McGAHON
SURVEYORS

Volume C Pricing Document

CLIENT: Cavan and Monaghan Education and Training Board (CMETB)

JOB: Schools Energy Pathfinder 2025 - Biomass Programme - Heating Upgrade and Building Enabling Works Package - Bundle 4

DATE: 25/09/2026



www.mcgahonsurveyors.com

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PRELIMINARIES

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1. PRELIMINARIES PARTICULARS **1 PRELIMINARY PARTICULARS** **This Pricing Document must be completed in full and returned with the tender** **1.1 Project, parties and consultants** The name, nature and location of the project Schools Energy Pathfinder 20025 - Biomass Programme - Heating Upgrade and Building Enabling Works Package - Bundle 4 (CMETB) The nature of the Works is the heating plantroom upgrade and associated electrical works including all associated builder's works and site works to facilitate the biomass heating installation (biomass heating installation will be completed by a separately appointed Biomass Contractor). The location of the sites are as follows: Loreto College, Drumkeen, Cavan, Co. Cavan Bailieborough Community School, Virginia Rd, Tanderagee, Bailieborough, Co. Cavan St Patrick's College, Cullies, Co. Cavan St Macartan's College, Mullamurphy, Co. Monaghan Breifne College, 12 Cootehill Road, Cullies, Co. Cavan Beech Hill College, Dublin Road, Tirkeenan, Monaghan, Co. Monaghan A general description of the works The contract comprises the following works: The Works comprise the upgrade of heating plantrooms across 6 No. school sites in Counties Cavan and Monaghan. The Works Contractor shall be responsible for all heating plantroom upgrade works and associated electrical works, including all necessary builder's works and siteworks required to facilitate the installation of biomass heating systems by a separately appointed Biomass Contractor. Siteworks shall include trenching, underground pipework and ducting routes to the proposed biomass cabin locations, together with the provision of concrete plinths and all associated enabling works for the installation of containerised biomass units. The scope also includes all required modifications to existing structures and services and all works necessary to facilitate the interface, connection, testing and commissioning of the biomass systems by others, as detailed in Volume A Works Requirements.					

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	1. PRELIMINARIES PARTICULARS (Cont)					
	The names and address of the Employer and Consultants together with their respective roles.					
	The 'Employer' shall mean					
	Cavan and Monaghan Education and Training Board (CMETB), Market Street, Monaghan, Co. Monaghan					
	Names and addresses of the Consultants					
	The term 'Employer's Representative' shall mean					
	BDP, Blackhall Green, Dublin 7, D07 V0RF, Ireland					
	The Building Services Engineer is:					
	BDP, Blackhall Green, Dublin 7, D07 V0RF, Ireland					
	The Quantity Surveyor is:					
	McGahon Surveyors Ltd., Block 1, Quayside Business Park, Mill Street, Dundalk, Co Louth					
	1.2 Description of site					
A	The Works are to be carried out across 6No. separate school sites in Counties Cavan and Monaghan. The boundaries, access arrangements and positions of the Works are indicated on the Site Layout Plans included in the Works Requirements.	1	item			
B	The Contractor shall be deemed to have visited the sites and satisfied themselves as to all site conditions, access constraints and the nature of the existing buildings and surrounding areas.	1	item			
	The existing boundaries of the site include the following:					
C	The existing boundaries to each of the school sites shall remain unchanged for the duration of the Works.	1	Item			
D	The Contractor shall familiarise themselves with all boundary conditions and interfaces with adjoining properties and shall ensure no interference or damage is caused to same.	1	Item			
	Means of Access					
E	Access to the Works shall be via the existing entrances to each school site. No alternative access points shall be used without prior approval of the Employer's Representative.	1	Item			
F	The Contractor shall provide and maintain safe and secure access to the Works areas at all times and implement appropriate traffic management and signage to minimise disruption to school operations, staff and local traffic.	1	Item			
				To Collection €		

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	1. PRELIMINARIES PARTICULARS (Cont)					
A	The Contractor shall be responsible for maintaining clean and safe access routes and shall make good any damage arising from their operations.	1	Item			
	Restrictions on Access					
B	The Contractor's working areas shall be limited to the designated Works areas only and shall not impede the operation of the remainder of the school sites.	1	Item			
C	The Contractor shall allow for the presence of school staff, pupils and others on site and shall ensure appropriate segregation, safety measures and controls are in place at all times.	1	Item			
D	Existing emergency access and egress routes shall be maintained throughout the Works.	1	Item			
	Position of the Works					
E	The position and extent of the Works at each site are as indicated on the Site Layout Plans included in the Works Requirements.	1	Item			
F	The Contractor shall set out and coordinate the Works to suit the existing buildings, services and site constraints.	1	Item			
	Existing Buildings and Services					
G	Existing school buildings and services located within each site as indicated in the Works Requirements.	1	Item			
H	The Contractor shall ensure that all existing services remain operational within occupied areas for the duration of the Works and shall coordinate all works accordingly.	1	Item			
J	The Contractor shall verify the location of all existing services prior to commencing works and shall be responsible for avoiding damage to same.	1	Item			
K	ll necessary liaison with school representatives shall be undertaken to coordinate works, particularly in relation to any service interruptions, which shall be minimised and agreed in advance.	1	Item			
	Adjacent / Abutting Structures					
L	The Contractor shall allow for working in proximity to existing buildings and adjoining properties and shall take all necessary precautions to prevent damage or disturbance.	1	Item			
M	A pre-construction condition survey of existing buildings, hardstandings and adjacent properties shall be carried out and issued to the Employer's Representative for record.	1	Item			
N	The Contractor shall liaise with adjacent stakeholders as required and shall ensure that disruption arising from the Works is kept to a minimum.	1	Item			
				To Collection €		

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	1. PRELIMINARIES PARTICULARS (Cont)					
	Biomass Installation by Others					
A	The Contractor shall note that the containerised biomass systems will be supplied and installed by a separately appointed Biomass Contractor.	1	Item			
	The Contractor shall:					
B	Facilitate access to the site and designated installation areas for the Biomass Contractor	1	Item			
C	Coordinate and liaise with the Biomass Contractor to ensure the timely delivery, positioning and installation of the biomass units	1	Item			
D	Programme and manage the Works to accommodate the installation by others and ensure no delay to the overall completion of the Works	1	Item			
E	The Contractor shall include for all necessary attendance, coordination and communication required to ensure the biomass installation is completed in accordance with the overall project programme.	1	Item			
	1.3 Drawings and other documents					
	Drawings and other documents used for the preparation of this bill of quantities are:					
F	Documents contained in Volume A - Works Requirements	1	Item			
	Project Particulars & General Conditions					
G	Provide for any costs arising from complying with items given in Volume A1 - Project Particulars	1	Item			
	Drawings - Copies					
H	Copies of the Drawings, additional to those provided for in the Conditions of Contract shall be provided at the Contractor's expense. Keep one copy of all contract drawings on the works for inspection by the Employer's Representative on completion of the works.	1	Item			
	Pricing Documents					
J	The basis of measurement is the Agreed Rules of Measurement, Issue Four 2010 (ARM4) and ARM 4 Supplement 1, agreed between the Construction Industry Federation and the Society of Chartered Surveyors Ireland.	1	Item			
K	Mechanical & Electrical Works measured in accordance with The Agreed Rules of Measurement 4 to Supplement 2	1	Item			
L	Tendering Contractors are referred to the General Rules section of ARM 4 Supplement 1 (Issue 1 2010) and the ARM Standing Committee Notice of Amendments to ARM 4, Supplement 2 dated 15th November 2019 used in the production of Volume C Pricing Document.	1	Item			
				To Collection €		

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	1. PRELIMINARIES PARTICULARS (Cont)					
A	Tenders must be priced in accordance with section 5.7 of the Instructions to Tenderers issued with this tender	1	Item			
B	Errors in the Pricing Document will be dealt with in accordance with section 8.1 of the Instructions to Tenderers issued with this tender	1	Item			
C	Unbalanced Tenders will be dealt with in accordance with section 8.2 of the Instructions to Tenderers issued with this tender	1	Item			
D	Abnormally low tenders, abnormally high or low rates or prices will be dealt with in accordance with section 8.3 of the Instructions to Tenderers issued with this tender	1	Item			
E	The Contractor shall keep one unpriced copy of the Pricing Document on the Works and the Employer's Representative or his representatives shall at all reasonable times have access to it.	1	Item			
F	No alterations or qualifications of any kind may be made by the Tenderer to the text of the Pricing Document. Should any alteration amendment note or addition be made it will be ignored and the text prepared by the Quantity Surveyor shall be adhered to.	1	Item			
G	The tendering contractor must comply with the rules set out in the Instructions to Tenderers when completing Volume C - Pricing Document	1	Item			
	Generic Names / Performance Requirements / Proprietary Names					
H	To avoid long descriptions repetitions, certain descriptions and measured items refer to the specification by use of the words " as described" whether so referred or not, all instructions and information contained in the Specification Clauses will be deemed to have been taken into consideration in pricing the whole of this Pricing Document.	1	Item			
J	Wherever a proprietary name is used to specify a material or process it shall be deemed to have the term "or equivalent" appended to it.	1	Item			
K	Where a material or process is described by reference to its proprietary name the name is used to indicate the standard of construction, appearance, ease of maintenance and durability acceptable to the Employer's Representative. The Employer's Representative will approve the use of alternatives where such alternatives are shown to equal or surpass the qualities of the product or process specified. Accordingly proprietary names wherever mentioned in the Specification, Pricing Document or on the drawings shall be deemed to mean the provision of the named product or process or an equivalent.	1	Item			
L	If the Contractor wishes to propose an "equivalent" product to that specified, they must follow the following procedures:	1	Item			
M	a) Proposal to change must be formally requested through the employer's representative (ER) citing the reason why and demonstrating that the "equivalent" is equal to the original specification	1	Item			
				To Collection €		

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	1. PRELIMINARIES PARTICULARS (Cont)					
A	b) The ER is entitled to seek further demonstration that the "equivalent" proposal is equal, and tendering contractors should expect and include for same	1	Item			
B	c) The ER's approval of the "equivalent" must be issued in writing prior to the works commencing	1	Item			
C	In exceptional cases where it has not been possible to specify a generic element and a specific product has been named, an equivalent product to that specified is acceptable where it meets the technical, functional and aesthetic standards of that specified: the onus is on the contractor to ensure that an equivalent product to that specified meets the standard by means of an agreement cert, insurance backed guarantee or warranty, detailed specifications, fire test certificates where applicable, brochure and other means of proof of compliance. Notwithstanding this, the appropriate foregoing documentation and samples are to be provided to the architect prior to being incorporated into the construction.	1	Item			
				To Collection €		

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1. PRELIMINARIES PARTICULARS (Cont)					
COLLECTION					
Page No. Prelims Works Con/1					
Page No. Prelims Works Con/2					
Page No. Prelims Works Con/3					
Page No. Prelims Works Con/4					
Page No. Prelims Works Con/5					
Page No. Prelims Works Con/6					
1. PRELIMINARIES PARTICULARS **Carried to Summary**					

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	2. CONTRACT					
	2. CONTRACT					
	2.1 Form, type and conditions of contract					
	Form, type and conditions of contract					
	The Form of Conditions set out in the Public Works Contract for Minor Building and Civil Engineering Works designed by the Employer with a cited revision reference commencing with v2 published on https://cwmf.gov.ie/en/pillars/pillar-1/pw-cf5/ on the date 10 days before the latest date for receipt of Tenders (disregarding any amendements posted on that date).					
	Articles of Agreement					
A	Agreement A2	1	Item			
	Conditions of Contract - clause headings					
	1. THE CONTRACT					
B	1.1 Definitions	1	item			
C	1.2 Interpretation	1	item			
D	1.3 Inconsistencies	1	item			
E	1.4 Pricing Document and Works Proposals	1	item			
F	1.5 Performance Bond	1	item			
G	1.6 (not used)	1	item			
H	1.7 Joint Ventures	1	item			
J	1.8 Assignment	1	item			
K	1.9 Miscellaneous	1	item			
L	1.10 Background Information	1	item			
	2.0 THE LAW					
M	2.1 Law governing the Contract	1	item			
N	2.2 Compliance with Legal Requirements	1	item			
P	2.3 Consents	1	item			
Q	2.4 Project Supervisor	1	item			
R	2.5 Safety, Health and Welfare at Work Act 2005 and Safety, Health and Welfare at Work (Construction) Regulations 2013	1	item			

To Collection €

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	2. CONTRACT (Cont)					
A	2.6 Ethics in Public Office	1	item			
B	2.7 Data Protection	1	item			
	3.0 LOSS, DAMAGE AND INJURY					
C	3.1 Employer's Risks of Loss and Damage to the Works	1	item			
D	3.2 Care of the Works	1	item			
E	3.3 Insurance of the Works and Other Risk Items	1	item			
F	3.4 Contractor's Indemnity	1	item			
G	3.5 Employer's Indemnity	1	item			
H	3.6 Public Liability and Employer's Liability Insurances	1	item			
J	3.7 Professional Indemnity Insurance	1	item			
K	3.8 Existing Facilities and Use or Occupation by Employer	1	item			
L	3.9 General Requirements Concerning Insurance	1	item			
M	3.10 Limitation of Liability	1	item			
	4.0 MANAGEMENT					
N	4.1 Co-operation	1	item			
P	4.2 Contractor's Representative and Supervisor	1	item			
Q	4.3 Employer's Representative	1	item			
R	4.4 Employer's Representative's Communications	1	item			
S	4.5 Instructions	1	item			
T	4.6 Works Proposals	1	item			
U	4.7 Required Contractor Submissions	1	item			
V	4.8 (not used)	1	item			
W	4.9 Programme	1	item			
X	4.10 Progress Reports	1	item			
Y	4.11 Notice and Time for Employer's Obligations	1	item			
Z	4.12 Documents	1	item			
AA	4.13 Contractor's Management	1	item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	4.14 Communications	1	item			
B	4.15 Meetings	1	item			
C	4.16 Confidentiality and Secrecy	1	item			
D	4.17 Contractor's Things Not to be Removed	1	item			
E	4.18 Contractor's Documents	1	item			
	5.0 CONTRACTOR'S PERSONNEL					
F	5.1 Contractor's Personnel to carry out Contractor's Obligations	1	item			
G	5.2 Qualifications and Competence	1	item			
H	5.3 Pay and Conditions of Employment	1	item			
J	5.4 Subcontractors and Specialists	1	item			
K	5.5 Collateral Warranties	1	item			
L	5.6 Removal of Work Persons	1	item			
M	5.7 Weekly Labour Records	1	item			
N	5.8 Ancillary Certificates	1	item			
	6.0 PROPERTY					
P	6.1 Ownership of Work Items	1	item			
Q	6.2 Infringement of Property Rights	1	item			
R	6.3 Works Requirements	1	item			
S	6.4 Rights in Contractor's Documents	1	item			
	7.0 THE SITE					
T	7.1 Lands made available for the Works	1	item			
U	7.2 Trespassers	1	item			
V	7.3 Contractor Responsible for all Site Operations	1	item			
W	7.4 Services for Employer's Facilities	1	item			
X	7.5 Security and Safety of the Site and Nuisance	1	item			
Y	7.6 Other Contractors	1	item			
Z	7.7 Setting Out the Works	1	item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	7.8 Archaeological Objects and Human Remains	1	item			
B	7.9 Access and Facilities	1	item			
C	7.10 (not used)	1	item			
D	7.11 (not used)	1	item			
E	7.12 Charges	1	item			
	8.0 QUALITY, TESTING AND DEFECTS					
F	8.1 Standards of Workmanship and Works Items	1	item			
G	8.2 Quality Assurance	1	item			
H	8.3 Inspection	1	item			
J	8.4 Tests	1	item			
K	8.5 Defects	1	item			
L	8.6 Defects Period	1	item			
M	8.7 Defects Certificate	1	item			
	9.0 TIME AND COMPLETION					
N	9.1 Starting Date	1	item			
P	9.2 Suspension	1	item			
Q	9.3 Delay and Extension of Time	1	item			
R	9.4 Programme Contingency	1	item			
S	9.5 Omissions and Reduction of Time	1	item			
T	9.6 Substantial Completion	1	item			
U	9.7 (not used)	1	item			
V	9.8 Liquidated Damages	1	item			
	10.0 CLAIMS AND ADJUSTMENTS					
W	10.1 Compensation Event	1	item			
X	10.2 Contractor to Pay Employer's Cost of Checking Quantities	1	item			
Y	10.3 Contractor Claims	1	item			
Z	10.4 Proposed Instructions	1	item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	10.5 Employer's Representative's Determination	1	item			
B	10.6 Adjustments to the Contract Sum	1	item			
C	10.7 Delay Cost	1	item			
D	10.8 (Not used)	1	item			
E	10.9 Employer's Claims	1	item			
	11.0 PAYMENT					
F	11.1 Interim Payment	1	item			
G	11.2 Unfixed Works Items	1	item			
H	11.3 Retention	1	item			
J	11.4 Full payment	1	item			
K	11.5 Final Statement	1	item			
L	11.6 Time for Payment and Interest	1	item			
M	11.7 Value Added Tax	1	item			
N	11.8 Withholding Tax	1	item			
	12.0 TERMINATION					
P	12.1 Termination on Contractor Default	1	item			
Q	12.2 Consequences of Default Termination	1	item			
R	12.3 Suspension by the Contractor	1	item			
S	12.4 Termination by the Contractor	1	item			
T	12.5 Termination at Employer's Election	1	item			
U	12.6 Consequences of Termination by Contractor or at Employer's Election	1	item			
V	12.7 Survival	1	item			
W	12.8 Payment	1	item			
X	12.9 Reference to Conciliation	1	item			
	13.0 DISPUTES					
Y	13.1 Conciliation	1	item			
Z	13.2 Adjudication	1	item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	13.3 Arbitration	1	item			
B	13.4 Jurisdiction	1	item			
C	13.5 Agent for Service	1	item			
D	13.6 Continuing obligations	1	item			
	14.0 COVID-19 MADATORY CLOSURE					
E	14.1 Covid-19 Definitions	1	item			
F	14.2 Covid-19 General Provisions	1	item			
G	14.3 Covid-19 Costs	1	item			
	15.0 PRICE VARIATION					
H	15.1 Definitions	1	item			
J	15.2 Contract Sum Adjustments	1	item			
K	15.3 Proportions	1	item			
L	15.4 Change in Law	1	item			
M	15.5 Failure to Commence by the Start Date	1	item			
N	15.6 Failure to Complete on Time	1	item			
P	15.7 Excluded Amounts	1	item			
Q	15.8 Revisions to the Index Figures	1	item			
R	15.9 Permitted Increases and Permitted Decreases for Material Categories and Fuel Categories	1	item			
S	15.10 Adjustments for Labour	1	item			
T	15.11 Efficiency	1	item			
	APPENDICES TO CLAUSE 15					
U	Appendix 1 Definitions	1	item			
V	Appendix 2 Permitted Increases and Permitted Decreases for Materials and Fuel	1	item			
W	Appendix 3 Labour	1	item			
				To Collection €		

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	2. CONTRACT (Cont)					
	THE SCHEDULE - PART 1					
A	A. Employer's Representative and Communications	1	item			
B	B. Documents	1	item			
C	C. Project Supervisor	1	item			
D	D. Insurance	1	item			
E	E. Performance Bond	1	item			
F	F (i). Collateral Warranties	1	item			
G	F (ii). Ancillary Certificates	1	item			
H	F (iii). Named Specialists	1	item			
J	G. Dates for Substantial Completion, Sections, Liquidated Damages, Retention	1	item			
K	H. Early Completion	1	item			
L	I. Defects Period	1	item			
M	J. Random Checks for Employment Records	1	item			
N	K. Delay Events, Compensation Events, Programme Contingency, Delay Costs, Adjustments	1	item			
P	L. Payment Particulars	1	item			
Q	M. Cap on Liability	1	item			
R	N. Conciliation, Adjudication and Arbitration	1	item			
S	O. Rights in Contractor's Documents	1	item			
T	P. Material Categories	1	Item			
U	The completed Schedule Part 1 of the contract is contained within Volume B. Provide herin if not included elsewhere for complying in all respects with the schedule & conditions as described.	1	Item			
	<u>The insertions in the Schedule Part 1 are</u>:					
	<u>A. Employer's Representative and Communications</u>					
	Sub-clauses 4.3 and 4.14					
	Notices under clauses 12 and 13 to be sent to					
	Chief Executive, Cavan and Monaghan Education and Training Board (CMETB)					
				To Collection €		

2. CONTRACT (Cont)

Market Street, Monaghan, Co. Monaghan

Other notices to the Employer to be sent to

Mr. Paul Campbell, BDP

Blackhall Green, Dublin 7, D07 V0RF, Ireland

Phone: +353 1 474 0600

Email: paul.campbell@bdp.com

The Employer's Representative is: Mr. Paul Campbell, BDP

Notices to the Employer's Representative to be sent to

Mr. Paul Campbell, BDP

Blackhall Green, Dublin 7, D07 V0RF, Ireland

Phone: +353 1 474 0600

Email: paul.campbell@bdp.com

Maximum adjustment to the Contract Sum for a single Change Order: €2,000.00

Maximum cumulative value of adjustments to the Contract Sum for Change Orders in any 3 month period is: 0.25% of the Contract value, unless approved by the Employer.

B. Documents

Works Requirements are:

As Scheduled in Volume A Works Requirements

Pricing Document is:

A Bill of Quantities measured in accordance with the: Agreed Rules of Measurement 4, Supplement 1 as included in Volume C.

Mechanical & Electrical works measured in accordance with The Agreed Rules of Measurement 4 to Supplement 2

Works Proposals are:

As included in Volume D and attachments - Works Proposals (response to Technical Merit Criteria as outlined in Appendix 1 of the ITT document and accompanying tender information outlining the criteria).

To Collection €

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	2. CONTRACT (Cont)					
	C. Project Supervisor (Sub-clause 2.4)					
	The Contractor is to be appointed project supervisor for the construction stage for the Works and any other work on the Site from the Starting Date until all construction work on the project has been completed.					
	D. Insurance (Sub-clause 3)					
A	Insurance of the works: minimum amount insured for professional fees 12.5% of the Contract Sum	1	item			
B	Minimum indemnity limit for Public Liability insurance: €6,500,000 for any one event, but this limit may be on an annual aggregate basis for products liability, collapse, vibration, subsidence, removal and weakening of supports and sudden accidental pollution	1	item			
C	Minimum indemnity limit for Employers' liability insurance: €13,000,000 for any one event	1	item			
D	Maximum excess for Insurance of Works and other Risk Items: the greater of 1% of the Project Value or 0.5% of Contractor's turnover	1	item			
E	Maximum excess for Public liability: the greater of 1% of the Project Value or 0.5% of Contractor's turnover in respect of property damage only. There shall be no excess for death, injury or illness.	1	item			
F	There is no excess permitted for Employers' liability insurance.	1	item			
	Permitted exclusions from all Insurances					
G	War, invasion, act of foreign enemies, hostilities [whether war is declared or not], civil war, rebellion, revolution, insurrection or military or usurped power	1	item			
H	Pressure waves caused by aircraft or other airborne objects travelling at sonic or supersonic speeds	1	item			
J	Contamination by radioactivity or radioactive, toxic, explosive or other hazardous properties of any explosive nuclear assembly or its components, in each case not caused by the Contractor or the Contractor's Personnel	1	item			
K	Terrorism	1	item			
L	Asbestos	1	item			
	Permitted exclusions from insurance of the Works and other Risk Items:					
M	Use or occupation of the Works by the Employer except in connection with the Works	1	item			
N	Unless otherwise specified in the Works Requirements, cost of making good defects in the Works but not damage caused by such defects to other sound parts of the Works	1	item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	Wear, tear, normal upkeep or normal repair or gradual deterioration	1	item			
B	Inventory losses	1	item			
C	Loss of use or any consequential loss of any nature including penalties for delay, non-completion or non-compliance	1	item			
D	Failure of information technology	1	item			
E	Mechanical or electrical breakdown but not resulting damage	1	item			
F	Cessation of the Works for more than 3 months	1	item			
	Permitted exclusions from public liability insurance:					
G	Persons under a contract of service or apprenticeship with the insured	1	item			
H	Property of the insured or in the insured's custody or control other than existing premises and their contents temporarily occupied for the purposes of the Works	1	item			
J	Defective workmanship or materials but not resulting damage	1	item			
K	Mechanically propelled vehicles within the meaning of the Road Traffic Acts	1	item			
L	Loss or damage due to design	1	item			
M	Gradual pollution or contamination	1	item			
N	Territorial limits	1	item			
P	Unless otherwise specified in the Works Requirements, aircraft and waterborne craft	1	item			
Q	Fines, penalties, liquidated damages	1	item			
	Permitted exclusions from employer's liability insurance:					
R	Offshore work	1	item			
S	Liability compulsorily insurable under the Road Traffic Acts	1	item			
	Permitted exclusions for professional indemnity insurance:					
T	Persons under a contract of service or apprenticeship with the insured	1	item			
U	Ownership, use, occupation or leasing of mobile or immobile property	1	item			
V	Effecting or maintenance of insurance of or in connection with the provision of finance or advice on financial matters	1	item			
W	Dishonest, malicious, criminal or deliberate illegal acts	1	item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	Libel and slander	1	item			
B	Insolvency	1	item			
C	Fines, penalties, liquidated damages or any penal, punitive, exemplary, non-compensatory or aggravated damages	1	item			
D	Failure of information technology	1	item			
E	Contractual liability that would not apply in the absence of the contract	1	item			
	Optional insurance provisions					
F	Sub-clause 3.8 shall apply.	1	item			
G	Insurance of the works and other Risk Items shall include the following property of the Employer, other than the Works and Work Items: Not applicable and the minimum sum for which this property is to be insured shall be €Not applicable.	1	item			
H	If insurance of the Works and other Risk Items is to include terrorism cover, the minimum sum insured shall be: €0.00	1	item			
J	The Contractor is not required to extend the insurance of the Works and other Risk Items for a Section that has reached Substantial Completion until the Employer's Representative issues the certificate of Substantial Completion for the whole Works.	1	item			
K	Required extensions to Insurance: N/A	1	item			
L	Professional Indemnity Insurance is required	1	item			
M	If required, the Professional Indemnity Insurance is in place it must be kept in place for 12 years after Substantial Completion of the Works is certified by the Employer's Representative	1	item			
N	If required the minimum indemnity limit for professional indemnity insurance shall be €750,000 annual aggregate limit	1	item			
P	The maximum excess shall be the greater amount of 2% of the Contractor's annual turnover or €5,000.	1	item			
	<u>E. Performance Bond (Sub-clause 1.5)</u>					
	A performance bond is required					
Q	The amount of the performance bond shall be 12.5% of the initial Contract Sum up to certification of Substantial Completion of the Works, and 6.25% of the initial Contract Sum for 450 days after that.	1	item			
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	2. CONTRACT (Cont)					
	F(i). Collateral Warranties (Sub-clause 5.5)					
	Collateral Warranties are required from the following categories of Specialists, by the following dates; and the amount withheld from payments under sub-clause 11.4.1 area as follows:					
A	Not applicable	1	item			
	F(ii). Ancillary Certificates (Sub-clause 5.8)					
	Ancillary Certificates are required from the following categories of Contractor's Personnel. The list reflects the works elements known at the time of tender but does not limit the Contractor's duties under sub-clause 2.3.1:					
B	Refer to list of Ancillary Certificates included in Volume B - Schedule Part 1 (Note: The contractor should note that the list is not exhaustive).	1	item			
	F(iii). Named Specialists (Sub-clause 5.4)					
C	Not applicable	1	item			
	G. Dates for Substantial Completion, Sections, Liquidated Damages, Retention					
	The Works					
D	Date for Substantial Completion: The last working day of 42 weeks starting on the contract date and including first threshold under Clause 9.4	1	item			
E	Rate of Liquidated Damages: €3,000 per week	1	Item			
	H. Early Completion (Sub-clause 9.6)					
F	The Employer's Representative is required to issue the certificate of Substantial Completion if the Works or a Section reaches Substantial Completion before its Date for Substantial Completion.	1	item			
	I. Defects Period					
G	The initial Defects Period is one year from the date of Substantial Completion of the Works	1	Item			
	J. Random Checks for Employment Records					
H	Sub-clause 5.3.3A(2) shall be part of the contract	1	Item			
	K. Delay Events, Compensation Events, Programme Contingency, Delay Costs, Adjustments (Sub-clauses 9.3,9.4, 10.1, 10.6, 10.7)					
J	Event Nr 17 (Compensation Event - Yes)	1	item			
K	Event Nr 18 (Compensation Event - Yes)	1	item			
L	Event Nr 19 (Compensation Event - Yes)	1	item			

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	2. CONTRACT (Cont)					
A	Event Nr 20 (Compensation Event - Yes)	1	item			
B	Event Nr 21 (Compensation Event - Yes)	1	item			
C	Weather station for measurement of weather events: Ballyhaise weather station	1	item			
D	An order or other act of a court or other public authority exercising authority under Law includes a Covid-19 Mandatory Closure.	1	item			
	In Sub-clause 9.4					
E	The programme contingency is five (5) Site Working Days of delay caused by Compensation Events	1	item			
F	In Sub-clause 10.6.4(3), the rates to be used to determine the cost of plant are the rates in: Not applicable	1	item			
	Modified as follows:					
G	Rates will be treated as if in euro and any rates in the Pricing Document	1	item			
	In sub-clause 10.7, the amount to be added for delay cost is in accordance with sub-clause 10.7.1(2) the daily rate tendered by the Contractor in the Schedule, part 2D					
H	For the purposes of sub-clause 10.7, the Contractor is to tender in part 2D a single daily rate for delay costs	1	item			
	L. Payment Particulars (Clause 11)					
J	Period for interim payment is: Monthly	1	Item			
K	Minimum amount for interim payments, except release of retention, €5,000.00	1	Item			
L	Up to the percentage stated below of the Contract value of the following unfixed Works Items may be included in an interim payment in accordance with sub-clause 11.2:	1	Item			
M	On-Site Materials % of Contract value: 90%	1	Item			
N	Off-Site Materials with Bond % of Contract value: 90%	1	Item			
P	The retention percentage is 5%	1	Item			
	<u>M. Cap on Liability (Sub-clause 3.10)</u>					
	Subject to sub-clause 3.10.2 of the Conditions of Contract, the monetary amount of the Contractor's liabilty to the EMployer under or arising out of this Contract shall not exceed the amount stated below:					
Q	€Amount equal to Contract Sum	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
	N. Conciliation, Adjudication and Arbitration (Sub-clauses 13.2, 13.3 and 13.4)					
A	Failing agreement, the conciliator (or Standing Conciliator) will be appointed by: The President of the RIAI	1	item			
B	The arbitration rules are the Capital Works Management Framework (CWMF) Arbitration Rules for use with Public Works and Construction Services Contracts (AR1)	1	Item			
C	The person or body to appoint the arbitrator, if not agreed by the parties, is The President of the RIAI	1	Item			
D	The person to appoint the adjudicator, if not agreed by the parties is Chairperson of the Panel of Adjudicators	1	Item			
	O. Rights in Contractor's Documents (Sub-clause 6.4)					
E	Copyright and all other rights in the following Contractor's Documents and Works Proposals described in sub-clause 6.4.2 transfers to the Employer in accordance with sub-clause 6.4: Nil	1	Item			
	P. Material Categories (sub-clause 15.9.1)					
F	Table 1B (All Materials Category only) applies.	1	Item			
	STATUTORY COMPLIANCE					
	Planning					
G	The Contractor shall comply with all planning permissions (where applicable) relating to the Works, including all conditions attached thereto, and shall ensure that the execution of the Works does not give rise to any breach of such conditions.	1	Item			
	Fire Safety					
H	The Contractor shall comply with all Fire Safety Certificates (where applicable) relating to the Works, including all conditions attached thereto, and shall ensure that the execution of the Works does not give rise to any breach of such conditions.	1	Item			
J	The Contractor shall engage a competent third party Fire Safety Certifier to provide an Ancillary Inspection Completion Certificate (SI RIAI ACI 02) in accordance with SI No. 9, in respect of all works relating to fire safety, including compliance with Building Regulations Part B and any applicable Fire Safety Certificate.	1	Item			
	Inspect & photograph each and every element of fire protection during construction:					

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	2. CONTRACT (Cont)					
A	Provide a detailed report and photographic log upon completion with interim reports at each fortnightly site meeting.	1	Item			
B	Provide Cs Cert for the supply & installation of the fire stopping.	1	Item			
	Disability Access Certificates (DAC)					
C	Not Applicable	1	Item			
	Building Control (Amendment) Regulations 2014					
D	Where applicable, the Contractor shall comply in full with the Building Control Regulations (as amended), including the Building Control (Amendment) Regulations 2014 and the associated Code of Practice for Inspection and Certification.	1	Item			
E	The Contractor shall be responsible for the timely submission of all notices, documentation and statutory certificates required under the Regulations and shall ensure that no works commence until a valid Commencement Notice has been accepted by the Building Control Authority.	1	Item			
	Certification and Coordination					
F	The Contractor shall cooperate fully with the Assigned Certifier, Employer's Representative and Design Team and shall provide all information, documentation, inspections and confirmations required to support certification and compliance.	1	Item			
G	The Contractor shall coordinate all subcontractors, specialists and designers to ensure the provision of all Ancillary Certificates, test certificates and inspection records required for completion and certification of the Works.	1	Item			
	Inspection Plan and Notifications					
H	The Contractor shall comply with the Preliminary Inspection Plan and Inspection Notification Framework and shall allow for all inspections, notifications, testing and record keeping required.	1	Item			
J	No claim for delay or additional cost shall arise from the Contractor's failure to properly plan, notify, coordinate or complete inspections or provide required documentation.	1	Item			
	Records and Handover					
K	The Contractor shall maintain full and accurate records of inspections, tests and compliance throughout the Works and shall provide same to the Assigned Certifier as required.	1	Item			
L	Prior to completion, the Contractor shall provide all documentation necessary to enable certification and registration of the Works on the Building Control Management System.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
	Completion					
A	The Contractor shall ensure that all certification requirements are satisfied to enable completion of the Works, including the submission of the Certificate of Compliance on Completion where applicable.	1	Item			
	Ancillary Certification					
B	The Contractor shall engage and coordinate all necessary Ancillary Certifiers and ensure that all Ancillary Certificates are provided in accordance with the Works Requirements and the Building Control Regulations.	1	Item			
	Additional BC(A)R Requirements					
	Fire Protection Photographic Log					
C	Inspect & photograph each and every element of fire protection during construction:	1	Item			
D	Provide a detailed report and photographic log upon completion with interim reports at each fortnightly site meeting	1	Item			
E	Provide Cs Cert for supply & installation of firestopping	1	Item			
	COMPLIANCE WITH BUILDING CONTROL ACT 2007					
F	All building works to conform fully with the requirements of the Building Control Act 2007 (including current amendments) and specific items of works are to be executed strictly in accordance with the recommendations set out in the various Technical Guidance documents. A full set of the Technical Guidance Documents to be provided and kept on site at the Contractor's expense.	1	Item			
G	The Contractor on completion of the said Contract Works is to issue a certificate in a form acceptable to the Employer's Representative and Client confirming that all the Contract Works have been executed in accordance with the requirements of the Building Control Act 2007 and any amendments thereof.	1	Item			
	CONSTRUCTION CONTRACTS ACT 2013					
H	The Contractor shall comply with the Main Contractor requirements as set out in the Construction Contracts Act 2013 and shall include for all costs associated with same. The "payment claim date" shall fall within the final full calendar week of each month for the duration of the construction Contract until the Certificate of Practical Completion is awarded.	1	Item			

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	2. CONTRACT (Cont)					
	2.2 Contractor's liability					
A	Contractors liability for risk or injury to persons and property and of damage to the works.	1	Item			
B	Provide for taking out and maintaining Public Liability and Employer's liability Insurances against injury to persons and property (minimum sum for Public Liability Insurances: (€6,500,000 for each and every claim; minimum sum for Employer's Liability Insurance €13,000,000) as required by the Conditions of Contract.	1	Item			
C	The Employer requires the Contractor to effect insurance in respect of the Contractor's liability for any such risk.	1	Item			
D	Provide for taking out and maintaining All Risks Insurance for the full value of the Works and ancillary items required by the Conditions of Contract.	1	Item			
E	The Contractor shall be responsible for any damage to adjoining property or existing site features arising from the Works and shall make good same at their own expense. The Contractor shall indemnify the Employer against any such claims.	1	Item			
F	Before commencement of the Works, the Contractor shall submit proposals for the off-site disposal of waste materials, which shall only be disposed of at suitably licensed or permitted facilities in accordance with the Waste Management Acts. Details shall be submitted to and agreed with the Employer's Representative.	1	Item			
G	The prices and rates shall include for any costs arising from the Contractor's obligations under the Waste Management Act 1996. or any other environmental legislation, with particular regard to the holding, transport recovery and disposal of waste arising from the carrying out of the works.	1	Item			
H	Insurances provided by Contractors must be authorised for this jurisdiction.	1	Item			
J	Any insurance policies which are renewed on or after 01 January 2021 with a UK domiciled Insurer will not be permitted in the ROI.	1	Item			
K	Any insurance policies which were in force prior to 01 January 2021 with a UK domiciled Insurer will remain valid (solely for the purposes of paying claims) for a period of 15 years.	1	Item			
L	Where asbestos handling or removal forms part of the Works, the Contractor shall ensure appropriate insurances are in place, including Employers Liability and Public/Products/Pollution Liability, with the Employer named as additional insured where required.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
	2.3 Insurance liability of Employer					
A	The Employer shall bear the risk of loss or damage to its existing facilities and to those parts of the Works which it occupies or uses, in accordance with the Conditions of Contract.	1	Item			
	2.4 Local Authority fees and charges					
B	The Contractor shall be responsible for obtaining all necessary approvals, permits and licences required for the execution of the Works and shall include for all associated costs.	1	Item			
C	The Contractor shall comply with all statutory requirements and liaise with the relevant authorities as necessary. No additional costs shall be entertained in this regard.	1	Item			
	2.5 Obligations and restrictions imposed by the Employer					
	a) Access to and possession or use of the site.					
	Construction Access					
D	The Contractor shall be responsible for providing, maintaining and managing all access to the Works areas, including pedestrian and vehicular access, and shall ensure safe and secure ingress and egress at all times.	1	Item			
E	The Contractor shall be deemed to have satisfied themselves as to all access constraints and site conditions prior to submission of their tender.	1	Item			
	Construction Access and Traffic Management					
F	The Contractor shall be responsible for all traffic management associated with the Works, including the preparation and implementation of a Construction Traffic Management Plan.	1	Item			
G	The Contractor shall ensure that construction activities, deliveries and removals are coordinated to minimise disruption to school staff, local residents and the public, and shall allow for the continued operation of the school sites where staff may be present.	1	Item			
H	Construction and school-related activities shall be appropriately segregated at all times, and all access routes shall be maintained in a safe, clean and operational condition.	1	Item			
	Restrictions on Use of Site					
J	The Contractor's operations shall be confined to the designated Works areas and shall not interfere with the operation of the remainder of the school sites.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	The Contractor shall provide all necessary security measures, including controlled access points, and shall prevent unauthorised access to the Works areas at all times.	1	Item			
B	The Contractor shall ensure that existing emergency access and egress routes are maintained throughout the duration of the Works.	1	Item			
	Site Management and Control					
C	The Contractor shall implement appropriate site management procedures, including a site access control system, and shall ensure that all personnel entering the Works are properly managed and supervised.	1	Item			
D	The Contractor shall not use the Site for any purpose other than the execution of the Works.	1	Item			
	Access for Employer's Representative					
E	The Employer's Representative and authorised persons shall be afforded full access to the Works, the Site and any workshops or locations where materials or components are being prepared for incorporation into the Works.	1	Item			
	b) Limitations of working space					
F	The Contractor shall allow for all constraints associated with the limited working areas at each site and shall plan and execute the Works accordingly.	1	Item			
G	All Contractor and staff parking shall be confined to designated areas within the site boundaries, unless otherwise agreed.	1	Item			
H	The Contractor shall confine their operations, storage of materials, plant and welfare facilities to the designated Works areas only and shall ensure that all areas are maintained in a safe, tidy and controlled condition.	1	Item			
J	The Contractor shall ensure appropriate segregation between construction activities and any areas of the school sites that remain in use, including provision of safe access routes where required.	1	Item			
K	The Contractor shall be responsible for any damage to buildings, services, roads or external areas arising from the Works and shall make good same at their own expense.	1	Item			
L	Where works extend beyond the immediate Works areas, the Contractor shall include for all necessary temporary works, protection, signage, permits and reinstatement to the satisfaction of the relevant authority.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
	c) Limitations of working hours.					
	The limitations on working hours will apply:					
A	The Contractor shall carry out the Works during normal working hours, as agreed with the Employer's Representative, and in accordance with any statutory requirements or planning conditions where applicable.	1	Item			
B	The Contractor shall ensure that noise, vibration and general disturbance arising from the Works are minimised at all times.	1	Item			
C	Any works required outside agreed working hours shall be subject to the prior approval of the Employer's Representative and compliance with all statutory requirements.	1	Item			
	d) Limitations on use operation of plant with respect to adjoining property					
D	The Contractor shall carry out the Works in a manner that minimises nuisance to adjoining properties and any occupied areas of the school sites, including control of noise, dust and vibration.	1	Item			
E	The Contractor shall implement appropriate control measures and method statements as necessary and shall comply with all relevant statutory requirements and any planning conditions where applicable.	1	Item			
	e) The use or disposal of any material found on the site.					
F	No materials arising from the Site shall be removed or reused except in accordance with the instructions of the Employer's Representative.	1	Item			
G	The Contractor shall be responsible for the proper handling, storage and disposal of all waste and surplus materials arising from the Works in accordance with all statutory requirements.	1	Item			
H	The Contractor shall ensure that no deleterious materials are discharged into drainage systems or the surrounding environment and shall maintain appropriate records of waste disposal.	1	Item			
J	Where hazardous or contaminated materials are encountered, the Contractor shall comply with all relevant statutory requirements and implement appropriate control and safety measures.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
	f) Hoardings, fences, screens, temporary roofs, temporary name boards and advertising rights.					
A	The Contractor shall provide and maintain all necessary temporary fencing, hoarding, barriers and protection required to safely segregate the Works areas from the remainder of the school sites and the public.	1	Item			
B	Such measures shall be appropriate to the nature and scale of the Works and shall generally comprise secure temporary fencing (e.g. Heras or similar), unless otherwise required by the Works Requirements or Employer's Representative.	1	Item			
C	The Contractor shall ensure that the Works areas are secure at all times and that unauthorised access is prevented. Safe access routes shall be maintained for school staff and others where required.	1	Item			
D	The Contractor shall provide all necessary signage, including safety signage and directional signage for construction access and deliveries. No advertisements or signage shall be displayed without the approval of the Employer's Representative.	1	Item			
E	The Contractor shall allow for dust control measures as necessary, including localised dust screens or partitions within buildings where works are carried out in proximity to occupied areas.	1	Item			
F	All temporary works and protection measures shall be maintained for the duration of the Works and removed on completion, with all affected areas made good.	1	Item			
	g) The maintenance and protection of existing services on, under or over the site.					
G	The Contractor shall identify, protect and maintain all existing services on, under or over the site for the duration of the Works.	1	Item			
H	The Contractor shall plan and execute the Works to minimise disruption to existing services and shall ensure that all services remain operational, except where temporary interruptions are agreed in advance with the Employer's Representative and the school.	1	Item			
J	The Contractor shall verify the location of all existing services prior to commencing works and shall be responsible for avoiding damage to same.	1	Item			
K	Where works involve connections to or alterations of existing services, these shall be carefully coordinated and carried out with the minimum disruption, including provision for any temporary measures required to maintain service continuity.	1	Item			
L	The Contractor shall comply with all statutory requirements and liaise with relevant service providers where necessary.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	The Contractor shall be responsible for any damage to existing services and for the full cost of repair, reinstatement and any associated consequences arising from their operations.	1	Item			
B	The Contractor shall allow for all necessary investigations to confirm the location and condition of existing services and no claims shall arise due to lack of knowledge in this regard.	1	Item			
	h) The execution or completion of the work in any specific order or in sections or phases, including any coincidental work not at the discretion of the contractor.					
C	The Works shall be planned and executed in a manner that minimises disruption to the operation of the school sites, with due regard to the presence of school staff and other users.	1	Item			
D	The Contractor shall coordinate and sequence the Works appropriately across the various sites and shall allow for restricted access to certain areas where required.	1	Item			
E	The Contractor shall liaise with the Employer's Representative and school representatives to agree the timing of any works that may impact access or services.	1	Item			
F	The overall works are to be completed by the last working day of 42 weeks starting on the contract date and including first threshold under Clause 9.4	1	Item			
	Services Connections / Tie-ins					
G	Where the Works involve connections to or modifications of existing services, the Contractor shall plan and coordinate such works to minimise disruption.	1	Item			
H	Any required service interruptions shall be agreed in advance with the Employer's Representative and the school and shall be carried out at appropriate times.	1	Item			
J	The Contractor shall include for all programming, temporary works and measures necessary to facilitate such connections.	1	Item			
	Working Outside Designated Areas					
K	Where works are required outside the immediate Works areas, the Contractor shall liaise with the relevant stakeholders and obtain agreement on access, extent and timing in advance of carrying out such works.	1	Item			
	Biomass Installation by Others					
L	The Contractor shall note that the containerised biomass systems will be supplied and installed by a separately appointed Biomass Contractor.	1	Item			
	The Contractor shall:					

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	2. CONTRACT (Cont)					
A	Facilitate access to the site and designated installation areas for the Biomass Contractor	1	Item			
B	Coordinate and liaise with the Biomass Contractor to ensure the timely delivery, positioning and installation of the biomass units	1	Item			
C	Programme and manage the Works to accommodate the installation by others and ensure no delay to the overall completion of the Works	1	Item			
D	The Contractor shall include for all necessary attendance, coordination and communication required to ensure the biomass installation is completed in accordance with the overall project programme.	1	Item			
	i) Maintenance of specific temperature and humidity levels.					
E	The Contractor shall provide any necessary temporary measures required to protect the Works and ensure suitable environmental conditions for installation and commissioning of equipment.	1	Item			
	j) Temporary accommodation and facilities for the use of the Employer including heating, lighting, furnishing and attendance.					
F	The Contractor shall provide all temporary accommodation and welfare facilities required for the execution of the Works in accordance with statutory requirements.	1	Item			
G	The Contractor shall allow for meetings to be held on site in agreed locations, including within the existing school buildings where suitable and permitted.	1	Item			
H	The Contractor shall provide adequate sanitary and welfare facilities for site personnel for the duration of the Works.	1	Item			
	k) Provision of connections to temporary voice and data communications systems for use of the Employer.					
J	The Contractor shall provide all communication systems necessary for the proper execution and management of the Works.	1	Item			
	l) Periodic using and access charges on voice and data communications systems for use of the Employer and associated running costs.					
K	No dedicated temporary voice or data communication systems shall be required for the Employer unless specifically stated in the Works Requirements.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
	m) Provision of the Project Supervisor Construction Stage services by the Contractor under the Safety, Health and Welfare at Works (Construction) Regulations.					
A	The Contractor shall act as Project Supervisor for the Construction Stage (PSCS) and shall comply with all duties under the Safety, Health and Welfare at Work (Construction) Regulations 2013.	1	Item			
B	The Contractor shall prepare, implement and maintain the Construction Stage Safety and Health Plan and shall coordinate all contractors and activities on site.	1	Item			
C	The Contractor shall cooperate with the PSDP and provide all information required for the Safety File.	1	Item			
	Safety File					
	The Contractor shall provide all information necessary for inclusion in the Safety File, including relevant drawings, specifications, certificates and operation and maintenance information, prior to completion of the Works.					
	As-Built Information & O&M Manuals					
D	The Contractor shall provide as-built drawings and operation and maintenance manuals for all installed systems and equipment.	1	Item			
E	Documentation shall include details of installed plant, operating instructions, maintenance requirements, test certificates and warranties, as applicable to the Works.	1	Item			
	Completion Certificates					
F	The Contractor shall provide all relevant completion and test certificates for the Works, including:	1	Item			
G	Electrical installation certification (ETCI or equivalent)	1	Item			
H	Mechanical and equipment commissioning certificates	1	Item			
J	Manufacturer's certificates and warranties	1	Item			
K	Any ancillary or statutory certificates required under the Contract	1	Item			
	Temporary Works					
L	The Contractor shall be responsible for the design, installation and safety of all temporary works required for the execution of the Works and shall comply with all statutory requirements.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
	Fire Safety					
A	The Contractor shall ensure that fire safety measures are maintained at all times during the Works and that all works comply with Building Regulations Part B and any applicable Fire Safety Certificate.	1	Item			
B	The Contractor shall provide all relevant fire safety certification on completion where applicable.	1	Item			
	Security					
C	The Contractor shall ensure that all Works areas are secure at all times and that unauthorised access is prevented.	1	Item			
D	Appropriate site control measures, including a sign-in/sign-out system, shall be implemented.	1	Item			
	Environmental					
E	The Contractor shall comply with all statutory environmental requirements and shall ensure proper management, storage and disposal of waste materials.	1	Item			
F	The Contractor shall take all reasonable measures to prevent pollution, nuisance and environmental damage arising from the Works.	1	Item			
	Cleaning and Handover					
G	The Contractor shall maintain the Works in a clean and tidy condition throughout and shall, on completion, leave all areas clean and ready for use.	1	Item			
	n) Any other obligation or restriction					
	ESB					
H	The Contractor shall be responsible for liaising with all relevant statutory authorities and service providers, including where applicable ESB, in relation to any connections, approvals or works required as part of the project.	1	Item			
J	The Contractor shall include for all associated requirements to ensure that any necessary connections or modifications to services are completed within the programme.	1	Item			
	Programme					
K	The Contractor shall prepare and submit a detailed programme prior to commencement of the Works, indicating the sequence and duration of all activities, including procurement, installation, testing and commissioning.	1	Item			
L	The programme shall demonstrate completion of the Works within the Contract period and shall be updated as required during the course of the Works.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	The Contractor shall coordinate the Works across all sites and allow for any constraints associated with access, service connections and working in existing school environments.	1	Item			
B	The Contractor shall allow for all necessary submissions, inspections and approvals required under the Contract and statutory requirements within the programme.	1	Item			
C	Include all the requirements set out in Clause 4.9.1 of the Contract	1	Item			
	The Tenderer must include in their tender price the following associated costs as per the Works Requirements:					
D	- mobilisation and demobilisation between phases; and	1	Item			
E	- heating must be available to all schools throughout the works; therefore, should the new heating system as part of the Works not be fully operational, the Tenderer must provide all temporary equipment required to provide heating to the schools until the newly installed heating systems are commissioned; and	1	Item			
F	- required coordination with the separately appointed biomass contractor and individual schools for site access and completion of all Works phases.	1	Item			
	Use of Services Prior To Handover					
G	The Contractor shall be responsible for the cost of all utilities used for construction, testing and commissioning of the Works prior to completion.	1	Item			
H	The Contractor shall provide and maintain all services necessary for the proper execution and completion of the Works.	1	Item			
	Materials & Workmanship					
J	All materials and products used in the Works shall comply with the Construction Products Regulation (EU) No. 305/2011 and all applicable standards.	1	Item			
K	British Standards (BS) and British Board of Agrement (BBA) certification are not acceptable methods of demonstrating compliance in accordance with Construction Products Regulation (EU) No 305/2011.	1	Item			
L	Products shall be CE marked where required and be accompanied by the relevant Declaration of Performance.	1	Item			
M	Where alternative materials or products are proposed, the Contractor shall provide evidence of equivalence in advance for approval.	1	Item			
	Regulations & Current Standards					
N	The Works shall be carried out in accordance with all applicable statutory requirements, Building Regulations, and relevant national and European standards and codes of practice.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	All referenced standards shall be the latest applicable editions at the time of tender.	1	Item			
	Schedule of Samples					
B	The Contractor shall submit samples of materials and workmanship as required by the Works Requirements or as reasonably requested by the Employer's Representative (ER) for approval prior to incorporation into the Works.	1	Item			
C	Approved samples shall set the standard for the Works.	1	Item			
D	The Contractor shall allow for all costs associated with sampling and testing.	1	Item			
E	All testing of mechanical and electrical Works shall be in accordance with the Mechanical and Electrical Materials & Workmanship Specification.	1	Item			
	Submittals					
F	The Contractor shall not commence relevant works until required submittals have been reviewed by the ER.	1	Item			
G	The Contractor shall provide a schedule of submittals in line with the programme and allow reasonable time for review.	1	Item			
H	Submittals shall demonstrate compliance with the Works Requirements.	1	Item			
	Storage of Materials					
J	Materials shall be stored in a safe and suitable manner in accordance with manufacturer's recommendations and best practice.	1	Item			
	Workmanship					
K	All workmanship shall comply with applicable Building Regulations, standards and specifications.	1	Item			
L	Works shall be carried out by suitably qualified and experienced personnel and completed to a high standard.	1	Item			
	Method Statements					
M	The Contractor shall prepare and submit method statements for key elements of the Works where required by the Works Requirements or reasonably requested by the ER.	1	Item			
N	Works shall not proceed until relevant method statements are in place where required.	1	Item			
	Building Fabric Standards					
P	The Works shall comply with all current Building Regulations and applicable standards, including Part L (Conservation of Fuel and Energy).	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	The Contractor shall ensure that the building achieves the required air tightness performance and shall carry out air permeability testing on completion.	1	Item			
B	The Contractor shall provide a Building Energy Rating (BER) Certificate and all associated documentation on completion.	1	Item			
C	Acoustic testing shall be carried out where required in accordance with Department of Education guidance.	1	Item			
D	Where applicable, radon protection measures shall be installed and tested in accordance with Building Regulations.	1	Item			
E	All testing and certification shall be submitted to the Employer's Representative prior to completion.	1	Item			
	CE Marking					
F	All construction products used in the Works shall comply with the Construction Products Regulation (EU) No. 305/2011.	1	Item			
G	Products shall be CE marked where required and be accompanied by a valid Declaration of Performance (DoP).	1	Item			
H	Products certified by UK notified bodies will not be accepted unless compliant with EU requirements. Any non-compliant products shall be removed and replaced at the Contractor's cost.	1	Item			
	Testing and Commissioning					
J	The Contractor shall carry out all testing and commissioning necessary to demonstrate that the Works comply with the Works Requirements and applicable standards.	1	Item			
K	Testing and commissioning proposals shall be submitted to the Employer's Representative (ER) for review.	1	Item			
L	All systems shall be fully tested and commissioned prior to completion, and relevant records and certificates shall be provided to the ER.	1	Item			
	Quality Assurance and Quality Control					
M	The Contractor shall implement and maintain a quality management system appropriate to the Works.	1	Item			
	This shall include:					
N	- inspection and test plans where required	1	Item			
P	- supervision of works and subcontractors	1	Item			
Q	- ensuring compliance with the Works Requirements and Building Regulations	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	Quality records shall be maintained and made available to the ER on request.	1	Item			
	Non-Conformance / Defects					
B	The Contractor shall promptly address any defects or non-conformances identified during the Works and maintain records of same.	1	Item			
	Contractor's Monthly Progress Reports					
	The Contractor shall submit regular progress reports prior to site meetings, including:					
C	- progress against programme	1	Item			
D	- key issues affecting progress	1	Item			
E	- look-ahead of upcoming works	1	Item			
F	- any required information or decisions	1	Item			
G	Progress photographs shall be provided as part of the report.	1	Item			
	Control of Noise & Nuisance					
H	The Contractor shall carry out the Works in a manner that minimises noise, vibration, dust and general disturbance to the school and adjoining properties.	1	Item			
J	Works shall be carried out in accordance with applicable guidance, including BS 5228, where relevant.	1	Item			
K	The Contractor shall take all reasonable measures to avoid nuisance and shall comply with any reasonable directions of the Employer's Representative in this regard.	1	Item			
	General Nuisance / Liaison					
L	The Contractor shall coordinate the Works with the school and shall ensure minimal disruption to ongoing activities.	1	Item			
M	Any complaints arising shall be promptly addressed by the Contractor.	1	Item			
	Tax Clearance					
N	The Contractor shall comply with all statutory requirements in relation to tax clearance and shall ensure that all subcontractors engaged on the Works are similarly compliant.	1	Item			
	Custom Duties					
P	The Contractor shall be deemed to have included for all applicable duties and statutory charges in their tender.		Item			
				To Collection €		

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	2. CONTRACT (Cont)					
	Value Added Tax (VAT)					
A	The tender shall be submitted on a VAT exclusive basis. However tenderers shall list separately the items included in the tender amount that are liable for VAT at rates other than the special building rate (13.5%) to allow for the calculation of the Employer's total VAT outlay on the contract. The Employer reserves the right to seek advice from the Revenue Commissioners on the accuracy of the VAT allocations shown and, in the event of a dispute, the opinion of the Revenue Commissioners on the VAT rate appropriate to any item of work shall be final (See Appendix A of this Pricing Document).	1	Item			
	During the Contract, payment amounts due to the Contractor shall be invoiced on the following basis:					
B	(a) the amount due to the Contractor that carries a VAT liability of 13.5% shall be invoiced separately from any other amounts due. This invoice shall be clearly marked with the statement 'VAT ON THIS SUPPLY TO BE ACCOUNTED FOR BY THE PRINCIPAL CONTRACTOR'	1	Item			
C	(b) amounts due to the Contractor that carry no VAT liability, or are liable at rates other than 13.5%, shall be invoiced on a second invoice that identifies amounts due at the various VAT rates (apart from 13.5%), identifies the VAT due at the various rates and states the total amount due for payment.	1	Item			
	Patent Rights and Royalties					
D	The Contractor shall indemnify the Employer against any claims arising from infringement of patent rights, trademarks or other protected rights in connection with the Works.	1	Item			
	Removal of Improper Work and Materials					
E	The Employer's Representative may instruct the removal and replacement of any work or materials not in accordance with the Contract.	1	Item			
	Other items for consideration					
F	The Works shall be completed to a standard suitable for occupation and use prior to certification of Substantial Completion. Any outstanding items shall be minor in nature and not prevent the intended use of the Works.	1	Item			
G	The Contractor shall coordinate deliveries and site activities to minimise disruption to the school and surrounding area.	1	Item			
	Site House Keeping					
H	The Contractor shall maintain the Site in a safe, clean and orderly condition at all times.	1	Item			
J	Prevent dust, debris and nuisance arising from the Works	1	Item			
K	Maintain clear access for emergency vehicles at all times	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
A	Ensure no burning of waste or uncontrolled emissions on site	1	Item			
B	Protect and maintain existing drainage systems	1	Item			
C	Carry out works in a manner that minimises disruption to the school and surrounding area	1	Item			
	Road Cleaning					
D	The Contractor shall ensure that adjoining roads and access routes are kept clean and free from mud and debris arising from the Works.	1	Item			
E	All cleaning measures shall be at the Contractor's expense.	1	Item			
	Pre-Commencement Survey					
F	Prior to commencement, the Contractor shall carry out a survey of existing site conditions and report any discrepancies to the Employers Representative.	1	Item			
	Schedule of Dilapidations					
G	The Contractor shall, upon taking possession of the Site, provide a photographic record of the condition of adjacent roads, boundaries, buildings and any areas likely to be affected by the Works.	1	Item			
H	This record shall be submitted to the Employer's Representative and shall not relieve the Contractor of their obligations under the Contract.	1	Item			
J	Where works interface with existing buildings, the Contractor shall inspect and record the condition of affected areas prior to commencement and allow for all necessary protection and making good.	1	Item			
	Extended Guarantees					
K	Provide all warranties and guarantees as specified in the Works Requirements.	1	Item			
	Discovery of Items					
L	Any items of potential historical or archaeological interest discovered during the Works shall be reported to the Employers Representative and works in the affected area shall cease pending instruction.	1	Item			
	Environmental Management					
M	The Contractor shall comply with all statutory environmental requirements and implement appropriate measures to control dust, noise, waste and pollution arising from the Works.	1	Item			
N	Where required, a Construction Environmental Management Plan shall be prepared and maintained.	1	Item			
				To Collection €		

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	2. CONTRACT (Cont)					
	Waste Management					
A	All waste shall be managed, stored and disposed of in accordance with current legislation.Only authorised waste facilities shall be used.	1	Item			
	Services Co-ordination					
B	The Contractor shall be responsible for the coordination of all building services and utility connections, including liaison with relevant authorities and ensuring timely installation, testing and commissioning.	1	Item			
	Maintenance During Defects Period					
C	The Contractor shall maintain all installed systems and rectify defects during the Defects Liability Period in accordance with the Contract.	1	Item			
	Guarantees and Warranties					
D	Provide all warranties, guarantees and certification as required under the Works Requirements and Specification.	1	Item			
	Schedule of Guarantees					
E	The contractor shall include a cost herein for providing all required Guarantees/ Insurance Back Guarantees for the various elements of works. as outlined in the Volume A Works Requirements. No claims on the grounds of want of knowledge will be entertained whatsoever.	1	Item			
	Progress Records					
F	The Contractor shall maintain appropriate records of progress and provide updates as reasonably required by the Employer's Representative.	1	Item			
	Handover Requirements					
	Prior to Substantial Completion, the Contractor shall provide:					
G	All statutory and BCAR certification	1	Item			
H	O&M manuals and as-built drawings	1	Item			
J	Test and commissioning records	1	Item			
K	Warranties and guarantees	1	Item			
L	Safety File	1	Item			
M	All works shall be fully completed, tested and snagged prior to handover.	1	Item			
				To Collection €		

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2. CONTRACT (Cont)					
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2. CONTRACT (Cont)					
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2. CONTRACT **Carried to Summary**					

	3. WORK BY NOVATED SPECIALISTS, SPECIALISTS, WORK BY UTILITY PROVIDERS AND WORK BY OTHERS ENGAGED DIRECTLY BY T				
	3. WORK BY NOVATED SPECIALISTS, SPECIALISTS, WORK BY UTILITY PROVIDERS AND WORK BY OTHERS ENGAGED DIRECTLY BY THE EMPLOYER				
	3.1 Work by Novated Specialists and other Specialists				
A	n/a		Note		
	3.2 Work by Utility Providers				
B	Capital contributions to statutory utility providers (e.g. ESB) shall be paid by the Employer.	1	Item		
	The Contractor shall:				
C	Liaise with all utility providers	1	Item		
D	Coordinate all connections and diversions	1	Item		
E	Allow for all temporary connections and diversions required for the Works	1	Item		
F	Include all costs associated with facilitating and coordinating these works	1	Item		
	3.3 Work by others engaged directly by the Employer				
G	The Employer may appoint others to carry out specialist works or inspections associated with the project.	1	Item		
	The Contractor shall:				
H	Liaise and coordinate with such parties	1	Item		
J	Provide reasonable access to the Site and Works	1	Item		
K	Coordinate the programme to accommodate such works where required	1	Item		
L	The Contractor shall not be responsible for the supply or execution of such works unless specifically included in the Contract.	1	Item		
	Biomass Installation by Others				
M	The Contractor shall note that the containerised biomass systems will be supplied and installed by a separately appointed Biomass Contractor.	1	Item		
	The Contractor shall:				
N	Facilitate access to the site and designated installation areas for the Biomass Contractor	1	Item		
				To Collection €	

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	3. WORK BY NOVATED SPECIALISTS, SPECIALISTS, WORK BY UTILITY PROVIDERS AND WORK BY OTHERS ENGAGED DIRECTLY BY T					
A	Coordinate and liaise with the Biomass Contractor to ensure the timely delivery, positioning and installation of the biomass units	1	Item			
B	Programme and manage the Works to accommodate the installation by others and ensure no delay to the overall completion of the Works	1	Item			
C	The Contractor shall include for all necessary attendance, coordination and communication required to ensure the biomass installation is completed in accordance with the overall project programme.	1	Item			
				To Collection €		

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3. WORK BY NOVATED SPECIALISTS, SPECIALISTS, WORK BY UTILITY PROVIDERS AND WORK BY OTHERS ENGAGED DIRECTLY BY T					
COLLECTION					
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3. WORK BY NOVATED SPECIALISTS, SPECIALISTS, WORK BY UTILITY PROVIDERS AND WORK BY OTHERS ENGAGED DIRECTLY **Carried to Summary**					

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	4. GENERAL FACILITIES AND OBLIGATIONS					
	4. GENERAL FACILITIES AND OBLIGATIONS					
A	Maintaining temporary works, adapting, clearing away and making good shall be deemed to be included with the following items Under 4. (General Facilities And Obligations). Notices and fees to statutory Authorities or Public of Private Utility Providers or Undertakings and related to the preceding items shall be deemed to be included with those items. No claims in this regard will be entertained whatsoever.	1	Item			
	a) Supervision and co-ordination of the Works.					
B	The Contractor shall be responsible for the coordination, supervision and management of the Works, including all subcontractors and compliance with Building Regulations where applicable.	1	Item			
	The Contractor shall:					
C	Coordinate all works with the Employer, Design Team and school operations	1	Item			
D	Programme and manage subcontractors and suppliers	1	Item			
E	Ensure works are carried out safely and in accordance with the Contract	1	Item			
	Building Regulations / BCAR					
	The Contractor shall:					
F	Comply with all applicable Building Regulations relevant to the Works	1	Item			
G	Provide all necessary inspection records, test certificates and documentation	1	Item			
H	Cooperate with the Assigned Certifier and Design Team as required	1	Item			
	Method Statements					
	The Contractor shall submit method statements for key activities including:					
J	Installation of heating systems and associated services	1	Item			
K	Works in live/occupied environments	1	Item			
L	Any temporary works or isolations required	1	Item			
M	Method statements shall demonstrate safe systems of work and compliance with the Contract.	1	Item			
	Supervision Staff					
N	The Contractor shall provide adequate and competent supervision appropriate to the scale of the Works.	1	Item			
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
	Temporary Works (If Required)					
A	The Contractor shall be responsible for the design, coordination and implementation of any temporary works required to complete the Works safely.	1	Item			
	b) Plant, tools and vehicles					
B	The Contractor shall provide all plant, tools, transport and equipment necessary to complete the Works, including delivery, maintenance and removal on completion.	1	Item			
	The Contractor shall allow for:					
C	- bringing all such plant to site and removing on completion	1	Item			
D	- maintaining on site for the duration of the works.	1	Item			
	Removal of Plant					
E	Plant shall be removed from site as agreed with the Employer's Representative.	1	Item			
	c) Scaffolding					
F	The Contractor shall provide safe access equipment as required for the Works, including scaffolding, podiums or MEWPs, in compliance with all relevant safety regulations.	1	Item			
	d) Site administration including the provision and keeping of all statutory records.					
	The Contractor shall:					
G	Provide site supervision, security and protection of the Works	1	Item			
H	Maintain site records including labour, materials and testing	1	Item			
J	Provide photographic record of pre-existing conditions where required					
	Site Records / Progress Records					
K	Maintain records of progress, labour, materials and tests, and make available to the Employer's Representative upon request.	1	Item			
	Progress Meetings					
L	Attend regular progress meetings and coordinate subcontractors as required.	1	Item			
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
	Valuations					
A	Submit when applicable, up to date detailed claims and supporting documents in accordance with the Conditions of Contract	1	Item			
	Method Statement and Construction Management Plan					
	The Contractor shall submit method statements in advance of the Works, including (where applicable):					
B	Works in occupied areas / live school environment	1	Item			
C	Fire safety and hot works	1	Item			
D	Asbestos awareness (if applicable)	1	Item			
E	Traffic and access management	1	Item			
F	Services tie-ins and shutdown procedures	1	Item			
G	Site safety and security	1	Item			
	Working in Live Environment					
	The Contractor shall plan and execute the Works to minimise disruption to the school, including:					
H	Phasing of works	1	Item			
J	Out-of-hours or holiday working where required	1	Item			
K	Coordination of shutdowns and tie-ins with the Employer	1	Item			
	Working in Live Environment					
	The Contractor shall:					
L	Agree all shutdowns in advance with the Employer	1	Item			
M	Provide temporary services where required	1	Item			
N	Minimise downtime to existing systems	1	Item			
	e) Security					
	The Contractor shall be responsible for the security of the Works and shall:					
P	Secure all work areas to prevent unauthorised access, particularly within an occupied school environment	1	Item			
Q	Maintain the site in a safe and controlled condition at all times	1	Item			
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
A	Provide appropriate barriers, signage and protection to segregate works from staff, students and the public	1	Item			
B	Implement a site access and sign-in procedure for all personnel	1	Item			
C	Safeguard all materials, plant and equipment against damage or theft	1	Item			
D	Ensure safe access and egress for deliveries and coordinate with school operations	1	Item			
E	Prevent access to non-work areas and adjoining properties	1	Item			
F	The Contractor shall provide suitable barriers or enclosures appropriate to the nature of the Works.	1	Item			
G	The Contractor shall ensure all works are planned and executed to maintain the safe operation of the school at all times.	1	Item			
H	Particular care shall be taken to segregate construction activities from occupied areas.	1	Item			
	f) Provision of clearly identifiable site perimeters and surroundings.					
	The Contractor shall:					
J	Provide a designated site compound and storage area as agreed with the Employer's Representative	1	Item			
K	Keep all materials, plant and welfare facilities within this area	1	Item			
L	Maintain the compound in a safe and tidy condition	1	Item			
M	Remove all temporary facilities and reinstate areas on completion	1	Item			
	g) Provisions for protection of the public from site operations and arrangements for protection of third parties and visitors to the site in accordance with all statutory requirements.					
	The Contractor shall:					
N	Protect the public, school occupants and visitors from the Works	1	Item			
P	Provide appropriate barriers, signage and safe access arrangements	1	Item			
Q	Comply with all statutory safety requirements	1	Item			
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
	h) Transport for work people.					
A	The Contractor shall provide all necessary transport for personnel to and from the site.	1	Item			
	i) Protecting the works from inclement weather					
B	The Contractor shall protect the Works from adverse weather and provide any temporary coverings or protection required.	1	Item			
	j) Water for the works.					
	The Contractor shall:					
C	Provide all water required for the Works	1	Item			
D	Make all necessary temporary connections and pay associated costs	1	Item			
E	Comply with all statutory and Irish Water requirement	1	Item			
	k) Temporary lighting and power for the works.					
	The Contractor shall:					
F	Provide all temporary power and lighting required for the Works	1	Item			
	Make all necessary connections and pay associated costs					
G	Ensure all temporary installations are safe and removed on completion	1	Item			
	l) Temporary roads, hardstandings, crossing and similar items.					
	The Contractor shall:					
H	Provide safe access to and within the site as required	1	Item			
J	Maintain safe pedestrian and vehicle routes at all times	1	Item			
K	Minimise disruption to school operations and surrounding areas	1	Item			
L	Provide traffic management measures where required and agree same with the Employer	1	Item			
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
	Parking					
	The Contractor shall:					
A	Manage parking of site personnel within designated areas only	1	Item			
	m) Temporary accommodation for the use of the Contractor.					
	Welfare Facilities					
	The Contractor shall:					
B	Provide welfare facilities in accordance with Safety, Health and Welfare at Work (Construction) Regulations	1	Item			
C	Maintain facilities in a clean and hygienic condition for the duration of the Works	1	Item			
	n) Temporary storage areas including suitable and separate storage for dangerous materials or substances.					
	The Contractor shall:					
D	Provide suitable storage for materials and equipment	1	Item			
E	Store materials safely and protect from damage	1	Item			
	o) Temporary telephones for the use of the Contractor.					
F	The Contractor shall provide appropriate communication systems for site management and coordination of the Works.	1	Item			
	p) Traffic regulations					
	The Contractor shall:					
G	Comply with all traffic regulations	1	Item			
H	Manage deliveries and site traffic to minimise disruption	1	Item			
J	Ensure safe access at all times, particularly during school opening and closing hours	1	Item			
K	Provide supervision where required to manage interaction with students and staff	1	Item			
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
	q) Welfare facilities for work people to be in compliance with the fourth schedule of the Safety Health and Welfare at Work (Construction) Regulations.					
A	Provide all welfare facilities in accordance with statutory requirements.	1	Item			
	r) Safety Health and Welfare at Work provisions including items for the following:-					
	The Contractor shall:					
B	Comply with all requirements of the Safety, Health and Welfare at Work Acts and associated Construction Regulations	1	Item			
C	Provide all necessary supervision, safety personnel and procedures for the safe execution of the Works	1	Item			
D	Ensure all personnel hold valid Safe Pass and relevant certifications	1	Item			
E	Provide and maintain appropriate PPE for all personnel and visitors	1	Item			
F	Provide adequate first aid facilities and trained first aid personnel	1	Item			
G	Maintain safe access, egress and emergency procedures at all times	1	Item			
H	Provide all necessary safety signage and traffic management measures	1	Item			
	<u>Live School Environment</u>					
	The Contractor shall:					
J	Plan and execute the Works to ensure the safety of students, staff and visitors at all times	1	Item			
K	Segregate work areas from school operations	1	Item			
L	Control noise, dust and disruption	1	Item			
M	Restrict works to agreed times where required	1	Item			
N	Provide supervision where works interface with school activities	1	Item			
	<u>Overhead Services</u>					
P	Where working near existing services, the Contractor shall implement appropriate safety measures in accordance with statutory requirements.	1	Item			
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
	s) Disbursements arising from the employment of work people					
	The Contractor shall:					
A	Provide all labour necessary to complete the Works	1	Item			
B	Ensure all personnel are competent and suitably qualified	1	Item			
C	Comply with all employment legislation and industry requirements	1	Item			
	t) Maintenance of public and private roads					
	The Contractor shall:					
D	Maintain safe access and egress to the site at all times	1	Item			
E	Implement appropriate traffic management measures, particularly in relation to the live school environment	1	Item			
F	Schedule deliveries to avoid school peak times where required	1	Item			
G	Keep access routes and surrounding areas free from obstruction, mud and debris	1	Item			
H	Make good any damage to roads, paths or adjoining property caused by the Works	1	Item			
	u) Removing rubbish, protective casings and coverings and cleaning the works on completion					
	The Contractor shall:					
J	Keep the Works and surrounding areas clean and tidy at all times	1	Item			
K	Remove rubbish and surplus materials regularly and dispose of same in accordance with statutory requirements	1	Item			
L	Prevent dust, debris and waste from impacting the school environment	1	Item			
M	On completion, remove all plant, materials and waste and leave the site clean and in good condition	1	Item			
N	Make good any areas disturbed by the Works	1	Item			
	v) Compliance with waste management statutory requirements					
	The Contractor shall:					
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
A	Manage and dispose of all waste arising from the Works in accordance with all statutory requirements	1	Item			
B	Use appropriately licensed waste collection and disposal facilities	1	Item			
C	Provide waste transfer documentation upon request	1	Item			
D	Ensure hazardous materials (if any) are handled, transported and disposed of in accordance with applicable regulations	1	Item			
E	Keep the site and surrounding areas free from waste and debris at all times	1	Item			
F	Remove all waste from site on completion of the Works	1	Item			
G	The Contractor shall allow for the removal and disposal of all existing plant, equipment and associated materials arising from the Works.	1	Item			
	w) Drying the works					
H	The Contractor is fully responsible for drying out the works and for providing all the necessary plant or equipment to achieve this. The Contractor must included here for all costs associated with drying out the works.	1	Item			
	x) Temporary fencing, hoardings, gates, doors, screens, fans, planked footways, guardrails, gantries, floor, stair, roof edge protection, and protection of openings, safety nets and similar items					
	The Contractor shall:					
J	Provide all necessary temporary fencing, barriers and protection to safely segregate the Works from the live school environment	1	Item			
K	Prevent unauthorised access to work areas at all times	1	Item			
L	Provide temporary partitions where required to: prevent dust migration; reduce noise disturbance; maintain fire separation where required	1	Item			
M	emporary partitions shall be appropriate to the location and duration of the works	1	Item			
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
A	The Contractor shall provide fully weathered (fully flashed, independently drained), insulated, acoustically treated and fire rated partitions between the existing school and the new works in each location that an interface is required. These temporary partitions shall also prevent dust migrating from the construction area into the occupied school. This may require to be placed in a number of locations over the course of the construction stage and may require different versions for different phases. When weathering has been completed, the acoustic and fire related element of these partitions will still be required until substantial completion. Contractor to include herein all costs associated with this requirement and the design of these temporary works.	1	Item			
	y) Control of noise, pollution and compliance with statutory obligations					
	The Contractor shall:					
B	Carry out works in a manner that minimises disruption to the school environment	1	Item			
C	Agree working hours and any particularly noisy activities with the Employer's Representative	1	Item			
D	Provide advance notice of disruptive works where required	1	Item			
E	Implement measures to control noise and vibration	1	Item			
F	Implement dust control measures to prevent nuisance within the school and adjoining areas	1	Item			
G	Prohibit radios or unnecessary noise on site where required	1	Item			
	z) protection of the works					
	The Contractor shall:					
H	Protect all works, materials and equipment from damage, weather and theft	1	Item			
J	Protect all existing buildings, services and surrounding areas from damage arising from the Works	1	Item			
K	Make good any damage caused during the execution of the Works	1	Item			
L	Protect completed and partially completed works from damage, dirt or deterioration	1	Item			
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
	ADDITIONAL PRELIMINARIES					
	General Attendance on Specialist Sub-Contractors					
	The Contractor shall:					
A	Provide all necessary attendance on subcontractors	1	Item			
B	Coordinate and manage all subcontract works to ensure proper sequencing and completion of the Works	1	Item			
	Subcontractor Coordination					
	The Contractor shall:					
C	Coordinate all subcontractors to ensure efficient progress of the Works	1	Item			
D	Provide all necessary information and setting out to avoid abortive work	1	Item			
	Certificates/ Guarantees					
	The Contractor shall:					
E	Provide all required certificates, warranties and guarantees for materials and workmanship	1	Item			
F	Submit all certification required for completion and handover	1	Item			
	Modifications to Entrances					
G	The Contractor shall maintain safe access to the school at all times and provide temporary measures where required.	1	Item			
	Inspection / Notices					
H	The Contractor shall give reasonable notice for inspections where required.	1	item			
	Completion / Handover					
	The Contractor shall:					
J	Provide all as-built drawings, O&M manuals and certification required for handover	1	Item			
K	Allow access to the Employer's Representative for inspection of the Works	1	Item			
L	Make good all defects during the Defects Period	1	Item			
	Services / Statutory Undertakers					
	The Contractor shall:					
M	Coordinate with all statutory undertakers and service providers as required	1	Item			
				To Collection €		

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	4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
A	Ensure all works to existing services are carried out in accordance with relevant requirements	1	Item			

				€	c
4. GENERAL FACILITIES AND OBLIGATIONS (Cont)					
COLLECTION					
Page No. Prelims Works Con/45					
Page No. Prelims Works Con/46					
Page No. Prelims Works Con/47					
Page No. Prelims Works Con/48					
Page No. Prelims Works Con/49					
Page No. Prelims Works Con/50					
Page No. Prelims Works Con/51					
Page No. Prelims Works Con/52					
Page No. Prelims Works Con/53					
Page No. Prelims Works Con/54					
Page No. Prelims Works Con/55					
Page No. Prelims Works Con/56					
4. GENERAL FACILITIES AND OBLIGATIONS **Carried to Summary**					

		€	c
SUMMARY	**Page No.**		
1. PRELIMINARIES PARTICULARS	Prelims Works Con/7		
2. CONTRACT	Prelims Works Con/41		
3. WORK BY NOVATED SPECIALISTS, SPECIALISTS, WORK BY UTILITY PROVIDERS AND WORK BY OTHERS ENGAGED DIRECTLY BY THE EMPLOYER	Prelims Works Con/44		
4. GENERAL FACILITIES AND OBLIGATIONS	Prelims Works Con/57		
TOTAL AMOUNT CARRIED TO GENERAL SUMMARY			
Prelims Works Con/1 - Prelims Works Con/57.			

4.1 - Loreto College

					€	c
	(10) DEMOLITIONS AND ALTERATIONS					
	DEMOLITION & ALTERATIONS					
	GENERAL					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYER'S REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Demolitions					
	Removing					
	Fittings and Fixtures					
B	Existing External single door and frame; approx 1000mm wide x 3160mm high; include all fittings, architrives, liners etc; diposal of all material off site	1	nr			
	Removing Finishes					
C	Existing ceiling finishes to certain locations within existing building; disposal of all materials off site; prepare ceilings to receive new finishes	150	m2			
	Plumbing and Engineering Installations					
D	Removal and disposal of existing oil tanks; include for grubbing up and disposal of all associated pipework; include fittings, etc.; include for disposal & making good where necessary; backfilling with Grade C16/20 S3 lean mix to Engineer's Satisfaction; complete	1	Item			

				€	c
(10) DEMOLITIONS AND ALTERATIONS (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/1					
(10) DEMOLITIONS AND ALTERATIONS **Carried to Summary**					

					€	c
	(31) EXTERNAL WALL COMPLETIONS					
	METALWORK					
	Non-Structural					
	ALUMINUM DOORS INCLUDING LOUVRE DOORS; The successful contractor will be responsible for the design, supply, fabrication, and installation of the doors all in accordance with the best building practices and systems supplier#s recommendations; The contractor will be responsible for providing all proposals, drawings, samples etc required to satisfy the requirements of the tender and also to demonstrate that the contractor is competent and able to execute the works in a proper and timely manner; The contractor will be responsible but not limited to providing the design team the following documentation in advance of any works been commenced; Providing all test data covering all the proposed systems; After the contractor has been awarded the project they must provide the design team the following prior to any work commencing; A full set of detailed shop drawings showing all the relevant interfaces, systems junctions, flashing details, glass types, and indicting all the surfaces being painted; include for inbuilt screen; as per Architect's specification					
	Composite Items; Doorsets (Louvred Doors)					
A	External Single Door; overall opening size (including frame) 1000mm wide x 3160mm high; comprising 1nr louvred door size 1000mm wide x 3160mm high; complete	1	nr			
				To Collection €		

				€	c
(31) EXTERNAL WALL COMPLETIONS (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/3					
(31) EXTERNAL WALL COMPLETIONS **Carried to Summary**					

					€	c
	(35) & (45) CEILING FINISHES					
	FLOOR, WALL & CEILING FINISHES					
	Suspended Ceiling					
	Proprietary suspended ceiling system; Manufacturer: Submit proposals for Architects approval; Product reference: CasoLine MF suspended ceiling system- or equivalent to Architect#s approval; Suspension system; Hanger type: Gypframe MF8 strap hangers; Top fixings: Gypframe MF12 soffit cleats fixed to concrete soffit or metal deck; Primary grid centres: 1200 mm. Hanger centres: 900 mm; Secondary grid centres: 400 mm; Linings: 1 x 12.5 mm Gyproc WallBoard, Gyproc moistureproof green board where noted on RCP's and in a wet area; Insulation: none; Access Units: Gyproc Profilex access panels; Finishing: Taped seamless finish; Primer/ Sealer; Type: 1 coat of Gyproc Drywall Primer (2 coats where noted as moistureproof green board; Accessories: none; all as per Architects Specification					
	Ceilings; fixed below floor structure					
A	Depth of suspension 500mm - 1000mm	150	m2			
	PAINTING AND DECORATING					
	Painting					
	Emulsion paint; To internal plastered surfaces and fairfaced blockwork; Manufacturer: Submit proposals for Architects approval; Product reference: Dulux trade Diamond Matt (water based tough Scrubbable Matt emulsion); Surfaces: Internal plastered surfaces; Preparation: Tape and fill joints; Initial coats: 40% thinned primer.Thinning Sealing new or bare surfaces: Add up to 1 part clean water to 10 parts paint; Number of coats: 2; Undercoats: As recommended by manufacturer; Number of coats: As recommended by manufacturer; Finishing coats: Washable matt vinyl; Number of coats: 2; all as per Architects Specification					
	Ceilings					
B	Exceeding 300mm	150	m2			

				€	c
(35) & (45) CEILING FINISHES (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/5					
(35) & (45) CEILING FINISHES **Carried to Summary**					

					€	c
	(5-) MECHANICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Strip out and disposal offsite of existing boiler room plant including boilers, associated flues and pipework, pump sets, valves, pressurisation unit and expansion vessel; isolate, drain down, disconnection equipment in co-ordination with installation and commissioning of new works; remaining systems to stay operational during decommissioning works, required down-time to be coordinated in advance and carried out during out-of-hours; all in accordance with the Mechanical specification and Drawings 4.1(5-)M005	1	item			
C	Removal of existing oil tank; isolate, drain down, disconnect, remove and dispose offsite existing oil tank and pipework; all in accordance with the Mechanical specification and Drawing 4.1(5-)M005	1	item			
D	Modifications to existing secondary heating circuit flow/return pipework to facilitate connections to new 250mm diameter header (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.1(5-)M007	1	item			
E	Modifications to existing hot water circuit flow/return pipework to facilitate connections to new Calorifier (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.1(5-)M007	1	item			
F	Modification to existing mains water supply pipework to facilitate reconnection to new pressurisation unit (measured elsewhere); including isolation, draindown, pipe alterations, fittings, valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.1(5-)M007	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	Enabling works to facilitate connection into existing cold water supply pipework serving new calorifier (measured elsewhere); including provision of isolation valves, non-return valves, fittings, reducers, supports, flushing, pressure testing, and full reinstatement of insulation and finishes; all shutdowns to be agreed in advance and carried out outside normal operating hours; all in accordance with the Mechanical Specification and Drawing 4.1(5-)M007	1	item			
	ASBESTOS REMOVAL					
	DEMOLITION & ALTERATIONS					
	General					
B	The following items are not measured in strict accordance with ARM.		note			
C	The Contractor is refered to the Pre Refurbishment & Demolition Asbestos Survey		note			
D	The Contractor must ensure that any risk of exposure to asbestos is completely eliminated. Contractor to consult with Employer's Representative before any work commences on site.	1	item			
E	The Contractor is advised that there is a notification form to be used for any work involving asbestos. This form must be submitted 28 days prior to the start of such work.	1	item			
F	The Main Contractor / PSCS must appoint a specialist asbestos removal contractor to carry out the asbestos removal & disposal works	1	item			
G	Prior to commencing any demolition or construction works on site all asbestos must be removed from site; in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010	1	item			
H	The Main Contractor / PSCS must appoint a competent independent analyst / accredited laboratory for the purpose of undertaking air sampling, project monitoring and issuing site clearance for reoccupation certification; in conformance with ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories	1	item			
J	Prior to commencing the asbestos removal works the specialist contractor shall submit (to the PSDP & Employer's Representitive) their Plan of Work (risk assessment / method statement), Design Risk Assessment, and temporary works certificates for the Asbestos Removal works (at least 21 days in advance of commencing the asbestos removal works)	1	item			
K	Prior to commencing the asbestos removal works the specialist contractor shall submit their Plan of Work (risk assessment / method statement), and notify, to the HSA (at least 14 days in advance of commencing the asbestos removal works). The PSCS must also ensure that copies of the notifications are forwarded to the PSDP, Client & Project Manager	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	No works may take place on site until the Plan of Work has been drawn up and approved by the Main Contractor / PSCS	1	item			
B	No deviations shall be permitted from the plan of work submitted to the HSA	1	item			
C	Should the Plan of Work require amending / updating (for whatever reason) it must be issued to the PSDP & Project Manager in the first instance, and then the HSA, prior to proceeding with any proposed changes	1	item			
D	No asbestos removal works may take place in areas occupied by normal construction / project personnel and / or third parties	1	item			
E	An asbestos site clearance for reoccupation certificate(s) must be supplied (by the competent independent analyst / accredited laboratory) to the PSDP & Project Manager prior to commencing any demolition or construction works on site (other than the asbestos removal works); the certificate(s) must include (1) Visual inspection, (2) Air monitoring and (3) The decontamination unit	1	item			
F	After completing Asbestos Removal works the PSCS must ensure that asbestos site clearance for reoccupation certificates are issued to the Project Manager, PSDP, and Client PRIOR to allowing those areas to be opened up to persons (other than those persons directly involved in the asbestos removal works)	1	item			
G	NO Asbestos Containing Waste Material may be removed from the site unless a Waste Transfer Form (removal of Hazardous Waste Material from Site) has been completed and issued to the PSCS / Main Contractor, the PSDP & Project Manager	1	item			
H	The PSCS / Main Contractor must forward copies of final disposal certificates (i.e. completed Waste Transfer Form (final disposal of Hazardous Waste Material)) to the PSDP & Project Manager	1	item			
J	The PSCS / Main Contractor must forward, the following information (as applicable) to the PSDP, for inclusion in the Safety File; Bulk sample results, Amended Asbestos Register, Preliminary Safety & Health Plan and Specification, Specialist asbestos removal contractor Plan of Work, Notification to the Health and Safety Authority, Air monitoring results prior to removal works commencing, Air monitoring results during removal works, site clearance for reoccupation certificates, Completed Waste Transfer Form for the final disposal of all asbestos / hazardous waste.	1	item			
K	All asbestos works must be carried out in accordance with; The HSA 2010 Code of Practice for Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001, The Safety Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010, The HSA Guidelines on Working with Materials Containing Asbestos Cement (and any subsequent amendments updates to HSA Guidelines and / or Codes of Practice)	1	item			
L	Contractor to include here (Unless included in rates elsewhere) for protection of all fixtures, fittings and finishes to all areas in which asbestos removal occurs	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Alterations					
A	The Contractor must note that the safe and proper removal and disposal of all asbestos material is the Contractor's full responsibility and therefore the contractor's price/rates must include for all work in connection with same; no claims on the grounds of want of knowledge will be entertained whatsoever.	1	item			
	Removing Finishes; Asbestos Material					
B	Submit Plan of Work and 14 day prior notification to the Health & Safety Authority	1	item			
C	Setup Decontamination Unit & Form Enclosures	1	item			
D	Specialist removal and disposal of asbestos-containing valves in accordance with all relevant safety and environmental regulations.	1	item			
E	Specialist removal and disposal of asbestos - asbestos in gasket - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
F	Environmental clean to achieve clearance certification	1	item			
G	Asbestos Removal & Disposal Certificates	1	item			
H	INAB Accredited Asbestos Clearance Certification					
J	Reassurance Air Monitoring and Re-occupation Clearance Certification by an Asbestos Consultant	1	item			
	Notes					
K	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
L	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
M	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
				To Collection €		

(5-) MECHANICAL INSTALLATION (Cont)

ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS

(51) HEATING CENTRE

System

Heating center installation, testing and commissioning; consisting of 1nr Biomass boiler (Primary heating source) and 3nr LPG gas fired condensing boilers (secondary heating source) serving radiators throughout the building; the installation shall include a pressurisation unit, expansion vessel, pipework, shunt pumps and all associated valves; existing flow rates to be recorded prior to works and re-established at the end of the works; The heating system shall be flushed and provided with appropriate chemical treatment; Commissioning results including a flue gas analysis shall be provided for the boilers prior to handover, along with a statement by the manufacturer/supplier confirming their correct and efficient operation; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/6. Heating System, Section B (56) Heating System Pipework; Volume 3; Volume 4 and Drawings (5-)M007

Primary Equipment

Boiler; supply and installation complete; Type: Forced draught condensing pre-mix fully modulating boiler; Fuel: LPG; Heat exchanger: Stainless steel; Casing: Steel; Insulation: 50mm rockwool; Output: 182kW; Flow rate: 2.2kg/s; Flow Temperature: 80°C; Return Temperature: 60°C; Max water side pressure differential: 50kPa; Rated pressure: 6 bar; Efficiency: 96% seasonal efficiency; Accessories: Safety valve, Pressure Gauge, Temperature Gauge, Drain cock; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications Volume 3 - Equipment Schedules

A	Boiler; Ref: B-01 - B03; Location: Plant Room	3	nr		

Accessories associated with Primary Equipment

Stop valves for isolation of LPHW pipework up to 65mm Dia; Type: Lever operated, Brass full bore ball valve, WRC approved; Materials: to suit steel tube: Bronze or DZRR copper alloy body; Chrome or nickel plated DZR sphere with full bore flow aperture. PTFE seals and stem seals. Anti-blowout stem; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B

B	50mm Stop valves	7	nr		

Stop valves for isolation of LPHW pipework over 65mm Dia; Type: Lever operated, controlled elastomer compression on flange faces; semi lugged wafer type design, for installation between flanged pipework connections, body to suit IS EN 1092-2; Materials: Cast iron body; stainless steel shaft; aluminium bronze disc; EPDM seat; lever and gear operated valves with long body neck; Seat - Bonded; all in strict accordance with Engineers Specification Volume 2/B

C	80mm Stop valves	12	nr		
D	125mm Stop valves	9	nr		

To Collection €

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
A	125mm Non-return valves	3	nr			
	Double regulating valve with orifice measurement; Type: Screwed double regulating valves up to 65Dia. Flanged for 65 Dia and above; WRAS approved; Material: To suit steel tube; Material - Cast iron to IS EN 13789; Oblique or Y pattern; copper alloy, nickel alloy or resilient valve face; rising stem outside screw or non-rising stem inside screw; manufacturer's standard materials; Provide drain plug facility; independent means for positive isolation on pressure tapping or adapter. include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
B	50mm Double regulating valve	1	nr			
C	80mm Double regulating valve	1	nr			
D	125mm Double regulating valve	3	nr			
	Pressure Relief Safety Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
E	125mm Pressure relief safety valves	1	nr			
	Motorized valves; maximum power consumption of 1 W; minimum static pressure of 10 bar; differential pressure of 250 kPa; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
F	50mm 2-port motorized valves	1	nr			
G	80mm 3-port motorized valves	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
H	Temperature sensor	8	nr			
	Pressure gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
J	80mm Pressure gauge	3	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
K	80mm Temperature gauge	4	nr			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Flexible connections; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	50mm Flexible connections	2	nr			
B	80mm Flexible connections	4	nr			
C	125mm Flexible connections	6	nr			
	Capped Ends; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
D	250mm Capped Ends	2	nr			
	Drain Cock; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
E	250mm Drain Cock	1	nr			
	Strainer valve; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
F	80mm Strainer valve	2	nr			
	Pumps; supply and installation; complete; Pump Head: 1; Integrated VSD: No; Variable speed control: N/A Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
G	Pump LPHW, Ref: PB01; Flow rate: 2.177kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
H	Pump LPHW, Ref: PB02; Flow rate: 2.177kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
J	Pump LPHW, Ref: PB03; Flow rate: 2.177kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
K	Pump LPHW, Ref: PHW01; Flow rate: 1.5kg/s; External pressure drop: 100kPa; Temp: 80øc	1	nr			
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
L	Pump LPHW, Ref: PH01; Flow rate: 6.531kg/s; External pressure drop: 200kPa; Temp: 80°c	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Pump LPHW, Ref: PBI01; Flow rate: 4.8g/s; External pressure drop: 150kPa; Temp: 80°c	1	nr			
	Pressurisation Unit; supply and installation; complete; System: Heating; Fluid: Water; Fluid Temp: 80°C - 60°C; Energy Input: 546kW; Minimum expansion vessel size: 484 L; Maximum Fill Pressure: 6 bar; System Height: 8m; Tank Size: 4 L; Fill Rate: 12L/m; No. of Pumps (with auto changeover if multiple) per unit: 2; Maximum Ambient: 20°C; Pump Casing Material: Gun Metal; Pump Shaft Material: Stainless Steel; c/w isolation valve; lockshield valve, strainer on pumps; pressure gauge; air relief valve, pressure relief valve; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
B	Pressurisation Unit; Ref: PU-01; Location: Plant room	1	nr			
	Chemical dosing pot; supply and installation; complete; c/w foot valve; chemical drum; Cleansing; Corrosion inhibitor and wall mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
C	Chemical dosing pot	1	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 6.531L/s; Maximum working temp: 110øC; Pipe connections: 150mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework; separator to be capable of separating particles with a size of 5um and larger; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
D	Air/Dirt separator; Ref: DA1	1	nr			
	Unvented Expansion Vessel; supply and installation; complete; include for all accessories, fixings and mounting brackets; complete; include for all fixings and mounting brackets; all in strict accordance with the Mechanical Engineers Specification Volume 2					
E	Unvented Expansion Vessel	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Stainless steel flue; supply and installation; complete; External lining: 304 stainless steel; Insulation: 25mm mineral wool; Internal lining: 316 stainless steel; Fire rating: 2 hr to EN 13501; Structure: The detailed design, structural stability including all anchoring of the flue arrangement shall be the sole responsibility of the contractor; Support material: Corrosion proof, treated supports; Flue dimensions: Confirm with combustion equipment supplier prior to ordering; c/w individual modulating air intake control damper and terminated with a propriety cowl; include for all necessary branch fittings, weather roof flashing, rain caps and supports; The flue shall be fitted with adequate supports, offsets, tee's, condensate to drain and termination unit; include for all accessories, fittings and firestopping; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
A	Twin walled flue; Size 125mm diameter	3	nr			
B	Twin walled flue; Size 150mm diameter	1	nr			
	Heat meter; supply and installation; complete; Accuracy Shall be accurate within 1% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
C	Heat Meter; Ref: HM02, HM03, HM04, HM05	4	nr			
	Oil-filled electric radiator; supply and installation; powder coated white finish; radiator control to turn on at 5°C, switch off at 14°C; linked to local temperature sensor, via BMS; c/w mounting brackets; include for all fixings and accessories; in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
D	Oil filled Electric radiator; Output 1kW	1	nr			
	<u>Distribution</u>					
	Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
E	80mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B					
A	40mm diameter pipework	1	item			
B	50mm diameter pipework	1	item			
C	54mm diameter pipework	1	item			
D	80mm diameter pipework	1	item			
E	125mm diameter pipework	1	item			
F	250mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
G	to 40mm diameter pipework	1	item			
H	to 50mm diameter pipework	1	item			
J	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
K	to 80mm diameter pipework	1	item			
	Insulation, 80mm thick					
L	to 125mm diameter pipework	1	item			
M	to 250mm diameter pipework	1	item			

To Collection €

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
A	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
B	to 40mm diameter pipework	1	item			
C	to 50mm diameter pipework	1	item			
D	to 54mm diameter pipework	1	item			
E	to 80mm diameter pipework	1	item			
F	to 125mm diameter pipework	1	item			
G	to 250mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
H	Testing and commissioning	1	item			
J	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
K	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
L	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
M	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
N	As built drawings	1	item			
				To Collection €		

(5-) MECHANICAL INSTALLATION (Cont)

Identification plates, labels and the like; all in accordance with Engineers Specification

A	Identification plates, labels and the like	1	item		

(52) DRAINAGE AND REFUSE DISPOSAL

System

Soils and Waste Drainage Installation, testing and commissioning; complete; The complete installation of all above ground foul water drainage and refuse disposals; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Section 7, Volume 3, Volume 4 and Drawing 4.1(5-)M006

Terminal equipment and fittings

Floor Gully; supply and installation; complete; Type: Stainless steel; c/w removable core; include for all fittings and seals; all in accordance with the Mechanical Specification

B	Floor Gully	1	nr		

Distribution System

Condensate pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; all in strict accordance with the Mechanical Specification Volume 2/A 7.4

C	28mm nominal diameter; supports at average 1200mm centres vertical, 500mm centres horizontal; ears fixed with screws to background requiring plugging	1	item		
D	32mm nominal diameter; supports at average 1200mm centres vertical, 500mm centres horizontal; ears fixed with screws to background requiring plugging	1	item		

General

Testing and commissioning; all in accordance with Engineers Specification

E	Testing and commissioning	1	item		

Operating and maintenance manuals; all in accordance with Engineers Specification

F	Operating and maintenance manuals	1	item		

Working drawings; all in accordance with Engineers Specification

G	Working drawings	1	item		

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Co-ordination drawings; all in accordance with Engineers Specification					
A	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
B	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
C	Identification plates, labels and the like	1	item			
	(53) WATER SERVICES - HOT AND COLD WATER					
	System					
	Cold Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.1(5-)M007					
	Hot Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.1(5-)M007					
	Equipment					
	Calorifier; supply and installation; complete; Capacity: 27kW; Storage Capacity: 1875 litres; Flow temperature: 60°C; Temperature difference: 20K; LPHW flow rate: 0.3kg/s; Electric immeresion: 10kW; Insulation: vessel insulated to U-value of 0.25W/m2K or better; Material: cylinder stainless steel; Efficiency: ErP rating if B or better; Test pressure: 6 bar for cylinder, 10bar for coil; Crossion protection: magnesium electrolytic protection anode; Connections: Cold inlet at base of unit and hot water outlet at top, hwsr 1/3 from top; Electric Immersion Maintenance: Immersions shall be fully removable through flanged, insulated connections; Electric Immersion protection: immersions shall include run dry protection and over temperature; Electric Immersion Trip: Immersion shall include over temperature protection requiring manual reset; c/w Packaged expansion kit, Non-return valve, Pressure relief valve, temperature gauge, cylinder temperature sensor pocket; include for all accessories and fittings; complete; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
D	Calorifier; Ref: C01; Location: Boiler room	1	nr			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
A	50mm Isolation valves	5	nr			
B	54mm Isolation valves	3	nr			
	Stop valves for isolation of CWS/HWS pipework over 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; flanged connections; all in strict accordance with Engineers Specification Volume 2/B					
C	67mm Isolation valves	2	nr			
	Double regulating valve; Type: globe valve c/w macro and micro position indicator, locking mechanism; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
D	54mm Double regulating valve	1	nr			
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
E	50mm Non-return valves	1	nr			
	Pressure Relief Safety Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
F	67mm Pressure relief safety valve	1	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
G	54mm Temperature gauge	1	nr			
H	67mm Temperature gauge	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
J	Temperature sensor, calorifier	1	nr			
	Tundish; supply and installation; complete; c/w mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
K	Tundish	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Magnetic water filter; supply and installation; complete; c/w mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
A	Magnetic water filter	1	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 6.531L/s; Maximum working temp: 110øC; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework; separator to be capable of separating particles with a size of 5um and larger; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
B	Air/Dirt separator; Ref: DA1	1	nr			
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
C	Pump HWR, Ref: PHW02; Flow rate: 1.5kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
	Unvented Expansion Vessel; supply and installation; complete; include for all accessories, fixings and wall mounting brackets; complete; all in strict accordance with the Mechanical Engineers Specification					
D	Expansion Vessel	1	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05l/s of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
E	Water Meter; Ref: WM01	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Distribution					
	Copper pipes and fitting; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
A	35mm diameter pipework	1	item			
B	42mm diameter pipework	1	item			
C	50mm diameter pipework	1	item			
D	54mm diameter pipework	1	item			
E	67mm diameter pipework	1	item			
F	76mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
G	to 35mm diameter pipework	1	item			
H	to 42mm diameter pipework	1	item			
J	to 50mm diameter pipework	1	item			
K	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
L	to 67mm diameter pipework	1	item			
M	to 76mm diameter pipework	1	item			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
A	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
B	to 35mm diameter pipework	1	item			
C	to 42mm diameter pipework	1	item			
D	to 50mm diameter pipework	1	item			
E	to 54mm diameter pipework	1	item			
F	to 67mm diameter pipework	1	item			
G	to 76mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
H	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
J	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
K	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
L	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
M	As built drawings; complete	1	item			
				To Collection €		

	(5-) MECHANICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
A	Identification plates, labels and the like; complete	1	item			
	(53) WATER DISTRIBUTION - MAINS WATER					
	System					
	Mains Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.1(5-)M007					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
B	28mm Isolation valves	4	nr			
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
C	28mm Non-return valves	2	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05l/s of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
D	Water meter; Ref: WH01	1	nr			
	Distribution system					
	Multi-layer non-matallic pipework and fittings; in accordance with the Irish Standard IS EN 806:2005: Specification for installations inside buildings conveying water for human consumption; include for all fixing brackets, hangers and supports; include for all elbows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Specification					
E	15mm diameter pipework	1	item			
F	22mm diameter pipework	1	item			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	25mm diameter pipework	1	item			
B	28mm diameter pipework	1	item			
C	35mm diameter pipework	1	item			
D	42mm diameter pipework	1	item			
E	54mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
F	to 15mm diameter pipework	1	item			
G	to 22mm diameter pipework	1	item			
H	to 25mm diameter pipework	1	item			
J	to 28mm diameter pipework	1	item			
K	to 35mm diameter pipework	1	item			
L	to 42mm diameter pipework	1	item			
M	to 54mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
N	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
P	to 15mm diameter pipework	1	item			
Q	to 22mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	to 25mm diameter pipework	1	item			
B	to 28mm diameter pipework	1	item			
C	to 35mm diameter pipework	1	item			
D	to 42mm diameter pipework	1	item			
E	to 54mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
F	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
G	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
H	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
J	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
K	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
L	Identification plates, labels and the like; complete	1	item			
				To Collection €		

(5-) MECHANICAL INSTALLATION (Cont)

(54) GAS DISTRIBUTION - LPG GAS SERVICES

System

LPG Gas distribution; installation testing and commissioning; The school building will be fed from a new incoming LPG gas supply, The gas supply shall extend to serve the gas fired boiler within the plantroom; The contractor shall allow for liaising with the gas supplier regarding coordination of works and certification of the site gas pipework and tank installation; LPG installation shall be installed in compliance with IS3213; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.1(5-)M004, 4.1(5-)M007

Accessories associated with Primary Equipment

Stop Valves for isolation of gas pipework 65mm Dia and above; Type: Lever operated (gradual notch) butterfly valves; Construction - Provide controlled elastomer compression on flange faces; semi-lugged wafer type design, for installation between flanged pipework connections; Provide lever and gear operated valves with long body neck for lagging clearance; Seat - Bonded; Materials: Cast iron body; stainless steel shaft; aluminum bronze disc; EPDM seat; Operation - Lever and graduated notch plate; include for all seals; all in strict accordance with Engineers Specification Volume 2

A	80mm Stop valves	5	nr		

Pressure regulator; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2

B	80mm Pressure regulator	1	nr		

Strainer Valves; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2

C	80mm Strainer valves	3	nr		

Flexible connections; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2

D	80mm Flexible connections	3	nr		

Gas meter; supply and installation; complete; Accuracy Shall be accurate within 0.2m3/hr up to maximum valve above; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, no battery backup; Utility Meter: In addition to above, provide utility meters to utility requirements; Utility Meter: Shall be 2m from any window or opening, shall be provide in locked cage (measured elsewhere); include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules

E	Gas Meter; Ref: GM01	1	nr		

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	Tamper proof, lockable metal caging	1	nr			
	Distribution System					
	Medium grade black mild steel pipes and fittings; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; Painted with one primer coat - Zinc phosphate primer), one final coat of ochre yellow paint (Ral 1024; all in strict accordance with Engineers Specification Volume 2					
B	80mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	(54) GAS DETECTION SYSTEM					
	System					
	Gas detection system installation testing and commissioning; A gas detection system will be installed in the heating center comprising of gas detectors, heat detectors, slam shut valve, gas detection panel and emergency lock-stop located adjacent to the boiler room door; The gas detection panel shall be provided with volt free contacts and an I/O interface unit for connection to the schools fire alarm system; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.1(5-)M006					
	Primary Equipment					
	Gas detection control panel; c/w emergency knock-off button, reset button, mute button, LED indication for power on, gas-on and emergency stop; free relay output for the BMS; IP44; CE rated, IEC61779-1; wall mounted; include for all accessories and fittings; all in accordance with the Mechanical Specification Volume 3 - Equipment schedules					
A	Gas detection control panel; Location: Boiler room	1	nr			
	Accessories associated with Primary Equipment					
	Gas Slam Shut Valve; supply and installation; complete; Auto reset on loss of power and fire alarm reset; compliance to EN161 and DIN Class A; maximum consumption of 2W during normal usage; all in strict accordance with Engineers Specification Volume 3 - Equipment schedules					
B	80mm Gas solenoid valve	1	nr			
	Emergency Push Button; supply and installation; complete; all in strict accordance with Engineers Specification Volume 2					
C	Emergency Push Button	1	nr			
	Gas Detectors; supply and installation; complete; IP44 protection; Mounting: mounted over each burner, linked to the gas control panel; c/w gas conical collector hood; all in strict accordance with Engineers Specification Volume 2					
D	Gas detector	3	nr			
	Heat Detectors; supply and installation; complete; all in strict accordance with Engineers Specification Volume 2					
E	Heat Detectors	3	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(58) FIRE PROTECTION INSTALLATION					
	System					
	Fire Fighting installation, testing and commissioning; complete; Hand held fire extinguishers and fire blankets shall be provided throughout the building as detailed on the drawings; The installation will comply with BS 5306-2000-Part 8; The Contractor shall be responsible for carrying out the commissioning of the portable fire extinguishers before they are installed; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 11, Volume 3, Volume 4 and Drawings 4.1(5-)M006					
	Terminal equipment and Fittings					
	Fire Extinguishers supply and installation; complete with 5 years guarantee, CE approved and marked; all in accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
F	5KG CO2 Gas Extinguishers; c/w wall mounting brackets and ID signage; complete	1	nr			
G	5kg ABC Dry Powder Fire Extinguishers; c/w wall mounting brackets and ID signage; complete	1	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
H	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(58) HVAC MOTOR CONTROL CENTER & BUILDING MANAGEMENT SYSTEM					
	System					
	BMS System Installation; testing and commissioning; complete; Building management software including a target and monitoring system based on a traffic light system shall be designed and installed in this school to inform relevant personnel for energy usage in the school. How utility supplies are behaving when set against targeted parameters. This information is to be available on the principals pc. They should be capable of remote monitoring and alarm if there is a problem; all in strict accordance with the Mechanical Specification					
	Primary Equipment					
	MCC Panel; supply and installation; complete; The MCC panel: wall mounted top entry and top exit type with hinged front doors, suitable for installing against a wall; Dimensions: max. width 2000mm, max depth 300mm; Spare capacity: 30%; The MCC shall contain hand/off/auto switches with run and trip indicators and interfaces for all items as detailed on the drawings; each button shall be clearly labelled showing the area served; include for all fittings and accessories; all in accordance with the Mechanical Engineers Specification					
F	MCC Panel; Ref: MCC; Location: Plant room	1	nr			
G	MCC Panel; Ref: MCC; Location: Biomass Unit	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	External sensor; linked to BMS; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 4					
A	External frost sensor	1	nr			
B	External temperature sensor	1	nr			
	Remote data transmitter, supply and installation, complete; 4G enabled transmitter capable of interfacing with utility meters and transmitting recorded data to an external web-based front-end system; include for all fittings and accessories; all in accordance with the Mechanical Specification					
C	Remote data transmitter; Boiler Room	1	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
D	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
E	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
F	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
G	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
H	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
J	Identification plates, labels and the like	1	item			
	MECHANICAL INSTALLATIONS					
	Sundries & Builders Work					
	General Attendances					
K	Provide all general attendances in accordance with Arm 4 .	1	item			
L	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide use of the Main Contractors scaffolding.	1	item			
B	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
C	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
D	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
E	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Mechanical services works, including testing and commissioning , and pay all ongoing operation charges.	1	item			
F	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
G	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
H	Provide temporary telephone services to the Mechanical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
J	Include for unloading, hoisting/cranage and placing into position all items of heavy plant and site offices supplied by the sub-contractors.	1	item			
K	Allow for maintaining all ducts, chases, trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
L	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
M	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
N	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	Special Attendances					
P	Provide all special attendances in accordance with Arm 4 Clause 3.1	1	item			
Q	Provide temporary roads and hardstandings in connection with heavy items of plant and the like.	1	item			
R	Provide accommodation for the sub-contractor's staff for eating, site lavatories, site washing facilities, and cloaks.	1	item			
S	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
B	Provide temporary distribution systems for lighting, power, water for the execution of the electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
C	Provide the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
D	Protection of the works the Main Contractor is responsible for providing adequate protection at all times for the Mechanical services installation.	1	item			
E	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day.	1	item			
F	Provide external access to high level on building facade to permit the installation of any external equipment/fittings and for the removal of existing services as required.	1	item			
G	Provide Mobile Elevated Working Platforms (MEWP) or scaffolding for Mechanical sub-contractors working at high level.	1	item			
H	Provide for weathering & sleeving around all penetrations through the external structure of the building and to allow for sealing to fabric to maintain air tightness.	1	item			
J	Allow for maintaining all ducts, chases, trenches, trunking etc, clean and free of all water, debris and rodents at all times.	1	item			
K	Allow for making good and fire sealing of all builders work opes with proprietary sealant to architects details, where services penetrate fire zones.	1	item			
L	Allow for coordination with local authorities and utility providers in respect of application for connections, providing excavation of roads and full coordination with various utility companies.	1	item			
M	Coordinate with Mechanical Contractor to facilitate fitting of all sanitary ware.	1	item			
N	Allow for patrices behind ceiling tiles and ceilings for the support of light fittings, grilles, smoke detectors, sensors etc.	1	item			
P	Allow for weathering details on all services passing through external envelope.	1	item			
Q	Allow for all service / utility entries into building.	1	item			
R	Allow for clearing away and disposal of any rubbish.	1	item			
S	Provide safe access to roofspace to facilitate Mechanical installation work.	1	item			
T	Making good of opes for fire smoke dampers.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide and maintain the specific temperatures and humidity levels.	1	item			
B	Contractor to provide for the construction of a walkway within the Attic space for service and maintenance of water and ventilation services.	1	item			
C	Contractor to ensure all existing services shut downs for connecting in new and changeovers shall be carried out between 10pm on a Sunday Night and 6pm on a Monday morning, to avoid any interruptions of the running of the existing school; times to be agreed with school management.	1	item			
D	Provide plywood protective cover over boiler for protection.	1	item			
	Unload, hoist distribute, and place in position the following items of plant and equipment:					
E	Gas boiler	1	item			
F	Biomass unit	1	item			
G	Calorifier tank	1	item			
H	Pumps	1	item			
	Sundries & Builders Work					
	General					
J	Marking positions of holes, mortices and chases	1	item			
K	Testing & Commissioning	1	item			
L	Preparing drawings of "as completed" installations	1	item			
M	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
N	Keys, tools and spares	1	item			
	In-situ concrete; plain; to IS EN 206; Grade C30; formwork to sides of platform, powerfloating finish; all in strict accordance with the Engineers Drawings and Specification					
	Bases					
P	Size 850mm x 1650mm x 100mm thick	1	nr			
Q	Size 1850mm x 1100mm x 100mm thick	1	nr			
R	Size 2650mm x 1850mm x 100mm thick	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Equipment supports; provide mounting grounds for the installation of the following fittings; making good structure and finishes; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
	Equipment supports					
A	Provide wall fixings for portable fire extinguishers to walls at 1500mm above floor	2	nr			
	Forming or cutting holes; including sleeves/plates, making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
B	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
C	cutting or forming opes is deemed to include the making good and sealing of the ope around the pipe or duct		note			
	For ducts/pipes through exisitng external cavity blockwork wall, include for building in sleeves; weather proofing, making good all finishes on completion					
D	Size 1000mm x 250mm opes	1	nr			
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification and Drawings					
	Special works were services pass through structures; external walls, making good all finishes on completion					
E	Size 1000mm x 250mm opes	1	nr			

				€	c
(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/7					
Page No. Lot 4.1 Works Con/8					
Page No. Lot 4.1 Works Con/9					
Page No. Lot 4.1 Works Con/10					
Page No. Lot 4.1 Works Con/11					
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Page No. Lot 4.1 Works Con/13					
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Page No. Lot 4.1 Works Con/23					
Page No. Lot 4.1 Works Con/24					
Page No. Lot 4.1 Works Con/25					
Page No. Lot 4.1 Works Con/26					
Page No. Lot 4.1 Works Con/27					
Page No. Lot 4.1 Works Con/28					
Page No. Lot 4.1 Works Con/29					

				€	c
(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/30					
Page No. Lot 4.1 Works Con/31					
Page No. Lot 4.1 Works Con/32					
Page No. Lot 4.1 Works Con/33					
Page No. Lot 4.1 Works Con/34					
Page No. Lot 4.1 Works Con/35					
Page No. Lot 4.1 Works Con/36					
(5-) MECHANICAL INSTALLATION **Carried to Summary**					

					€	c
	(6-) ELECTRICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Alterations to existing switch board to facilitate the installation of new submians; 1nr 40A TP&N sub-mains connection to New MCC panel; 1nr 50A TP&N sub-mains connection to Biomass unit (sub-main cable & TP&N device measured elsewhere); allow for modifications and fittings to existing DB as required to accommodate the new connections; include all isolation, shutdown coordination, and commissioning; all in strict accordance with Electrical Specification and Drawing 4.1(60)E001	1	item			
C	Alterations to existing PV system to facilitate installation of fire-rated DC cabling and fireman#s switch (fireman switch measured elsewhere), including safe isolation, modifications, re-termination and reinstatement of PV system, testing, commissioning, and certification, in full compliance with ET101; all in strict accordance with Electrical Specification and Drawing 4.1(60)E001	1	item			
D	Modification of existing fire alarm system to facilitate interface with existing gas solenoid valve, including all necessary wiring, controls integration, programming, testing, commissioning, and certification, all in strict accordance with Electrical Specification and Drawing 4.1(63)E001	1	item			
	Notes					
E	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
F	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			

(6-) ELECTRICAL INSTALLATION (Cont)

A	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			

ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES

(61) ELECTRICITY SUPPLY & MAIN DISTRIBUTION - LV INSTALLATIONS

System

LV installation, testing and commissioning; complete; The Contractor shall allow for the supply and installation of all switchgear, distribution boards and sub-mains cables in accordance with the drawings and attached specification; The Contractor shall be responsible for safe off-loading, receiving, storage, positioning and fixing of the boards and shall be liable for any damage to boards during installation; The Contractor shall submit working drawings to the Engineer for approval prior to manufacture of switchgear; the contractor shall allow for liaising with the ESB; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 and Drawings 4.1(60)E001

B	LV Installations	1	item			

Fittings

C	Isolation device; supply and installation; complete; terminating of incoming and outcoming cabling; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
D	Isolation device; 40A TPN	1	nr			
	Firemans switch; supply and installation (including wiring & terminations); complete; isolation of the electrical supply to the entire building; located at main entrance; fire rated enhanced PH120 cable; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
E	Firemans Switch; isolation of main MCCB within switch board	1	nr			
F	Firemans Switch; isolation of PV system	1	nr			
	Multi-function digital meter; supply and installation; complete; digital multi-meter capable of indicating kVA, kW, KVAR, kWhr, Amps, Volts, etc. per phase and between phases; suitable for interfacing with B.M.S. network; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
G	Multi-function digital meter; BMS meter	3	nr			
H	Multi-function digital meter; CT meter	3	nr			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Insulated Matting; supply and installation; complete; Width: 900mm wide; Length: to extend to full Length of switch board, with an additional 300 mm beyond each end; Class rating: based on the system voltage and clearly colour-coded; Standards to conform to BS EN 61111:2009 (IEC 61111:2009); include for all fixings and accessories; all in strict accordance with the Electrical Specification Vol.2 Section 4.3					
A	Insulated matting; Ref: Existing Switch Board	1	nr			
	Main switchboard circuit chart; 'A1' framed drawing of the switchboard to be installed within the switch room; the drawing shall be framed with a perspex cover; include for all accessories; in strict accordance with the Electrical Specification Vol.2 Section 4.3					
B	Main switchboard; Ref: Existing Switch Board	1	nr			
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board to sub-distribution boards/ Control panels located throughout school building; Sub-mains distribution within the building shall be via XLPE/LSF/SWA/PVCarmored cables laid in galvanized steel cable tray/trunking; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Section and Drawing 4.1(60)E001					
C	Submains; Existing switch board to Biomass Unit; 1 x 4c 35sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
D	Submains; Existing switch board to MCC Panel; 1 x 4c 16sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Specification					
E	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
G	Operating and maintenance manuals	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Working drawings; all in accordance with Engineers Specification					
A	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
B	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
C	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
D	Identification plates, labels and the like	1	item			
	(62) POWER - CONTAINMENT					
	System					
	Cable ladder/ tray/ trunking installation, testing and commissioning; complete; The Contractor must allow for the supply and installation of a complete cable support system using galvanized steel cable tray, trunking, conduit and support steelwork as shown on the drawings and as detailed in the specification. The Contractor shall include for all incidental cable containment which may not be shown on the drawings but which may be required to effect cable routes to individual items of equipment, luminaries etc; include for all joints, fixing brackets, supports and fire barrier pillow system; all exposed and exteaneous conductive parts are to be boned and properly earthed in accordance with current wiring regulations; all in accordance with the Electrical Specification Volume 1, Volume 2 and Drawing 4.1(63)E001					
E	Cable Ladder; LV; galvanized steel; heavy duty; size 200mm wide x 50mm high; complete	1	item			
F	Cable Header Trunking; LV; galvanized steel; size 150mm wide x 150mm high; complete	1	item			
G	Conduit; galvanised steel; size 25mm diameter; complete	1	item			
H	Conduit; galvanised steel; size 50mm diameter; complete	1	item			
J	Conduit; flexible steel; size 25mm diameter; complete	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
A	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
B	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings; complete	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings; complete	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like; complete	1	item			
	(62) POWER - GENERAL SERVICES					
	System					
	General Services and small power installation, testing and commissioning; complete; to include vampire load design strategy; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.1(63)E001					
H	General Services Installation	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Accessories associated with terminal equipment					
	Isolation device; supply and installation (including wiring); complete; surface mounting; include for all accessories and fixings; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification					
A	20amp SPN Isolator switch IP65	12	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	(65) PROTECTIVE SERVICES - EARTHING AND BONDING					
	System					
	Earthing and Bonding; installation; testing and commissioning; The contractor shall undertake to effectively earth the whole of the electrical installation in accordance with the National Rules for Electrical Installations IS-10101:2020. Main equipotent earth bonding should be provided from each of the following items, as a minimum, to the main earthing bar: Incoming Water Main, Incoming Gas Main, Metal drainage pipes, Structural Steelwork, Main Heating Pipework, Main Ventilation Ductwork, Lightning Protection System, Comms Rooms, Supplementary earth bonding shall be carried out on extraneous metal parts at the following locations: Metallic Wireways and Containment, Suspended Ceiling Grids, Wash Hand Basins, Showers, Sinks, WC's, Cleaners Sinks, Catering equipment, Metal worktops, Plantroom Pipework (e.g. across pumps, valves, vessels, etc.); all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.1 (60)E001					
A	Earthing and Bonding	1	item			
	Fittings					
	Earth terminal bar; supply and installation; c/w insulating shrouds to I.S. 10101:2020 and of suitable capacity for the number and size of cables to be connected; all in strict accordance with the Electrical Engineers Specification Vol. 2/A Part 9					
B	Earth terminal bar	1	nr			
	Main earth conductor cable; supply and installation complete; 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
C	Earth terminal bar to earth pits	1	item			
D	Earth terminal bar to Surge arrestor	1	item			
	Main earth conductor cable; supply and installation complete; Cable 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
E	From ESB to earth terminal bar	1	item			
	Equipotent earth bonding; supply and installation complete; Cable 1 x 1 core 10mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
F	Incoming Water Main	1	item			
G	Incoming Gas Main	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metal drainage pipes	1	item			
B	Structural Steelwork	1	item			
C	Main Heating Pipework	1	item			
D	Main Ventilation Ductwork	1	item			
E	Lightning Protection System	1	item			
F	Lift shaft steel work	1	item			
G	Eircom DP	1	item			
	Supplementary earth bonding; supply and installation complete; 2.5mm2 LSF green/ yellow earth cable; shall be carried out on extraneous metal parts at the following locations; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
H	Metallic Wireways and Containment	1	item			
J	Suspended Ceiling Grids	1	item			
K	Wash Hand Basins	1	item			
L	Showers	1	item			
M	Sinks	1	item			
N	WC's	1	item			
P	Cleaners Sinks	1	item			
Q	Catering equipment	1	item			
R	Metal worktops	1	item			
S	Plant room Pipework	1	item			
	<u>General Earthing and Bonding</u>					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
T	Generally	1	item			
	<u>General</u>					
	Testing and commissioning; all in accordance with Engineers Specification					
U	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(65) SECURITY & PROTECTION - SURGE PROTECTION					
	System					
	Transitent & Overvoltage Protection installation, testing and commissioning; The Contractor shall be responsible for the supply and installation of all incoming and outgoing cables (of all types) to be provided with Lightning/Surge Protection devices; The electrical contractor shall ensure allowance for surge protection at all panels within his scope and those provided by others; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.1 (60)E001					
F	Transitent & Overvoltage Protection	1	item			
	Fittings					
	Surge Suppression Devices; installation (including wiring); complete; Lighting/ Surge Protection devices Type 1 and Type 2 to I.S. EN 62305:2006; all in strict accordance with the Electrical Specification and Drawing 4.1 (60)E001					
G	Surge Protection; 400V TP&N,Type 1 & 2; Existing Switch Board	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
H	Generally	1	item			

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
	(68) MECHANICAL WIRING INSTALLATIONS					
	Mechanical Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplies; all in accordance with the Mechanical and Electrical Specification and Drawings 4.1(50)M005					
G	Mechanical Wiring Installation	1	item			
	Fittings					
	Gas detection system mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the 4.1(50)M005					
H	Gas detection control panel (Location: Boiler room)	1	nr			
J	80mm dia Gas solenoid valve	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Emergency Stop Button	1	nr			
B	Gas detector	3	nr			
C	Heat detector	3	nr			
D	Carbon monoxide	1	nr			
	Frost protection mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Drawing 4.1(50)M005					
E	Oil filled Electric radiator; Size 1000mm long x 500mm high; Output 1000w	1	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers					
F	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
G	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
H	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
J	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
K	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
L	As built drawings; complete	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
A	Identification plates, labels and the like; complete	1	item			
	(68) BMS WIRING INSTALLATIONS					
	System					
	BMS Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplied as a 'Free Issue' item by the Mechanical Contractor as part of the BMS installation, and must be installed and connected up by the electrical contractor. Generally, the MCC panels must be installed in boiler houses, plant rooms, etc.; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.1 (5-)M007					
B	BMS Wiring Installation	1	item			
	Equipment					
	Mechanical Control Panel; Mechanical and BMS wiring installation, testing and commissioning; complete; The Contractor shall allow for all wiring associated with the installation of the MCC and BMS outstations; The Contractor shall allow for all switchgear as indicated on the electrical services connection schedules and reflected on the electrical services layouts; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.1(5-)M007					
C	Mechanical Control Center; Ref: MCC Panel, Location: Plant Room	1	item			
D	Mechanical Control Center; Ref: MCC Panel, Location: Biomass Unit	1	item			
	Remote data transmitter, testing and commisssioning; complete; Install loggers and determine the maximum electrical load (MIC) across all phases for the entire school; all in accordance with the Mechanical & Electrical Specification and Drawing 4.1(5-)M007					
E	Remote data transmitter; Boiler Room	1	nr			
	GSM modem; supply and installation; c/w dedicated SIM card, cabling and power supplies; contractor to maintain system for duration of supply contract; include for all fittings and accessories; testing and commissioning, complete; all in accordance with the Mechanical Specification					
F	GSM modem	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fittings					
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Plant room					
A	Pressurisation Unit - Low level fault	1	nr			
B	Pressurisation Unit - High level fault	1	nr			
C	Pressurisation Unit - Run indication	1	nr			
D	Main Header - Flow temperature sensor	2	nr			
E	Main Header - Return temperature sensor	2	nr			
F	Main Header - Imersion frost	2	nr			
G	Boiler - Enable	3	nr			
H	Boiler - Temperature set point	3	nr			
J	Boiler - Common alarm	3	nr			
K	Boiler - Shunt pump fault/enable	3	nr			
L	Boiler - Flow temperature sensor	3	nr			
M	Boiler - Burner currently firing feedback	3	nr			
N	Biomass - Enable/fault	1	nr			
P	Biomass - Temperature set point	1	nr			
Q	Biomass - Common alarm	1	nr			
R	Biomass - Primary pump head 1 fault/enable	1	nr			
S	Biomass - Primary pump head 2 fault/enable	1	nr			
T	Biomass - Pump 1 flow set point	1	nr			
U	Biomass - Pump 2 flow set point	1	nr			
V	Biomass - Flow temperature sensor	1	nr			
W	Biomass - Return temperature sensor	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	VT Circuit - Pump head 1 enable/fault	1	nr			
B	VT Circuit - Pump head 2 enable/fault	1	nr			
C	VT Circuit - Flow temperature sensor	1	nr			
D	VT Circuit - Return temperature sensor	1	nr			
E	VT Circuit - 3-port mixing valve	1	nr			
F	Trace heating - Enable/fault	1	nr			
G	Main Secondary Calorifier - Pump head 1 enable/ fault	1	nr			
H	Main Secondary Calorifier - LPHW return temperature	1	nr			
J	Main Secondary Calorifier - 2-port mixing valve	1	nr			
K	Main Secondary Calorifier - Calorifier temperature	1	nr			
L	Main Secondary Calorifier - HWSR pump 1 enable/ fault	1	nr			
M	Main Secondary Calorifier - Sacrificial annode	1	nr			
N	Main Secondary Calorifier - 2-port valve	1	nr			
P	Main Secondary Calorifier - High limit stat	1	nr			
Q	Gas Detection - Gas detector 1	1	nr			
R	Gas Detection - Gas detector 2	1	nr			
S	Gas Detection - Gas detector 3	1	nr			
T	Gas Detection - Heat detector 1	1	nr			
U	Gas Detection - Heat detector 2	1	nr			
V	Gas Detection - Heat detector 3	1	nr			
W	Gas Detection - Fire alarm interface	1	nr			
X	Metering - Main Gas meter	1	nr			
Y	Metering - Gas meter to boilers	1	nr			
Z	Metering - Gas meter to Water heater	1	nr			
AA	Metering - Mains water meter	1	nr			
BB	Metering - Cold water to hot water meter	1	nr			
CC	Metering - Rainwater usage meter	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metering - Flushing water meter	1	nr			
B	Metering - Heat Meter modbus	5	nr			
C	Frost protection - External temperature sensor	1	nr			
D	Frost protection - External Frost Senor	1	nr			
E	Data connection to MCC-Biomass	1	nr			
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all 6 core 0.6mm2 PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Biomass Unit					
F	Fire alarm interface	1	nr			
G	Biomass - Enable/fault	1	nr			
H	Buffer temperature Sensor H/L	1	nr			
J	Buffer temperature Sensor M/L	1	nr			
K	Biomass boiler back end protection	1	nr			
L	Biomass boiler flow temperature sensor	1	nr			
M	Biomass boiler return temperature sensor	1	nr			
N	Heat exchanger pump (primary) - Enable/Fault	1	nr			
P	Heat exchanger pump (secondary) - Enable/Fault	1	nr			
Q	Primary heat exchanger flow temperature sensor	1	nr			
R	Primary heat exchanger return temperature sensor	1	nr			
S	Secondary heat exchanger flow temperature sensor	1	nr			
T	Secondary heat exchanger return temperature sensor	1	nr			
U	Pressurisation Unit - Enable / fault	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Final Circuits (including all points terminations)					
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification, Control points schedule and Drawing (5-)M007					
	Final Circuits - MCC - Plant room					
A	Power - Pressurisation Unit; SPN 20amp	1	nr			
B	Power - Boiler; SPN 20amp	3	nr			
C	Power - Shunt pump; SPN 20amp	3	nr			
D	Power - Trace heating; SPN 20amp	1	nr			
E	Power - Heat meter; SPN 20amp	5	nr			
F	Power - Calorifier sacrificial annode; SPN 20amp	1	nr			
G	Power - Gas detection panel; SPN 13amp	1	nr			
H	Power - VT circuit pump head 1; TPN 20amp	1	nr			
J	Power - VT circuit pump head 2; TPN 20amp	1	nr			
K	Power - Calorifier pump head 1; TPN 20amp	1	nr			
L	Power - Calorifier HWSR pump 1; SPN 20amp	1	nr			
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification and Drawing (5-)M007					
	Final Circuits - MCC - Biomass Unit					
M	Power - Biomass Unit; TPN 100amp	1	nr			
N	Power - Biomass primary pump head 1; SPN 20amp	1	nr			
P	Power - Biomass primary pump head 2; SPN 20amp	1	nr			
Q	Power - Pressurisation Unit; SPN 20amp	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Final Circuits (including all points terminations)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
A	General Earthing and Bonding; complete		item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
B	Testing and commissioning; complete		item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
C	Operating and maintenance manuals; complete		item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
D	Working drawings; complete		item			
	Co-ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
E	Co-ordination drawings;complete		item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
F	As built drawings; complete		item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
G	Identification plates, labels and the like; complete		item			
H						
	ELECTRICAL INSTALLATIONS					
	Sundries and Builders Work					
	General Attendances					
J	Provide all general attendances in accordance with Arm 4.	1	item			
K	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide use of the Main Contractors scaffolding.	1	item			
B	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
C	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
D	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
E	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
F	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
G	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
H	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
J	Include for unloading, hoisting/cranage and placing into position all items of heavy plant supplied by the subcontractors.	1	item			
K	Allow for maintaining all ducts, chases , trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
L	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
M	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
N	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	<u>Special Attendances</u>					
P	Provide all special attendances in accordance with Arm 4 Work Section B Clause 3.1	1	item			
Q	Provide temporary access roads and hardstanding in connection with heavy items of plant and the like, forming part of the site establishment works	1	item			
R	Provide scaffolding internal and external to the building to facilitate installation of high-level electrical services during the contract	1	item			
S	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide adequate barriers/tape/signage of exclusion zoning in relation to use of access equipment and ACOPs for working at height	1	item			
B	Provide construction signage (internal and external) in relation to M&E services e.g live systems etc.	1	item			
C	Provide temporary lighting and power in accordance with IS10101 Wiring Regulations.	1	item			
D	Provide protection to all M&E services installations installed during the works including protection against debris and water ingress	1	item			
E	Provide fire stopping to all electrical services on the vertical and horizontal planes throughout the entire buildings	1	item			
F	Ensure close coordination during the building phase to ensure electrical, ventilation and mechanical services are installed and integrated within the building fabric as designed.	1	item			
G	Provide grounds and fixings for suspension of Electrical services; Electrical loading = 10kg/m Mechanical loading = 40kg/m	1	item			
H	Provide boxing out of containment and pipework as necessary, boxing to be accessible with screwed access.	1	item			
J	Main contractor shall employ a full time M&E Co-ordinator for the duration of the contract works and their duties shall include but not limited to details set out within the specification A2.4 Part 1 of 4 particular specification document	1	item			
K	Contractor shall be aware that drawings are indicative only including the minimum ope sizes; It will be the contractors responsibility in conjunction with their in-house M&E services coordinator to produce construction stage builders works drawings for DT comment	1	item			
L	Provide safe access and task lighting for electrical sub-contractor to all sections of school roofspace	1	item			
M	Provide safe access for electrical sub-contractor to all sections of the site	1	item			
N	The M&E installation within the SEN accommodation is to be a fully recessed installation. The contractor shall include for casting in of all electrical services and recessing of all radiators within the wall panels	1	item			
P	Seal all incoming services to prevent ingress of vermin	1	item			
Q	Fire Stopping to all services penetrations throughout	1	item			
R	Attendance to electrical sub-contractor	1	item			
S	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
B	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
C	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
D	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
E	Provide temporary power supplies (3 phase 400V and maximum loading 15kVA) for welding, handtools, and for commissioning, including infrastructure and all charges fot the contractors use of the facility.	1	item			
F	Provide scaffolding additional to the main contractors standing scaffolding, or access towers if required.	1	item			
G	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day	1	item			
H	Provide facilities for safe removal and disposal of all materials off site	1	item			
J	Provide a week by week program detailing the Mechanical and Electrical service activities	1	item			
K	Provide for heating / drying out the building as and when necessary to comply with their program. This may be done (at the clients specific consent) with the installed conventional heating system (if available). Be responsible, however, for providing the fuel to do this. Be responsible for maintaining background heat until the building is handed over to the client, after the heating system has been commissioned	1	item			
L	Provide and maintain the specific temperatures and humidity levels	1	item			
M	Provide Builders Attendances to all utility services as follows; Gas Networks Ireland, Eir, Virgin Media, Local Authority, ESB Networks.	1	item			
N	Fire stopping requirements of all services penetrations through fire compartment structures to be the responsibility of the building contractor. In addition, all pipework, ductwork, containment and service penetrations shall be fire-stopped where passing through every wall, floor and ceiling regardless if its a fire compartment or not by main contractor. Refer to M&E services drawings indicating main routes of M&E infrastructure. All instances of firestopping shall be labelled and certified using CE certified products including fire-pillows for use inside electrical trunkings.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Unload, hoist, distribute and place in position the following items of heavy plant and equipment					
A	Main switch board	1	item			
B	Sub-distribution boards	1	item			
C	MCC panel	1	item			
D	Containment	1	item			
E	Cabling	1	item			
F	Lighting	1	item			
G	PV Panels	1	item			
	Sundries & Builders Work					
	General					
H	Marking positions of holes, mortices and chases	1	item			
J	Testing & Commissioning	1	item			
K	Preparing drawings of "as completed" installations	1	item			
L	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
M	Keys, tools and spares	1	item			
	Forming or cutting holes/mortices/chases and the like; including sleeves/plates, intumescent collars; making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
N	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
P	cutting or forming opes is deemed to include the making good and sealing of the ope		note			
	Cutting or forming holes through existing external walls various thicknesses; include for building in sleeves; making good all finishes on completion					
Q	440mm x 225mm opes	2	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Cutting or forming holes through existing internal walls various thicknesses; include for building in sleeves; making good all finishes on completion					
A	440mm x 225mm opes	5	nr			
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification P12					
	Special works were services pass through structures; existing external walls various thicknesses, making good all finishes on completion					
B	440mm x 225mm opes	2	nr			
	Special works were services pass through structures; existing internal walls various thicknesses, making good all finishes on completion					
C	440mm x 225mm opes	5	nr			
				To Collection €		

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/39					
Page No. Lot 4.1 Works Con/40					
Page No. Lot 4.1 Works Con/41					
Page No. Lot 4.1 Works Con/42					
Page No. Lot 4.1 Works Con/43					
Page No. Lot 4.1 Works Con/44					
Page No. Lot 4.1 Works Con/45					
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Page No. Lot 4.1 Works Con/49					
Page No. Lot 4.1 Works Con/50					
Page No. Lot 4.1 Works Con/51					
Page No. Lot 4.1 Works Con/52					
Page No. Lot 4.1 Works Con/53					
Page No. Lot 4.1 Works Con/54					
Page No. Lot 4.1 Works Con/55					
Page No. Lot 4.1 Works Con/56					
Page No. Lot 4.1 Works Con/57					
Page No. Lot 4.1 Works Con/58					
Page No. Lot 4.1 Works Con/59					

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(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/60					
(6-) ELECTRICAL INSTALLATION **Carried to Summary**					

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND					
	EXCAVATION AND EARTHWORK					
	Excavation					
	Excavation					
	Reduce levels					
A	Depth between not exceeding 2.00m	72	m3			
	Extra on Excavation Items for:					
	Breaking up existing					
B	Hard surfaces; Tarmacadam surface; 100mm thick; complete	103	m2			
	Disposal					
	Water					
C	Surface	1	item			
D	Ground	1	item			
	Excavated material; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
E	Disposal off site	62	m3			
F	Disposal off site; existing Tarmac; Disposal to a suitable licensed waste disposal facility	11	m3			
	Filling with hardcore to be obtained off-site; clean angular gravel 20mm, free from pyrite and macarsite as per specification					
	To make up levels					
G	Average thickness not exceeding 250mm	11	m3			
	Filling with hardcore to be obtained off-site; Clause 804 crushed stone well compacted on firm clean formation; compliant with TII Publications series 800, free from pyrite and macarsite as per specification					
	To make up levels					
H	Average thickness not exceeding 250mm	11	m3			
				To Collection €		

	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)				
	Filling with granular fill material to be obtained off-site; Class 6F2 compliant with TII Publications series 600, free from pyrite and macarsite; depositing in 150mm layers maximum thickness; compacting; as per Drawings and Specification				
	To make up levels				
A	Average thickness exceeding 250mm	31	m3		
	Surface treatments				
	Levelling and compacting; bottom of excavations				
B	Horizontal	103	m2		
	CONCRETE WORK				
	In-situ Concrete				
	Concrete cubes for testing				
	Provide for making concrete cubes from freshly mixed concrete; transporting and testing cubes; all as per details in the Specification				
C	Size 150 x 150 x 150mm	4	nr		
	In-situ Concrete; Reinforced				
	Grade C40/5-XF4 to IS EN 206				
	Beds				
D	Generally; Reinforced	21	m3		
	Surface Finishes				
	Brushed finish to wet concrete as per Specifications				
E	Generally	103	m2		
	Reinforcement				
	Fabric				
	A252 mesh reinforcement; 350mm laps; 350mm end laps; all in strict accordance with the Engineers Drawings and Specification				
F	Horizontal	103	m2		

To Collection €

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Formwork					
	Formwork Generally					
	Sides of beds					
A	Height or width 250 - 500mm	63	m			
B	Extra over for forming recess in floor slab for district heating pipe; comprising 65mm dia x 400mm deep recess; include for cutting to all angles and corners	5	nr			
	SURFACE PAVINGS, FENCING AND LANDSCAPING					
	Fencing					
	Paladin Fencing; Steel mesh and wire fence to I.S. EN 10223, comprising striped mesh using 6mm horizontal wire at 145mm centres, reducing to 50mm centres on the V crimp, 4 mm wires structured with 2 No. wires at 40mm centres and 4 No. wires at 20mm centres to give a striped effect; all finished in polyester powder coating to I.S. EN 15773 & I.S. EN 12206; include for 60 x 60 x 2mm hot dipped galvanized steel posts to I.S. EN9 ISO 1461: 199 after fabrication and subsequently eletrostatically powder coated in a plant conforming to EN 1722 Part 16; post centres maximum 2080 mm; fixings: steel clips with 8 mm anti-vandal bolts; 350 x 350 x 600mm Grade C30/37 concrete bases set 100mm below ground level; all as per Specification and Drawings					
	Paladin Fencing System					
C	1800mm high above ground level	28	m			
	Extra over for					
D	Angle posts; 60x60x2 SHS posts, 1800mm high above ground level and 900mm below ground level; set in 450x450x600mm deep concrete grade C28/35 base	4	nr			
	Gates					
E	Single gate; opening size approx 1000 x 1800mm high	2	nr			
	100x100x10 SHS hot dipped galvanised SHS powder coated post; gate posts set in 1000x1000x1000mm C28/35 concrete pocket; top of concrete 300mm below ground level; galvanised to Specification and polyester powder coating to Specification in selected colour, colour to be chosen by the Architect from samples provided on site by the Contractor; complete					
	Gate Posts					
F	100 x 100 SHS posts; 1800mm high above ground level and 900mm below ground level; min 600mm embedment in concrete	4	nr			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Ball stop netting (over gas compound); Description: Ball stop netting system installed over the full area of the gas tank compound, fixed to and supported from the top of paladin fencing, including all necessary supports, cables, brackets and fixings; Manufacturer: Submit proposals; Performance: Complete external system to prevent ingress of balls; Contractor to design system including supports and fixings; Allow for wind loading and avoid overloading fence, provide independent supports if required; Maintain safe clearances to all gas infrastructure and access routes; Netting; Material: UV stabilised HDPE or polypropylene; Colour: Black or green; Mesh size: Max 48 mm; Twine: Min 3 mm; Cables and fixings: Stainless steel or galvanised steel support cables with tensioning gear, non-corroding proprietary fixings; Support steelwork: Galvanised steel brackets/arms as required; Execution: Install taut and secure to manufacturers recommendations; Provide access/demountable sections where required; Do not overstress or modify fence without approval; Submittals: Product data, layout drawings and structural calculations.; all as per Specification and Drawing					
	Ball stop netting					
A	Exceeding 300mm wide	48	m2			

				€	c
(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/63					
Page No. Lot 4.1 Works Con/64					
Page No. Lot 4.1 Works Con/65					
Page No. Lot 4.1 Works Con/66					
(30) SITE ENCLOSURES - PLANT COMPOUND **Carried to Summary**					

					€	c
	(50) SITE SERVICES - GAS					
	DRAINAGE/SERVICES - GAS MAIN					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 1nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average Depth 500 - 1000mm	21	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	11	m			
E	Excavating existing grass and making good to match existing after excavation and drainage runs have been laid	10	m			
	Around existing services crossing excavations					
F	Storm pipe; crossing excavations	3	nr			
G	Foul pipe; crossing excavations	2	nr			
H	ESB; crossing excavations	2	nr			

To Collection €

					€	c
	(50) SITE SERVICES - GAS (Cont)					
	Disposal					
A	Ground Water	1	item			
B	Surface Water	1	item			
	Sand bed and surround; to Engineer's Specification					
	Beds and surrounds					
C	290 x 215mm, to 90mm pipes / ducts	21	m			
	PVC marker tape "Heptape" or equivalent					
D	Continuous strip laid during trench backfill, 100mm above pipework	21	m			
	Mechanical Installations					
	Gas pipework as per Engineer's Specification & Gas Suppliers details; complete					
	Pipework					
E	Installation only of gas pipework; size: 90mm; pipe to be supplied by Gas Supplier; complete	21	m			
	Tank					
F	Contractor to provide attendances to supplier of 1 Tonne Gas Tank; complete	3	nr			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
G	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
H	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
J	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
K	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
L	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

					€	c
	(50) SITE SERVICES - GAS (Cont)					
A	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			
B	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			
C	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

				€	c
(50) SITE SERVICES - GAS (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/68					
Page No. Lot 4.1 Works Con/69					
Page No. Lot 4.1 Works Con/70					
(50) SITE SERVICES - GAS **Carried to Summary**					

					€	c
	(50) SITE SERVICES - DISTRICT HEATING					
	DRAINAGE/SERVICES - DISTRICT HEATING					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average depth 500 - 1000mm	55	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	35	m			
E	Excavating existing grass and making good to match existing after excavation and drainage runs have been laid	20	m			
	Around existing services crossing excavations					
F	Storm pipe; crossing excavations	3	nr			
G	Foul pipe; crossing excavations	2	nr			
H	ESB; crossing excavations	2	nr			

					€	c
	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
	Disposal					
A	Ground water	1	item			
B	Surface water	1	item			
	Sand bed and surround; to Engineer's Specification					
	Beds and Surrounds					
C	475 x 225mm; to 2nr 100mm duct	55	m			
	PVC marker tape; "Heptape" or equivalent					
D	Continuous strip; laid during trench backfill; 100mm above pipework	55	m			
	Ductwork					
	100mm diameter					
E	Laid in trenches	109	m			
F	Extra over for easy sweep bends	4	nr			
G	Extra over for ducts capped for Biomass connection	2	nr			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
H	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
J	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
K	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
L	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
M	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
N	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

					€	c
	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
A	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			
B	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

				€	c
(50) SITE SERVICES - DISTRICT HEATING (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/72					
Page No. Lot 4.1 Works Con/73					
Page No. Lot 4.1 Works Con/74					
(50) SITE SERVICES - DISTRICT HEATING **Carried to Summary**					

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS					
	(50) SITE SERVICES (MAINLY MECHANICAL) - WORKS IN CONNECTION WITH BIOMASS UNIT					
	System					
	Biomass unit mechanical connections, installation, testing and commissioning; complete; The Biomass unit shall be supplied by others under a separate contract; The Contractor shall coordinate all interface requirements to ensure a fully operational installation; Prior to handover, the Contractor shall provide commissioning certification confirming that all required cleaning, flushing and water treatment procedures have been correctly carried out; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2/A Part 10, 2/B Part 17; Volume 3; Volume 4 and Drawings 4.1(5-)M004, 4.1(5-)M007					
	Primary Equipment					
	Biomass unit ancillary works; Provide all labour, materials and ancillary works necessary for the coordination and completion of all mechanical connections associated with the installation, testing, commissioning and operation of the biomass boiler plant (biomass unit supplied by others under a separate contract), including all plant room interface connections and associated mechanical services works; complete; all in strict accordance with the Mechanical Engineer's Specification					
D	Biomass unit ancillary works; Location: External plant compound	1	nr			

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

Distribution

Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B

A	80mm diameter pipework	1	item		

Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B

B	80mm diameter pipework	1	item		

Insulation

Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

Insulation, 65mm thick

C	to 80mm diameter pipework	1	item		

Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

D	General Valve & Plant	1	item		

Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B

E	to 80mm diameter pipework	1	item		
F	General Valve & Plant	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
B	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like	1	item			
	(50) SITE SERVICES (MAINLY MECHANICAL) - MAINS WATER					
	System					
	Mains Water connections to biomass unit installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.1(5-)M004, (5-)M007					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of MWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
H	28mm Isolation valves	2	nr			

	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
A	28mm Non-return valves	1	nr			
	Strainer valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
B	28mm Strainer valves	1	nr			
	Distribution system					
	Polyethylene pipework and fittings; all in strict accordance with the Mechanical Specification					
C	28mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
D	to 28mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
E	General Valve & Plant	1	item			
	Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B					
F	to 28mm diameter pipework	1	item			
G	General Valve & Plant	1	item			

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
A	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
B	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
C	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
D	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
E	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
F	Identification plates, labels and the like; complete	1	item			
	(50) SITE SERVICES (MAINLY MECHANICAL) - LPG GAS					
	System					
	LPG Gas installation testing and commissioning; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Section 8, 2/B Section 16 and Drawing 4.1(5-)M004, (5-)M007					
	Equipment					
	LPG gas tanks; supply and installation; complete; Capacity: 1 tonne; Dimensions: 1000mm Diameter, 3000mm length; Mechanical attendances in connection with the installation of LPG gas tanks; including all necessary pipework connections, valves, regulators, fittings, supports, accessories, testing and commissioning as required to provide a complete installation; all in accordance with the Mechanical Engineers Specification Volume 2/A.					
G	LPG Gas Tank	3	nr			
				To Collection €		

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Accessories associated with primary equipment					
	1st Stage Regulator; supply and installation Complete; all in strict accordance with the Mechanical Specification Part 1, Section 7.3					
A	1st Stage Regulator	1	nr			
	Second stage regulator c/w tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2/A					
B	2nd Stage Regulator	1	nr			
	Isolating Valves; supply and installation; complete; include for all accessories; all in strict accordance with the Mechanical Specification Volume 2/A					
C	125mm Isolation Valves	2	nr			
	Pressure Gauge; supply and installation; complete; include for all accessories;all in strict accordance with the Mechanical Specification Volume 2/ A					
D	125mm Pressure Gauge	2	nr			
	Pressure relief valve; supply and installation; complete; include for all accessories; all in strict accordance with the Mechanical Specification Volume 2/A					
E	125mm Pressure relief Valve	1	nr			
	Tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
F	Tamper proof, lockable metal caging	1	nr			
	Distribution System					
	HDPE pipes and fittings; all in strict accordance with the Mechanical Specification Volume 2					
G	125mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
H	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(50) SITE SERVICES - TRACE HEATING					
	System					
	Trace Heating installation, testing and commissioning; complete; Trace heating shall be installed on all the water systems where they travel externally between building blocks; Trace heating shall be provided complete with control panels and all required components to prevent system freezing. Capacity of trace heating shall maintain water temperature above 3°C when ambient temperature is -15°C. Trace heating temperature control shall prevent water temperature rising above 10øC. Trace heating system to incorporate air control thermostats and pipework safety cut out thermostats. All trace heating circuits shall be linked to BMS to provide status and fault indication on BMS; Supply electric trace heating complete with fixing tape, shrink sleeves, crimps, junction boxes and controls; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2; Volume 3; Volume 4 and Drawings					
	Primary Equipment					
	Trace heating control panel; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule					
F	Trace heating panel; Location: Plant room	1	nr			

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Accessories associated with Primary Equipment					
	Self-regulating heating tape; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule					
A	Self-regulating heating tape	1	item			
	Air control thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule					
B	Air control thermostats	1	item			
	Safety cut out thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule					
C	Safety cut out thermostats	1	item			
	Insulation					
	Modified polyolefin electrical insulation; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule					
D	80mm diameter pipework	1	item			
E	Valves and Plant; generally	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
G	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
H	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
J	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
K	As built drawings	1	item			
				To Collection €		

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Identification plates, labels and the like; all in accordance with Engineers Specification					
A	Identification plates, labels and the like	1	item			

				€	c
(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/76					
Page No. Lot 4.1 Works Con/77					
Page No. Lot 4.1 Works Con/78					
Page No. Lot 4.1 Works Con/79					
Page No. Lot 4.1 Works Con/80					
Page No. Lot 4.1 Works Con/81					
Page No. Lot 4.1 Works Con/82					
Page No. Lot 4.1 Works Con/83					
Page No. Lot 4.1 Works Con/84					
(50) SITE SERVICES (MAINLY MECHANICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES					
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER TO BIOMASS UNIT					
	System					
	Power to Biomass Unit installation, testing and commissioning; complete; The electrical contractor shall provide all wiring and power supplies associated with the external Biomass Unit as detailed on the wiring schematic; all underground electrical services cables shall be distributed within ducts; separate underground service ducts shall be provided as part of the builders works element; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 - Section A and Drawings 4.1(5-)M004					
D	Biomass Power Installation	1	item			
	Accessories associated with terminal equipment					
	Rotary Isolator Switch; supply and installation (including wiring & terminations); complete; surface mounting; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification Volume 2					
E	Rotary Isolator; TPN; 50amp; IP65	1	nr			
				To Collection €		

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board, located in the existing switch room; Sub-mains distribution outside the building shall be via XLPE/LZOH/SWA armoured cables laid in underground ducts; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Volume 2, Section A and Drawing 4.1(60)E001					
A	Submains; Existing switch board to Biomass Unit-1; 1 x 4c 35sq.mm XLPE/LZOH/SWA + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers specification documents and drawings					
C	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers specification documents and drawings					
D	Operating and maintenance manuals; complete	1	nr			
	Working drawings; all in accordance with the Electrical Engineers specification documents and drawings					
E	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers specification documents and drawings					
F	Co- ordination drawings; complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers specification documents and drawings					
G	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers specification documents and drawings					
H	Identification plates, labels and the like; complete	1	item			
				To Collection €		

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					

To Collection €

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
COLLECTION					
Page No. Lot 4.1 Works Con/86					
Page No. Lot 4.1 Works Con/87					
Page No. Lot 4.1 Works Con/88					
(60) SITE SERVICES (MAINLY ELECTRICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
C	The contractor shall also ascertain whether or not there are any E.S.B. cables on the site and arrange for their removal so that it does not delay site progress. All, redundant site services/site services made redundant, for all utilities and services, will be removed as part of the contract.	1	item			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr ducts not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported hardcore; disposal of surplus soil off site; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
D	Average depth 500 - 1000mm	55	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
E	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	35	m			
F	Excavating existing grass and making good to match existing after excavation and drainage runs have been laid	20	m			
	Around existing services crossing excavations					
G	Storm pipe; crossing excavations	3	nr			
H	Foul pipe; crossing excavations	2	nr			
				To Collection €		

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)					
A	ESB; crossing excavations	2	nr			
	Disposal					
B	Ground water	1	item			
C	Surface water	1	item			
	Plain in-situ concrete bed and surround; minimum 150mm bed; Class 16/20; leanmix concrete backfill; as per Engineer's Drawing					
	Beds and Surrounds					
D	595 x 325mm; to 2nr ducts	55	m			
	PVC Red marker tape; "Heptape" or equivalent					
E	Continuous strip; laid during trench backfill; 100mm above pipework	55	m			
	PVC Yellow marker tape; "Heptape" or equivalent					
F	Continuous strip; laid during trench backfill; 300mm above pipework	55	m			
	Ductwork; uPVC duct; LV Duct					
	110mm dia.; include for draw-wire					
G	Laid in trenches	55	m			
H	Extra over for easy sweep bends	2	nr			
J	Extra over for ducts capped for Biomass connection	1	nr			
	Ductwork; uPVC duct; Comms Duct					
	110mm dia.; include for draw-wire					
K	Laid in trenches	55	m			
L	Extra over for easy sweep bends	2	nr			
M	Extra over for ducts capped for Biomass connection	1	nr			
				To Collection €		

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)

Chambers

Draw pit chamber; complete; excavating pits from stripped level 1000x1000x800mm deep internally; dispose of surplus soil; grading bottom; earthwork support; open bottom pit filled with 50mm course gravel for drainage; RC3 concrete base on 50mm blinding grade gen 3; Concrete roof slab grade C25 c/w opening for cover and frame; 225mm thick Class B engineering brickwork in english bond; Walls: 1000mm high with 50mm rebate for removable cover; include for openings for ducts; Heavy duty cast iron cover and frame to Engineer's Specification bedded in epoxy mortar; include for step irons; all pvc pipes to fall away from building and all pits should not waterlog; pipes to be buried 750mm below ground level; include for backfilling to sides of chamber where necessary; all in accordance with the site plan Drawing

A	Average depth not exceeding 1000mm	3	nr		
	Sundries				
B	Allow for sealing all incoming service ductwork to prevent ingress of damp, dirt and vermin	1	item		
C	Allow for clearance between Telecom ducts and ESB ducts and cables over 650 volts; of 300mm vertical clearance at crossings and 600mm lateral clearance in parallel trenches	1	item		
D	Allow for clearance between ESB ducts and cables and other service ducts; 150mm vertical clearance at crossings and 300mm lateral clearance in parallel trenches	1	item		
E	Provide for all necessary attendances on ESB to include liaising with ESB before, during and after installation of electrical services and providing and making available site data for their use	1	item		
F	Provide markings/signage of ESB cables at locations as agreed with Local Engineering Officer and in accordance with ESB Specifications; as per Engineer's Drawing	1	item		
G	Provide all necessary attendances and builders work in association with disconnecting and removing existing underground ESB supply; complete	1	item		

To Collection €

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)

COLLECTION

Page No. Lot 4.1 Works Con/90

Page No. Lot 4.1 Works Con/91

Page No. Lot 4.1 Works Con/92

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT
Carried to Summary

		€	c
SUMMARY	**Page No.**		
(10) DEMOLITIONS AND ALTERATIONS	Lot 4.1 Works Con/2		
(31) EXTERNAL WALL COMPLETIONS	Lot 4.1 Works Con/4		
(35) & (45) CEILING FINISHES	Lot 4.1 Works Con/6		
(5-) MECHANICAL INSTALLATION	Lot 4.1 Works Con/38		
(6-) ELECTRICAL INSTALLATION	Lot 4.1 Works Con/62		
(30) SITE ENCLOSURES - PLANT COMPOUND	Lot 4.1 Works Con/67		
(50) SITE SERVICES - GAS	Lot 4.1 Works Con/71		
(50) SITE SERVICES - DISTRICT HEATING	Lot 4.1 Works Con/75		
(50) SITE SERVICES (MAINLY MECHANICAL)	Lot 4.1 Works Con/85		
(60) SITE SERVICES (MAINLY ELECTRICAL)	Lot 4.1 Works Con/89		
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT	Lot 4.1 Works Con/93		
TOTAL AMOUNT CARRIED TO GENERAL SUMMARY			
Lot 4.1 Works Con/1 - Lot 4.1 Works Con/93.			

4.2 - Bailieborough Community School

					€	c
	(10) DEMOLITIONS AND ALTERATIONS					
	DEMOLITION & ALTERATIONS					
	GENERAL					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYER'S REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Demolitions					
	Removing					
	Fittings and Fixtures					
B	Existing External double door and frame; approx 1650mm wide x 3160mm high; include all fittings, architrives, liners etc; diposal of all material off site	1	nr			
	Removing Finishes					
C	Existing ceiling finishes to certain locations within existing building; disposal of all materials off site; prepare ceilings to receive new finishes	83	m2			
	Plumbing and Engineering Installations					
D	Removal and disposal of existing oil tanks; include for grubbing up and disposal of all associated pipework; include fittings, etc.; include for disposal & making good where necessary; backfilling with Grade C16/20 S3 lean mix to Engineer's Satisfaction; complete	1	Item			

				€	c
(10) DEMOLITIONS AND ALTERATIONS (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/1					
(10) DEMOLITIONS AND ALTERATIONS **Carried to Summary**					

					€	c
	(31) EXTERNAL WALL COMPLETIONS					
	METALWORK					
	Non-Structural					
	ALUMINUM DOORS INCLUDING LOUVRE DOORS; The successful contractor will be responsible for the design, supply, fabrication, and installation of the doors all in accordance with the best building practices and systems supplier#s recommendations; The contractor will be responsible for providing all proposals, drawings, samples etc required to satisfy the requirements of the tender and also to demonstrate that the contractor is competent and able to execute the works in a proper and timely manner; The contractor will be responsible but not limited to providing the design team the following documentation in advance of any works been commenced; Providing all test data covering all the proposed systems; After the contractor has been awarded the project they must provide the design team the following prior to any work commencing; A full set of detailed shop drawings showing all the relevant interfaces, systems junctions, flashing details, glass types, and indicting all the surfaces being painted; include for inbuilt screen; as per Architect's specification					
	Composite Items; Doorsets (Louvred Doors)					
A	External double Door; overall opening size (including frame) 1650mm wide x 3160mm high; comprising 2nr louvred door size 825mm wide x 3160mm high; complete	1	nr			
				To Collection €		

				€	c
(31) EXTERNAL WALL COMPLETIONS (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/3					
(31) EXTERNAL WALL COMPLETIONS **Carried to Summary**					

					€	c
	(35) & (45) CEILING FINISHES					
	FLOOR, WALL & CEILING FINISHES					
	Suspended Ceiling					
	Proprietary suspended ceiling system; Manufacturer: Submit proposals for Architects approval; Product reference: CasoLine MF suspended ceiling system- or equivalent to Architect#s approval; Suspension system; Hanger type: Gypframe MF8 strap hangers; Top fixings: Gypframe MF12 soffit cleats fixed to concrete soffit or metal deck; Primary grid centres: 1200 mm. Hanger centres: 900 mm; Secondary grid centres: 400 mm; Linings: 1 x 12.5 mm Gyproc WallBoard, Gyproc moistureproof green board where noted on RCP's and in a wet area; Insulation: none; Access Units: Gyproc Profilex access panels; Finishing: Taped seamless finish; Primer/ Sealer; Type: 1 coat of Gyproc Drywall Primer (2 coats where noted as moistureproof green board; Accessories: none; all as per Architects Specification					
	Ceilings; fixed below floor structure					
A	Depth of suspension 500mm - 1000mm	83	m2			
	PAINTING AND DECORATING					
	Painting					
	Emulsion paint; To internal plastered surfaces and fairfaced blockwork; Manufacturer: Submit proposals for Architects approval; Product reference: Dulux trade Diamond Matt (water based tough Scrubbable Matt emulsion); Surfaces: Internal plastered surfaces; Preparation: Tape and fill joints; Initial coats: 40% thinned primer.Thinning Sealing new or bare surfaces: Add up to 1 part clean water to 10 parts paint; Number of coats: 2; Undercoats: As recommended by manufacturer; Number of coats: As recommended by manufacturer; Finishing coats: Washable matt vinyl; Number of coats: 2; all as per Architects Specification					
	Ceilings					
B	Exceeding 300mm	83	m2			

To Collection €

				€	c
(35) & (45) CEILING FINISHES (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/5					
(35) & (45) CEILING FINISHES **Carried to Summary**					

					€	c
	(5-) MECHANICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Strip out and disposal offsite of existing boiler room plant including boilers, associated flues and pipework, pump sets, valves, pressurisation unit and expansion vessel; isolate, drain down, disconnection equipment in co-ordination with installation and commissioning of new works; remaining systems to stay operational during decommissioning works, required down-time to be coordinated in advance and carried out during out-of-hours; all in accordance with the Mechanical specification and Drawings 4.2(5-)M003	1	item			
C	Removal of existing oil tank; isolate, drain down, disconnect, remove and dispose offsite existing oil tank and pipework; all in accordance with the Mechanical specification and Drawing 4.2(5-)M003	1	item			
D	Modifications to existing secondary heating circuit flow/return pipework to facilitate connections to new 250mm diameter header (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.2(5-)M004	1	item			
E	Modifications to existing hot water circuit flow/return pipework to facilitate connections to new Calorifier (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.2(5-)M004	1	item			
F	Modification to existing mains water supply pipework to facilitate reconnection to new pressurisation unit (measured elsewhere); including isolation, draindown, pipe alterations, fittings, valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.2(5-)M004	1	item			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Enabling works to facilitate connection into existing cold water supply pipework serving new calorifier (measured elsewhere); including provision of isolation valves, non-return valves, fittings, reducers, supports, flushing, pressure testing, and full reinstatement of insulation and finishes; all shutdowns to be agreed in advance and carried out outside normal operating hours; all in accordance with the Mechanical Specification and Drawing 4.2(5-)M004	1	item			
	ASBESTOS REMOVAL					
	DEMOLITION & ALTERATIONS					
	General					
B	The following items are not measured in strict accordance with ARM.		note			
C	The Contractor is refered to the Pre Refurbishment & Demolition Asbestos Survey		note			
D	The Contractor must ensure that any risk of exposure to asbestos is completely eliminated. Contractor to consult with Employer's Representative before any work commences on site.	1	item			
E	The Contractor is advised that there is a notification form to be used for any work involving asbestos. This form must be submitted 28 days prior to the start of such work.	1	item			
F	The Main Contractor / PSCS must appoint a specialist asbestos removal contractor to carry out the asbestos removal & disposal works	1	item			
G	Prior to commencing any demolition or construction works on site all asbestos must be removed from site; in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010	1	item			
H	The Main Contractor / PSCS must appoint a competent independent analyst / accredited laboratory for the purpose of undertaking air sampling, project monitoring and issuing site clearance for reoccupation certification; in conformance with ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories	1	item			
J	Prior to commencing the asbestos removal works the specialist contractor shall submit (to the PSDP & Employer's Representitive) their Plan of Work (risk assessment / method statement), Design Risk Assessment, and temporary works certificates for the Asbestos Removal works (at least 21 days in advance of commencing the asbestos removal works)	1	item			
K	Prior to commencing the asbestos removal works the specialist contractor shall submit their Plan of Work (risk assessment / method statement), and notify, to the HSA (at least 14 days in advance of commencing the asbestos removal works). The PSCS must also ensure that copies of the notifications are forwarded to the PSDP, Client & Project Manager	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	No works may take place on site until the Plan of Work has been drawn up and approved by the Main Contractor / PSCS	1	item			
B	No deviations shall be permitted from the plan of work submitted to the HSA	1	item			
C	Should the Plan of Work require amending / updating (for whatever reason) it must be issued to the PSDP & Project Manager in the first instance, and then the HSA, prior to proceeding with any proposed changes	1	item			
D	No asbestos removal works may take place in areas occupied by normal construction / project personnel and / or third parties	1	item			
E	An asbestos site clearance for reoccupation certificate(s) must be supplied (by the competent independent analyst / accredited laboratory) to the PSDP & Project Manager prior to commencing any demolition or construction works on site (other than the asbestos removal works); the certificate(s) must include (1) Visual inspection, (2) Air monitoring and (3) The decontamination unit	1	item			
F	After completing Asbestos Removal works the PSCS must ensure that asbestos site clearance for reoccupation certificates are issued to the Project Manager, PSDP, and Client PRIOR to allowing those areas to be opened up to persons (other than those persons directly involved in the asbestos removal works)	1	item			
G	NO Asbestos Containing Waste Material may be removed from the site unless a Waste Transfer Form (removal of Hazardous Waste Material from Site) has been completed and issued to the PSCS / Main Contractor, the PSDP & Project Manager	1	item			
H	The PSCS / Main Contractor must forward copies of final disposal certificates (i.e. completed Waste Transfer Form (final disposal of Hazardous Waste Material)) to the PSDP & Project Manager	1	item			
J	The PSCS / Main Contractor must forward, the following information (as applicable) to the PSDP, for inclusion in the Safety File; Bulk sample results, Amended Asbestos Register, Preliminary Safety & Health Plan and Specification, Specialist asbestos removal contractor Plan of Work, Notification to the Health and Safety Authority, Air monitoring results prior to removal works commencing, Air monitoring results during removal works, site clearance for reoccupation certificates, Completed Waste Transfer Form for the final disposal of all asbestos / hazardous waste.	1	item			
K	All asbestos works must be carried out in accordance with; The HSA 2010 Code of Practice for Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001, The Safety Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010, The HSA Guidelines on Working with Materials Containing Asbestos Cement (and any subsequent amendments updates to HSA Guidelines and / or Codes of Practice)	1	item			
L	Contractor to include here (Unless included in rates elsewhere) for protection of all fixtures, fittings and finishes to all areas in which asbestos removal occurs	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Alterations					
A	The Contractor must note that the safe and proper removal and disposal of all asbestos material is the Contractor's full responsibility and therefore the contractor's price/rates must include for all work in connection with same; no claims on the grounds of want of knowledge will be entertained whatsoever.	1	item			
	Removing Finishes; Asbestos Material					
B	Submit Plan of Work and 14 day prior notification to the Health & Safety Authority	1	item			
C	Setup Decontamination Unit & Form Enclosures	1	item			
D	Specialist removal and disposal of asbestos-containing valves in accordance with all relevant safety and environmental regulations.	1	item			
E	Specialist removal and disposal of asbestos - asbestos in loose slates , cement products in ground floor boiler room near pipework 001 - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
F	Specialist removal and disposal of asbestos - asbestos in rope seal, woven product at oil tank 2 external tank lid 027 - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
G	Specialist removal and disposal of asbestos - asbestos in water tank gaskets - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
H	Environmental clean to achieve clearance certification	1	item			
J	Asbestos Removal & Disposal Certificates	1	item			
K	INAB Accredited Asbestos Clearance Certification					
L	Reassurance Air Monitoring and Re-occupation Clearance Certification by an Asbestos Consultant	1	item			
	Notes					
M	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
N	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
				To Collection €		

(5-) MECHANICAL INSTALLATION (Cont)

A Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist. — note

ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS

(51) HEATING CENTRE

System

Heating center installation, testing and commissioning; consisting of 1nr Biomass boiler (Primary heating source) and 3nr LPG gas fired condensing boilers (secondary heating source) serving radiators throughout the building; the installation shall include a pressurisation unit, expansion vessel, pipework, shunt pumps and all associated valves; existing flow rates to be recorded prior to works and re-established at the end of the works; The heating system shall be flushed and provided with appropriate chemical treatment; Commissioning results including a flue gas analysis shall be provided for the boilers prior to handover, along with a statement by the manufacturer/supplier confirming their correct and efficient operation; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/6. Heating System, Section B (56) Heating System Pipework; Volume 3; Volume 4 and Drawings 4.2(5-)M004

Primary Equipment

Boiler; supply and installation complete; Type: Forced draught condensing pre-mix fully modulating boiler; Fuel: LPG; Heat exchanger: Stainless steel; Casing: Steel; Insulation: 50mm rockwool; Output 229.4kW; Flow rate: 2.7kg/s; Flow Temperature: 80°C; Return Temperature: 60°C; Max water side pressure differential: 50kPa; Rated pressure: 6 bar; Efficiency: 96% seasonal efficiency; Accessories: Safety valve, Pressure Gauge, Temperature Gauge, Drain cock; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications Volume 3 - Equipment Schedules

B Boiler; Ref: B-01 - B03; Location: Plant Room — 3 — nr

Accessories associated with Primary Equipment

Stop valves for isolation of LPHW pipework up to 65mm Dia; Type: Lever operated, Brass full bore ball valve, WRC approved; Materials: to suit steel tube: Bronze or DZRR copper alloy body; Chrome or nickel plated DZR sphere with full bore flow aperture. PTFE seals and stem seals. Anti-blowout stem; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B

C 50mm Stop valves — 7 — nr

To Collection €

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Stop valves for isolation of LPHW pipework over 65mm Dia; Type: Lever operated, controlled elastomer compression on flange faces; semi lugged wafer type design, for installation between flanged pipework connections, body to suit IS EN 1092-2; Materials: Cast iron body; stainless steel shaft; aluminium bronze disc; EPDM seat; lever and gear operated valves with long body neck; Seat - Bonded; all in strict accordance with Engineers Specification Volume 2/B					
A	80mm Stop valves	12	nr			
B	125mm Stop valves	9	nr			
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
C	125mm Non-return valves	3	nr			
	Double regulating valve with orifice measurement; Type: Screwed double regulating valves up to 65Dia. Flanged for 65 Dia and above; WRAS approved; Material: To suit steel tube; Material - Cast iron to IS EN 13789; Oblique or Y pattern; copper alloy, nickel alloy or resilient valve face; rising stem outside screw or non-rising stem inside screw; manufacturer's standard materials; Provide drain plug facility; independent means for positive isolation on pressure tapping or adapter. include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
D	50mm Double regulating valve	1	nr			
E	80mm Double regulating valve	1	nr			
F	125mm Double regulating valve	3	nr			
	Pressure Relief Safety Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
G	125mm Pressure relief safety valves	1	nr			
	Motorized valves; maximum power consumption of 1 W; minimum static pressure of 10 bar; differential pressure of 250 kPa; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
H	50mm 2-port motorized valves	1	nr			
J	80mm 3-port motorized valves	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
K	Temperature sensor	8	nr			

To Collection €

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Pressure gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	80mm Pressure gauge	3	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
B	80mm Temperature gauge	4	nr			
	Flexible connections; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
C	50mm Flexible connections	2	nr			
D	80mm Flexible connections	4	nr			
E	125mm Flexible connections	6	nr			
	Capped Ends; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
F	250mm Capped Ends	2	nr			
	Drain Cock; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
G	250mm Drain Cock	1	nr			
	Strainer valve; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
H	80mm Strainer valve	2	nr			
	Pumps; supply and installation; complete; Pump Head: 1; Integrated VSD: No; Variable speed control: N/A Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
J	Pump LPHW, Ref: PB01; Flow rate: 2.744kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
K	Pump LPHW, Ref: PB02; Flow rate: 2.744kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
L	Pump LPHW, Ref: PB03; Flow rate: 2.744kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
M	Pump LPHW, Ref: PHW01; Flow rate: 1.32kg/s; External pressure drop: 100kPa; Temp: 80øc	1	nr			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
A	Pump LPHW, Ref: PH01; Flow rate: 8.232kg/s; External pressure drop: 200kPa; Temp: 80°c	1	nr			
B	Pump LPHW, Ref: PBI01; Flow rate: 4.8kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
	Pressurisation Unit; supply and installation; complete; System: Heating; Fluid: Water; Fluid Temp: 80°C - 60°C; Energy Input: 688.2kW; Minimum expansion vessel size: 610 L; Maximum Fill Pressure: 6 bar; System Height: 8m; Tank Size: 4 L; Fill Rate: 12L/m; No. of Pumps (with auto changeover if multiple) per unit: 2; Maximum Ambient: 20°C; Pump Casing Material: Gun Metal; Pump Shaft Material: Stainless Steel; c/w isolation valve; lockshield valve, strainer on pumps; pressure gauge; air relief valve, pressure relief valve; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
C	Pressurisation Unit; Ref: PU-01; Location: Plant room	1	nr			
	Chemical dosing pot; supply and installation; complete; c/w foot valve; chemical drum; Cleansing; Corrosion inhibitor and wall mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
D	Chemical dosing pot	1	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 8.232L/s; Maximum working temp: 110°C; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework; separator to be capable of separating particles with a size of 5um and larger; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
E	Air/Dirt separator; Ref: DA1	1	nr			
	Unvented Expansion Vessel; supply and installation; complete; include for all accessories, fixings and mounting brackets; complete; include for all fixings and mounting brackets; all in strict accordance with the Mechanical Engineers Specification Volume 2					
F	Unvented Expansion Vessel	1	nr			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Stainless steel flue; supply and installation; complete; External lining: 304 stainless steel; Insulation: 25mm mineral wool; Internal lining: 316 stainless steel; Fire rating: 2 hr to EN 13501; Structure: The detailed design, structural stability including all anchoring of the flue arrangement shall be the sole responsibility of the contractor; Support material: Corrosion proof, treated supports; Flue dimensions: Confirm with combustion equipment supplier prior to ordering; c/w individual modulating air intake control damper and terminated with a propriety cowl; include for all necessary branch fittings, weather roof flashing, rain caps and supports; The flue shall be fitted with adequate supports, offsets, tee's, condensate to drain and termination unit; include for all accessories, fittings and firestopping; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
A	Twin walled flue; Size 125mm diameter	3	nr			
B	Twin walled flue; Size 150mm diameter	1	nr			
	Heat meter; supply and installation; complete; Accuracy Shall be accurate within 1% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
C	Heat Meter; Ref: HM02, HM03, HM04, HM05	4	nr			
	Oil-filled electric radiator; supply and installation; powder coated white finish; radiator control to turn on at 5°C, switch off at 14°C; linked to local temperature sensor, via BMS; c/w mounting brackets; include for all fixings and accessories; in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
D	Oil filled Electric radiator; Output 1kW	1	nr			
	<u>Distribution</u>					
	Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
E	80mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B					
A	40mm diameter pipework	1	item			
B	50mm diameter pipework	1	item			
C	54mm diameter pipework	1	item			
D	80mm diameter pipework	1	item			
E	125mm diameter pipework	1	item			
F	250mm diameter header pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
G	to 40mm diameter pipework	1	item			
H	to 50mm diameter pipework	1	item			
J	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
K	to 80mm diameter pipework	1	item			
	Insulation, 80mm thick					
L	to 125mm diameter pipework	1	item			
M	to 250mm diameter header pipework	1	item			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
A	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
B	to 40mm diameter pipework	1	item			
C	to 50mm diameter pipework	1	item			
D	to 54mm diameter pipework	1	item			
E	to 80mm diameter pipework	1	item			
F	to 125mm diameter pipework	1	item			
G	to 250mm diameter header pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
H	Testing and commissioning	1	item			
J	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
K	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
L	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
M	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
N	As built drawings	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with Engineers Specification					
A	Identification plates, labels and the like	1	item			
	(52) DRAINAGE AND REFUSE DISPOSAL					
	System					
	Soils and Waste Drainage Installation, testing and commissioning; complete; The complete installation of all above ground foul water drainage and refuse disposals; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Section 7, Volume 3, Volume 4 and Drawing 4.2(5-)M005					
	Terminal equipment and fittings					
	Floor Gully; supply and installation; complete; Type: Stainless steel; c/w removable core; include for all fittings and seals; all in accordance with the Mechanical Specification					
B	Floor Gully	1	nr			
	Distribution System					
	Condensate pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; all in strict accordance with the Mechanical Specification Volume 2/A 7.4					
C	28mm nominal diameter; supports at average 1200mm centres vertical, 500mm centres horizontal; ears fixed with screws to background requiring plugging	1	item			
D	32mm nominal diameter; supports at average 1200mm centres vertical, 500mm centres horizontal; ears fixed with screws to background requiring plugging	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
E	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
F	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
G	Working drawings	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Co-ordination drawings; all in accordance with Engineers Specification					
A	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
B	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
C	Identification plates, labels and the like	1	item			
	(53) WATER SERVICES - HOT AND COLD WATER					
	System					
	Cold Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.2(5-)M004					
	Hot Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.2(5-)M004					
	Equipment					
	Calorifier; supply and installation; complete; Capacity: 27kW; Storage Capacity: 1875 litres; Flow temperature: 60°C; Temperature difference: 20K; LPHW flow rate: 0.3kg/s; Electric immeresion: 10kW; Insulation: vessel insulated to U-value of 0.25W/m2K or better; Material: cylinder stainless steel; Efficiency: ErP rating if B or better; Test pressure: 6 bar for cylinder, 10bar for coil; Crossion protection: magnesium electrolytic protection anode; Connections: Cold inlet at base of unit and hot water outlet at top, hwsr 1/3 from top; Electric Immersion Maintenance: Immersions shall be fully removable through flanged, insulated connections; Electric Immersion protection: immersions shall include run dry protection and over temperature; Electric Immersion Trip: Immersion shall include over temperature protection requiring manual reset; c/w Packaged expansion kit, Non-return valve, Pressure relief valve, temperature gauge, cylinder temperature sensor pocket; include for all accessories and fittings; complete; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
D	Calorifier; Ref: C01; Location: Boiler room	1	nr			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
A	50mm Isolation valves	5	nr			
B	54mm Isolation valves	3	nr			
	Stop valves for isolation of CWS/HWS pipework over 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; flanged connections; all in strict accordance with Engineers Specification Volume 2/B					
C	67mm Isolation valves	2	nr			
	Double regulating valve; Type: globe valve c/w macro and micro position indicator, locking mechanism; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
D	54mm Double regulating valve	1	nr			
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
E	50mm Non-return valves	1	nr			
	Pressure Relief Safety Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
F	67mm Pressure relief safety valve	1	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
G	54mm Temperature gauge	1	nr			
H	67mm Temperature gauge	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
J	Temperature sensor, calorifier	1	nr			
	Tundish; supply and installation; complete; c/w mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
K	Tundish	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Magnetic water filter; supply and installation; complete; c/w mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
A	Magnetic water filter	1	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 8.232L/s; Maximum working temp: 110øC; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework; separator to be capable of separating particles with a size of 5um and larger; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
B	Air/Dirt separator; Ref: DA1	1	nr			
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
C	Pump HWR, Ref: PHW02; Flow rate: 1.32kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
	Unvented Expansion Vessel; supply and installation; complete; include for all accessories, fixings and wall mounting brackets; complete; all in strict accordance with the Mechanical Engineers Specification					
D	Expansion Vessel	1	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05l/s of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
E	Water Meter; Ref: WM01	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Distribution					
	Copper pipes and fitting; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
A	35mm diameter pipework	1	item			
B	42mm diameter pipework	1	item			
C	50mm diameter pipework	1	item			
D	54mm diameter pipework	1	item			
E	67mm diameter pipework	1	item			
F	76mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
G	to 35mm diameter pipework	1	item			
H	to 42mm diameter pipework	1	item			
J	to 50mm diameter pipework	1	item			
K	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
L	to 67mm diameter pipework	1	item			
M	to 76mm diameter pipework	1	item			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
A	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
B	to 35mm diameter pipework	1	item			
C	to 42mm diameter pipework	1	item			
D	to 50mm diameter pipework	1	item			
E	to 54mm diameter pipework	1	item			
F	to 67mm diameter pipework	1	item			
G	to 76mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
H	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
J	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
K	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
L	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
M	As built drawings; complete	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
A	Identification plates, labels and the like; complete	1	item			
	(53) WATER DISTRIBUTION - MAINS WATER					
	System					
	Mains Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.2(5-)M004					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
B	28mm Isolation valves	4	nr			
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
C	28mm Non-return valves	2	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05l/s of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
D	Water meter; Ref: WH01	1	nr			
	Distribution system					
	Multi-layer non-matallic pipework and fittings; in accordance with the Irish Standard IS EN 806:2005: Specification for installations inside buildings conveying water for human consumption; include for all fixing brackets, hangers and supports; include for all elbows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Specification					
E	15mm diameter pipework	1	item			
F	22mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	25mm diameter pipework	1	item			
B	28mm diameter pipework	1	item			
C	35mm diameter pipework	1	item			
D	42mm diameter pipework	1	item			
E	54mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
F	to 15mm diameter pipework	1	item			
G	to 22mm diameter pipework	1	item			
H	to 25mm diameter pipework	1	item			
J	to 28mm diameter pipework	1	item			
K	to 35mm diameter pipework	1	item			
L	to 42mm diameter pipework	1	item			
M	to 54mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
N	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
P	to 15mm diameter pipework	1	item			
Q	to 22mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	to 25mm diameter pipework	1	item			
B	to 28mm diameter pipework	1	item			
C	to 35mm diameter pipework	1	item			
D	to 42mm diameter pipework	1	item			
E	to 54mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
F	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
G	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
H	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
J	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
K	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
L	Identification plates, labels and the like; complete	1	item			
				To Collection €		

(5-) MECHANICAL INSTALLATION (Cont)

(54) GAS DISTRIBUTION - LPG GAS SERVICES

System

LPG Gas distribution; installation testing and commissioning; The school building will be fed from a new incoming LPG gas supply, The gas supply shall extend to serve the gas fired boiler within the plantroom; The contractor shall allow for liaising with the gas supplier regarding coordination of works and certification of the site gas pipework and tank installation; LPG installation shall be installed in compliance with IS3213; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.2(5-)M002, 4.2(5-)M004

Accessories associated with Primary Equipment

Stop Valves for isolation of gas pipework 65mm Dia and above; Type: Lever operated (gradual notch) butterfly valves; Construction - Provide controlled elastomer compression on flange faces; semi-lugged wafer type design, for installation between flanged pipework connections; Provide lever and gear operated valves with long body neck for lagging clearance; Seat - Bonded; Materials: Cast iron body; stainless steel shaft; aluminum bronze disc; EPDM seat; Operation - Lever and graduated notch plate; include for all seals; all in strict accordance with Engineers Specification Volume 2

A	80mm Stop valves	5	nr		

Pressure regulator; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2

B	80mm Pressure regulator	1	nr		

Strainer Valves; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2

C	80mm Strainer valves	3	nr		

Flexible connections; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2

D	80mm Flexible connections	3	nr		

Gas meter; supply and installation; complete; Accuracy Shall be accurate within 0.2m3/hr up to maximum valve above; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, no battery backup; Utility Meter: In addition to above, provide utility meters to utility requirements; Utility Meter: Shall be 2m from any window or opening, shall be provide in locked cage (measured elsewhere); include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules

E	Gas Meter; Ref: GM01	1	nr		

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	Tamper proof, lockable metal caging	1	nr			
	Distribution System					
	Medium grade black mild steel pipes and fittings; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; Painted with one primer coat - Zinc phosphate primer), one final coat of ochre yellow paint (Ral 1024; all in strict accordance with Engineers Specification Volume 2					
B	80mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	(54) GAS DETECTION SYSTEM					
	System					
	Gas detection system installation testing and commissioning; A gas detection system will be installed in the heating center comprising of gas detectors, heat detectors, slam shut valve, gas detection panel and emergency lock-stop located adjacent to the boiler room door; The gas detection panel shall be provided with volt free contacts and an I/O interface unit for connection to the schools fire alarm system; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.2(5-)M005					
	Primary Equipment					
	Gas detection control panel; c/w emergency knock-off button, reset button, mute button, LED indication for power on, gas-on and emergency stop; free relay output for the BMS; IP44; CE rated, IEC61779-1; wall mounted; include for all accessories and fittings; all in accordance with the Mechanical Specification Volume 3 - Equipment schedules					
A	Gas detection control panel; Location: Boiler room	1	nr			
	Accessories associated with Primary Equipment					
	Gas Slam Shut Valve; supply and installation; complete; Auto reset on loss of power and fire alarm reset; compliance to EN161 and DIN Class A; maximum consumption of 2W during normal usage; all in strict accordance with Engineers Specification Volume 3 - Equipment schedules					
B	80mm Gas solenoid valve	1	nr			
	Emergency Push Button; supply and installation; complete; all in strict accordance with Engineers Specification Volume 2					
C	Emergency Push Button	1	nr			
	Gas Detectors; supply and installation; complete; IP44 protection; Mounting: mounted over each burner, linked to the gas control panel; c/w gas conical collector hood; all in strict accordance with Engineers Specification Volume 2					
D	Gas detector	3	nr			
	Heat Detectors; supply and installation; complete; all in strict accordance with Engineers Specification Volume 2					
E	Heat Detectors	3	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(58) FIRE PROTECTION INSTALLATION					
	System					
	Fire Fighting installation, testing and commissioning; complete; Hand held fire extinguishers and fire blankets shall be provided throughout the building as detailed on the drawings; The installation will comply with BS 5306-2000-Part 8; The Contractor shall be responsible for carrying out the commissioning of the portable fire extinguishers before they are installed; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 11, Volume 3, Volume 4 and Drawings 4.2(5-)M005					
	Terminal equipment and Fittings					
	Fire Extinguishers supply and installation; complete with 5 years guarantee, CE approved and marked; all in accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
F	5KG CO2 Gas Extinguishers; c/w wall mounting brackets and ID signage; complete	1	nr			
G	5kg ABC Dry Powder Fire Extinguishers; c/w wall mounting brackets and ID signage; complete	1	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
H	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(58) HVAC MOTOR CONTROL CENTER & BUILDING MANAGEMENT SYSTEM					
	System					
	BMS System Installation; testing and commissioning; complete; Building management software including a target and monitoring system based on a traffic light system shall be designed and installed in this school to inform relevant personnel for energy usage in the school. How utility supplies are behaving when set against targeted parameters. This information is to be available on the principals pc. They should be capable of remote monitoring and alarm if there is a problem; all in strict accordance with the Mechanical Specification					
	Primary Equipment					
	MCC Panel; supply and installation; complete; The MCC panel: wall mounted top entry and top exit type with hinged front doors, suitable for installing against a wall; Dimensions: max. width 2000mm, max depth 300mm; Spare capacity: 30%; The MCC shall contain hand/off/auto switches with run and trip indicators and interfaces for all items as detailed on the drawings; each button shall be clearly labelled showing the area served; include for all fittings and accessories; all in accordance with the Mechanical Engineers Specification					
F	MCC Panel; Ref: MCC; Location: Plant room	1	nr			
G	MCC Panel; Ref: MCC; Location: Biomass Unit	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	External sensor; linked to BMS; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 4					
A	External frost sensor	1	nr			
B	External temperature sensor	1	nr			
	Remote data transmitter, supply and installation, complete; 4G enabled transmitter capable of interfacing with utility meters and transmitting recorded data to an external web-based front-end system; include for all fittings and accessories; all in accordance with the Mechanical Specification					
C	Remote data transmitter	1	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
D	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
E	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
F	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
G	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
H	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
J	Identification plates, labels and the like	1	item			
	MECHANICAL INSTALLATIONS					
	Sundries & Builders Work					
	General Attendances					
K	Provide all general attendances in accordance with Arm 4 .	1	item			
L	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide use of the Main Contractors scaffolding.	1	item			
B	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
C	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
D	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
E	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Mechanical services works, including testing and commissioning , and pay all ongoing operation charges.	1	item			
F	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
G	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
H	Provide temporary telephone services to the Mechanical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
J	Include for unloading, hoisting/cranage and placing into position all items of heavy plant and site offices supplied by the sub-contractors.	1	item			
K	Allow for maintaining all ducts, chases, trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
L	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
M	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
N	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	Special Attendances					
P	Provide all special attendances in accordance with Arm 4 Clause 3.1	1	item			
Q	Provide temporary roads and hardstandings in connection with heavy items of plant and the like.	1	item			
R	Provide accommodation for the sub-contractor's staff for eating, site lavatories, site washing facilities, and cloaks.	1	item			
S	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
B	Provide temporary distribution systems for lighting, power, water for the execution of the electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
C	Provide the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
D	Protection of the works the Main Contractor is responsible for providing adequate protection at all times for the Mechanical services installation.	1	item			
E	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day.	1	item			
F	Provide external access to high level on building facade to permit the installation of any external equipment/fittings and for the removal of existing services as required.	1	item			
G	Provide Mobile Elevated Working Platforms (MEWP) or scaffolding for Mechanical sub-contractors working at high level.	1	item			
H	Provide for weathering & sleeving around all penetrations through the external structure of the building and to allow for sealing to fabric to maintain air tightness.	1	item			
J	Allow for maintaining all ducts, chases, trenches, trunking etc, clean and free of all water, debris and rodents at all times.	1	item			
K	Allow for making good and fire sealing of all builders work opes with proprietary sealant to architects details, where services penetrate fire zones.	1	item			
L	Allow for coordination with local authorities and utility providers in respect of application for connections, providing excavation of roads and full coordination with various utility companies.	1	item			
M	Coordinate with Mechanical Contractor to facilitate fitting of all sanitary ware.	1	item			
N	Allow for patrices behind ceiling tiles and ceilings for the support of light fittings, grilles, smoke detectors, sensors etc.	1	item			
P	Allow for weathering details on all services passing through external envelope.	1	item			
Q	Allow for all service / utility entries into building.	1	item			
R	Allow for clearing away and disposal of any rubbish.	1	item			
S	Provide safe access to roofspace to facilitate Mechanical installation work.	1	item			
T	Making good of opes for fire smoke dampers.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide and maintain the specific temperatures and humidity levels.	1	item			
B	Contractor to provide for the construction of a walkway within the Attic space for service and maintenance of water and ventilation services.	1	item			
C	Contractor to ensure all existing services shut downs for connecting in new and changeovers shall be carried out between 10pm on a Sunday Night and 6pm on a Monday morning, to avoid any interruptions of the running of the existing school; times to be agreed with school management.	1	item			
D	Provide plywood protective cover over boiler for protection.	1	item			
	Unload, hoist distribute, and place in position the following items of plant and equipment:					
E	Gas boiler	1	item			
F	Biomass unit	1	item			
G	Calorifier tank	1	item			
H	Pumps	1	item			
	Sundries & Builders Work					
	General					
J	Marking positions of holes, mortices and chases	1	item			
K	Testing & Commissioning	1	item			
L	Preparing drawings of "as completed" installations	1	item			
M	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
N	Keys, tools and spares	1	item			
	In-situ concrete; plain; to IS EN 206; Grade C30; formwork to sides of platform, powerfloating finish; all in strict accordance with the Engineers Drawings and Specification					
	Bases					
P	Size 850mm x 1650mm x 100mm thick	1	nr			
Q	Size 1850mm x 1100mm x 100mm thick	1	nr			
R	Size 2650mm x 1850mm x 100mm thick	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Equipment supports; provide mounting grounds for the installation of the following fittings; making good structure and finishes; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
	Equipment supports					
A	Provide wall fixings for portable fire extinguishers to walls at 1500mm above floor	2	nr			
	Forming or cutting holes; including sleeves/plates, making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
B	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
C	cutting or forming opes is deemed to include the making good and sealing of the ope around the pipe or duct		note			
	For ducts/pipes through exisitng external cavity blockwork wall, include for building in sleeves; weather proofing, making good all finishes on completion					
D	Size 1000mm x 250mm opes	1	nr			
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification and Drawings					
	Special works were services pass through structures; external walls, making good all finishes on completion					
E	Size 1000mm x 250mm opes	1	nr			

				€	c
(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/7					
Page No. Lot 4.2 Works Con/8					
Page No. Lot 4.2 Works Con/9					
Page No. Lot 4.2 Works Con/10					
Page No. Lot 4.2 Works Con/11					
Page No. Lot 4.2 Works Con/12					
Page No. Lot 4.2 Works Con/13					
Page No. Lot 4.2 Works Con/14					
Page No. Lot 4.2 Works Con/15					
Page No. Lot 4.2 Works Con/16					
Page No. Lot 4.2 Works Con/17					
Page No. Lot 4.2 Works Con/18					
Page No. Lot 4.2 Works Con/19					
Page No. Lot 4.2 Works Con/20					
Page No. Lot 4.2 Works Con/21					
Page No. Lot 4.2 Works Con/22					
Page No. Lot 4.2 Works Con/23					
Page No. Lot 4.2 Works Con/24					
Page No. Lot 4.2 Works Con/25					
Page No. Lot 4.2 Works Con/26					
Page No. Lot 4.2 Works Con/27					
Page No. Lot 4.2 Works Con/28					
Page No. Lot 4.2 Works Con/29					

				€	c
(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/30					
Page No. Lot 4.2 Works Con/31					
Page No. Lot 4.2 Works Con/32					
Page No. Lot 4.2 Works Con/33					
Page No. Lot 4.2 Works Con/34					
Page No. Lot 4.2 Works Con/35					
Page No. Lot 4.2 Works Con/36					
(5-) MECHANICAL INSTALLATION **Carried to Summary**					

					€	c
	(6-) ELECTRICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Alterations to existing switch board to facilitate the installation of new submians; 1nr 40A TP&N sub-mains connection to New MCC panel; 1nr 50A TP&N sub-mains connection to Biomass unit (sub-main cable & TP&N device measured elsewhere); allow for modifications and fittings to existing DB as required to accommodate the new connections; include all isolation, shutdown coordination, and commissioning; all in strict accordance with Electrical Specification and Drawing 4.2(60)E001	1	item			
C	Alterations to existing PV system to facilitate installation of fire-rated DC cabling and fireman#s switch (fireman switch measured elsewhere), including safe isolation, modifications, re-termination and reinstatement of PV system, testing, commissioning, and certification, in full compliance with ET101; all in strict accordance with Electrical Specification and Drawing 4.2(60)E001	1	item			
D	Modification of existing fire alarm system to facilitate interface with existing gas solenoid valve, including all necessary wiring, controls integration, programming, testing, commissioning, and certification, all in strict accordance with Electrical Specification and Drawing 4.2(63)E001	1	item			
	Notes					
E	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
F	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES					
	(61) ELECTRICITY SUPPLY & MAIN DISTRIBUTION - LV INSTALLATIONS					
	System					
	LV installation, testing and commissioning; complete; The Contractor shall allow for the supply and installation of all switchgear, distribution boards and sub-mains cables in accordance with the drawings and attached specification; The Contractor shall be responsible for safe off-loading, receiving, storage, positioning and fixing of the boards and shall be liable for any damage to boards during installation; The Contractor shall submit working drawings to the Engineer for approval prior to manufacture of switchgear; the contractor shall allow for liaising with the ESB; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 and Drawings 4.2(60)E001					
B	LV Installations	1	item			
	Fittings					
C	Isolation device; supply and installation; complete; terminating of incoming and outcoming cabling; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
D	Isolation device; 40A TPN	1	nr			
	Firemans switch; supply and installation (including wiring & terminations); complete; isolation of the electrical supply to the entire building; located at main entrance; fire rated enhanced PH120 cable; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
E	Firemans Switch; isolation of main MCCB within switch board	1	nr			
F	Firemans Switch; isolation of PV system	1	nr			
	Multi-function digital meter; supply and installation; complete; digital multi-meter capable of indicating kVA, kW, KVAR, kWhr, Amps, Volts, etc. per phase and between phases; suitable for interfacing with B.M.S. network; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
G	Multi-function digital meter; BMS meter	3	nr			
H	Multi-function digital meter; CT meter	3	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Insulated Matting; supply and installation; complete; Width: 900mm wide; Length: to extend to full Length of switch board, with an additional 300 mm beyond each end; Class rating: based on the system voltage and clearly colour-coded; Standards to conform to BS EN 61111:2009 (IEC 61111:2009); include for all fixings and accessories; all in strict accordance with the Electrical Specification Vol.2 Section 4.3					
A	Insulated matting; Ref: Existing Switch Board	1	nr			
	Main switchboard circuit chart; 'A1' framed drawing of the switchboard to be installed within the switch room; the drawing shall be framed with a perspex cover; include for all accessories; in strict accordance with the Electrical Specification Vol.2 Section 4.3					
B	Main switchboard; Ref: Existing Switch Board	1	nr			
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board to sub-distribution boards/ Control panels located throughout school building; Sub-mains distribution within the building shall be via XLPE/LSF/SWA/PVCarmored cables laid in galvanized steel cable tray/trunking; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Section and Drawing 4.2(60)E001					
C	Submains; Existing switch board to Biomass Unit; 1 x 4c 35sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
D	Submains; Existing switch board to MCC Panel; 1 x 4c 25sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Specification					
E	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
G	Operating and maintenance manuals	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Working drawings; all in accordance with Engineers Specification					
A	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
B	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
C	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
D	Identification plates, labels and the like	1	item			
	(62) POWER - CONTAINMENT					
	System					
	Cable ladder/ tray/ trunking installation, testing and commissioning; complete; The Contractor must allow for the supply and installation of a complete cable support system using galvanized steel cable tray, trunking, conduit and support steelwork as shown on the drawings and as detailed in the specification. The Contractor shall include for all incidental cable containment which may not be shown on the drawings but which may be required to effect cable routes to individual items of equipment, luminaries etc; include for all joints, fixing brackets, supports and fire barrier pillow system; all exposed and exteaneous conductive parts are to be boned and properly earthed in accordance with current wiring regulations; all in accordance with the Electrical Specification Volume 1, Volume 2 and Drawing 4.2(63)E001					
E	Cable Ladder; LV; galvanized steel; heavy duty; size 200mm wide x 50mm high; complete	1	item			
F	Cable Header Trunking; LV; galvanized steel; size 150mm wide x 150mm high; complete	1	item			
G	Conduit; galvanised steel; size 25mm diameter; complete	1	item			
H	Conduit; galvanised steel; size 50mm diameter; complete	1	item			
J	Conduit; flexible steel; size 25mm diameter; complete	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
A	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
B	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings; complete	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings; complete	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like; complete	1	item			
	(62) POWER - GENERAL SERVICES					
	System					
	General Services and small power installation, testing and commissioning; complete; to include vampire load design strategy; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.2(63)E001					
H	General Services Installation	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Accessories associated with terminal equipment					
	Isolation device; supply and installation (including wiring); complete; surface mounting; include for all accessories and fixings; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification					
A	20amp SPN Isolator switch IP65	1	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	(65) PROTECTIVE SERVICES - EARTHING AND BONDING					
	System					
	Earthing and Bonding; installation; testing and commissioning; The contractor shall undertake to effectively earth the whole of the electrical installation in accordance with the National Rules for Electrical Installations IS-10101:2020. Main equipotent earth bonding should be provided from each of the following items, as a minimum, to the main earthing bar: Incoming Water Main, Incoming Gas Main, Metal drainage pipes, Structural Steelwork, Main Heating Pipework, Main Ventilation Ductwork, Lightning Protection System, Comms Rooms, Supplementary earth bonding shall be carried out on extraneous metal parts at the following locations: Metallic Wireways and Containment, Suspended Ceiling Grids, Wash Hand Basins, Showers, Sinks, WC's, Cleaners Sinks, Catering equipment, Metal worktops, Plantroom Pipework (e.g. across pumps, valves, vessels, etc.); all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.2(60)E001					
A	Earthing and Bonding	1	item			
	Fittings					
	Earth terminal bar; supply and installation; c/w insulating shrouds to I.S. 10101:2020 and of suitable capacity for the number and size of cables to be connected; all in strict accordance with the Electrical Engineers Specification Vol. 2/A Part 9					
B	Earth terminal bar	1	nr			
	Main earth conductor cable; supply and installation complete; 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
C	Earth terminal bar to earth pits	1	item			
D	Earth terminal bar to Surge arrestor	1	item			
	Main earth conductor cable; supply and installation complete; Cable 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
E	From ESB to earth terminal bar	1	item			
	Equipotent earth bonding; supply and installation complete; Cable 1 x 1 core 10mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
F	Incoming Water Main	1	item			
G	Incoming Gas Main	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metal drainage pipes	1	item			
B	Structural Steelwork	1	item			
C	Main Heating Pipework	1	item			
D	Main Ventilation Ductwork	1	item			
E	Lightning Protection System	1	item			
F	Lift shaft steel work	1	item			
G	Eircom DP	1	item			
	Supplementary earth bonding; supply and installation complete; 2.5mm2 LSF green/ yellow earth cable; shall be carried out on extraneous metal parts at the following locations; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
H	Metallic Wireways and Containment	1	item			
J	Suspended Ceiling Grids	1	item			
K	Wash Hand Basins	1	item			
L	Showers	1	item			
M	Sinks	1	item			
N	WC's	1	item			
P	Cleaners Sinks	1	item			
Q	Catering equipment	1	item			
R	Metal worktops	1	item			
S	Plant room Pipework	1	item			
	<u>General Earthing and Bonding</u>					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
T	Generally	1	item			
	<u>General</u>					
	Testing and commissioning; all in accordance with Engineers Specification					
U	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(65) SECURITY & PROTECTION - SURGE PROTECTION					
	System					
	Transitent & Overvoltage Protection installation, testing and commissioning; The Contractor shall be responsible for the supply and installation of all incoming and outgoing cables (of all types) to be provided with Lightning/Surge Protection devices; The electrical contractor shall ensure allowance for surge protection at all panels within his scope and those provided by others; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.2 (60)E001					
F	Transitent & Overvoltage Protection	1	item			
	Fittings					
	Surge Suppression Devices; installation (including wiring); complete; Lighting/ Surge Protection devices Type 1 and Type 2 to I.S. EN 62305:2006; all in strict accordance with the Electrical Specification and Drawing 4.2(60)E001					
G	Surge Protection; 400V TP&N,Type 1 & 2; Existing Switch Board	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
H	Generally	1	item			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
	(68) MECHANICAL WIRING INSTALLATIONS					
	Mechanical Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplies; all in accordance with the Mechanical and Electrical Specification and Drawings 4.2(50)M005					
G	Mechanical Wiring Installation	1	item			
	Fittings					
	Gas detection system mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the 4.2(50)M005					
H	Gas detection control panel (Location: Boiler room)	1	nr			
J	80mm dia Gas solenoid valve	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Emergency Stop Button	1	nr			
B	Gas detector	3	nr			
C	Heat detector	3	nr			
	Frost protection mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Drawing 4.2(50)M005					
D	Oil filled Electric radiator; Size 1000mm long x 500mm high; Output 1000w	1	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers					
E	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
F	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
G	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
H	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
J	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
K	As built drawings; complete	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
A	Identification plates, labels and the like; complete	1	item			
	(68) BMS WIRING INSTALLATIONS					
	System					
	BMS Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplied as a 'Free Issue' item by the Mechanical Contractor as part of the BMS installation, and must be installed and connected up by the electrical contractor. Generally, the MCC panels must be installed in boiler houses, plant rooms, etc.; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.2 (5-)M004					
B	BMS Wiring Installation	1	item			
	Equipment					
	Mechanical Control Panel; Mechanical and BMS wiring installation, testing and commissioning; complete; The Contractor shall allow for all wiring associated with the installation of the MCC and BMS outstations; The Contractor shall allow for all switchgear as indicated on the electrical services connection schedules and reflected on the electrical services layouts; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.2(5-)M004					
C	Mechanical Control Center; Ref: MCC Panel, Location: Plant Room	1	item			
D	Mechanical Control Center; Ref: MCC Panel, Location: Biomass Unit	1	item			
	Remote data transmitter, testing and commisssioning; complete; Install loggers and determine the maximum electrical load (MIC) across all phases for the entire school; all in accordance with the Mechanical & Electrical Specification and Drawing 4.2(5-)M004					
E	Remote data transmitter; Boiler Room	1	nr			
	GSM modem; supply and installation; c/w dedicated SIM card, cabling and power supplies; contractor to maintain system for duration of supply contract; include for all fittings and accessories; testing and commissioning, complete; all in accordance with the Mechanical Specification					
F	GSM modem	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fittings					
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Plant room					
A	Pressurisation Unit - Low level fault	1	nr			
B	Pressurisation Unit - High level fault	1	nr			
C	Pressurisation Unit - Run indication	1	nr			
D	Main Header - Flow temperature sensor	2	nr			
E	Main Header - Return temperature sensor	2	nr			
F	Main Header - Imersion frost	2	nr			
G	Boiler - Enable	3	nr			
H	Boiler - Temperature set point	3	nr			
J	Boiler - Common alarm	3	nr			
K	Boiler - Shunt pump fault/enable	3	nr			
L	Boiler - Flow temperature sensor	3	nr			
M	Boiler - Burner currently firing feedback	3	nr			
N	Biomass - Enable/fault	1	nr			
P	Biomass - Temperature set point	1	nr			
Q	Biomass - Common alarm	1	nr			
R	Biomass - Primary pump head 1 fault/enable	1	nr			
S	Biomass - Primary pump head 2 fault/enable	1	nr			
T	Biomass - Pump 1 flow set point	1	nr			
U	Biomass - Pump 2 flow set point	1	nr			
V	Biomass - Flow temperature sensor	1	nr			
W	Biomass - Return temperature sensor	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	VT Circuit - Pump head 1 enable/fault	1	nr			
B	VT Circuit - Pump head 2 enable/fault	1	nr			
C	VT Circuit - Flow temperature sensor	1	nr			
D	VT Circuit - Return temperature sensor	1	nr			
E	VT Circuit - 3-port mixing valve	1	nr			
F	Trace heating - Enable/fault	1	nr			
G	Main Secondary Calorifier - Pump head 1 enable/ fault	1	nr			
H	Main Secondary Calorifier - LPHW return temperature	1	nr			
J	Main Secondary Calorifier - 2-port mixing valve	1	nr			
K	Main Secondary Calorifier - Calorifier temperature	1	nr			
L	Main Secondary Calorifier - 3-port diversion valve	1	nr			
M	Main Secondary Calorifier - HWSR pump 1 enable/ fault	1	nr			
N	Main Secondary Calorifier - Sacrificial annode	1	nr			
P	Main Secondary Calorifier - 2-port valve	1	nr			
Q	Main Secondary Calorifier - High limit stat	1	nr			
R	Gas Detection - Gas detector 1	1	nr			
S	Gas Detection - Gas detector 2	1	nr			
T	Gas Detection - Gas detector 3	1	nr			
U	Gas Detection - Heat detector 1	1	nr			
V	Gas Detection - Heat detector 2	1	nr			
W	Gas Detection - Heat detector 3	1	nr			
X	Gas Detection - Fire alarm interface	1	nr			
Y	Metering - Main Gas meter	1	nr			
Z	Metering - Gas meter to boilers	1	nr			
AA	Metering - Gas meter to Water heater	1	nr			
BB	Metering - Mains water meter	1	nr			
CC	Metering - Cold water to hot water meter	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metering - Rainwater usage meter	1	nr			
B	Metering - Flushing water meter	1	nr			
C	Metering - Heat Meter modbus	5	nr			
D	Frost protection - External temperature sensor	1	nr			
E	Frost protection - External Frost Senor	1	nr			
F	Data connection to MCC-Biomass	1	nr			
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all 6 core 0.6mm2 PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Biomass Unit					
G	Fire alarm interface	1	nr			
H	Biomass - Enable/fault	1	nr			
J	Buffer temperature Sensor H/L	1	nr			
K	Buffer temperature Sensor M/L	1	nr			
L	Biomass boiler back end protection	1	nr			
M	Biomass boiler flow temperature sensor	1	nr			
N	Biomass boiler return temperature sensor	1	nr			
P	Heat exchanger pump (primary) - Enable/Fault	1	nr			
Q	Heat exchanger pump (secondary) - Enable/Fault	1	nr			
R	Primary heat exchanger flow temperature sensor	1	nr			
S	Primary heat exchanger return temperature sensor	1	nr			
T	Secondary heat exchanger flow temperature sensor	1	nr			
U	Secondary heat exchanger return temperature sensor	1	nr			
V	Pressurisation Unit - Enable / fault	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Final Circuits (including all points terminations)					
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification, Control points schedule and Drawing (5-)M004					
	Final Circuits - MCC - Plant room					
A	Power - Pressurisation Unit; SPN 20amp	1	nr			
B	Power - Boiler; SPN 20amp	3	nr			
C	Power - Shunt pump; SPN 20amp	3	nr			
D	Power - Trace heating; SPN 20amp	1	nr			
E	Power - Heat meter; SPN 20amp	5	nr			
F	Power - Calorifier sacrificial annode; SPN 20amp	1	nr			
G	Power - Gas detection panel; SPN 13amp	1	nr			
H	Power - VT circuit pump head 1; TPN 20amp	1	nr			
J	Power - VT circuit pump head 2; TPN 20amp	1	nr			
K	Power - Calorifier pump head 1; TPN 20amp	1	nr			
L	Power - Calorifier HWSR pump 1; SPN 20amp	1	nr			
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification and Drawing (5-)M004					
	Final Circuits - MCC - Biomass Unit					
M	Power - Biomass Unit; TPN 100amp	1	nr			
N	Power - Biomass primary pump head 1; SPN 20amp	1	nr			
P	Power - Biomass primary pump head 2; SPN 20amp	1	nr			
Q	Power - Pressurisation Unit; SPN 20amp	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
A	General Earthing and Bonding; complete		item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
B	Testing and commissioning; complete		item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
C	Operating and maintenance manuals; complete		item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
D	Working drawings; complete		item			
	Co-ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
E	Co-ordination drawings;complete		item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
F	As built drawings; complete		item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
G	Identification plates, labels and the like; complete		item			
H						
	ELECTRICAL INSTALLATIONS					
	Sundries and Builders Work					
	General Attendances					
J	Provide all general attendances in accordance with Arm 4.	1	item			
K	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
L	Provide use of the Main Contractors scaffolding.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
B	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
C	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
D	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
E	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
F	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
G	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
H	Include for unloading, hoisting/cranage and placing into position all items of heavy plant supplied by the subcontractors.	1	item			
J	Allow for maintaining all ducts, chases , trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
K	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
L	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
M	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	<u>Special Attendances</u>					
N	Provide all special attendances in accordance with Arm 4 Work Section B Clause 3.1	1	item			
P	Provide temporary access roads and hardstanding in connection with heavy items of plant and the like, forming part of the site establishment works	1	item			
Q	Provide scaffolding internal and external to the building to facilitate installation of high-level electrical services during the contract	1	item			
R	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
S	Provide adequate barriers/tape/signage of exclusion zoning in relation to use of access equipment and ACOPs for working at height	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide construction signage (internal and external) in relation to M&E services e.g live systems etc.	1	item			
B	Provide temporary lighting and power in accordance with IS10101 Wiring Regulations.	1	item			
C	Provide protection to all M&E services installations installed during the works including protection against debris and water ingress	1	item			
D	Provide fire stopping to all electrical services on the vertical and horizontal planes throughout the entire buildings	1	item			
E	Ensure close coordination during the building phase to ensure electrical, ventilation and mechanical services are installed and integrated within the building fabric as designed.	1	item			
F	Provide grounds and fixings for suspension of Electrical services; Electrical loading = 10kg/m Mechanical loading = 40kg/m	1	item			
G	Provide boxing out of containment and pipework as necessary, boxing to be accessible with screwed access.	1	item			
H	Main contractor shall employ a full time M&E Co-ordinator for the duration of the contract works and their duties shall include but not limited to details set out within the specification A2.4 Part 1 of 4 particular specification document	1	item			
J	Contractor shall be aware that drawings are indicative only including the minimum ope sizes; It will be the contractors responsibility in conjunction with their in-house M&E services coordinator to produce construction stage builders works drawings for DT comment	1	item			
K	Provide safe access and task lighting for electrical sub-contractor to all sections of school roofspace	1	item			
L	Provide safe access for electrical sub-contractor to all sections of the site	1	item			
M	The M&E installation within the SEN accommodation is to be a fully recessed installation. The contractor shall include for casting in of all electrical services and recessing of all radiators within the wall panels	1	item			
N	Seal all incoming services to prevent ingress of vermin	1	item			
P	Fire Stopping to all services penetrations throughout	1	item			
Q	Attendance to electrical sub-contractor	1	item			
R	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
S	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
B	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
C	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
D	Provide temporary power supplies (3 phase 400V and maximum loading 15kVA) for welding, handtools, and for commissioning, including infrastructure and all charges fot the contractors use of the facility.	1	item			
E	Provide scaffolding additional to the main contractors standing scaffolding, or access towers if required.	1	item			
F	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day	1	item			
G	Provide facilities for safe removal and disposal of all materials off site	1	item			
H	Provide a week by week program detailing the Mechanical and Electrical service activities	1	item			
J	Provide for heating / drying out the building as and when necessary to comply with their program. This may be done (at the clients specific consent) with the installed conventional heating system (if available). Be responsible, however, for providing the fuel to do this. Be responsible for maintaining background heat until the building is handed over to the client, after the heating system has been commissioned	1	item			
K	Provide and maintain the specific temperatures and humidity levels	1	item			
L	Provide Builders Attendances to all utility services as follows; Gas Networks Ireland, Eir, Virgin Media, Local Authority, ESB Networks.	1	item			
M	Fire stopping requirements of all services penetrations through fire compartment structures to be the responsibility of the building contractor. In addition, all pipework, ductwork, containment and service penetrations shall be fire-stopped where passing through every wall, floor and ceiling regardless if its a fire compartment or not by main contractor. Refer to M&E services drawings indicating main routes of M&E infrastructure. All instances of firestopping shall be labelled and certified using CE certified products including fire-pillows for use inside electrical trunkings.	1	item			
	Unload, hoist, distribute and place in position the following items of heavy plant and equipment					
N	Main switch board	1	item			
P	Sub-distribution boards	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	MCC panel	1	item			
B	Containment	1	item			
C	Cabling	1	item			
D	Lighting	1	item			
E	PV Panels	1	item			
	Sundries & Builders Work					
	General					
F	Marking positions of holes, mortices and chases	1	item			
G	Testing & Commissioning	1	item			
H	Preparing drawings of "as completed" installations	1	item			
J	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
K	Keys, tools and spares	1	item			
	Forming or cutting holes/mortices/chases and the like; including sleeves/plates, intumescent collars; making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
L	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
M	cutting or forming opes is deemed to include the making good and sealing of the ope		note			
	Cutting or forming holes through existing external walls various thicknesses; include for building in sleeves; making good all finishes on completion					
N	440mm x 225mm opes	2	nr			
	Cutting or forming holes through existing internal walls various thicknesses; include for building in sleeves; making good all finishes on completion					
P	440mm x 225mm opes	5	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification P12					
	Special works were services pass through structures; existing external walls various thicknesses, making good all finishes on completion					
A	440mm x 225mm opes	2	nr			
	Special works were services pass through structures; existing internal walls various thicknesses, making good all finishes on completion					
B	440mm x 225mm opes	5	nr			
				To Collection €		

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/39					
Page No. Lot 4.2 Works Con/40					
Page No. Lot 4.2 Works Con/41					
Page No. Lot 4.2 Works Con/42					
Page No. Lot 4.2 Works Con/43					
Page No. Lot 4.2 Works Con/44					
Page No. Lot 4.2 Works Con/45					
Page No. Lot 4.2 Works Con/46					
Page No. Lot 4.2 Works Con/47					
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Page No. Lot 4.2 Works Con/49					
Page No. Lot 4.2 Works Con/50					
Page No. Lot 4.2 Works Con/51					
Page No. Lot 4.2 Works Con/52					
Page No. Lot 4.2 Works Con/53					
Page No. Lot 4.2 Works Con/54					
Page No. Lot 4.2 Works Con/55					
Page No. Lot 4.2 Works Con/56					
Page No. Lot 4.2 Works Con/57					
Page No. Lot 4.2 Works Con/58					
Page No. Lot 4.2 Works Con/59					

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/60					
(6-) ELECTRICAL INSTALLATION **Carried to Summary**					

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND					
	EXCAVATION AND EARTHWORK					
	Excavation					
	Excavation					
	Reduce levels					
A	Depth between not exceeding 2.00m	62	m3			
	Extra on Excavation Items for:					
	Breaking up existing					
B	Hard surfaces; Tarmacadam surface; 100mm thick; complete	88	m2			
	Disposal					
	Water					
C	Surface	1	item			
D	Ground	1	item			
	Excavated material; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
E	Disposal off site	53	m3			
F	Disposal off site; existing Tarmac; Disposal to a suitable licensed waste disposal facility	9	m3			
	Filling with hardcore to be obtained off-site; clean angular gravel 20mm, free from pyrite and macarsite as per specification					
	To make up levels					
G	Average thickness not exceeding 250mm	9	m3			
	Filling with hardcore to be obtained off-site; Clause 804 crushed stone well compacted on firm clean formation; compliant with TII Publications series 800, free from pyrite and macarsite as per specification					
	To make up levels					
H	Average thickness not exceeding 250mm	9	m3			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Filling with granular fill material to be obtained off-site; Class 6F2 compliant with TII Publications series 600, free from pyrite and macarsite; depositing in 150mm layers maximum thickness; compacting; as per Drawings and Specification					
	To make up levels					
A	Average thickness exceeding 250mm	27	m3			
	Surface treatments					
	Levelling and compacting; bottom of excavations					
B	Horizontal	88	m2			
	CONCRETE WORK					
	In-situ Concrete					
	Concrete cubes for testing					
	Provide for making concrete cubes from freshly mixed concrete; transporting and testing cubes; all as per details in the Specification					
C	Size 150 x 150 x 150mm	3	nr			
	In-situ Concrete; Reinforced					
	Grade C40/5-XF4 to IS EN 206					
	Beds					
D	Generally; Reinforced	18	m3			
	Surface Finishes					
	Brushed finish to wet concrete as per Specifications					
E	Generally	88	m2			
	Reinforcement					
	Fabric					
	A252 mesh reinforcement; 350mm laps; 350mm end laps; all in strict accordance with the Engineers Drawings and Specification					
F	Horizontal	88	m2			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Formwork					
	Formwork Generally					
	Sides of beds					
A	Height or width 250 - 500mm	58	m			
B	Extra over for forming recess in floor slab for district heating pipe; comprising 65mm dia x 400mm deep recess; include for cutting to all angles and corners	5	nr			
	SURFACE PAVINGS, FENCING AND LANDSCAPING					
	Fencing					
	Paladin Fencing; Steel mesh and wire fence to I.S. EN 10223, comprising striped mesh using 6mm horizontal wire at 145mm centres, reducing to 50mm centres on the V crimp, 4 mm wires structured with 2 No. wires at 40mm centres and 4 No. wires at 20mm centres to give a striped effect; all finished in polyester powder coating to I.S. EN 15773 & I.S. EN 12206; include for 60 x 60 x 2mm hot dipped galvanized steel posts to I.S. EN9 ISO 1461: 199 after fabrication and subsequently eletrostatically powder coated in a plant conforming to EN 1722 Part 16; post centres maximum 2080 mm; fixings: steel clips with 8 mm anti-vandal bolts; 350 x 350 x 600mm Grade C30/37 concrete bases set 100mm below ground level; all as per Specification and Drawings					
	Paladin Fencing System					
C	1800mm high above ground level	23	m			
	Extra over for					
D	Angle posts; 60x60x2 SHS posts, 1800mm high above ground level and 900mm below ground level; set in 450x450x600mm deep concrete grade C28/35 base	4	nr			
	Gates					
E	Single gate; opening size approx 1000 x 1800mm high	2	nr			
	100x100x10 SHS hot dipped galvanised SHS powder coated post; gate posts set in 1000x1000x1000mm C28/35 concrete pocket; top of concrete 300mm below ground level; galvanised to Specification and polyester powder coating to Specification in selected colour, colour to be chosen by the Architect from samples provided on site by the Contractor; complete					
	Gate Posts					
F	100 x 100 SHS posts; 1800mm high above ground level and 900mm below ground level; min 600mm embedment in concrete	4	nr			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Ball stop netting (over gas compound); Description: Ball stop netting system installed over the full area of the gas tank compound, fixed to and supported from the top of paladin fencing, including all necessary supports, cables, brackets and fixings; Manufacturer: Submit proposals; Performance: Complete external system to prevent ingress of balls; Contractor to design system including supports and fixings; Allow for wind loading and avoid overloading fence, provide independent supports if required; Maintain safe clearances to all gas infrastructure and access routes; Netting; Material: UV stabilised HDPE or polypropylene; Colour: Black or green; Mesh size: Max 48 mm; Twine: Min 3 mm; Cables and fixings: Stainless steel or galvanised steel support cables with tensioning gear, non-corroding proprietary fixings; Support steelwork: Galvanised steel brackets/arms as required; Execution: Install taut and secure to manufacturers recommendations; Provide access/demountable sections where required; Do not overstress or modify fence without approval; Submittals: Product data, layout drawings and structural calculations.; all as per Specification and Drawing					
	Ball stop netting					
A	Exceeding 300mm wide	33	m2			

				€	c
(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/63					
Page No. Lot 4.2 Works Con/64					
Page No. Lot 4.2 Works Con/65					
Page No. Lot 4.2 Works Con/66					
(30) SITE ENCLOSURES - PLANT COMPOUND **Carried to Summary**					

					€	c
	(50) SITE SERVICES - GAS					
	DRAINAGE/SERVICES - GAS MAIN					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 1nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average Depth 500 - 1000mm	73	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	73	m			
	Around existing services crossing excavations					
E	Storm pipe; crossing excavations	3	nr			
F	Foul pipe; crossing excavations	2	nr			
G	ESB; crossing excavations	2	nr			
	Disposal					
H	Ground Water	1	item			
J	Surface Water	1	item			
				To Collection €		

					€	c
	(50) SITE SERVICES - GAS (Cont)					
	Sand bed and surround; to Engineer's Specification					
	Beds and surrounds					
A	290 x 215mm, to 90mm pipes / ducts	73	m			
	PVC marker tape "Heptape" or equivalent					
B	Continuous strip laid during trench backfill, 100mm above pipework	73	m			
	Mechanical Installations					
	Gas pipework as per Engineer's Specification & Gas Suppliers details; complete					
	Pipework					
C	Installation only of gas pipework; size: 90mm; pipe to be supplied by Gas Supplier; complete	73	m			
	Tank					
D	Contractor to provide attendances to supplier of 2 Tonne Gas Tank; complete	2	nr			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
E	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
F	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
G	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
H	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
J	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
K	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

					€	c
	(50) SITE SERVICES - GAS (Cont)					
A	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			
B	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

				€	c
(50) SITE SERVICES - GAS (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/68					
Page No. Lot 4.2 Works Con/69					
Page No. Lot 4.2 Works Con/70					
(50) SITE SERVICES - GAS **Carried to Summary**					

					€	c
	(50) SITE SERVICES - DISTRICT HEATING					
	DRAINAGE/SERVICES - DISTRICT HEATING					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average depth 500 - 1000mm	36	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	36	m			
	Around existing services crossing excavations					
E	Storm pipe; crossing excavations	3	nr			
F	Foul pipe; crossing excavations	2	nr			
G	ESB; crossing excavations	2	nr			
	Disposal					
H	Ground water	1	item			
J	Surface water	1	item			
				To Collection €		

	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
	Sand bed and surround; to Engineer's Specification					
	Beds and Surrounds					
A	475 x 225mm; to 2nr 100mm duct	36	m			
	PVC marker tape; "Heptape" or equivalent					
B	Continuous strip; laid during trench backfill; 100mm above pipework	36	m			
	Ductwork					
	100mm diameter					
C	Laid in trenches	72	m			
D	Extra over for easy sweep bends	4	nr			
E	Extra over for ducts capped for Biomass connection	2	nr			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
F	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
G	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
H	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
J	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
K	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
L	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			
M	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			

To Collection €

					€	c
	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
A	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

				€	c
(50) SITE SERVICES - DISTRICT HEATING (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/72					
Page No. Lot 4.2 Works Con/73					
Page No. Lot 4.2 Works Con/74					
(50) SITE SERVICES - DISTRICT HEATING **Carried to Summary**					

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS					
	(50) SITE SERVICES (MAINLY MECHANICAL) - WORKS IN CONNECTION WITH BIOMASS UNIT					
	System					
	Biomass unit mechanical connections, installation, testing and commissioning; complete; The Biomass unit shall be supplied by others under a separate contract; The Contractor shall coordinate all interface requirements to ensure a fully operational installation; Prior to handover, the Contractor shall provide commissioning certification confirming that all required cleaning, flushing and water treatment procedures have been correctly carried out; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2/A Part 10, 2/B Part 17; Volume 3; Volume 4 and Drawings 4.2(5-)M002, 4.2(5-)M004, 4.2(5-)M007					
	Primary Equipment					
	Biomass unit ancillary works; Provide all labour, materials and ancillary works necessary for the coordination and completion of all mechanical connections associated with the installation, testing, commissioning and operation of the biomass boiler plant (biomass unit supplied by others under a separate contract), including all plant room interface connections and associated mechanical services works; complete; all in strict accordance with the Mechanical Engineer's Specification					
D	Biomass unit ancillary works; Location: External plant compound	1	nr			

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Distribution					
	Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
A	65mm diameter pipework	1	item			
B	80mm diameter pipework	1	item			
	Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B					
C	65mm diameter pipework	1	item			
D	80mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 65mm thick					
E	to 65mm diameter pipework	1	item			
F	to 80mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
G	General Valve & Plant	1	item			
				To Collection €		

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B					
A	to 65mm diameter pipework	1	item			
B	to 80mm diameter pipework	1	item			
C	General Valve & Plant	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
D	Testing and commissioning	1	item			
E	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
F	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
G	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
H	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
J	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
K	Identification plates, labels and the like	1	item			

To Collection €

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

(50) SITE SERVICES (MAINLY MECHANICAL) - MAINS WATER

System

Mains Water connections to biomass unit installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.6(5-)M002, (5-)M004,

Accessories associated with Primary Equipment

Stop valves for isolation of MWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B

A	28mm Isolation valves	2	nr		

Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B

B	28mm Non-return valves	1	nr		

Strainer valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B

C	28mm Strainer valves	1	nr		

Distribution system

Polyethylene pipework and fittings; all in strict accordance with the Mechanical Specification

D	28mm diameter pipework	1	item		

Insulation

Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

Insulation, 50mm thick

E	to 28mm diameter pipework	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
A	General Valve & Plant	1	item			
	Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B					
B	to 28mm diameter pipework	1	item			
C	General Valve & Plant	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
D	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
E	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
F	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
G	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
H	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
J	Identification plates, labels and the like; complete	1	item			
				To Collection €		

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

(50) SITE SERVICES (MAINLY MECHANICAL) - LPG GAS

System

LPG Gas installation testing and commissioning; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Section 8, 2/B Section 16 and Drawing 4.2(5-)M002, 4.2(5-)M004

Equipment

LPG gas tanks; supply and installation; complete; Capacity: 2 tonne; Dimensions: 1500mm Diameter, 3000mm length; Mechanical attendances in connection with the installation of LPG gas tanks; including all necessary pipework connections, valves, regulators, fittings, supports, accessories, testing and commissioning as required to provide a complete installation; all in accordance with the Mechanical Engineers Specification Volume 2/A.

A	LPG Gas Tank	2	nr		

Accessories associated with primary equipment

1st Stage Regulator; supply and installation Complete; all in strict accordance with the Mechanical Specification Part 1, Section 7.3

B	1st Stage Regulator	1	nr		

Second stage regulator c/w tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2/A

C	2nd Stage Regulator	1	nr		

Isolating Valves; supply and installation; complete; include for all accessories; all in strict accordance with the Mechanical Specification Volume 2/A

D	125mm Isolation Valves	2	nr		

Pressure Gauge; supply and installation; complete; include for all accessories;all in strict accordance with the Mechanical Specification Volume 2/A

E	125mm Pressure Gauge	2	nr		

Pressure relief valve; supply and installation; complete; include for all accessories; all in strict accordance with the Mechanical Specification Volume 2/A

F	125mm Pressure relief Valve	1	nr		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	Tamper proof, lockable metal caging	1	nr			
	Distribution System					
	HDPE pipes and fittings; all in strict accordance with the Mechanical Specification Volume 2					
B	125mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

(50) SITE SERVICES - TRACE HEATING

System

Trace Heating installation, testing and commissioning; complete; Trace heating shall be installed on all the water systems where they travel externally between building blocks; Trace heating shall be provided complete with control panels and all required components to prevent system freezing. Capacity of trace heating shall maintain water temperature above 3ºC when ambient temperature is -15ºC. Trace heating temperature control shall prevent water temperature rising above 10øC. Trace heating system to incorporate air control thermostats and pipework safety cut out thermostats. All trace heating circuits shall be linked to BMS to provide status and fault indication on BMS; Supply electric trace heating complete with fixing tape, shrink sleeves, crimps, junction boxes and controls; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2; Volume 3; Volume 4 and Drawings

Primary Equipment

Trace heating control panel; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

A	Trace heating panel; Location: Plant room	1	nr		

Accessories associated with Primary Equipment

Self-regulating heating tape; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

B	Self-regulating heating tape	1	item		

Air control thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

C	Air control thermostats	1	item		

Safety cut out thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

D	Safety cut out thermostats	1	item		

Insulation

Modified polyolefin electrical insulation; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

E	80mm diameter pipework	1	item		
F	Valves and Plant; generally	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
				To Collection €		

				€	c
(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/76					
Page No. Lot 4.2 Works Con/77					
Page No. Lot 4.2 Works Con/78					
Page No. Lot 4.2 Works Con/79					
Page No. Lot 4.2 Works Con/80					
Page No. Lot 4.2 Works Con/81					
Page No. Lot 4.2 Works Con/82					
Page No. Lot 4.2 Works Con/83					
Page No. Lot 4.2 Works Con/84					
(50) SITE SERVICES (MAINLY MECHANICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES					
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER TO BIOMASS UNIT					
	System					
	Power to Biomass Unit installation, testing and commissioning; complete; The electrical contractor shall provide all wiring and power supplies associated with the external Biomass Unit as detailed on the wiring schematic; all underground electrical services cables shall be distributed within ducts; separate underground service ducts shall be provided as part of the builders works element; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 - Section A and Drawings 4.2(5-)M002					
D	Biomass Power Installation	1	item			
	Accessories associated with terminal equipment					
	Rotary Isolator Switch; supply and installation (including wiring & terminations); complete; surface mounting; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification Volume 2					
E	Rotary Isolator; TPN; 50amp; IP65	1	nr			
				To Collection €		

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board, located in the existing switch room; Sub-mains distribution outside the building shall be via XLPE/LZOH/SWA armoured cables laid in underground ducts; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Volume 2, Section A and Drawing 4.2 (60)E001					
A	Submains; Existing switch board to Biomass Unit-1; 1 x 4c 35sq.mm XLPE/LZOH/SWA + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers specification documents and drawings					
C	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers specification documents and drawings					
D	Operating and maintenance manuals; complete	1	nr			
	Working drawings; all in accordance with the Electrical Engineers specification documents and drawings					
E	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers specification documents and drawings					
F	Co- ordination drawings; complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers specification documents and drawings					
G	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers specification documents and drawings					
H	Identification plates, labels and the like; complete	1	item			
				To Collection €		

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
COLLECTION					
Page No. Lot 4.2 Works Con/86					
Page No. Lot 4.2 Works Con/87					
Page No. Lot 4.2 Works Con/88					
(60) SITE SERVICES (MAINLY ELECTRICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
C	The contractor shall also ascertain whether or not there are any E.S.B. cables on the site and arrange for their removal so that it does not delay site progress. All, redundant site services/site services made redundant, for all utilities and services, will be removed as part of the contract.	1	item			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr ducts not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported hardcore; disposal of surplus soil off site; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
D	Average depth 500 - 1000mm	36	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
E	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	36	m			
	Around existing services crossing excavations					
F	Storm pipe; crossing excavations	3	nr			
G	Foul pipe; crossing excavations	2	nr			
H	ESB; crossing excavations	2	nr			
				To Collection €		

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)

	Disposal				
A	Ground water	1	item		
B	Surface water	1	item		
	Plain in-situ concrete bed and surround; minimum 150mm bed; Class 16/20; leanmix concrete backfill; as per Engineer's Drawing				
	Beds and Surrounds				
C	595 x 325mm; to 2nr ducts	36	m		
	PVC Red marker tape; "Heptape" or equivalent				
D	Continuous strip; laid during trench backfill; 100mm above pipework	36	m		
	PVC Yellow marker tape; "Heptape" or equivalent				
E	Continuous strip; laid during trench backfill; 300mm above pipework	36	m		
	Ductwork; uPVC duct; LV Duct				
	110mm dia.; include for draw-wire				
F	Laid in trenches	36	m		
G	Extra over for easy sweep bends	2	nr		
H	Extra over for ducts capped for Biomass connection	1	nr		
	Ductwork; uPVC duct; Comms Duct				
	110mm dia.; include for draw-wire				
J	Laid in trenches	36	m		
K	Extra over for easy sweep bends	2	nr		
L	Extra over for ducts capped for Biomass connection	1	nr		

To Collection €

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)

Chambers

Draw pit chamber; complete; excavating pits from stripped level 1000x1000x800mm deep internally; dispose of surplus soil; grading bottom; earthwork support; open bottom pit filled with 50mm course gravel for drainage; RC3 concrete base on 50mm blinding grade gen 3; Concrete roof slab grade C25 c/w opening for cover and frame; 225mm thick Class B engineering brickwork in english bond; Walls: 1000mm high with 50mm rebate for removable cover; include for openings for ducts; Heavy duty cast iron cover and frame to Engineer's Specification bedded in epoxy mortar; include for step irons; all pvc pipes to fall away from building and all pits should not waterlog; pipes to be buried 750mm below ground level; include for backfilling to sides of chamber where necessary; all in accordance with the site plan Drawing

A	Average depth not exceeding 1000mm	2	nr		

Sundries

B	Allow for sealing all incoming service ductwork to prevent ingress of damp, dirt and vermin	1	item		
C	Allow for clearance between Telecom ducts and ESB ducts and cables over 650 volts; of 300mm vertical clearance at crossings and 600mm lateral clearance in parallel trenches	1	item		
D	Allow for clearance between ESB ducts and cables and other service ducts; 150mm vertical clearance at crossings and 300mm lateral clearance in parallel trenches	1	item		
E	Provide for all necessary attendances on ESB to include liaising with ESB before, during and after installation of electrical services and providing and making available site data for their use	1	item		
F	Provide markings/signage of ESB cables at locations as agreed with Local Engineering Officer and in accordance with ESB Specifications; as per Engineer's Drawing	1	item		
G	Provide all necessary attendances and builders work in association with disconnecting and removing existing underground ESB supply; complete	1	item		

To Collection €

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)

COLLECTION

Page No. Lot 4.2 Works Con/90

Page No. Lot 4.2 Works Con/91

Page No. Lot 4.2 Works Con/92

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT
Carried to Summary

		€	c
SUMMARY	**Page No.**		
(10) DEMOLITIONS AND ALTERATIONS	Lot 4.2 Works Con/2		
(31) EXTERNAL WALL COMPLETIONS	Lot 4.2 Works Con/4		
(35) & (45) CEILING FINISHES	Lot 4.2 Works Con/6		
(5-) MECHANICAL INSTALLATION	Lot 4.2 Works Con/38		
(6-) ELECTRICAL INSTALLATION	Lot 4.2 Works Con/62		
(30) SITE ENCLOSURES - PLANT COMPOUND	Lot 4.2 Works Con/67		
(50) SITE SERVICES - GAS	Lot 4.2 Works Con/71		
(50) SITE SERVICES - DISTRICT HEATING	Lot 4.2 Works Con/75		
(50) SITE SERVICES (MAINLY MECHANICAL)	Lot 4.2 Works Con/85		
(60) SITE SERVICES (MAINLY ELECTRICAL)	Lot 4.2 Works Con/89		
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT	Lot 4.2 Works Con/93		
TOTAL AMOUNT CARRIED TO GENERAL SUMMARY			
Lot 4.2 Works Con/1 - Lot 4.2 Works Con/93.			

4.3 - St. Patrick's College

					€	c
	(10) DEMOLITIONS AND ALTERATIONS					
	DEMOLITION & ALTERATIONS					
	GENERAL					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYER'S REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Demolitions					
	Removing					
	Removing Finishes					
B	Existing ceiling finishes to certain locations within existing building; disposal of all materials off site; prepare ceilings to receive new finishes	72	m2			
	Plumbing and Engineering Installations					
C	Removal and disposal of existing oil tanks; include for grubbing up and disposal of all associated pipework; include fittings, etc.; include for disposal & making good where necessary; backfilling with Grade C16/20 S3 lean mix to Engineer's Satisfaction; complete	1	Item			

				€	c
(10) DEMOLITIONS AND ALTERATIONS (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/1					
(10) DEMOLITIONS AND ALTERATIONS **Carried to Summary**					

					€	c
	(35) & (45) CEILING FINISHES					
	FLOOR, WALL & CEILING FINISHES					
	Suspended Ceiling					
	Proprietary suspended ceiling system; Manufacturer: Submit proposals for Architects approval; Product reference: CasoLine MF suspended ceiling system- or equivalent to Architect#s approval; Suspension system; Hanger type: Gypframe MF8 strap hangers; Top fixings: Gypframe MF12 soffit cleats fixed to concrete soffit or metal deck; Primary grid centres: 1200 mm. Hanger centres: 900 mm; Secondary grid centres: 400 mm; Linings: 1 x 12.5 mm Gyproc WallBoard, Gyproc moistureproof green board where noted on RCP's and in a wet area; Insulation: none; Access Units: Gyproc Profilex access panels; Finishing: Taped seamless finish; Primer/ Sealer; Type: 1 coat of Gyproc Drywall Primer (2 coats where noted as moistureproof green board; Accessories: none; all as per Architects Specification					
	Ceilings; fixed below floor structure					
A	Depth of suspension 500mm - 1000mm	72	m2			
	PAINTING AND DECORATING					
	Painting					
	Emulsion paint; To internal plastered surfaces and fairfaced blockwork; Manufacturer: Submit proposals for Architects approval; Product reference: Dulux trade Diamond Matt (water based tough Scrubbable Matt emulsion); Surfaces: Internal plastered surfaces; Preparation: Tape and fill joints; Initial coats: 40% thinned primer.Thinning Sealing new or bare surfaces: Add up to 1 part clean water to 10 parts paint; Number of coats: 2; Undercoats: As recommended by manufacturer; Number of coats: As recommended by manufacturer; Finishing coats: Washable matt vinyl; Number of coats: 2; all as per Architects Specification					
	Ceilings					
B	Exceeding 300mm	72	m2			

				€	c
(35) & (45) CEILING FINISHES (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/3					
(35) & (45) CEILING FINISHES **Carried to Summary**					

					€	c
	(5-) MECHANICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Strip out and disposal offsite of existing boiler room 1 plant including boilers, associated flues and pipework, pump sets, valves; the exisitng pressurisation unit, expansion vessel and calorifier shall be retained and protected throughout the duration of the works; isolate, drain down, disconnection equipment in co-ordination with installation and commissioning of new works; remaining systems to stay operational during decommissioning works, required down-time to be coordinated in advance and carried out during out-of-hours; all in accordance with the Mechanical specification and Drawings 4.3(5-)M003	1	item			
C	Strip out and disposal offsite of existing boiler room 2 plant including boilers, associated flues and pipework, pump sets, valves, pressurisation unit and expansion vessel; isolate, drain down, disconnection equipment in co-ordination with installation and commissioning of new works; remaining systems to stay operational during decommissioning works, required down-time to be coordinated in advance and carried out during out-of-hours; all in accordance with the Mechanical specification and Drawings 4.3(5-)M003	1	item			
D	Removal of existing oil tank; isolate, drain down, disconnect, remove and dispose offsite existing oil tank and pipework; all in accordance with the Mechanical specification and Drawing 4.3(5-)M003	1	item			
E	Modifications to boiler room 1, existing secondary heating circuit flow/ return pipework to facilitate installation of new heat meters (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.3(5-)M004	1	item			

To Collection €

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	Modifications to boiler room 1 existing hot water circuit flow/return pipework to facilitate installation of water meter & temperature gauges (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.3(5-)M004	1	item			
B	Modification to boiler room 1 existing mains water supply pipework to facilitate reconnection to new pressurisation unit (measured elsewhere); including isolation, draindown, pipe alterations, fittings, valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.3(5-)M004	1	item			
C	Modifications to existing secondary heating circuit flow/return pipework to facilitate connections to new 150mm diameter header (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.3(5-)M004	1	item			
D	Enabling works to boiler room 2 facilitate connection into existing cold water supply pipework serving new calorifier (measured elsewhere); including provision of isolation valves, non-return valves, fittings, reducers, supports, flushing, pressure testing, and full reinstatement of insulation and finishes; all shutdowns to be agreed in advance and carried out outside normal operating hours; all in accordance with the Mechanical Specification and Drawing 4.3(5-)M004	1	item			
	ASBESTOS REMOVAL					
	DEMOLITION & ALTERATIONS					
	General					
E	The following items are not measured in strict accordance with ARM.		note			
F	The Contractor is refered to the Pre Refurbishment & Demolition Asbestos Survey		note			
G	The Contractor must ensure that any risk of exposure to asbestos is completely eliminated. Contractor to consult with Employer's Representative before any work commences on site.	1	item			
H	The Contractor is advised that there is a notification form to be used for any work involving asbestos. This form must be submitted 28 days prior to the start of such work.	1	item			
J	The Main Contractor / PSCS must appoint a specialist asbestos removal contractor to carry out the asbestos removal & disposal works	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	Prior to commencing any demolition or construction works on site all asbestos must be removed from site; in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010	1	item			
B	The Main Contractor / PSCS must appoint a competent independent analyst / accredited laboratory for the purpose of undertaking air sampling, project monitoring and issuing site clearance for reoccupation certification; in conformance with ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories	1	item			
C	Prior to commencing the asbestos removal works the specialist contractor shall submit (to the PSDP & Employer's Representitive) their Plan of Work (risk assessment / method statement), Design Risk Assessment, and temporary works certificates for the Asbestos Removal works (at least 21 days in advance of commencing the asbestos removal works)	1	item			
D	Prior to commencing the asbestos removal works the specialist contractor shall submit their Plan of Work (risk assessment / method statement), and notify, to the HSA (at least 14 days in advance of commencing the asbestos removal works). The PSCS must also ensure that copies of the notifications are forwarded to the PSDP, Client & Project Manager	1	item			
E	No works may take place on site until the Plan of Work has been drawn up and approved by the Main Contractor / PSCS	1	item			
F	No deviations shall be permitted from the plan of work submitted to the HSA	1	item			
G	Should the Plan of Work require amending / updating (for whatever reason) it must be issued to the PSDP & Project Manager in the first instance, and then the HSA, prior to proceeding with any proposed changes	1	item			
H	No asbestos removal works may take place in areas occupied by normal construction / project personnel and / or third parties	1	item			
J	An asbestos site clearance for reoccupation certificate(s) must be supplied (by the competent independent analyst / accredited laboratory) to the PSDP & Project Manager prior to commencing any demolition or construction works on site (other than the asbestos removal works); the certificate(s) must include (1) Visual inspection, (2) Air monitoring and (3) The decontamination unit	1	item			
K	After completing Asbestos Removal works the PSCS must ensure that asbestos site clearance for reoccupation certificates are issued to the Project Manager, PSDP, and Client PRIOR to allowing those areas to be opened up to persons (other than those persons directly involved in the asbestos removal works)	1	item			
L	NO Asbestos Containing Waste Material may be removed from the site unless a Waste Transfer Form (removal of Hazardous Waste Material from Site) has been completed and issued to the PSCS / Main Contractor, the PSDP & Project Manager	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	The PSCS / Main Contractor must forward copies of final disposal certificates (i.e. completed Waste Transfer Form (final disposal of Hazardous Waste Material)) to the PSDP & Project Manager	1	item			
B	The PSCS / Main Contractor must forward, the following information (as applicable) to the PSDP, for inclusion in the Safety File; Bulk sample results, Amended Asbestos Register, Preliminary Safety & Health Plan and Specification, Specialist asbestos removal contractor Plan of Work, Notification to the Health and Safety Authority, Air monitoring results prior to removal works commencing, Air monitoring results during removal works, site clearance for reoccupation certificates, Completed Waste Transfer Form for the final disposal of all asbestos / hazardous waste.	1	item			
C	All asbestos works must be carried out in accordance with; The HSA 2010 Code of Practice for Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001, The Safety Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010, The HSA Guidelines on Working with Materials Containing Asbestos Cement (and any subsequent amendments updates to HSA Guidelines and / or Codes of Practice)	1	item			
D	Contractor to include here (Unless included in rates elsewhere) for protection of all fixtures, fittings and finishes to all areas in which asbestos removal occurs	1	item			
	Alterations					
E	The Contractor must note that the safe and proper removal and disposal of all asbestos material is the Contractor's full responsibility and therefore the contractor's price/rates must include for all work in connection with same; no claims on the grounds of want of knowledge will be entertained whatsoever.	1	item			
	Removing Finishes; Asbestos Material					
F	Submit Plan of Work and 14 day prior notification to the Health & Safety Authority	1	item			
G	Setup Decontamination Unit & Form Enclosures	1	item			
H	Specialist removal and disposal of asbestos-containing valves in accordance with all relevant safety and environmental regulations.	1	item			
J	Specialist removal and disposal of asbestos - asbestos in grundfos pump gaskets - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
K	Specialist removal and disposal of asbestos - asbestos in water tank gaskets - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
L	Environmental clean to achieve clearance certification	1	item			
M	Asbestos Removal & Disposal Certificates	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	INAB Accredited Asbestos Clearance Certification					
B	Reassurance Air Monitoring and Re-occupation Clearance Certification by an Asbestos Consultant	1	item			
	Notes					
C	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
D	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
E	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
	ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS					
	(51) HEATING CENTRE - BOILER ROOM 1					
	System					
	Heating center installation, testing and commissioning; consisting of 1nr Biomass boiler (Primary heating source) and 3nr LPG gas fired condensing boilers (secondary heating source) serving radiators throughout the building; incorporating the existing pressurisation unit, expansion vessel, pipework, pumps and all associated valves; the existing header and on floor distribution pipework to be retained and reused; existing flow rates to be recorded prior to works and re-established at the end of the works; The heating system shall be flushed and provided with appropriate chemical treatment; Commissioning results including a flue gas analysis shall be provided for the boilers prior to handover, along with a statement by the manufacturer/supplier confirming their correct and efficient operation; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/6. Heating System, Section B (56) Heating System Pipework; Volume 3; Volume 4 and Drawings (5-)M004					
	Primary Equipment					
	Boiler; supply and installation complete; Type: Forced draught condensing pre-mix fully modulating boiler; Fuel: LPG; Heat exchanger: Stainless steel; Casing: Steel; Insulation 50mm rockwool; Output: 229.4kW; Flow rate: 2.7kg/s; Flow Temperature: 80°C; Return Temperature: 60°C; Max water side pressure differential: 50kPa; Rated pressure: 6 bar; Efficiency: 96% seasonal efficiency; Accessories: Safety valve, Pressure Gauge, Temperature Gauge, Drain cock; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications Volume 3 - Equipment Schedules					
A	Boiler; Ref: B-01 - B03; Location: Plant Room	3	nr			
	Accessories associated with Primary Equipment					
	Stop valves for isolation of LPHW pipework up to 65mm Dia; Type: Lever operated, Brass full bore ball valve, WRC approved; Materials: to suit steel tube: Bronze or DZRR copper alloy body; Chrome or nickel plated DZR sphere with full bore flow aperture. PTFE seals and stem seals. Anti-blowout stem; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
B	50mm Stop valves	2	nr			
	Stop valves for isolation of LPHW pipework over 65mm Dia; Type: Lever operated, controlled elastomer compression on flange faces; semi lugged wafer type design, for installation between flanged pipework connections, body to suit IS EN 1092-2; Materials: Cast iron body; stainless steel shaft; aluminium bronze disc; EPDM seat; lever and gear operated valves with long body neck; Seat - Bonded; all in strict accordance with Engineers Specification Volume 2/B					
C	80mm Stop valves	6	nr			
D	125mm Stop valves	18	nr			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
A	50mm Non-return valves	1	nr			
B	125mm Non-return valves	3	nr			
	Double regulating valve with orifice measurement; Type: Screwed double regulating valves up to 65Dia. Flanged for 65 Dia and above; WRAS approved; Material: To suit steel tube; Material - Cast iron to IS EN 13789; Oblique or Y pattern; copper alloy, nickel alloy or resilient valve face; rising stem outside screw or non-rising stem inside screw; manufacturer's standard materials; Provide drain plug facility; independent means for positive isolation on pressure tapping or adapter. include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
C	80mm Double regulating valve	1	nr			
D	125mm Double regulating valve	3	nr			
	Pressure Relief Safety Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
E	125mm Pressure relief safety valves	1	nr			
	Strainer Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
F	80mm Strainer Valve	2	nr			
	Motorized valves; maximum power consumption of 1 W; minimum static pressure of 10 bar; differential pressure of 250 kPa; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
G	50mm 2-port motorized valves	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
H	Temperature sensor	10	nr			
	Pressure gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
J	80mm Pressure gauge	3	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
K	80mm Temperature gauge	4	nr			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Flexible connections; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	80mm Flexible connections	2	nr			
B	125mm Flexible connections	6	nr			
	Pumps; supply and installation; complete; Pump Head: 1; Integrated VSD: No; Variable speed control: N/A Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
C	Pump LPHW, Ref: PB01; Flow rate: 2.744kg/s; External pressure drop: 120kPa; Temp: 80°c	1	nr			
D	Pump LPHW, Ref: PB02; Flow rate: 2.744kg/s; External pressure drop: 120kPa; Temp: 80°c	1	nr			
E	Pump LPHW, Ref: PB03; Flow rate: 2.744kg/s; External pressure drop: 120kPa; Temp: 80°c	1	nr			
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
F	Pump LPHW, Ref: PHBI01; Flow rate: 3.59kg/s; External pressure drop: 200kPa; Temp: 80°c	1	nr			
	Pressurisation Unit; supply and installation; complete; System: Heating; Fluid: Water; Fluid Temp: 80°C - 60°C; Energy Input: 600kW; Minimum expansion vessel size: 531 L; Maximum Fill Pressure: 6 bar; System Height: 8m; Tank Size: 4 L; Fill Rate: 12L/m; No. of Pumps (with auto changeover if multiple) per unit: 2; Maximum Ambient: 20°C; Pump Casing Material: Gun Metal; Pump Shaft Material: Stainless Steel; c/w isolation valve; lockshield valve, strainer on pumps; pressure gauge; air relief valve, pressure relief valve; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
G	Pressurisation Unit; Ref: PU-01; Location: Plant room	1	nr			
	Chemical dosing pot; supply and installation; complete; c/w foot valve; chemical drum; Cleansing; Corrosion inhibitor and wall mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
H	Chemical dosing pot	1	nr			

To Collection €

(5-) MECHANICAL INSTALLATION (Cont)

Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 8.232L/s; Maximum working temp: 110°C; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework; separator to be capable of separating particles with a size of 5um and larger; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules

A	Air/Dirt separator; Ref: DA1	1	nr		

Unvented Expansion Vessel; supply and installation; complete; include for all accessories, fixings and mounting brackets; complete; include for all fixings and mounting brackets; all in strict accordance with the Mechanical Engineers Specification Volume 2

B	Unvented Expansion Vessel	1	nr		

Stainless steel flue; supply and installation; complete; External lining: 304 stainless steel; Insulation: 25mm mineral wool; Internal lining: 316 stainless steel; Fire rating: 2 hr to EN 13501; Structure: The detailed design, structural stability including all anchoring of the flue arrangement shall be the sole responsibility of the contractor; Support material: Corrosion proof, treated supports; Flue dimensions: Confirm with combustion equipment supplier prior to ordering; c/w individual modulating air intake control damper and terminated with a propriety cowl; include for all necessary branch fittings, weather roof flashing, rain caps and supports; The flue shall be fitted with adequate supports, offsets, tee's, condensate to drain and termination unit; include for all accessories, fittings and firestopping; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules

C	Twin walled flue; Size 125mm diameter	5	nr		
D	Twin walled flue; Size 150mm diameter	1	nr		

Heat meter; supply and installation; complete; Accuracy Shall be accurate within 1% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules

E	Heat Meter, Ref: HM02, HM03, HM04, HM05	4	nr		

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Oil-filled electric radiator; supply and installation; powder coated white finish; radiator control to turn on at 5°C, switch off at 14°C; linked to local temperature sensor, via BMS; c/w mounting brackets; include for all fixings and accessories; in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
A	Oil filled Electric radiator; Output 1kW	1	nr			
	Distribution					
	Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
B	80mm diameter pipework	1	item			
	Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B					
C	40mm diameter pipework	1	item			
D	50mm diameter pipework	1	item			
E	54mm diameter pipework	1	item			
F	80mm diameter pipework	1	item			
G	125mm diameter pipework	1	item			
H	250mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
J	to 40mm diameter pipework	1	item			
K	to 50mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
B	to 80mm diameter pipework	1	item			
	Insulation, 80mm thick					
C	to 125mm diameter pipework	1	item			
D	to 250mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
E	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
F	to 40mm diameter pipework	1	item			
G	to 50mm diameter pipework	1	item			
H	to 54mm diameter pipework	1	item			
J	to 80mm diameter pipework	1	item			
K	to 125mm diameter pipework	1	item			
L	to 250mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
M	Testing and commissioning	1	item			
N	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
P	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
Q	Working drawings	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Co-ordination drawings; all in accordance with Engineers Specification					
A	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
B	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
C	Identification plates, labels and the like	1	item			
	(51) HEATING CENTRE - BOILER ROOM 2					
	System					
	Heating center installation, testing and commissioning; 2nr LPG gas fired condensing boilers (secondary heating source) serving radiators throughout the building; existing flow rates to be recorded prior to works and re-established at the end of the works; The heating system shall be flushed and provided with appropriate chemical treatment; Commissioning results including a flue gas analysis shall be provided for the boilers prior to handover, along with a statement by the manufacturer/supplier confirming their correct and efficient operation; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/6. Heating System, Section B (56) Heating System Pipework; Volume 3; Volume 4 and Drawings (5-)M004, (5-)M006					
	Primary Equipment					
	Boiler; supply and installation complete; Type: Forced draught condensing pre-mix fully modulating boiler; Fuel: LPG; Heat exchanger: Stainless steel; Casing: Steel; Insulation 50mm rockwool; Output 60kW; Flow rate: 0.7kg/s; Flow Temperature: 80°C; Return Temperature: 60°C; Max water side pressure differential: 50kPa; Rated pressure: 6 bar; Efficiency: 96% seasonal efficiency; Accessories: Safety valve, Pressure Gauge, Temperature Gauge, Drain cock; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications Volume 3 - Equipment Schedules					
D	Boiler; Ref: B05 - B06; Location: Plant Room	2	nr			
	Accessories associated with Primary Equipment					
	Stop valves for isolation of LPHW pipework up to 65mm Dia; Type: Lever operated, Brass full bore ball valve, WRC approved; Materials: to suit steel tube: Bronze or DZRR copper alloy body; Chrome or nickel plated DZR sphere with full bore flow aperture. PTFE seals and stem seals. Anti-blowout stem; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
E	25mm Stop valves	2	nr			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Stop valves for isolation of LPHW pipework over 65mm Dia; Type: Lever operated, controlled elastomer compression on flange faces; semi lugged wafer type design, for installation between flanged pipework connections, body to suit IS EN 1092-2; Materials: Cast iron body; stainless steel shaft; aluminium bronze disc; EPDM seat; lever and gear operated valves with long body neck; Seat - Bonded; all in strict accordance with Engineers Specification Volume 2/B					
A	65mm Stop valves	17	nr			
B	125mm Stop valves	3	nr			
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
C	165mm Non-return valves	2	nr			
	Double regulating valve with orifice measurement; Type: Screwed double regulating valves up to 65Dia. Flanged for 65 Dia and above; WRAS approved; Material: To suit steel tube; Material - Cast iron to IS EN 13789; Oblique or Y pattern; copper alloy, nickel alloy or resilient valve face; rising stem outside screw or non-rising stem inside screw; manufacturer's standard materials; Provide drain plug facility; independent means for positive isolation on pressure tapping or adapter. include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
D	25mm Double regulating valve	1	nr			
E	65mm Double regulating valve	4	nr			
	Pressure Relief Safety Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
F	65mm Pressure relief safety valves	1	nr			
	Capped Ends; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
G	150mm Capped Ends	2	nr			
	Drain Cock; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
H	150mm Drain Cock	1	nr			
	Strainer Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
J	65mm Strainer Valve	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Motorized valves; maximum power consumption of 1 W; minimum static pressure of 10 bar; differential pressure of 250 kPa; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
A	25mm 3-port motorized valves	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
B	Temperature sensor	8	nr			
	Pressure gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
C	125mm Pressure gauge	2	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
D	65mm Temperature gauge	2	nr			
E	125mm Temperature gauge	2	nr			
	Flexible connections; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
F	25mm Flexible connections	2	nr			
G	65mm Flexible connections	6	nr			
	Pumps; supply and installation; complete; Pump Head: 1; Integrated VSD: No; Variable speed control: N/A Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
H	Pump LPHW, Ref: PB04; Flow rate: 0.718kg/s; External pressure drop: 120kPa; Temp: 80°c	1	nr			
J	Pump LPHW, Ref: PB05; Flow rate: 0.718kg/s; External pressure drop: 120kPa; Temp: 80°c	1	nr			
K	Pump LPHW, Ref: PHW01; Flow rate: 1.32kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
L	Pump LPHW, Ref: PHW02; Flow rate: 1.32kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
A	Pump LPHW, Ref: PH01; Flow rate: 1.435kg/s; External pressure drop: 150kPa; Temp: 80°c	1	nr			
	Chemical dosing pot; supply and installation; complete; c/w foot valve; chemical drum; Cleansing; Corrosion inhibitor and wall mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
B	Chemical dosing pot	1	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 8.232L/s; Maximum working temp: 110°C; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework; separator to be capable of separating particles with a size of 5um and larger; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
C	Air/Dirt separator; Ref: DA1	1	nr			
	Stainless steel flue; supply and installation; complete; External lining: 304 stainless steel; Insulation: 25mm mineral wool; Internal lining: 316 stainless steel; Fire rating: 2 hr to EN 13501; Structure: The detailed design, structural stability including all anchoring of the flue arrangement shall be the sole responsibility of the contractor; Support material: Corrosion proof, treated supports; Flue dimensions: Confirm with combustion equipment supplier prior to ordering; c/w individual modulating air intake control damper and terminated with a propriety cowl; include for all necessary branch fittings, weather roof flashing, rain caps and supports; The flue shall be fitted with adequate supports, offsets, tee's, condensate to drain and termination unit; include for all accessories, fittings and firestopping; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
D	Twin walled flue; Size 125mm diameter	2	nr			
E	Twin walled flue; Size 150mm diameter	1	nr			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Heat meter; supply and installation; complete; Accuracy Shall be accurate within 1% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
A	Heat Meter; Ref: HM03.1, HM04.1	2	nr			
	Oil-filled electric radiator; supply and installation; powder coated white finish; radiator control to turn on at 5°C, switch off at 14°C; linked to local temperature sensor, via BMS; c/w mounting brackets; include for all fixings and accessories; in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
B	Oil filled Electric radiator; Output 1kW	1	nr			
	Distribution					
	Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
C	125mm diameter pipework	1	item			
	Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B					
D	25mm diameter pipework	1	item			
E	40mm diameter pipework	1	item			
F	50mm diameter pipework	1	item			
G	54mm diameter pipework	1	item			
H	65mm diameter pipework	1	item			
J	125mm diameter pipework	1	item			
K	150mm diameter header pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
A	to 25mm diameter pipework	1	item			
B	to 40mm diameter pipework	1	item			
C	to 50mm diameter pipework	1	item			
D	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
E	to 65mm diameter pipework	1	item			
	Insulation, 80mm thick					
F	to 125mm diameter pipework	1	item			
G	to 150mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
H	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
J	to 25mm diameter pipework	1	item			
K	to 40mm diameter pipework	1	item			
L	to 50mm diameter pipework	1	item			
M	to 54mm diameter pipework	1	item			
N	to 65mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	to 125mm diameter pipework	1	item			
B	to 150mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
D	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
E	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
F	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
G	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
H	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
J	Identification plates, labels and the like	1	item			
	(52) DRAINAGE AND REFUSE DISPOSAL					
	System					
	Soils and Waste Drainage Installation, testing and commissioning; complete; The complete installation of all above ground foul water drainage and refuse disposals; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Section 7, Volume 3, Volume 4 and Drawing 4.3(50)M004					
	Terminal equipment and fittings					
	Floor Gully; supply and installation; complete; Type: Stainless steel; c/w removable core; include for all fittings and seals; all in accordance with the Mechanical Specification					
K	Floor Gully	2	nr			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Distribution System					
	Condensate pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; all in strict accordance with the Mechanical Specification Volume 2/A 7.4					
A	28mm nominal diameter; supports at average 1200mm centres vertical, 500mm centres horizontal; ears fixed with screws to background requiring plugging	1	item			
B	32mm nominal diameter; supports at average 1200mm centres vertical, 500mm centres horizontal; ears fixed with screws to background requiring plugging	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	(53) WATER SERVICES - HOT AND COLD WATER BOILER ROOM 1					
	System					
	Cold Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.3(5-)M004					
	Hot Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.3(5-)M004					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
A	50mm Isolation valves	2	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
B	54mm Temperature gauge	1	nr			
C	67mm Temperature gauge	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
D	Temperature sensor, calorifier	1	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
E	Water Meter; Ref: WM01	1	nr			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Distribution					
	Copper pipes and fitting; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
A	35mm diameter pipework	1	item			
B	42mm diameter pipework	1	item			
C	50mm diameter pipework	1	item			
D	54mm diameter pipework	1	item			
E	67mm diameter pipework	1	item			
F	76mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
G	to 35mm diameter pipework	1	item			
H	to 42mm diameter pipework	1	item			
J	to 50mm diameter pipework	1	item			
K	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
L	to 67mm diameter pipework	1	item			
M	to 76mm diameter pipework	1	item			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
A	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
B	to 35mm diameter pipework	1	item			
C	to 42mm diameter pipework	1	item			
D	to 50mm diameter pipework	1	item			
E	to 54mm diameter pipework	1	item			
F	to 67mm diameter pipework	1	item			
G	to 76mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
H	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
J	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
K	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
L	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
M	As built drawings; complete	1	item			
				To Collection €		

(5-) MECHANICAL INSTALLATION (Cont)

Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents

A	Identification plates, labels and the like; complete	1	item		

(53) WATER SERVICES - HOT AND COLD WATER BOILER ROOM 2

System

Cold Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.3(5-)M004

Hot Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.3(5-)M004

Equipment

Calorifier; supply and installation; complete; Capacity: 23kW; Storage Capacity: 1400litres; Flow temperature: 60°C; Temperature difference: 20K; LPHW flow rate: 0.3kg/s; Electric immeresion: 10kW; Insulation: vessel insulated to U-value of 0.25W/m2K or better; Material: cylinder stainless steel; Efficiency: ErP rating if B or better; Test pressure: 6 bar for cylinder, 10bar for coil; Crossion protection: magnesium electrolytic protection anode; Connections: Cold inlet at base of unit and hot water outlet at top, hwsr 1/3 from top; Electric Immersion Maintenance: Immersions shall be fully removable through flanged, insulated connections; Electric Immersion protection: immersions shall include run dry protection and over temperature; Electric Immersion Trip: Immersion shall include over temperature protection requiring manual reset; c/w Packaged expansion kit, Non-return valve, Pressure relief valve, temperature gauge, cylinder temperature sensor pocket; include for all accessories and fittings; complete; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules

B	Calorifier; Ref: C01; Location: Boiler room 2	1	nr		

Accessories associated with Primary Equipment

Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B

C	25mm Isolation valves	3	nr		
D	50mm Isolation valves	3	nr		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Double regulating valve; Type: globe valve c/w macro and micro position indicator, locking mechanism; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
A	25mm Double regulating valve	1	nr			
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
B	50mm Non-return valves	1	nr			
	Pressure Relief Safety Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
C	25mm Pressure relief safety valve	1	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
D	25mm Temperature gauge	2	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
E	Temperature sensor, calorifier	1	nr			
	Tundish; supply and installation; complete; c/w mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
F	Tundish	1	nr			
	Magnetic water filter; supply and installation; complete; c/w mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
G	Magnetic water filter	1	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 8.232L/s; Maximum working temp: 110°C; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework; separator to be capable of separating particles with a size of 5um and larger; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
H	Air/Dirt separator; Ref: DA1	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
A	Pump HWR, Ref: PHW02; Flow rate: 1.22kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
	Unvented Expansion Vessel; supply and installation; complete; include for all accessories, fixings and wall mounting brackets; complete; all in strict accordance with the Mechanical Engineers Specification					
B	Expansion Vessel	1	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
C	Water Meter; Ref: WH01	1	nr			
	Distribution					
	Copper pipes and fitting; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
D	25mm diameter pipework	1	item			
E	42mm diameter pipework	1	item			
F	50mm diameter pipework	1	item			
G	54mm diameter pipework	1	item			
H	67mm diameter pipework	1	item			
J	76mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
A	to 25mm diameter pipework	1	item			
B	to 42mm diameter pipework	1	item			
C	to 50mm diameter pipework	1	item			
D	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
E	to 67mm diameter pipework	1	item			
F	to 76mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
G	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
H	to 25mm diameter pipework	1	item			
J	to 42mm diameter pipework	1	item			
K	to 50mm diameter pipework	1	item			
L	to 54mm diameter pipework	1	item			
M	to 67mm diameter pipework	1	item			
N	to 76mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
A	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
B	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
C	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
D	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
E	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
F	Identification plates, labels and the like; complete	1	item			
	(53) WATER DISTRIBUTION - MAINS WATER					
	System					
	Mains Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.3(5-)M004					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
G	28mm Isolation valves	6	nr			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
A	28mm Non-return valves	3	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
B	Water meter; Ref: WH01	1	nr			
	Distribution system					
	Multi-layer non-matallic pipework and fittings; in accordance with the Irish Standard IS EN 806:2005: Specification for installations inside buildings conveying water for human consumption; include for all fixing brackets, hangers and supports; include for all elbows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Specification					
C	15mm diameter pipework	1	item			
D	22mm diameter pipework	1	item			
E	25mm diameter pipework	1	item			
F	28mm diameter pipework	1	item			
G	35mm diameter pipework	1	item			
H	42mm diameter pipework	1	item			
J	54mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
A	to 15mm diameter pipework	1	item			
B	to 22mm diameter pipework	1	item			
C	to 25mm diameter pipework	1	item			
D	to 28mm diameter pipework	1	item			
E	to 35mm diameter pipework	1	item			
F	to 42mm diameter pipework	1	item			
G	to 50mm diameter pipework	1	item			
H	to 54mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
J	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
K	to 15mm diameter pipework	1	item			
L	to 22mm diameter pipework	1	item			
M	to 25mm diameter pipework	1	item			
N	to 28mm diameter pipework	1	item			
P	to 35mm diameter pipework	1	item			
Q	to 42mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	to 50mm diameter pipework	1	item			
B	to 54mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
C	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
D	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
E	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
F	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
G	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
H	Identification plates, labels and the like; complete	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	(54) GAS DISTRIBUTION - LPG GAS SERVICES					
	System					
	LPG Gas distribution; installation testing and commissioning; The school building will be fed from a new incoming LPG gas supply, The gas supply shall extend to serve the gas fired boiler within the plantroom; The contractor shall allow for liaising with the gas supplier regarding coordination of works and certification of the site gas pipework and tank installation; LPG installation shall be installed in compliance with IS3213; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.3(5-)M004					
	Accessories associated with Primary Equipment					
	Stop Valves for isolation of gas pipework 65mm Dia and above; Type: Lever operated (gradual notch) butterfly valves; Construction - Provide controlled elastomer compression on flange faces; semi-lugged wafer type design, for installation between flanged pipework connections; Provide lever and gear operated valves with long body neck for lagging clearance; Seat - Bonded; Materials: Cast iron body; stainless steel shaft; aluminum bronze disc; EPDM seat; Operation - Lever and graduated notch plate; include for all seals; all in strict accordance with Engineers Specification Volume 2					
A	80mm Stop valves	9	nr			
	Pressure regulator; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2					
B	80mm Pressure regulator	2	nr			
	Strainer Valves; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2					
C	80mm Strainer valves	5	nr			
	Flexible connections; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2					
D	80mm Flexible connections	5	nr			
	Gas meter; supply and installation; complete; Accuracy Shall be accurate within 0.2m3/hr up to maximum valve above; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, no battery backup; Utility Meter: In addition to above, provide utility meters to utility requirements; Utility Meter: Shall be 2m from any window or opening, shall be provide in locked cage (measured elsewhere); include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
E	Gas Meter; Ref: GM01	2	nr			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	Tamper proof, lockable metal caging	2	nr			
	Distribution System					
	Medium grade black mild steel pipes and fittings; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; Painted with one primer coat - Zinc phosphate primer), one final coat of ochre yellow paint (Ral 1024; all in strict accordance with Engineers Specification Volume 2					
B	80mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	(54) GAS DETECTION SYSTEM					
	System					
	Gas detection system installation testing and commissioning; A gas detection system will be installed in the heating center comprising of gas detectors, heat detectors, slam shut valve, gas detection panel and emergency lock-stop located adjacent to the boiler room door; The gas detection panel shall be provided with volt free contacts and an I/O interface unit for connection to the schools fire alarm system; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.3(5-)M005, (5-)M006					
	Primary Equipment					
	Gas detection control panel; c/w emergency knock-off button, reset button, mute button, LED indication for power on, gas-on and emergency stop; free relay output for the BMS; IP44; CE rated, IEC61779-1; wall mounted; include for all accessories and fittings; all in accordance with the Mechanical Specification Volume 3 - Equipment schedules					
A	Gas detection control panel; Location: Boiler room 1	1	nr			
B	Gas detection control panel; Location: Boiler room 2	1	nr			
	Accessories associated with Primary Equipment					
	Gas Slam Shut Valve; supply and installation; complete; Auto reset on loss of power and fire alarm reset; compliance to EN161 and DIN Class A; maximum consumption of 2W during normal usage; all in strict accordance with Engineers Specification Volume 3 - Equipment schedules					
C	80mm Gas solenoid valve	2	nr			
	Emergency Push Button; supply and installation; complete; all in strict accordance with Engineers Specification Volume 2					
D	Emergency Push Button	2	nr			
	Gas Detectors; supply and installation; complete; IP44 protection; Mounting: mounted over each burner, linked to the gas control panel; c/w gas conical collector hood; all in strict accordance with Engineers Specification Volume 2					
E	Gas detector	5	nr			
	Heat Detectors; supply and installation; complete; all in strict accordance with Engineers Specification Volume 2					
F	Heat Detectors	5	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
	(58) FIRE PROTECTION INSTALLATION					
	System					
	Fire Fighting installation, testing and commissioning; complete; Hand held fire extinguishers and fire blankets shall be provided throughout the building as detailed on the drawings; The installation will comply with BS 5306-2000-Part 8; The Contractor shall be responsible for carrying out the commissioning of the portable fire extinguishers before they are installed; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 11, Volume 3, Volume 4 and Drawings 4.3(5-)M005, (5-)M006					
	Terminal equipment and Fittings					
	Fire Extinguishers supply and installation; complete with 5 years guarantee, CE approved and marked; all in accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
G	5KG CO2 Gas Extinguishers; c/w wall mounting brackets and ID signage; complete	2	nr			
H	5kg ABC Dry Powder Fire Extinguishers; c/w wall mounting brackets and ID signage; complete	2	nr			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	(58) HVAC MOTOR CONTROL CENTER & BUILDING MANAGEMENT SYSTEM					
	System					
	BMS System Installation; testing and commissioning; complete; Building management software including a target and monitoring system based on a traffic light system shall be designed and installed in this school to inform relevant personnel for energy usage in the school. How utility supplies are behaving when set against targeted parameters. This information is to be available on the principals pc. They should be capable of remote monitoring and alarm if there is a problem; all in strict accordance with the Mechanical Specification					
	Primary Equipment					
	MCC Panel; supply and installation; complete; The MCC panel: wall mounted top entry and top exit type with hinged front doors, suitable for installing against a wall; Dimensions: max. width 2000mm, max depth 300mm; Spare capacity: 30%; The MCC shall contain hand/off/auto switches with run and trip indicators and interfaces for all items as detailed on the drawings; each button shall be clearly labelled showing the area served; include for all fittings and accessories; all in accordance with the Mechanical Engineers Specification					
A	MCC Panel; Ref: MCC; Location: Plant room	1	nr			
B	MCC Panel; Ref: MCC; Location: Biomass Unit	1	nr			
	External sensor; linked to BMS; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 4					
C	External frost sensor	2	nr			
D	External temperature sensor	2	nr			
	Remote data transmitter, supply and installation, complete; 4G enabled transmitter capable of interfacing with utility meters and transmitting recorded data to an external web-based front-end system; include for all fittings and accessories; all in accordance with the Mechanical Specification					
E	Remote data transmitter	1	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
G	Operating and maintenance manuals	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Working drawings; all in accordance with Engineers Specification					
A	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
B	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
C	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
D	Identification plates, labels and the like	1	item			
	MECHANICAL INSTALLATIONS					
	Sundries & Builders Work					
	General Attendances					
E	Provide all general attendances in accordance with Arm 4 .	1	item			
F	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
G	Provide use of the Main Contractors scaffolding.	1	item			
H	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
J	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
K	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
L	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Mechanical services works, including testing and commissioning , and pay all ongoing operation charges.	1	item			
M	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
N	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
P	Provide temporary telephone services to the Mechanical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Include for unloading, hoisting/cranage and placing into position all items of heavy plant and site offices supplied by the sub-contractors.	1	item			
B	Allow for maintaining all ducts, chases, trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
C	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
D	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
E	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	Special Attendances					
F	Provide all special attendances in accordance with Arm 4 Clause 3.1	1	item			
G	Provide temporary roads and hardstandings in connection with heavy items of plant and the like.	1	item			
H	Provide accommodation for the sub-contractor's staff for eating, site lavatories, site washing facilities, and cloaks.	1	item			
J	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
K	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
L	Provide temporary distribution systems for lighting, power, water for the execution of the electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
M	Provide the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
N	Protection of the works the Main Contractor is responsible for providing adequate protection at all times for the Mechanical services installation.	1	item			
P	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day.	1	item			
Q	Provide external access to high level on building facade to permit the installation of any external equipment/fittings and for the removal of existing services as required.	1	item			
R	Provide Mobile Elevated Working Platforms (MEWP) or scaffolding for Mechanical sub-contractors working at high level.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide for weathering & sleeving around all penetrations through the external structure of the building and to allow for sealing to fabric to maintain air tightness.	1	item			
B	Allow for maintaining all ducts, chases, trenches, trunking etc, clean and free of all water, debris and rodents at all times.	1	item			
C	Allow for making good and fire sealing of all builders work opes with proprietary sealant to architects details, where services penetrate fire zones.	1	item			
D	Allow for coordination with local authorities and utility providers in respect of application for connections, providing excavation of roads and full coordination with various utility companies.	1	item			
E	Coordinate with Mechanical Contractor to facilitate fitting of all sanitary ware.	1	item			
F	Allow for patrices behind ceiling tiles and ceilings for the support of light fittings, grilles, smoke detectors, sensors etc.	1	item			
G	Allow for weathering details on all services passing through external envelope.	1	item			
H	Allow for all service / utility entries into building.	1	item			
J	Allow for clearing away and disposal of any rubbish.	1	item			
K	Provide safe access to roofspace to facilitate Mechanical installation work.	1	item			
L	Making good of opes for fire smoke dampers.	1	item			
M	Provide and maintain the specific temperatures and humidity levels.	1	item			
N	Contractor to provide for the construction of a walkway within the Attic space for service and maintenance of water and ventilation services.	1	item			
P	Contractor to ensure all existing services shut downs for connecting in new and changeovers shall be carried out between 10pm on a Sunday Night and 6pm on a Monday morning, to avoid any interruptions of the running of the existing school; times to be agreed with school management.	1	item			
Q	Provide plywood protective cover over boiler for protection.	1	item			
	Unload, hoist distribute, and place in position the following items of plant and equipment:					
R	Gas boiler	1	item			
S	Biomass unit	1	item			
T	Calorifier tank	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Pumps	1	item			
	Sundries & Builders Work					
	General					
B	Marking positions of holes, mortices and chases	1	item			
C	Testing & Commissioning	1	item			
D	Preparing drawings of "as completed" installations	1	item			
E	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
F	Keys, tools and spares	1	item			
	In-situ concrete; plain; to IS EN 206; Grade C30; formwork to sides of platform, powerfloating finish; all in strict accordance with the Engineers Drawings and Specification					
	Bases					
G	Size 850mm x 1650mm x 100mm thick	2	nr			
H	Size 1850mm x 1100mm x 100mm thick	2	nr			
J	Size 2650mm x 1850mm x 100mm thick	2	nr			
	Equipment supports; provide mounting grounds for the installation of the following fittings; making good structure and finishes; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
	Equipment supports					
K	Provide wall fixings for portable fire extinguishers to walls at 1500mm above floor	4	nr			
	Forming or cutting holes; including sleeves/plates, making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
L	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
M	cutting or forming opes is deemed to include the making good and sealing of the ope around the pipe or duct		note			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	For ducts/pipes through exisitng external cavity blockwork wall, include for building in sleeves; weather proofing, making good all finishes on completion					
A	Size 1000mm x 250mm opes	2	nr			
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification and Drawings					
	Special works were services pass through structures; external walls, making good all finishes on completion					
B	Size 1000mm x 250mm opes	2	nr			
				To Collection €		

				€	c
(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/5					
Page No. Lot 4.3 Works Con/6					
Page No. Lot 4.3 Works Con/7					
Page No. Lot 4.3 Works Con/8					
Page No. Lot 4.3 Works Con/9					
Page No. Lot 4.3 Works Con/10					
Page No. Lot 4.3 Works Con/11					
Page No. Lot 4.3 Works Con/12					
Page No. Lot 4.3 Works Con/13					
Page No. Lot 4.3 Works Con/14					
Page No. Lot 4.3 Works Con/15					
Page No. Lot 4.3 Works Con/16					
Page No. Lot 4.3 Works Con/17					
Page No. Lot 4.3 Works Con/18					
Page No. Lot 4.3 Works Con/19					
Page No. Lot 4.3 Works Con/20					
Page No. Lot 4.3 Works Con/21					
Page No. Lot 4.3 Works Con/22					
Page No. Lot 4.3 Works Con/23					
Page No. Lot 4.3 Works Con/24					
Page No. Lot 4.3 Works Con/25					
Page No. Lot 4.3 Works Con/26					
Page No. Lot 4.3 Works Con/27					

				€	c
(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/28					
Page No. Lot 4.3 Works Con/29					
Page No. Lot 4.3 Works Con/30					
Page No. Lot 4.3 Works Con/31					
Page No. Lot 4.3 Works Con/32					
Page No. Lot 4.3 Works Con/33					
Page No. Lot 4.3 Works Con/34					
Page No. Lot 4.3 Works Con/35					
Page No. Lot 4.3 Works Con/36					
Page No. Lot 4.3 Works Con/37					
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Page No. Lot 4.3 Works Con/41					
Page No. Lot 4.3 Works Con/42					
Page No. Lot 4.3 Works Con/43					
Page No. Lot 4.3 Works Con/44					
Page No. Lot 4.3 Works Con/45					
(5-) MECHANICAL INSTALLATION **Carried to Summary**					

(6-) ELECTRICAL INSTALLATION

(10) DEMOLITION & ALTERATIONS

ALTERATIONS

Note:

A 1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER. — note

Removing

Plumbing and Engineering Installations

B Alterations to existing switch board to facilitate the installation of new submians; 1nr 40A TP&N sub-mains connection to New MCC panel; 1nr 50A TP&N sub-mains connection to Biomass unit (sub-main cable & TP&N device measured elsewhere); allow for modifications and fittings to existing DB as required to accommodate the new connections; include all isolation, shutdown coordination, and commissioning; all in strict accordance with Electrical Specification and Drawing 4.3(60)E001 — 1 item

C Alterations to existing PV system to facilitate installation of fire-rated DC cabling and fireman#s switch (fireman switch measured elsewhere), including safe isolation, modifications, re-termination and reinstatement of PV system, testing, commissioning, and certification, in full compliance with ET101; all in strict accordance with Electrical Specification and Drawing 4.3(60)E001 — 1 item

D Modification of existing fire alarm system to facilitate interface with existing gas solenoid valve, including all necessary wiring, controls integration, programming, testing, commissioning, and certification, all in strict accordance with Electrical Specification and Drawing 4.3(63)E001 — 1 item

Notes

E The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document. — note

F The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers. — note

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES					
	(61) ELECTRICITY SUPPLY & MAIN DISTRIBUTION - LV INSTALLATIONS					
	System					
	LV installation, testing and commissioning; complete; The Contractor shall allow for the supply and installation of all switchgear, distribution boards and sub-mains cables in accordance with the drawings and attached specification; The Contractor shall be responsible for safe off-loading, receiving, storage, positioning and fixing of the boards and shall be liable for any damage to boards during installation; The Contractor shall submit working drawings to the Engineer for approval prior to manufacture of switchgear; the contractor shall allow for liaising with the ESB; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 and Drawings 4.3(60)E001					
B	LV Installations	1	item			
	Fittings					
C	Isolation device; supply and installation; complete; terminating of incoming and outcoming cabling; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
D	Isolation device; 40A TPN	1	nr			
	Firemans switch; supply and installation (including wiring & terminations); complete; isolation of the electrical supply to the entire building; located at main entrance; fire rated enhanced PH120 cable; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
E	Firemans Switch; isolation of main MCCB within switch board	1	nr			
F	Firemans Switch; isolation of PV system	1	nr			
	Multi-function digital meter; supply and installation; complete; digital multi-meter capable of indicating kVA, kW, KVAR, kWhr, Amps, Volts, etc. per phase and between phases; suitable for interfacing with B.M.S. network; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
G	Multi-function digital meter; BMS meter	3	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Multi-function digital meter; CT meter	3	nr			
	Insulated Matting; supply and installation; complete; Width: 900mm wide; Length: to extend to full Length of switch board, with an additional 300 mm beyond each end; Class rating: based on the system voltage and clearly colour-coded; Standards to conform to BS EN 61111:2009 (IEC 61111:2009); include for all fixings and accessories; all in strict accordance with the Electrical Specification Vol.2 Section 4.3					
B	Insulated matting; Ref: Existing Switch Board	1	nr			
	Main switchboard circuit chart; 'A1' framed drawing of the switchboard to be installed within the switch room; the drawing shall be framed with a perspex cover; include for all accessories; in strict accordance with the Electrical Specification Vol.2 Section 4.3					
C	Main switchboard; Ref: Existing Switch Board	1	nr			
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board to sub-distribution boards/ Control panels located throughout school building; Sub-mains distribution within the building shall be via XLPE/LSF/SWA/PVCarmored cables laid in galvanized steel cable tray/trunking; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Section and Drawing 4.3(60)E001					
D	Submains; Existing switch board to Biomass Unit; 1 x 4c 50sq.mm XLPE/LSF/SWA/ PVC + 16sq.mm CPC	1	item			
E	Submains; Existing switch board to MCC Panel; 1 x 4c 35sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
F	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
G	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
H	Operating and maintenance manuals	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Working drawings; all in accordance with Engineers Specification					
A	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
B	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
C	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
D	Identification plates, labels and the like	1	item			
	(62) POWER - CONTAINMENT					
	System					
	Cable ladder/ tray/ trunking installation, testing and commissioning; complete; The Contractor must allow for the supply and installation of a complete cable support system using galvanized steel cable tray, trunking, conduit and support steelwork as shown on the drawings and as detailed in the specification. The Contractor shall include for all incidental cable containment which may not be shown on the drawings but which may be required to effect cable routes to individual items of equipment, luminaries etc; include for all joints, fixing brackets, supports and fire barrier pillow system; all exposed and exteaneous conductive parts are to be boned and properly earthed in accordance with current wiring regulations; all in accordance with the Electrical Specification Volume 1, Volume 2 and Drawing 4.3(63)E001					
E	Cable Ladder; LV; galvanized steel; heavy duty; size 200mm wide x 50mm high; complete	1	item			
F	Cable Header Trunking; LV; galvanized steel; size 150mm wide x 150mm high; complete	1	item			
G	Conduit; galvanised steel; size 25mm diameter; complete	1	item			
H	Conduit; galvanised steel; size 50mm diameter; complete	1	item			
J	Conduit; flexible steel; size 25mm diameter; complete	1	item			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
A	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
B	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings; complete	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings; complete	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like; complete	1	item			
	(62) POWER - GENERAL SERVICES					
	System					
	General Services and small power installation, testing and commissioning; complete; to include vampire load design strategy; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.3(63)E001					
H	General Services Installation	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Accessories associated with terminal equipment					
	Isolation device; supply and installation (including wiring); complete; surface mounting; include for all accessories and fixings; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification					
A	20amp SPN Isolator switch IP65	12	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	(65) PROTECTIVE SERVICES - EARTHING AND BONDING					
	System					
	Earthing and Bonding; installation; testing and commissioning; The contractor shall undertake to effectively earth the whole of the electrical installation in accordance with the National Rules for Electrical Installations IS-10101:2020. Main equipotent earth bonding should be provided from each of the following items, as a minimum, to the main earthing bar: Incoming Water Main, Incoming Gas Main, Metal drainage pipes, Structural Steelwork, Main Heating Pipework, Main Ventilation Ductwork, Lightning Protection System, Comms Rooms, Supplementary earth bonding shall be carried out on extraneous metal parts at the following locations: Metallic Wireways and Containment, Suspended Ceiling Grids, Wash Hand Basins, Showers, Sinks, WC's, Cleaners Sinks, Catering equipment, Metal worktops, Plantroom Pipework (e.g. across pumps, valves, vessels, etc.); all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.3 (60)E001					
A	Earthing and Bonding	1	item			
	Fittings					
	Earth terminal bar; supply and installation; c/w insulating shrouds to I.S. 10101:2020 and of suitable capacity for the number and size of cables to be connected; all in strict accordance with the Electrical Engineers Specification Vol. 2/A Part 9					
B	Earth terminal bar	1	nr			
	Main earth conductor cable; supply and installation complete; 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
C	Earth terminal bar to earth pits	1	item			
D	Earth terminal bar to Surge arrestor	1	item			
	Main earth conductor cable; supply and installation complete; Cable 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
E	From ESB to earth terminal bar	1	item			
	Equipotent earth bonding; supply and installation complete; Cable 1 x 1 core 10mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
F	Incoming Water Main	1	item			
G	Incoming Gas Main	1	item			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metal drainage pipes	1	item			
B	Structural Steelwork	1	item			
C	Main Heating Pipework	1	item			
D	Main Ventilation Ductwork	1	item			
E	Lightning Protection System	1	item			
F	Lift shaft steel work	1	item			
G	Eircom DP	1	item			
	Supplementary earth bonding; supply and installation complete; 2.5mm2 LSF green/ yellow earth cable; shall be carried out on extraneous metal parts at the following locations; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
H	Metallic Wireways and Containment	1	item			
J	Suspended Ceiling Grids	1	item			
K	Wash Hand Basins	1	item			
L	Showers	1	item			
M	Sinks	1	item			
N	WC's	1	item			
P	Cleaners Sinks	1	item			
Q	Catering equipment	1	item			
R	Metal worktops	1	item			
S	Plant room Pipework	1	item			
	<u>General Earthing and Bonding</u>					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
T	Generally	1	item			
	<u>General</u>					
	Testing and commissioning; all in accordance with Engineers Specification					
U	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(65) SECURITY & PROTECTION - SURGE PROTECTION					
	System					
	Transitent & Overvoltage Protection installation, testing and commissioning; The Contractor shall be responsible for the supply and installation of all incoming and outgoing cables (of all types) to be provided with Lightning/Surge Protection devices; The electrical contractor shall ensure allowance for surge protection at all panels within his scope and those provided by others; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.3 (60)E001					
F	Transitent & Overvoltage Protection	1	item			
	Fittings					
	Surge Suppression Devices; installation (including wiring); complete; Lighting/ Surge Protection devices Type 1 and Type 2 to I.S. EN 62305:2006; all in strict accordance with the Electrical Specification and Drawing 4.3 (60)E001					
G	Surge Protection; 400V TP&N,Type 1 & 2; Existing Switch Board	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
H	Generally	1	item			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
	(68) MECHANICAL WIRING INSTALLATIONS					
	Mechanical Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplies; all in accordance with the Mechanical and Electrical Specification and Drawings 4.3(50)M005					
G	Mechanical Wiring Installation	1	item			
	Fittings					
	Gas detection system mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the 4.3(50)M005					
H	Gas detection control panel (Location: Boiler room)	2	nr			
J	80mm dia Gas solenoid valve	2	nr			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Emergency Stop Button	2	nr			
B	Gas detector	5	nr			
C	Heat detector	5	nr			
	Frost protection mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Drawing 4.3(50)M005					
D	Oil filled Electric radiator; Size 1000mm long x 500mm high; Output 1000w	2	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers					
E	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
F	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
G	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
H	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
J	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
K	As built drawings; complete	1	item			
				To Collection €		

	(6-) ELECTRICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
A	Identification plates, labels and the like; complete	1	item			
	(68) BMS WIRING INSTALLATIONS					
	System					
	BMS Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplied as a 'Free Issue' item by the Mechanical Contractor as part of the BMS installation, and must be installed and connected up by the electrical contractor. Generally, the MCC panels must be installed in boiler houses, plant rooms, etc.; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.3 (5-)M004					
B	BMS Wiring Installation	1	item			
	Equipment					
	Mechanical Control Panel; Mechanical and BMS wiring installation, testing and commissioning; complete; The Contractor shall allow for all wiring associated with the installation of the MCC and BMS outstations; The Contractor shall allow for all switchgear as indicated on the electrical services connection schedules and reflected on the electrical services layouts; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.3(5-)M004					
C	Mechanical Control Center; Ref: MCC Panel, Location: Plant Room	1	item			
D	Mechanical Control Center; Ref: MCC Panel, Location: Biomass Unit	1	item			
	Remote data transmitter, testing and commisssioning; complete; Install loggers and determine the maximum electrical load (MIC) across all phases for the entire school; all in accordance with the Mechanical & Electrical Specification and Drawing 4.2(5-)M004					
E	Remote data transmitter; Boiler Room	1	nr			
	GSM modem; supply and installation; c/w dedicated SIM card, cabling and power supplies; contractor to maintain system for duration of supply contract; include for all fittings and accessories; testing and commissioning, complete; all in accordance with the Mechanical Specification					
F	GSM modem	1	nr			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fittings					
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Plant room					
A	Pressurisation Unit - Low level fault	1	nr			
B	Pressurisation Unit - High level fault	1	nr			
C	Pressurisation Unit - Run indication	1	nr			
D	Main Header - Flow temperature sensor	2	nr			
E	Main Header - Return temperature sensor	2	nr			
F	Main Header - Imersion frost	2	nr			
G	Boiler - Enable	5	nr			
H	Boiler - Temperature set point	5	nr			
J	Boiler - Common alarm	5	nr			
K	Boiler - Shunt pump fault/enable	5	nr			
L	Boiler - Flow temperature sensor	5	nr			
M	Boiler - Burner currently firing feedback	5	nr			
N	Biomass - Enable/fault	1	nr			
P	Biomass - Temperature set point	1	nr			
Q	Biomass - Common alarm	1	nr			
R	Biomass - Primary pump head 1 fault/enable	1	nr			
S	Biomass - Primary pump head 2 fault/enable	1	nr			
T	Biomass - Pump 1 flow set point	1	nr			
U	Biomass - Pump 2 flow set point	1	nr			
V	Biomass - Flow temperature sensor	1	nr			
W	Biomass - Return temperature sensor	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	VT Circuit - Pump head 1 enable/fault	1	nr			
B	VT Circuit - Pump head 2 enable/fault	1	nr			
C	VT Circuit - Flow temperature sensor	1	nr			
D	VT Circuit - Return temperature sensor	1	nr			
E	VT Circuit - 3-port mixing valve	1	nr			
F	Trace heating - Enable/fault	1	nr			
G	Main Secondary Calorifier - Pump head 1 enable/ fault	1	nr			
H	Main Secondary Calorifier - LPHW return temperature	1	nr			
J	Main Secondary Calorifier - 2-port mixing valve	1	nr			
K	Main Secondary Calorifier - Calorifier temperature	1	nr			
L	Main Secondary Calorifier - 3-port diversion valve	1	nr			
M	Main Secondary Calorifier - HWSR pump 1 enable/ fault	1	nr			
N	Main Secondary Calorifier - Sacrificial annode	1	nr			
P	Main Secondary Calorifier - 2-port valve	1	nr			
Q	Main Secondary Calorifier - High limit stat	1	nr			
R	Gas Detection - Gas detector 1	1	nr			
S	Gas Detection - Gas detector 2	1	nr			
T	Gas Detection - Gas detector 3	1	nr			
U	Gas Detection - Heat detector 1	1	nr			
V	Gas Detection - Heat detector 2	1	nr			
W	Gas Detection - Heat detector 3	1	nr			
X	Gas Detection - Fire alarm interface	1	nr			
Y	Metering - Main Gas meter	1	nr			
Z	Metering - Gas meter to boilers	1	nr			
AA	Metering - Gas meter to Water heater	1	nr			
BB	Metering - Mains water meter	1	nr			
CC	Metering - Cold water to hot water meter	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metering - Rainwater usage meter	1	nr			
B	Metering - Flushing water meter	1	nr			
C	Metering - Heat Meter modbus	7	nr			
D	Frost protection - External temperature sensor	1	nr			
E	Frost protection - External Frost Senor	1	nr			
F	Data connection to MCC-Biomass	1	nr			
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all 6 core 0.6mm2 PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Biomass Unit					
G	Fire alarm interface	1	nr			
H	Biomass - Enable/fault	1	nr			
J	Buffer temperature Sensor H/L	1	nr			
K	Buffer temperature Sensor M/L	1	nr			
L	Biomass boiler back end protection	1	nr			
M	Biomass boiler flow temperature sensor	1	nr			
N	Biomass boiler return temperature sensor	1	nr			
P	Heat exchanger pump (primary) - Enable/Fault	1	nr			
Q	Heat exchanger pump (secondary) - Enable/Fault	1	nr			
R	Primary heat exchanger flow temperature sensor	1	nr			
S	Primary heat exchanger return temperature sensor	1	nr			
T	Secondary heat exchanger flow temperature sensor	1	nr			
U	Secondary heat exchanger return temperature sensor	1	nr			
V	Pressurisation Unit - Enable / fault	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Final Circuits (including all points terminations)					
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification, Control points schedule and Drawing (5-)M004					
	Final Circuits - MCC - Plant room					
A	Power - Pressurisation Unit; SPN 20amp	1	nr			
B	Power - Boiler; SPN 20amp	5	nr			
C	Power - Shunt pump; SPN 20amp	5	nr			
D	Power - Trace heating; SPN 20amp	1	nr			
E	Power - Heat meter; SPN 20amp	5	nr			
F	Power - Calorifier sacrificial annode; SPN 20amp	1	nr			
G	Power - Gas detection panel; SPN 13amp	2	nr			
H	Power - VT circuit pump head 1; TPN 20amp	1	nr			
J	Power - VT circuit pump head 2; TPN 20amp	1	nr			
K	Power - Calorifier pump head 1; TPN 20amp	1	nr			
L	Power - Calorifier HWSR pump 1; SPN 20amp	1	nr			
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification and Drawing (5-)M004					
	Final Circuits - MCC - Biomass Unit					
M	Power - Biomass Unit; TPN 100amp	1	nr			
N	Power - Biomass primary pump head 1; SPN 20amp	1	nr			
P	Power - Biomass primary pump head 2; SPN 20amp	1	nr			
Q	Power - Pressurisation Unit; SPN 20amp	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
A	General Earthing and Bonding; complete		item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
B	Testing and commissioning; complete		item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
C	Operating and maintenance manuals; complete		item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
D	Working drawings; complete		item			
	Co-ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
E	Co-ordination drawings;complete		item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
F	As built drawings; complete		item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
G	Identification plates, labels and the like; complete		item			
H						
	ELECTRICAL INSTALLATIONS					
	Sundries and Builders Work					
	General Attendances					
J	Provide all general attendances in accordance with Arm 4.	1	item			
K	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
L	Provide use of the Main Contractors scaffolding.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
B	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
C	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
D	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
E	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
F	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
G	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
H	Include for unloading, hoisting/cranage and placing into position all items of heavy plant supplied by the subcontractors.	1	item			
J	Allow for maintaining all ducts, chases , trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
K	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
L	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
M	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	Special Attendances					
N	Provide all special attendances in accordance with Arm 4 Work Section B Clause 3.1	1	item			
P	Provide temporary access roads and hardstanding in connection with heavy items of plant and the like, forming part of the site establishment works	1	item			
Q	Provide scaffolding internal and external to the building to facilitate installation of high-level electrical services during the contract	1	item			
R	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
S	Provide adequate barriers/tape/signage of exclusion zoning in relation to use of access equipment and ACOPs for working at height	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide construction signage (internal and external) in relation to M&E services e.g live systems etc.	1	item			
B	Provide temporary lighting and power in accordance with IS10101 Wiring Regulations.	1	item			
C	Provide protection to all M&E services installations installed during the works including protection against debris and water ingress	1	item			
D	Provide fire stopping to all electrical services on the vertical and horizontal planes throughout the entire buildings	1	item			
E	Ensure close coordination during the building phase to ensure electrical, ventilation and mechanical services are installed and integrated within the building fabric as designed.	1	item			
F	Provide grounds and fixings for suspension of Electrical services; Electrical loading = 10kg/m Mechanical loading = 40kg/m	1	item			
G	Provide boxing out of containment and pipework as necessary, boxing to be accessible with screwed access.	1	item			
H	Main contractor shall employ a full time M&E Co-ordinator for the duration of the contract works and their duties shall include but not limited to details set out within the specification A2.4 Part 1 of 4 particular specification document	1	item			
J	Contractor shall be aware that drawings are indicative only including the minimum ope sizes; It will be the contractors responsibility in conjunction with their in-house M&E services coordinator to produce construction stage builders works drawings for DT comment	1	item			
K	Provide safe access and task lighting for electrical sub-contractor to all sections of school roofspace	1	item			
L	Provide safe access for electrical sub-contractor to all sections of the site	1	item			
M	The M&E installation within the SEN accommodation is to be a fully recessed installation. The contractor shall include for casting in of all electrical services and recessing of all radiators within the wall panels	1	item			
N	Seal all incoming services to prevent ingress of vermin	1	item			
P	Fire Stopping to all services penetrations throughout	1	item			
Q	Attendance to electrical sub-contractor	1	item			
R	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
S	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
B	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
C	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
D	Provide temporary power supplies (3 phase 400V and maximum loading 15kVA) for welding, handtools, and for commissioning, including infrastructure and all charges fot the contractors use of the facility.	1	item			
E	Provide scaffolding additional to the main contractors standing scaffolding, or access towers if required.	1	item			
F	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day	1	item			
G	Provide facilities for safe removal and disposal of all materials off site	1	item			
H	Provide a week by week program detailing the Mechanical and Electrical service activities	1	item			
J	Provide for heating / drying out the building as and when necessary to comply with their program. This may be done (at the clients specific consent) with the installed conventional heating system (if available). Be responsible, however, for providing the fuel to do this. Be responsible for maintaining background heat until the building is handed over to the client, after the heating system has been commissioned	1	item			
K	Provide and maintain the specific temperatures and humidity levels	1	item			
L	Provide Builders Attendances to all utility services as follows; Gas Networks Ireland, Eir, Virgin Media, Local Authority, ESB Networks.	1	item			
M	Fire stopping requirements of all services penetrations through fire compartment structures to be the responsibility of the building contractor. In addition, all pipework, ductwork, containment and service penetrations shall be fire-stopped where passing through every wall, floor and ceiling regardless if its a fire compartment or not by main contractor. Refer to M&E services drawings indicating main routes of M&E infrastructure. All instances of firestopping shall be labelled and certified using CE certified products including fire-pillows for use inside electrical trunkings.	1	item			
	Unload, hoist, distribute and place in position the following items of heavy plant and equipment					
N	Main switch board	1	item			
P	Sub-distribution boards	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	MCC panel	1	item			
B	Containment	1	item			
C	Cabling	1	item			
D	Lighting	1	item			
E	PV Panels	1	item			
	Sundries & Builders Work					
	General					
F	Marking positions of holes, mortices and chases	1	item			
G	Testing & Commissioning	1	item			
H	Preparing drawings of "as completed" installations	1	item			
J	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
K	Keys, tools and spares	1	item			
	Forming or cutting holes/mortices/chases and the like; including sleeves/plates, intumescent collars; making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
L	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
M	cutting or forming opes is deemed to include the making good and sealing of the ope		note			
	Cutting or forming holes through existing external walls various thicknesses; include for building in sleeves; making good all finishes on completion					
N	440mm x 225mm opes	2	nr			
	Cutting or forming holes through existing internal walls various thicknesses; include for building in sleeves; making good all finishes on completion					
P	440mm x 225mm opes	5	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification P12					
	Special works were services pass through structures; existing external walls various thicknesses, making good all finishes on completion					
A	440mm x 225mm opes	2	nr			
	Special works were services pass through structures; existing internal walls various thicknesses, making good all finishes on completion					
B	440mm x 225mm opes	5	nr			

To Collection €

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/48					
Page No. Lot 4.3 Works Con/49					
Page No. Lot 4.3 Works Con/50					
Page No. Lot 4.3 Works Con/51					
Page No. Lot 4.3 Works Con/52					
Page No. Lot 4.3 Works Con/53					
Page No. Lot 4.3 Works Con/54					
Page No. Lot 4.3 Works Con/55					
Page No. Lot 4.3 Works Con/56					
Page No. Lot 4.3 Works Con/57					
Page No. Lot 4.3 Works Con/58					
Page No. Lot 4.3 Works Con/59					
Page No. Lot 4.3 Works Con/60					
Page No. Lot 4.3 Works Con/61					
Page No. Lot 4.3 Works Con/62					
Page No. Lot 4.3 Works Con/63					
Page No. Lot 4.3 Works Con/64					
Page No. Lot 4.3 Works Con/65					
Page No. Lot 4.3 Works Con/66					
Page No. Lot 4.3 Works Con/67					
Page No. Lot 4.3 Works Con/68					

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/69					
(6-) ELECTRICAL INSTALLATION **Carried to Summary**					

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND					
	EXCAVATION AND EARTHWORK					
	Excavation					
	Excavation					
	Reduce levels					
A	Depth between not exceeding 2.00m	62	m3			
	Extra on Excavation Items for:					
	Breaking up existing					
B	Hard surfaces; Tarmacadam surface; 100mm thick; complete	88	m2			
	Disposal					
	Water					
C	Surface	1	item			
D	Ground	1	item			
	Excavated material; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
E	Disposal off site	53	m3			
F	Disposal off site; existing Tarmac; Disposal to a suitable licensed waste disposal facility	9	m3			
	Filling with hardcore to be obtained off-site; clean angular gravel 20mm, free from pyrite and macarsite as per specification					
	To make up levels					
G	Average thickness not exceeding 250mm	9	m3			
	Filling with hardcore to be obtained off-site; Clause 804 crushed stone well compacted on firm clean formation; compliant with TII Publications series 800, free from pyrite and macarsite as per specification					
	To make up levels					
H	Average thickness not exceeding 250mm	9	m3			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Filling with granular fill material to be obtained off-site; Class 6F2 compliant with TII Publications series 600, free from pyrite and macarsite; depositing in 150mm layers maximum thickness; compacting; as per Drawings and Specification					
	To make up levels					
A	Average thickness exceeding 250mm	27	m3			
	Surface treatments					
	Levelling and compacting; bottom of excavations					
B	Horizontal	88	m2			
	CONCRETE WORK					
	In-situ Concrete					
	Concrete cubes for testing					
	Provide for making concrete cubes from freshly mixed concrete; transporting and testing cubes; all as per details in the Specification					
C	Size 150 x 150 x 150mm	3	nr			
	In-situ Concrete; Reinforced					
	Grade C40/5-XF4 to IS EN 206					
	Beds					
D	Generally; Reinforced	18	m3			
	Surface Finishes					
	Brushed finish to wet concrete as per Specifications					
E	Generally	88	m2			
	Reinforcement					
	Fabric					
	A252 mesh reinforcement; 350mm laps; 350mm end laps; all in strict accordance with the Engineers Drawings and Specification					
F	Horizontal	88	m2			

To Collection €

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Formwork					
	Formwork Generally					
	Sides of beds					
A	Height or width 250 - 500mm	58	m			
B	Extra over for forming recess in floor slab for district heating pipe; comprising 65mm dia x 400mm deep recess; include for cutting to all angles and corners	5	nr			
	SURFACE PAVINGS, FENCING AND LANDSCAPING					
	Fencing					
	Paladin Fencing; Steel mesh and wire fence to I.S. EN 10223, comprising striped mesh using 6mm horizontal wire at 145mm centres, reducing to 50mm centres on the V crimp, 4 mm wires structured with 2 No. wires at 40mm centres and 4 No. wires at 20mm centres to give a striped effect; all finished in polyester powder coating to I.S. EN 15773 & I.S. EN 12206; include for 60 x 60 x 2mm hot dipped galvanized steel posts to I.S. EN9 ISO 1461: 199 after fabrication and subsequently eletrostatically powder coated in a plant conforming to EN 1722 Part 16; post centres maximum 2080 mm; fixings: steel clips with 8 mm anti-vandal bolts; 350 x 350 x 600mm Grade C30/37 concrete bases set 100mm below ground level; all as per Specification and Drawings					
	Paladin Fencing System					
C	1800mm high above ground level	23	m			
	Extra over for					
D	Angle posts; 60x60x2 SHS posts, 1800mm high above ground level and 900mm below ground level; set in 450x450x600mm deep concrete grade C28/35 base	4	nr			
	Gates					
E	Single gate; opening size approx 1000 x 1800mm high	2	nr			
	100x100x10 SHS hot dipped galvanised SHS powder coated post; gate posts set in 1000x1000x1000mm C28/35 concrete pocket; top of concrete 300mm below ground level; galvanised to Specification and polyester powder coating to Specification in selected colour, colour to be chosen by the Architect from samples provided on site by the Contractor; complete					
	Gate Posts					
F	100 x 100 SHS posts; 1800mm high above ground level and 900mm below ground level; min 600mm embedment in concrete	4	nr			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Ball stop netting (over gas compound); Description: Ball stop netting system installed over the full area of the gas tank compound, fixed to and supported from the top of paladin fencing, including all necessary supports, cables, brackets and fixings; Manufacturer: Submit proposals; Performance: Complete external system to prevent ingress of balls; Contractor to design system including supports and fixings; Allow for wind loading and avoid overloading fence, provide independent supports if required; Maintain safe clearances to all gas infrastructure and access routes; Netting; Material: UV stabilised HDPE or polypropylene; Colour: Black or green; Mesh size: Max 48 mm; Twine: Min 3 mm; Cables and fixings: Stainless steel or galvanised steel support cables with tensioning gear, non-corroding proprietary fixings; Support steelwork: Galvanised steel brackets/arms as required; Execution: Install taut and secure to manufacturers recommendations; Provide access/demountable sections where required; Do not overstress or modify fence without approval; Submittals: Product data, layout drawings and structural calculations.; all as per Specification and Drawing					
	Ball stop netting					
A	Exceeding 300mm wide	33	m2			

				€	c
(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/72					
Page No. Lot 4.3 Works Con/73					
Page No. Lot 4.3 Works Con/74					
Page No. Lot 4.3 Works Con/75					
(30) SITE ENCLOSURES - PLANT COMPOUND **Carried to Summary**					

					€	c
	(30) SITE ENCLOSURES - RETAINING WALL					
	EXCAVATION AND EARTHWORK					
	General Information					
	Information					
A	The contractor should consult with the Architect and must visit the site to ascertain the extent of the works involved under this section. No variations will be approved for works that ought to have been apparent to the contractor after a site inspection and review of the Architects drawings and specifications		note			
B	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
	Excavation					
	Excavation					
	Foundation Trenches					
C	Depth between 2.00 - 4.00m	381	m3			
	Soft spots					
D	Depth between 2.00 - 4.00m	22	m3			
	Working Space					
	Foundations					
E	Depth between 2.00 - 4.00m; backfilling trenches with clause 804 hardcore compliant with SR21 Annex E	340	m2			
	Disposal					
	Water					
F	Surface	1	item			
G	Ground	1	item			
	Excavated material; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
H	Disposal On-site	216	m3			
J	Disposal Off-site	165	m3			

To Collection €

					€	c
	(30) SITE ENCLOSURES - RETAINING WALL (Cont)					
A	Disposal Off-site; for soft spots	22	m3			
	Filling with hardcore to be obtained off-site; Clause 804 crushed stone well compacted on firm clean formation; compliant with TII Publications series 800, free from pyrite and macarsite as per Engineer's specification					
	To make up levels					
B	Average thickness exceeding 250mm	28	m3			
	Filling with excavated material to be obtained from on site spoil heaps; depositing and compacting as specified by the Employer's Representative					
	To make up levels					
C	Average thickness exceeding 250mm	216	m3			
	Surface treatments					
	Levelling and compacting; bottom of excavations					
D	Horizontal	76	m2			
	CONCRETE WORK					
	In-situ Concrete					
	Concrete cubes for testing					
	Provide for making concrete cubes from freshly mixed concrete; transporting and testing cubes; all as per details in Engineer's Concrete Specification					
E	Size 150 x 150 x 150mm	13	nr			
	Grade C12/15					
	Bulk filling to soft spots					
F	Generally; poured on or against earth or unblinded hardcore	22	m3			
	Blinding					
G	Generally; poured on or against earth or unblinded hardcore	4	m3			
	In-situ Concrete; Reinforced					
	Grade C30/37					
	Foundations					
H	Generally; Reinforced	23	m3			

To Collection €

					€	c
	(30) SITE ENCLOSURES - RETAINING WALL (Cont)					
	Walls					
A	Generally; Reinforced	28	m3			
	Reinforcement					
	Bar reinforcement; hot rolled deformed high yield steel; must be free of loose millscale and thoroughly cleaned to remove all loose rust, oil, grease or other harmful matter prior to being placed in position with and including all necessary laps, spacers, chairs and tying wire; all in strict accordance with the Engineers Drawings and Specification					
	Bar; straight or bent					
B	Nominal size not exceeding 12mm diameter	4.56	t			
C	Nominal size 12mm - 25mm diameter	6.84	t			
	Fabric					
	A393 mesh reinforcement; 350mm laps; 350mm end laps; all in strict accordance with the Engineers Drawings and Specification					
D	Horizontal	76	m2			
	Surface Finishes					
	Trowelling					
E	Generally	10	m2			
	Formwork					
	Formwork Generally					
	Sides of foundations					
F	Height or width 250 - 500mm	61	m			
	Kickers					
G	Walls	31	m			
	Walls					
H	Vertical; two side; Retaining Wall	182	m2			

					€	c
	(30) SITE ENCLOSURES - RETAINING WALL (Cont)					
	METALWORK					
	Non-Structural					
	Guardrail - high powder coated steel railing with 80x12mm top and bottom rail and 80x10mm balustrates @100mm c/s with 80x80 "I" post @1500mm c/s, including 80x12m flat bar at corner or end posts, joiner posts to be flat, finish to be powder-coated to BS 1722-16, joiner posts to be 1100mm high and intermediate posts to be 1500mm high; all fixed to concrete footing, all as per Architects Specification and Drawing 20059-OPP-01-ZZ-DR-A-4004-S1-P01 and Engineers Specification and Drawing 11063-7101					
	Composite Items; Railing, Complete					
A	Railing; 1500mm high	31	m			
	DRAINAGE					
	Below Ground					
	Pea Gravel fill bed and surround; granular side and fill cover to be placed uniformly on either side of the pipe in layers not exceeding 150mm, each layer being compacted by hand and tamping until the pipe has a minimum 150mm compacted cover; as per Engineer's Drawings DG0010-01 & Specification					
	Beds and Surround					
B	450 x 450mm to 150mm diameter pipe	31	m			
	Pipework; land drain pipe					
	Pipes; perforated; PVC SN8 pipework and fittings; as per Engineer's Drawings & Specification					
C	150mm diameter; include for geotextile cloth wrapping for protection	31	m			

To Collection €

				€	c
(30) SITE ENCLOSURES - RETAINING WALL (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/77					
Page No. Lot 4.3 Works Con/78					
Page No. Lot 4.3 Works Con/79					
Page No. Lot 4.3 Works Con/80					
(30) SITE ENCLOSURES - RETAINING WALL **Carried to Summary**					

					€	c
	(50) SITE SERVICES - GAS					
	DRAINAGE/SERVICES - GAS MAIN					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 1nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average Depth 500 - 1000mm	177	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	177	m			
	Around existing services crossing excavations					
E	Storm pipe; crossing excavations	10	nr			
F	Foul pipe; crossing excavations	10	nr			
G	ESB; crossing excavations	2	nr			
	Disposal					
H	Ground Water	1	item			
J	Surface Water	1	item			

					€	c
	(50) SITE SERVICES - GAS (Cont)					
	Sand bed and surround; to Engineer's Specification					
	Beds and surrounds					
A	290 x 215mm, to 90mm pipes / ducts	177	m			
	PVC marker tape "Heptape" or equivalent					
B	Continuous strip laid during trench backfill, 100mm above pipework	177	m			
	Mechanical Installations					
	Gas pipework as per Engineer's Specification & Gas Suppliers details; complete					
	Pipework					
C	Installation only of gas pipework; size: 90mm; pipe to be supplied by Gas Supplier; complete	177	m			
	Tank					
D	Contractor to provide attendances to supplier of 2 Tonne Gas Tank; complete	2	nr			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
E	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
F	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
G	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
H	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
J	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
K	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			

To Collection €

					€	c
	(50) SITE SERVICES - GAS (Cont)					
A	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			
B	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

				€	c
(50) SITE SERVICES - GAS (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/82					
Page No. Lot 4.3 Works Con/83					
Page No. Lot 4.3 Works Con/84					
(50) SITE SERVICES - GAS **Carried to Summary**					

					€	c
	(50) SITE SERVICES - DISTRICT HEATING					
	DRAINAGE/SERVICES - DISTRICT HEATING					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average depth 500 - 1000mm	183	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	183	m			
	Around existing services crossing excavations					
E	Storm pipe; crossing excavations	10	nr			
F	Foul pipe; crossing excavations	10	nr			
G	ESB; crossing excavations	2	nr			
	Disposal					
H	Ground water	1	item			
J	Surface water	1	item			

	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
	Sand bed and surround; to Engineer's Specification					
	Beds and Surrounds					
A	475 x 225mm; to 2nr 100mm duct	183	m			
	PVC marker tape; "Heptape" or equivalent					
B	Continuous strip; laid during trench backfill; 100mm above pipework	183	m			
	Ductwork					
	100mm diameter					
C	Laid in trenches	366	m			
D	Extra over for easy sweep bends	18	nr			
E	Extra over for ducts capped for Biomass connection	2	nr			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
F	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
G	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
H	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
J	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
K	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
L	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			
M	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			

					€	c
	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
A	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

				€	c
(50) SITE SERVICES - DISTRICT HEATING (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/86					
Page No. Lot 4.3 Works Con/87					
Page No. Lot 4.3 Works Con/88					
(50) SITE SERVICES - DISTRICT HEATING **Carried to Summary**					

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS					
	(50) SITE SERVICES (MAINLY MECHANICAL) - WORKS IN CONNECTION WITH BIOMASS UNIT					
	System					
	Biomass unit mechanical connections, installation, testing and commissioning; complete; The Biomass unit shall be supplied by others under a separate contract; The Contractor shall coordinate all interface requirements to ensure a fully operational installation; Prior to handover, the Contractor shall provide commissioning certification confirming that all required cleaning, flushing and water treatment procedures have been correctly carried out; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2/A Part 10, 2/B Part 17; Volume 3; Volume 4 and Drawings 4.3(5-)M002, (5-)M004, (5-)M008					
	Primary Equipment					
	Biomass unit ancillary works; Provide all labour, materials and ancillary works necessary for the coordination and completion of all mechanical connections associated with the installation, testing, commissioning and operation of the biomass boiler plant (biomass unit supplied by others under a separate contract), including all plant room interface connections and associated mechanical services works; complete; all in strict accordance with the Mechanical Engineer#s Specification.					
D	Biomass unit ancillary works; Location: External plant compound	1	nr			

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

Distribution

Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B

A	80mm diameter pipework	1	item		
B	125mm diameter pipework	1	item		

Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B

C	80mm diameter pipework	1	item		
D	125mm diameter pipework	1	item		

Insulation

Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

Insulation, 65mm thick

E	to 80mm diameter pipework	1	item		
F	to 125mm diameter pipework	1	item		

Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

G	General Valve & Plant	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B					
A	to 80mm diameter pipework	1	item			
B	to 125mm diameter pipework	1	item			
C	General Valve & Plant	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
D	Testing and commissioning	1	item			
E	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
F	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
G	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
H	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
J	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
K	Identification plates, labels and the like	1	item			
				To Collection €		

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

(50) SITE SERVICES (MAINLY MECHANICAL) - MAINS WATER

System

Mains Water connections to biomass unit installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.3(5-)M002, (5-)M004,

Accessories associated with Primary Equipment

Stop valves for isolation of MWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B

A	28mm Isolation valves	2	nr		

Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B

B	28mm Non-return valves	2	nr		

Strainer valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B

C	28mm Strainer valves	1	nr		

Distribution system

Polyethylene pipework and fittings; all in strict accordance with the Mechanical Specification

D	28mm diameter pipework	1	item		

Insulation

Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

Insulation, 50mm thick

E	to 28mm diameter pipework	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
A	General Valve & Plant	1	item			
	Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B					
B	to 28mm diameter pipework	1	item			
C	General Valve & Plant	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
D	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
E	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
F	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
G	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
H	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
J	Identification plates, labels and the like; complete	1	item			

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

(50) SITE SERVICES (MAINLY MECHANICAL) - LPG GAS

System

LPG Gas installation testing and commissioning; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Section 8, 2/B Section 16 and Drawing 4.3(5-)M002, (5-)M004, (5-)M007

Equipment

LPG gas tanks; supply and installation; complete; Capacity: 2 tonne; Dimensions: 1500mm Diameter, 3000mm length; Mechanical attendances in connection with the installation of LPG gas tanks; including all necessary pipework connections, valves, regulators, fittings, supports, accessories, testing and commissioning as required to provide a complete installation; all in accordance with the Mechanical Engineers Specification Volume 2/A.

A	LPG Gas Tank	2	nr		

Accessories associated with primary equipment

1st Stage Regulator; supply and installation Complete; all in strict accordance with the Mechanical Specification Part 1, Section 7.3

B	1st Stage Regulator	1	nr		

Second stage regulator c/w tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2/A

C	2nd Stage Regulator	2	nr		

Isolating Valves; supply and installation; complete; include for all accessories; all in strict accordance with the Mechanical Specification Volume 2/A

D	125mm Isolation Valves	4	nr		

Pressure Gauge; supply and installation; complete; include for all accessories;all in strict accordance with the Mechanical Specification Volume 2/ A

E	125mm Pressure Gauge	2	nr		

Pressure relief valve; supply and installation; complete; include for all accessories; all in strict accordance with the Mechanical Specification Volume 2/A

F	125mm Pressure relief Valve	2	nr		

To Collection €

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	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	Tamper proof, lockable metal caging	2	nr			
	Distribution System					
	HDPE pipes and fittings; all in strict accordance with the Mechanical Specification Volume 2					
B	125mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

(50) SITE SERVICES - TRACE HEATING

System

Trace Heating installation, testing and commissioning; complete; Trace heating shall be installed on all the water systems where they travel externally between building blocks; Trace heating shall be provided complete with control panels and all required components to prevent system freezing. Capacity of trace heating shall maintain water temperature above 3øC when ambient temperature is -15øC. Trace heating temperature control shall prevent water temperature rising above 10øC. Trace heating system to incorporate air control thermostats and pipework safety cut out thermostats. All trace heating circuits shall be linked to BMS to provide status and fault indication on BMS; Supply electric trace heating complete with fixing tape, shrink sleeves, crimps, junction boxes and controls; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2; Volume 3; Volume 4 and Drawings (5-)M002

Primary Equipment

Trace heating control panel; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

A	Trace heating panel; Location: Plant room	1	nr		

Accessories associated with Primary Equipment

Self-regulating heating tape; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

B	Self-regulating heating tape	1	item		

Air control thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

C	Air control thermostats	1	item		

Safety cut out thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

D	Safety cut out thermostats	1	item		

Insulation

Modified polyolefin electrical insulation; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

E	80mm diameter pipework	1	item		
F	125mm diameter pipework	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
A	Valves and Plant; generally	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
B	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like	1	item			
				To Collection €		

				€	c
(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/90					
Page No. Lot 4.3 Works Con/91					
Page No. Lot 4.3 Works Con/92					
Page No. Lot 4.3 Works Con/93					
Page No. Lot 4.3 Works Con/94					
Page No. Lot 4.3 Works Con/95					
Page No. Lot 4.3 Works Con/96					
Page No. Lot 4.3 Works Con/97					
Page No. Lot 4.3 Works Con/98					
(50) SITE SERVICES (MAINLY MECHANICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES					
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER TO BIOMASS UNIT					
	System					
	Power to Biomass Unit installation, testing and commissioning; complete; The electrical contractor shall provide all wiring and power supplies associated with the external Biomass Unit as detailed on the wiring schematic; all underground electrical services cables shall be distributed within ducts; separate underground service ducts shall be provided as part of the builders works element; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 - Section A and Drawings					
D	Biomass Power Installation	1	item			
	Accessories associated with terminal equipment					
	Rotary Isolator Switch; supply and installation (including wiring & terminations); complete; surface mounting; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification Volume 2					
E	Rotary Isolator; TPN; 50amp; IP65	1	nr			

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board, located in the existing switch room; Sub-mains distribution outside the building shall be via XLPE/LZOH/SWA armoured cables laid in underground ducts; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Volume 2, Section A and Drawing 4.3 (60)E001					
A	Submains; Existing switch board to Biomass Unit-1; 1 x 4c 50sq.mm XLPE/LZOH/ SWA + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers specification documents and drawings					
C	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers specification documents and drawings					
D	Operating and maintenance manuals; complete	1	nr			
	Working drawings; all in accordance with the Electrical Engineers specification documents and drawings					
E	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers specification documents and drawings					
F	Co- ordination drawings; complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers specification documents and drawings					
G	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers specification documents and drawings					
H	Identification plates, labels and the like; complete	1	item			
				To Collection €		

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					

To Collection €

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
COLLECTION					
Page No. Lot 4.3 Works Con/100					
Page No. Lot 4.3 Works Con/101					
Page No. Lot 4.3 Works Con/102					
(60) SITE SERVICES (MAINLY ELECTRICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
C	The contractor shall also ascertain whether or not there are any E.S.B. cables on the site and arrange for their removal so that it does not delay site progress. All, redundant site services/site services made redundant, for all utilities and services, will be removed as part of the contract.	1	item			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr ducts not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported hardcore; disposal of surplus soil off site; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
D	Average depth 500 - 1000mm	183	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
E	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	183	m			
	Around existing services crossing excavations					
F	Storm pipe; crossing excavations	10	nr			
G	Foul pipe; crossing excavations	10	nr			
H	ESB; crossing excavations	2	nr			

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)					
	Disposal					
A	Ground water	1	item			
B	Surface water	1	item			
	Plain in-situ concrete bed and surround; minimum 150mm bed; Class 16/20; leanmix concrete backfill; as per Engineer's Drawing					
	Beds and Surrounds					
C	595 x 325mm; to 2nr ducts	183	m			
	PVC Red marker tape; "Heptape" or equivalent					
D	Continuous strip; laid during trench backfill; 100mm above pipework	183	m			
	PVC Yellow marker tape; "Heptape" or equivalent					
E	Continuous strip; laid during trench backfill; 300mm above pipework	183	m			
	Ductwork; uPVC duct; LV Duct					
	110mm dia.; include for draw-wire					
F	Laid in trenches	183	m			
G	Extra over for easy sweep bends	9	nr			
H	Extra over for ducts capped for Biomass connection	1	nr			
	Ductwork; uPVC duct; Comms Duct					
	110mm dia.; include for draw-wire					
J	Laid in trenches	183	m			
K	Extra over for easy sweep bends	9	nr			
L	Extra over for ducts capped for Biomass connection	1	nr			

To Collection €

					€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)						
	Chambers					
	Draw pit chamber; complete; excavating pits from stripped level 1000x1000x800mm deep internally; dispose of surplus soil; grading bottom; earthwork support; open bottom pit filled with 50mm course gravel for drainage; RC3 concrete base on 50mm blinding grade gen 3; Concrete roof slab grade C25 c/w opening for cover and frame; 225mm thick Class B engineering brickwork in english bond; Walls: 1000mm high with 50mm rebate for removable cover; include for openings for ducts; Heavy duty cast iron cover and frame to Engineer's Specification bedded in epoxy mortar; include for step irons; all pvc pipes to fall away from building and all pits should not waterlog; pipes to be buried 750mm below ground level; include for backfilling to sides of chamber where necessary; all in accordance with the site plan Drawing					
A	Average depth not exceeding 1000mm	9	nr			
	Sundries					
B	Allow for sealing all incoming service ductwork to prevent ingress of damp, dirt and vermin	1	item			
C	Allow for clearance between Telecom ducts and ESB ducts and cables over 650 volts; of 300mm vertical clearance at crossings and 600mm lateral clearance in parallel trenches	1	item			
D	Allow for clearance between ESB ducts and cables and other service ducts; 150mm vertical clearance at crossings and 300mm lateral clearance in parallel trenches	1	item			
E	Provide for all necessary attendances on ESB to include liaising with ESB before, during and after installation of electrical services and providing and making available site data for their use	1	item			
F	Provide markings/signage of ESB cables at locations as agreed with Local Engineering Officer and in accordance with ESB Specifications; as per Engineer's Drawing	1	item			
G	Provide all necessary attendances and builders work in association with disconnecting and removing existing underground ESB supply; complete	1	item			

To Collection €

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)

COLLECTION

Page No. Lot 4.3 Works Con/104

Page No. Lot 4.3 Works Con/105

Page No. Lot 4.3 Works Con/106

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT
Carried to Summary

		€	c
SUMMARY	**Page No.**		
(10) DEMOLITIONS AND ALTERATIONS	Lot 4.3 Works Con/2		
(35) & (45) CEILING FINISHES	Lot 4.3 Works Con/4		
(5-) MECHANICAL INSTALLATION	Lot 4.3 Works Con/47		
(6-) ELECTRICAL INSTALLATION	Lot 4.3 Works Con/71		
(30) SITE ENCLOSURES - PLANT COMPOUND	Lot 4.3 Works Con/76		
(30) SITE ENCLOSURES - RETAINING WALL	Lot 4.3 Works Con/81		
(50) SITE SERVICES - GAS	Lot 4.3 Works Con/85		
(50) SITE SERVICES - DISTRICT HEATING	Lot 4.3 Works Con/89		
(50) SITE SERVICES (MAINLY MECHANICAL)	Lot 4.3 Works Con/99		
(60) SITE SERVICES (MAINLY ELECTRICAL)	Lot 4.3 Works Con/103		
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT	Lot 4.3 Works Con/107		
TOTAL AMOUNT CARRIED TO GENERAL SUMMARY			
Lot 4.3 Works Con/1 - Lot 4.3 Works Con/107.			

4.4 - St Macartan's College

					€	c
	(10) DEMOLITIONS AND ALTERATIONS					
	DEMOLITION & ALTERATIONS					
	GENERAL					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYER'S REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Demolitions					
	Removing					
	Removing Finishes					
B	Existing ceiling finishes to certain locations within existing building; disposal of all materials off site; prepare ceilings to receive new finishes	59	m2			

				€	c
(10) DEMOLITIONS AND ALTERATIONS (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/1					
(10) DEMOLITIONS AND ALTERATIONS **Carried to Summary**					

					€	c
	(35) & (45) CEILING FINISHES					
	FLOOR, WALL & CEILING FINISHES					
	Suspended Ceiling					
	Proprietary suspended ceiling system; Manufacturer: Submit proposals for Architects approval; Product reference: CasoLine MF suspended ceiling system- or equivalent to Architect#s approval; Suspension system; Hanger type: Gypframe MF8 strap hangers; Top fixings: Gypframe MF12 soffit cleats fixed to concrete soffit or metal deck; Primary grid centres: 1200 mm. Hanger centres: 900 mm; Secondary grid centres: 400 mm; Linings: 1 x 12.5 mm Gyproc WallBoard, Gyproc moistureproof green board where noted on RCP's and in a wet area; Insulation: none; Access Units: Gyproc Profilex access panels; Finishing: Taped seamless finish; Primer/ Sealer; Type: 1 coat of Gyproc Drywall Primer (2 coats where noted as moistureproof green board; Accessories: none; all as per Architects Specification					
	Ceilings; fixed below floor structure					
A	Depth of suspension 500mm - 1000mm	59	m2			
	PAINTING AND DECORATING					
	Painting					
	Emulsion paint; To internal plastered surfaces and fairfaced blockwork; Manufacturer: Submit proposals for Architects approval; Product reference: Dulux trade Diamond Matt (water based tough Scrubbable Matt emulsion); Surfaces: Internal plastered surfaces; Preparation: Tape and fill joints; Initial coats: 40% thinned primer.Thinning Sealing new or bare surfaces: Add up to 1 part clean water to 10 parts paint; Number of coats: 2; Undercoats: As recommended by manufacturer; Number of coats: As recommended by manufacturer; Finishing coats: Washable matt vinyl; Number of coats: 2; all as per Architects Specification					
	Ceilings					
B	Exceeding 300mm	59	m2			

				€	c
(35) & (45) CEILING FINISHES (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/3					
(35) & (45) CEILING FINISHES **Carried to Summary**					

					€	c
	(5-) MECHANICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Strip out and disposal offsite of existing boiler room plant including pipework, pump sets, valves, pressurisation unit and expansion vessel; isolate, drain down, disconnection equipment in co-ordination with installation and commissioning of new works; remaining systems to stay operational during decommissioning works, required down-time to be coordinated in advance and carried out during out-of-hours; all in accordance with the Mechanical specification and Drawings 4.4(5-)M003	1	item			
C	Retention, protection and recommissioning of existing 5nr LPG boilers; forming new connections into 250mm heating header including system isolation, drain-down, cutting and forming tees, provision of isolation valves, non-return valves (where required), fittings, reducers, supports, flushing, pressure testing, and full reinstatement of insulation and finishes; All shutdowns to be agreed in advance and carried out outside normal operating hours; all in accordance with the Mechanical Specification and Drawing 4.4(5-)M004	1	item			
D	Modifications to existing secondary heating circuit flow/return pipework to facilitate connections to new 250mm diameter header (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.4(5-)M004	1	item			
E	Modifications to existing hot water circuit flow/return pipework to facilitate connections to new Calorifier (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.4(5-)M004	1	item			
F	Modification to existing mains water supply pipework to facilitate reconnection to new pressurisation unit (measured elsewhere); including isolation, draindown, pipe alterations, fittings, valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.4(5-)M004	1	item			

To Collection €

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	Modification of existing gas service to accommodate installation of new gas meter, including all necessary alterations, pipework adjustments, fittings, testing, commissioning, and certification, in accordance with Engineers Specification and Drawing 4.4 (50)M004	1	item			
B	Enabling works to facilitate connection into existing cold water supply pipework serving new calorifier (measured elsewhere); including provision of isolation valves, non-return valves, fittings, reducers, supports, flushing, pressure testing, and full reinstatement of insulation and finishes; all shutdowns to be agreed in advance and carried out outside normal operating hours; all in accordance with the Mechanical Specification and Drawing 4.4(5-)M004	1	item			
	ASBESTOS REMOVAL					
	DEMOLITION & ALTERATIONS					
	General					
C	The following items are not measured in strict accordance with ARM.		note			
D	The Contractor is refered to the Pre Refurbishment & Demolition Asbestos Survey		note			
E	The Contractor must ensure that any risk of exposure to asbestos is completely eliminated. Contractor to consult with Employer's Representative before any work commences on site.	1	item			
F	The Contractor is advised that there is a notification form to be used for any work involving asbestos. This form must be submitted 28 days prior to the start of such work.	1	item			
G	The Main Contractor / PSCS must appoint a specialist asbestos removal contractor to carry out the asbestos removal & disposal works	1	item			
H	Prior to commencing any demolition or construction works on site all asbestos must be removed from site; in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010	1	item			
J	The Main Contractor / PSCS must appoint a competent independent analyst / accredited laboratory for the purpose of undertaking air sampling, project monitoring and issuing site clearance for reoccupation certification; in conformance with ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories	1	item			
K	Prior to commencing the asbestos removal works the specialist contractor shall submit (to the PSDP & Employer's Representitive) their Plan of Work (risk assessment / method statement), Design Risk Assessment, and temporary works certificates for the Asbestos Removal works (at least 21 days in advance of commencing the asbestos removal works)	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	Prior to commencing the asbestos removal works the specialist contractor shall submit their Plan of Work (risk assessment / method statement), and notify, to the HSA (at least 14 days in advance of commencing the asbestos removal works). The PSCS must also ensure that copies of the notifications are forwarded to the PSDP, Client & Project Manager	1	item			
B	No works may take place on site until the Plan of Work has been drawn up and approved by the Main Contractor / PSCS	1	item			
C	No deviations shall be permitted from the plan of work submitted to the HSA	1	item			
D	Should the Plan of Work require amending / updating (for whatever reason) it must be issued to the PSDP & Project Manager in the first instance, and then the HSA, prior to proceeding with any proposed changes	1	item			
E	No asbestos removal works may take place in areas occupied by normal construction / project personnel and / or third parties	1	item			
F	An asbestos site clearance for reoccupation certificate(s) must be supplied (by the competent independent analyst / accredited laboratory) to the PSDP & Project Manager prior to commencing any demolition or construction works on site (other than the asbestos removal works); the certificate(s) must include (1) Visual inspection, (2) Air monitoring and (3) The decontamination unit	1	item			
G	After completing Asbestos Removal works the PSCS must ensure that asbestos site clearance for reoccupation certificates are issued to the Project Manager, PSDP, and Client PRIOR to allowing those areas to be opened up to persons (other than those persons directly involved in the asbestos removal works)	1	item			
H	NO Asbestos Containing Waste Material may be removed from the site unless a Waste Transfer Form (removal of Hazardous Waste Material from Site) has been completed and issued to the PSCS / Main Contractor, the PSDP & Project Manager	1	item			
J	The PSCS / Main Contractor must forward copies of final disposal certificates (i.e. completed Waste Transfer Form (final disposal of Hazardous Waste Material)) to the PSDP & Project Manager	1	item			
K	The PSCS / Main Contractor must forward, the following information (as applicable) to the PSDP, for inclusion in the Safety File; Bulk sample results, Amended Asbestos Register, Preliminary Safety & Health Plan and Specification, Specialist asbestos removal contractor Plan of Work, Notification to the Health and Safety Authority, Air monitoring results prior to removal works commencing, Air monitoring results during removal works, site clearance for reoccupation certificates, Completed Waste Transfer Form for the final disposal of all asbestos / hazardous waste.	1	item			
L	All asbestos works must be carried out in accordance with; The HSA 2010 Code of Practice for Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001, The Safety Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010, The HSA Guidelines on Working with Materials Containing Asbestos Cement (and any subsequent amendments updates to HSA Guidelines and / or Codes of Practice)	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Contractor to include here (Unless included in rates elsewhere) for protection of all fixtures, fittings and finishes to all areas in which asbestos removal occurs	1	item			
	Alterations					
B	The Contractor must note that the safe and proper removal and disposal of all asbestos material is the Contractor's full responsibility and therefore the contractor's price/rates must include for all work in connection with same; no claims on the grounds of want of knowledge will be entertained whatsoever.	1	item			
	Removing Finishes; Asbestos Material					
C	Submit Plan of Work and 14 day prior notification to the Health & Safety Authority	1	item			
D	Setup Decontamination Unit & Form Enclosures	1	item			
E	Specialist removal and disposal of asbestos-containing valves in accordance with all relevant safety and environmental regulations.	1	item			
F	Specialist removal and disposal of asbestos - asbestos in flue rope seals, woven product in basement boiler room 001 - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
G	Environmental clean to achieve clearance certification	1	item			
H	Asbestos Removal & Disposal Certificates	1	item			
J	INAB Accredited Asbestos Clearance Certification					
K	Reassurance Air Monitoring and Re-occupation Clearance Certification by an Asbestos Consultant	1	item			
	Notes					
L	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
M	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
N	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
	ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS					
	(51) HEATING CENTRE					
	System					
	Heating center installation, testing and commissioning; consisting of 1nr Biomass boiler (Primary heating source) and 5nr existing LPG gas fired condensing boilers (secondary heating source) serving radiators throughout the building; the installation shall include a pressurisation unit, expansion vessel, pipework, shunt pumps and all associated valves; existing flow rates to be recorded prior to works and re-established at the end of the works; The heating system shall be flushed and provided with appropriate chemical treatment; Commissioning results including a flue gas analysis shall be provided for the boilers prior to handover, along with a statement by the manufacturer/ supplier confirming their correct and efficient operation; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/6. Heating System, Section B (56) Heating System Pipework; Volume 3; Volume 4 and Drawings (5-)M004					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of LPHW pipework up to 65mm Dia; Type: Lever operated, Brass full bore ball valve, WRC approved; Materials: to suit steel tube: Bronze or DZRR copper alloy body; Chrome or nickel plated DZR sphere with full bore flow aperture. PTFE seals and stem seals. Anti-blowout stem; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
A	50mm Stop valves	6	nr			
	Stop valves for isolation of LPHW pipework over 65mm Dia; Type: Lever operated, controlled elastomer compression on flange faces; semi lugged wafer type design, for installation between flanged pipework connections, body to suit IS EN 1092-2; Materials: Cast iron body; stainless steel shaft; aluminium bronze disc; EPDM seat; lever and gear operated valves with long body neck; Seat - Bonded; all in strict accordance with Engineers Specification Volume 2/B					
B	80mm Stop valves	13	nr			
C	125mm Stop valves	4	nr			
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
D	80mm Non-return valves	1	nr			
E	125mm Non-return valves	5	nr			
	Strainer valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
F	80mm Strainer valves	2	nr			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Double regulating valve with orifice measurement; Type: Screwed double regulating valves up to 65Dia. Flanged for 65 Dia and above; WRAS approved; Material: To suit steel tube; Material - Cast iron to IS EN 13789; Oblique or Y pattern; copper alloy, nickel alloy or resilient valve face; rising stem outside screw or non-rising stem inside screw; manufacturer's standard materials; Provide drain plug facility; independent means for positive isolation on pressure tapping or adapter. include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
A	50mm Double regulating valve	1	nr			
B	80mm Double regulating valve	1	nr			
C	125mm Double regulating valve	6	nr			
	Motorized valves; maximum power consumption of 1 W; minimum static pressure of 10 bar; differential pressure of 250 kPa; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
D	50mm 2-port motorized valves	1	nr			
E	125mm 3-port motorized valves	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
F	Temperature sensor	8	nr			
	Pressure gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
G	80mm Pressure gauge	3	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
H	80mm Temperature gauge	4	nr			
	Flexible connections; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
J	50mm Flexible connections	2	nr			
K	80mm Flexible connections	4	nr			
L	125mm Flexible connections	6	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Capped Ends; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	250mm Capped Ends	2	nr			
	Drain Cock; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
B	250mm Drain Cock	1	nr			
	Strainer valve; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
C	80mm Strainer valve	2	nr			
	Pumps; supply and installation; complete; Pump Head: 1; Integrated VSD: No; Variable speed control: N/A Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
D	Pump LPHW, Ref: PB01-5; Flow rate: 28.71kg/s; External pressure drop: 100kPa; Temp: 80°c	5	nr			
E	Pump LPHW, Ref: PHW01; Flow rate: 1.5kg/s; External pressure drop: 100kPa; Temp: 80°c	1	nr			
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
F	Pump LPHW, Ref: PH01; Flow rate: 28.71kg/s; External pressure drop: 150kPa; Temp: 80°c	1	nr			
G	Pump LPHW, Ref: PHBIO01; Flow rate: 4.8kg/s; External pressure drop: 150kPa; Temp: 80°c	1	nr			
	Pressurisation Unit; supply and installation; complete; System: Heating; Fluid: Water; Fluid Temp: 80°C - 60°C; Energy Input: 550kW; Minimum expansion vessel size: 487 L; Maximum Fill Pressure: 6 bar; System Height: 8m; Tank Size: 4 L; Fill Rate: 12L/m; No. of Pumps (with auto changeover if multiple) per unit: 2; Maximum Ambient: 20°C; Pump Casing Material: Gun Metal; Pump Shaft Material: Stainless Steel; c/w isolation valve; lockshield valve, strainer on pumps; pressure gauge; air relief valve, pressure relief valve; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
H	Pressurisation Unit; Ref: PU-01; Location: Plant room	1	nr			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Chemical dosing pot; supply and installation; complete; c/w foot valve; chemical drum; Cleansing; Corrosion inhibitor and wall mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
A	Chemical dosing pot	1	nr			
	Buffer vessel; supply and installation complete; Storage Capacity: 3.75m3; Dimensions: 1750mm diameter x 2000mm height; Connections: 4; Storage temperature: 90øC; Material: Stainless steel; Internal baffles: Yes; Insulation: 0.3W/m2K or better; Pressure rating: factory tested 10 bar; Efficiency: ERP efficiency rating B; Accessories: Access hatch, Temperature Gauge, Pressure Gauge, Temp/Pressure, safety Valve & tundish, Immersion Pockets as required; include for all fittings and accessories; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
B	Buffer vessel; Ref: CB1	1	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 28kg/s; Maximum working temp: 150øC; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework:; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
C	Air/Dirt separator; Ref: DA1	1	nr			
	Unvented Expansion Vessel; supply and installation; complete; include for all accessories, fixings and mounting brackets; complete; include for all fixings and mounting brackets; all in strict accordance with the Mechanical Engineers Specification Volume 2					
D	Unvented Expansion Vessel	1	nr			
	Stainless steel flue; supply and installation; complete; External lining: 304 stainless steel; Insulation: 25mm mineral wool; Internal lining: 316 stainless steel; Fire rating: 2 hr to EN 13501; Structure: The detailed design, structural stability including all anchoring of the flue arrangement shall be the sole responsibility of the contractor; Support material: Corrosion proof, treated supports; Flue dimensions: Confirm with combustion equipment supplier prior to ordering; c/w individual modulating air intake control damper and terminated with a propriety cowl; include for all necessary branch fittings, weather roof flashing, rain caps and supports; The flue shall be fitted with adequate supports, offsets, tee's, condensate to drain and termination unit; include for all accessories, fittings and firestopping; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
E	Twin walled flue; Size 125mm diameter	5	nr			
F	Twin walled flue; Size 150mm diameter	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Heat meter; supply and installation; complete; Accuracy Shall be accurate within 1% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
A	Heat Meter; Ref: HM02, HM03, HM04, HM05	4	nr			
	Oil-filled electric radiator; supply and installation; powder coated white finish; radiator control to turn on at 5°C, switch off at 14°C; linked to local temperature sensor, via BMS; c/w mounting brackets; include for all fixings and accessories; in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
B	Oil filled Electric radiator; Output 1kW	1	nr			
	Distribution					
	Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
C	80mm diameter pipework	1	item			
	Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B					
D	40mm diameter pipework	1	item			
E	50mm diameter pipework	1	item			
F	54mm diameter pipework	1	item			
G	80mm diameter pipework	1	item			
H	125mm diameter pipework	1	item			
J	250mm diameter header pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
A	to 40mm diameter pipework	1	item			
B	to 50mm diameter pipework	1	item			
C	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
D	to 80mm diameter pipework	1	item			
	Insulation, 80mm thick					
E	to 125mm diameter pipework	1	item			
F	to 250mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
G	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
H	to 40mm diameter pipework	1	item			
J	to 50mm diameter pipework	1	item			
K	to 54mm diameter pipework	1	item			
L	to 80mm diameter pipework	1	item			
M	to 125mm diameter pipework	1	item			
N	to 250mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
B	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like	1	item			
	(52) DRAINAGE AND REFUSE DISPOSAL					
	System					
	Soils and Waste Drainage Installation, testing and commissioning; complete; The complete installation of all above ground foul water drainage and refuse disposals; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Section 7, Volume 3, Volume 4 and Drawing 4.4(5-)M005					
	Terminal equipment and fittings					
	Floor Gully; supply and installation; complete; Type: Stainless steel; c/w removable core; include for all fittings and seals; all in accordance with the Mechanical Specification					
H	Floor Gully	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Distribution System					
	Condensate pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; all in strict accordance with the Mechanical Specification Volume 2/A 7.4					
A	28mm nominal diameter; supports at average 1200mm centres vertical, 500mm centres horizontal; ears fixed with screws to background requiring plugging	1	item			
B	32mm nominal diameter; supports at average 1200mm centres vertical, 500mm centres horizontal; ears fixed with screws to background requiring plugging	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	(53) WATER SERVICES - HOT AND COLD WATER					
	System					
	Cold Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.4(5-)M004					
	Hot Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.4(5-)M004					
	Equipment					
	Calorifier; supply and installation; complete; Capacity: 33kW; Storage Capacity: 2250 litres; Flow temperature: 60°C; Temperature difference: 20K; LPHW flow rate: 0.4kg/s; Electric immeresion: 10kW; Insulation: vessel insulated to U-value of 0.25W/m2K or better; Material: cylinder stainless steel; Efficiency: ErP rating if B or better; Test pressure: 6 bar for cylinder, 10bar for coil; Crossion protection: magnesium electrolytic protection anode; Connections: Cold inlet at base of unit and hot water outlet at top, hwsr 1/3 from top; Electric Immersion Maintenance: Immersions shall be fully removable through flanged, insulated connections; Electric Immersion protection: immersions shall include run dry protection and over temperature; Electric Immersion Trip: Immersion shall include over temperature protection requiring manual reset; c/w Packaged expansion kit, Non-return valve, Pressure relief valve, temperature gauge, cylinder temperature sensor pocket; include for all accessories and fittings; complete; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
A	Calorifier; Ref: C01; Location: Boiler room	1	nr			
	Accessories associated with Primary Equipment					
	Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
B	50mm Isolation valves	5	nr			
C	54mm Isolation valves	3	nr			
	Double regulating valve; Type: globe valve c/w macro and micro position indicator, locking mechanism; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
D	54mm Double regulating valve	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
A	50mm Non-return valves	1	nr			
	Pressure Relief Safety Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
B	67mm Pressure relief safety valve	1	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
C	54mm Temperature gauge	1	nr			
D	67mm Temperature gauge	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
E	Temperature sensor, calorifier	1	nr			
	Tundish; supply and installation; complete; c/w mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
F	Tundish	1	nr			
	Magnetic water filter; supply and installation; complete; c/w mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
G	Magnetic water filter	1	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 28kg/s; Maximum working temp: 150øC; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework;; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
H	Air/Dirt separator; Ref: DA1	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
A	Pump HWR, Ref: PHW02; Flow rate: 1.5kg/s; External pressure drop: 100kPa; Temp: 80øc	1	nr			
	Unvented Expansion Vessel; supply and installation; complete; include for all accessories, fixings and wall mounting brackets; complete; all in strict accordance with the Mechanical Engineers Specification					
B	Expansion Vessel	1	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05l/s up to the maximum value above.; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
C	Water Meter; Ref: WM01	1	nr			
	<u>Distribution</u>					
	Copper pipes and fitting; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
D	35mm diameter pipework	1	item			
E	42mm diameter pipework	1	item			
F	50mm diameter pipework	1	item			
G	54mm diameter pipework	1	item			
H	67mm diameter pipework	1	item			
J	76mm diameter pipework	1	item			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
A	to 35mm diameter pipework	1	item			
B	to 42mm diameter pipework	1	item			
C	to 50mm diameter pipework	1	item			
D	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
E	to 67mm diameter pipework	1	item			
F	to 76mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
G	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
H	to 35mm diameter pipework	1	item			
J	to 42mm diameter pipework	1	item			
K	to 50mm diameter pipework	1	item			
L	to 54mm diameter pipework	1	item			
M	to 67mm diameter pipework	1	item			
N	to 76mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
A	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
B	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
C	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
D	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
E	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
F	Identification plates, labels and the like; complete	1	item			
	(53) WATER DISTRIBUTION - MAINS WATER					
	System					
	Mains Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.4(5-)M004					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
G	28mm Isolation valves	4	nr			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
A	28mm Non-return valves	3	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
B	Water meter WM01	1	nr			
	Distribution system					
	Multi-layer non-matallic pipework and fittings; in accordance with the Irish Standard IS EN 806:2005: Specification for installations inside buildings conveying water for human consumption; include for all fixing brackets, hangers and supports; include for all elbows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Specification					
C	15mm diameter pipework	1	item			
D	22mm diameter pipework	1	item			
E	25mm diameter pipework	1	item			
F	28mm diameter pipework	1	item			
G	35mm diameter pipework	1	item			
H	42mm diameter pipework	1	item			
J	54mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
A	to 15mm diameter pipework	1	item			
B	to 22mm diameter pipework	1	item			
C	to 25mm diameter pipework	1	item			
D	to 28mm diameter pipework	1	item			
E	to 35mm diameter pipework	1	item			
F	to 42mm diameter pipework	1	item			
G	to 54mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
H	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
J	to 15mm diameter pipework	1	item			
K	to 22mm diameter pipework	1	item			
L	to 25mm diameter pipework	1	item			
M	to 28mm diameter pipework	1	item			
N	to 35mm diameter pipework	1	item			
P	to 42mm diameter pipework	1	item			
Q	to 54mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
A	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
B	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
C	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
D	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
E	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
F	Identification plates, labels and the like; complete	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	(54) GAS DISTRIBUTION - LPG GAS SERVICES					
	System					
	LPG Gas distribution; installation testing and commissioning; The school building is fed from an existing incoming LPG gas supply, The gas supply extends to serve the gas fired boiler within the plantroom; LPG installation shall be installed in compliance with IS3213; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.4(5-)M004					
	Accessories associated with Primary Equipment					
	Stop Valves for isolation of gas pipework 65mm Dia and above; Type: Lever operated (gradual notch) butterfly valves; Construction - Provide controlled elastomer compression on flange faces; semi-lugged wafer type design, for installation between flanged pipework connections; Provide lever and gear operated valves with long body neck for lagging clearance; Seat - Bonded; Materials: Cast iron body; stainless steel shaft; aluminum bronze disc; EPDM seat; Operation - Lever and graduated notch plate; include for all seals; all in strict accordance with Engineers Specification Volume 2					
A	80mm Stop valves	2	nr			
	Pressure regulator; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2					
B	80mm Pressure regulator	1	nr			
	Gas meter; supply and installation; complete; Accuracy Shall be accurate within 0.2m3/hr up to maximum valve above; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, no battery backup; Utility Meter: In addition to above, provide utility meters to utility requirements; Utility Meter: Shall be 2m from any window or opening, shall be provide in locked cage (measured elsewhere); include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
C	Gas Meter; Ref: GM01	1	nr			
	Tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
D	Tamper proof, lockable metal caging	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Distribution System					
	Medium grade black mild steel pipes and fittings; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; Painted with one primer coat - Zinc phosphate primer), one final coat of ochre yellow paint (Ral 1024; all in strict accordance with Engineers Specification Volume 2					
A	80mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
B	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	(54) GAS DETECTION SYSTEM					
	System					
	Gas detection system installation testing and commissioning; A gas detection system will be installed in the heating center comprising of gas detectors, heat detectors, slam shut valve, gas detection panel and emergency lock-stop located adjacent to the boiler room door; The gas detection panel shall be provided with volt free contacts and an I/O interface unit for connection to the schools fire alarm system; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.4(5-)M004					
	Primary Equipment					
	Gas detection control panel; c/w emergency knock-off button, reset button, mute button, LED indication for power on, gas-on and emergency stop; free relay output for the BMS; IP44; CE rated, IEC61779-1; wall mounted; include for all accessories and fittings; all in accordance with the Mechanical Specification Volume 3 - Equipment schedules					
A	Gas detection control panel; Location: Boiler room	1	nr			
	Accessories associated with Primary Equipment					
	Gas Slam Shut Valve; supply and installation; complete; Auto reset on loss of power and fire alarm reset; compliance to EN161 and DIN Class A; maximum consumption of 2W during normal usage; all in strict accordance with Engineers Specification Volume 3 - Equipment schedules					
B	80mm Gas solenoid valve	1	nr			
	Emergency Push Button; supply and installation; complete; all in strict accordance with Engineers Specification Volume 2					
C	Emergency Push Button	1	nr			
	Gas Detectors; supply and installation; complete; IP44 protection; Mounting: mounted over each burner, linked to the gas control panel; c/w gas conical collector hood; all in strict accordance with Engineers Specification Volume 2					
D	Gas detector	5	nr			
	Heat Detectors; supply and installation; complete; all in strict accordance with Engineers Specification Volume 2					
E	Heat Detectors	5	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(58) FIRE PROTECTION INSTALLATION					
	<u>System</u>					
	Fire Fighting installation, testing and commissioning; complete; Hand held fire extinguishers and fire blankets shall be provided throughout the building as detailed on the drawings; The installation will comply with BS 5306-2000-Part 8; The Contractor shall be responsible for carrying out the commissioning of the portable fire extinguishers before they are installed; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 11, Volume 3, Volume 4 and Drawings 4.4(5-)M005					
	<u>Terminal equipment and Fittings</u>					
	Fire Extinguishers supply and installation; complete with 5 years guarantee, CE approved and marked; all in accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
F	5KG CO2 Gas Extinguishers; c/w wall mounting brackets and ID signage; complete	1	nr			
G	5kg ABC Dry Powder Fire Extinguishers; c/w wall mounting brackets and ID signage; complete	1	nr			
	<u>General</u>					
	Testing and commissioning; all in accordance with Engineers Specification					
H	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(58) HVAC MOTOR CONTROL CENTER & BUILDING MANAGEMENT SYSTEM					
	System					
	BMS System Installation; testing and commissioning; complete; Building management software including a target and monitoring system based on a traffic light system shall be designed and installed in this school to inform relevant personnel for energy usage in the school. How utility supplies are behaving when set against targeted parameters. This information is to be available on the principals pc. They should be capable of remote monitoring and alarm if there is a problem; all in strict accordance with the Mechanical Specification					
	Primary Equipment					
	MCC Panel; supply and installation; complete; The MCC panel: wall mounted top entry and top exit type with hinged front doors, suitable for installing against a wall; Dimensions: max. width 2000mm, max depth 300mm; Spare capacity: 30%; The MCC shall contain hand/off/auto switches with run and trip indicators and interfaces for all items as detailed on the drawings; each button shall be clearly labelled showing the area served; include for all fittings and accessories; all in accordance with the Mechanical Engineers Specification					
F	MCC Panel; Ref: MCC; Location: Plant room	1	nr			
G	MCC Panel; Ref: MCC; Location: Biomass Unit	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	External sensor; linked to BMS; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 4					
A	External frost sensor	1	nr			
B	External temperature sensor	1	nr			
	Remote data transmitter, supply and installation, complete; 4G enabled transmitter capable of interfacing with utility meters and transmitting recorded data to an external web-based front-end system; include for all fittings and accessories; all in accordance with the Mechanical Specification					
C	Remote data transmitter	1	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
D	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
E	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
F	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
G	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
H	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
J	Identification plates, labels and the like	1	item			
	MECHANICAL INSTALLATIONS					
	Sundries & Builders Work					
	General Attendances					
K	Provide all general attendances in accordance with Arm 4 .	1	item			
L	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide use of the Main Contractors scaffolding.	1	item			
B	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
C	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
D	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
E	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Mechanical services works, including testing and commissioning , and pay all ongoing operation charges.	1	item			
F	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
G	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
H	Provide temporary telephone services to the Mechanical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
J	Include for unloading, hoisting/cranage and placing into position all items of heavy plant and site offices supplied by the sub-contractors.	1	item			
K	Allow for maintaining all ducts, chases, trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
L	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
M	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
N	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	<u>Special Attendances</u>					
P	Provide all special attendances in accordance with Arm 4 Clause 3.1	1	item			
Q	Provide temporary roads and hardstandings in connection with heavy items of plant and the like.	1	item			
R	Provide accommodation for the sub-contractor's staff for eating, site lavatories, site washing facilities, and cloaks.	1	item			
S	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
B	Provide temporary distribution systems for lighting, power, water for the execution of the electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
C	Provide the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
D	Protection of the works the Main Contractor is responsible for providing adequate protection at all times for the Mechanical services installation.	1	item			
E	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day.	1	item			
F	Provide external access to high level on building facade to permit the installation of any external equipment/fittings and for the removal of existing services as required.	1	item			
G	Provide Mobile Elevated Working Platforms (MEWP) or scaffolding for Mechanical sub-contractors working at high level.	1	item			
H	Provide for weathering & sleeving around all penetrations through the external structure of the building and to allow for sealing to fabric to maintain air tightness.	1	item			
J	Allow for maintaining all ducts, chases, trenches, trunking etc, clean and free of all water, debris and rodents at all times.	1	item			
K	Allow for making good and fire sealing of all builders work opes with proprietary sealant to architects details, where services penetrate fire zones.	1	item			
L	Allow for coordination with local authorities and utility providers in respect of application for connections, providing excavation of roads and full coordination with various utility companies.	1	item			
M	Coordinate with Mechanical Contractor to facilitate fitting of all sanitary ware.	1	item			
N	Allow for patrices behind ceiling tiles and ceilings for the support of light fittings, grilles, smoke detectors, sensors etc.	1	item			
P	Allow for weathering details on all services passing through external envelope.	1	item			
Q	Allow for all service / utility entries into building.	1	item			
R	Allow for clearing away and disposal of any rubbish.	1	item			
S	Provide safe access to roofspace to facilitate Mechanical installation work.	1	item			
T	Making good of opes for fire smoke dampers.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide and maintain the specific temperatures and humidity levels.	1	item			
B	Contractor to provide for the construction of a walkway within the Attic space for service and maintenance of water and ventilation services.	1	item			
C	Contractor to ensure all existing services shut downs for connecting in new and changeovers shall be carried out between 10pm on a Sunday Night and 6pm on a Monday morning, to avoid any interruptions of the running of the existing school; times to be agreed with school management.	1	item			
D	Provide plywood protective cover over boiler for protection.	1	item			
	Unload, hoist distribute, and place in position the following items of plant and equipment:					
E	Gas boiler	1	item			
F	Biomass unit	1	item			
G	Calorifier tank	1	item			
H	Pumps	1	item			
	Sundries & Builders Work					
	General					
J	Marking positions of holes, mortices and chases	1	item			
K	Testing & Commissioning	1	item			
L	Preparing drawings of "as completed" installations	1	item			
M	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
N	Keys, tools and spares	1	item			
	In-situ concrete; plain; to IS EN 206; Grade C30; formwork to sides of platform, powerfloating finish; all in strict accordance with the Engineers Drawings and Specification					
	Bases					
P	Size 850mm x 1650mm x 100mm thick	1	nr			
Q	Size 1850mm x 1100mm x 100mm thick	1	nr			
R	Size 2650mm x 1850mm x 100mm thick	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Equipment supports; provide mounting grounds for the installation of the following fittings; making good structure and finishes; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
	Equipment supports					
A	Provide wall fixings for portable fire extinguishers to walls at 1500mm above floor	2	nr			
	Forming or cutting holes; including sleeves/plates, making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
B	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
C	cutting or forming opes is deemed to include the making good and sealing of the ope around the pipe or duct		note			
	For ducts/pipes through exisitng external cavity blockwork wall, include for building in sleeves; weather proofing, making good all finishes on completion					
D	Size 1000mm x 250mm opes	1	nr			
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification and Drawings					
	Special works were services pass through structures; external walls, making good all finishes on completion					
E	Size 1000mm x 250mm opes	1	nr			

				€	c
(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/5					
Page No. Lot 4.4 Works Con/6					
Page No. Lot 4.4 Works Con/7					
Page No. Lot 4.4 Works Con/8					
Page No. Lot 4.4 Works Con/9					
Page No. Lot 4.4 Works Con/10					
Page No. Lot 4.4 Works Con/11					
Page No. Lot 4.4 Works Con/12					
Page No. Lot 4.4 Works Con/13					
Page No. Lot 4.4 Works Con/14					
Page No. Lot 4.4 Works Con/15					
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Page No. Lot 4.4 Works Con/18					
Page No. Lot 4.4 Works Con/19					
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Page No. Lot 4.4 Works Con/21					
Page No. Lot 4.4 Works Con/22					
Page No. Lot 4.4 Works Con/23					
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Page No. Lot 4.4 Works Con/27					

				€	c
(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/28					
Page No. Lot 4.4 Works Con/29					
Page No. Lot 4.4 Works Con/30					
Page No. Lot 4.4 Works Con/31					
Page No. Lot 4.4 Works Con/32					
Page No. Lot 4.4 Works Con/33					
Page No. Lot 4.4 Works Con/34					
(5-) MECHANICAL INSTALLATION **Carried to Summary**					

					€	c
	(6-) ELECTRICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Alterations to existing switch board to facilitate the installation of new submians; 1nr 40A TP&N sub-mains connection to New MCC panel; 1nr 50A TP&N sub-mains connection to Biomass unit (sub-main cable & TP&N device measured elsewhere); allow for modifications and fittings to existing DB as required to accommodate the new connections; include all isolation, shutdown coordination, and commissioning; all in strict accordance with Electrical Specification and Drawing 4.4(60)E001	1	item			
C	Alterations to existing PV system to facilitate installation of fire-rated DC cabling and fireman#s switch (fireman switch measured elsewhere), including safe isolation, modifications, re-termination and reinstatement of PV system, testing, commissioning, and certification, in full compliance with ET101; all in strict accordance with Electrical Specification and Drawing 4.4(60)E001	1	item			
D	Modification of existing fire alarm system to facilitate interface with existing gas solenoid valve, including all necessary wiring, controls integration, programming, testing, commissioning, and certification, all in strict accordance with Electrical Specification and Drawing 4.4(63)E001	1	item			
	Notes					
E	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
F	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			

(6-) ELECTRICAL INSTALLATION (Cont)

A Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist. — note

ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES

(61) ELECTRICITY SUPPLY & MAIN DISTRIBUTION - LV INSTALLATIONS

System

LV installation, testing and commissioning; complete; The Contractor shall allow for the supply and installation of all switchgear, distribution boards and sub-mains cables in accordance with the drawings and attached specification; The Contractor shall be responsible for safe off-loading, receiving, storage, positioning and fixing of the boards and shall be liable for any damage to boards during installation; The Contractor shall submit working drawings to the Engineer for approval prior to manufacture of switchgear; the contractor shall allow for liaising with the ESB; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 and Drawings 4.4(60)E001

B LV Installations — 1 — item

Fittings

C Isolation device; supply and installation; complete; terminating of incoming and outcoming cabling; all in accordance with the Electrical Specifications Vol.2 Section 4.3

D Isolation device; 40A TPN — 1 — nr

Firemans switch; supply and installation (including wiring & terminations); complete; isolation of the electrical supply to the entire building; located at main entrance; fire rated enhanced PH120 cable; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3

E Firemans Switch; isolation of main MCCB within switch board — 1 — nr

F Firemans Switch; isolation of PV system — 1 — nr

Multi-function digital meter; supply and installation; complete; digital multi-meter capable of indicating kVA, kW, KVAR, kWhr, Amps, Volts, etc. per phase and between phases; suitable for interfacing with B.M.S. network; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3

G Multi-function digital meter; BMS meter — 3 — nr

H Multi-function digital meter; CT meter — 3 — nr

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Insulated Matting; supply and installation; complete; Width: 900mm wide; Length: to extend to full Length of switch board, with an additional 300 mm beyond each end; Class rating: based on the system voltage and clearly colour-coded; Standards to conform to BS EN 61111:2009 (IEC 61111:2009); include for all fixings and accessories; all in strict accordance with the Electrical Specification Vol.2 Section 4.3					
A	Insulated matting; Ref: Existing Switch Board	1	nr			
	Main switchboard circuit chart; 'A1' framed drawing of the switchboard to be installed within the switch room; the drawing shall be framed with a perspex cover; include for all accessories; in strict accordance with the Electrical Specification Vol.2 Section 4.3					
B	Main switchboard; Ref: Existing Switch Board	1	nr			
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board to sub-distribution boards/ Control panels located throughout school building; Sub-mains distribution within the building shall be via XLPE/LSF/SWA/PVCarmored cables laid in galvanized steel cable tray/trunking; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Section and Drawing 4.4(60)E001					
C	Submains; Existing switch board to Biomass Unit; 1 x 4c 35sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
D	Submains; Existing switch board to MCC Panel; 1 x 4c 25sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Specification					
E	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
G	Operating and maintenance manuals	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Working drawings; all in accordance with Engineers Specification					
A	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
B	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
C	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
D	Identification plates, labels and the like	1	item			
	(62) POWER - CONTAINMENT					
	System					
	Cable ladder/ tray/ trunking installation, testing and commissioning; complete; The Contractor must allow for the supply and installation of a complete cable support system using galvanized steel cable tray, trunking, conduit and support steelwork as shown on the drawings and as detailed in the specification. The Contractor shall include for all incidental cable containment which may not be shown on the drawings but which may be required to effect cable routes to individual items of equipment, luminaries etc; include for all joints, fixing brackets, supports and fire barrier pillow system; all exposed and exteaneous conductive parts are to be boned and properly earthed in accordance with current wiring regulations; all in accordance with the Electrical Specification Volume 1, Volume 2 and Drawing 4.4(63)E001					
E	Cable Ladder; LV; galvanized steel; heavy duty; size 200mm wide x 50mm high; complete	1	item			
F	Cable Header Trunking; LV; galvanized steel; size 150mm wide x 150mm high; complete	1	item			
G	Conduit; galvanised steel; size 25mm diameter; complete	1	item			
H	Conduit; galvanised steel; size 50mm diameter; complete	1	item			
J	Conduit; flexible steel; size 25mm diameter; complete	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
A	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
B	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings; complete	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings; complete	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like; complete	1	item			
	(62) POWER - GENERAL SERVICES					
	System					
	General Services and small power installation, testing and commissioning; complete; to include vampire load design strategy; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.4(63)E001					
H	General Services Installation	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Accessories associated with terminal equipment					
	Isolation device; supply and installation (including wiring); complete; surface mounting; include for all accessories and fixings; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification					
A	20amp SPN Isolator switch IP65	12	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	(65) PROTECTIVE SERVICES - EARTHING AND BONDING					
	System					
	Earthing and Bonding; installation; testing and commissioning; The contractor shall undertake to effectively earth the whole of the electrical installation in accordance with the National Rules for Electrical Installations IS-10101:2020. Main equipotent earth bonding should be provided from each of the following items, as a minimum, to the main earthing bar: Incoming Water Main, Incoming Gas Main, Metal drainage pipes, Structural Steelwork, Main Heating Pipework, Main Ventilation Ductwork, Lightning Protection System, Comms Rooms, Supplementary earth bonding shall be carried out on extraneous metal parts at the following locations: Metallic Wireways and Containment, Suspended Ceiling Grids, Wash Hand Basins, Showers, Sinks, WC's, Cleaners Sinks, Catering equipment, Metal worktops, Plantroom Pipework (e.g. across pumps, valves, vessels, etc.); all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.4 (60)E001					
A	Earthing and Bonding	1	item			
	Fittings					
	Earth terminal bar; supply and installation; c/w insulating shrouds to I.S. 10101:2020 and of suitable capacity for the number and size of cables to be connected; all in strict accordance with the Electrical Engineers Specification Vol. 2/A Part 9					
B	Earth terminal bar	1	nr			
	Main earth conductor cable; supply and installation complete; 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
C	Earth terminal bar to earth pits	1	item			
D	Earth terminal bar to Surge arrestor	1	item			
	Main earth conductor cable; supply and installation complete; Cable 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
E	From ESB to earth terminal bar	1	item			
	Equipotent earth bonding; supply and installation complete; Cable 1 x 1 core 10mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
F	Incoming Water Main	1	item			
G	Incoming Gas Main	1	item			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metal drainage pipes	1	item			
B	Structural Steelwork	1	item			
C	Main Heating Pipework	1	item			
D	Main Ventilation Ductwork	1	item			
E	Lightning Protection System	1	item			
F	Lift shaft steel work	1	item			
G	Eircom DP	1	item			
	Supplementary earth bonding; supply and installation complete; 2.5mm2 LSF green/ yellow earth cable; shall be carried out on extraneous metal parts at the following locations; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
H	Metallic Wireways and Containment	1	item			
J	Suspended Ceiling Grids	1	item			
K	Wash Hand Basins	1	item			
L	Showers	1	item			
M	Sinks	1	item			
N	WC's	1	item			
P	Cleaners Sinks	1	item			
Q	Catering equipment	1	item			
R	Metal worktops	1	item			
S	Plant room Pipework	1	item			
	<u>General Earthing and Bonding</u>					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
T	Generally	1	item			
	<u>General</u>					
	Testing and commissioning; all in accordance with Engineers Specification					
U	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(65) SECURITY & PROTECTION - SURGE PROTECTION					
	System					
	Transitent & Overvoltage Protection installation, testing and commissioning; The Contractor shall be responsible for the supply and installation of all incoming and outgoing cables (of all types) to be provided with Lightning/Surge Protection devices; The electrical contractor shall ensure allowance for surge protection at all panels within his scope and those provided by others; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.4 (60)E001					
F	Transitent & Overvoltage Protection	1	item			
	Fittings					
	Surge Suppression Devices; installation (including wiring); complete; Lighting/ Surge Protection devices Type 1 and Type 2 to I.S. EN 62305:2006; all in strict accordance with the Electrical Specification and Drawing 4.4 (60)E001					
G	Surge Protection; 400V TP&N,Type 1 & 2; Existing Switch Board	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
H	Generally	1	item			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
	(68) MECHANICAL WIRING INSTALLATIONS					
	Mechanical Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplies; all in accordance with the Mechanical and Electrical Specification and Drawings 4.4(50)M005					
G	Mechanical Wiring Installation	1	item			
	Fittings					
	Gas detection system mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the 4.4(50)M005					
H	Gas detection control panel (Location: Boiler room)	1	nr			
J	80mm dia Gas solenoid valve	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Emergency Stop Button	1	nr			
B	Gas detector	5	nr			
C	Heat detector	5	nr			
	Frost protection mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Drawing 4.4(50)M005					
D	Oil filled Electric radiator; Size 1000mm long x 500mm high; Output 1000w	1	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers					
E	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
F	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
G	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
H	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
J	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
K	As built drawings; complete	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
A	Identification plates, labels and the like; complete	1	item			
	(68) BMS WIRING INSTALLATIONS					
	System					
	BMS Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplied as a 'Free Issue' item by the Mechanical Contractor as part of the BMS installation, and must be installed and connected up by the electrical contractor. Generally, the MCC panels must be installed in boiler houses, plant rooms, etc.; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.4 (5-)M004					
B	BMS Wiring Installation	1	item			
	Equipment					
	Mechanical Control Panel; Mechanical and BMS wiring installation, testing and commissioning; complete; The Contractor shall allow for all wiring associated with the installation of the MCC and BMS outstations; The Contractor shall allow for all switchgear as indicated on the electrical services connection schedules and reflected on the electrical services layouts; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.4(5-)M004					
C	Mechanical Control Center; Ref: MCC Panel, Location: Plant Room	1	item			
D	Mechanical Control Center; Ref: MCC Panel, Location: Biomass Unit	1	item			
	Remote data transmitter, testing and commisssioning; complete; Install loggers and determine the maximum electrical load (MIC) across all phases for the entire school; all in accordance with the Mechanical & Electrical Specification and Drawing 4.4(5-)M004					
E	Remote data transmitter; Boiler Room	1	nr			
	GSM modem; supply and installation; c/w dedicated SIM card, cabling and power supplies; contractor to maintain system for duration of supply contract; include for all fittings and accessories; testing and commissioning, complete; all in accordance with the Mechanical Specification					
F	GSM modem	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fittings					
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Plant room					
A	Pressurisation Unit - Low level fault	1	nr			
B	Pressurisation Unit - High level fault	1	nr			
C	Pressurisation Unit - Run indication	1	nr			
D	Main Header - Flow temperature sensor	2	nr			
E	Main Header - Return temperature sensor	2	nr			
F	Main Header - Imersion frost	2	nr			
G	Boiler - Enable	5	nr			
H	Boiler - Temperature set point	5	nr			
J	Boiler - Common alarm	5	nr			
K	Boiler - Shunt pump fault/enable	5	nr			
L	Boiler - Flow temperature sensor	5	nr			
M	Boiler - Burner currently firing feedback	5	nr			
N	Biomass - Enable/fault	1	nr			
P	Biomass - Temperature set point	1	nr			
Q	Biomass - Common alarm	1	nr			
R	Biomass - Primary pump head 1 fault/enable	1	nr			
S	Biomass - Primary pump head 2 fault/enable	1	nr			
T	Biomass - Pump 1 flow set point	1	nr			
U	Biomass - Pump 2 flow set point	1	nr			
V	Biomass - Flow temperature sensor	1	nr			
W	Biomass - Return temperature sensor	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	VT Circuit - Pump head 1 enable/fault	1	nr			
B	VT Circuit - Pump head 2 enable/fault	1	nr			
C	VT Circuit - Flow temperature sensor	1	nr			
D	VT Circuit - Return temperature sensor	1	nr			
E	VT Circuit - 3-port mixing valve	1	nr			
F	Trace heating - Enable/fault	1	nr			
G	Main Secondary Calorifier - Pump head 1 enable/ fault	1	nr			
H	Main Secondary Calorifier - LPHW return temperature	1	nr			
J	Main Secondary Calorifier - 2-port mixing valve	1	nr			
K	Main Secondary Calorifier - Calorifier temperature	1	nr			
L	Main Secondary Calorifier - 3-port diversion valve	1	nr			
M	Main Secondary Calorifier - HWSR pump 1 enable/ fault	1	nr			
N	Main Secondary Calorifier - Sacrificial annode	1	nr			
P	Main Secondary Calorifier - 2-port valve	1	nr			
Q	Main Secondary Calorifier - High limit stat	1	nr			
R	Gas Detection - Gas detector 1	1	nr			
S	Gas Detection - Gas detector 2	1	nr			
T	Gas Detection - Gas detector 3	1	nr			
U	Gas Detection - Heat detector 1	1	nr			
V	Gas Detection - Heat detector 2	1	nr			
W	Gas Detection - Heat detector 3	1	nr			
X	Gas Detection - Fire alarm interface	1	nr			
Y	Metering - Main Gas meter	1	nr			
Z	Metering - Gas meter to boilers	1	nr			
AA	Metering - Gas meter to Water heater	1	nr			
BB	Metering - Mains water meter	1	nr			
CC	Metering - Cold water to hot water meter	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metering - Rainwater usage meter	1	nr			
B	Metering - Flushing water meter	1	nr			
C	Metering - Heat Meter modbus	5	nr			
D	Frost protection - External temperature sensor	1	nr			
E	Frost protection - External Frost Senor	1	nr			
F	Data connection to MCC-Biomass	1	nr			
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all 6 core 0.6mm2 PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Biomass Unit					
G	Fire alarm interface	1	nr			
H	Biomass - Enable/fault	1	nr			
J	Buffer temperature Sensor H/L	1	nr			
K	Buffer temperature Sensor M/L	1	nr			
L	Biomass boiler back end protection	1	nr			
M	Biomass boiler flow temperature sensor	1	nr			
N	Biomass boiler return temperature sensor	1	nr			
P	Heat exchanger pump (primary) - Enable/Fault	1	nr			
Q	Heat exchanger pump (secondary) - Enable/Fault	1	nr			
R	Primary heat exchanger flow temperature sensor	1	nr			
S	Primary heat exchanger return temperature sensor	1	nr			
T	Secondary heat exchanger flow temperature sensor	1	nr			
U	Secondary heat exchanger return temperature sensor	1	nr			
V	Pressurisation Unit - Enable / fault	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Final Circuits (including all points terminations)					
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification, Control points schedule and Drawing (50)M001					
	Final Circuits - MCC - Plant room					
A	Power - Pressurisation Unit; SPN 20amp	1	nr			
B	Power - Boiler; SPN 20amp	5	nr			
C	Power - Shunt pump; SPN 20amp	5	nr			
D	Power - Trace heating; SPN 20amp	1	nr			
E	Power - Heat meter; SPN 20amp	5	nr			
F	Power - Calorifier sacrificial annode; SPN 20amp	1	nr			
G	Power - Gas detection panel; SPN 13amp	1	nr			
H	Power - VT circuit pump head 1; TPN 20amp	1	nr			
J	Power - VT circuit pump head 2; TPN 20amp	1	nr			
K	Power - Calorifier pump head 1; TPN 20amp	1	nr			
L	Power - Calorifier HWSR pump 1; SPN 20amp	1	nr			
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification and Drawing (50)M001					
	Final Circuits - MCC - Biomass Unit					
M	Power - Biomass Unit; TPN 100amp	1	nr			
N	Power - Biomass primary pump head 1; SPN 20amp	1	nr			
P	Power - Biomass primary pump head 2; SPN 20amp	1	nr			
Q	Power - Pressurisation Unit; SPN 20amp	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
A	General Earthing and Bonding; complete		item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
B	Testing and commissioning; complete		item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
C	Operating and maintenance manuals; complete		item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
D	Working drawings; complete		item			
	Co-ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
E	Co-ordination drawings;complete		item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
F	As built drawings; complete		item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
G	Identification plates, labels and the like; complete		item			
H						
	ELECTRICAL INSTALLATIONS					
	Sundries and Builders Work					
	General Attendances					
J	Provide all general attendances in accordance with Arm 4.	1	item			
K	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
L	Provide use of the Main Contractors scaffolding.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
B	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
C	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
D	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
E	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
F	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
G	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
H	Include for unloading, hoisting/cranage and placing into position all items of heavy plant supplied by the subcontractors.	1	item			
J	Allow for maintaining all ducts, chases , trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
K	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
L	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
M	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	<u>Special Attendances</u>					
N	Provide all special attendances in accordance with Arm 4 Work Section B Clause 3.1	1	item			
P	Provide temporary access roads and hardstanding in connection with heavy items of plant and the like, forming part of the site establishment works	1	item			
Q	Provide scaffolding internal and external to the building to facilitate installation of high-level electrical services during the contract	1	item			
R	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
S	Provide adequate barriers/tape/signage of exclusion zoning in relation to use of access equipment and ACOPs for working at height	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide construction signage (internal and external) in relation to M&E services e.g live systems etc.	1	item			
B	Provide temporary lighting and power in accordance with IS10101 Wiring Regulations.	1	item			
C	Provide protection to all M&E services installations installed during the works including protection against debris and water ingress	1	item			
D	Provide fire stopping to all electrical services on the vertical and horizontal planes throughout the entire buildings	1	item			
E	Ensure close coordination during the building phase to ensure electrical, ventilation and mechanical services are installed and integrated within the building fabric as designed.	1	item			
F	Provide grounds and fixings for suspension of Electrical services; Electrical loading = 10kg/m Mechanical loading = 40kg/m	1	item			
G	Provide boxing out of containment and pipework as necessary, boxing to be accessible with screwed access.	1	item			
H	Main contractor shall employ a full time M&E Co-ordinator for the duration of the contract works and their duties shall include but not limited to details set out within the specification A2.4 Part 1 of 4 particular specification document	1	item			
J	Contractor shall be aware that drawings are indicative only including the minimum ope sizes; It will be the contractors responsibility in conjunction with their in-house M&E services coordinator to produce construction stage builders works drawings for DT comment	1	item			
K	Provide safe access and task lighting for electrical sub-contractor to all sections of school roofspace	1	item			
L	Provide safe access for electrical sub-contractor to all sections of the site	1	item			
M	The M&E installation within the SEN accommodation is to be a fully recessed installation. The contractor shall include for casting in of all electrical services and recessing of all radiators within the wall panels	1	item			
N	Seal all incoming services to prevent ingress of vermin	1	item			
P	Fire Stopping to all services penetrations throughout	1	item			
Q	Attendance to electrical sub-contractor	1	item			
R	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
S	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
B	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
C	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
D	Provide temporary power supplies (3 phase 400V and maximum loading 15kVA) for welding, handtools, and for commissioning, including infrastructure and all charges fot the contractors use of the facility.	1	item			
E	Provide scaffolding additional to the main contractors standing scaffolding, or access towers if required.	1	item			
F	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day	1	item			
G	Provide facilities for safe removal and disposal of all materials off site	1	item			
H	Provide a week by week program detailing the Mechanical and Electrical service activities	1	item			
J	Provide for heating / drying out the building as and when necessary to comply with their program. This may be done (at the clients specific consent) with the installed conventional heating system (if available). Be responsible, however, for providing the fuel to do this. Be responsible for maintaining background heat until the building is handed over to the client, after the heating system has been commissioned	1	item			
K	Provide and maintain the specific temperatures and humidity levels	1	item			
L	Provide Builders Attendances to all utility services as follows; Gas Networks Ireland, Eir, Virgin Media, Local Authority, ESB Networks.	1	item			
M	Fire stopping requirements of all services penetrations through fire compartment structures to be the responsibility of the building contractor. In addition, all pipework, ductwork, containment and service penetrations shall be fire-stopped where passing through every wall, floor and ceiling regardless if its a fire compartment or not by main contractor. Refer to M&E services drawings indicating main routes of M&E infrastructure. All instances of firestopping shall be labelled and certified using CE certified products including fire-pillows for use inside electrical trunkings.	1	item			
	Unload, hoist, distribute and place in position the following items of heavy plant and equipment					
N	Main switch board	1	item			
P	Sub-distribution boards	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	MCC panel	1	item			
B	Containment	1	item			
C	Cabling	1	item			
D	Lighting	1	item			
E	PV Panels	1	item			
	Sundries & Builders Work					
	General					
F	Marking positions of holes, mortices and chases	1	item			
G	Testing & Commissioning	1	item			
H	Preparing drawings of "as completed" installations	1	item			
J	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
K	Keys, tools and spares	1	item			
	Forming or cutting holes/mortices/chases and the like; including sleeves/plates, intumescent collars; making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
L	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
M	cutting or forming opes is deemed to include the making good and sealing of the ope		note			
	Cutting or forming holes through existing external walls various thicknesses; include for building in sleeves; making good all finishes on completion					
N	440mm x 225mm opes	2	nr			
	Cutting or forming holes through existing internal walls various thicknesses; include for building in sleeves; making good all finishes on completion					
P	440mm x 225mm opes	5	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification P12					
	Special works were services pass through structures; existing external walls various thicknesses, making good all finishes on completion					
A	440mm x 225mm opes	2	nr			
	Special works were services pass through structures; existing internal walls various thicknesses, making good all finishes on completion					
B	440mm x 225mm opes	5	nr			
				To Collection €		

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/37					
Page No. Lot 4.4 Works Con/38					
Page No. Lot 4.4 Works Con/39					
Page No. Lot 4.4 Works Con/40					
Page No. Lot 4.4 Works Con/41					
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Page No. Lot 4.4 Works Con/50					
Page No. Lot 4.4 Works Con/51					
Page No. Lot 4.4 Works Con/52					
Page No. Lot 4.4 Works Con/53					
Page No. Lot 4.4 Works Con/54					
Page No. Lot 4.4 Works Con/55					
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Page No. Lot 4.4 Works Con/57					

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/58					
(6-) ELECTRICAL INSTALLATION **Carried to Summary**					

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND					
	EXCAVATION AND EARTHWORK					
	Excavation					
	Excavation					
	Reduce levels					
A	Depth between not exceeding 2.00m	39	m3			
	Extra on Excavation Items for:					
	Breaking up existing					
B	Hard surfaces; Tarmacadam surface; 100mm thick; complete	55	m2			
	Disposal					
	Water					
C	Surface	1	item			
D	Ground	1	item			
	Excavated material; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
E	Disposal off site	33	m3			
F	Disposal off site; existing Tarmac; Disposal to a suitable licensed waste disposal facility	6	m3			
	Filling with hardcore to be obtained off-site; clean angular gravel 20mm, free from pyrite and macarsite as per specification					
	To make up levels					
G	Average thickness not exceeding 250mm	6	m3			
	Filling with hardcore to be obtained off-site; Clause 804 crushed stone well compacted on firm clean formation; compliant with TII Publications series 800, free from pyrite and macarsite as per specification					
	To make up levels					
H	Average thickness not exceeding 250mm	6	m3			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Filling with granular fill material to be obtained off-site; Class 6F2 compliant with TII Publications series 600, free from pyrite and macarsite; depositing in 150mm layers maximum thickness; compacting; as per Drawings and Specification					
	To make up levels					
A	Average thickness exceeding 250mm	17	m3			
	Surface treatments					
	Levelling and compacting; bottom of excavations					
B	Horizontal	55	m2			
	CONCRETE WORK					
	In-situ Concrete					
	Concrete cubes for testing					
	Provide for making concrete cubes from freshly mixed concrete; transporting and testing cubes; all as per details in the Specification					
C	Size 150 x 150 x 150mm	2	nr			
	In-situ Concrete; Reinforced					
	Grade C40/5-XF4 to IS EN 206					
	Beds					
D	Generally; Reinforced	11	m3			
	Surface Finishes					
	Brushed finish to wet concrete as per Specifications					
E	Generally	55	m2			
	Reinforcement					
	Fabric					
	A252 mesh reinforcement; 350mm laps; 350mm end laps; all in strict accordance with the Engineers Drawings and Specification					
F	Horizontal	55	m2			

To Collection €

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Formwork					
	Formwork Generally					
	Sides of beds					
A	Height or width 250 - 500mm	35	m			
B	Extra over for forming recess in floor slab for district heating pipe; comprising 65mm dia x 400mm deep recess; include for cutting to all angles and corners	4	nr			

				€	c
(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/61					
Page No. Lot 4.4 Works Con/62					
Page No. Lot 4.4 Works Con/63					
(30) SITE ENCLOSURES - PLANT COMPOUND **Carried to Summary**					

					€	c
	(50) SITE SERVICES - DISTRICT HEATING					
	DRAINAGE/SERVICES - DISTRICT HEATING					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average depth 500 - 1000mm	13	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	13	m			
	Around existing services crossing excavations					
E	Storm pipe; crossing excavations	3	nr			
F	Foul pipe; crossing excavations	2	nr			
G	ESB; crossing excavations	2	nr			
	Disposal					
H	Ground water	1	item			
J	Surface water	1	item			
				To Collection €		

	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
	Sand bed and surround; to Engineer's Specification					
	Beds and Surrounds					
A	475 x 225mm; to 2nr 100mm duct	13	m			
	PVC marker tape; "Heptape" or equivalent					
B	Continuous strip; laid during trench backfill; 100mm above pipework	13	m			
	Ductwork					
	100mm diameter					
C	Laid in trenches	26	m			
D	Extra over for easy sweep bends	4	nr			
E	Extra over for ducts capped for Biomass connection	2	nr			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
F	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
G	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
H	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
J	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
K	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
L	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			
M	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			

To Collection €

					€	c
	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
A	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			
					To Collection €	

				€	c
(50) SITE SERVICES - DISTRICT HEATING (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/65					
Page No. Lot 4.4 Works Con/66					
Page No. Lot 4.4 Works Con/67					
(50) SITE SERVICES - DISTRICT HEATING **Carried to Summary**					

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS					
	(50) SITE SERVICES (MAINLY MECHANICAL) - WORKS IN CONNECTION WITH BIOMASS UNIT					
	System					
	Biomass unit mechanical connections, installation, testing and commissioning; complete; The Biomass unit shall be supplied by others under a separate contract; The Contractor shall coordinate all interface requirements to ensure a fully operational installation; Prior to handover, the Contractor shall provide commissioning certification confirming that all required cleaning, flushing and water treatment procedures have been correctly carried out; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2/A Part 10, 2/B Part 17; Volume 3; Volume 4 and Drawings 4.4(5-)M002, (5-)M004, (5-)M007					
	Primary Equipment					
	Biomass unit ancillary works; Provide all labour, materials and ancillary works necessary for the coordination and completion of all mechanical connections associated with the installation, testing, commissioning and operation of the biomass boiler plant (biomass unit supplied by others under a separate contract), including all plant room interface connections and associated mechanical services works; complete; all in strict accordance with the Mechanical Engineer's Specification					
D	Biomass unit ancillary works; Location: External plant compound	1	nr			

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

Distribution

Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B

A	80mm diameter pipework	1	item		

Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B

B	80mm diameter pipework	1	item		

Insulation

Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

Insulation, 65mm thick

C	to 80mm diameter pipework	1	item		

Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

D	General Valve & Plant	1	item		

Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B

E	to 80mm diameter pipework	1	item		
F	General Valve & Plant	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
B	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like	1	item			
	(50) SITE SERVICES (MAINLY MECHANICAL) - MAINS WATER					
	System					
	Mains Water connections to biomass unit installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.4(5-)M002, (5-)M004,					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of MWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
H	28mm Isolation valves	2	nr			

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B

A	28mm Non-return valves	1	nr		

Strainer valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B

B	28mm Strainer valves	1	nr		

Distribution system

Polyethylene pipework and fittings; all in strict accordance with the Mechanical Specification

C	28mm diameter pipework	1	item		

Insulation

Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

Insulation, 50mm thick

D	to 28mm diameter pipework	1	item		

Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

E	General Valve & Plant	1	item		

Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B

F	to 28mm diameter pipework	1	item		
G	General Valve & Plant	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
A	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
B	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
C	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
D	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
E	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
F	Identification plates, labels and the like; complete	1	item			
				To Collection €		

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

(50) SITE SERVICES - TRACE HEATING

System

Trace Heating installation, testing and commissioning; complete; Trace heating shall be installed on all the water systems where they travel externally between building blocks; Trace heating shall be provided complete with control panels and all required components to prevent system freezing. Capacity of trace heating shall maintain water temperature above 3øC when ambient temperature is -15øC. Trace heating temperature control shall prevent water temperature rising above 10øC. Trace heating system to incorporate air control thermostats and pipework safety cut out thermostats. All trace heating circuits shall be linked to BMS to provide status and fault indication on BMS; Supply electric trace heating complete with fixing tape, shrink sleeves, crimps, junction boxes and controls; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2; Volume 3; Volume 4 and Drawings

Primary Equipment

Trace heating control panel; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

A	Trace heating panel; Location: Plant room	1	nr		

Accessories associated with Primary Equipment

Self-regulating heating tape; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

B	Self-regulating heating tape	1	item		

Air control thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

C	Air control thermostats	1	item		

Safety cut out thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

D	Safety cut out thermostats	1	item		

Insulation

Modified polyolefin electrical insulation; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

E	80mm diameter pipework	1	item		
F	Valves and Plant; generally	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
				To Collection €		

				€	c
(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/69					
Page No. Lot 4.4 Works Con/70					
Page No. Lot 4.4 Works Con/71					
Page No. Lot 4.4 Works Con/72					
Page No. Lot 4.4 Works Con/73					
Page No. Lot 4.4 Works Con/74					
Page No. Lot 4.4 Works Con/75					
(50) SITE SERVICES (MAINLY MECHANICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES					
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER TO BIOMASS UNIT					
	System					
	Power to Biomass Unit installation, testing and commissioning; complete; The electrical contractor shall provide all wiring and power supplies associated with the external Biomass Unit as detailed on the wiring schematic; all underground electrical services cables shall be distributed within ducts; separate underground service ducts shall be provided as part of the builders works element; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 - Section A and Drawings					
D	Biomass Power Installation	1	item			
	Accessories associated with terminal equipment					
	Rotary Isolator Switch; supply and installation (including wiring & terminations); complete; surface mounting; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification Volume 2					
E	Rotary Isolator; TPN; 50amp; IP65	1	nr			
				To Collection €		

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board, located in the existing switch room; Sub-mains distribution outside the building shall be via XLPE/LZOH/SWA armoured cables laid in underground ducts; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Volume 2, Section A and Drawing 4.4 (60)E001					
A	Submains; Existing switch board to Biomass Unit-1; 1 x 4c 35sq.mm XLPE/LZOH/SWA + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers specification documents and drawings					
C	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers specification documents and drawings					
D	Operating and maintenance manuals; complete	1	nr			
	Working drawings; all in accordance with the Electrical Engineers specification documents and drawings					
E	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers specification documents and drawings					
F	Co- ordination drawings; complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers specification documents and drawings					
G	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers specification documents and drawings					
H	Identification plates, labels and the like; complete	1	item			
				To Collection €		

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					

To Collection €

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/77					
Page No. Lot 4.4 Works Con/78					
Page No. Lot 4.4 Works Con/79					
(60) SITE SERVICES (MAINLY ELECTRICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
C	The contractor shall also ascertain whether or not there are any E.S.B. cables on the site and arrange for their removal so that it does not delay site progress. All, redundant site services/site services made redundant, for all utilities and services, will be removed as part of the contract.	1	item			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr ducts not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported hardcore; disposal of surplus soil off site; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
D	Average depth 500 - 1000mm	13	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
E	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	13	m			
	Around existing services crossing excavations					
F	Storm pipe; crossing excavations	3	nr			
G	Foul pipe; crossing excavations	2	nr			
H	ESB; crossing excavations	2	nr			
				To Collection €		

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)					
	Disposal					
A	Ground water	1	item			
B	Surface water	1	item			
	Plain in-situ concrete bed and surround; minimum 150mm bed; Class 16/20; leanmix concrete backfill; as per Engineer's Drawing					
	Beds and Surrounds					
C	595 x 325mm; to 2nr ducts	13	m			
	PVC Red marker tape; "Heptape" or equivalent					
D	Continuous strip; laid during trench backfill; 100mm above pipework	13	m			
	PVC Yellow marker tape; "Heptape" or equivalent					
E	Continuous strip; laid during trench backfill; 300mm above pipework	13	m			
	Ductwork; uPVC duct; LV Duct					
	110mm dia.; include for draw-wire					
F	Laid in trenches	13	m			
G	Extra over for easy sweep bends	2	nr			
H	Extra over for ducts capped for Biomass connection	1	nr			
	Ductwork; uPVC duct; Comms Duct					
	110mm dia.; include for draw-wire					
J	Laid in trenches	13	m			
K	Extra over for easy sweep bends	2	nr			
L	Extra over for ducts capped for Biomass connection	1	nr			
				To Collection €		

					€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)						
	Chambers					
	Draw pit chamber; complete; excavating pits from stripped level 1000x1000x800mm deep internally; dispose of surplus soil; grading bottom; earthwork support; open bottom pit filled with 50mm course gravel for drainage; RC3 concrete base on 50mm blinding grade gen 3; Concrete roof slab grade C25 c/w opening for cover and frame; 225mm thick Class B engineering brickwork in english bond; Walls: 1000mm high with 50mm rebate for removable cover; include for openings for ducts; Heavy duty cast iron cover and frame to Engineer's Specification bedded in epoxy mortar; include for step irons; all pvc pipes to fall away from building and all pits should not waterlog; pipes to be buried 750mm below ground level; include for backfilling to sides of chamber where necessary; all in accordance with the site plan Drawing					
A	Average depth not exceeding 1000mm	1	nr			
	Sundries					
B	Allow for sealing all incoming service ductwork to prevent ingress of damp, dirt and vermin	1	item			
C	Allow for clearance between Telecom ducts and ESB ducts and cables over 650 volts; of 300mm vertical clearance at crossings and 600mm lateral clearance in parallel trenches	1	item			
D	Allow for clearance between ESB ducts and cables and other service ducts; 150mm vertical clearance at crossings and 300mm lateral clearance in parallel trenches	1	item			
E	Provide for all necessary attendances on ESB to include liaising with ESB before, during and after installation of electrical services and providing and making available site data for their use	1	item			
F	Provide markings/signage of ESB cables at locations as agreed with Local Engineering Officer and in accordance with ESB Specifications; as per Engineer's Drawing	1	item			
G	Provide all necessary attendances and builders work in association with disconnecting and removing existing underground ESB supply; complete	1	item			
				To Collection €		

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)					
COLLECTION					
Page No. Lot 4.4 Works Con/81					
Page No. Lot 4.4 Works Con/82					
Page No. Lot 4.4 Works Con/83					
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT Carried to Summary					

		€	c
SUMMARY	**Page No.**		
(10) DEMOLITIONS AND ALTERATIONS	Lot 4.4 Works Con/2		
(35) & (45) CEILING FINISHES	Lot 4.4 Works Con/4		
(5-) MECHANICAL INSTALLATION	Lot 4.4 Works Con/36		
(6-) ELECTRICAL INSTALLATION	Lot 4.4 Works Con/60		
(30) SITE ENCLOSURES - PLANT COMPOUND	Lot 4.4 Works Con/64		
(50) SITE SERVICES - DISTRICT HEATING	Lot 4.4 Works Con/68		
(50) SITE SERVICES (MAINLY MECHANICAL)	Lot 4.4 Works Con/76		
(60) SITE SERVICES (MAINLY ELECTRICAL)	Lot 4.4 Works Con/80		
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT	Lot 4.4 Works Con/84		
TOTAL AMOUNT CARRIED TO GENERAL SUMMARY			
Lot 4.4 Works Con/1 - Lot 4.4 Works Con/84.			

4.5 - Breifne College

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	(10) DEMOLITIONS AND ALTERATIONS					
	DEMOLITION & ALTERATIONS					
	GENERAL					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYER'S REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Demolitions					
	Removing					
	Fittings and Fixtures					
B	Existing External double door and frame; approx 1650mm wide x 3160mm high; include all fittings, architrives, liners etc; diposal of all material off site	1	nr			
	Removing Finishes					
C	Existing ceiling finishes to certain locations within existing building; disposal of all materials off site; prepare ceilings to receive new finishes	34	m2			

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(10) DEMOLITIONS AND ALTERATIONS (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/1					
(10) DEMOLITIONS AND ALTERATIONS **Carried to Summary**					

					€	c
	(31) EXTERNAL WALL COMPLETIONS					
	METALWORK					
	Non-Structural					
	ALUMINUM DOORS INCLUDING LOUVRE DOORS; The successful contractor will be responsible for the design, supply, fabrication, and installation of the doors all in accordance with the best building practices and systems supplier#s recommendations; The contractor will be responsible for providing all proposals, drawings, samples etc required to satisfy the requirements of the tender and also to demonstrate that the contractor is competent and able to execute the works in a proper and timely manner; The contractor will be responsible but not limited to providing the design team the following documentation in advance of any works been commenced; Providing all test data covering all the proposed systems; After the contractor has been awarded the project they must provide the design team the following prior to any work commencing; A full set of detailed shop drawings showing all the relevant interfaces, systems junctions, flashing details, glass types, and indicting all the surfaces being painted; include for inbuilt screen; as per Architect's specification					
	Composite Items; Doorsets (Louvred Doors)					
A	External double Door; overall opening size (including frame) 1650mm wide x 3160mm high; comprising 2nr louvred door size 825mm wide x 3160mm high; complete	1	nr			
				To Collection €		

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(31) EXTERNAL WALL COMPLETIONS (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/3					
(31) EXTERNAL WALL COMPLETIONS **Carried to Summary**					

					€	c
	(35) & (45) CEILING FINISHES					
	FLOOR, WALL & CEILING FINISHES					
	Suspended Ceiling					
	Proprietary suspended ceiling system; Manufacturer: Submit proposals for Architects approval; Product reference: CasoLine MF suspended ceiling system- or equivalent to Architect#s approval; Suspension system; Hanger type: Gypframe MF8 strap hangers; Top fixings: Gypframe MF12 soffit cleats fixed to concrete soffit or metal deck; Primary grid centres: 1200 mm. Hanger centres: 900 mm; Secondary grid centres: 400 mm; Linings: 1 x 12.5 mm Gyproc WallBoard, Gyproc moistureproof green board where noted on RCP's and in a wet area; Insulation: none; Access Units: Gyproc Profilex access panels; Finishing: Taped seamless finish; Primer/ Sealer; Type: 1 coat of Gyproc Drywall Primer (2 coats where noted as moistureproof green board; Accessories: none; all as per Architects Specification					
	Ceilings; fixed below floor structure					
A	Depth of suspension 500mm - 1000mm	34	m2			
	PAINTING AND DECORATING					
	Painting					
	Emulsion paint; To internal plastered surfaces and fairfaced blockwork; Manufacturer: Submit proposals for Architects approval; Product reference: Dulux trade Diamond Matt (water based tough Scrubbable Matt emulsion); Surfaces: Internal plastered surfaces; Preparation: Tape and fill joints; Initial coats: 40% thinned primer.Thinning Sealing new or bare surfaces: Add up to 1 part clean water to 10 parts paint; Number of coats: 2; Undercoats: As recommended by manufacturer; Number of coats: As recommended by manufacturer; Finishing coats: Washable matt vinyl; Number of coats: 2; all as per Architects Specification					
	Ceilings					
B	Exceeding 300mm	34	m2			

To Collection €

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(35) & (45) CEILING FINISHES (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/5					
(35) & (45) CEILING FINISHES **Carried to Summary**					

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	(5-) MECHANICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Plant room enabling works to facilitate installation of Biomass flow/return pipework; including installation of meters, sensors and gauges (measured elsewhere); isolate, drain down, disconnection equipment in co-ordination with installation and commissioning of new works; remaining systems to stay operational during decommissioning works, required down-time to be coordinated in advance and carried out during out-of-hours; all in accordance with the Mechanical specification and Drawings 4.5(5-)M004	1	item			
C	Retention, protection, relocation, modification and recommissioning of 5nr existing LPG boilers; including system isolation, drain-down, cutting and forming tees, provision of isolation valves, non-return valves (where required), fittings, reducers, supports, flushing, pressure testing, and full reinstatement of insulation and finishes; All shutdowns to be agreed in advance and carried out outside normal operating hours; all in accordance with the Mechanical Specification and Drawing 4.5(5-)M004	1	item			
	ASBESTOS REMOVAL					
	DEMOLITION & ALTERATIONS					
	General					
D	The following items are not measured in strict accordance with ARM.		note			
E	The Contractor is refered to the Pre Refurbishment & Demolition Asbestos Survey		note			
F	The Contractor must ensure that any risk of exposure to asbestos is completely eliminated. Contractor to consult with Employer's Representative before any work commences on site.	1	item			

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	The Contractor is advised that there is a notification form to be used for any work involving asbestos. This form must be submitted 28 days prior to the start of such work.	1	item			
B	The Main Contractor / PSCS must appoint a specialist asbestos removal contractor to carry out the asbestos removal & disposal works	1	item			
C	Prior to commencing any demolition or construction works on site all asbestos must be removed from site; in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010	1	item			
D	The Main Contractor / PSCS must appoint a competent independent analyst / accredited laboratory for the purpose of undertaking air sampling, project monitoring and issuing site clearance for reoccupation certification; in conformance with ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories	1	item			
E	Prior to commencing the asbestos removal works the specialist contractor shall submit (to the PSDP & Employer's Representitive) their Plan of Work (risk assessment / method statement), Design Risk Assessment, and temporary works certificates for the Asbestos Removal works (at least 21 days in advance of commencing the asbestos removal works)	1	item			
F	Prior to commencing the asbestos removal works the specialist contractor shall submit their Plan of Work (risk assessment / method statement), and notify, to the HSA (at least 14 days in advance of commencing the asbestos removal works). The PSCS must also ensure that copies of the notifications are forwarded to the PSDP, Client & Project Manager	1	item			
G	No works may take place on site until the Plan of Work has been drawn up and approved by the Main Contractor / PSCS	1	item			
H	No deviations shall be permitted from the plan of work submitted to the HSA	1	item			
J	Should the Plan of Work require amending / updating (for whatever reason) it must be issued to the PSDP & Project Manager in the first instance, and then the HSA, prior to proceeding with any proposed changes	1	item			
K	No asbestos removal works may take place in areas occupied by normal construction / project personnel and / or third parties	1	item			
L	An asbestos site clearance for reoccupation certificate(s) must be supplied (by the competent independent analyst / accredited laboratory) to the PSDP & Project Manager prior to commencing any demolition or construction works on site (other than the asbestos removal works); the certificate(s) must include (1) Visual inspection, (2) Air monitoring and (3) The decontamination unit	1	item			
M	After completing Asbestos Removal works the PSCS must ensure that asbestos site clearance for reoccupation certificates are issued to the Project Manager, PSDP, and Client PRIOR to allowing those areas to be opened up to persons (other than those persons directly involved in the asbestos removal works)	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	NO Asbestos Containing Waste Material may be removed from the site unless a Waste Transfer Form (removal of Hazardous Waste Material from Site) has been completed and issued to the PSCS / Main Contractor, the PSDP & Project Manager	1	item			
B	The PSCS / Main Contractor must forward copies of final disposal certificates (i.e. completed Waste Transfer Form (final disposal of Hazardous Waste Material)) to the PSDP & Project Manager	1	item			
C	The PSCS / Main Contractor must forward, the following information (as applicable) to the PSDP, for inclusion in the Safety File; Bulk sample results, Amended Asbestos Register, Preliminary Safety & Health Plan and Specification, Specialist asbestos removal contractor Plan of Work, Notification to the Health and Safety Authority, Air monitoring results prior to removal works commencing, Air monitoring results during removal works, site clearance for reoccupation certificates, Completed Waste Transfer Form for the final disposal of all asbestos / hazardous waste.	1	item			
D	All asbestos works must be carried out in accordance with; The HSA 2010 Code of Practice for Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001, The Safety Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010, The HSA Guidelines on Working with Materials Containing Asbestos Cement (and any subsequent amendments updates to HSA Guidelines and / or Codes of Practice)	1	item			
E	Contractor to include here (Unless included in rates elsewhere) for protection of all fixtures, fittings and finishes to all areas in which asbestos removal occurs	1	item			
	Alterations					
F	The Contractor must note that the safe and proper removal and disposal of all asbestos material is the Contractor's full responsibility and therefore the contractor's price/rates must include for all work in connection with same; no claims on the grounds of want of knowledge will be entertained whatsoever.	1	item			
	Removing Finishes; Asbestos Material					
G	Submit Plan of Work and 14 day prior notification to the Health & Safety Authority	1	item			
H	Setup Decontamination Unit & Form Enclosures	1	item			
J	Specialist removal and disposal of asbestos-containing valves in accordance with all relevant safety and environmental regulations.	1	item			
K	Specialist removal and disposal of asbestos - asbestos in old pipe flange gaskets in ground floor boiler room 004 - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
L	Environmental clean to achieve clearance certification	1	item			
M	Asbestos Removal & Disposal Certificates	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	INAB Accredited Asbestos Clearance Certification					
B	Reassurance Air Monitoring and Re-occupation Clearance Certification by an Asbestos Consultant	1	item			
	Notes					
C	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
D	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
E	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
				To Collection €		

(5-) MECHANICAL INSTALLATION (Cont)

ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS

(51) HEATING CENTRE

System

Heating center installation, testing and commissioning; consisting of 1nr Biomass boiler (Primary heating source) and 5nr existing LPG gas fired condensing boilers (secondary heating source) serving radiators throughout the building; the installation shall include minor works all existing plant and header and distribution pipework to be retained and reused; existing flow rates to be recorded prior to works and re-established at the end of the works; The heating system shall be flushed and provided with appropriate chemical treatment; Commissioning results including a flue gas analysis shall be provided for the boilers prior to handover, along with a statement by the manufacturer/ supplier confirming their correct and efficient operation; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/6. Heating System, Section B (56) Heating System Pipework; Volume 3; Volume 4 and Drawings (5-)M004

Accessories associated with Primary Equipment

Stop valves for isolation of LPHW pipework over 65mm Dia; Type: Lever operated, controlled elastomer compression on flange faces; semi lugged wafer type design, for installation between flanged pipework connections, body to suit IS EN 1092-2; Materials: Cast iron body; stainless steel shaft; aluminium bronze disc; EPDM seat; lever and gear operated valves with long body neck; Seat - Bonded; all in strict accordance with Engineers Specification Volume 2/B

A	80mm Stop valves	3	nr		
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B				
B	80mm Non-return valves	1	nr		
	Strainer valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B				
C	80mm Strainer valves	1	nr		
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules				
D	Pump LPHW, Ref: PHBI01; Flow Rate: 4.8kg/s; External Pressure Drop: 150kPa; Temperature: 80°C	1	nr		

To Collection €

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
A	Temperature sensor	8	nr			
	Pressure gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
B	80mm Pressure gauge	3	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
C	80mm Temperature gauge	4	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 2.5kg/s; Maximum working temp: 110°C; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework; separator to be capable of separating particles with a size of 5um and larger; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
D	Air/Dirt separator; Ref: DA1	1	nr			
	Heat meter; supply and installation; complete; Accuracy Shall be accurate within 1% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
E	Heat Meter; Ref: HM02, HM03, HM04, HM05	4	nr			
	Oil-filled electric radiator; supply and installation; powder coated white finish; radiator control to turn on at 5°C, switch off at 14°C; linked to local temperature sensor, via BMS; c/w mounting brackets; include for all fixings and accessories; in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
F	Oil filled Electric radiator; Output 1kW	1	nr			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Distribution					
	Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
A	80mm diameter pipework	1	item			
	Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B					
B	40mm diameter pipework	1	item			
C	50mm diameter pipework	1	item			
D	54mm diameter pipework	1	item			
E	80mm diameter pipework	1	item			
F	125mm diameter pipework	1	item			
G	250mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
H	to 40mm diameter pipework	1	item			
J	to 50mm diameter pipework	1	item			
K	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
L	to 80mm diameter pipework	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Insulation, 80mm thick					
A	to 125mm diameter pipework	1	item			
B	to 250mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
C	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
D	to 40mm diameter pipework	1	item			
E	to 50mm diameter pipework	1	item			
F	to 54mm diameter pipework	1	item			
G	to 80mm diameter pipework	1	item			
H	to 125mm diameter pipework	1	item			
J	to 250mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
K	Testing and commissioning	1	item			
L	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
M	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
N	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
P	Co-ordination drawings	1	item			

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	(5-) MECHANICAL INSTALLATION (Cont)					
	As built drawings; all in accordance with Engineers Specification					
A	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
B	Identification plates, labels and the like	1	item			
	(53) WATER SERVICES - HOT AND COLD WATER					
	System					
	Cold Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.5(5-)M004					
	Hot Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.5(5-)M004					
	Accessories associated with Primary Equipment					
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
C	54mm Temperature gauge	1	nr			
D	67mm Temperature gauge	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
E	Temperature sensor, calorifier	1	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05l/s of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
F	Water Meter; Ref: WM01	1	nr			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Distribution					
	Copper pipes and fitting; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
A	35mm diameter pipework	1	item			
B	42mm diameter pipework	1	item			
C	50mm diameter pipework	1	item			
D	54mm diameter pipework	1	item			
E	67mm diameter pipework	1	item			
F	76mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
G	to 35mm diameter pipework	1	item			
H	to 42mm diameter pipework	1	item			
J	to 50mm diameter pipework	1	item			
K	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
L	to 67mm diameter pipework	1	item			
M	to 76mm diameter pipework	1	item			

To Collection €

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	(5-) MECHANICAL INSTALLATION (Cont)					
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
A	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
B	to 35mm diameter pipework	1	item			
C	to 42mm diameter pipework	1	item			
D	to 50mm diameter pipework	1	item			
E	to 54mm diameter pipework	1	item			
F	to 67mm diameter pipework	1	item			
G	to 76mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
H	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
J	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
K	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
L	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
M	As built drawings; complete	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
A	Identification plates, labels and the like; complete	1	item			
	(54) GAS DISTRIBUTION - LPG GAS SERVICES					
	System					
	LPG Gas distribution; installation testing and commissioning; The school building is fed from an existing incoming LPG gas supply, The gas supply extends to serve the gas fired boiler within the plantroom; LPG installation shall be installed in compliance with IS3213; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.5(5-)M004					
	Accessories associated with Primary Equipment					
	Stop Valves for isolation of gas pipework 65mm Dia and above; Type: Lever operated (gradual notch) butterfly valves; Construction - Provide controlled elastomer compression on flange faces; semi-lugged wafer type design, for installation between flanged pipework connections; Provide lever and gear operated valves with long body neck for lagging clearance; Seat - Bonded; Materials: Cast iron body; stainless steel shaft; aluminum bronze disc; EPDM seat; Operation - Lever and graduated notch plate; include for all seals; all in strict accordance with Engineers Specification Volume 2					
B	80mm Stop valves	2	nr			
	Gas meter; supply and installation; complete; Accuracy Shall be accurate within 0.2m3/hr up to maximum valve above; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, no battery backup; Utility Meter: In addition to above, provide utility meters to utility requirements; Utility Meter: Shall be 2m from any window or opening, shall be provide in locked cage (measured elsewhere); include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
C	Gas Meter; Ref: GM01	1	nr			
	Tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
D	Tamper proof, lockable metal caging	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Distribution System					
	Medium grade black mild steel pipes and fittings; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; Painted with one primer coat - Zinc phosphate primer), one final coat of ochre yellow paint (Ral 1024; all in strict accordance with Engineers Specification Volume 2					
A	80mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
B	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like	1	item			
				To Collection €		

(5-) MECHANICAL INSTALLATION (Cont)

(58) FIRE PROTECTION INSTALLATION

System

Fire Fighting installation, testing and commissioning; complete; Hand held fire extinguishers and fire blankets shall be provided throughout the building as detailed on the drawings; The supplier shall install the fire extinguishers and labels to BS 5306 and provide a signed certificate for the installation Fire extinguishers to conform to BS EN 3-7:2004 and I.S. 291. ; The Contractor shall be responsible for carrying out the commissioning of the portable fire extinguishers before they are installed; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 11, Volume 3, Volume 4 and Drawings 4.5(5-)M005

Terminal equipment and Fittings

Fire Extinguishers supply and installation; complete with 5 years guarantee, CE approved and marked; all in accordance with the Mechanical Specification Volume 3 - Equipment Schedules

A	5KG CO2 Gas Extinguishers; c/w wall mounting brackets and ID signage; complete	1	nr		
B	5kg ABC Dry Powder Fire Extinguishers; c/w wall mounting brackets and ID signage; complete	1	nr		

General

Testing and commissioning; all in accordance with Engineers Specification

C	Testing and commissioning	1	item		

Operating and maintenance manuals; all in accordance with Engineers Specification

D	Operating and maintenance manuals	1	item		

Working drawings; all in accordance with Engineers Specification

E	Working drawings	1	item		

Co-ordination drawings; all in accordance with Engineers Specification

F	Co-ordination drawings	1	item		

As built drawings; all in accordance with Engineers Specification

G	As built drawings	1	item		

Identification plates, labels and the like; all in accordance with Engineers Specification

H	Identification plates, labels and the like	1	item		

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	(58) HVAC MOTOR CONTROL CENTER & BUILDING MANAGEMENT SYSTEM					
	System					
	BMS System Installation; testing and commissioning; complete; Building management software including a target and monitoring system based on a traffic light system shall be designed and installed in this school to inform relevant personnel for energy usage in the school. How utility supplies are behaving when set against targeted parameters. This information is to be available on the principals pc. They should be capable of remote monitoring and alarm if there is a problem; all in strict accordance with the Mechanical Specification					
	Primary Equipment					
	MCC Panel; supply and installation; complete; The MCC panel: wall mounted top entry and top exit type with hinged front doors, suitable for installing against a wall; Dimensions: max. width 2000mm, max depth 300mm; Spare capacity: 30%; The MCC shall contain hand/off/auto switches with run and trip indicators and interfaces for all items as detailed on the drawings; each button shall be clearly labelled showing the area served; include for all fittings and accessories; all in accordance with the Mechanical Engineers Specification					
A	MCC Panel; Ref: MCC; Location: Plant room	1	nr			
B	MCC Panel; Ref: MCC; Location: Biomass Unit	1	nr			
	External sensor; linked to BMS; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 4					
C	External frost sensor	1	nr			
D	External temperature sensor	1	nr			
	Remote data transmitter, supply and installation, complete; 4G enabled transmitter capable of interfacing with utility meters and transmitting recorded data to an external web-based front-end system; include for all fittings and accessories; all in accordance with the Mechanical Specification					
E	Remote data transmitter	1	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
G	Operating and maintenance manuals	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Working drawings; all in accordance with Engineers Specification					
A	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
B	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
C	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
D	Identification plates, labels and the like	1	item			
	MECHANICAL INSTALLATIONS					
	Sundries & Builders Work					
	General Attendances					
E	Provide all general attendances in accordance with Arm 4 .	1	item			
F	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
G	Provide use of the Main Contractors scaffolding.	1	item			
H	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
J	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
K	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
L	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Mechanical services works, including testing and commissioning , and pay all ongoing operation charges.	1	item			
M	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
N	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
P	Provide temporary telephone services to the Mechanical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Include for unloading, hoisting/cranage and placing into position all items of heavy plant and site offices supplied by the sub-contractors.	1	item			
B	Allow for maintaining all ducts, chases, trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
C	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
D	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
E	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	Special Attendances					
F	Provide all special attendances in accordance with Arm 4 Clause 3.1	1	item			
G	Provide temporary roads and hardstandings in connection with heavy items of plant and the like.	1	item			
H	Provide accommodation for the sub-contractor's staff for eating, site lavatories, site washing facilities, and cloaks.	1	item			
J	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
K	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
L	Provide temporary distribution systems for lighting, power, water for the execution of the electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
M	Provide the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
N	Protection of the works the Main Contractor is responsible for providing adequate protection at all times for the Mechanical services installation.	1	item			
P	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day.	1	item			
Q	Provide external access to high level on building facade to permit the installation of any external equipment/fittings and for the removal of existing services as required.	1	item			
R	Provide Mobile Elevated Working Platforms (MEWP) or scaffolding for Mechanical sub-contractors working at high level.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide for weathering & sleeving around all penetrations through the external structure of the building and to allow for sealing to fabric to maintain air tightness.	1	item			
B	Allow for maintaining all ducts, chases, trenches, trunking etc, clean and free of all water, debris and rodents at all times.	1	item			
C	Allow for making good and fire sealing of all builders work opes with proprietary sealant to architects details, where services penetrate fire zones.	1	item			
D	Allow for coordination with local authorities and utility providers in respect of application for connections, providing excavation of roads and full coordination with various utility companies.	1	item			
E	Coordinate with Mechanical Contractor to facilitate fitting of all sanitary ware.	1	item			
F	Allow for patrices behind ceiling tiles and ceilings for the support of light fittings, grilles, smoke detectors, sensors etc.	1	item			
G	Allow for weathering details on all services passing through external envelope.	1	item			
H	Allow for all service / utility entries into building.	1	item			
J	Allow for clearing away and disposal of any rubbish.	1	item			
K	Provide safe access to roofspace to facilitate Mechanical installation work.	1	item			
L	Making good of opes for fire smoke dampers.	1	item			
M	Provide and maintain the specific temperatures and humidity levels.	1	item			
N	Contractor to provide for the construction of a walkway within the Attic space for service and maintenance of water and ventilation services.	1	item			
P	Contractor to ensure all existing services shut downs for connecting in new and changeovers shall be carried out between 10pm on a Sunday Night and 6pm on a Monday morning, to avoid any interruptions of the running of the existing school; times to be agreed with school management.	1	item			
Q	Provide plywood protective cover over boiler for protection.	1	item			
	Unload, hoist distribute, and place in position the following items of plant and equipment:					
R	Gas boiler	1	item			
S	Biomass unit	1	item			
T	Calorifier tank	1	item			
U	Pumps	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Sundries & Builders Work					
	General					
A	Marking positions of holes, mortices and chases	1	item			
B	Testing & Commissioning	1	item			
C	Preparing drawings of "as completed" installations	1	item			
D	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
E	Keys, tools and spares	1	item			
	Forming or cutting holes; including sleeves/plates, making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
F	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
G	cutting or forming opes is deemed to include the making good and sealing of the ope around the pipe or duct		note			
	For ducts/pipes through exisitng external cavity blockwork wall, include for building in sleeves; weather proofing, making good all finishes on completion					
H	Size 1000mm x 250mm opes	1	nr			
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification and Drawings					
	Special works were services pass through structures; external walls, making good all finishes on completion					
J	Size 1000mm x 250mm opes	1	nr			
				To Collection €		

				€	c
(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/7					
Page No. Lot 4.5 Works Con/8					
Page No. Lot 4.5 Works Con/9					
Page No. Lot 4.5 Works Con/10					
Page No. Lot 4.5 Works Con/11					
Page No. Lot 4.5 Works Con/12					
Page No. Lot 4.5 Works Con/13					
Page No. Lot 4.5 Works Con/14					
Page No. Lot 4.5 Works Con/15					
Page No. Lot 4.5 Works Con/16					
Page No. Lot 4.5 Works Con/17					
Page No. Lot 4.5 Works Con/18					
Page No. Lot 4.5 Works Con/19					
Page No. Lot 4.5 Works Con/20					
Page No. Lot 4.5 Works Con/21					
Page No. Lot 4.5 Works Con/22					
Page No. Lot 4.5 Works Con/23					
Page No. Lot 4.5 Works Con/24					
Page No. Lot 4.5 Works Con/25					
(5-) MECHANICAL INSTALLATION **Carried to Summary**					

					€	c
	(6-) ELECTRICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Alterations to existing switch board to facilitate the installation of new submians; 1nr 40A TP&N sub-mains connection to New MCC panel; 1nr 50A TP&N sub-mains connection to Biomass unit (sub-main cable & TP&N device measured elsewhere); allow for modifications and fittings to existing DB as required to accommodate the new connections; include all isolation, shutdown coordination, and commissioning; all in strict accordance with Electrical Specification and Drawing 4.5(60)E001	1	item			
C	Alterations to existing PV system to facilitate installation of fire-rated DC cabling and fireman#s switch (fireman switch measured elsewhere), including safe isolation, modifications, re-termination and reinstatement of PV system, testing, commissioning, and certification, in full compliance with ET101; all in strict accordance with Electrical Specification and Drawing 4.5(60)E001	1	item			
D	Modification of existing fire alarm system to facilitate interface with existing gas solenoid valve, including all necessary wiring, controls integration, programming, testing, commissioning, and certification, all in strict accordance with Electrical Specification and Drawing 4.5(63)E001	1	item			
	Notes					
E	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
F	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES					
	(61) ELECTRICITY SUPPLY & MAIN DISTRIBUTION - LV INSTALLATIONS					
	System					
	LV installation, testing and commissioning; complete; The Contractor shall allow for the supply and installation of all switchgear, distribution boards and sub-mains cables in accordance with the drawings and attached specification; The Contractor shall be responsible for safe off-loading, receiving, storage, positioning and fixing of the boards and shall be liable for any damage to boards during installation; The Contractor shall submit working drawings to the Engineer for approval prior to manufacture of switchgear; the contractor shall allow for liaising with the ESB; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 and Drawings 4.5(60)E001					
B	LV Installations	1	item			
	Fittings					
C	Isolation device; supply and installation; complete; terminating of incoming and outcoming cabling; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
D	Isolation device; 40A TPN	1	nr			
	Firemans switch; supply and installation (including wiring & terminations); complete; isolation of the electrical supply to the entire building; located at main entrance; fire rated enhanced PH120 cable; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
E	Firemans Switch; isolation of main MCCB within switch board	1	nr			
F	Firemans Switch; isolation of PV system	1	nr			
	Multi-function digital meter; supply and installation; complete; digital multi-meter capable of indicating kVA, kW, KVAR, kWhr, Amps, Volts, etc. per phase and between phases; suitable for interfacing with B.M.S. network; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
G	Multi-function digital meter; BMS meter	3	nr			
H	Multi-function digital meter; CT meter	3	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Insulated Matting; supply and installation; complete; Width: 900mm wide; Length: to extend to full Length of switch board, with an additional 300 mm beyond each end; Class rating: based on the system voltage and clearly colour-coded; Standards to conform to BS EN 61111:2009 (IEC 61111:2009); include for all fixings and accessories; all in strict accordance with the Electrical Specification Vol.2 Section 4.3					
A	Insulated matting; Ref: Existing Switch Board	1	nr			
	Main switchboard circuit chart; 'A1' framed drawing of the switchboard to be installed within the switch room; the drawing shall be framed with a perspex cover; include for all accessories; in strict accordance with the Electrical Specification Vol.2 Section 4.3					
B	Main switchboard; Ref: Existing Switch Board	1	nr			
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board to sub-distribution boards/ Control panels located throughout school building; Sub-mains distribution within the building shall be via XLPE/LSF/SWA/PVCarmored cables laid in galvanized steel cable tray/trunking; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Section and Drawing 4.5(60)E001					
C	Submains; Existing switch board to Biomass Unit; 1 x 4c 35sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
D	Submains; Existing switch board to MCC Panel; 1 x 4c 25sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Specification					
E	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
G	Operating and maintenance manuals	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Working drawings; all in accordance with Engineers Specification					
A	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
B	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
C	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
D	Identification plates, labels and the like	1	item			
	(62) POWER - CONTAINMENT					
	System					
	Cable ladder/ tray/ trunking installation, testing and commissioning; complete; The Contractor must allow for the supply and installation of a complete cable support system using galvanized steel cable tray, trunking, conduit and support steelwork as shown on the drawings and as detailed in the specification. The Contractor shall include for all incidental cable containment which may not be shown on the drawings but which may be required to effect cable routes to individual items of equipment, luminaries etc; include for all joints, fixing brackets, supports and fire barrier pillow system; all exposed and exteaneous conductive parts are to be boned and properly earthed in accordance with current wiring regulations; all in accordance with the Electrical Specification Volume 1, Volume 2 and Drawing 4.5(63)E001					
E	Cable Ladder; LV; galvanized steel; heavy duty; size 200mm wide x 50mm high; complete	1	item			
F	Cable Header Trunking; LV; galvanized steel; size 150mm wide x 150mm high; complete	1	item			
G	Conduit; galvanised steel; size 25mm diameter; complete	1	item			
H	Conduit; galvanised steel; size 50mm diameter; complete	1	item			
J	Conduit; flexible steel; size 25mm diameter; complete	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
A	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
B	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings; complete	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings; complete	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like; complete	1	item			
	(62) POWER - GENERAL SERVICES					
	System					
	General Services and small power installation, testing and commissioning; complete; to include vampire load design strategy; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.5(63)E001					
H	General Services Installation	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Accessories associated with terminal equipment					
	Isolation device; supply and installation (including wiring); complete; surface mounting; include for all accessories and fixings; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification					
A	20amp SPN Isolator switch IP65	12	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	(65) PROTECTIVE SERVICES - EARTHING AND BONDING					
	System					
	Earthing and Bonding; installation; testing and commissioning; The contractor shall undertake to effectively earth the whole of the electrical installation in accordance with the National Rules for Electrical Installations IS-10101:2020. Main equipotent earth bonding should be provided from each of the following items, as a minimum, to the main earthing bar: Incoming Water Main, Incoming Gas Main, Metal drainage pipes, Structural Steelwork, Main Heating Pipework, Main Ventilation Ductwork, Lightning Protection System, Comms Rooms, Supplementary earth bonding shall be carried out on extraneous metal parts at the following locations: Metallic Wireways and Containment, Suspended Ceiling Grids, Wash Hand Basins, Showers, Sinks, WC's, Cleaners Sinks, Catering equipment, Metal worktops, Plantroom Pipework (e.g. across pumps, valves, vessels, etc.); all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.5 (60)E001					
A	Earthing and Bonding	1	item			
	Fittings					
	Earth terminal bar; supply and installation; c/w insulating shrouds to I.S. 10101:2020 and of suitable capacity for the number and size of cables to be connected; all in strict accordance with the Electrical Engineers Specification Vol. 2/A Part 9					
B	Earth terminal bar	1	nr			
	Main earth conductor cable; supply and installation complete; 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
C	Earth terminal bar to earth pits	1	item			
D	Earth terminal bar to Surge arrestor	1	item			
	Main earth conductor cable; supply and installation complete; Cable 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
E	From ESB to earth terminal bar	1	item			
	Equipotent earth bonding; supply and installation complete; Cable 1 x 1 core 10mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
F	Incoming Water Main	1	item			
G	Incoming Gas Main	1	item			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metal drainage pipes	1	item			
B	Structural Steelwork	1	item			
C	Main Heating Pipework	1	item			
D	Main Ventilation Ductwork	1	item			
E	Lightning Protection System	1	item			
F	Lift shaft steel work	1	item			
G	Eircom DP	1	item			
	Supplementary earth bonding; supply and installation complete; 2.5mm2 LSF green/ yellow earth cable; shall be carried out on extraneous metal parts at the following locations; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
H	Metallic Wireways and Containment	1	item			
J	Suspended Ceiling Grids	1	item			
K	Wash Hand Basins	1	item			
L	Showers	1	item			
M	Sinks	1	item			
N	WC's	1	item			
P	Cleaners Sinks	1	item			
Q	Catering equipment	1	item			
R	Metal worktops	1	item			
S	Plant room Pipework	1	item			
	<u>General Earthing and Bonding</u>					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
T	Generally	1	item			
	<u>General</u>					
	Testing and commissioning; all in accordance with Engineers Specification					
U	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(65) SECURITY & PROTECTION - SURGE PROTECTION					
	System					
	Transitent & Overvoltage Protection installation, testing and commissioning; The Contractor shall be responsible for the supply and installation of all incoming and outgoing cables (of all types) to be provided with Lightning/Surge Protection devices; The electrical contractor shall ensure allowance for surge protection at all panels within his scope and those provided by others; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.5 (60)E001					
F	Transitent & Overvoltage Protection	1	item			
	Fittings					
	Surge Suppression Devices; installation (including wiring); complete; Lighting/ Surge Protection devices Type 1 and Type 2 to I.S. EN 62305:2006; all in strict accordance with the Electrical Specification and Drawing 4.5(60)E001					
G	Surge Protection; 400V TP&N,Type 1 & 2; Existing Switch Board	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
H	Generally	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
	(68) MECHANICAL WIRING INSTALLATIONS					
	Mechanical Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplies; all in accordance with the Mechanical and Electrical Specification and Drawings 4.5(50)M005					
G	Mechanical Wiring Installation	1	item			
	Fittings					
	Frost protection mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Drawing 4.4(50)M005					
H	Oil filled Electric radiator; Size 1000mm long x 500mm high; Output 1000w	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers					
A	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
B	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
C	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
D	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
E	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
F	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
G	Identification plates, labels and the like; complete	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	(68) BMS WIRING INSTALLATIONS					
	System					
	BMS Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplied as a 'Free Issue' item by the Mechanical Contractor as part of the BMS installation, and must be installed and connected up by the electrical contractor. Generally, the MCC panels must be installed in boiler houses, plant rooms, etc.; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.5 (50)M001					
A	BMS Wiring Installation	1	item			
	Equipment					
	Mechanical Control Panel; Mechanical and BMS wiring installation, testing and commissioning; complete; The Contractor shall allow for all wiring associated with the installation of the MCC and BMS outstations; The Contractor shall allow for all switchgear as indicated on the electrical services connection schedules and reflected on the electrical services layouts; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.5(50)M001					
B	Mechanical Control Center; Ref: MCC Panel, Location: Plant Room	1	item			
C	Mechanical Control Center; Ref: MCC Panel, Location: Biomass Unit	1	item			
	Remote data transmitter, testing and commisssioning; complete; Install loggers and determine the maximum electrical load (MIC) across all phases for the entire school; all in accordance with the Mechanical & Electrical Specification and Drawing 4.2(50)M001					
D	Remote data transmitter; Boiler Room	1	nr			
	GSM modem; supply and installation; c/w dedicated SIM card, cabling and power supplies; contractor to maintain system for duration of supply contract; include for all fittings and accessories; testing and commissioning, complete; all in accordance with the Mechanical Specification					
E	GSM modem	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fittings					
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Plant room					
A	Pressurisation Unit - Low level fault	1	nr			
B	Pressurisation Unit - High level fault	1	nr			
C	Pressurisation Unit - Run indication	1	nr			
D	Main Header - Flow temperature sensor	2	nr			
E	Main Header - Return temperature sensor	2	nr			
F	Main Header - Imersion frost	2	nr			
G	Boiler - Enable	5	nr			
H	Boiler - Temperature set point	5	nr			
J	Boiler - Common alarm	5	nr			
K	Boiler - Shunt pump fault/enable	5	nr			
L	Boiler - Flow temperature sensor	5	nr			
M	Boiler - Burner currently firing feedback	5	nr			
N	Biomass - Enable/fault	1	nr			
P	Biomass - Temperature set point	1	nr			
Q	Biomass - Common alarm	1	nr			
R	Biomass - Primary pump head 1 fault/enable	1	nr			
S	Biomass - Primary pump head 2 fault/enable	1	nr			
T	Biomass - Pump 1 flow set point	1	nr			
U	Biomass - Pump 2 flow set point	1	nr			
V	Biomass - Flow temperature sensor	1	nr			
W	Biomass - Return temperature sensor	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	VT Circuit - Pump head 1 enable/fault	1	nr			
B	VT Circuit - Pump head 2 enable/fault	1	nr			
C	VT Circuit - Flow temperature sensor	1	nr			
D	VT Circuit - Return temperature sensor	1	nr			
E	VT Circuit - 3-port mixing valve	1	nr			
F	Trace heating - Enable/fault	1	nr			
G	Main Secondary Calorifier - Pump head 1 enable/ fault	1	nr			
H	Main Secondary Calorifier - LPHW return temperature	1	nr			
J	Main Secondary Calorifier - 2-port mixing valve	1	nr			
K	Main Secondary Calorifier - Calorifier temperature	1	nr			
L	Main Secondary Calorifier - 3-port diversion valve	1	nr			
M	Main Secondary Calorifier - HWSR pump 1 enable/ fault	1	nr			
N	Main Secondary Calorifier - Sacrificial annode	1	nr			
P	Main Secondary Calorifier - 2-port valve	1	nr			
Q	Main Secondary Calorifier - High limit stat	1	nr			
R	Gas Detection - Gas detector 1	1	nr			
S	Gas Detection - Gas detector 2	1	nr			
T	Gas Detection - Gas detector 3	1	nr			
U	Gas Detection - Heat detector 1	1	nr			
V	Gas Detection - Heat detector 2	1	nr			
W	Gas Detection - Heat detector 3	1	nr			
X	Gas Detection - Fire alarm interface	1	nr			
Y	Metering - Main Gas meter	1	nr			
Z	Metering - Gas meter to boilers	1	nr			
AA	Metering - Gas meter to Water heater	1	nr			
BB	Metering - Mains water meter	1	nr			
CC	Metering - Cold water to hot water meter	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metering - Rainwater usage meter	1	nr			
B	Metering - Flushing water meter	1	nr			
C	Metering - Heat Meter modbus	5	nr			
D	Frost protection - External temperature sensor	1	nr			
E	Frost protection - External Frost Senor	1	nr			
F	Data connection to MCC-Biomass	1	nr			
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all 6 core 0.6mm2 PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Biomass Unit					
G	Fire alarm interface	1	nr			
H	Biomass - Enable/fault	1	nr			
J	Buffer temperature Sensor H/L	1	nr			
K	Buffer temperature Sensor M/L	1	nr			
L	Biomass boiler back end protection	1	nr			
M	Biomass boiler flow temperature sensor	1	nr			
N	Biomass boiler return temperature sensor	1	nr			
P	Heat exchanger pump (primary) - Enable/Fault	1	nr			
Q	Heat exchanger pump (secondary) - Enable/Fault	1	nr			
R	Primary heat exchanger flow temperature sensor	1	nr			
S	Primary heat exchanger return temperature sensor	1	nr			
T	Secondary heat exchanger flow temperature sensor	1	nr			
U	Secondary heat exchanger return temperature sensor	1	nr			
V	Pressurisation Unit - Enable / fault	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Final Circuits (including all points terminations)					
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification, Control points schedule and Drawing (50)M001					
	Final Circuits - MCC - Plant room					
A	Power - Pressurisation Unit; SPN 20amp	1	nr			
B	Power - Boiler; SPN 20amp	5	nr			
C	Power - Shunt pump; SPN 20amp	5	nr			
D	Power - Trace heating; SPN 20amp	1	nr			
E	Power - Heat meter; SPN 20amp	5	nr			
F	Power - Calorifier sacrificial annode; SPN 20amp	1	nr			
G	Power - Gas detection panel; SPN 13amp	1	nr			
H	Power - VT circuit pump head 1; TPN 20amp	1	nr			
J	Power - VT circuit pump head 2; TPN 20amp	1	nr			
K	Power - Calorifier pump head 1; TPN 20amp	1	nr			
L	Power - Calorifier HWSR pump 1; SPN 20amp	1	nr			
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification and Drawing (50)M001					
	Final Circuits - MCC - Biomass Unit					
M	Power - Biomass Unit; TPN 100amp	1	nr			
N	Power - Biomass primary pump head 1; SPN 20amp	1	nr			
P	Power - Biomass primary pump head 2; SPN 20amp	1	nr			
Q	Power - Pressurisation Unit; SPN 20amp	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
A	General Earthing and Bonding; complete		item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
B	Testing and commissioning; complete		item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
C	Operating and maintenance manuals; complete		item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
D	Working drawings; complete		item			
	Co-ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
E	Co-ordination drawings;complete		item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
F	As built drawings; complete		item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
G	Identification plates, labels and the like; complete		item			
H						
	ELECTRICAL INSTALLATIONS					
	Sundries and Builders Work					
	General Attendances					
J	Provide all general attendances in accordance with Arm 4.	1	item			
K	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
L	Provide use of the Main Contractors scaffolding.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
B	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
C	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
D	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
E	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
F	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
G	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
H	Include for unloading, hoisting/cranage and placing into position all items of heavy plant supplied by the subcontractors.	1	item			
J	Allow for maintaining all ducts, chases , trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
K	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
L	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
M	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	<u>Special Attendances</u>					
N	Provide all special attendances in accordance with Arm 4 Work Section B Clause 3.1	1	item			
P	Provide temporary access roads and hardstanding in connection with heavy items of plant and the like, forming part of the site establishment works	1	item			
Q	Provide scaffolding internal and external to the building to facilitate installation of high-level electrical services during the contract	1	item			
R	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
S	Provide adequate barriers/tape/signage of exclusion zoning in relation to use of access equipment and ACOPs for working at height	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide construction signage (internal and external) in relation to M&E services e.g live systems etc.	1	item			
B	Provide temporary lighting and power in accordance with IS10101 Wiring Regulations.	1	item			
C	Provide protection to all M&E services installations installed during the works including protection against debris and water ingress	1	item			
D	Provide fire stopping to all electrical services on the vertical and horizontal planes throughout the entire buildings	1	item			
E	Ensure close coordination during the building phase to ensure electrical, ventilation and mechanical services are installed and integrated within the building fabric as designed.	1	item			
F	Provide grounds and fixings for suspension of Electrical services; Electrical loading = 10kg/m Mechanical loading = 40kg/m	1	item			
G	Provide boxing out of containment and pipework as necessary, boxing to be accessible with screwed access.	1	item			
H	Main contractor shall employ a full time M&E Co-ordinator for the duration of the contract works and their duties shall include but not limited to details set out within the specification A2.4 Part 1 of 4 particular specification document	1	item			
J	Contractor shall be aware that drawings are indicative only including the minimum ope sizes; It will be the contractors responsibility in conjunction with their in-house M&E services coordinator to produce construction stage builders works drawings for DT comment	1	item			
K	Provide safe access and task lighting for electrical sub-contractor to all sections of school roofspace	1	item			
L	Provide safe access for electrical sub-contractor to all sections of the site	1	item			
M	The M&E installation within the SEN accommodation is to be a fully recessed installation. The contractor shall include for casting in of all electrical services and recessing of all radiators within the wall panels	1	item			
N	Seal all incoming services to prevent ingress of vermin	1	item			
P	Fire Stopping to all services penetrations throughout	1	item			
Q	Attendance to electrical sub-contractor	1	item			
R	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
S	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
B	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
C	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
D	Provide temporary power supplies (3 phase 400V and maximum loading 15kVA) for welding, handtools, and for commissioning, including infrastructure and all charges fot the contractors use of the facility.	1	item			
E	Provide scaffolding additional to the main contractors standing scaffolding, or access towers if required.	1	item			
F	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day	1	item			
G	Provide facilities for safe removal and disposal of all materials off site	1	item			
H	Provide a week by week program detailing the Mechanical and Electrical service activities	1	item			
J	Provide for heating / drying out the building as and when necessary to comply with their program. This may be done (at the clients specific consent) with the installed conventional heating system (if available). Be responsible, however, for providing the fuel to do this. Be responsible for maintaining background heat until the building is handed over to the client, after the heating system has been commissioned	1	item			
K	Provide and maintain the specific temperatures and humidity levels	1	item			
L	Provide Builders Attendances to all utility services as follows; Gas Networks Ireland, Eir, Virgin Media, Local Authority, ESB Networks.	1	item			
M	Fire stopping requirements of all services penetrations through fire compartment structures to be the responsibility of the building contractor. In addition, all pipework, ductwork, containment and service penetrations shall be fire-stopped where passing through every wall, floor and ceiling regardless if its a fire compartment or not by main contractor. Refer to M&E services drawings indicating main routes of M&E infrastructure. All instances of firestopping shall be labelled and certified using CE certified products including fire-pillows for use inside electrical trunkings.	1	item			
	Unload, hoist, distribute and place in position the following items of heavy plant and equipment					
N	Main switch board	1	item			
P	Sub-distribution boards	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	MCC panel	1	item			
B	Containment	1	item			
C	Cabling	1	item			
D	Lighting	1	item			
E	PV Panels	1	item			
	Sundries & Builders Work					
	General					
F	Marking positions of holes, mortices and chases	1	item			
G	Testing & Commissioning	1	item			
H	Preparing drawings of "as completed" installations	1	item			
J	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
K	Keys, tools and spares	1	item			
	Forming or cutting holes/mortices/chases and the like; including sleeves/plates, intumescent collars; making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
L	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
M	cutting or forming opes is deemed to include the making good and sealing of the ope		note			
	Cutting or forming holes through existing external walls various thicknesses; include for building in sleeves; making good all finishes on completion					
N	440mm x 225mm opes	2	nr			
	Cutting or forming holes through existing internal walls various thicknesses; include for building in sleeves; making good all finishes on completion					
P	440mm x 225mm opes	5	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification P12					
	Special works were services pass through structures; existing external walls various thicknesses, making good all finishes on completion					
A	440mm x 225mm opes	2	nr			
	Special works were services pass through structures; existing internal walls various thicknesses, making good all finishes on completion					
B	440mm x 225mm opes	5	nr			
				To Collection €		

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/27					
Page No. Lot 4.5 Works Con/28					
Page No. Lot 4.5 Works Con/29					
Page No. Lot 4.5 Works Con/30					
Page No. Lot 4.5 Works Con/31					
Page No. Lot 4.5 Works Con/32					
Page No. Lot 4.5 Works Con/33					
Page No. Lot 4.5 Works Con/34					
Page No. Lot 4.5 Works Con/35					
Page No. Lot 4.5 Works Con/36					
Page No. Lot 4.5 Works Con/37					
Page No. Lot 4.5 Works Con/38					
Page No. Lot 4.5 Works Con/39					
Page No. Lot 4.5 Works Con/40					
Page No. Lot 4.5 Works Con/41					
Page No. Lot 4.5 Works Con/42					
Page No. Lot 4.5 Works Con/43					
Page No. Lot 4.5 Works Con/44					
Page No. Lot 4.5 Works Con/45					
Page No. Lot 4.5 Works Con/46					
Page No. Lot 4.5 Works Con/47					

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/48					
(6-) ELECTRICAL INSTALLATION **Carried to Summary**					

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND					
	EXCAVATION AND EARTHWORK					
	Excavation					
	Excavation					
	Reduce levels					
A	Depth between not exceeding 2.00m	39	m3			
	Extra on Excavation Items for:					
	Breaking up existing					
B	Hard surfaces; Tarmacadam surface; 100mm thick; complete	55	m2			
	Disposal					
	Water					
C	Surface	1	item			
D	Ground	1	item			
	Excavated material; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
E	Disposal off site	33	m3			
F	Disposal off site; existing Tarmac; Disposal to a suitable licensed waste disposal facility	6	m3			
	Filling with hardcore to be obtained off-site; clean angular gravel 20mm, free from pyrite and macarsite as per specification					
	To make up levels					
G	Average thickness not exceeding 250mm	6	m3			
	Filling with hardcore to be obtained off-site; Clause 804 crushed stone well compacted on firm clean formation; compliant with TII Publications series 800, free from pyrite and macarsite as per specification					
	To make up levels					
H	Average thickness not exceeding 250mm	6	m3			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Filling with granular fill material to be obtained off-site; Class 6F2 compliant with TII Publications series 600, free from pyrite and macarsite; depositing in 150mm layers maximum thickness; compacting; as per Drawings and Specification					
	To make up levels					
A	Average thickness exceeding 250mm	17	m3			
	Surface treatments					
	Levelling and compacting; bottom of excavations					
B	Horizontal	55	m2			
	CONCRETE WORK					
	In-situ Concrete					
	Concrete cubes for testing					
	Provide for making concrete cubes from freshly mixed concrete; transporting and testing cubes; all as per details in the Specification					
C	Size 150 x 150 x 150mm	2	nr			
	In-situ Concrete; Reinforced					
	Grade C40/5-XF4 to IS EN 206					
	Beds					
D	Generally; Reinforced	11	m3			
	Surface Finishes					
	Brushed finish to wet concrete as per Specifications					
E	Generally	55	m2			
	Reinforcement					
	Fabric					
	A252 mesh reinforcement; 350mm laps; 350mm end laps; all in strict accordance with the Engineers Drawings and Specification					
F	Horizontal	55	m2			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Formwork					
	Formwork Generally					
	Sides of beds					
A	Height or width 250 - 500mm	35	m			
B	Extra over for forming recess in floor slab for district heating pipe; comprising 65mm dia x 400mm deep recess; include for cutting to all angles and corners	4	nr			

				€	c
(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/51					
Page No. Lot 4.5 Works Con/52					
Page No. Lot 4.5 Works Con/53					
(30) SITE ENCLOSURES - PLANT COMPOUND **Carried to Summary**					

					€	c
	(50) SITE SERVICES - GAS					
	DRAINAGE/SERVICES - GAS MAIN					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 1nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average Depth 500 - 1000mm	31	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	31	m			
	Around existing services crossing excavations					
E	Storm pipe; crossing excavations	3	nr			
F	Foul pipe; crossing excavations	2	nr			
G	ESB; crossing excavations	2	nr			
	Disposal					
H	Ground Water	1	item			
J	Surface Water	1	item			
				To Collection €		

					€	c
	(50) SITE SERVICES - GAS (Cont)					
	Sand bed and surround; to Engineer's Specification					
	Beds and surrounds					
A	290 x 215mm, to 90mm pipes / ducts	31	m			
	PVC marker tape "Heptape" or equivalent					
B	Continuous strip laid during trench backfill, 100mm above pipework	31	m			
	Mechanical Installations					
	Gas pipework as per Engineer's Specification & Gas Suppliers details; complete					
	Pipework					
C	Installation only of gas pipework; size: 90mm; pipe to be supplied by Gas Supplier; complete	31	m			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
D	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
E	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
F	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
G	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
H	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
J	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			
K	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			
L	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			

To Collection €

				€	c
(50) SITE SERVICES - GAS (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/55					
Page No. Lot 4.5 Works Con/56					
(50) SITE SERVICES - GAS **Carried to Summary**					

					€	c
	(50) SITE SERVICES - DISTRICT HEATING					
	DRAINAGE/SERVICES - DISTRICT HEATING					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average depth 500 - 1000mm	40	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	40	m			
	Around existing services crossing excavations					
E	Storm pipe; crossing excavations	3	nr			
F	Foul pipe; crossing excavations	2	nr			
G	ESB; crossing excavations	2	nr			
	Disposal					
H	Ground water	1	item			
J	Surface water	1	item			
				To Collection €		

	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
	Sand bed and surround; to Engineer's Specification					
	Beds and Surrounds					
A	475 x 225mm; to 2nr 100mm duct	40	m			
	PVC marker tape; "Heptape" or equivalent					
B	Continuous strip; laid during trench backfill; 100mm above pipework	40	m			
	Ductwork					
	100mm diameter					
C	Laid in trenches	79	m			
D	Extra over for easy sweep bends	2	nr			
E	Extra over for ducts capped for Biomass connection	2	nr			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
F	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
G	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
H	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
J	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
K	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
L	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			
M	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			

To Collection €

					€	c
	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
A	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

				€	c
(50) SITE SERVICES - DISTRICT HEATING (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/58					
Page No. Lot 4.5 Works Con/59					
Page No. Lot 4.5 Works Con/60					
(50) SITE SERVICES - DISTRICT HEATING **Carried to Summary**					

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS					
	(50) SITE SERVICES (MAINLY MECHANICAL) - WORKS IN CONNECTION WITH BIOMASS UNIT					
	System					
	Biomass unit mechanical connections, installation, testing and commissioning; complete; The Biomass unit shall be supplied by others under a separate contract; The Contractor shall coordinate all interface requirements to ensure a fully operational installation; Prior to handover, the Contractor shall provide commissioning certification confirming that all required cleaning, flushing and water treatment procedures have been correctly carried out; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2/A Part 10, 2/B Part 17; Volume 3; Volume 4 and Drawings 4.5(5-)M002, (5-)M004, (5-)M007					
	Primary Equipment					
	Biomass unit ancillary works; Provide all labour, materials and ancillary works necessary for the coordination and completion of all mechanical connections associated with the installation, testing, commissioning and operation of the biomass boiler plant (biomass unit supplied by others under a separate contract), including all plant room interface connections and associated mechanical services works; complete; all in strict accordance with the Mechanical Engineer's Specification					
D	Biomass unit ancillary works; Location: External plant compound	1	nr			

To Collection €

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

Distribution

Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B

A	80mm diameter pipework	1	item		

Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B

B	80mm diameter pipework	1	item		

Insulation

Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

Insulation, 65mm thick

C	to 80mm diameter pipework	1	item		

Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

D	General Valve & Plant	1	item		

Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B

E	to 80mm diameter pipework	1	item		
F	General Valve & Plant	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
B	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like	1	item			
	(50) SITE SERVICES (MAINLY MECHANICAL) - MAINS WATER					
	System					
	Mains Water connections to biomass unit installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.5 (5-)M002, (5-)M004					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of MWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
H	28mm Isolation valves	2	nr			
				To Collection €		

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
A	28mm Non-return valves	1	nr			
	Strainer valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
B	28mm Strainer valves	1	nr			
	Distribution system					
	Polyethylene pipework and fittings; all in strict accordance with the Mechanical Specification					
C	28mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
D	to 28mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
E	General Valve & Plant	1	item			
	Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B					
F	to 28mm diameter pipework	1	item			
G	General Valve & Plant	1	item			

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
A	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
B	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
C	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
D	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
E	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
F	Identification plates, labels and the like; complete	1	item			
				To Collection €		

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

(50) SITE SERVICES - TRACE HEATING

System

Trace Heating installation, testing and commissioning; complete; Trace heating shall be installed on all the water systems where they travel externally between building blocks; Trace heating shall be provided complete with control panels and all required components to prevent system freezing. Capacity of trace heating shall maintain water temperature above 3ºC when ambient temperature is -15ºC. Trace heating temperature control shall prevent water temperature rising above 10øC. Trace heating system to incorporate air control thermostats and pipework safety cut out thermostats. All trace heating circuits shall be linked to BMS to provide status and fault indication on BMS; Supply electric trace heating complete with fixing tape, shrink sleeves, crimps, junction boxes and controls; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2; Volume 3; Volume 4 and Drawings

Primary Equipment

Trace heating control panel; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

A	Trace heating panel; Location: Plant room	1	nr		

Accessories associated with Primary Equipment

Self-regulating heating tape; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

B	Self-regulating heating tape	1	item		

Air control thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

C	Air control thermostats	1	item		

Safety cut out thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

D	Safety cut out thermostats	1	item		

Insulation

Modified polyolefin electrical insulation; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule

E	80mm diameter pipework	1	item		
F	Valves and Plant; generally	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
				To Collection €		

				€	c
(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/62					
Page No. Lot 4.5 Works Con/63					
Page No. Lot 4.5 Works Con/64					
Page No. Lot 4.5 Works Con/65					
Page No. Lot 4.5 Works Con/66					
Page No. Lot 4.5 Works Con/67					
Page No. Lot 4.5 Works Con/68					
(50) SITE SERVICES (MAINLY MECHANICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES					
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER TO BIOMASS UNIT					
	System					
	Power to Biomass Unit installation, testing and commissioning; complete; The electrical contractor shall provide all wiring and power supplies associated with the external Biomass Unit as detailed on the wiring schematic; all underground electrical services cables shall be distributed within ducts; separate underground service ducts shall be provided as part of the builders works element; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 - Section A and Drawings					
D	Biomass Power Installation	1	item			
	Accessories associated with terminal equipment					
	Rotary Isolator Switch; supply and installation (including wiring & terminations); complete; surface mounting; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification Volume 2					
E	Rotary Isolator; TPN; 50amp; IP65	1	nr			
				To Collection €		

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board, located in the existing switch room; Sub-mains distribution outside the building shall be via XLPE/LZOH/SWA armoured cables laid in underground ducts; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Volume 2, Section A and Drawing 4.5 (60)E001					
A	Submains; Existing switch board to Biomass Unit-1; 1 x 4c 35sq.mm XLPE/LZOH/SWA + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers specification documents and drawings					
C	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers specification documents and drawings					
D	Operating and maintenance manuals; complete	1	nr			
	Working drawings; all in accordance with the Electrical Engineers specification documents and drawings					
E	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers specification documents and drawings					
F	Co- ordination drawings; complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers specification documents and drawings					
G	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers specification documents and drawings					
H	Identification plates, labels and the like; complete	1	item			
				To Collection €		

				€	c
<u>**(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)**</u>					

To Collection €

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
COLLECTION					
Page No. Lot 4.5 Works Con/70					
Page No. Lot 4.5 Works Con/71					
Page No. Lot 4.5 Works Con/72					
(60) SITE SERVICES (MAINLY ELECTRICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
C	The contractor shall also ascertain whether or not there are any E.S.B. cables on the site and arrange for their removal so that it does not delay site progress. All, redundant site services/site services made redundant, for all utilities and services, will be removed as part of the contract.	1	item			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr ducts not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported hardcore; disposal of surplus soil off site; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
D	Average depth 500 - 1000mm	40	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
E	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	40	m			
	Around existing services crossing excavations					
F	Storm pipe; crossing excavations	3	nr			
G	Foul pipe; crossing excavations	2	nr			
H	ESB; crossing excavations	2	nr			

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)					
	Disposal					
A	Ground water	1	item			
B	Surface water	1	item			
	Plain in-situ concrete bed and surround; minimum 150mm bed; Class 16/20; leanmix concrete backfill; as per Engineer's Drawing					
	Beds and Surrounds					
C	595 x 325mm; to 2nr ducts	40	m			
	PVC Red marker tape; "Heptape" or equivalent					
D	Continuous strip; laid during trench backfill; 100mm above pipework	40	m			
	PVC Yellow marker tape; "Heptape" or equivalent					
E	Continuous strip; laid during trench backfill; 300mm above pipework	40	m			
	Ductwork; uPVC duct; LV Duct					
	110mm dia.; include for draw-wire					
F	Laid in trenches	40	m			
G	Extra over for easy sweep bends	1	nr			
H	Extra over for ducts capped for Biomass connection	1	nr			
	Ductwork; uPVC duct; Comms Duct					
	110mm dia.; include for draw-wire					
J	Laid in trenches	40	m			
K	Extra over for easy sweep bends	1	nr			
L	Extra over for ducts capped for Biomass connection	1	nr			
				To Collection €		

					€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)						
	Chambers					
	Draw pit chamber; complete; excavating pits from stripped level 1000x1000x800mm deep internally; dispose of surplus soil; grading bottom; earthwork support; open bottom pit filled with 50mm course gravel for drainage; RC3 concrete base on 50mm blinding grade gen 3; Concrete roof slab grade C25 c/w opening for cover and frame; 225mm thick Class B engineering brickwork in english bond; Walls: 1000mm high with 50mm rebate for removable cover; include for openings for ducts; Heavy duty cast iron cover and frame to Engineer's Specification bedded in epoxy mortar; include for step irons; all pvc pipes to fall away from building and all pits should not waterlog; pipes to be buried 750mm below ground level; include for backfilling to sides of chamber where necessary; all in accordance with the site plan Drawing					
A	Average depth not exceeding 1000mm	1	nr			
	Sundries					
B	Allow for sealing all incoming service ductwork to prevent ingress of damp, dirt and vermin	1	item			
C	Allow for clearance between Telecom ducts and ESB ducts and cables over 650 volts; of 300mm vertical clearance at crossings and 600mm lateral clearance in parallel trenches	1	item			
D	Allow for clearance between ESB ducts and cables and other service ducts; 150mm vertical clearance at crossings and 300mm lateral clearance in parallel trenches	1	item			
E	Provide for all necessary attendances on ESB to include liaising with ESB before, during and after installation of electrical services and providing and making available site data for their use	1	item			
F	Provide markings/signage of ESB cables at locations as agreed with Local Engineering Officer and in accordance with ESB Specifications; as per Engineer's Drawing	1	item			
G	Provide all necessary attendances and builders work in association with disconnecting and removing existing underground ESB supply; complete	1	item			
				To Collection €		

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)

COLLECTION

Page No. Lot 4.5 Works Con/74

Page No. Lot 4.5 Works Con/75

Page No. Lot 4.5 Works Con/76

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT
Carried to Summary

		€	c
SUMMARY	**Page No.**		
(10) DEMOLITIONS AND ALTERATIONS	Lot 4.5 Works Con/2		
(31) EXTERNAL WALL COMPLETIONS	Lot 4.5 Works Con/4		
(35) & (45) CEILING FINISHES	Lot 4.5 Works Con/6		
(5-) MECHANICAL INSTALLATION	Lot 4.5 Works Con/26		
(6-) ELECTRICAL INSTALLATION	Lot 4.5 Works Con/50		
(30) SITE ENCLOSURES - PLANT COMPOUND	Lot 4.5 Works Con/54		
(50) SITE SERVICES - GAS	Lot 4.5 Works Con/57		
(50) SITE SERVICES - DISTRICT HEATING	Lot 4.5 Works Con/61		
(50) SITE SERVICES (MAINLY MECHANICAL)	Lot 4.5 Works Con/69		
(60) SITE SERVICES (MAINLY ELECTRICAL)	Lot 4.5 Works Con/73		
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT	Lot 4.5 Works Con/77		
TOTAL AMOUNT CARRIED TO GENERAL SUMMARY			
Lot 4.5 Works Con/1 - Lot 4.5 Works Con/77.			

4.6 Beech Hill College

					€	c
	(10) DEMOLITIONS AND ALTERATIONS					
	DEMOLITION & ALTERATIONS					
	GENERAL					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYER'S REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Demolitions					
	Removing					
	Removing Finishes					
B	Existing ceiling finishes to certain locations within existing building; disposal of all materials off site; prepare ceilings to receive new finishes	24	m2			
	Plumbing and Engineering Installations					
C	Removal and disposal of existing oil tanks; include for grubbing up and disposal of all associated pipework; include fittings, etc.; include for disposal & making good where necessary; backfilling with Grade C16/20 S3 lean mix to Engineer's Satisfaction; complete	1	Item			

				€	c
(10) DEMOLITIONS AND ALTERATIONS (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/1					
(10) DEMOLITIONS AND ALTERATIONS **Carried to Summary**					

					€	c
	(35) & (45) CEILING FINISHES					
	FLOOR, WALL & CEILING FINISHES					
	Suspended Ceiling					
	Proprietary suspended ceiling system; Manufacturer: Submit proposals for Architects approval; Product reference: CasoLine MF suspended ceiling system- or equivalent to Architect#s approval; Suspension system; Hanger type: Gypframe MF8 strap hangers; Top fixings: Gypframe MF12 soffit cleats fixed to concrete soffit or metal deck; Primary grid centres: 1200 mm. Hanger centres: 900 mm; Secondary grid centres: 400 mm; Linings: 1 x 12.5 mm Gyproc WallBoard, Gyproc moistureproof green board where noted on RCP's and in a wet area; Insulation: none; Access Units: Gyproc Profilex access panels; Finishing: Taped seamless finish; Primer/ Sealer; Type: 1 coat of Gyproc Drywall Primer (2 coats where noted as moistureproof green board; Accessories: none; all as per Architects Specification					
	Ceilings; fixed below floor structure					
A	Depth of suspension 500mm - 1000mm	24	m2			
	PAINTING AND DECORATING					
	Painting					
	Emulsion paint; To internal plastered surfaces and fairfaced blockwork; Manufacturer: Submit proposals for Architects approval; Product reference: Dulux trade Diamond Matt (water based tough Scrubbable Matt emulsion); Surfaces: Internal plastered surfaces; Preparation: Tape and fill joints; Initial coats: 40% thinned primer.Thinning Sealing new or bare surfaces: Add up to 1 part clean water to 10 parts paint; Number of coats: 2; Undercoats: As recommended by manufacturer; Number of coats: As recommended by manufacturer; Finishing coats: Washable matt vinyl; Number of coats: 2; all as per Architects Specification					
	Ceilings					
B	Exceeding 300mm	24	m2			

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(35) & (45) CEILING FINISHES (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/3					
(35) & (45) CEILING FINISHES **Carried to Summary**					

					€	c
	(5-) MECHANICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Strip out and disposal offsite of existing boiler room plant including boilers, associated flues and pipework, pump sets, valves, pressurisation unit and expansion vessel; isolate, drain down, disconnection equipment in co-ordination with installation and commissioning of new works; remaining systems to stay operational during decommissioning works, required down-time to be coordinated in advance and carried out during out-of-hours; all in accordance with the Mechanical specification and Drawings 4.6(5-)M003	1	item			
C	Modifications to existing secondary heating circuit flow/return pipework to facilitate connections to new 250mm diameter header (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.6(5-)M004	1	item			
D	Modifications to existing hot water circuit flow/return pipework to facilitate connections to new Calorifier (measured elsewhere); including isolation, draining down, pipe alterations, provision of fittings and valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.6(5-)M004	1	item			
E	Modification to existing mains water supply pipework to facilitate reconnection to new pressurisation unit (measured elsewhere); including isolation, draindown, pipe alterations, fittings, valves, supports, testing, making good and full reinstatement of insulation and finishes; all in accordance with the Mechanical Specification and Drawing 4.6(5-)M004	1	item			
F	Enabling works to facilitate connection into existing cold water supply pipework serving new calorifier (measured elsewhere); including provision of isolation valves, non-return valves, fittings, reducers, supports, flushing, pressure testing, and full reinstatement of insulation and finishes; all shutdowns to be agreed in advance and carried out outside normal operating hours; all in accordance with the Mechanical Specification and Drawing 4.6(5-)M004	1	item			

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	(5-) MECHANICAL INSTALLATION (Cont)					
	ASBESTOS REMOVAL					
	DEMOLITION & ALTERATIONS					
	General					
A	The following items are not measured in strict accordance with ARM.		note			
B	The Contractor is refered to the Pre Refurbishment & Demolition Asbestos Survey		note			
C	The Contractor must ensure that any risk of exposure to asbestos is completely eliminated. Contractor to consult with Employer's Representative before any work commences on site.	1	item			
D	The Contractor is advised that there is a notification form to be used for any work involving asbestos. This form must be submitted 28 days prior to the start of such work.	1	item			
E	The Main Contractor / PSCS must appoint a specialist asbestos removal contractor to carry out the asbestos removal & disposal works	1	item			
F	Prior to commencing any demolition or construction works on site all asbestos must be removed from site; in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010	1	item			
G	The Main Contractor / PSCS must appoint a competent independent analyst / accredited laboratory for the purpose of undertaking air sampling, project monitoring and issuing site clearance for reoccupation certification; in conformance with ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories	1	item			
H	Prior to commencing the asbestos removal works the specialist contractor shall submit (to the PSDP & Employer's Representitive) their Plan of Work (risk assessment / method statement), Design Risk Assessment, and temporary works certificates for the Asbestos Removal works (at least 21 days in advance of commencing the asbestos removal works)	1	item			
J	Prior to commencing the asbestos removal works the specialist contractor shall submit their Plan of Work (risk assessment / method statement), and notify, to the HSA (at least 14 days in advance of commencing the asbestos removal works). The PSCS must also ensure that copies of the notifications are forwarded to the PSDP, Client & Project Manager	1	item			
K	No works may take place on site until the Plan of Work has been drawn up and approved by the Main Contractor / PSCS	1	item			
L	No deviations shall be permitted from the plan of work submitted to the HSA	1	item			
M	Should the Plan of Work require amending / updating (for whatever reason) it must be issued to the PSDP & Project Manager in the first instance, and then the HSA, prior to proceeding with any proposed changes	1	item			
				To Collection €		

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	(5-) MECHANICAL INSTALLATION (Cont)					
A	No asbestos removal works may take place in areas occupied by normal construction / project personnel and / or third parties	1	item			
B	An asbestos site clearance for reoccupation certificate(s) must be supplied (by the competent independent analyst / accredited laboratory) to the PSDP & Project Manager prior to commencing any demolition or construction works on site (other than the asbestos removal works); the certificate(s) must include (1) Visual inspection, (2) Air monitoring and (3) The decontamination unit	1	item			
C	After completing Asbestos Removal works the PSCS must ensure that asbestos site clearance for reoccupation certificates are issued to the Project Manager, PSDP, and Client PRIOR to allowing those areas to be opened up to persons (other than those persons directly involved in the asbestos removal works)	1	item			
D	NO Asbestos Containing Waste Material may be removed from the site unless a Waste Transfer Form (removal of Hazardous Waste Material from Site) has been completed and issued to the PSCS / Main Contractor, the PSDP & Project Manager	1	item			
E	The PSCS / Main Contractor must forward copies of final disposal certificates (i.e. completed Waste Transfer Form (final disposal of Hazardous Waste Material)) to the PSDP & Project Manager	1	item			
F	The PSCS / Main Contractor must forward, the following information (as applicable) to the PSDP, for inclusion in the Safety File; Bulk sample results, Amended Asbestos Register, Preliminary Safety & Health Plan and Specification, Specialist asbestos removal contractor Plan of Work, Notification to the Health and Safety Authority, Air monitoring results prior to removal works commencing, Air monitoring results during removal works, site clearance for reoccupation certificates, Completed Waste Transfer Form for the final disposal of all asbestos / hazardous waste.	1	item			
G	All asbestos works must be carried out in accordance with; The HSA 2010 Code of Practice for Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001, The Safety Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010, The HSA Guidelines on Working with Materials Containing Asbestos Cement (and any subsequent amendments updates to HSA Guidelines and / or Codes of Practice)	1	item			
H	Contractor to include here (Unless included in rates elsewhere) for protection of all fixtures, fittings and finishes to all areas in which asbestos removal occurs	1	item			
	Alterations					
J	The Contractor must note that the safe and proper removal and disposal of all asbestos material is the Contractor's full responsibility and therefore the contractor's price/rates must include for all work in connection with same; no claims on the grounds of want of knowledge will be entertained whatsoever.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Removing Finishes; Asbestos Material					
A	Submit Plan of Work and 14 day prior notification to the Health & Safety Authority	1	item			
B	Setup Decontamination Unit & Form Enclosures	1	item			
C	Specialist removal and disposal of asbestos-containing valves in accordance with all relevant safety and environmental regulations.	1	item			
D	Specialist removal and disposal of asbestos - asbestos in boiler unit internals, woven product in sports hall ground floor boiler room 007 - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
E	Specialist removal and disposal of asbestos - asbestos in pipe gaskets in sports hall ground floor boiler room 007 - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
F	Specialist removal and disposal of asbestos - asbestos in rope seal to the lid, woven product in sports hall ground floor oil tank 008 - chrysotile in accordance with all relevant safety and environmental regulations.	1	item			
G	Environmental clean to achieve clearance certification	1	item			
H	Asbestos Removal & Disposal Certificates	1	item			
J	INAB Accredited Asbestos Clearance Certification					
K	Reassurance Air Monitoring and Re-occupation Clearance Certification by an Asbestos Consultant	1	item			
	Notes					
L	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
M	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
N	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			

To Collection €

(5-) MECHANICAL INSTALLATION (Cont)

ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS

(51) HEATING CENTRE

System

Heating center installation, testing and commissioning; consisting of 1nr Biomass boiler (Primary heating source) and 3nr LPG gas fired condensing boilers (secondary heating source) serving radiators throughout the building; the installation shall include a pressurisation unit, expansion vessel, pipework, shunt pumps and all associated valves; existing flow rates to be recorded prior to works and re-established at the end of the works; The heating system shall be flushed and provided with appropriate chemical treatment; Commissioning results including a flue gas analysis shall be provided for the boilers prior to handover, along with a statement by the manufacturer/supplier confirming their correct and efficient operation; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/6. Heating System, Section B (56) Heating System Pipework; Volume 3; Volume 4 and Drawings (5-)M004

Primary Equipment

Boiler; supply and installation complete; Type: Forced draught condensing pre-mix fully modulating boiler; Fuel: LPG; Heat exchanger: Stainless steel; Casing: Steel; Insulation 50mm rockwool; Output 299.4kW; Flow rate: 2.7kg/s; Flow Temperature: 80°C; Return Temperature: 60°C; Max water side pressure differential: 50kPa; Rated pressure: 6 bar; Efficiency: 96% seasonal efficiency; Accessories: Safety valve, Pressure Gauge, Temperature Gauge, Drain cock; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications Volume 3 - Equipment Schedules

A	Boiler; Ref: B-01 - B03; Location: Plant Room	3	nr		

Accessories associated with Primary Equipment

Stop valves for isolation of LPHW pipework up to 65mm Dia; Type: Lever operated, Brass full bore ball valve, WRC approved; Materials: to suit steel tube: Bronze or DZRR copper alloy body; Chrome or nickel plated DZR sphere with full bore flow aperture. PTFE seals and stem seals. Anti-blowout stem; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B

B	50mm Stop valves	7	nr		

Stop valves for isolation of LPHW pipework over 65mm Dia; Type: Lever operated, controlled elastomer compression on flange faces; semi lugged wafer type design, for installation between flanged pipework connections, body to suit IS EN 1092-2; Materials: Cast iron body; stainless steel shaft; aluminium bronze disc; EPDM seat; lever and gear operated valves with long body neck; Seat - Bonded; all in strict accordance with Engineers Specification Volume 2/B

C	80mm Stop valves	13	nr		
D	125mm Stop valves	9	nr		

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
A	125mm Non-return valves	3	nr			
	Double regulating valve with orifice measurement; Type: Screwed double regulating valves up to 65Dia. Flanged for 65 Dia and above; WRAS approved; Material: To suit steel tube; Material - Cast iron to IS EN 13789; Oblique or Y pattern; copper alloy, nickel alloy or resilient valve face; rising stem outside screw or non-rising stem inside screw; manufacturer's standard materials; Provide drain plug facility; independent means for positive isolation on pressure tapping or adapter. include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
B	50mm Double regulating valve	1	nr			
C	80mm Double regulating valve	1	nr			
D	125mm Double regulating valve	3	nr			
	Pressure Relief Safety Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
E	125mm Pressure relief safety valves	1	nr			
	Motorized valves; maximum power consumption of 1 W; minimum static pressure of 10 bar; differential pressure of 250 kPa; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
F	50mm 2-port motorized valves	1	nr			
G	80mm 3-port motorized valves	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
H	Temperature sensor	8	nr			
	Pressure gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
J	80mm Pressure gauge	3	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
K	80mm Temperature gauge	4	nr			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Flexible connections; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	50mm Flexible connections	2	nr			
B	80mm Flexible connections	4	nr			
C	125mm Flexible connections	6	nr			
	Capped Ends; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
D	250mm Capped Ends	2	nr			
	Drain Cock; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
E	250mm Drain Cock	1	nr			
	Strainer valve; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
F	80mm Strainer valve	2	nr			
	Pumps; supply and installation; complete; Pump Head: 1; Integrated VSD: No; Variable speed control: N/A Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
G	Pump LPHW, Ref: PB01; Flow rate: 2.744kg/s; External pressure drop: 120kPa; Temp: 80°c	1	nr			
H	Pump LPHW, Ref: PB02; Flow rate: 2.744kg/s; External pressure drop: 120kPa; Temp: 80°c	1	nr			
J	Pump LPHW, Ref: PB03; Flow rate: 2.744kg/s; External pressure drop: 120kPa; Temp: 80°c	1	nr			
K	Pump LPHW, Ref: PHW01; Flow rate: 1.5kg/s; External pressure drop: 100kPa; Temp: 80øc	1	nr			
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
L	Pump LPHW, Ref: PH01; Flow rate: 8.232kg/s; External pressure drop: 200kPa; Temp: 80°c	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Pump LPHW, Ref: PHBIO01; Flow rate: 4.8kg/s; External pressure drop: 150kPa; Temp: 80øc	1	nr			
	Pressurisation Unit; supply and installation; complete; System: Heating; Fluid: Water; Fluid Temp: 80°c - 60°C; Energy Input: 688.2kW; Minimum expansion vessel size: 610 L; Maximum Fill Pressure: 6 bar; System Height: 8m; Tank Size: 4 L; Fill Rate: 12L/m; No. of Pumps (with auto changeover if multiple) per unit: 2; Maximum Ambient: 20°C; Pump Casing Material: Gun Metal; Pump Shaft Material: Stainless Steel; c/w isolation valve; lockshield valve, strainer on pumps; pressure gauge; air relief valve, pressure relief valve; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
B	Pressurisation Unit; Ref: PU-01; Location: Plant room	1	nr			
	Chemical dosing pot; supply and installation; complete; c/w foot valve; chemical drum; Cleansing; Corrosion inhibitor and wall mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
C	Chemical dosing pot	1	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 8.232L/s; Maximum working temp: 110°C; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework; separator to be capable of separating particles with a size of 5um and larger; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
D	Air/Dirt separator; Ref: DA1	1	nr			
	Unvented Expansion Vessel; supply and installation; complete; include for all accessories, fixings and mounting brackets; complete; include for all fixings and mounting brackets; all in strict accordance with the Mechanical Engineers Specification Volume 2					
E	Unvented Expansion Vessel	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Stainless steel flue; supply and installation; complete; External lining: 304 stainless steel; Insulation: 25mm mineral wool; Internal lining: 316 stainless steel; Fire rating: 2 hr to EN 13501; Structure: The detailed design, structural stability including all anchoring of the flue arrangement shall be the sole responsibility of the contractor; Support material: Corrosion proof, treated supports; Flue dimensions: Confirm with combustion equipment supplier prior to ordering; c/w individual modulating air intake control damper and terminated with a propriety cowl; include for all necessary branch fittings, weather roof flashing, rain caps and supports; The flue shall be fitted with adequate supports, offsets, tee's, condensate to drain and termination unit; include for all accessories, fittings and firestopping; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
A	Twin walled flue; Size 125mm diameter	3	nr			
B	Twin walled flue; Size 150mm diameter	1	nr			
	Heat meter; supply and installation; complete; Accuracy Shall be accurate within 1% of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
C	Heat Meter; Ref: HM02, HM03, HM04, HM05	4	nr			
	Oil-filled electric radiator; supply and installation; powder coated white finish; radiator control to turn on at 5°C, switch off at 14°C; linked to local temperature sensor, via BMS; c/w mounting brackets; include for all fixings and accessories; in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
D	Oil filled Electric radiator; Output 1kW	1	nr			
	<u>Distribution</u>					
	Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
E	80mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B					
A	40mm diameter pipework	1	item			
B	50mm diameter pipework	1	item			
C	54mm diameter pipework	1	item			
D	80mm diameter pipework	1	item			
E	125mm diameter pipework	1	item			
F	250mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
G	to 40mm diameter pipework	1	item			
H	to 50mm diameter pipework	1	item			
J	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
K	to 80mm diameter pipework	1	item			
	Insulation, 80mm thick					
L	to 125mm diameter pipework	1	item			
M	to 250mm diameter pipework	1	item			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
A	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
B	to 40mm diameter pipework	1	item			
C	to 50mm diameter pipework	1	item			
D	to 54mm diameter pipework	1	item			
E	to 80mm diameter pipework	1	item			
F	to 125mm diameter pipework	1	item			
G	to 250mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
H	Testing and commissioning	1	item			
J	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
K	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
L	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
M	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
N	As built drawings	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with Engineers Specification					
A	Identification plates, labels and the like	1	item			
	(52) DRAINAGE AND REFUSE DISPOSAL					
	System					
	Soils and Waste Drainage Installation, testing and commissioning; complete; The complete installation of all above ground foul water drainage and refuse disposals; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Section 7, Volume 3, Volume 4 and Drawing 4.6(5-)M005					
	Terminal equipment and fittings					
	Floor Gully; supply and installation; complete; Type: Stainless steel; c/w removable core; include for all fittings and seals; all in accordance with the Mechanical Specification					
B	Floor Gully	1	nr			
	Distribution System					
	Condensate pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; all in strict accordance with the Mechanical Specification Volume 2/A 7.4					
C	28mm nominal diameter; supports at average 1200mm centres vertical, 500mm centres horizontal; ears fixed with screws to background requiring plugging	1	item			
D	32mm nominal diameter; supports at average 1200mm centres vertical, 500mm centres horizontal; ears fixed with screws to background requiring plugging	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
E	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
F	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
G	Working drawings	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Co-ordination drawings; all in accordance with Engineers Specification					
A	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
B	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
C	Identification plates, labels and the like	1	item			
	(53) WATER SERVICES - HOT AND COLD WATER					
	System					
	Cold Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.6(5-)M004					
	Hot Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.6(5-)M004					
	Equipment					
	Calorifier; supply and installation; complete; Capacity: 23kW; Storage Capacity: 1400 litres; Flow temperature: 60°C; Temperature difference: 20K; LPHW flow rate: 0.3kg/s; Electric immeresion: 10kW; Insulation: vessel insulated to U-value of 0.25W/m2K or better; Material: cylinder stainless steel; Efficiency: ErP rating if B or better; Test pressure: 6 bar for cylinder, 10bar for coil; Crossion protection: magnesium electrolytic protection anode; Connections: Cold inlet at base of unit and hot water outlet at top, hwsr 1/3 from top; Electric Immersion Maintenance: Immersions shall be fully removable through flanged, insulated connections; Electric Immersion protection: immersions shall include run dry protection and over temperature; Electric Immersion Trip: Immersion shall include over temperature protection requiring manual reset; c/w Packaged expansion kit, Non-return valve, Pressure relief valve, temperature gauge, cylinder temperature sensor pocket; include for all accessories and fittings; complete; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
D	Calorifier; Ref: C01; Location: Boiler room	1	nr			

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
A	50mm Isolation valves	5	nr			
B	54mm Isolation valves	3	nr			
	Stop valves for isolation of CWS/HWS pipework over 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; flanged connections; all in strict accordance with Engineers Specification Volume 2/B					
C	67mm Isolation valves	2	nr			
	Double regulating valve; Type: globe valve c/w macro and micro position indicator, locking mechanism; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
D	54mm Double regulating valve	1	nr			
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
E	50mm Non-return valves	1	nr			
	Pressure Relief Safety Valve; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2/B					
F	67mm Pressure relief safety valve	1	nr			
	Temperature gauge; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
G	54mm Temperature gauge	1	nr			
H	67mm Temperature gauge	1	nr			
	Temperature sensor; linked to BMS; include for all accessories and fittings; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
J	Temperature sensor, calorifier	1	nr			
	Tundish; supply and installation; complete; c/w mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
K	Tundish	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Magnetic water filter; supply and installation; complete; c/w mounting brackets; include for all accessories and fittings; all in strict accordance with the Mechanical Specification					
A	Magnetic water filter	1	nr			
	Combined deaerator & dirt separator; supply and installation; complete; Flow Rate: 8.232L/s; Maximum working temp: 110øC; Pipe connections: 100mm flanged; Test Pressure: 10bar; Max pressure drop acceptable at flow rate: 3.7kPa; Material: Stainless steel; Insulation: same standard as continuing pipework; separator to be capable of separating particles with a size of 5um and larger; Accessories: air vent and dirt drain; Magnetic filter integrated into unit: yes; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
B	Air/Dirt separator; Ref: DA1	1	nr			
	Pumps; supply and installation; complete; Pump Head: 2; Integrated VSD: No; Variable speed control: Auto adapt; Pump housing: Cast iron; Pump impeller: Plastic; Electrical: 1phase/230V/50 Hz; Control interface: BACnet; include for all fixings, connections, test points, anti vibration mounts and brackets; all in strict accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
C	Pump HWR, Ref: PHW02; Flow rate: 1.5kg/s; External pressure drop: 100kPa; Temp: 80øc	1	nr			
	Unvented Expansion Vessel; supply and installation; complete; include for all accessories, fixings and wall mounting brackets; complete; all in strict accordance with the Mechanical Engineers Specification					
D	Expansion Vessel	1	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05l/s of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
E	Water Meter; Ref: WM01	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Distribution					
	Copper pipes and fitting; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Engineers Specification Volume 2/B					
A	35mm diameter pipework	1	item			
B	42mm diameter pipework	1	item			
C	50mm diameter pipework	1	item			
D	54mm diameter pipework	1	item			
E	67mm diameter pipework	1	item			
F	76mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
G	to 35mm diameter pipework	1	item			
H	to 42mm diameter pipework	1	item			
J	to 50mm diameter pipework	1	item			
K	to 54mm diameter pipework	1	item			
	Insulation, 65mm thick					
L	to 67mm diameter pipework	1	item			
M	to 76mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
A	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
B	to 35mm diameter pipework	1	item			
C	to 42mm diameter pipework	1	item			
D	to 50mm diameter pipework	1	item			
E	to 54mm diameter pipework	1	item			
F	to 67mm diameter pipework	1	item			
G	to 76mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
H	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
J	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
K	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
L	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
M	As built drawings; complete	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
A	Identification plates, labels and the like; complete	1	item			
	(53) WATER DISTRIBUTION - MAINS WATER					
	System					
	Mains Water Distribution installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.6(5-)M004					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of CWS/HWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
B	28mm Isolation valves	4	nr			
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
C	28mm Non-return valves	2	nr			
	Water meter; supply and installation; complete; Accuracy Shall be accurate within 0.05l/s of rated output; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, not battery; Battery Backup: Meter to retain value for at least 72 hrs with a battery life of 16 yrs; Pressure drop: Maximum pressure drop through the meter shall be 5 kPa; Monitoring method: Ultrasonic; IP rating: IP54; Ambient range: Operate from -5 to 40°C; c/w pockets for all probes required; Compliance: EN 1434 Class 2; Pressure Rating: 16 bar; include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules					
D	Water meter; Ref: WM01	1	nr			
	Distribution system					
	Multi-layer non-matallic pipework and fittings; in accordance with the Irish Standard IS EN 806:2005: Specification for installations inside buildings conveying water for human consumption; include for all fixing brackets, hangers and supports; include for all elbows, unions and tees necessary to complete works; all in strict accordance with the Mechanical Specification					
E	15mm diameter pipework	1	item			
F	22mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	25mm diameter pipework	1	item			
B	28mm diameter pipework	1	item			
C	35mm diameter pipework	1	item			
D	42mm diameter pipework	1	item			
E	54mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
F	to 15mm diameter pipework	1	item			
G	to 22mm diameter pipework	1	item			
H	to 25mm diameter pipework	1	item			
J	to 28mm diameter pipework	1	item			
K	to 35mm diameter pipework	1	item			
L	to 42mm diameter pipework	1	item			
M	to 54mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
N	General Valve & Plant	1	item			
	Aluminium Cladding; to valves and plant; 0.56mm thick gauge aluminium, fixed with self-tapping screws, reinforced bands at 300mm centres; all in strict accordance with the Mechanical Specification Volume 2/B					
P	to 15mm diameter pipework	1	item			
Q	to 22mm diameter pipework	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	to 25mm diameter pipework	1	item			
B	to 28mm diameter pipework	1	item			
C	to 35mm diameter pipework	1	item			
D	to 42mm diameter pipework	1	item			
E	to 54mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
F	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
G	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
H	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
J	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
K	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
L	Identification plates, labels and the like; complete	1	item			
				To Collection €		

(5-) MECHANICAL INSTALLATION (Cont)

(54) GAS DISTRIBUTION - LPG GAS SERVICES

System

LPG Gas distribution; installation testing and commissioning; The school building will be fed from a new incoming LPG gas supply, The gas supply shall extend to serve the gas fired boiler within the plantroom; The contractor shall allow for liaising with the gas supplier regarding coordination of works and certification of the site gas pipework and tank installation; LPG installation shall be installed in compliance with IS3213; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.6(5-)M002, 4.6(5-)M004

Accessories associated with Primary Equipment

Stop Valves for isolation of gas pipework 65mm Dia and above; Type: Lever operated (gradual notch) butterfly valves; Construction - Provide controlled elastomer compression on flange faces; semi-lugged wafer type design, for installation between flanged pipework connections; Provide lever and gear operated valves with long body neck for lagging clearance; Seat - Bonded; Materials: Cast iron body; stainless steel shaft; aluminum bronze disc; EPDM seat; Operation - Lever and graduated notch plate; include for all seals; all in strict accordance with Engineers Specification Volume 2

A	80mm Stop valves	5	nr		

Pressure regulator; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2

B	80mm Pressure regulator	1	nr		

Strainer Valves; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2

C	80mm Strainer valves	3	nr		

Flexible connections; include for all accessories and fittings; complete; all in strict accordance with Engineers Specification Volume 2

D	80mm Flexible connections	3	nr		

Gas meter; supply and installation; complete; Accuracy Shall be accurate within 0.2m3/hr up to maximum valve above; Control Interface: Modbus, pass stored totals not pulses; Power: Operate from mains power, no battery backup; Utility Meter: In addition to above, provide utility meters to utility requirements; Utility Meter: Shall be 2m from any window or opening, shall be provide in locked cage (measured elsewhere); include for all fixings and mounting brackets; all in strict accordance with the Mechanical drawing and Specifications documents Volume 3 - Equipment Schedules

E	Gas Meter; Ref: GM01	1	nr		

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
A	Tamper proof, lockable metal caging	1	nr			
	Distribution System					
	Medium grade black mild steel pipes and fittings; include for all fixing brackets, hangers and supports; include for all elbows, expansion bellows, unions and tees necessary to complete works; Painted with one primer coat - Zinc phosphate primer), one final coat of ochre yellow paint (Ral 1024; all in strict accordance with Engineers Specification Volume 2					
B	80mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

(5-) MECHANICAL INSTALLATION (Cont)

(54) GAS DETECTION SYSTEM

System

Gas detection system installation testing and commissioning; A gas detection system will be installed in the heating center comprising of gas detectors, heat detectors, slam shut valve, gas detection panel and emergency lock-stop located adjacent to the boiler room door; The gas detection panel shall be provided with volt free contacts and an I/O interface unit for connection to the schools fire alarm system; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 4, 2/B Part 16, Volume 3, Volume 4 and Drawings 4.6(5-)M005

Primary Equipment

Gas detection control panel; c/w emergency knock-off button, reset button, mute button, LED indication for power on, gas-on and emergency stop; free relay output for the BMS; IP44; CE rated, IEC61779-1; wall mounted; include for all accessories and fittings; all in accordance with the Mechanical Specification Volume 3 - Equipment schedules

A	Gas detection control panel; Location: Boiler room	1	nr			

Accessories associated with Primary Equipment

Gas Slam Shut Valve; supply and installation; complete; Auto reset on loss of power and fire alarm reset; compliance to EN161 and DIN Class A; maximum consumption of 2W during normal usage; all in strict accordance with Engineers Specification Volume 3 - Equipment schedules

B	80mm Gas solenoid valve	1	nr			

Emergency Push Button; supply and installation; complete; all in strict accordance with Engineers Specification Volume 2

C	Emergency Push Button	1	nr			

Gas Detectors; supply and installation; complete; IP44 protection; Mounting: mounted over each burner, linked to the gas control panel; c/w gas conical collector hood; all in strict accordance with Engineers Specification Volume 2

D	Gas detector	3	nr			

Heat Detectors; supply and installation; complete; all in strict accordance with Engineers Specification Volume 2

E	Heat Detectors	3	nr			

General

Testing and commissioning; all in accordance with Engineers Specification

F	Testing and commissioning	1	item			

To Collection €

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(58) FIRE PROTECTION INSTALLATION					
	<u>System</u>					
	Fire Fighting installation, testing and commissioning; complete; Hand held fire extinguishers and fire blankets shall be provided throughout the building as detailed on the drawings; The installation will comply with BS 5306-2000-Part 8; The Contractor shall be responsible for carrying out the commissioning of the portable fire extinguishers before they are installed; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Part 11, Volume 3, Volume 4 and Drawings 4.6(5-)M005					
	<u>Terminal equipment and Fittings</u>					
	Fire Extinguishers supply and installation; complete with 5 years guarantee, CE approved and marked; all in accordance with the Mechanical Specification Volume 3 - Equipment Schedules					
F	5KG CO2 Gas Extinguishers; c/w wall mounting brackets and ID signage; complete	1	nr			
G	5kg ABC Dry Powder Fire Extinguishers; c/w wall mounting brackets and ID signage; complete	1	nr			
	<u>General</u>					
	Testing and commissioning; all in accordance with Engineers Specification					
H	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(58) HVAC MOTOR CONTROL CENTER & BUILDING MANAGEMENT SYSTEM					
	System					
	BMS System Installation; testing and commissioning; complete; Building management software including a target and monitoring system based on a traffic light system shall be designed and installed in this school to inform relevant personnel for energy usage in the school. How utility supplies are behaving when set against targeted parameters. This information is to be available on the principals pc. They should be capable of remote monitoring and alarm if there is a problem; all in strict accordance with the Mechanical Specification					
	Primary Equipment					
	MCC Panel; supply and installation; complete; The MCC panel: wall mounted top entry and top exit type with hinged front doors, suitable for installing against a wall; Dimensions: max. width 2000mm, max depth 300mm; Spare capacity: 30%; The MCC shall contain hand/off/auto switches with run and trip indicators and interfaces for all items as detailed on the drawings; each button shall be clearly labelled showing the area served; include for all fittings and accessories; all in accordance with the Mechanical Engineers Specification					
F	MCC Panel; Ref: MCC; Location: Plant room	1	nr			
G	MCC Panel; Ref: MCC; Location: Biomass Unit	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	External sensor; linked to BMS; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 4					
A	External frost sensor	1	nr			
B	External temperature sensor	1	nr			
	Remote data transmitter, supply and installation, complete; 4G enabled transmitter capable of interfacing with utility meters and transmitting recorded data to an external web-based front-end system; include for all fittings and accessories; all in accordance with the Mechanical Specification					
C	Remote data transmitter	1	nr			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
D	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
E	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
F	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
G	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
H	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
J	Identification plates, labels and the like	1	item			
	MECHANICAL INSTALLATIONS					
	Sundries & Builders Work					
	General Attendances					
K	Provide all general attendances in accordance with Arm 4 .	1	item			
L	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide use of the Main Contractors scaffolding.	1	item			
B	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
C	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
D	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
E	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Mechanical services works, including testing and commissioning , and pay all ongoing operation charges.	1	item			
F	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
G	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
H	Provide temporary telephone services to the Mechanical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
J	Include for unloading, hoisting/cranage and placing into position all items of heavy plant and site offices supplied by the sub-contractors.	1	item			
K	Allow for maintaining all ducts, chases, trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
L	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
M	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
N	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	<u>Special Attendances</u>					
P	Provide all special attendances in accordance with Arm 4 Clause 3.1	1	item			
Q	Provide temporary roads and hardstandings in connection with heavy items of plant and the like.	1	item			
R	Provide accommodation for the sub-contractor's staff for eating, site lavatories, site washing facilities, and cloaks.	1	item			
S	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
B	Provide temporary distribution systems for lighting, power, water for the execution of the electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
C	Provide the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
D	Protection of the works the Main Contractor is responsible for providing adequate protection at all times for the Mechanical services installation.	1	item			
E	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day.	1	item			
F	Provide external access to high level on building facade to permit the installation of any external equipment/fittings and for the removal of existing services as required.	1	item			
G	Provide Mobile Elevated Working Platforms (MEWP) or scaffolding for Mechanical sub-contractors working at high level.	1	item			
H	Provide for weathering & sleeving around all penetrations through the external structure of the building and to allow for sealing to fabric to maintain air tightness.	1	item			
J	Allow for maintaining all ducts, chases, trenches, trunking etc, clean and free of all water, debris and rodents at all times.	1	item			
K	Allow for making good and fire sealing of all builders work opes with proprietary sealant to architects details, where services penetrate fire zones.	1	item			
L	Allow for coordination with local authorities and utility providers in respect of application for connections, providing excavation of roads and full coordination with various utility companies.	1	item			
M	Coordinate with Mechanical Contractor to facilitate fitting of all sanitary ware.	1	item			
N	Allow for patrices behind ceiling tiles and ceilings for the support of light fittings, grilles, smoke detectors, sensors etc.	1	item			
P	Allow for weathering details on all services passing through external envelope.	1	item			
Q	Allow for all service / utility entries into building.	1	item			
R	Allow for clearing away and disposal of any rubbish.	1	item			
S	Provide safe access to roofspace to facilitate Mechanical installation work.	1	item			
T	Making good of opes for fire smoke dampers.	1	item			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
A	Provide and maintain the specific temperatures and humidity levels.	1	item			
B	Contractor to provide for the construction of a walkway within the Attic space for service and maintenance of water and ventilation services.	1	item			
C	Contractor to ensure all existing services shut downs for connecting in new and changeovers shall be carried out between 10pm on a Sunday Night and 6pm on a Monday morning, to avoid any interruptions of the running of the existing school; times to be agreed with school management.	1	item			
D	Provide plywood protective cover over boiler for protection.	1	item			
	Unload, hoist distribute, and place in position the following items of plant and equipment:					
E	Gas boiler	1	item			
F	Biomass unit	1	item			
G	Calorifier tank	1	item			
H	Pumps	1	item			
	Sundries & Builders Work					
	General					
J	Marking positions of holes, mortices and chases	1	item			
K	Testing & Commissioning	1	item			
L	Preparing drawings of "as completed" installations	1	item			
M	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
N	Keys, tools and spares	1	item			
	In-situ concrete; plain; to IS EN 206; Grade C30; formwork to sides of platform, powerfloating finish; all in strict accordance with the Engineers Drawings and Specification					
	Bases					
P	Size 850mm x 1650mm x 100mm thick	1	nr			
Q	Size 1850mm x 1100mm x 100mm thick	1	nr			
R	Size 2650mm x 1850mm x 100mm thick	1	nr			
				To Collection €		

					€	c
	(5-) MECHANICAL INSTALLATION (Cont)					
	Equipment supports; provide mounting grounds for the installation of the following fittings; making good structure and finishes; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
	Equipment supports					
A	Provide wall fixings for portable fire extinguishers to walls at 1500mm above floor	2	nr			
	Forming or cutting holes; including sleeves/plates, making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
B	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
C	cutting or forming opes is deemed to include the making good and sealing of the ope around the pipe or duct		note			
	For ducts/pipes through exisitng external cavity blockwork wall, include for building in sleeves; weather proofing, making good all finishes on completion					
D	Size 1000mm x 250mm opes	1	nr			
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification and Drawings					
	Special works were services pass through structures; external walls, making good all finishes on completion					
E	Size 1000mm x 250mm opes	1	nr			

				€	c
(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/5					
Page No. Lot 4.6 Works Con/6					
Page No. Lot 4.6 Works Con/7					
Page No. Lot 4.6 Works Con/8					
Page No. Lot 4.6 Works Con/9					
Page No. Lot 4.6 Works Con/10					
Page No. Lot 4.6 Works Con/11					
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Page No. Lot 4.6 Works Con/14					
Page No. Lot 4.6 Works Con/15					
Page No. Lot 4.6 Works Con/16					
Page No. Lot 4.6 Works Con/17					
Page No. Lot 4.6 Works Con/18					
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(5-) MECHANICAL INSTALLATION (Cont)					
COLLECTION					
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Page No. Lot 4.6 Works Con/30					
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(5-) MECHANICAL INSTALLATION **Carried to Summary**					

					€	c
	(6-) ELECTRICAL INSTALLATION					
	(10) DEMOLITION & ALTERATIONS					
	ALTERATIONS					
	Note:					
A	1. THE ONUS IS ON THE CONTRACTOR TO VISIT THE SITE OF THE WORKS AND TO SATISFY HIMSELF AS TO THE NATURE AND EXTENT OF THE WORKS AND ALL OTHER MATTERS THAT MIGHT INFLUENCE HIS PRICE OR TIME FOR COMPLETION OF THE WORKS (ARRANGEMENTS TO VISIT THE SITE SHOULD BE MADE WITH THE EMPLOYERS REPRESENTATIVE). THE CONTRACTOR MUST INCLUDE WITHIN HIS PRICE FOR ALL WORKS IN CONNECTION WITH THE DEMOLITION WORKS AND WORKS TO THE EXISTING BUILDINGS, WHICH COULD BE REASONABLY FORESEEN OR IMPLIED BY THE TENDER DOCUMENTS. NO CLAIMS ON THE GROUNDS OF WANT OF KNOWLEDGE IN RESPECT OF THE ABOVE WILL BE ENTERTAINED WHATSOEVER.		note			
	Removing					
	Plumbing and Engineering Installations					
B	Alterations to existing switch board to facilitate the installation of new submians; 1nr 40A TP&N sub-mains connection to New MCC panel; 1nr 50A TP&N sub-mains connection to Biomass unit (sub-main cable & TP&N device measured elsewhere); allow for modifications and fittings to existing DB as required to accommodate the new connections; include all isolation, shutdown coordination, and commissioning; all in strict accordance with Electrical Specification and Drawing 4.6(60)E001	1	item			
C	Alterations to existing PV system to facilitate installation of fire-rated DC cabling and fireman#s switch (fireman switch measured elsewhere), including safe isolation, modifications, re-termination and reinstatement of PV system, testing, commissioning, and certification, in full compliance with ET101; all in strict accordance with Electrical Specification and Drawing 4.6(60)E001	1	item			
D	Modification of existing fire alarm system to facilitate interface with existing gas solenoid valve, including all necessary wiring, controls integration, programming, testing, commissioning, and certification, all in strict accordance with Electrical Specification and Drawing 4.6(63)E001	1	item			
	Notes					
E	The tendering Contractors are referred to ARM 4 Supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
F	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings, will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES					
	(61) ELECTRICITY SUPPLY & MAIN DISTRIBUTION - LV INSTALLATIONS					
	System					
	LV installation, testing and commissioning; complete; The Contractor shall allow for the supply and installation of all switchgear, distribution boards and sub-mains cables in accordance with the drawings and attached specification; The Contractor shall be responsible for safe off-loading, receiving, storage, positioning and fixing of the boards and shall be liable for any damage to boards during installation; The Contractor shall submit working drawings to the Engineer for approval prior to manufacture of switchgear; the contractor shall allow for liaising with the ESB; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 and Drawings 4.6(60)E001					
B	LV Installations	1	item			
	Fittings					
C	Isolation device; supply and installation; complete; terminating of incoming and outcoming cabling; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
D	Isolation device; 40A TPN	1	nr			
	Firemans switch; supply and installation (including wiring & terminations); complete; isolation of the electrical supply to the entire building; located at main entrance; fire rated enhanced PH120 cable; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
E	Firemans Switch; isolation of main MCCB within switch board	1	nr			
F	Firemans Switch; isolation of PV system	1	nr			
	Multi-function digital meter; supply and installation; complete; digital multi-meter capable of indicating kVA, kW, KVAR, kWhr, Amps, Volts, etc. per phase and between phases; suitable for interfacing with B.M.S. network; installation as per manufacturers recommendations; all in accordance with the Electrical Specifications Vol.2 Section 4.3					
G	Multi-function digital meter; BMS meter	3	nr			
H	Multi-function digital meter; CT meter	3	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Insulated Matting; supply and installation; complete; Width: 900mm wide; Length: to extend to full Length of switch board, with an additional 300 mm beyond each end; Class rating: based on the system voltage and clearly colour-coded; Standards to conform to BS EN 61111:2009 (IEC 61111:2009); include for all fixings and accessories; all in strict accordance with the Electrical Specification Vol.2 Section 4.3					
A	Insulated matting; Ref: Existing Switch Board	1	nr			
	Main switchboard circuit chart; 'A1' framed drawing of the switchboard to be installed within the switch room; the drawing shall be framed with a perspex cover; include for all accessories; in strict accordance with the Electrical Specification Vol.2 Section 4.3					
B	Main switchboard; Ref: Existing Switch Board	1	nr			
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board to sub-distribution boards/ Control panels located throughout school building; Sub-mains distribution within the building shall be via XLPE/LSF/SWA/PVCarmored cables laid in galvanized steel cable tray/trunking; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Section and Drawing 4.6(60)E001					
C	Submains; Existing switch board to Biomass Unit; 1 x 4c 35sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
D	Submains; Existing switch board to MCC Panel; 1 x 4c 25sq.mm XLPE/LSF/SWA/PVC + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Specification					
E	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
G	Operating and maintenance manuals	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Working drawings; all in accordance with Engineers Specification					
A	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
B	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
C	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
D	Identification plates, labels and the like	1	item			
	(62) POWER - CONTAINMENT					
	System					
	Cable ladder/ tray/ trunking installation, testing and commissioning; complete; The Contractor must allow for the supply and installation of a complete cable support system using galvanized steel cable tray, trunking, conduit and support steelwork as shown on the drawings and as detailed in the specification. The Contractor shall include for all incidental cable containment which may not be shown on the drawings but which may be required to effect cable routes to individual items of equipment, luminaries etc; include for all joints, fixing brackets, supports and fire barrier pillow system; all exposed and exteaneous conductive parts are to be boned and properly earthed in accordance with current wiring regulations; all in accordance with the Electrical Specification Volume 1, Volume 2 and Drawing 4.6(63)E001					
E	Cable Ladder; LV; galvanized steel; heavy duty; size 200mm wide x 50mm high; complete	1	item			
F	Cable Header Trunking; LV; galvanized steel; size 150mm wide x 150mm high; complete	1	item			
G	Conduit; galvanised steel; size 25mm diameter; complete	1	item			
H	Conduit; galvanised steel; size 50mm diameter; complete	1	item			
J	Conduit; flexible steel; size 25mm diameter; complete	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
A	General earthing and bonding	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
B	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings; complete	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings; complete	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like; complete	1	item			
	(62) POWER - GENERAL SERVICES					
	System					
	General Services and small power installation, testing and commissioning; complete; to include vampire load design strategy; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.6(63)E001					
H	General Services Installation	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Accessories associated with terminal equipment					
	Isolation device; supply and installation (including wiring); complete; surface mounting; include for all accessories and fixings; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification					
A	20amp SPN Isolator switch IP65	12	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
C	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
D	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
E	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
F	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
G	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
H	Identification plates, labels and the like	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	(65) PROTECTIVE SERVICES - EARTHING AND BONDING					
	System					
	Earthing and Bonding; installation; testing and commissioning; The contractor shall undertake to effectively earth the whole of the electrical installation in accordance with the National Rules for Electrical Installations IS-10101:2020. Main equipotent earth bonding should be provided from each of the following items, as a minimum, to the main earthing bar: Incoming Water Main, Incoming Gas Main, Metal drainage pipes, Structural Steelwork, Main Heating Pipework, Main Ventilation Ductwork, Lightning Protection System, Comms Rooms, Supplementary earth bonding shall be carried out on extraneous metal parts at the following locations: Metallic Wireways and Containment, Suspended Ceiling Grids, Wash Hand Basins, Showers, Sinks, WC's, Cleaners Sinks, Catering equipment, Metal worktops, Plantroom Pipework (e.g. across pumps, valves, vessels, etc.); all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.6 (60)E001					
A	Earthing and Bonding	1	item			
	Fittings					
	Earth terminal bar; supply and installation; c/w insulating shrouds to I.S. 10101:2020 and of suitable capacity for the number and size of cables to be connected; all in strict accordance with the Electrical Engineers Specification Vol. 2/A Part 9					
B	Earth terminal bar	1	nr			
	Main earth conductor cable; supply and installation complete; 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
C	Earth terminal bar to earth pits	1	item			
D	Earth terminal bar to Surge arrestor	1	item			
	Main earth conductor cable; supply and installation complete; Cable 1 x 1 core 120mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
E	From ESB to earth terminal bar	1	item			
	Equipotent earth bonding; supply and installation complete; Cable 1 x 1 core 10mm2 LSF green/yellow earth cable; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
F	Incoming Water Main	1	item			
G	Incoming Gas Main	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metal drainage pipes	1	item			
B	Structural Steelwork	1	item			
C	Main Heating Pipework	1	item			
D	Main Ventilation Ductwork	1	item			
E	Lightning Protection System	1	item			
F	Lift shaft steel work	1	item			
G	Eircom DP	1	item			
	Supplementary earth bonding; supply and installation complete; 2.5mm2 LSF green/ yellow earth cable; shall be carried out on extraneous metal parts at the following locations; Design parameters as defined within I.S 10101: 2020 regulations; all in strict accordance with the Electrical Engineers Specification Part 1, Section Volume 2/A Part 9					
H	Metallic Wireways and Containment	1	item			
J	Suspended Ceiling Grids	1	item			
K	Wash Hand Basins	1	item			
L	Showers	1	item			
M	Sinks	1	item			
N	WC's	1	item			
P	Cleaners Sinks	1	item			
Q	Catering equipment	1	item			
R	Metal worktops	1	item			
S	Plant room Pipework	1	item			
	<u>General Earthing and Bonding</u>					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
T	Generally	1	item			
	<u>General</u>					
	Testing and commissioning; all in accordance with Engineers Specification					
U	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(65) SECURITY & PROTECTION - SURGE PROTECTION					
	System					
	Transitent & Overvoltage Protection installation, testing and commissioning; The Contractor shall be responsible for the supply and installation of all incoming and outgoing cables (of all types) to be provided with Lightning/Surge Protection devices; The electrical contractor shall ensure allowance for surge protection at all panels within his scope and those provided by others; all in accordance with the Electrical Specification Section Volume 1, Volume 2 and Drawings 4.6 (60)E001					
F	Transitent & Overvoltage Protection	1	item			
	Fittings					
	Surge Suppression Devices; installation (including wiring); complete; Lighting/ Surge Protection devices Type 1 and Type 2 to I.S. EN 62305:2006; all in strict accordance with the Electrical Specification and Drawing 4.6(60)E001					
G	Surge Protection; 400V TP&N,Type 1 & 2; Existing Switch Board	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Specification					
H	Generally	1	item			

To Collection €

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
B	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
C	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
D	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
E	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
F	Identification plates, labels and the like	1	item			
	(68) MECHANICAL WIRING INSTALLATIONS					
	Mechanical Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplies; all in accordance with the Mechanical and Electrical Specification and Drawings 4.6 (50)M005					
G	Mechanical Wiring Installation	1	item			
	Fittings					
	Gas detection system mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the 4.6(50)M005					
H	Gas detection control panel (Location: Boiler room)	1	nr			
J	80mm dia Gas solenoid valve	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Emergency Stop Button	1	nr			
B	Gas detector	5	nr			
C	Heat detector	5	nr			
	Frost protection mechanical wiring provisions and final connections (ONLY); installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all LV/ELV control wiring cables to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Drawing 4.6 (50)M005					
D	Oil filled Electric radiator; Size 1000mm long x 500mm high; Output 1000w	1	nr			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers					
E	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
F	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
G	Operating and maintenance manuals; complete	1	item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
H	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
J	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
K	As built drawings; complete	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
A	Identification plates, labels and the like; complete	1	item			
	(68) BMS WIRING INSTALLATIONS					
	System					
	BMS Wiring Installation; testing and commissioning; complete; Electrical Contractor must provide and issue as installed drawings for all electrical cabling associated with mechanical services. All wiring for mechanical services must be carried out under this contract to include wiring for heating, ventilation etc. The wiring to all mechanical devices must be taken from dedicated MCC (motor control center) panels supplied as a 'Free Issue' item by the Mechanical Contractor as part of the BMS installation, and must be installed and connected up by the electrical contractor. Generally, the MCC panels must be installed in boiler houses, plant rooms, etc.; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.6 (5-)M004					
B	BMS Wiring Installation	1	item			
	Equipment					
	Mechanical Control Panel; Mechanical and BMS wiring installation, testing and commissioning; complete; The Contractor shall allow for all wiring associated with the installation of the MCC and BMS outstations; The Contractor shall allow for all switchgear as indicated on the electrical services connection schedules and reflected on the electrical services layouts; all in accordance with the Mechanical Engineers Specification Volume 1, Volume 2, Volume 3, Volume 4, Control points list and Drawing 4.6(5-)M004					
C	Mechanical Control Center; Ref: MCC Panel, Location: Plant Room	1	item			
D	Mechanical Control Center; Ref: MCC Panel, Location: Biomass Unit	1	item			
	Remote data transmitter, testing and commisssioning; complete; Install loggers and determine the maximum electrical load (MIC) across all phases for the entire school; all in accordance with the Mechanical & Electrical Specification and Drawing 4.6(5-)M004					
E	Remote data transmitter; Boiler Room	1	nr			
	GSM modem; supply and installation; c/w dedicated SIM card, cabling and power supplies; contractor to maintain system for duration of supply contract; include for all fittings and accessories; testing and commissioning, complete; all in accordance with the Mechanical Specification					
F	GSM modem	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fittings					
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Plant room					
A	Pressurisation Unit - Low level fault	1	nr			
B	Pressurisation Unit - High level fault	1	nr			
C	Pressurisation Unit - Run indication	1	nr			
D	Main Header - Flow temperature sensor	2	nr			
E	Main Header - Return temperature sensor	2	nr			
F	Main Header - Imersion frost	2	nr			
G	Boiler - Enable	3	nr			
H	Boiler - Temperature set point	3	nr			
J	Boiler - Common alarm	3	nr			
K	Boiler - Shunt pump fault/enable	3	nr			
L	Boiler - Flow temperature sensor	3	nr			
M	Boiler - Burner currently firing feedback	3	nr			
N	Biomass - Enable/fault	1	nr			
P	Biomass - Temperature set point	1	nr			
Q	Biomass - Common alarm	1	nr			
R	Biomass - Primary pump head 1 fault/enable	1	nr			
S	Biomass - Primary pump head 2 fault/enable	1	nr			
T	Biomass - Pump 1 flow set point	1	nr			
U	Biomass - Pump 2 flow set point	1	nr			
V	Biomass - Flow temperature sensor	1	nr			
W	Biomass - Return temperature sensor	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	VT Circuit - Pump head 1 enable/fault	1	nr			
B	VT Circuit - Pump head 2 enable/fault	1	nr			
C	VT Circuit - Flow temperature sensor	1	nr			
D	VT Circuit - Return temperature sensor	1	nr			
E	VT Circuit - 3-port mixing valve	1	nr			
F	Trace heating - Enable/fault	1	nr			
G	Main Secondary Calorifier - Pump head 1 enable/ fault	1	nr			
H	Main Secondary Calorifier - LPHW return temperature	1	nr			
J	Main Secondary Calorifier - 2-port mixing valve	1	nr			
K	Main Secondary Calorifier - Calorifier temperature	1	nr			
L	Main Secondary Calorifier - 3-port diversion valve	1	nr			
M	Main Secondary Calorifier - HWSR pump 1 enable/ fault	1	nr			
N	Main Secondary Calorifier - Sacrificial annode	1	nr			
P	Main Secondary Calorifier - 2-port valve	1	nr			
Q	Main Secondary Calorifier - High limit stat	1	nr			
R	Gas Detection - Gas detector 1	1	nr			
S	Gas Detection - Gas detector 2	1	nr			
T	Gas Detection - Gas detector 3	1	nr			
U	Gas Detection - Heat detector 1	1	nr			
V	Gas Detection - Heat detector 2	1	nr			
W	Gas Detection - Heat detector 3	1	nr			
X	Gas Detection - Fire alarm interface	1	nr			
Y	Metering - Main Gas meter	1	nr			
Z	Metering - Gas meter to boilers	1	nr			
AA	Metering - Gas meter to Water heater	1	nr			
BB	Metering - Mains water meter	1	nr			
CC	Metering - Cold water to hot water meter	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Metering - Rainwater usage meter	1	nr			
B	Metering - Flushing water meter	1	nr			
C	Metering - Heat Meter modbus	5	nr			
D	Frost protection - External temperature sensor	1	nr			
E	Frost protection - External Frost Senor	1	nr			
F	Data connection to MCC-Biomass	1	nr			
	BMS final connections and wiring installation, testing and commissioning; complete; The Electrical Specialist shall include for the supply and installation of all 6 core 0.6mm2 PVC/LZOH ELV control wiring cables fed from the MCC panel to mechanically operated items installed under this contract; cables shall be drawn in trunking/ cable trays; all in accordance with the Electrical Engineers Specifications and Control points schedule					
	MCC Panel - Biomass Unit					
G	Fire alarm interface	1	nr			
H	Biomass - Enable/fault	1	nr			
J	Buffer temperature Sensor H/L	1	nr			
K	Buffer temperature Sensor M/L	1	nr			
L	Biomass boiler back end protection	1	nr			
M	Biomass boiler flow temperature sensor	1	nr			
N	Biomass boiler return temperature sensor	1	nr			
P	Heat exchanger pump (primary) - Enable/Fault	1	nr			
Q	Heat exchanger pump (secondary) - Enable/Fault	1	nr			
R	Primary heat exchanger flow temperature sensor	1	nr			
S	Primary heat exchanger return temperature sensor	1	nr			
T	Secondary heat exchanger flow temperature sensor	1	nr			
U	Secondary heat exchanger return temperature sensor	1	nr			
V	Pressurisation Unit - Enable / fault	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Final Circuits (including all points terminations)					
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification, Control points schedule and Drawing (5-)M004					
	Final Circuits - MCC - Plant room					
A	Power - Pressurisation Unit; SPN 20amp	1	nr			
B	Power - Boiler; SPN 20amp	3	nr			
C	Power - Shunt pump; SPN 20amp	3	nr			
D	Power - Trace heating; SPN 20amp	1	nr			
E	Power - Heat meter; SPN 20amp	5	nr			
F	Power - Calorifier sacrificial annode; SPN 20amp	1	nr			
G	Power - Gas detection panel; SPN 13amp	1	nr			
H	Power - VT circuit pump head 1; TPN 20amp	1	nr			
J	Power - VT circuit pump head 2; TPN 20amp	1	nr			
K	Power - Calorifier pump head 1; TPN 20amp	1	nr			
L	Power - Calorifier HWSR pump 1; SPN 20amp	1	nr			
	Final Circuits; installation, testing and commissioning; Complete; Final circuits shall be fed from local sub-distribution board; Installation: Sub-circuit wiring SWA/XLPE/LZOH & earth; shall be drawn in concealed galvanized steel conduit and/or galvanized steel trunking; all in accordance with the Electrical Engineers Specification and Drawing (5-)M004					
	Final Circuits - MCC - Biomass Unit					
M	Power - Biomass Unit; TPN 100amp	1	nr			
N	Power - Biomass primary pump head 1; SPN 20amp	1	nr			
P	Power - Biomass primary pump head 2; SPN 20amp	1	nr			
Q	Power - Pressurisation Unit; SPN 20amp	1	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
A	General Earthing and Bonding; complete		item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers Specification Documents					
B	Testing and commissioning; complete		item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers Specification Documents					
C	Operating and maintenance manuals; complete		item			
	Working drawings; all in accordance with the Electrical Engineers Specification Documents					
D	Working drawings; complete		item			
	Co-ordination drawings; all in accordance with the Electrical Engineers Specification Documents					
E	Co-ordination drawings;complete		item			
	As built drawings; all in accordance with the Electrical Engineers Specification Documents					
F	As built drawings; complete		item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers Specification Documents					
G	Identification plates, labels and the like; complete		item			
H						
	ELECTRICAL INSTALLATIONS					
	Sundries and Builders Work					
	General Attendances					
J	Provide all general attendances in accordance with Arm 4.	1	item			
K	Provide use of the Main Contractors temporary roads and hardstandings.	1	item			
L	Provide use of the Main Contractors scaffolding.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
B	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
C	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
D	Provide temporary distribution systems for lighting, power, water and fuel for the execution of the Electrical services works, including testing and commissioning, and pay all ongoing operation charges.	1	item			
E	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
F	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
G	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
H	Include for unloading, hoisting/cranage and placing into position all items of heavy plant supplied by the subcontractors.	1	item			
J	Allow for maintaining all ducts, chases , trenches, trunking, etc., clean and free of all water, debris and rodents at all times.	1	item			
K	Allow for making good and fire sealing of all builders work opes with proprietary sealant to Architects details, where services penetrate fire zones.	1	item			
L	Fire proofing (material) around ducts and pipework shall be the responsibility of the Main Contractor	1	item			
M	Timber grounds shall be provided within stud partitions to facilitate fixing of wall mounted accessories	1	item			
	<u>Special Attendances</u>					
N	Provide all special attendances in accordance with Arm 4 Work Section B Clause 3.1	1	item			
P	Provide temporary access roads and hardstanding in connection with heavy items of plant and the like, forming part of the site establishment works	1	item			
Q	Provide scaffolding internal and external to the building to facilitate installation of high-level electrical services during the contract	1	item			
R	Provide use of the Main Contractors standing power operated hoisting plant.	1	item			
S	Provide adequate barriers/tape/signage of exclusion zoning in relation to use of access equipment and ACOPs for working at height	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide construction signage (internal and external) in relation to M&E services e.g live systems etc.	1	item			
B	Provide temporary lighting and power in accordance with IS10101 Wiring Regulations.	1	item			
C	Provide protection to all M&E services installations installed during the works including protection against debris and water ingress	1	item			
D	Provide fire stopping to all electrical services on the vertical and horizontal planes throughout the entire buildings	1	item			
E	Ensure close coordination during the building phase to ensure electrical, ventilation and mechanical services are installed and integrated within the building fabric as designed.	1	item			
F	Provide grounds and fixings for suspension of Electrical services; Electrical loading = 10kg/m Mechanical loading = 40kg/m	1	item			
G	Provide boxing out of containment and pipework as necessary, boxing to be accessible with screwed access.	1	item			
H	Main contractor shall employ a full time M&E Co-ordinator for the duration of the contract works and their duties shall include but not limited to details set out within the specification A2.4 Part 1 of 4 particular specification document	1	item			
J	Contractor shall be aware that drawings are indicative only including the minimum ope sizes; It will be the contractors responsibility in conjunction with their in-house M&E services coordinator to produce construction stage builders works drawings for DT comment	1	item			
K	Provide safe access and task lighting for electrical sub-contractor to all sections of school roofspace	1	item			
L	Provide safe access for electrical sub-contractor to all sections of the site	1	item			
M	The M&E installation within the SEN accommodation is to be a fully recessed installation. The contractor shall include for casting in of all electrical services and recessing of all radiators within the wall panels	1	item			
N	Seal all incoming services to prevent ingress of vermin	1	item			
P	Fire Stopping to all services penetrations throughout	1	item			
Q	Attendance to electrical sub-contractor	1	item			
R	Provide accommodation for the subcontractors staff for eating, site lavatories, site washing facilities and cloakroom facilities.	1	item			
S	Each sub-contractor shall be permitted the free use, in common with other trades engaged on the site, of any available water supply, temporary plumbing and electrical services.	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	Provide safe and dry storage accommodation for the sub-contractors materials, plant and tools.	1	item			
B	Provide space for the provision by the sub-contractors of their own site offices.	1	item			
C	Provide temporary telephone services to the Electrical Contractors temporary office and pay all charges associated with installation and operation.	1	item			
D	Provide temporary power supplies (3 phase 400V and maximum loading 15kVA) for welding, handtools, and for commissioning, including infrastructure and all charges fot the contractors use of the facility.	1	item			
E	Provide scaffolding additional to the main contractors standing scaffolding, or access towers if required.	1	item			
F	Protection/Maintenance, provide covers for placing on live equipment/fittings in areas under construction at the start of each work day and removing the covers at the end of each work day	1	item			
G	Provide facilities for safe removal and disposal of all materials off site	1	item			
H	Provide a week by week program detailing the Mechanical and Electrical service activities	1	item			
J	Provide for heating / drying out the building as and when necessary to comply with their program. This may be done (at the clients specific consent) with the installed conventional heating system (if available). Be responsible, however, for providing the fuel to do this. Be responsible for maintaining background heat until the building is handed over to the client, after the heating system has been commissioned	1	item			
K	Provide and maintain the specific temperatures and humidity levels	1	item			
L	Provide Builders Attendances to all utility services as follows; Gas Networks Ireland, Eir, Virgin Media, Local Authority, ESB Networks.	1	item			
M	Fire stopping requirements of all services penetrations through fire compartment structures to be the responsibility of the building contractor. In addition, all pipework, ductwork, containment and service penetrations shall be fire-stopped where passing through every wall, floor and ceiling regardless if its a fire compartment or not by main contractor. Refer to M&E services drawings indicating main routes of M&E infrastructure. All instances of firestopping shall be labelled and certified using CE certified products including fire-pillows for use inside electrical trunkings.	1	item			
	Unload, hoist, distribute and place in position the following items of heavy plant and equipment					
N	Main switch board	1	item			
P	Sub-distribution boards	1	item			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
A	MCC panel	1	item			
B	Containment	1	item			
C	Cabling	1	item			
D	Lighting	1	item			
E	PV Panels	1	item			
	Sundries & Builders Work					
	General					
F	Marking positions of holes, mortices and chases	1	item			
G	Testing & Commissioning	1	item			
H	Preparing drawings of "as completed" installations	1	item			
J	Identification plates, labels and the like; Provide and fit colour identification markers to ceiling hatches to mark the location of isolating devices within ceiling voids	1	item			
K	Keys, tools and spares	1	item			
	Forming or cutting holes/mortices/chases and the like; including sleeves/plates, intumescent collars; making good structure and finishes; include for a fully completed installation where nothing must remain to be done to the installation by others; in strict accordance with the Architects/ Services Engineers drawings, schedule and specifications					
L	cutting or forming holes is deemed to include all finishes and decorations both sides of the structure		note			
M	cutting or forming opes is deemed to include the making good and sealing of the ope		note			
	Cutting or forming holes through existing external walls various thicknesses; include for building in sleeves; making good all finishes on completion					
N	440mm x 225mm opes	2	nr			
	Cutting or forming holes through existing internal walls various thicknesses; include for building in sleeves; making good all finishes on completion					
P	440mm x 225mm opes	5	nr			
				To Collection €		

					€	c
	(6-) ELECTRICAL INSTALLATION (Cont)					
	Fire stopping system to multiple and single service penetrations; including intumescent boards, fire stop laminate; intumescent foams and mastic; intumescent pillows; intumescent putty; mineral wool rigid batts; intumescent collars and sealants to achieve 1 hour fire resistance; all in accordance with the Architects specification P12					
	Special works were services pass through structures; existing external walls various thicknesses, making good all finishes on completion					
A	440mm x 225mm opes	2	nr			
	Special works were services pass through structures; existing internal walls various thicknesses, making good all finishes on completion					
B	440mm x 225mm opes	5	nr			
				To Collection €		

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/37					
Page No. Lot 4.6 Works Con/38					
Page No. Lot 4.6 Works Con/39					
Page No. Lot 4.6 Works Con/40					
Page No. Lot 4.6 Works Con/41					
Page No. Lot 4.6 Works Con/42					
Page No. Lot 4.6 Works Con/43					
Page No. Lot 4.6 Works Con/44					
Page No. Lot 4.6 Works Con/45					
Page No. Lot 4.6 Works Con/46					
Page No. Lot 4.6 Works Con/47					
Page No. Lot 4.6 Works Con/48					
Page No. Lot 4.6 Works Con/49					
Page No. Lot 4.6 Works Con/50					
Page No. Lot 4.6 Works Con/51					
Page No. Lot 4.6 Works Con/52					
Page No. Lot 4.6 Works Con/53					
Page No. Lot 4.6 Works Con/54					
Page No. Lot 4.6 Works Con/55					
Page No. Lot 4.6 Works Con/56					
Page No. Lot 4.6 Works Con/57					

				€	c
(6-) ELECTRICAL INSTALLATION (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/58					
(6-) ELECTRICAL INSTALLATION **Carried to Summary**					

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND					
	EXCAVATION AND EARTHWORK					
	Excavation					
	Excavation					
	Reduce levels					
A	Depth between not exceeding 2.00m	62	m3			
	Extra on Excavation Items for:					
	Breaking up existing					
B	Hard surfaces; Tarmacadam surface; 100mm thick; complete	88	m2			
	Disposal					
	Water					
C	Surface	1	item			
D	Ground	1	item			
	Excavated material; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
E	Disposal off site	53	m3			
F	Disposal off site; existing Tarmac; Disposal to a suitable licensed waste disposal facility	9	m3			
	Filling with hardcore to be obtained off-site; clean angular gravel 20mm, free from pyrite and macarsite as per specification					
	To make up levels					
G	Average thickness not exceeding 250mm	9	m3			
	Filling with hardcore to be obtained off-site; Clause 804 crushed stone well compacted on firm clean formation; compliant with TII Publications series 800, free from pyrite and macarsite as per specification					
	To make up levels					
H	Average thickness not exceeding 250mm	9	m3			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Filling with granular fill material to be obtained off-site; Class 6F2 compliant with TII Publications series 600, free from pyrite and macarsite; depositing in 150mm layers maximum thickness; compacting; as per Drawings and Specification					
	To make up levels					
A	Average thickness exceeding 250mm	27	m3			
	Surface treatments					
	Levelling and compacting; bottom of excavations					
B	Horizontal	88	m2			
	CONCRETE WORK					
	In-situ Concrete					
	Concrete cubes for testing					
	Provide for making concrete cubes from freshly mixed concrete; transporting and testing cubes; all as per details in the Specification					
C	Size 150 x 150 x 150mm	3	nr			
	In-situ Concrete; Reinforced					
	Grade C40/5-XF4 to IS EN 206					
	Beds					
D	Generally; Reinforced	18	m3			
	Surface Finishes					
	Brushed finish to wet concrete as per Specifications					
E	Generally	88	m2			
	Reinforcement					
	Fabric					
	A252 mesh reinforcement; 350mm laps; 350mm end laps; all in strict accordance with the Engineers Drawings and Specification					
F	Horizontal	88	m2			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Formwork					
	Formwork Generally					
	Sides of beds					
A	Height or width 250 - 500mm	58	m			
B	Extra over for forming recess in floor slab for district heating pipe; comprising 65mm dia x 400mm deep recess; include for cutting to all angles and corners	5	nr			
	SURFACE PAVINGS, FENCING AND LANDSCAPING					
	Fencing					
	Paladin Fencing; Steel mesh and wire fence to I.S. EN 10223, comprising striped mesh using 6mm horizontal wire at 145mm centres, reducing to 50mm centres on the V crimp, 4 mm wires structured with 2 No. wires at 40mm centres and 4 No. wires at 20mm centres to give a striped effect; all finished in polyester powder coating to I.S. EN 15773 & I.S. EN 12206; include for 60 x 60 x 2mm hot dipped galvanized steel posts to I.S. EN9 ISO 1461: 199 after fabrication and subsequently eletrostatically powder coated in a plant conforming to EN 1722 Part 16; post centres maximum 2080 mm; fixings: steel clips with 8 mm anti-vandal bolts; 350 x 350 x 600mm Grade C30/37 concrete bases set 100mm below ground level; all as per Specification and Drawings					
	Paladin Fencing System					
C	1800mm high above ground level	23	m			
	Extra over for					
D	Angle posts; 60x60x2 SHS posts, 1800mm high above ground level and 900mm below ground level; set in 450x450x600mm deep concrete grade C28/35 base	4	nr			
	Gates					
E	Single gate; opening size approx 1000 x 1800mm high	2	nr			
	100x100x10 SHS hot dipped galvanised SHS powder coated post; gate posts set in 1000x1000x1000mm C28/35 concrete pocket; top of concrete 300mm below ground level; galvanised to Specification and polyester powder coating to Specification in selected colour, colour to be chosen by the Architect from samples provided on site by the Contractor; complete					
	Gate Posts					
F	100 x 100 SHS posts; 1800mm high above ground level and 900mm below ground level; min 600mm embedment in concrete	4	nr			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
	Ball stop netting (over gas compound); Description: Ball stop netting system installed over the full area of the gas tank compound, fixed to and supported from the top of paladin fencing, including all necessary supports, cables, brackets and fixings; Manufacturer: Submit proposals; Performance: Complete external system to prevent ingress of balls; Contractor to design system including supports and fixings; Allow for wind loading and avoid overloading fence, provide independent supports if required; Maintain safe clearances to all gas infrastructure and access routes; Netting; Material: UV stabilised HDPE or polypropylene; Colour: Black or green; Mesh size: Max 48 mm; Twine: Min 3 mm; Cables and fixings: Stainless steel or galvanised steel support cables with tensioning gear, non-corroding proprietary fixings; Support steelwork: Galvanised steel brackets/arms as required; Execution: Install taut and secure to manufacturers recommendations; Provide access/demountable sections where required; Do not overstress or modify fence without approval; Submittals: Product data, layout drawings and structural calculations.; all as per Specification and Drawing					
	Ball stop netting					
A	Exceeding 300mm wide	33	m2			

				€	c
(30) SITE ENCLOSURES - PLANT COMPOUND (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/61					
Page No. Lot 4.6 Works Con/62					
Page No. Lot 4.6 Works Con/63					
Page No. Lot 4.6 Works Con/64					
(30) SITE ENCLOSURES - PLANT COMPOUND **Carried to Summary**					

					€	c
	(30) SITE ENCLOSURES - RETAINING WALL					
	EXCAVATION AND EARTHWORK					
	General Information					
	Information					
A	The contractor should consult with the Architect and must visit the site to ascertain the extent of the works involved under this section. No variations will be approved for works that ought to have been apparent to the contractor after a site inspection and review of the Architects drawings and specifications		note			
B	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
	Excavation					
	Excavation					
	Foundation Trenches					
C	Depth between 2.00 - 4.00m	381	m3			
	Soft spots					
D	Depth between 2.00 - 4.00m	22	m3			
	Working Space					
	Foundations					
E	Depth between 2.00 - 4.00m; backfilling trenches with clause 804 hardcore compliant with SR21 Annex E	340	m2			
	Disposal					
	Water					
F	Surface	1	item			
G	Ground	1	item			
	Excavated material; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
H	Disposal On-site	216	m3			
J	Disposal Off-site	165	m3			
K	Disposal Off-site; for soft spots	22	m3			
				To Collection €		

					€	c
	(30) SITE ENCLOSURES - RETAINING WALL (Cont)					
	Filling with hardcore to be obtained off-site; Clause 804 crushed stone well compacted on firm clean formation; compliant with TII Publications series 800, free from pyrite and macarsite as per Engineer's specification					
	To make up levels					
A	Average thickness exceeding 250mm	28	m3			
	Filling with excavated material to be obtained from on site spoil heaps; depositing and compacting as specified by the Employer's Representative					
	To make up levels					
B	Average thickness exceeding 250mm	216	m3			
	Surface treatments					
	Levelling and compacting; bottom of excavations					
C	Horizontal	76	m2			
	CONCRETE WORK					
	In-situ Concrete					
	Concrete cubes for testing					
	Provide for making concrete cubes from freshly mixed concrete; transporting and testing cubes; all as per details in Engineer's Concrete Specification					
D	Size 150 x 150 x 150mm	13	nr			
	Grade C12/15					
	Bulk filling to soft spots					
E	Generally; poured on or against earth or unblinded hardcore	22	m3			
	Blinding					
F	Generally; poured on or against earth or unblinded hardcore	4	m3			
	In-situ Concrete; Reinforced					
	Grade C30/37					
	Foundations					
G	Generally; Reinforced	23	m3			

					€	c
	(30) SITE ENCLOSURES - RETAINING WALL (Cont)					
	Walls					
A	Generally; Reinforced	28	m3			
	Reinforcement					
	Bar reinforcement; hot rolled deformed high yield steel; must be free of loose millscale and thoroughly cleaned to remove all loose rust, oil, grease or other harmful matter prior to being placed in position with and including all necessary laps, spacers, chairs and tying wire; all in strict accordance with the Engineers Drawings and Specification					
	Bar; straight or bent					
B	Nominal size not exceeding 12mm diameter	4.56	t			
C	Nominal size 12mm - 25mm diameter	6.84	t			
	Fabric					
	A393 mesh reinforcement; 350mm laps; 350mm end laps; all in strict accordance with the Engineers Drawings and Specification					
D	Horizontal	76	m2			
	Surface Finishes					
	Trowelling					
E	Generally	10	m2			
	Formwork					
	Formwork Generally					
	Sides of foundations					
F	Height or width 250 - 500mm	61	m			
	Kickers					
G	Walls	31	m			
	Walls					
H	Vertical; two side; Retaining Wall	182	m2			

To Collection €

					€	c
	(30) SITE ENCLOSURES - RETAINING WALL (Cont)					
	METALWORK					
	Non-Structural					
	Guardrail - high powder coated steel railing with 80x12mm top and bottom rail and 80x10mm balustrates @100mm c/s with 80x80 "I" post @1500mm c/s, including 80x12m flat bar at corner or end posts, joiner posts to be flat, finish to be powder-coated to BS 1722-16, joiner posts to be 1100mm high and intermediate posts to be 1500mm high; all fixed to concrete footing, all as per Architects Specification and Drawing 20059-OPP-01-ZZ-DR-A-4004-S1-P01 and Engineers Specification and Drawing 11063-7101					
	Composite Items; Railing, Complete					
A	Railing; 1500mm high	31	m			
	DRAINAGE					
	Below Ground					
	Pea Gravel fill bed and surround; granular side and fill cover to be placed uniformly on either side of the pipe in layers not exceeding 150mm, each layer being compacted by hand and tamping until the pipe has a minimum 150mm compacted cover; as per Engineer's Drawings DG0010-01 & Specification					
	Beds and Surround					
B	450 x 450mm to 150mm diameter pipe	31	m			
	Pipework; land drain pipe					
	Pipes; perforated; PVC SN8 pipework and fittings; as per Engineer's Drawings & Specification					
C	150mm diameter; include for geotextile cloth wrapping for protection	31	m			

To Collection €

				€	c
(30) SITE ENCLOSURES - RETAINING WALL (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/66					
Page No. Lot 4.6 Works Con/67					
Page No. Lot 4.6 Works Con/68					
Page No. Lot 4.6 Works Con/69					
(30) SITE ENCLOSURES - RETAINING WALL **Carried to Summary**					

					€	c
	(50) SITE SERVICES - GAS					
	DRAINAGE/SERVICES - GAS MAIN					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 1nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average Depth 500 - 1000mm	20	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	20	m			
	Around existing services crossing excavations					
E	Storm pipe; crossing excavations	3	nr			
F	Foul pipe; crossing excavations	2	nr			
G	ESB; crossing excavations	2	nr			
	Disposal					
H	Ground Water	1	item			
J	Surface Water	1	item			

					€	c
	(50) SITE SERVICES - GAS (Cont)					
	Sand bed and surround; to Engineer's Specification					
	Beds and surrounds					
A	290 x 215mm, to 90mm pipes / ducts	20	m			
	PVC marker tape "Heptape" or equivalent					
B	Continuous strip laid during trench backfill, 100mm above pipework	20	m			
	Mechanical Installations					
	Gas pipework as per Engineer's Specification & Gas Suppliers details; complete					
	Pipework					
C	Installation only of gas pipework; size: 90mm; pipe to be supplied by Gas Supplier; complete	20	m			
	Tank					
D	Contractor to provide attendances to supplier of 2 Tonne Gas Tank; complete	2	nr			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
E	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
F	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
G	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
H	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
J	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
K	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			

To Collection €

					€	c
	(50) SITE SERVICES - GAS (Cont)					
A	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			
B	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

				€	c
(50) SITE SERVICES - GAS (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/71					
Page No. Lot 4.6 Works Con/72					
Page No. Lot 4.6 Works Con/73					
(50) SITE SERVICES - GAS **Carried to Summary**					

					€	c
	(50) SITE SERVICES - DISTRICT HEATING					
	DRAINAGE/SERVICES - DISTRICT HEATING					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr duct not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported compacted stone fill; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations; as per Engineer's Drawing					
C	Average depth 500 - 1000mm	34	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
D	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	34	m			
	Around existing services crossing excavations					
E	Storm pipe; crossing excavations	3	nr			
F	Foul pipe; crossing excavations	2	nr			
G	ESB; crossing excavations	2	nr			
	Disposal					
H	Ground water	1	item			
J	Surface water	1	item			

To Collection €

	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
	Sand bed and surround; to Engineer's Specification					
	Beds and Surrounds					
A	475 x 225mm; to 2nr 100mm duct	34	m			
	PVC marker tape; "Heptape" or equivalent					
B	Continuous strip; laid during trench backfill; 100mm above pipework	34	m			
	Ductwork					
	100mm diameter					
C	Laid in trenches	68	m			
D	Extra over for easy sweep bends	4	nr			
E	Extra over for ducts capped for Biomass connection	2	nr			
	MECHANICAL INSTALLATIONS					
	Generally					
	General; complete; refer to M&E Drawings, M&E Mechanical Engineering General Specification					
	General					
F	Testing and commissioning; all in accordance with Engineers specification documents and drawings	1	Item			
G	Operating and maintenance manuals; all in accordance with Engineers specification documents and drawings	1	Item			
H	Working drawings; all in accordance with Engineerss specification documents and drawings	1	Item			
J	Co- ordination drawings; all in accordance with Engineers specification documents and drawings	1	Item			
K	As built drawings; all in accordance with Engineers specification documents and drawings	1	Item			
L	Identification plates, labels and the like; all in accordance with Engineers specification documents and drawings	1	Item			
M	Builderswork; forming and cutting holes, mortices, chases or the like, providing grounds, lifting, re-fixing and replacing as required existing chequer plates, floor boards or raised access floor panels etc. and amking good, all in accordance with Engineers specification documents and drawings	1	Item			

To Collection €

					€	c
	(50) SITE SERVICES - DISTRICT HEATING (Cont)					
A	Fire stopping and other associated fire protection works; all in accordance with Engineers specification documents and drawings	1	Item			
				To Collection €		

				€	c
(50) SITE SERVICES - DISTRICT HEATING (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/75					
Page No. Lot 4.6 Works Con/76					
Page No. Lot 4.6 Works Con/77					
(50) SITE SERVICES - DISTRICT HEATING **Carried to Summary**					

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Mechanical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATIONS					
	(50) SITE SERVICES (MAINLY MECHANICAL) - WORKS IN CONNECTION WITH BIOMASS UNIT					
	System					
	Biomass unit mechanical connections, installation, testing and commissioning; complete; The Biomass unit shall be supplied by others under a separate contract; The Contractor shall coordinate all interface requirements to ensure a fully operational installation; Prior to handover, the Contractor shall provide commissioning certification confirming that all required cleaning, flushing and water treatment procedures have been correctly carried out; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2/A Part 10, 2/B Part 17; Volume 3; Volume 4 and Drawings 4.6(5-)M002, (5-)M004, (5-)M007					
	Primary Equipment					
	Biomass unit ancillary works; Provide all labour, materials and ancillary works necessary for the coordination and completion of all mechanical connections associated with the installation, testing, commissioning and operation of the biomass boiler plant (biomass unit supplied by others under a separate contract), including all plant room interface connections and associated mechanical services works; complete; all in strict accordance with the Mechanical Engineer's Specification					
D	Biomass unit ancillary works; Location: External plant compound	1	nr			

(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)

Distribution

Pre-insulated district heating pipework and fittings; cross-linked polyethylene pipe insulation; conductivity of 0.0199 W/m2K; all joints taped and sealed; Pipework to be installed within below-ground service ducts (measure elsewhere), including all necessary supports, protection and installation accessories; all in strict accordance with the Mechanical Engineers Specification Volume 2/B

A	80mm diameter pipework	1	item		

Medium Grade Black Mild steel pipework and fittings; include for all fixings and supports; include for all elbows, expansion bellows; unions and tees necessary to complete the work; Painting: two coat of zinc chromate primer prior to fitting of insulation; all in strict accordance with the Mechanical Specification Volume 2/B

B	80mm diameter pipework	1	item		

Insulation

Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

Insulation, 65mm thick

C	to 80mm diameter pipework	1	item		

Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B

D	General Valve & Plant	1	item		

Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B

E	to 80mm diameter pipework	1	item		
F	General Valve & Plant	1	item		

To Collection €

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
A	Testing and commissioning	1	item			
B	Testing,chemical dosing, sterilization and certification of all systems	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
C	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
D	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
E	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
F	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
G	Identification plates, labels and the like	1	item			
	(50) SITE SERVICES (MAINLY MECHANICAL) - MAINS WATER					
	System					
	Mains Water connections to biomass unit installation, testing and commissioning; complete; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2. Section A/9. Water System, Section B (53) Internal water services; Volume 3; Volume 4 and Drawings 4.6(5-)M002, (5-)M004,					
	Accessories associated with Primary Equipment					
	Stop valves for isolation of MWS pipework up to 65mm Dia; Type: Lever operated butterfly valves; copper alloy ball valves to EN 13828; Ends: Threaded; all in strict accordance with Engineers Specification Volume 2/B					
H	28mm Isolation valves	2	nr			

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Non-return valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
A	28mm Non-return valves	1	nr			
	Strainer valves; include for all accessories and fittings; all in strict accordance with Engineers Specification Volume 2/B					
B	28mm Strainer valves	1	nr			
	Distribution system					
	Polyethylene pipework and fittings; all in strict accordance with the Mechanical Specification					
C	28mm diameter pipework	1	item			
	Insulation					
	Insulation; to all pipework services; Thermal conductivity: 0.025 W/m2K or better; Zero ODP and GWP; ZERO CFC and HFC in its manufacture; Fire performance to BL,s1,D0; A BRE Green Guide Rating of A+; Manufactured to BD EN ISo14001; 90% closed cell structure; All insulation shall comply with Euroclass A1; When completed, ensure surface-finish complies with BS 476-7 Class 1 spread of flame; all insulation materials shall be supplied by a manufacturer assessed and registered in accordance with IS ISO 9000-2; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
	Insulation, 50mm thick					
D	to 28mm diameter pipework	1	item			
	Valve jackets provided with Velcro fixings shall be provided on all valves, flanges, pumps and heat exchangers within the plant rooms and externally. All valve jackets used on external pipework shall be weather proof; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 2/B					
E	General Valve & Plant	1	item			
	Polyisobutylene (PIB) weather protection to external pipework, fittings and valves; PIB sheeting to be minimum 0.8 mm thick, wrapped to all insulated pipework and fittings, all joints lapped by not less than 50 mm, solvent welded and secured using stainless steel or manufacturer-approved banding; all in strict accordance with the Mechanical Specification Volume 2/B					
F	to 28mm diameter pipework	1	item			
G	General Valve & Plant	1	item			

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	General					
	Testing and commissioning; all in accordance with the Mechanical Engineers Specification Documents					
A	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Mechanical Engineers Specification Documents					
B	Operating and maintenance manuals;complete	1	item			
	Working drawings; all in accordance with the Mechanical Engineers Specification Documents					
C	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Mechanical Engineers Specification Documents					
D	Co- ordination drawings;complete	1	item			
	As built drawings; all in accordance with the Mechanical Engineers Specification Documents					
E	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Mechanical Engineers Specification Documents					
F	Identification plates, labels and the like; complete	1	item			
	(50) SITE SERVICES (MAINLY MECHANICAL) - LPG GAS					
	System					
	LPG Gas installation testing and commissioning; all in strict accordance with the Mechanical Specification Volume 1, Volume 2/A Section 8, 2/B Section 16 and Drawing 4.6(5-)M002, (5-)M004, (5-)M006					
	Equipment					
	LPG gas tanks; supply and installation; complete; Capacity: 2 tonne; Dimensions: 1500mm Diameter, 3000mm length; Mechanical attendances in connection with the installation of LPG gas tanks; including all necessary pipework connections, valves, regulators, fittings, supports, accessories, testing and commissioning as required to provide a complete installation; all in accordance with the Mechanical Engineers Specification Volume 2/A.					
G	LPG Gas Tank	1	nr			
				To Collection €		

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Accessories associated with primary equipment					
	1st Stage Regulator; supply and installation Complete; all in strict accordance with the Mechanical Specification Part 1, Section 7.3					
A	1st Stage Regulator	1	nr			
	Second stage regulator c/w tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2/A					
B	2nd Stage Regulator	1	nr			
	Isolating Valves; supply and installation; complete; include for all accessories; all in strict accordance with the Mechanical Specification Volume 2/A					
C	125mm Isolation Valves	2	nr			
	Pressure Gauge; supply and installation; complete; include for all accessories;all in strict accordance with the Mechanical Specification Volume 2/ A					
D	125mm Pressure Gauge	2	nr			
	Pressure relief valve; supply and installation; complete; include for all accessories; all in strict accordance with the Mechanical Specification Volume 2/A					
E	125mm Pressure relief Valve	1	nr			
	Tamper proof, lockable metal caging; include for all accessories and fittings; complete; all in strict accordance with the Mechanical Specification Volume 2					
F	Tamper proof, lockable metal caging	1	nr			
	Distribution System					
	HDPE pipes and fittings; all in strict accordance with the Mechanical Specification Volume 2					
G	125mm diameter pipework	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
H	Testing and commissioning	1	item			
				To Collection €		

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Operating and maintenance manuals; all in accordance with Engineers Specification					
A	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
B	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
C	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
D	As built drawings	1	item			
	Identification plates, labels and the like; all in accordance with Engineers Specification					
E	Identification plates, labels and the like	1	item			
	(50) SITE SERVICES - TRACE HEATING					
	System					
	Trace Heating installation, testing and commissioning; complete; Trace heating shall be installed on all the water systems where they travel externally between building blocks; Trace heating shall be provided complete with control panels and all required components to prevent system freezing. Capacity of trace heating shall maintain water temperature above 3°C when ambient temperature is -15°C. Trace heating temperature control shall prevent water temperature rising above 10øC. Trace heating system to incorporate air control thermostats and pipework safety cut out thermostats. All trace heating circuits shall be linked to BMS to provide status and fault indication on BMS; Supply electric trace heating complete with fixing tape, shrink sleeves, crimps, junction boxes and controls; all in strict accordance with the Mechanical Engineers Specification Volume 1; Volume 2; Volume 3; Volume 4 and Drawings					
	Primary Equipment					
	Trace heating control panel; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule					
F	Trace heating panel; Location: Plant room	1	nr			

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Accessories associated with Primary Equipment					
	Self-regulating heating tape; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule					
A	Self-regulating heating tape	1	item			
	Air control thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule					
B	Air control thermostats	1	item			
	Safety cut out thermostats; supply and installation; complete; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule					
C	Safety cut out thermostats	1	item			
	Insulation					
	Modified polyolefin electrical insulation; all joints taped and sealed; all in strict accordance with the Electrical Engineers Specification Volume 3 - Equipment Schedule					
D	80mm diameter pipework	1	item			
E	Valves and Plant; generally	1	item			
	General					
	Testing and commissioning; all in accordance with Engineers Specification					
F	Testing and commissioning	1	item			
	Operating and maintenance manuals; all in accordance with Engineers Specification					
G	Operating and maintenance manuals	1	item			
	Working drawings; all in accordance with Engineers Specification					
H	Working drawings	1	item			
	Co-ordination drawings; all in accordance with Engineers Specification					
J	Co-ordination drawings	1	item			
	As built drawings; all in accordance with Engineers Specification					
K	As built drawings	1	item			
				To Collection €		

					€	c
	(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
	Identification plates, labels and the like; all in accordance with Engineers Specification					
A	Identification plates, labels and the like	1	item			

To Collection €

				€	c
(50) SITE SERVICES (MAINLY MECHANICAL) (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/79					
Page No. Lot 4.6 Works Con/80					
Page No. Lot 4.6 Works Con/81					
Page No. Lot 4.6 Works Con/82					
Page No. Lot 4.6 Works Con/83					
Page No. Lot 4.6 Works Con/84					
Page No. Lot 4.6 Works Con/85					
Page No. Lot 4.6 Works Con/86					
Page No. Lot 4.6 Works Con/87					
(50) SITE SERVICES (MAINLY MECHANICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL)					
	Notes					
A	The tendering contractors are referred to ARM 4 supplement 2, Agreed Alternative Rules for the Measurement of Services Installations (Issue 1, 2013), used in the production of this section of the pricing document.		note			
B	The following works are to be priced in accordance with the detailed design; performance specifications and scheme drawing numbers (list included in the Works Requirements) as prepared by BDP Consulting Engineers.		note			
C	Builders work in connection with the contract works such as cutting or drilling of holes, forming apertures, chases in walls, floors and ceilings will be carried out by the Works Specialist under the terms of the main contract. The Electrical Specialist shall be responsible for the correct marking out of all attendances, and all other cutting to be performed by the Works Specialist.		note			
	ALTERNATIVE RULES FOR THE MEASUREMENT OF ELECTRICAL SERVICES					
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER TO BIOMASS UNIT					
	System					
	Power to Biomass Unit installation, testing and commissioning; complete; The electrical contractor shall provide all wiring and power supplies associated with the external Biomass Unit as detailed on the wiring schematic; all underground electrical services cables shall be distributed within ducts; separate underground service ducts shall be provided as part of the builders works element; all in strict accordance with the Electrical Engineers Specification Volume 1, Volume 2 - Section A and Drawings 4.6(5-)M002					
D	Biomass Power Installation	1	item			
	Accessories associated with terminal equipment					
	Rotary Isolator Switch; supply and installation (including wiring & terminations); complete; surface mounting; c/w galvanised steel back boxes; include for all accessories and fixings; all in strict accordance with the Electrical Specification Volume 2					
E	Rotary Isolator; TPN; 50amp; IP65	1	nr			
				To Collection €		

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
	Mains and Sub-mains cables					
	Supply and Installation of sub-mains cable from Existing switch board, located in the existing switch room; Sub-mains distribution outside the building shall be via XLPE/LZOH/SWA armoured cables laid in underground ducts; a separate CPC shall be installed with every sub-mains feed and shall be of the size detailed on the drawings; cables shall be terminated at both ends; all in strict accordance with the Electrical Engineers Specification Volume 2, Section A and Drawing 4.6 (60)E001					
A	Submains; Existing switch board to Biomass Unit-1; 1 x 4c 35sq.mm XLPE/LZOH/SWA + 16sq.mm CPC	1	item			
	General Earthing and Bonding					
	General Earthing and Bonding; Design parameters as defined within I.S 10101: 2020 regulations; all in strlct accordance with the Electrical Engineers Specification					
B	Generally	1	item			
	General					
	Testing and commissioning; all in accordance with the Electrical Engineers specification documents and drawings					
C	Testing and commissioning; complete	1	item			
	Operating and maintenance manuals; all in accordance with the Electrical Engineers specification documents and drawings					
D	Operating and maintenance manuals; complete	1	nr			
	Working drawings; all in accordance with the Electrical Engineers specification documents and drawings					
E	Working drawings; complete	1	item			
	Co- ordination drawings; all in accordance with the Electrical Engineers specification documents and drawings					
F	Co- ordination drawings; complete	1	item			
	As built drawings; all in accordance with the Electrical Engineers specification documents and drawings					
G	As built drawings; complete	1	item			
	Identification plates, labels and the like; all in accordance with the Electrical Engineers specification documents and drawings					
H	Identification plates, labels and the like; complete	1	item			
				To Collection €		

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					

To Collection €

				€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) (Cont)					
COLLECTION					
Page No. Lot 4.6 Works Con/89					
Page No. Lot 4.6 Works Con/90					
Page No. Lot 4.6 Works Con/91					
(60) SITE SERVICES (MAINLY ELECTRICAL) **Carried to Summary**					

					€	c
	(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT					
	General Information					
	Information					
A	When pricing the following items the Contractor's attention is drawn to the location of the site. The Contractor should also visit and check the site. No claims on the grounds of want of knowledge in respect of the above will be entertained whatsoever.		note			
B	Any un-authorised excavations below the required level shall be made up with concrete of the same composition as for drain beds at the Contractors own expense; all as per Architects Specification		note			
C	The contractor shall also ascertain whether or not there are any E.S.B. cables on the site and arrange for their removal so that it does not delay site progress. All, redundant site services/site services made redundant, for all utilities and services, will be removed as part of the contract.	1	item			
	Builders work in connection with all installation					
	Excavation					
	Excavating trenches to receive 2nr ducts not exceeding 250mm diameter, earthwork support to sides of trenches; include for excavating below ground water level; grading bottoms of excavations; backfilling with imported hardcore; disposal of surplus soil off site; All surplus materials to be disposed of off-site to a licenced waste disposal facility granted by the EPA under Section 40 of the Waste Management Act or by the Local Authority under the Waste Facility Permit Regulations					
D	Average depth 500 - 1000mm	34	m			
	Extra over excavating trenches irrespective of depth					
	Breaking up & Reinstating					
E	Breaking out hardurfacing; saw cutting surface; include for reinstating surfacing to match existing including Type 804 sub base material where necessary; fair jointing to fair edges; disposal of excavated material off site; include for replacing associated concrete kerbs; all to satisfaction of Engineers Specification & Drawings	34	m			
	Around existing services crossing excavations					
F	Storm pipe; crossing excavations	3	nr			
G	Foul pipe; crossing excavations	2	nr			
H	ESB; crossing excavations	2	nr			
				To Collection €		

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)

	Disposal					
A	Ground water	1	item			
B	Surface water	1	item			
	Plain in-situ concrete bed and surround; minimum 150mm bed; Class 16/20; leanmix concrete backfill; as per Engineer's Drawing					
	Beds and Surrounds					
C	595 x 325mm; to 2nr ducts	34	m			
	PVC Red marker tape; "Heptape" or equivalent					
D	Continuous strip; laid during trench backfill; 100mm above pipework	34	m			
	PVC Yellow marker tape; "Heptape" or equivalent					
E	Continuous strip; laid during trench backfill; 300mm above pipework	34	m			
	Ductwork; uPVC duct; LV Duct					
	110mm dia.; include for draw-wire					
F	Laid in trenches	34	m			
G	Extra over for easy sweep bends	2	nr			
H	Extra over for ducts capped for Biomass connection	1	nr			
	Ductwork; uPVC duct; Comms Duct					
	110mm dia.; include for draw-wire					
J	Laid in trenches	34	m			
K	Extra over for easy sweep bends	2	nr			
L	Extra over for ducts capped for Biomass connection	1	nr			

To Collection €

					€	c
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)						
	Chambers					
	Draw pit chamber; complete; excavating pits from stripped level 1000x1000x800mm deep internally; dispose of surplus soil; grading bottom; earthwork support; open bottom pit filled with 50mm course gravel for drainage; RC3 concrete base on 50mm blinding grade gen 3; Concrete roof slab grade C25 c/w opening for cover and frame; 225mm thick Class B engineering brickwork in english bond; Walls: 1000mm high with 50mm rebate for removable cover; include for openings for ducts; Heavy duty cast iron cover and frame to Engineer's Specification bedded in epoxy mortar; include for step irons; all pvc pipes to fall away from building and all pits should not waterlog; pipes to be buried 750mm below ground level; include for backfilling to sides of chamber where necessary; all in accordance with the site plan Drawing					
A	Average depth not exceeding 1000mm	2	nr			
	Sundries					
B	Allow for sealing all incoming service ductwork to prevent ingress of damp, dirt and vermin	1	item			
C	Allow for clearance between Telecom ducts and ESB ducts and cables over 650 volts; of 300mm vertical clearance at crossings and 600mm lateral clearance in parallel trenches	1	item			
D	Allow for clearance between ESB ducts and cables and other service ducts; 150mm vertical clearance at crossings and 300mm lateral clearance in parallel trenches	1	item			
E	Provide for all necessary attendances on ESB to include liaising with ESB before, during and after installation of electrical services and providing and making available site data for their use	1	item			
F	Provide markings/signage of ESB cables at locations as agreed with Local Engineering Officer and in accordance with ESB Specifications; as per Engineer's Drawing	1	item			
G	Provide all necessary attendances and builders work in association with disconnecting and removing existing underground ESB supply; complete	1	item			

To Collection €

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT (Cont)

COLLECTION

Page No. Lot 4.6 Works Con/93

Page No. Lot 4.6 Works Con/94

Page No. Lot 4.6 Works Con/95

(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT
Carried to Summary

		€	c
SUMMARY	**Page No.**		
(10) DEMOLITIONS AND ALTERATIONS	Lot 4.6 Works Con/2		
(35) & (45) CEILING FINISHES	Lot 4.6 Works Con/4		
(5-) MECHANICAL INSTALLATION	Lot 4.6 Works Con/36		
(6-) ELECTRICAL INSTALLATION	Lot 4.6 Works Con/60		
(30) SITE ENCLOSURES - PLANT COMPOUND	Lot 4.6 Works Con/65		
(30) SITE ENCLOSURES - RETAINING WALL	Lot 4.6 Works Con/70		
(50) SITE SERVICES - GAS	Lot 4.6 Works Con/74		
(50) SITE SERVICES - DISTRICT HEATING	Lot 4.6 Works Con/78		
(50) SITE SERVICES (MAINLY MECHANICAL)	Lot 4.6 Works Con/88		
(60) SITE SERVICES (MAINLY ELECTRICAL)	Lot 4.6 Works Con/92		
(60) SITE SERVICES (MAINLY ELECTRICAL) - POWER & COMMS TO BIOMASS UNIT	Lot 4.6 Works Con/96		
TOTAL AMOUNT CARRIED TO GENERAL SUMMARY			
Lot 4.6 Works Con/1 - Lot 4.6 Works Con/96.			

GENERAL SUMMARY

						€	
		GENERAL SUMMARY					
		Amount for:					
A		**PRELIMINARIES**					
B		**4.1 - Loreto College**					
C		**4.2 - Bailieborough Community School**					
D		**4.3 - St Patrick's College**					
E		**4.4 - St Macartan's College**					
F		**4.5 - Breifne College**					
G		**4.6 - Beech Hill College**					
H		**Total (excluding VAT)**			**€**		
		Provide for:					
I		entering into a bond with an approved Insurance Company which will become bound jointly and severally with the Contractor in a sum equal to 12.5% of the contract sum; paying all premiums and expenses arising; complying with all conditions of the bond; lodging the bond with the Architect		Item			
		PROJECT SUPERVISOR					
J		Provide for all costs in respect of: The appointment of project supervisor for the Construction Stage. We agree to nominate a suitably qualified person to provide the required services and have included for all costs associated with the provision of such services to fulfill the function and perform on behalf of the Employer the duties of the Project Supervisor for the Construction Stage as set out in paragraphs 6 & 7 of the safety, Health and Welfare at Works Construction Regulations 2013; complying with the Conditions of the Collateral Agreement including any additional insurance costs **(Exclusive of Value Added Tax)**		Item			
		TOTAL AMOUNT OF TENDER (EXCLUDING VAT) FORWARD TO FORM OF TENDER			**€**		

APPENDIX A - VAT SCHEDULE

SCHEDULE OF WORKS ITEMS SUBJECT TO VAT AT RATES OTHER THAN SPECIAL BUILDING RATE (13.5%)

Notes

1. Please list separately the items included in the tender amount (including M&E Items) that are liable for VAT at rates other than the special building rate (13.5%) i.e. 23% to allow for the calculation of the Employer's total VAT outlay on the contract.	Note			
2. The Employer reserves the right to seek advice from the Revenue Commissioners on the accuracy of the VAT allocations shown and, in the event of a dispute, the opinion of the Revenue Commissioners on the VAT rate appropriate to any item of work shall be final.	Note			
3. Where the cost of any items are VAT exempt or zero rated zero rated for VAT purposes the relevant items shall be itemised and the amount of the liability at this rate shall be clearly identified	Note			
4. This schedule is for information purposes only and should not be carried forward to the General summary and will therefore not be included in the Tender amount.	Note			

Ref	Description	Unit	Amount Subject to VAT at rates other than 13.5% €	VAT Percentage Amount e.g. 23% %	Amount of VAT €
	Please See Below Example on How the Schedule is to be Filled Out (For information Purposes Only)	Note			
	The following example should not form any part of the Tenderers calculation	Note			
	Example				
	Light Fittings	Item	€10,000.00	23.00%	€2,300.00
	Works Items				
A					
B		Item			
C		Item			
D		Item			
E		Item			
F		Item			
G		Item			
H		Item			
I		Item			
J		Item			
K		Item			
L		Item			
M		Item			
N		Item			

Ref	Description	Unit	Amount Subject to VAT at rates other than 13.5% €	VAT Percentage Amount e.g. 23% %	Amount of VAT €
	Works Items				
A		Item			
B		Item			
C		Item			
D		Item			
E		Item			
F		Item			
G		Item			
H		Item			
I		Item			
J		Item			
K		Item			
L		Item			
M		Item			
N		Item			
O		Item			
P		Item			
Q		Item			
R		Item			
S		Item			
T		Item			
U		Item			
V		Item			

Ref	Description	Unit	Amount Subject to VAT at rates other than 13.5% €	VAT Percentage Amount e.g. 23% %	Amount of VAT €
	Works Items				
A		Item			
B		Item			
C		Item			
D		Item			
E		Item			
F		Item			
G		Item			
H		Item			
I		Item			
J		Item			
K		Item			
L		Item			
M		Item			
N		Item			
O		Item			
P		Item			
Q		Item			
R		Item			
S		Item			
T		Item			
U		Item			
V		Item			

McGAHON
SURVEYORS

Block 1, Quayside Business Park
Mill Street, Dundalk Co Louth
Tel: + 353 (0) 42 933 1192
Email: info@mcgahonsurveyors.com

6 St. Colman's Park, Newry,
Co. Down, BT34 2BX
Tel: +44 (0) 28 30833074
Email: newry@mcgahonsurveyors.com

www.mcgahonsurveyors.com