

Bill of Quantities

Project: CETB Biomass – Heating Upgrade Works	Details: Mechanical
Building: Carrigaline Community School	

Auto code	Description	Quantity	Unit	Rate	Total
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(00) EXTERNAL WORKS

	ENERGY CABIN CIVIL & SITE WORKS				
	<u>BUILDERS WORK</u>				
1	The works include, but are not limited to, site preparation, excavation, concrete foundations, service ducting, drainage works, hardstanding areas, access routes, reinstatement works, and all associated ancillary civil works required to facilitate the complete installation and operation of the Energy Cabin and associated infrastructure.		Note		
	<u>The Contractor shall allow for all labour, supervision, plant, materials, temporary works, traffic and pedestrian management, testing, commissioning support, and compliance with all relevant statutory requirements, specifications, drawings, and health and safety regulations necessary for the proper execution and completion of the works.</u>				
2	Reinforced concrete foundation slab, including excavation, formwork, reinforcement and finishing to required tolerances	63.00	m2		
3	Trenching for underground services, including excavation, bedding, backfill and reinstatement	1.00	item		
4	Underground primary LPHW flow and return pipe stubs terminated at cabin location	1.00	item		
5	Plinths, hardstanding and access provisions	1.00	item		
	Other Items				
6	Provide for all labour, materials, plant and all items which in the tenderers opinion are not specifically allowed for in this section of the works but which can be reasonably inferred from the works requirements as being necessary for the execution and completion of the works. – (List items below)	1.00	item		
7		1.00	item		
8		1.00	item		
9		1.00	item		
10		1.00	item		
11		1.00	item		
12		1.00	item		
13		1.00	item		
14		1.00	item		

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To Collection: 0

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(51) HEATING CENTRE

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	<u>ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATION</u>				
	<u>INFORMATION REQUIRED</u>				
1	1. Minimum information which must be shown on the drawings that accompany this section – scope and location of work.				
2	2. Information which must accompany this section – relevant drawings and specifications.				
3	3. Mandatory information to be provided – detailed description of the system giving specified output requirements.				
4	4. The tenderer is referred to the Mechanical Services Drawings, Mechanical Equipment Schedules and Mechanical Specification accompanying this Pricing Document.				
	<u>GENERALLY</u>				
5	1. The contractor shall note that this section is measured in accordance with the ARM4 Supplement 2 – Agreed Alternative Rules for the Measurement of Services Installations.				
6	2. The tenderer is referred to the Mechanical Services Drawings and Mechanical Specification accompanying this Pricing Document description of materials and workmanship other than those described hereafter.				
7	3. The tenderer is referred to the Works Requirements accompanying this Pricing Document.				
8	4. For preliminary particulars, please refer to tender documentation				
9	5. Plan, sections and details as shown on the Works Requirements Documents.				
10	6. Specification: Refer to Mechanical Services Work Requirements				
	<u>HEATING PLANTROOM UPGRADE</u>				
11	Mechanical Plant Installation;				
12	Include for upgrade works in each existing school plantroom, including the supply and installation of, secondary header pumps, low-loss headers, three-port modulating mixing valves, pressurisation units, expansion vessels, chemical dosing pots, dirt/air separators, strainers, valves, instrumentation and BMS outstations to provide fully modulating circulation and controllable flow temperature; as per Mechanical Services Drawings and Heating Upgrade – Mechanical Specification				
	<u>Primary Equipment:</u>				
	<u>Pumps</u>				
13	Secondary header pumps, variable speed inline type, duty and standby arrangement				
14	Flexible connectors to pumps	1.00	item		
15	Anti-vibration mounts and inertia bases to pumps	1.00	item		
16	Main Plantroom; VSD P1; Biomass Recirculation Pump	1.00	Nr		
	<u>Hydraulic Separation Equipment</u>				
17	Low-loss headers, fabricated steel	1.00	item		
18	Thermal insulation to low-loss headers	1.00	item		
19	Supports and brackets to low-loss headers	4.00	Nr		

To Collection:

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-----------	-------------	----------	------	------	-------

(51) HEATING CENTRE (Continued)

	<u>Valves & Controls</u>				
	<u>Main Plantroom</u>				
20	Biomass Flow to LLH; Ball Valve	2.00	Nr		
21	Biomass Flow to LLH; Non Return Valve	1.00	Nr		
22	LLH Return to Biomass; Fixed Orifice Double Regulating Valve	1.00	Nr		
23	LLH Return to Biomass; Ball Valve	3.00	Nr		
24	LLH Return to Biomass; Non Return Valve	1.00	Nr		
25	NG Boiler Flow to LLH; Gate Valve	1.00	Nr		
26	LLH Return to NG Boiler; Gate Valve	1.00	Nr		
27	LLH Flow to Distribution System; Gate Valve	1.00	Nr		
28	Distribution System Return to LLH; Gate Valve	3.00	Nr		
	<u>Outside Biomass Cabin</u>				
29	Biomass Flow to LLH; Ball Valve	1.00	Nr		
30	LLH Return to Biomass; Ball Valve	1.00	Nr		
31	Cold Make Up Water; Ball Valve	1.00	Nr		
	<u>Pressurisation & Water Treatment</u>				
32	Combined dirt separators	1.00	Nr		
33	Side stream filtration units	1.00	Nr		
34	Isolation valves 3" – 330 l/min	4.00	Nr		
	<u>Main Plantroom</u>				
35	Particle Filter	1.00	Nr		
36	Magnetic Filter	1.00	Nr		
37	Low Loss Header	1.00	Nr		
	<u>Instrumentation & BMS</u>				
	<u>Main Plantroom</u>				
38	Temperature Sensors; 0– 10 Barg; Direct Mounted Probe; Threaded, G 1/2	6.00	Nr		
39	Temperature Indicators; 0– 10 Barg; Direct Mounted Probe; Threaded, G 1/2	6.00	Nr		
40	Pressure Indicators; 0– 10 Barg; Direct Mounted Probe; Threaded, G 1/2	6.00	Nr		
41	Heat Meter; Inline Ultrasonic with temperature sensors connecting flow and return line.	1.00	Nr		
	<u>Outside Biomass Cabin</u>				
42	Heat Meter; Inline Ultrasonic with temperature sensors connecting flow and return line.	1.00	Nr		
	EXISTING GAS BOILER RETENTION				
43	Modify existing gas boiler pipework connections	1.00	item		
44	Reconnect retained gas boilers	1.00	item		
45	Registered Gas Installer (RGI) works	1.00	item		

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(51) HEATING CENTRE (Continued)

46	Gas soundness testing and certification	1.00	item		
47	Control interlock between gas boilers and biomass system	1.00	item		
48	BMS integration of retained boilers	1.00	item		
49	Recommission retained gas boilers	1.00	item		
	PRIMARY & SECONDARY LPHW PIPEWORK				
50	Supply & Install Steel pipework, black, screwed/welded, for LPHW systems, including fittings, jointing, supports, hangers, anchors, guides, testing and commissioning, complete; all in accordance with the Engineer's Specifications & Drawings and Manufacturer's Instructions.				
51	Pipework				
52	pipework generally externally	1.00	Item		
53	pipework generally internally	1.00	Item		
	<u>INSULATION</u>				
54	Pre-insulated buried LPHW pipework, including trenching, bedding, backfill, warning tape and testing				
55	Pipework				
56	Pre insulation	1.00	Item		
57	DN50/125 insulation class	1.00	Item		
58	DN80/160 insulation class	1.00	Item		
59	DN100/200 insulation class	1.00	Item		
60	Thermal insulation to pipework, mineral fibre with aluminium cladding, including valves and fittings				
61	Pipework				
62	insulation	1.00	Item		
	<u>Pipework Accessories</u>				
63	Isolation valves	1.00	Item		
64	Balancing valves	1.00	Item		
65	Motorised control valves	1.00	Item		
66	Air vents	1.00	Item		
67	Drain valves	1.00	Item		
68	Pipeline identification labels	1.00	Item		
	<u>GENERAL</u>				
69	General services installations; Complete all as per Fingleton White drawings, schedules and specifications and installed in accordance with the Manufacturer's Instructions.				
70	Heating Installations;				
71	operating and Maintenance manuals	1.00	item		
72	working drawings	1.00	item		
73	co-ordinated drawings	1.00	item		
74	as built drawings	1.00	item		

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(51) HEATING CENTRE

(Continued)

75	marking the positions of holes, mortice's and chases	1.00	item		
76	identification plates and labels	1.00	item		
77	builders works	1.00	item		
78	firestopping and other associated fire protection work	1.00	item		
79	protection and secure storage of all LPG plant and equipment prior to installation	1.00	item		
	<u>M&V Metering</u>				
80	Measurement and verification (M&V) metering installation				
81	Heat meters, ultrasonic type, complete with sensors and integrator	2.00	Nr		
82	Flow meters	1.00	Item		
83	Data logging and reporting interface	1.00	Item		
	<u>Painting & Decorating</u>				
	<u>PAINTING</u>				
84	Paint to all gas pipework; include for 1 no. Zinc phosphate primer and an overcoat in yellow Ochre Ral 1024 paint; all paint to be neat, drip and ripple free, and suitable for the temperature of pipe which it is applied to; application in accordance with the manufacturers instructions; all in accordance with M&E engineer's drawings and specification				
85	Pipework				
86	pipework generally	1.00	item		
87	Paint to un-insulated- visible heating pipework; include for 1 no. Zinc phosphate primer and an overcoat; all paint to be neat, drip and ripple free, and suitable for the temperature of pipe which it is applied to; application in accordance with the manufacturers instructions; all in accordance with M&E engineer's drawings and specification				
88	Pipework				
89	pipework generally	1.00	item		
90	Paint to insulated heating pipework; include for 1 no. Zinc phosphate primer; all paint to be neat, drip and ripple free, and suitable for the temperature of pipe which it is applied to; Recoat fittings and welds with four weeks of installation; application in accordance with the manufacturers instructions; all in accordance with M&E engineer's drawings and specification				
91	Pipework				
92	pipework generally	1.00	item		
	<u>Testing & Commissioning</u>				
93	All testing, commissioning, and handover documentation; all in accordance with the Engineer's Specifications & Drawings and Manufacturer's Instructions.				
94	Pressure testing of pipework systems	1.00	Item		
95	Flushing and chemical cleaning of systems	1.00	Item		
96	Balancing of LPHW systems	1.00	Item		
97	Commissioning of plant and controls	1.00	Item		
98	Provision of O&M manuals and training	1.00	Item		
	<u>Other Items</u>				

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(Continued)

99	Provide for all labour, materials, plant and all items which in the tenderers opinion are not specifically allowed for in this section of the works but which can be reasonably inferred from the works requirements as being necessary for the execution and completion of the works. – (List items below)		item		
100		1	item		
101		1	item		
102		1	item		
103		1	item		
104		1	item		
105		1	item		
106		1	item		
107		1	item		

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-----------	-------------	----------	------	------	-------

(51) HEATING CENTRE

(Continued)

COLLECTION

Page 2:	0
Page 3:	0
Page 4:	0
Page 5:	0
Page 6:	0

(51) HEATING CENTRE Carried to Summary:	0
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M&E BUILDERS WORK

	INSPECTION, TESTING, COMMISSIONING & HANDOVER				
	The Contractor is referred to the M&E Drawings packages, M&E Particular Specification and M&E Builders Works Schedule for details.				
1	General items to be allowed for in accordance with Mechanical Particular Specification.	1.00	item		
2	General items to be allowed for in accordance with Electrical Particular Specification.	1.00	item		
3	Form service penetrations through walls and floors	1.00	item		
4	Fire stopping to penetrations through fire-rated construction	1.00	item		
5	Electrical containment within plantrooms (mechanical scope)	1.00	item		
6	Making good and reinstatement of disturbed building fabric	1.00	item		

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Report Summary

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COLLECTION SUMMARY

PAGE NO

(00) EXTERNAL WORKS	1	0
(51) HEATING CENTRE	2 – 6	0
M&E BUILDERS WORK	8	0
Total Amount:		0