



MCLA

PERFORMANCE SPECIFICATION

MCLOUGHLIN ARCHITECTURE PERFORMANCE SPECIFICATION

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Secondary School

Doc Ref: 2207

Stage: Tender

Project Details: Stanhope Street Roof Works

Completed by: David Farrell

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PROJECT INTRODUCTION

Specification		Tender Purposes Only
At	Stanhope Street Secondary School	
For	BOM Stanhope Street Secondary School	
Project Ref:	2207	
Doc Ref:	Spec – T01	
Date:	September 2026	

This document has been prepared by McLoughlin Architecture and under the supervision and to the satisfaction of:

Liam McLoughlin,
McLoughlin Architecture,
Unit 4B, Elm House,
Millennium Park,
Naas, Co. Kildare.

To whom the copyright of this document belongs.

This specification shall be read in conjunction with all drawings, details, schedules and other information issued by McLoughlin Architecture and works shall be carried out accordingly unless otherwise instructed. Note: All sections of specifications, schedules etc. to be adhered to and to be priced by section. The Contractor's attention is drawn to the description of works outlined in the Building Specification including Specification of Materials & Workmanship; the detailed requirements of the Drawings; Schedule of Works; other Schedule Information as applicable and any other such documents referred to by the Architect which must be carefully read before pricing. No extra cost for additional work will be allowed unless clearly outside the meaning or may not be reasonably inferred from the Drawings and Specification documents.

NOTE: Prospective tenderers are required to visit the site prior to submitting their tender by arrangement with McLoughlin Architecture as a condition of tendering, in order to ensure that the full extent and scope of works required under the contract are understood. Evidence of prospective tenderers having visited the site will be required by signing a register on-site. This is to allay any doubts as to what works are required, in the interests of both the contracting authority and the selected tenderer ultimately charged with delivery of the scope of works. Any failure to observe this condition of tendering will result in the exclusion of the tenderer concerned.

NZEB Compliance: Contractor to familiarise themselves with the requirements of compliance with the NZEB Building regulations. Contractor to ensure that the project is constructed in accordance with the Latest Irish regulations and fully compliant with NZEB as specified.

INTRODUCTION

Upgrade of existing roofs and small internal repairs at Stanhope Street Secondary School,

ALL MATERIALS AND SYSTEMS SHALL BE SELECTED, DESIGNED AND INSTALLED AS COMPLETE, COMPATIBLE ASSEMBLIES IN STRICT ACCORDANCE WITH THE SUCCESSFUL SYSTEM MANUFACTURER'S CURRENT WRITTEN INSTRUCTIONS, CERTIFICATION AND DETAILS. THE CONTRACTOR SHALL IDENTIFY WITH ITS TENDER THE PROPOSED MANUFACTURER AND SYSTEM FOR EACH PERFORMANCE-SPECIFIED ELEMENT AND SHALL HIGHLIGHT ANY VARIANCE BETWEEN THE CONTRACT DOCUMENTS, SITE CONDITIONS, STRUCTURAL REQUIREMENTS AND THE PROPOSED SYSTEM.

The tenderer shall submit with the tender sufficient technical information to demonstrate that each proposed product and system satisfies every stated performance requirement. Evidence shall include current declarations of performance and CE/UKCA marking where applicable, relevant harmonised standards or European Technical Assessments, third-party certification, fire classification, thermal and condensation calculations, compatibility statements, installation requirements, details, samples and the proposed guarantees. The Contractor shall include all compatible primers, membranes, insulation, adhesives, fixings, trims, outlets, accessories and revised specialist details necessary to provide a complete system. Acceptance of a submission shall not relieve the Contractor or specialist designer of responsibility for design, coordination, suitability or performance.

No proprietary product is specified. References to a material type, construction, thickness, profile, dimension or performance level establish the minimum requirements. The Contractor may select any product or complete system that demonstrably satisfies all stated requirements and is suitable and compatible with the existing construction and intended use.

SITE VISITS

All arrangements for visiting the site and any enquiries pertaining there to are to be made through:

McLoughlin Architecture
Unit 48
Elm House
Millennium Park
Naas
Co. Kildare.
Tel: 045 854 900
E: info@mclarchitecture.ie

SITE ADDRESS

Stanhope Street Secondary School
7 Stanhope St,
Stoneybatter,
Dublin 7,

D07 W0Y0

CLIENT

BOM Stanhope Street Secondary School
7 Stanhope St,
Stoneybatter,
Dublin 7,
D07 W0Y0
Tel: (01) 671 0419
E: info@stanhopessecondary.ie

QUANTITY SURVEYOR

Lambert Surveyors
Claregate Street,
Co. Kildare
Tel: 045 542 698
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ARCHITECT

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Elm House
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PROJECT SUPERVISOR (DESIGN PROCESS)

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E: info@mclarchitecture.ie

STRCUTURAL ENGINEERS

Stem Consulting Engineers
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Trimleston,
Blackrock,
Co. Dublin.
Tel: +353 (87)2653640
E: info@stemtech.ie

2.0 PRELIMINARIES AND CONDITIONS OF CONTRACT

SITE CONDITIONS / SITE SURVEY

Tender parties shall visit the site and satisfy themselves as to all conditions under which the works will be executed particularly with regard to access, condition and Integrity of existing structures within the vicinity of the proposed works, quantity of materials necessary and any other matter which may affect this tender. No extra cost will be allowed in respect of items which would have been apparent or reasonably foreseeable during a proper site visit.

PROJECT SUPERVISOR (CONSTRUCTION STAGE)

The role of Project Supervisor (Construction Stage) shall be undertaken by the main contractor for the duration of the contract. Alternatively, the successful tenderer may appoint a suitably qualified person or firm to act in this role on their behalf.

PROJECT PHASING

Project phasing strategy to be included for proposed works with programme phasing / timing which will include access/ segregation/ noise/ access and compound areas.

Proposed works are within active school property, Refer to Architects drawings for provisional phasing layout.

Access to existing school building & phasing of works to existing building(s) to be agreed with client and architect for signed off and agreed prior to commencement of works.

Measures to be put in place to ensure safety of all students, teachers & visitors at all times including strict traffic management, access to site compound and health / safety regimes.

Date particulars to be set out in Articles of Agreement Contract with all parties involved.

TIMES WHERE CONSTRUCTION CAN TAKE PLACE

NOTE WORKS WILL BE CARRIED OUT WITHIN ACTIVE SCHOOL ENVIRONMENT SURROUNDING TEMPORARY COMPOUND & WORKS AREA, WORKS ARE TO BE CARRIED OUT BETWEEN 8.00 AND 17.30 FROM MONDAY TO FRIDAY AND SATURDAYS TO BE FROM 9.00 – 13.00

Dates where works take place may be subject to minor revision prior to the successful appointment of the Contractor. Architect / Contractor to liaise prior to works commencing in order to agree a schedule prior to Contract Agreement.

ACCESS & SECURITY

The chosen contractor is to liaise with Architect in order to agree a schedule of security and temporary access to the building. A plan of all the proposed routes included in the works should be agreed before commencement of works as the building is to remain fully functional in the regular working hours set out above.

The contractor is to note that at all times, access to and from the site is to be via the vehicular entrance/ exit to the rear of the site and pedestrian access via front public pathway. No access will be available or permitted via adjoining properties. The contractor will indemnify the employer against any damage or loss to the adjoining buildings/structures etc. (not being part of the work) caused by the contractor or his other agents, window contractor etc. Whether or not the damage or loss is as a result of the negligence of the contractor or his agents etc. The Contractor shall provide at all times during the execution of the works and the defects liability period proper means of access, with ladders, gangways, etc. and as necessary attendance to move and adapt same as directed, for the inspection or measurement of the works by the Architects, or their representatives.

SITE CLEARANCE, DEMOLITIONS & ALTERATIONS TO EXISTING STRUCTURES

Unless otherwise described all old materials arising from site clearance, demolitions & alterations to existing structures are to become the property of the Contractor who is to allow any credit therefore. Clearing away of such old materials, including deleterious or hazardous materials, shall be deemed to be included within the site clearance & demolition items. Proper and appropriate methods of disposal of deleterious & hazardous materials shall be the responsibility of the main contractor. Suitable material arising from demolition & site clearance may be selected for use as site fill subject to agreement with structural engineer. Dust shall be kept to a minimum. Demolition works shall be carried out in accordance with B.S.6187:2011- Code of practice for full and partial demolition. The use of explosives shall not be permitted. Burning of site materials arising shall not be permitted. The contractor shall be responsible for protecting remaining adjoining buildings or structures or party walls or public roads and paths and for providing adequate supports at all stages of demolition works. The contractor shall be held responsible for any damage to adjoining buildings or structures caused during the works or as a result of works. Temporary screens, coverings and protection materials shall be provided by the Contractor. The Architect is to be notified of Ordinance Survey marks found on structures scheduled for demolition. Such marks are not to be removed unless instructions to do so are given by the architect. Demolition works shall include the removal of existing roofs on the school.

LOCATION OF SKIP / WASTE MATERIALS

The chosen contractor is to liaise with Architect in order to agree the location of skip / waste materials. Refer to architects' drawings for provisional location, TBC prior to works commencing on site. Skip is to be located at least 6m away from the perimeter of the building.

INSTALLATION / ERECTION OF SCAFFOLDING

All scaffolding to be certified and be installed by suitably trained and certified scaffolding contractor. All the appropriate physical barriers/ scaffolding, safety rails, toe boards, securing to the existing structure etc. to be used as required for work at high level and installed fully compliant with the H S A regulations. Refer to the HSA Guidelines "Code of Practice for Safety in

Roof work & Access / Working Scaffolds". Along with all the other relevant Published HSA guidelines must be adhered to at all times. The contractor to allow for scaffolding to remain in place for the full duration of works as required. All roof works must be complete with approval by architect prior to removal of scaffolding.

HOARDING AND SITE SEPERATION

To separate and secure the works fully the contractor will erect temporary hoarding along the edge of the work zone within the site as shown on the contractor's traffic management plan to allow the safe construction of the works whilst maintaining the safety of the Stanhope Street Secondary management Students and visitors to the premises. The hoarding shall be decorated/painted to a reasonable standard (colour to architect's specification) on the road side for the duration of the works. The hoarding shall be secured and made stable at all times during its use. The contractor may at his own discretion and risk, use existing front boundary structures as hoarding to the site when appropriate should he consider the same to be appropriate and necessary and whereby suitable access can be formed. It is the responsibility of the contractor to obtain necessary approvals/consents/hoarding licenses etc. before commencing the relevant elements of the works. The Contractor shall securely erect the Architects site board to an agreed location.

HEALTH AND SAFETY

The contractor shall at all times maintain the site in a clean and safe condition, and shall carry out the works in an orderly and safe manner as set out in the Preliminary Health and Safety Report where provided. The Contractor shall be appointed as Project Supervisor (Construction Stage) and will be required to fulfil the roles and responsibilities of the Project Supervisor (Construction Stage) as set out and defined in S.I. No. 504/2006 - Safety, Health and Welfare At Work (Construction) Regulations 2006 and he/she shall ensure the above and maintain suitable records and issue relevant notices in accordance with the Health and Safety and Welfare at Works Acts. As Project Supervisor (Construction Stage) the Contractor shall prepare and hand over a copy of the Safety File to the client before Practical Completion can be certified. The Contractor shall be responsible for provision of all documents and drawings, including as built drawings, necessary for the Safety File and should allow for this in his costs.

SAFETY OFFICER

The contractor shall allow for having an adequately trained Safety Officer on site at all times and who shall be responsible for health and safety issues arising on site.

TIME FOR COMPLETION

The time for completion shall date from the day when instructions shall be sent to the Contractor to begin the works. The work must be carried out with due diligence and expedience and the whole works including any additional works ordered by the Architect must be completed to the Architect's satisfaction. The Architect shall be at liberty, however, to extend the time for completion of the works if in his opinion completion shall be delayed by circumstances outside the control of the Contractor. Possession of the site shall be granted as soon as is possible after agreement of contract and works shall commence as soon as is possible. Completion of the

works shall be as soon as is possible after possession of site. The Project Supervisor Construction Stage shall review the duration of the proposed program for the project as advised by the Contractor and shall confirm (or otherwise comment) on the practicality of same. The works shall be considered to be complete only from the date of issue by the Architect of the Certificate of Practical Completion.

PRIME COST & PROVISIONAL SUMS

Prime costs are not permitted in public works contracts therefore won't be accepted within the tender submission for the proposed works.

BUILDING REGULATIONS AND CONTROLS

The Contractor is to conform to the provisions of all Acts passed and adopted by Oireachtas Eireann or the state/European Union which may in any way affect the works and observe all orders, rules and regulations of the Municipal Authorities and shall indemnify the Employer against all claims or liabilities. All works shall be carried out to comply with the requirements of the current Building Regulations, current Technical Guidance Documents inclusive of current revisions & amendments and all relevant Codes of Practice at the time of construction. The Contractor shall supply all due notice of operations to the Local Authority as may be required and shall obtain all necessary licences, consents, approvals etc. as may be required. The Contractor shall provide for making all necessary connections for water, drainage etc. or other services and pay all charges connected therewith, with the exception of such levies associated with conditions of the Planning Approval. On practical completion of the contract the contractor will be required to furnish to the architects a certificate stating that the works (including window-contract works) have been built in accordance with the provisions of the latest Building Regulations. The Contractor shall include for adherence to all conditions of the Planning Approval. The Contractor shall include for adherence to all conditions of any Fire Certificate approval documents and shall be inclusive of all finally agreed drawings, documents & final approval documents.

EXTRA WORK

In no case will any claim for extra work be granted unless such work has been authorised in writing by the Architect and a price agreed upon before such work is commenced. No variation shall vitiate the Contract, and any authorised variations (additions or deductions) which shall be instructed by the Employer shall be measured and valued at the rates set out in the Schedule of Rates or in cases where no appropriate rate exists in the original at rates prevailing in the area at the time that the works in question were executed.

FOREMAN

The Contractor shall keep a competent foreman constantly on the works. He shall keep accurate measurements and a daily record of works. The foreman shall be responsible for the supervision of provision of informed instruction to personnel for the duration of the works. The foreman shall be required to remain based onsite and shall be empowered to act in the Contractor's absence and for all purposes as the Contractor's general agent. The foreman shall have good experience in carpentry, joinery & plastering.

RESPONSIBILITY

The Contractor is to take entire charge of the building works from commencement of the work to the completion of same and make good all injuries, damage and repairs occasioned or rendered necessary to same by causes over which the Contractor shall have control. He is to take the proper precautions to prevent such happenings and take all risks and hold the Employer harmless from any claims for injuries to persons, animals and things or for structural damage to property, happenings from any neglect, default, want of proper care, misconduct on the part of the Contractor or anyone in his employ, during the execution of the works.

INSPECTION

Where variation work may be instructed, work shall remain available for inspection and shall be passed by the Architect with any variation work to measure by him prior to covering up. Works covered up on breach of this instruction may be uncovered at the Contractor's expense and set out to the Architect's satisfaction. The Architect is to be given a minimum of 3 days' notice prior to milestone inspections as outlined in the Preliminary Inspection plan

INCLEMENT WEATHER

The whole of the works shall be protected as necessary during inclement weather, including covering walls & felt, supplying all necessary sheathing, screens etc. Any work damaged as a result of inclement weather shall be removed and re-instated by the Contractor as its own expense.

PROVISIONS FOR TEMPORARY SEALING THE BUILDING

The chosen contractor is to allow for the provision of temporary sealing the building during works if the situation arises which causes works to temperately stop on site as the building is currently fully operational.

CASE UP

The Contractor is to case up and protect the work by other tradesmen and be responsible for and make good or pay for making good of any work which may suffer from want of such casing and protection.

CLEAR AWAY

The contractor shall remove all rubbish and debris from the site of the works and maintain in a relatively clean condition for the duration of the contract and shall effectively clean all areas and make good all defacements at completion and leave all to the entire satisfaction of the Architect.

CLEANING ON COMPLETION

All floors, paving's etc. to be scrubbed, all glass to be cleaned on both sides of windows and doors, all gully's, gutters, pipe heads etc., to be cleaned out and the premises left clean perfect and water tight upon completion and shall make good all damage occasioned to same.

ATTENDANCE

The contractor shall allow for all attendance and give every facility and assistance to other tradesmen, Engineers etc. employed on the works and shall allow the use of his plant, scaffolding and water etc. free of charge. The contractor shall be responsible for the management of the works and for his work fitting in with the work of other trades. Contractor to cover up and protect work done by other tradesmen and be responsible for any loss or damage that may be suffered from want of same.

PRICE SCHEDULE OF RATES

The successful Contractor shall be required to lodge with the Architect within 14 days' notice of acceptance of this tender a priced and detailed schedule showing the rates on which his estimate was built up. All extra work will be measured and priced thereby.

INSURANCE

The Contractor shall be solely liable for and shall indemnify the Employer in respect of and shall insure against any liability due to injury to person's workmen's compensation or damage to property or loss of property. The Contractor shall make full provision for complying with the Conditions of Contract, relative to Fire Insurance Compensation for injury, Third Party Risks, All Risks etc.

MASTER PROGRAMME

The Contractor shall, before gaining possession of the site, prepare and submit his proposed master programme for the execution of the works for comment by the Architect. The master programme shall incorporate:

- The dates of possession and for completion named in the Appendix to the Condition of Contract.
- The dates as determined or proposed for commencement and completion of all trades including those window-contracted.
- Such dates as can be made available for procurement, delivery to site of materials, commencement and completion of execution of all contracts for works not forming part of this Contract which the Employer has placed or intends to place direct and the existence of which have been known to the Contractor.

Thereafter the Contractor shall amend and revise the master programme as required by the Conditions of Contract and as required by the Architect. In so doing, the Contractor shall obtain from all window-contractors, and use his best endeavours to obtain from all contractors including those made known to him during the course of the Contract) any updating in their progress or programme which has occurred or is likely to occur and incorporate this in the revised master programme.

CO-ORDINATION OF SITE WORKS

The Contractor shall be responsible for the co-ordination and proper execution and completion of the works and the protection of the site, The Contractor shall in accordance with his programme obtain and submit to the Engineer for his approval all builder's work details including shop drawings from window-contractors and suppliers, whether nominated or not. The Contractor shall arrange and attend such meetings as are necessary to ensure that the information requirements of all window-contractors are met and to establish their requirements for holes, chases, recesses, fixings and the like before the work is put in hand, to avoid conflict with other work. The Contractor shall be responsible for the setting out of the works in accordance with the drawings and Architect's instructions and shall be responsible for rectifying errors at its own expense.

GENERAL ATTENDANCES

The contractor shall allow for all attendance and give every facility and assistance to other tradesmen, Engineers etc. employed on the works and shall allow the use of his plant, scaffolding and water etc. free of charge. The contractor shall be responsible for the management of the works and for his work fitting in with the work of other trades. Contractor to cover up and protect work done by other tradesmen and be responsible for any loss or damage that may be suffered from want of same.

MAINTENANCE

The Contractor shall be responsible for maintaining the works for a period of 12 months from the certified date of Practical Completion. Before the end of the Maintenance Period the Contractor shall make good all defects, including shrinkages and settlements, to the entire satisfaction of the Architect.

DAYWORKS

No day works shall be allowed unless the permission of the Architect has been obtained in writing. Day works sheets shall be presented to the Architect during the execution of Authorised day work, and they shall itemise the works executed with a clear statement of time and full particulars of the materials chargeable to every item. No day works shall be allowed for works which can be measured. Contractors are to state in their tenders the percentage profit they require on the net cost of day work

TAX CLEARANCE AND VAT

The contractor shall be registered with the Revenue Commissioners for income tax purposes and shall furnish, prior to acceptance of tender a current Certificate of Authorization (Form C2). The contractor shall warrant that it is and will be at all times during the course of the contract including final certification/defects liability period, registered for VAT and will on requesting payment provide a VAT invoice as necessary including VAT registration number.

COMPLIANCE & STANDARDS OF MATERIALS GENERALLY

The material and workmanship shall be to the satisfaction of the Architect and shall be the best of their respective kinds and in accordance with Sections B & C of the Specification document. Materials shall comply with the current building regulation. Materials shall bear a CE Marking in accordance with the provisions of the Construction Products Regulation. Materials shall comply with an appropriate harmonised standard or European Technical Assessment in accordance with the provisions of the Construction Products Regulation or comply with an appropriate Irish Standard or Irish Agreement Certificate or with an alternative national technical specification of any State which is a contracting party to the Agreement on the European Economic Area, which provides in use an equivalent level of safety and suitability. All goods and materials shall be of Irish manufacture and supply as far as possible with manufacturers and supplier's instructions and relevant Irish or British Codes of Practice to be strictly adhered to where applicable. All goods and materials shall be subject to such tests and provision of samples as may be deemed necessary. The Architect may require any materials used on the contract to be tested to ensure that it conforms to the specification and where the tests show that it does not, the Contractor shall be responsible for the test so ordered. All dimensions and levels to be checked and verified on site prior to construction and any discrepancies to be reported to the Architect immediately. Do not scale off drawings. Setting out to be carried out by the Contractor after site clearance and in accordance with the architect's drawings. No foundations shall be poured till the setting out is approved and finalized. On practical completion of the contract the contractor will be required to furnish to the architects a certificate stating that the works (including window contract works) have been built in accordance with the provisions of the latest Building Regulations.

PLANT, TOOLS, SCAFFOLDING ETC

The Contractor shall provide everything required, whether or not mentioned in this specification or shown on the drawings provided that it may be reasonably inferred, whether labour, plant materials, materials, cartage, internal and external scaffolding hoisting, fixing, tackle and tools superintendence and hoarding etc. for the safe, proper and expeditions executions of the works. The methods of work employed by the contractor in relation to the works are entirely the contractor's own responsibility.

HOLIDAYS WITH PAY ETC.

- The Contractor shall be responsible for and include in his tender for all costs and expense in connection with workpeople including but not limited to:
 - a. National Insurance Contributions
 - b. Pensions
 - c. Holidays with Pay Scheme for Building and Civil Engineering Industries
 - d. Travelling time, expenses. Fares and transport
 - e. Guaranteed time.
 - f. Non-productive time and other expenses in connection with overtime.
 - g. Provision of all necessary supervision, including a competent foreman.
 - h. Any other disbursements arising from the employment of labour.

SAFEGUARDING THE WORKS

The Contractor shall be responsible and allow for safeguarding the works, materials and plant against damage or theft including all necessary watching and lighting for the security of the works and the protection of the public. The contractor shall insure himself for loss of any equipment or damage to the property by others. A temporary alarm system is to be installed in order to protect the property for the duration of the works.

NOISE

The Contractor's attention is drawn to the Control of Pollution Act 1974 with particular reference to the provision of Sections 60 and 61 of this Act. Refer project phasing and working hours above as noise restrictions will be in place during active school hours.

PROTECTION OF EXISTING SERVICES

The Contractor shall protect, uphold and maintain all existing public and private services during the execution of the Works. The Contractor is to make good any damage due to any cause within his control at his own expense or pay any costs and charges in connection therewith.

WATER FOR THE WORKS

The Contractor shall provide clean fresh water for use on the works, pay all charges and fees in connection therewith, provide all temporary storage, plumbing service connections etc., and clear way and make good on completion.

LIGHTING AND POWER FOR THE WORKS

The Contractor shall provide all artificial lighting and power for the use on the Works, pay all charges in connection therewith, provide all temporary supply, leads, fittings, etc. and clear away and make good on completion unless otherwise agreed with the Architect and the Client. Otherwise, the Contractor may utilize existing available supplies where applicable, on site whereby the Contractor will be responsible for fees for the use of electricity. The Contractor shall isolate the supply of the areas of work as necessary and ensure the remaining electrical installation is safe for continued usage and for use during the contract period in areas occupied by the client.

STORAGE OF MATERIALS

The Contractor shall agree with the Architect the location of a secure and Lockable room on the site for the storage and protection of all materials including materials of all nominated sub-contractors and to make good on completion all work disturbed due to the room being so used.

NEIGHBOURING PROPERTY

The Contractor shall ensure no disturbance to neighbours where applicable and to make good at his own expense, any damage caused to neighbour's property. The Contractor shall be responsible for liaising & informing neighbours in advance of works that may directly or indirectly affect them, with reasonable notice and shall provide a statement to the architect outlining how such works may be successfully executed with minimum disruption to neighbours.

PROTECTING, DRYING, CLEANING AND TESTING THE WORKS

The Contractor shall:

- Provide for carefully covering up and protecting the works and any adjoining property exposed by these works, from inclement weather.
- Provide for removing all rubbish from the site both as it accumulates from time to time and at completion.
- Provide for cleaning the building inside and out, and leaving the whole of the works clean, ready for occupation and to the satisfaction of the Architect on completion.
- Dry out and control the humidity of the works as may be necessary to facilitate the progress and satisfactory completion of the works including the works of nominated window-contractors.

The Contractor may use the permanent services installation partly or wholly for this purpose as and when available bearing all costs and paying all charges including the provision of a qualified attendant staff and the cost of fuel and equipment. Any damage to permanent installations is to be made good at the Contractor's expense.

Removal of water: The Contractor shall be responsible for all pumping that may be required to maintain the works in a dry state down to the level of the bottom of excavations from whatever water source. No accumulation of water shall be permitted during the completion of the works.

PROVIDE EVERYTHING NECESSARY

The Contractor shall provide everything required, whether or not mentioned in this specification or indicated in any supporting documents & drawings, provided that it may be reasonably inferred from the drawings & documents provided, whether labour, scaffolding, plant materials, superintendence, hoarding etc. for the safe proper and expeditious execution of the works. The methods of work employed by the Contractor in relation to the works are entirely the Contractor's own responsibility.

QUALITY ASSURANCE

Materials and suppliers are to have been assessed and certified by an approved independent third-party quality assurance scheme.

POINTING

Pointing to be in cement lime mortar (1:1:6) with joints raked out 20mm (3/4") and finished with a weather struck joint unless otherwise described. Re-pointing work to be carried out in accordance with BRE publication 'Good Repair Guide 24'. The Contractor shall prepare pointing samples as required by the Architect for approval & agreement purposes with the Architect prior to commencement of pointing work.

DAMP PROOF COURSES

Damp proof courses are to comply with BS 8215:1991 Code of practice for design and installation of damp-proof courses in masonry construction for flexible D.P. C's lapped at least 100mm (4"); carried at least 100mm (4") into adjacent brickwork, and bedded in cement lime mortar (1:1:6).

D.P.C.s are to be high performance pitch polymer with a nominal thickness 1.25 mm (nominal) weight 1.55 kg/m² minimum, proprietary pitch-polymer pre-formed cloaks and proprietary tanking. All tanking membranes, D.P.C. cloaks and sealing adhesive must be supplied by the same manufacturer and shall be compatible. The adhesive used is to be a solvent weld type.

D.P.C.s are to be installed in accordance with the detail drawings and generally as follows: 150 mm above ground level generally or as indicated on the Detail Drawings. At jambs, cills and heads to all openings. At roof abutments and changes in roof level. Chimney penetrations at roof level. Under copings. And/or as indicated on the Detail Drawings. All D.P.C.s shall be laid continuous with 100 mm lapped joints solvent welded and pre-formed cloaks, cavity trays etc. with joints solvent welded so that D.P.C. stay in place by their natural shape and do not rely on following materials to restrain them. Where proprietary cavity trays are to be provided such as at changes in roof levels, great care shall be exercised when setting out and that manufacturer's instructions and recommendations are carefully followed. All cavity trays, head and jamb and relieving angle D.P.C.s and elsewhere where D.P.C.s have a free edge within a cavity, they are to be mechanically fixed to the inner leaf of the cavity using continuous 25 x 3 mm stainless steel strips fixed with 20 mm S.S. screws and plugs at maximum 300 mm centres. All mechanically fixed D.P.C.s shall extend adequately above the maximum dampness level to ensure that no damp penetration occurs at the fixings. Adhesive fixing to be used as well as mechanical fixing. Cavity trays to be built into block walls • in areas where there is exposure to high levels of wind driven rain. Provide for proprietary type DPC tray across chimney stacks where projecting through roof. Damp proof courses to be installed in accordance with good practice for detailing as set out in BS 5628-3:2005 Code of practice for the use of masonry. Materials and components, design and workmanship and must be in accordance with the relevant clauses of BS 8102:2022 Protection of below ground structures against water ingress - code of practice, BRE Digest 380, Damp-proof courses and the manufacturer's instructions. Weep holes to be installed in the outer leaf above all D.P.C.s at 900 centres and to be formed using perpend stainless steel weep hole fittings or similar approved. Care must be taken to ensure that no damage is caused during cavity cleaning which must take place while mortar droppings are fresh. Cavity trays must be inspected as the work proceeds. Certified compliance with this specification may be requested. Vertical DPC's to be fitted at all cavity closers backed with 25mm phenolic type rigid insulation board or equal & approved by Architect. Bitumastic DPC coating to be used in reinforced concrete wall construction where normal DPC material may be impractical subject to Engineer's & Architect's details.

PLYWOOD:

Plywood generally shall comply with BS EN 636:2012 Plywood - Specifications (+A1:2015). All plywood shall be WBP bonded first grade and shall be faced with veneer as specified. One side shall be completely free from joints and surface defects. Joints and minor blemishes will be permitted on the reverse side only. Where both sides of the plywood are exposed these shall be totally free of joints and surface defects.

Fibreboard:

Medium density fibreboard shall comply to BS 1142

**Blockboard:**

Blockboard shall comply with BS 3444 Grade II veneer or with facing veneer as described.

Fire-Proof Board:

Shall be non-combustible, asbestos free, laminate board with calcium silicate matrix reinforced with vermiculite and natural organic fibres.

Wood Veneers:

Wood veneers to be prime quality selected real wood, a sample of which shall be submitted and approved by the Architect. The Architect is to be informed when the whole of the stock is ready for his inspection and approval before work is commenced.

Plastic Laminate:

Plastic laminate shall be of approved make, pattern and grade Formica or equal

Doors generally:

Shall have outer frame widths as shown with an infill of 100% of solid timber, as described or other approved material; all edges to be lipped with hardwood lipping, tongued and grooved to core frame. For veneered doors, where occurring, the lipping shall be checked on both sides to allow the veneer facing to extend to the edges of the door. Locking blocks shall be provided a least 250mm high. Fire resisting doors shall comply with BS 476-22:1987. Fire tests on building materials and structures. Methods for determination of the fire resistance of non-load bearing elements of construction

Ancillary trims:

Proposed ancillary trims and finishing elements to detail. Ancillary trims to be formed from Poplar hardwood unless otherwise indicated. All ancillary trims to be carefully formed at joints and to be plugged & screw fixed with fixings recessed for filling prior to decoration. Proposed picture rails, skirting's, architraves and other ancillary trims and finishing elements to detail. External timber for use in fascia, soffit & bargeboards shall be hardwood for finish to be selected by the Architect.

Glues:

Glues shall be of synthetic resin adhesive to BS EN 301: 2017 Adhesives, phenolic and amino plastic, for load-bearing timber structures. Classification and performance requirements applied strictly in accordance with the manufacturer's instructions.

Preservative treatment - organic:

All floor battens, concealed grounds, timber built into masonry, dry-lining etc. to be pressure impregnated against rot & insect attack. Any cut ends to receive two coats of approved wood preservative. Double vacuum organic solvent wood preservative treatment shall comply with BS 5707(1997): 1997 specification for preparations of wood preservatives in organic solvents. Treatment shall be in accordance with the following double vacuum schedules and treatment classes.

Minimum Treatment Schedule for Class A Timbers (in external situations)

Timber Species	Initial Vacuum Bar (mins)	Pressure Bar (mins)	Final Vacuum Bar (mins)
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Southern Yellow Teak, Pine, Iroko, Red Deal, White Deal, Ash, Oak	0.33 (0)	1.00 (40)	0.83 (20)
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Minimum Treatment Schedule for Class A Timbers (in internal situations)

Timber Species	Initial Vacuum Bar (mins)	Pressure Bar (mins)	Final Vacuum Bar (mins)
Southern Yellow Teak, Pine, Iroko, Red Deal, White Deal, Ash, Oak	0.33 (3)	0 (3)	0.67 (20)

The times given in the tables are the number of minutes for which the defined vacuum once achieved, is maintained. The initial vacuum is always maintained during flooding. Moisture content to be 18%, BS EN 942: 2007 - Timber in joinery - general requirements. Treatment to take place after cutting and notching.

Re-Treatment of Cut Surfaces:

All known cutting, machining, profiling and notching must be complete prior to assembly. Any unforeseen cutting of treated surfaces must have the Architects approval. Where the Architect gives such approval notches shall be given two liberal brush or spray applications or, where end grain is exposed, timbers shall be steeped in a compatible organic solvent end grain preservative for a period of not less than three minutes. Rip-sawing, planing and heavy sanding will not be permitted unless the timber is returned for re-treatment.

Screws and Nails:

Screws shall comply with BS 1210 and nails to BS 1202-1(2002): 2002 - Specification for nails - part 1: steel nails. In every case the size and material of screws and nails shall be appropriate to the nature of the fixing and of the materials involved.

Specialist Timber Floors:

To be laid in accordance with manufacturer's instructions, guidelines & recommendations.

Moisture Content of Timber:

The moisture content of all structural timber shall not exceed 22% at the time of erection.

Storage Generally:

Store timber and timber products protected from the weather, clear of the ground and supported to prevent distortion. If stored in the open or in damp air conditions enclose completely with a suitable covering to prevent deterioration and provide for air circulation and ventilation.

Certification:

The Contractor shall provide documents from their timber supplier certifying that all structural timber complies with the specified grading treatment and moisture content requirement.

Protection:

Protect, as necessary, all work described in this Section during the progress of the Works and clean down and leave perfect on completion.

Finishing:

Door leaves are to be finished with Teak lipping's which shall be finished off site as follows:

- Pre-sand all surfaces with 240 grit paper. Spray apply 1 wet coat P/C Basecoat. Granyte 53-024-5030 O.E.A.A.
- When dry sand with 240 grit paper. Spray apply 1 wet coat P/C Basecoat. Granyte 53 024 5030 O.E.A.A.
- When dry sand with 240 grit paper.
- Spray apply 1 wet coat pre catalysed lacquer. Satin Granyte 53 021 5540

Maximum thinning of each coat not to exceed 10%, all in accordance with the manufacturer's instructions. All soft wood, exposed M.D.F. (i.e. skirting's, and door frames) shall be painted by brush on site as follows: -

- Apply 1 No. coat wood/metal primed, sand lightly,
- Apply 2 No. coats oil-based undercoat, sanding lightly between coats,
- Apply 1 No. coat eggshell oil to a selected colour.

ARCHITECTURAL DATA EVIDENCE REQUIRED

Evidence Required for non-default window and rooflight data:

- Copies of invoices from the site identifying the make and model (building address included).
- 'CE MARKED' certificates referring to the relevant standards. Certificate must refer to:
 - Specific Make and model
 - BS EN 14351-1:2006 Windows and doors - product standard, performance characteristics. Windows and external pedestrian door sets (+A2:2016) (Incorporating corrigendum November 2016)
 - U-value
 - Solar Transmittance
 - Light transmittance
 - To use non default U-Value,

Evidence Required for non-default Building Envelope:

- Substantial documentary evidence of what has been installed on site, particularly for insulation which is not visible on completion-i.e. floors, walls, roofs.
- 'As Built' drawings showing the makeup of the element including the insulation material used and thicknesses of all layers including the insulation layers. Invoices/statements/as built drawings, reports of works detailing all layers and thicknesses of layers.
- As built drawings signed off by the architect/assigned certifier confirming as constructed.
- Photographs during construction of the element concerned with clearly identifiable insulation layers.
- Copies of site-specific invoices for insulation etc (building address included) with a detailed description of the work concerned and must clearly identify the work with the building concerned. Documents should indicate address, date and insulation material and thickness used.

- Agrément cert or other certified data sheets with CE marked data for conductivities of insulations.
- U-value and KM (effective thermal capacity) calculations in compliance with BRE 443:2019 and the relevant EN standard calculation for the relevant element.

Non default data for thermal bridging PSI values:

- As built Architectural drawings (plans, sections and elevations) identifying the location of the relevant details in compliance with Part L Acceptable Construction Details.
- Detail drawings identifying materials and thicknesses used in construction. Signed off copied from the ACDs indicating which key junctions they reference in the building.
- All to be signed and dated by the architect/assigned certifier to confirm compliance with limiting thermal bridging and air infiltration-Acceptable Construction Details.
- Written confirmation on headed paper from the builder stating he confirms the details are constructed as per the signed and dated drawings.
- Also acceptable from an accredited third body such as agreement or BRE Certified Thermal Details and products scheme or NSAI registered thermal bridge modeler. Also to be signed off as constructed by architect or assigned certifier.
- If the details are in compliance with TGD Part L data must be provided that demonstrates that 'Limiting Thermal Bridging and Air Infiltration-Acceptable Construction Details' as referenced in Building Regulations TGD L has been conformed to. This requires that the relevant drawings clearly show the relevant details and that these details are checked and signed off by the architect or assigned certifier.
- Where calculated psi values are used, documentary evidence in accordance with the methods described in IS EN ISO 10211:2017 with results that agree with the stated values of temperature and heat flow within the tolerance indicated in the standard for these examples. Several packages are available that meet this requirement.
- Detailed guidance on decisions regarding specific input to the modelling software and the determination of certain quantities from the output of the software contained in BRE Report BR 497 Conventions for calculating linear thermal transmittance and temperature factors. This guidance should be followed in carrying out modelling work so that different users of the same software package and users of different software packages can obtain correct and consistent results.
- Ψ values are calculated in accordance with I.S. EN 10211:2017. Certification of the detail by a member of NSAI Thermal modellers Certification Scheme is a means of meeting the requirements in TGD L and NEAP for calculation of Ψ values.
- We will require the architect to sign off on details, installations and specifications to ensure compliance with the specifications and drawings and also to account for the use of accredited Ψ values.

Non default data for Air Permeability:

- Pressure test certificate by an NSAI register tester is required with test carried out to relevant standards at 50Pa.

O&M MANUAL REQUIREMENTS

- It is a contractual requirement that the main contractor shall produce an Operations and Maintenance manual for the works. The required format (physical O&M Manual) for submission is to be agreed with the Architect at tender stage however as a **minimum two** no. hard copies and digital versions of the final approved manual will be required. Draft

digital copies of the O&M Manual shall be submitted for review to the Architect no less than three weeks in advance of the agreed date for Practical Completion.

- To facilitate submission of record drawings, the Contractor shall keep on site complete set of all drawings used on the Contract Works, on which he shall mark alterations to the designs shown thereon as such alterations are carried out. THIS PROCEDURE SHALL BE STRICTLY ADHERED TO.
- All operation and maintenance manuals along with their associated record drawings shall be prepared in accordance with the requirements of BSRIA document BG 79/2020 Handover Information and O&M manuals.
- The complete sets of Operating and Maintenance Manuals and record drawing shall be supplied to enable the Employer to operate and maintain the system correctly. The manuals must therefore contain all necessary technical information on each item of equipment and the associated components which have been used to assemble and construct the system(s).
- In addition, manuals for each system must contain information on the design intent of the system, commissioning and testing results and reports of how the components of the system are adjusted to achieve the design intent, line diagrams to show how the system is arranged in the building giving the location of all equipment and components, its control system, how the system must be set in the normal operating mode and in the event of any emergency, routine check that must be made and a list of spares which should be kept and a list of any special tools which may be required.
- The manuals must be prepared in such a way that an Architect / Engineer / Client without any previous knowledge of the Project may use them to operate and maintain the system.
- **The O&M Manual shall include, but not be limited to, the following:**
- Current, as of date of issue, contact details of each company/contractor involved in the supply or manufacture of elements, materials and components.
- All project approved certification, documentation and trade literature in relation to elements, materials and components used in the works.
- Hardcopy O&M Manual Format - A4 lever arch files with rigid plastic coated covers shall be used which
- A full set – in A3 format – of approved as-built drawings with all approved changes incorporated and supplemented with a comprehensive text based technical description of each element and system type of the works.
- A Copy of all completed BCAR Ancillary certificates and Statutory documents.
- All Required Building service and Architectural Data Evidence as detailed above.
- Full set of structural calculations for reference.
- Records of any toughened glass, including heat soak testing records. Include any records of NiS breakages that occur on-site during construction.
- A full list of warranty statements clearly identifying any terms and conditions.
- The approved Maintenance & Access Strategy Report which shall include methodology covering the procedures for replacement components, elements and materials which have been identified as 'Replicable' items and therefore having a design life which is less than the design life of the works.
- The approved Maintenance & Access Strategy Report, which shall include methodology covering the procedures for replacement of damaged and/or defective components, elements and materials.
- Manufacturer's recommendations and methodology for all routine cleaning and maintenance including but not limited to appropriate cleaning products, repair products, lubrication of component parts etc.

- Record/ check sheets for routine cleaning and maintenance works.

Presentation

- Indexing System
 - Each volume shall be numbered and shall be divided into sections using an appropriate numbering system
- Paper Sizes
 - The manual will contain manufacturer's literature which will be different sizes. Large pages will be folded and small pages will be fitted in plastic pockets with a reinforced edge punched for filing in A4 lever arch files.
 - The page size shall be standardised for all volumes using A4 paper (210 x 297mm) with four holes punched centrally in the longer side 80mm apart. Diagrams shall be prepared on A4 or A3 (297 x 420mm) paper
- Section Dividers
 - Stiff cardboard section dividers with extended tabs shall be used; these shall be SUMMIT Ring Book Guides or equivalent.
- Files for Manual
 - A4 lever arch files with rigid plastic-coated covers shall be used which shall be EMGEE or equivalent.
 - Inlaid lettering on the front cover shall indicate the title, i.e. Operating and Maintenance Manual, the Name of the Project and Volume Number. A label shall be fitted in the window on the spine of the file listing its contents.
 - The Trade Contractor is advised that all Record Drawings and O & M Manuals in the form described herein must be handed over to the Architect prior to the issue of a Practical Completion Certificate for the Trade Contract Works. Failure to issue these Record Drawings and O & M Manuals will also defer the issue of the Practical Completion Certificate until such time as they are received.
 - If the Trade Contractor fails to issue such documentation on time, then the Architect will have the right to engage such other third parties to prepare these Record Drawings and O & M Manuals and any resultant cost incurred by him shall be borne and set against the Contractor.
 - As-built Drawings - The Contractor shall include for a complete set of as-built drawings which shall incorporate all works carried out and completed by the Contractor
 - To facilitate submission of record drawings, the Contractor shall keep on site a complete set of all drawings used on the Contract Works, on which he shall mark alterations to the designs shown thereon as such alterations are carried out.

STANDARDS REFERENCED

- BS 6187:2011 Code of practice for full and partial demolition
- S.I. No. 504/2006 - Safety, Health and Welfare At Work (Construction) Regulations 2006
- Noise - Control of Pollution Act 1974 (Sections 60 and 61 of this Act)
- BS 5975:2019 - Code of practice for temporary works procedures and the permissible stress design of falsework
- BS 6031:2009 Code of practice for earthworks (incorporating corrigendum No.1)

- BS EN 12811-1:2003 Temporary works equipment. Scaffolds - Performance requirements and general design.
- ISO 8044:2020 Corrosion of metals and alloys — Vocabulary.
- BS 5531: 2007 - Code of Practice for Safety in Erecting Structural Frames
- I.S. EN 1996-1-1:2005+NA:2010
- S.R. 16:2016 – Guidance on The Use of I.S. En 12620:2002 – Aggregates for Concrete
- IS EN 197-1:2011 Cement - composition, specifications, and conformity criteria for common cements
- BS EN 1008: 2011 - Mixing Water for Concrete - Specification for Sampling, Testing and Assessing the Suitability of Water, Including Water Recovered from Processes in the Concrete Industry, as Mixing Water for Concrete
- 2015, BS 1881-124:2015 Testing concrete. Methods for analysis of hardened concrete (+A1:2021)
- BS EN 1992-1-1:2004 Eurocode 2: Design of concrete structures. General rules and rules for buildings (+A1:2014) (incorporating corrigenda January 2008, November 2010 and January 2014)
- BS 4449:2005+A3:2016 - Steel for the reinforcement of concrete. Weldable reinforcing steel. Bar, coil and decoiled product. Specification
- 2005, BS 4483:2005 Steel fabric for the reinforcement of concrete - specification (AMD 17105)
- BS 4466:1989 Shape Codes
- BS EN 3291: 1994 - Bearings, Airframe Rolling - Single Row Self-Aligning Roller Bearings in Steel, Cadmium Plated - Diameter Series 3 and 4 - Dimensions and Loads
- IS EN 1996-1-1:2005 Eurocode 6: Design of masonry structures. General rules for reinforced and unreinforced masonry structures (+A1:2012) (including Irish National Annex +A1:2014)
- BS 5628-1:2005 Code of practice for the use of masonry. Structural use of unreinforced masonry
- BS 5628-2:2005 Code of practice for the use of masonry. Structural use of reinforced and prestressed masonry
- BS 5628-3:2005 Code of practice for the use of masonry. Materials and components, design and workmanship
- I.S. EN 771-3:2011+A1:2015
- I.S. EN 771-3:2011+A1:2015 Specification for masonry units -Part 3: Aggregate concrete masonry units (Dense and lightweight aggregates)
- Stainless steel vertical twist type wall ties to BS EN 845-1.
- IS EN 845-2:2013 Specification for ancillary components for masonry - lintels (+A1:2016)
- BS EN 197-1: 2011 - Cement Composition, specifications and conformity criteria for common cements
- BS EN 459-1:2015 Building lime. Definitions, specifications and conformity criteria
- BS EN 13139:2002 Aggregates for mortar (AMD Corrigendum 15335)
- IS EN 998-2:2016 Specification for mortar for masonry. Masonry mortar
- BS 5628-3:2005 Code of practice for the use of masonry. Materials and components, design and workmanship
- BS 8102:2022 Protection of below ground structures against water ingress - code of practice
- BRE Digest 380, Damp-proof courses
- BS EN 636:2012 Plywood - Specifications (+A1:2015)

- BS EN 301: 2017 Adhesives, phenolic and amino plastic, for load-bearing timber structures. Classification and performance requirements
- BS 5707(1997): 1997 specification for preparations of wood preservatives in organic solvents
- BS EN 942: 2007 - Timber in joinery - general requirements
- BS 1202-1(2002): 2002 - Specification for nails - part 1: steel nails
- BS 1186-2(1988): 1988 - Timber for and workmanship in joinery - specification for workmanship
- BS EN 1995-1-1 (2004) Uk national annex to Eurocode 5: design of timber structures - part 1-1: general - common rules and rules for buildings
- BS EN 565: 2017 Mountaineering equipment - Tape - Safety requirements and test methods
- BS EN 13556: 2003 - Round and sawn timber - Nomenclature of timbers used in Europe
- BS 4978:2007 Visual strength grading of softwood - specification (+A2:2017)
- BS EN 1995-1-1 (2004) Uk national annex to Eurocode 5: design of timber structures - part 1-1: general - common rules and rules for buildings
- EN 14511-4:2018
- EN 14825
- BS EN 15502-1:2021 Gas-fired heating boilers. General requirements and test
- BS EN 14351-1:2006 Windows and doors - product standard, performance characteristics. Windows and external pedestrian door sets (+A2:2016) (Incorporating corrigendum November 2016)
- BRE 443:2019
- EN ISO 10211:2017
- BSRIA document BG 79/2020 Handover Information and O&M manuals.

3.0 SCOPE OF WORKS

To be read in conjunction with other related sections of the Specified Schedule of Works and drawings. The Specification and specified schedule will set out the nature and quality of finish required and provides for samples to be prepared to ensure the standard required is agreed and approved in advance. The contractor will be required to produce method statements, which shall address the relevant issues to work operations.

1. TEMPORARY SITE COMPOUND / AREA OF WORKS

- Location of a temporary site compound if required to be agreed with architect prior to works commencing.
- Proposed works are within active school property, measures to be put in place to ensure safety of all students, teachers & pedestrians at all times including strict traffic management, access to site compound and health / safety regimes.
- Contractor to separate and secure the works fully, it is the contractor's responsibility to erect Heras fencing along the boundary of the site / site compound and any area's where works take place as necessary to allow the safe construction of the works.
- The Heras fencing / separating partitions shall remain in place for the duration of the contract.
- The contractor may at his own discretion and risk, use existing boundary structures as hoarding to the site when appropriate should he consider the same to be appropriate and necessary and whereby suitable access can be formed.
- It is the responsibility of the contractor to obtain necessary approvals/consents/hoarding licenses etc. before commencing the relevant elements of the works. The Contractor shall securely erect the Architects site board to an agreed location.
- The importance of maintaining a tight control over unauthorised personnel entering / accessing the works area is to be enforced, a strict regime in this regard. Access onto the site / works area is strictly by invitation only by the Main Contractor and any persons authorised are to wear full PPE at all times.
- It is not recommended to store materials within site compound area, refer to section above.
- Any waste skips located within site compound must be min. 6m from all structures and boundaries in the event of arson.

2. SITE CLEARANCE, DEMOLITIONS & REMOVALS

- Location of a temporary site compound if required to be agreed with architect prior to works commencing.
- Proposed works are within school property, measures to be put in place to ensure safety of all students, teachers & pedestrians at all times including strict traffic management, access to site compound and health / safety regimes.
- Contractor to separate and secure the works fully, it is the contractor's responsibility to erect Heras fencing along the boundary of the site / site compound and any area's where works take place as necessary to allow the safe construction of the works.
- The Heras fencing / separating partitions shall remain in place for the duration of the contract.

- The contractor may at his own discretion and risk, use existing boundary structures as hoarding to the site when appropriate should he consider the same to be appropriate and necessary and whereby suitable access can be formed.
- It is the responsibility of the contractor to obtain necessary approvals/consents/hoarding licenses etc. before commencing the relevant elements of the works. The Contractor shall securely erect the Architects site board to an agreed location.
- The importance of maintaining a tight control over unauthorised personnel entering / accessing the works area is to be enforced, a strict regime in this regard. Access onto the site / works area is strictly by invitation only by the Main Contractor and any persons authorised are to wear full PPE at all times.
- It is not recommended to store materials within site compound area, refer to section above.
- The Contractor shall securely erect the Architects site board to an agreed location.
- Existing roofs are to be stripped back to the structure and all materials from the roofs to be safely disposed of.
- Damaged suspended ceiling tiles to be removed and disposed of safely.

3. ONGOING SCIENCE LAB PROJECT

- The Contractor shall be aware that a separate CASWS Science lab project at Stanhope Secondary School is currently at final procurement stage, with works anticipated to commence on site in October/ November 2026.
- There will be 4no thermal cowls installed in the roof as part of the mechanical ventilation system being installed in the science labs. These units won't be visible during site inspections when the project is live on e-tenders but they will be installed when this project starts on site. The contractor is to include in his costs for removing these thermal cowls safely storing them on site and for then reinstating and commissioning the units once the roof system has been installed.
- There will be extract ventilation unit from a fume cupboard installed in the roof as part of the mechanical ventilation system being installed in the science labs. This units won't be visible during site inspections when the project is live on e-tenders but they will be installed when this project starts on site. The contractor is to include in his costs for removing the unit safely storing it on site and for then reinstating and commissioning the unit once the roof system has been installed.

4. LOCATION OF SKIP / WASTE MATERIALS

- The chosen contractor is to liaise with Architect in order to agree the location of skip / waste materials. Refer to architects' drawings for provisional location, TBC prior to works commencing on site.
- Any waste skips located within site compound must be min. 6m from all structures and boundaries in the event of arson.
- Existing roofs are to be stripped back to the structure and all materials from the roofs to be safely disposed of.
- Damaged suspended ceiling tiles to be removed and disposed of safely.

5. INSTALLATION / ERECTION OF SCAFFOLDING

- Contractor shall provide appropriate physical barriers/ scaffolding, safety rails, toe boards etc as required for work at high level and installed fully compliant with the H S A regulations. Refer to the HSA Guidelines "Code of Practice for Safety in Roof work & Access / Working Scaffolds". Along with all the other relevant Published HSA guidelines must be adhered to at all times.
- The contractor to allow for scaffolding to remain in place for the full duration of works as required. All roof works must be complete with approval by architect prior to removal of scaffolding.

5.1 - SCAFFOLDING SIGNAGE

- Easily comprehensible signs showing the safe working load, for each working lift, should be placed on scaffolds and loading bays.
- Warning signs must also be erected on a scaffold that is not available for use, including during its assembly, dismantling or alteration and, where appropriate, the scaffolding should be protected, by barriers or other suitable means, from unauthorised access or use. Scaffold 'tag' systems are available that clearly indicate, usually at ladder access point, if the scaffold is in use or not.

5.2 - ACCESS TO THE SCAFFOLD

- A safe means of access and egress to all working platforms on the scaffold must be provided. This may include gangways, stairways, landings, ladders, ramps or hoists. Priority should be given to providing independent staircase access wherever practicable, particularly when there is high usage of the scaffolding or where materials will need to be carried between lifts by hand.
- Sufficient access points must be provided so that workers may easily gain access to their place of work. An inadequate number of access points may lead to unsafe practices such as workers climbing scaffold components to gain access to or egress from their place of work.

5.3 - LADDER ACCESS

- Scaffold access ladders should meet the following minimum standards:
 - Ladder access towers, fixed to the outside of the scaffold, should be erected, where practicable using single lift ladders and self-closing ladder gates to separate the access tower from the working platform;
 - The top of ladder stiles should be securely fixed to the scaffold by lashings;
 - The ladder should be set, where practicable, at an angle of not more than 4 verticals to 1 horizontal and allow sufficient room for workers access and egress through the ladder access opening;
 - Each stile should be equally supported on a firm and level footing;

- The ladder should extend at least 1m above the landing point unless a suitable alternative handrail has been provided;
- The maximum vertical distance between landings should be 9m;
- Where the ladder is internal, guardrails or other protective measures should be in place around the opening to prevent someone stepping into the ladder access opening accidentally;
- The clear dimensions of an access opening in a platform shall be at least 450mm wide, measured across the width of the platform, and 600mm long;
- Landings on ladder access towers should be provided with guard-rails and toe-boards and access openings protected with self-closing ladder gates or appropriate trap doors where deemed necessary. The provision of lifts, hoists, staircase towers or ramps should be considered where possible when justified by the frequency of passage, height to be negotiated, duration of use or evacuation requirements.

6. DoES DESIGN & CONSTRUCTION

- Proposed works shall be in accordance with the requirements of TGD 021 – 7 Minimum Performance Standards of Roof Finishes.
- These standards apply to all Primary and Post-primary construction projects, including special schools, funded in part or in whole by the Department of Education and Skills including Summer Works, Devolved Grant, Emergency Works and other similar schemes.
- The Minimum performance criteria within these guidelines has been updated to reflect TGD Part L of the Building Regulations 2017 Buildings, other than Dwellings, and the Department of Education and Skills TGD-033 requirements to achieve Nearly Zero Energy Buildings. Note the specification may not use minimum standards and where available will superseded tiemonium standard.
- Notwithstanding the above, the design and construction of all roofs shall comply with the relevant I.S., EN and B.S. Standards and meet the requirements of the current Building Regulations parts A to M as applicable.

1.1 GENERAL PERFORMANCE REQUIREMENTS

- Flexible waterproof membranes must have a 30-year manufacturer durability statement, along with a minimum of a 20-year manufacturer insurance backed guarantee for materials, workmanship and the entire installation on site for the specific project
- The design of roofs, roof systems and selection of roofing materials and finishes must consider the geographic location, siting and exposure of the building, along with any particular or extreme conditions it may be exposed to, eg, marine or coastal environments, wind velocities, unauthorised roof access/anti-social behaviour et
- Roof penetrations shall be kept to minimum. Where such penetrations occur all associated flashings and ancillary weathering components shall be of a similar performance and durability to the roof weathering material. Any sealants used must conform to the manufacturer's certification and approved details.
- Only suitably qualified and trained personnel shall undertake installation of roofing systems on school projects. The Design Team shall seek evidence of suitability and training directly from the roofing material manufacturer of such personnel.

- The roofing manufacturer shall undertake periodic inspections during the installation. Upon completion of all roof construction elements, a mandatory final inspection and written report, with confirmations on the adequacy of construction, materials, finishes etc., must be undertaken and completed by the roofing manufacturer. This written report shall be submitted for approval of to the DT leader and included in the handover documentation upon completion of the project.
- Roof systems shall incorporate a suitable vapour control layer (VCL) to the underside of the thermal insulation in accordance with TGD Part F. For built up roof systems, in school environments a steel liner sheet is not suitable for this purpose and a separate VCL is required
- The design and installation of roofing materials should not place an undue burden on the school authority with respect to maintenance and inspection regimes. All such requirements shall be clearly outlined to the school authority at the handover stage of the project.
- For roof refurbishment projects, the Design Team shall fully assess the suitability of the existing roof materials and substrates. Furthermore, the Design Team shall obtain from the roof manufacturer confirmation of the compatibility of the proposed roofing material with the existing roof finish in accordance with the required manufacturers certification and guarantees.

1.2 COMPLIANCE REQUIREMENTS

General

- All proposed designs for roofs for use in educational facilities must conform to the minimum performance criteria contained within this TGD and as set out in Table 1 below.
- The entire roof system build-up and associated components must have current NSAI or BBA certification.
- All associated flashing, upstands and ancillary weathering components shall be of a similar performance as the roof weathering sheet and shall be included in the required roof certification, guarantees and warranties. The use of third-party materials not covered by such certification, guarantees and warranties is not acceptable

Independent Accreditation

- The Design Team shall obtain evidence of independent test reports and certification for each of the following performance criteria contained in Table 1.
- (Note: The below Table 1 is not considered an exhaustive list of required performance criteria for all roof systems or materials and it is the responsibility of the individual Design Teams to ensure the designed roof system for the particular project adheres to the Building Regulations and relevant standards including but not limited to structural performance, fire performance, wind resistance, impact resistance etc. and obtain the associated certification from the roofing manufacturer)

Table 1 – Performance Criteria

Reference	DOES Requirements
Air Permeability (m/h/m2 @ 50pa)	≤3
Watertightness BS EN 14509:2013	Class A: Demanding applications with heavy rain and wind. The assembly shall be watertight up to 1,200 Pa (composite panel system)

BS EN 1928:2000
BS EN 13956:2012

Thermal Movement
BS5427:2016+A1:2017

Durability

Acoustic Performance
ISO 10140-1:2010/
2:2014

Thermal Transmittance
EN ISO 6946: 2017 & BR
443

Thermal Bridging &
surface condensation.
IS EN ISO 13788:2012;
IS EN ISO 10211:2007
Part 1 & 2; BRE Report BR
497 (2nd Edition).
Interstitial Condensation
Risk Analysis
IS EN ISO 13788:2012 &
BS 5250:2011+A1:2016.
IS EN ISO 15026:2007

Class B : 150 kPa (roofing membranes)

Code of practice for the use of profiled
sheet for roof and wall cladding on
buildings provides guidance on
allowable tolerances

Flexible waterproof membranes: 30
year manufacturer durability
statement with 20 year manufacturer
insurance backed guarantee for
materials, workmanship and
installation.

The Indoor Ambient Noise Levels
(IANL) must not exceed a 30dB limit
above Table 1.0 levels contained in
TGD-021-5 at the standardised heavy
rainfall rate of 40mm/hr.

Minimum 0.15W/m²K

The critical temperature factor (fCRsi)
for avoiding mould growth in School
Buildings is 0.75; Sports Halls,
Kitchens & Canteens is 0.8 (TGD Part L
D.2 & BRE IP1-06).

Humidity Class 4 buildings should be
used for analysis under IS EN ISO
13788.

In addition to the "Glaser method" (IS
EN ISO 13788) transient hygrothermal
simulation should be undertaken (IS
EN ISO 15026) to assess condensation
risks.

7. PHASING WORK ZONES

- The chosen Contractor is to include for onsite phasing of works zones as proposed works will take place in active school property, All Tendering Contractor to include proposed phasing of works and methodology of construction program within the tender submissions

and the chosen contractor will liaise and agree project masterplan and phasing with Architect prior to commencement of proposed works.

- Refer to architects' drawings for proposed extent of phased work zones (T104). All work zones and phasing TBC prior to commencement on site
- As mentioned above Heras fencing to be erected to separate active school areas from all work zones, temporary access roadway and site compound.
- Spalling works to the external façade of the main building is to be done during the summer months or when the school as an extended period off. These works will involve kango-hammering, sand blasting and grinding which are very noisy and can't be done when the school is active.

8. CLEANING BRICK

- Contractor to allow for area of brick indicated on sheet T100 to be steamed cleaned. Refer to section below.
- Variations in surface texture and hardness will be found brick which may prevent the safe use of abrasive cleaning, or reduce the pressure at which water jets can be used safely. Porosity also varies, and high absorbency may eliminate or stringently define the parameters of a chemical cleaning regime. Most brick types are also susceptible to impact damage and hence are readily damaged by abrasive cleaning.
- Some have a 'fire skin', a shallow surface layer of densely packed particles, and this must never be affected by cleaning processes.
- Careful consideration should also be given to the effect of the cleaning process on the mortar, as traditional brickwork pointing mortars, which are based on soft mixes of lime and sand, are usually softer than the bricks.
- Periods of saturation associated with water washing, chemical cleaning or wet abrasive cleaning can lead to the emergence of efflorescence. The efflorescence should be dry-brushed or vacuumed from the wall surface, taking care to ensure the salts are collected and not allowed to redeposit elsewhere on the masonry.



9. MOULD ERADICATION

- The Contractor is to allow for all concrete ceilings on the first floor to be sprayed with Mould Eradication Kit before the new paint finish is applied.
- This will allow for the mould on the existing ceilings to be eradicated before the new paint finish is applied.

10. DECORATION OF EXISTING DAMAGED CEILINGS

- Contractor is to allow for the cleaning & Preparation of the damaged paint in the rooms indicated on sheet T101
- Contractor is to allow for the area's indicated on architects ceiling plan to be chemically washed before the painting works are to start.

- Prepare all surfaces for decoration including repair, drying, filling, sanding etc. prior to decoration. Best qualities of white & red lead putty, linseed oil, knotting & driers are to be used and only tradesmen shall be engaged for the application of paint. Plasterwork is to be allowed to dry a minimum of three weeks or to be reviewed for the use of de-humidifying plant, before painting and is to be sufficiently dried out to receive paint. All joinery work to be properly and neatly cleaned on surface and all tongues & grooves and all jointing to be primed before assembling. All joinery to be primed prior to fitting. All coats of paints are to be thoroughly dry before subsequent coats are applied and rubbed down with fine waterproof glass paper between coats. One coat of suitable metal primer prior to application of compliant water-based paint system, solvent-based paint system or powder coating system in layers & thicknesses as recommended by manufacturer. Paints to be selected for ferrous & non-ferrous substrates as appropriate.
- **WALL PAINT**
- Contractor is to confirm the paint brand and colour with the architect prior to ordering.
- White matt emulsion to ceiling / bulkheads unless specified otherwise.
- Total Number of coats: 3no. top coats.





11.REMOVAL OF DAMAGED SUSPENDED CEILING TILES & PROPOSED CEILING TILES

- The Contractor is remove the suspended ceiling tiles and grids in the rooms highlighted on sheet T101. The Damaged tiles are to be disposed of safely off site.
- Contractor to allow for an Suspended ceiling Tile system in area's indicated on architects ceiling plan.
- New perimeter trim to be provided through, fixed directly to masonry wall.
- Ceiling Tile
- Surface finish: Lightly textured, unperforated, non-directional surface. Factory applied treatment for durability, impact, scratch, soil and humidity resistance. Durable edge treatment.
- Colour: Global White
- Light Reflectance = 87%, Measured in accordance with EN ISO 7724-2 & 3.
- Thickness: 19mm
- Board & Grid Size: 600 x 600mm modules.
- Board Edge: Tegular Edge
- Fire Rating: Euro class A2-s1, d0
- Dnfw: 36 dB in accordance with EN ISO 10848-2 & EN ISO 717-1
- Rw: 18 dB in accordance with EN ISO 140-3 & EN ISO 717-1
- aW : 0.70(H) in accordance with EN ISO 354 & EN ISO 11654
-
- Exposed Grid System
- Prelude 24 XL² / TLS or equivalent 24mm exposed grid system
- Colour: all products in Global White / RAL 9010
- Material: galvanised steel
- Surface finish: baked polyester paint
- Grid Size: 600 x 600mm modules.
- Fire Reaction: Euro class A1 EN 13501-1
- Suspension hangers: provided at 1200 x 1200mm centres
- Setting out: Centred in each room



- Perimeter Trims: galvanised steel 'L' perimeter trim fixings (1924 HD), baked polyester paint finish
-
- Main runner: Prelude 24 Peakform or equivalent
- Material: Steel
- Dimension: 24mm x 43mm x 3600mm
- Surface finish: Baked polyester paint
- Colour: Global white (WG)
- Cross tee unslotted: Prelude 24 XL² / TLS Peakform or equivalent
- Dimension: 24mm x 38mm x 600mm
- Material: Steel
- Surface finish: Baked polyester paint
- Colour: Global white (WG)



12. PROPOSED CEILING BELOW ROOF 2

- **MF Suspended Ceiling**
- Metal Stud Partition system type –standard suspended ceiling system non fire rated system to area below roof 2. Refer to architects ground floor plan
- **Performance characteristics**
 - Ceiling Fire Resistance (BS 476): n/a
 - Airborne Laboratory Sound Resistance (BS EN 717): 56Rw dB
 - Impact Laboratory Sound Transfer (BS EN 717): 68Lnw dB
- **Framing components**
 - Ceiling Sections: MF5 Ceiling Section
 - Ceiling Section installed maximum centres: 450mm
 - Primary Channels: MF7 Primary Channel
 - Primary Channel installed maximum centres: 1200mm
 - Connecting Clips: MF9 Connecting Clips used to connect MF5's to MF7's at every intersection.
 - Hanging Angle: GA1 Steel Angle
 - Hanging Angle installed maximum centres: 1200mm
 - Acoustical sealant: Sealant applied around perimeter of ceiling
 - Plasterboard components
 - Number of plasterboard layers: 1
 - plasterboards: Layer 1 (Inner): 12.5mm WallBoard
 - Screw fixings for boarding: Layer 1 (Inner): 25mm Drywall Screws

- All board joints installed staggered in accordance with current installation recommendations.
- Joints in face layer boards treated in accordance with Paper Joint Tape method.
- Drywall screws installed at 230mm centres within the field of the board and 150mm centres along board ends.
- Drywall screws must maintain a minimum 10mm penetration through metal framing components.
- Wafer Head Jack-Point Screws used to fix GA1 Angle to MF7 Primary Channels.

13. WATERPROOFING SYSTEM REQUIREMENTS

- Installation of the waterproofing system shall be carried out only by operatives trained, certified and currently approved by the proposed system manufacturer. Evidence of approval and operative competency shall be available for inspection at all times.
- Workmanship shall comply with BS 8217 and the proposed system manufacturer's current written specification and details. Non-compliant workmanship shall be remedied before the system guarantee is issued, irrespective of whether the roof appears watertight at inspection.
- All waterproofing membranes, insulation, vapour control layers, primers, adhesives, outlets and accessories shall form a single compatible system supplied or formally approved by the proposed system manufacturer. Unauthorised or incompatible components will be rejected. Related building work that can affect the system life shall be executed by suitably trained and qualified trades.
- Report immediately to the Employer's Representative and the system manufacturer any structural damage, irregularity, moisture, contamination or detail that may affect performance. Do not proceed until an accepted specialist solution has been provided.
- The contractor is to ensure water tightness of the roof at all times. Proper day joints must be formed at the end of each working day to provide a temporary seal. No mopping or loose covers will be permitted.
- Protect completed waterproofing from subsequent trades. The manufacturer's final inspection shall not take place until associated trades are complete, protection and debris are removed, outlets are clear and all roof areas are accessible.
- The approved roofing installer shall comply with the workmanship and quality-assurance requirements of the proposed system. Any deviation that could prejudice certification or guarantee shall be rectified at the Contractor's expense.
- All mechanical and electrical work to plant and equipment should be carried out by competent mechanical and electrical qualified tradesmen. All plant is to be reinstated and re-commissioned on completion of the roofing works in accordance with the client's detailed specification.
- Where building works are to be carried out by other trades, following completion of the waterproofing, the contractor must make adequate provision for supplying protection to prevent damage to the new waterproofing.
- Provide a compatible sacrificial protection layer beneath all plant or equipment placed on the finished roof, extending at least 25 mm beyond every contact point. Provide load-spreading supports where necessary, designed so that imposed loads do not damage the waterproofing, insulation or deck.
- All lead work to be carried out by skilled tradesmen and in accordance with current codes of practice and the recommendations of the Lead Sheet Association.

- Provide a minimum 20-year insurance-backed product and workmanship guarantee for the complete roof system, commencing at Practical Completion and subject to final inspection by the system manufacturer. The guarantee shall cover the waterproofing membranes, insulation, vapour control layer, accessories, attachment and installation. Submit full terms with the tender.

14.REQUIREMENTS FOR ALL ROOFS

- All roofing materials are to be in compliance with TGD 021 -7. All roofing materials are to have a 30 year manufacturer durability statement and a 20 year manufacturer insurance backed guarantee.
- For all roof penetrations all associated flashings and ancillary weathering components shall be of a similar performance and durability to the roof weathering material. Site applied liquid membranes and exposed mastics are not considered acceptable in conjunction with metal cladding sheets. Any sealants used must conform to the manufactures certification and approved details.
- The contractor shall provide evidence of suitability and training of all personnel working on the roof
- The roofing manufacturer shall undertake periodic inspections during the installation. Upon completion of all roof construction elements a mandatory final inspection and written report, with confirmations on the adequacy of construction, materials, finishes etc, must be undertaken and collected by the roofing manufacture. This written report shall be submitted for approval to the Architect and it must be included in the handover documentation on completion of the project.
- Site monitoring undertaken weekly by the manufacturer's Site Technicians, each visit being documented and circulated to all relevant parties electronically within 24hrs.
- BBA approval must be for the complete system (all components) i.e. including Vapour barrier, Insulation, Underlayer and Capping sheet.

15.WORKS ON ROOF 1 (ROOF OVER STUDENT CANTEEN)

- Roof area: Roof R1
- Substrate: Remove and dispose of exiting PVC membrane, insulated and make good existing concrete decking. :Concrete deck (designed and constructed to provide a minimum finished slope of min 1°).
- - Preparation: As clause 610C.
- Primer: compatible quick-drying substrate primer, selected by the system manufacturer for the existing roof deck and for all upstands and skirtings. Apply at the manufacturer's stated coverage rate and in accordance with current written instructions. For application method and guidance information, refer clause as clause 660A
- Vapour control layer: minimum 4 mm thick aluminium-lined elastomeric bitumen vapour control membrane, torch-applied or otherwise fully bonded where permitted by the accepted system and fire-risk assessment. Seal all laps, edges and penetrations. Installation as clauses 670D, 710
- Insulation: tapered rigid PIR roof insulation scheme designed by the system specialist to provide positive falls, eliminate backfalls and achieve the specified roof U-value

(0.12Wm²k). Provide layout, thickness schedule, drainage and condensation calculations with the technical submission.

- (refer Clause 230). This product has a zero ODP and a Green guide rating of 'A'. Installation as clause 680D and 775.
- Insulation to upstands: Vertical upstands to roof light kerbs, access hatches i.e. builders kerbs (but excluding proprietary insulated integrated rooflight units) and changes of level, the Insulation is to be the same thickness and meet the same thermal value as used for the flat area. Installation as clause 681B.
- Vertical upstands to insulated abutments: minimum 30 mm rigid PIR insulation board, foil faced, zero ODP and suitable for the proposed system. Extend insulation to maintain thermal continuity and provide a minimum 150 mm finished waterproofing upstand above the completed roof surface, or greater where shown. Install vertical insulation before adjoining flat insulation where required for secure retention.
- Waterproof covering: complete reinforced bituminous warm-roof waterproofing system designed, supplied, installed, inspected and guaranteed as a single system.
- Underlayer: minimum 3 mm SBS elastomeric reinforced bitumen membrane with glass-fibre reinforcement of not less than 120 g/m²; self-adhesive or otherwise cold-applied where necessary to satisfy the project fire-safety and safe-to-torch requirements.
- Attachment: As clauses 710, 747A
- Top layer / cap sheet: heavy-duty SBS elastomeric reinforced bitumen cap sheet with mineral finish, root resistance where required, and a service-life statement in excess of 30 years. 5.2 mm thick, 250g/m² polyester reinforced, SBS elastomeric bitumen torch applied capping sheet, Charcoal Grey slate finish.
- Attachment: As clauses 710, 750B.
- Flashings and detail work: compatible reinforced bituminous detailing membrane of suitable thickness and reinforcement, installed to the system manufacturer's standard details and the accepted project-specific details.
- Surface protection: provide clearly defined maintenance walkways using compatible, contrasting mineral-finished protection membrane or purpose-made walkway tiles, fully bonded without impairing drainage.
- Accessories: -
- Provide proprietary insulation upstand support brackets compatible with the complete waterproofing system where required by the accepted details.
- Provide 50 x 50 mm rigid insulation angle fillets, compatible with the complete waterproofing system, at internal changes of plane where required.
- Provide purpose-made warm-roof outlets with minimum 90 mm nominal bore where shown or required by hydraulic calculation, complete with factory-bonded compatible membrane flange, clamping or bonding accessories and removable dome grating.
- Provide two new overflow outlets through the brick parapet as indicated on the Architect's drawings. Size and invert levels shall be confirmed by the roofing system designer's drainage calculation and coordinated with the primary outlets.

16.WORKS ON ROOF 2 (FLAT ROOF OVER LINK CORRIDOR)

- Roof area: Roof R2
- Substrate: Remove and dispose of exiting PVC membrane, insulated and replace plywood decking. : Plywood deck (designed and constructed level with no deflections,) falls created with tapered insulation.

- - Preparation: As clause 610A.
- Primer: compatible bonding primer for self-adhesive bituminous membranes, applied to the roof substrate, upstands and skirtings at the manufacturer's stated coverage rate.
- Vapour control layer: minimum 2.5 mm aluminium-lined SBS elastomeric self-adhesive bitumen vapour control membrane, fully sealed at laps, edges and penetrations.
- Insulation: rigid PIR flat roof insulation board, fire performance suitable for the proposed roof assembly, zero ODP and minimum 200 mm thickness unless the specialist calculation demonstrates a different thickness is required to achieve the specified U-value (0.12W/m²k). Provide condensation-risk analysis.
- Waterproof covering: complete reinforced bituminous warm-roof waterproofing system designed, supplied, installed, inspected and guaranteed as a single system.
- Underlayer: minimum 3 mm SBS elastomeric reinforced bitumen membrane with glass-fibre reinforcement of not less than 120 g/m²; self-adhesive or cold-applied where required by the fire-risk assessment.
- Attachment: As clauses 710, 747A
- Top layer / cap sheet: heavy-duty SBS elastomeric reinforced bitumen cap sheet with mineral finish and a service-life statement in excess of 30 years.
, 5.2 mm thick, 250g/m² polyester reinforced, SBS elastomeric bitumen torch applied capping sheet, Charcoal Grey slate finish.
- Attachment: As clauses 710, 750B.
- Flashings and detail work: compatible reinforced bituminous detailing membrane installed to the accepted system details.
- Surface protection: provide clearly defined maintenance walkways using compatible, contrasting mineral-finished protection membrane or purpose-made walkway tiles, fully bonded without impairing drainage.
- Accessories: -
- Provide proprietary insulation upstand support brackets compatible with the complete waterproofing system where required by the accepted details.
- Provide 50 x 50 mm rigid insulation angle fillets, compatible with the complete waterproofing system, at internal changes of plane where required.
- Provide purpose-made warm-roof outlets with minimum 90 mm nominal bore where shown or required by hydraulic calculation, complete with factory-bonded compatible membrane flange and removable dome grating.

17. WORKS ON ROOF 3 (MAIN TWO STOREY ROOF)

-
- Roof area: Roof R3
- Substrate: Remove and dispose of existing PVC membrane, insulated and make good existing concrete decking. :Concrete deck (designed and constructed level with no deflections,) falls created with tapered insulation.
- - Preparation: As clause 610C.
- Primer: compatible quick-drying substrate primer selected by the system manufacturer for the deck, upstands and skirtings; apply at the manufacturer's stated coverage rate.
- Vapour control layer: minimum 4 mm aluminium-lined elastomeric bitumen vapour control membrane, torch-applied or otherwise fully bonded where permitted by the accepted system and fire-risk assessment.

- Insulation: tapered rigid PIR roof insulation scheme designed by the system specialist to provide positive falls and achieve the specified U-value. Submit layout, thickness schedule and calculations.
- (refer Clause 230). This product has a zero ODP and a Green guide rating of 'A'. Installation as clause 680D and 775.
- Form Tapered gutter within insulation, as clause 680L.
- Insulation to upstands: Vertical upstands to roof light kerbs, access hatches i.e. builders kerbs (but excluding proprietary insulated integrated rooflight units) and changes of level, the Insulation is to be the same thickness and meet the same thermal value as used for the flat area (0.12W/m2K). Installation as clause 681B.
- Vertical upstands: minimum 30 mm foil-faced rigid PIR insulation, zero ODP and compatible with the complete system. Maintain thermal continuity and the minimum finished waterproofing upstand height shown or required by current guidance.
- Waterproof covering: complete reinforced bituminous warm-roof waterproofing system designed, supplied, installed, inspected and guaranteed as a single system.
- Underlayer: minimum 3 mm SBS elastomeric reinforced bitumen membrane with glass-fibre reinforcement of not less than 120 g/m²; self-adhesive or cold-applied where required by the fire-risk assessment.
- Attachment: As clauses 710, 747A
- Top layer / cap sheet: heavy-duty SBS elastomeric reinforced bitumen cap sheet with mineral finish and a service-life statement in excess of 30 years.
, 5.2 mm thick, 250g/m² polyester reinforced, SBS elastomeric bitumen torch applied capping sheet, Charcoal Grey slate finish.
- Attachment: As clauses 710, 750B.
- Flashings and detail work: compatible reinforced bituminous detailing membrane installed to the accepted system details.
- Surface protection: provide clearly defined maintenance walkways using compatible contrasting protection membrane or purpose-made walkway tiles.
- Accessories: -
- Provide proprietary insulation upstand support brackets compatible with the complete waterproofing system where required.
- Provide 50 x 50 mm rigid insulation angle fillets compatible with the complete waterproofing system.
- Provide purpose-made warm-roof outlets with minimum 90 mm nominal bore where shown or required by hydraulic calculation, complete with compatible membrane flange and removable dome grating.
- Refer to structural engineers drawings for the location of the holes to be made in the existing parapet for new rain water outlets, new hoppers to be installed with 150mm rain water pipes.
- Existing expansion joints are to be removed and replaced with new upgraded expansion joints.

18.WORKS ON ROOF 4 (FLAT ROOF OVER BOILER ROOM AREA)

- Roof area: Roof R4
- Substrate: Remove and dispose of existing PVC membrane, insulated and make good existing concrete decking. :Concrete deck (designed and constructed level with no deflections,) falls created with tapered insulation.

- - Preparation: As clause 610C.
- Primer: compatible quick-drying substrate primer selected by the system manufacturer for the deck, upstands and skirtings.
- Vapour control layer: minimum 4 mm aluminium-lined elastomeric bitumen vapour control membrane, fully bonded where permitted by the accepted system and fire-risk assessment.
- Insulation: tapered rigid PIR roof insulation scheme, zero ODP, designed to provide positive falls and achieve the specified U-value (0.12W/m²k). Submit layout, thickness schedule, environmental data and calculations.
- Form Tapered gutter within insulation, as clause 680L.
- Insulation to upstands: Vertical upstands to roof light kerbs, access hatches i.e. builders kerbs (but excluding proprietary insulated integrated rooflight units) and changes of level, the Insulation is to be the same thickness and meet the same thermal value as used for the flat area. Installation as clause 681B.
- Vertical upstands: minimum 30 mm foil-faced rigid PIR insulation, zero ODP and compatible with the complete system. Maintain thermal continuity and required finished waterproofing upstand heights.
- Waterproof covering: complete reinforced bituminous warm-roof waterproofing system designed, supplied, installed, inspected and guaranteed as a single system.
- Underlayer: minimum 3 mm SBS elastomeric reinforced bitumen membrane with glass-fibre reinforcement of not less than 120 g/m²; self-adhesive or cold-applied where required by the fire-risk assessment.
- Attachment: As clauses 710, 747A
- Top layer / cap sheet: heavy-duty SBS elastomeric reinforced bitumen cap sheet with mineral finish and a service-life statement in excess of 30 years.
, 5.2 mm thick, 250g/m² polyester reinforced, SBS elastomeric bitumen torch applied capping sheet, Charcoal Grey slate finish.
- Attachment: As clauses 710, 750B.
- Flashings and detail work: compatible reinforced bituminous detailing membrane installed to the accepted system details.
- Surface protection: provide clearly defined maintenance walkways using compatible contrasting protection membrane or purpose-made walkway tiles.
- Accessories: -
- Provide proprietary insulation upstand support brackets compatible with the complete waterproofing system where required.
- Provide 50 x 50 mm rigid insulation angle fillets compatible with the complete waterproofing system.
- Provide purpose-made warm-roof outlets with minimum 90 mm nominal bore where shown or required by hydraulic calculation, complete with compatible membrane flange and removable dome grating.
- Hole to be broken out in existing parapet to allow for new rain water outlet as per detail indicated in architects drawings. New hopper to be installed as well as new 150mm rain water pipe.

19.WORKS ON ROOF 5 (GYM ROOF)

- Roof area: Roof R5
- Substrate: Remove and dispose of exiting PVC membrane, insulated and make good existing wood wool decking. : Existing wood wool deck (designed and constructed to a fall of TBC,)
- - Preparation: As clause 610A.

- Primer: compatible bonding primer for self-adhesive bituminous membranes, applied to the roof substrate, upstands and skirtings.
- Vapour control layer: minimum 2.5 mm aluminium-lined SBS elastomeric self-adhesive bitumen vapour control membrane.
- Insulation: rigid PIR flat roof insulation board, zero ODP, minimum 200 mm thickness unless calculations demonstrate otherwise, selected to achieve the specified U-value (0.12W/m²k) and suitable fire performance for the complete roof assembly.
- Vertical upstands: minimum 30 mm foil-faced rigid PIR insulation compatible with the complete system. Maintain thermal continuity and required finished waterproofing upstand heights.
- Form welted drip details to open perimeters served by external gutters using compatible detailing membrane wrapped around a pre-primed suitable former and installed to the accepted system detail.
- Waterproof covering: complete reinforced bituminous warm-roof waterproofing system designed, supplied, installed, inspected and guaranteed as a single system.
- Underlayer: minimum 3 mm SBS elastomeric reinforced bitumen membrane with glass-fibre reinforcement of not less than 120 g/m²; self-adhesive or cold-applied where required by the fire-risk assessment.
- Attachment: As clauses 710, 747A
- Top layer / cap sheet: heavy-duty SBS elastomeric reinforced bitumen cap sheet with mineral finish and a service-life statement in excess of 30 years.
, 5.2 mm thick, 250g/m² polyester reinforced, SBS elastomeric bitumen torch applied capping sheet, Charcoal Grey slate finish.
- Attachment: As clauses 715A, 750B.
- Flashings and detail work: compatible reinforced bituminous detailing membrane installed to the accepted system details.
- Surface protection: N/A
- Accessories: -
- Provide proprietary insulation upstand support brackets compatible with the complete waterproofing system where required.
- Provide 50 x 50 mm rigid insulation angle fillets compatible with the complete waterproofing system.

20. GENERAL GUIDANCE AND PERFORMANCE FOR ALL ROOFS

- **210 ROOF PERFORMANCE**
- General: Secure, free draining and weather tight.
- **230 INSULATION**
- Thermal transmittance (Average U-Value) of roof: 0.12W/m²K
- Finished Surface: Suitably even, stable and robust to receive roof covering.
- Insulation compliance: To relevant British Standard or Agrément certified.
- **469 DESIGNATED MAINTENANCE WALKWAYS**
- Manufacturer/Supplier:
- Product: Bitumen compatible free draining rubber matting.
- Location: As designated by the client.
- Application: strictly in accordance with the proposed system manufacturer's current written recommendations and installation guidance. Obtain written confirmation of suitability and compatibility for each substrate and interface before commencing.

- **PRODUCTS**
- **EXECUTION GENERALLY**
- **515 ADVERSE WEATHER**
 - General: Do not lay coverings in high winds, wet or damp conditions or in extremes of temperature unless effective temporary cover is provided over working area.
 - Unfinished areas of roof: Keep dry, protect edges of laid membrane from wind action.
- **520 INCOMPLETE WORK**
 - End of working day: Provide temporary seal to prevent water infiltration.
 - On resumption of work: Cut away tail of membrane from completed area and remove from roof.
- **530 APPLYING PRIMERS**
 - Coverage per coat (minimum): As per manufacturer's recommendations.
 - Surface coverage: Even and full.
 - Coats: Fully bond. Allow volatiles to dry off thoroughly between coats.
- **560 GENERAL WORKMANSHIP REQUIREMENTS**
 - Installation shall be carried out only by operatives trained, certified and currently approved by the proposed waterproofing system manufacturer. Evidence shall be available for inspection.
 - Workmanship shall comply with BS 8217 and the proposed system manufacturer's current written specification and details. Remedy all non-compliant work before issue of the guarantee.
 - All waterproofing materials and components shall form a single compatible system supplied or formally approved by the proposed system manufacturer. Unauthorised or incompatible components will be rejected.
 - Report immediately any structural damage, irregularity or detail that may affect system performance to the Employer's Representative and the system manufacturer. Do not proceed until an accepted solution is provided.
 - The contractor is to ensure water tightness of the roof at all times. Proper day joints must be formed at the end of each working day to provide a temporary seal. No mopping or loose covers will be permitted.
 - Protect completed waterproofing from subsequent trades. Final inspection shall take place only when associated work is complete, protection and debris are removed and the roof is fully accessible.
 - The approved roofing installer shall comply with all workmanship and quality-assurance requirements. Rectify any deviation that could prejudice certification or guarantee.
 - All mechanical and electrical work to plant and equipment should be carried out by competent mechanical and electrical qualified tradesmen. All plant is to be reinstated and re-commissioned on completion of the roofing works in accordance with the client's detailed specification.
 - Where building works are to be carried out by other trades, following completion of the waterproofing, the contractor must make adequate provision for supplying protection to prevent damage to the new waterproofing.
 - Provide a compatible sacrificial protection layer beneath plant or equipment placed on the finished roof, extending at least 25 mm beyond contact points. Provide load-spreading supports where necessary.
 - All lead work to be carried out by skilled tradesmen and in accordance with current codes of practice and the recommendations of the Lead Development Association.
- **561 SITE INSPECTIONS**

- The system manufacturer's technical representative shall undertake staged inspections during the works. Give adequate notice before covering the vapour control layer, insulation, underlayer or critical details and before commencing the cap sheet. Record and close out all observations.
- Notify the system manufacturer when the roof and all related work and snagging are complete and ready for final inspection. Obtain written acceptance before Practical Completion.
- **562 HEALTH & SAFETY INFORMATION – ROOFING WORK**
- 1. Suitable precautions must be taken to prevent accidents occurring when roofing systems are being installed.
- 2. The contractor must ensure that adequate measures are taken to effectively prevent injury to members of the public and other persons using the premises.
- 3. Whenever possible, access to the roof should be made via internal staircases rather than by temporary means. Where this is not available, it is the responsibility of the contractor to ensure a safe means of access and a safe working place is established through the risk assessment process.
- 4. Where microwave equipment is installed at roof level, care must be taken to prevent persons working on the roof from being exposed to large doses of microwave radiation.
- 5. Similarly, the contractor should liaise with the client to ensure that there are no extract outlets situated on the roof where noxious or harmful emissions could affect persons working. Suitable precautions will be necessary to prevent exposure where this situation arises.
- 6. The contractor is responsible for providing adequate fire fighting equipment in the form of extinguishers during work on the roof. These should be kept in easily accessible locations and be suitably signed.
- 7. The contractor must ensure that suitable written method statements and risk assessments are available for the work being undertaken. It is essential that working at height and manual handling methods be fully assessed as roofing materials are heavy and can cause serious injury.
- 8. The contractor must ensure that suitable information about the roof covering is provided to the Client at the end of the work to ensure that work in future can be carried out safely. This information will form part of the Health and Safety File.
- 9. All persons working on the roof should be provided with, and wear, suitable personal protective equipment and wet weather gear as identified in the risk assessment. Training must be provided to all contract staff on the safe use of the equipment.
- 10. The installer must observe Product Safety Datasheets and complete COSHH assessments relevant to the materials being used.
- 11. No work must be carried out on fragile roofs or where there are skylights unless a suitable risk assessment has been completed and precautions taken to prevent persons falling through fragile roofs and openings.
- 12. HSE guidance must be followed when carrying out any work involving interference with asbestos.
- 13. Current CDM Regulations must be observed.
- **SUBSTRATES / VAPOUR CONTROL LAYERS / WARM ROOF INSULATION**
- **610A SUITABILITY OF SUBSTRATES (PLYWOOD)**
- Substrates generally: Secure, clean, dry, smooth, and free from frost, contaminants, voids and protrusions. The new exterior grade plywood deck, minimum 18mm thickness as specified by client, conforming to BS EN 636-3 & CPD/CE compliance, fixed directly to either the joists or firings using non corroding ring shank nails or recommended screw fasteners.

- Falls: Where provided, the falls/cross-falls should be designed to 1:40 to achieve minimum finished falls of 1:80 to comply with drainage requirements of BS 6229:2018 and the SPRA design guide. No deflections or back-falls present if the deck is designed to achieve a 0° level finished surface (including when using tapered insulation to provide falls).
- Preliminary work: Complete including:
 - - Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
 - - Fixing of battens, fillets and anchoring plugs/strips.
- Moisture content and stability of substrate: Must not impair roof integrity.
- Preparation: All such items to be rectified as necessary to eliminate the possibility of puncturing the new waterproofing system.
- **610C SUITABILITY OF SUBSTRATES (CONCRETE)**
- Substrates generally: Secure, clean, dry, smooth, and free from frost, contaminants, voids and protrusions.
- Falls: Where provided, the falls/cross-falls should be designed to 1:40 to achieve minimum finished falls of 1:80 to comply with drainage requirements of BS 6229:2003 and current codes of practice BS 8217:2005. No deflections or back-falls present if the deck is designed to achieve a 0° level finished surface.
- Preliminary work: Complete including:
 - - Grouting of deck slab joints, application of surface screed (including falls if specified).
 - - Formation of abutment upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
 - - Fixing of battens, fillets and anchoring plugs/strips as required.
- Moisture content and stability of substrate: Must not impair roof integrity. Please note that cast in-situ concrete decks with steel trapezoidal formers need 60 days to dry out and cure before they can be waterproofed. Otherwise, 30 days.
- Preparation: The new concrete/ screed deck to be allowed to cure thoroughly, remove rough edges, and surface defects. If the surface is very rough a skin screed of concrete to be applied to give a smooth surface.
- **640 FIXING TIMBER TRIMS**
- Fasteners: type/length appropriate and suitable to particular deck substrate.
- Fixing centres (maximum): 500 mm.
- **WATERPROOF COVERINGS/ ACCESSORIES**
- **660A APPLYING PRIMER**
- Purpose: compatible multi-purpose substrate primer to seal and prepare dry surfaces before application of self-adhesive bituminous membranes.
- Before application: All surfaces must be dry, clean and free from dust, dirt, oil, grease and loose material.
- Application method: Spray Applied to provide even and full coverage. Avoid pooling. Never attempt torching within 10 min of primer application, even if the surface appears dry.
- Application rate:
 - - 300mm wide spray
 - - Coverage: Approx. 60 g/m²
 - - Two coats may be required for very porous substrates.
- Application temperature: +5 - +30°C
- Drying time: Approx. 5 - 10 mins, dependent upon ambient temperature and material porosity.
- Coats: Fully bond. Allow volatiles to dry off thoroughly between coats.
- Re-application: Necessary after 4 hours exposure if waterproofing has not yet been applied, to maintain adhesion performance.

- Caution: Use only outdoors in well ventilated areas or with respiratory apparatus and keep away from all sources of ignition. Take necessary precautions to avoid the solvent vapour from entering the buildings ventilation system.
- OR
- Purpose: compatible specialist substrate primer to seal and prepare dry surfaces before application of self-adhesive bituminous membranes.
- Application method: Apply by brush or roller to provide even and full coverage. Avoid pooling.
- Application rate:
- Timber/Metal: Approx. 200 g/m²
- Concrete / brickwork: Approx. 200-300 g/m² depending upon roughness and porosity.
- Two coats may be required for very porous substrates.
- Application temperature: 5-25°C
- Drying time: Approx.30 mins, dependent upon ambient temperature and material porosity.
- Coats: Fully bond. Allow volatiles to dry off thoroughly between coats.
- Re-application: Necessary after 4 hours exposure if waterproofing has not yet been applied, to maintain adhesion performance.
- Caution: Use only outdoors in well ventilated areas or with respiratory apparatus and keep away from all sources of ignition. Take necessary precautions to avoid the solvent vapour from entering the buildings ventilation system.
- **660C APPLYING PRIMER**
- Purpose: compatible black bonding primer for self-adhesive bituminous membranes.
- Use: seal and prepare clean, dry substrates before application of self-adhesive bituminous membranes.
- Before application: All surfaces must be dry, clean and free from dust, dirt, oil, grease and loose material.
- Application method: Apply by brush or roller to provide even and full coverage. Avoid pooling.
- Application rate:
- Timber/Metal: Approx. 200 g/m²
- Concrete / brickwork: Approx. 200-300 g/m² depending upon roughness and porosity.
- - Two coats may be required for very porous substrates.
- Application temperature: +5 - +30°C
- Drying time: Approx.30 mins, dependent upon ambient temperature and material porosity.
- Coats: Fully bond. Allow volatiles to dry off thoroughly between coats.
- Re-application: repeat where the maximum open time stated by the primer manufacturer is exceeded before the membrane is applied.
- Caution: Use only outdoors in well ventilated areas or with respiratory apparatus and keep away from all sources of ignition. Take necessary precautions to avoid the solvent vapour from entering the buildings ventilation system.
- **670D LAYING AIR AND VAPOUR CONTROL LAYER**
- Attachment: fully bond to the deck substrate in accordance with the accepted system. For new concrete, use the partial-bonding method required by current codes of practice and the system manufacturer's written instructions.
- Side and end laps: minimum 100 mm, with all laps torch sealed to provide a continuous bitumen bead extrusion. Installation methods as recommended by manufacturer.
- Penetrations: Fully seal using bonding methods recommended by manufacturer.
- Edges of insulation at roof edges, abutments, upstands, kerbs, penetrations and the like: Enclose, with air and vapour control layer:

- - Dressed up 150 mm above surface of insulation, thus providing 100 mm (minimum) seal when overlapped by the roof covering.
- 680D LAYING WARM ROOF INSULATION
- Setting out:
 - - Long edges: Fully supported. (Where metal decking is specified, the long edges must be fully support and run at right angles to metal deck troughs).
 - - End edges: Fully supported.
 - - Joints: close butted together.
 - - End joints: Stagger.
- Bedding: bond insulation to the upper surface of the vapour control layer using a compatible polyurethane insulation adhesive. Apply continuous beads at the spacing and rate required by the wind-uplift calculation and manufacturer's instructions.
- Multiple board layers: where more than one insulation layer is required, bond each layer using compatible insulation adhesive at the rate required by the wind-uplift calculation. Stagger and offset joints between layers.
- Protection to exposed edges of insulation: Reduced thickness treated timber batten as clause 640 (or equivalent plywood construction), a minimum width of 150 mm and 10 mm less in thickness than the insulation to accommodate the build-up of the waterproofing layers – all securely fixed to the deck. Outer edges chamfered at changes in level.
- Completion: Boards must be in good condition, well-fitting and stable.
- **681B INSTALLING WARM ROOF INSULATION (INSULATED UPSTANDS)**
- Bedding: Fully bonded to the vapour control layer by torch activating the membrane surface profiles. Board joints to be close butted. Uprand insulation boards should be installed before
- Sequence flat and vertical insulation so that the upstand insulation is securely retained at base and top. At cavity-insulated abutments provide compatible mechanical support brackets where required by the accepted detail.
- Protective hard edges: provide treated timber battens or compatible insulated upstand brackets, as appropriate, at right-angled edges including parapet tops and abutment upstands.
- Encapsulation seal: Provision must be allowed for forming a minimum 100 mm lap seal between the vapour control layer and underlayer, where the insulation finishes.
- 710 LAYING REINFORCED BITUMEN MEMBRANES GENERALLY
- Direction of laying: Unrolled up the slope.
- Where practicable, install so that water drains over and not into laps.
- Side and end laps (minimum): 100 mm, with the exception of mineral surfaced membranes, where side laps are 80 mm, but the head laps to remain 100 mm.
- Head and side laps: Offset.
- Intermediate and top layer/Capping sheet: Fully bond.
- Successive layers: Apply without delay. Do not trap moisture.
- Strips of bitumen membrane for 'linear' details: Cut from length of roll e.g. gutter sole pieces.
- Detail flashings: to be cut from width of roll.
- Completed coverings: Firmly attached, fully sealed, smooth, weather proof and free draining.
- 715A LAYING REINFORCED BITUMEN MEMBRANES ON ROOFS PITCHED 5° AND ABOVE
- 18mm WBP Plywood or OSB3 Capping Sheet Retention Plate: When insulation is to be incorporated within the system, the retention plate should be installed to allow provision for mechanical fixing of the top leading edge of the capping sheet. The plate to run continuously

across the roof slope coinciding with where the top leading edge of the capping sheet occurs.

- A continuous run of the retention plate will be required for each row where the cap sheet head laps are staggered. Head laps should not be fixed in a continuous line, unless the roof is less than the length of the roll from the ridge to the gutter eaves.
- Install membrane retention plates in accordance with the proposed system manufacturer's current written guidance and the project wind-uplift calculation.
- Locations: as required by the accepted project-specific wind-uplift design, system installation manual and details.
- Size: 18mm x 300mm x 2400mm.
- Insulation thickness: Where the mechanical retention plate is to be incorporated, the insulation below needs to be 20mm thinner to ensure the plate finishes virtually flush with the main area insulation. Mechanically fix the plate through to the deck using the specified thermally broken fasteners, as clause 354.
- Prime mechanical retention plates with a compatible primer before applying bituminous membranes.
- Setting out of membranes: Parallel to roof slope, with successive layers carried over ridges.
- Lengths (maximum): As per roll length.
- End laps: Half stagger and align on alternate bitumen membranes.
- Additional fixing of bitumen membranes: mechanically fix cap-sheet head laps using not less than five equally spaced suitable fasteners across each 1 m sheet width, or as required by the project-specific wind-uplift calculation where more onerous. Obtain the system designer's written detail where conditions vary.
- **747A SELF-ADHESIVE BONDING OF REINFORCED BITUMEN UNDERLAYER**
- Bond: Full over whole surface, with no air pockets.
- Underlayer: cold apply and fully bond by removing the release film and rolling to achieve full adhesion. Unless the accepted system requires otherwise, provide 100 mm head laps, 80 mm side laps and 100 mm laps at upstands, edges and flashings. Seal laps using the safe method appropriate to the substrate and fire-risk assessment.
- Underlayer inspection: give adequate notice to the system manufacturer's technical representative before laying the cap sheet. Rectify all defects, contamination, ponding and incomplete details before proceeding.
- **750B LAYING REINFORCED BITUMEN TORCH-ON CAPPING SHEET**
- Bond: Full over whole surface, with no air pockets.
- Excess compound at laps of top layer/ capping sheet: Leave as a 5 mm - 10 mm continuous bitumen bead extrusion.
- Laying top layer: fully bond to the underlayer using the accepted safe application method. Unless the accepted system requires otherwise, provide 100 mm head laps, 80 mm side laps and 100 mm laps at upstands, edges and flashings.
- Final inspection: the system manufacturer's technical representative shall inspect the completed waterproofing before any overburden, landscaping or access finishes are placed. Rectify observations and obtain written acceptance so that the guarantee is not prejudiced.
- **780 WELTED DRIPS**
- Material for torch-free locations: self-adhesive or cold-applied SBS elastomeric bitumen cap sheet suitable for the proposed system and substrate, installed without naked flame.
- Material for locations where torch application is permitted: torch-applied SBS elastomeric bitumen mineral-finished cap sheet, installed in accordance with the project fire-risk assessment and safe-to-torch method statement.

- Welled drip: provide the proposed system manufacturer's accepted standard detail, coordinated with the external gutter and perimeter construction.
- - Length: Form using maximum width strips.
- - Height at external gutter (minimum): 75 mm.
- Welt tail: Nail to face of drip batten. Fold neatly around a pre-primed suitable former.
- Welt: Bond together; carry minimum 150 mm onto roof. Overlap with bitumen membrane capping sheet.
- Important Torch-Free note: self-adhesive bitumen is affected by UV exposure. Slide drip flashing behind the former, then fix and dress each flashing consecutively. Do not hang all flashings before fixing, otherwise they will only adhere by torch activation.
- Mansard Roofs: A new lead flashing is to be installed behind the batten and dressed down over the top mansard tiles prior to installing the welled drip detail.
- LIGHTNING CONDUCTOR CLIPS
- Fix lightning conductor tape using purpose-made non-metallic conductor clips incorporating a colour-matched compatible cap-sheet pad fully bonded to the main waterproofing at maximum 1 m centres. Loose bituminous membrane strips are not acceptable.
- Where lightning conductors are required to be fixed to brickwork, upstands, parapet walls etc., proprietary clips mechanically fixed should be utilised. Care should be taken to ensure that fixings do not penetrate the new waterproofing system.
- 863 DESIGNATED MAINTENANCE WALKWAYS
- Location: As designated by the client.
- Application: Remove the selvedge lap prior to installing. Membrane to be fully bonded to the previous capping sheet layer, making provision for leaving intermittent 100 mm gaps between sheets to form drainage channels, particularly where the walkway layer impedes water run-off.
- **COMPLETION**
- **910B INSPECTION**
- Interim and final roof inspections: in accordance with the manufacturer's requirements for guarantee.
- Notification: advise the system manufacturer when the roof is ready for final inspection. Obtain written approval of the waterproofing before installing landscaping, overburden or finishes that conceal it.
- Other requirements: Please also refer to preliminaries / general conditions.
- **940 COMPLETION**
- Roof areas: Clean.
- Outlets: Clear.
- Work necessary to provide a weather tight finish: Complete.
- Storage of materials on finished surface: Not permitted.
- Completed membrane: Do not damage. Protect from chemicals, traffic and adjacent or high level working.
- **950B GUARANTEE**
- **Provide a minimum 25-year insurance-backed product, workmanship and consequential-damage guarantee for the complete roof system following final inspection. Submit a manufacturer durability statement confirming a design service life in excess of 30 years.**
- The complete roof system shall be installed by a roofing contractor currently approved by the proposed system manufacturer as a condition of the guarantee.

21. PROPOSED LIGHTING PROTECTION

- Contractor shall provide a lightning protection system in accordance with ISEN 62305:2011 Parts 1 to 4. See lightning specification below for full details.
 - Contractor shall engage in a lightning protection specialist to provide the final design, lightning protection systems designers shall have proven competence to IS EN 62305, Protection Against Lightning. This competence is accredited independently by the Association of Technical Lightning and Access Specialists. (ATLAS).
 - Lightning protection specialist shall carry out a detailed Risk Management Analysis (RSA) as set out in ISEN 62305 Part 2 to determine the need for Lightning Protection.
 - The contractor may use the Direct Strike Lightning Protection and earthing services, provisional DT design and specification attached in complete tender for reference, please note contractor must obtain their own quotation / price agreement Lightning protection specialist as the quotation included is only Fixed price 30 days, exclusive of value added tax.
 - Design stage RSA conducted by Direct Strike Lightning Protection concludes that a Class IV structural Lightning and Coordinated Surge Protection System (SPD) is required.
 - Direct Strike Lightning Protection Quotation Exclusions
 - Excavation and reinstatements, Main Contractor shall provide as required
 - Installation of Inspection chambers, Main Contractor shall provide as required
 - Access to all working areas, Main Contractor shall co ordinate
 - Installation of clips to specialist roofing surfaces, Refer to Warm Roof System specification above
 - Supply & Installation of Surge Protection Devices, Outside scope of works.
 - Attendances/Builders to be provided by Main contractor to enable Lightning Specialist
- Installation**
- Site welfare and first aid facilities
 - Access to all working areas,
 - Excavating and making good 0.6m deep trenches for earth tapes and rods, fixing earth rod inspection houses and making connections to reinforcing.
 - Forming holes and making good as required, building in flanges.
 - Structural Lighting protection Specification
 - Air Termination Network
 - 25x3mm bare aluminium tapes secured to flat roof by non-metallic clips (clips to be supplied and installed by roofing contractor).
 - Down Conductors
 - 25x3mm PVC aluminium tapes in 16 No positions secured to wall by non-metallic clips.
 - Joints
 - Proprietary aluminium square clamps
 - Bonds
 - Aluminium bonds to metallic plant
 - Test Points
 - Via 16 No Polymer Inspection chambers
 - Via 16 No stainless steel bi metallic clamps
 - Earth Terminations
 - 16 No 16mm x 2.4m copper bond earth electrodes, complete with rod to tape clamp and surmounted by a polymer inspection housing (housing to be installed by others).

22.WIND LOAD CALCULATIONS

- Submit project-specific wind-load and wind-uplift calculations, fixing design, tapered insulation layout and perimeter/corner-zone requirements prepared by the proposed roofing system designer. Coordinate with the structural engineer and Architect's details before ordering.

23.ROOF FLASHINGS

- Contractor shall remove all existing abutment flashings within the area of works and provide new replacement flashings throughout as part of the new warm roof system. Refer Architects Drawings for extents of abutments, to be read in conjunction the specification above for the new warm roof system.
- Code 5 lead to be used for all abutment flashings. Lead should be treated with patination oil to prevent staining of adjacent material etc.
- Contractor shall include for Provision for forming a new chase and installing lead counter-flashings to the existing render finish walls of adjoining buildings to allow for the revised finish levels followed by the installation of a new galvanised steel top bead over the lead junction with new bell cast render to patch in with existing building together with all making good to any damages caused to existing wall finishes upon completion of works.
- All lead works and abutments etc shall be carried out in accordance with good roofing practice. All lead work to be carried out in accordance with recommendations of lead sheet association.uk

24.ALTERATION OF EXISTING PARAPET UPSTANDS

- Existing parapet to be removed and stripped back to existing Concrete upstand. Refer to architects drawing T104.
- Following the removal of the existing roof system, associated perimeter edging and fascia the successful contractor shall provide a new treated timber perimeter upstand.
- The proposed upstand shall be constructed using 200mm X 44mm Treated Rough Sawn Timber construction timber is kiln dried and strength graded to a minimum grade of C 16 and complies with the requirements of IS-127 standard & I.S. EN 14081-1:2016+A1:2019.
- The upstand shall be constructed of the primary structure with a minimum 50mm upstand above the proposed roof finish at the highest perimeter contact point.
- 200x100x5mm SHS with base plate shall be mechanically bolted to existing concrete roof slab at 3600mm max centres to stabilize proposed new parapet upstand.
- The proposed upstand shall be constructed at a single level around the perimeter of the proposed roof with a tapered capping / fascia flashing, refer to specification below.
- Proposed upstand shall contain no air voids and all cavities shall be picked with Rigid PIR insulation to match the roof insulation and enclosed clad both sides with 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015 prior to the application of a vapour control layer / breather membrane.
- Proposed new aluminium fascia shall be backed with 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015
- Contractor shall provide DPC where proposed timber is required to sit on existing concrete structure.

- **Aluminium Fascia**

- Provide a proprietary powder-coated aluminium interlocking fascia system forming a complete weathered perimeter assembly.
- Fascia system: factory-finished interlocking aluminium profiles, complete with corners, joints, stop ends, support brackets, fixings and all accessories. Submit profile, alloy, coating classification, colour range, wind resistance and project-specific details for acceptance.
- Provide a four-bend fascia profile, or project-specific profile of equivalent geometry approved through the technical submission, firmly fixed to the treated softwood support in accordance with the manufacturer's wind-load design.
- RAL colour to be agreed with Architect before installing. All installed as per manufacturers recommendations.
- Refer to architect's drawings for extent of proposed aluminium fascia
- All Joints may be made watertight using a low-modulus silicone sealant.
- Powder-coated aluminium interlocking fascia profile and accessories; size and geometry as shown on the Architect's drawings and confirmed by site measurement.
- Profile: SF4 - Four times bent
- Features and Performance:
- Standard components shall be lightweight, durable and corrosion resistant.
- Entirely weatherproof.
- Easy to handle.
- Life expectancy of aluminium: 40 years (rural/suburban areas); up to 25 years (industrial/marine areas).
- Aluminium product shall be 100% recyclable.
- Finish: Powder-coated
- Material: Aluminium
- Thickness or gauge: 3 mm.
- Height: To match proposed new fascia / perimeter Edge Kerb height.
- Length: Full External Perimeter of All roof upgrades.
- Finish – Powder coated, Tested to BS 476.
- Film thickness (minimum) : 120-160 Microns (Marine).
- Application: Linear components joined by internal brackets, avoiding stepped joints. Fabricated fittings are mitred, welded and finished to provide a smooth uniform finish
-
- The high brick parapet on roof 2 is to be lowered by a height of 1.2 metres.
- A new pressed metal capping is to be installed on top of the parapet.
- Contractor is to carefully remove the brickwork and dispose of it off site.

25. RAINWATER GOODS.

- **ROOF 1.**
- The rain water pipes are brought down internally on Roof 1.
- The contractor is to allow for new outlets on the roof but no alternations are to be made to the pipes brought down internally in the building. Refer to architects drawings for location of new rainwater goods.
- Contractor is to allow for 2 new overflow outlets to be installed on this roof.
- **ROOF 2**
- New internal rain water pipe to be installed in the existing location.
- RWP to be 150mm and new outlet to be installed on the roof in the existing location.

• **ROOF 3**

- R3 store room roofs to receive new rainwater gutters and downpipes as indicated.
- New hopper and downpipe to be installed to R3 Main roof. Refer to architects drawings.
- Provide complete cast-aluminium rainwater goods throughout the identified work areas, including gutters, outlets, offsets, bends, shoes, brackets, joint seals, fixings and accessories from one compatible system.
- All new rainwater pipes are to be 150mm in diameter.
- Gutters and downpipes: cast-aluminium, beaded deep-run socketed gutter and flush-jointed downpipe system installed to the manufacturer's current instructions. Colour to be selected by the Architect from the manufacturer's standard durable powder-coated range.
- Refer to architects' roof plan for location of existing gutters & downpipes upgraded. Contractor to inspect existing run lengths and required connections upon site visit & include for removal and replacement as required.
- Following roof works completion existing gullies to be made good where applicable.
- All re-routed connections to be reconnected and tested prior to completion of roof works.
- Rainwater Drainage Systems – GENERAL
- Gravity Rainwater Drainage System.
- Rainwater outlets, gutters, pipework and accessories as per detail sections below
- System Performance
- Design Standard: To BS EN 12056-3:2000, clauses 3-7 and National Annexes
- Collection and Distribution of Rainwater: Complete, and without leakage or noise nuisance
- Design Parameters: Design rate of rainfall as per BS EN 12056-3:2000, National Annex NB.2 - Category 1
- PRODUCTS
- Beaded deep-run cast-aluminium gutter, nominal 113 x 75 mm, or larger where required by the hydraulic calculation.
- Gutters and fittings to: BS 8530 (formerly BS 2997)
- Manufacturer: proposed by the Contractor and identified in the technical submission.
- Submit current technical contact details, product literature, finish samples, hydraulic capacity data and project-specific layout with the tender technical submission.
- Reference: Heritage cast aluminium rainwater system
- Profile: Half Round beaded deep run
- Size: 113 x 75mm
- Outlet Size: 100mm
- Type/grade: Made from LM2 and LM6 grades of Aluminium alloy to BSEN1559:1997, BSEN 1676:1997 and BSEN 1706:1998
- Finish: Polyester powder coated to BS EN 12206-1:2004
- Colour: To be advised
- Jointing: Gutter lengths or fittings are overlapped at the joint with a spigot and socket. Slots are provided for fixing using M6 mushroom head aluminium screws with nuts and washers. Seal evenly across the
- joints with Dow Corning 791.
- Fixing: Fascia bracket fixed at 915mm centres and at each fitting using number 12x38mm round head twin thread screws and washers bright zinc plated.
- Flush-jointed cast-aluminium downpipe, nominal 150 mm diameter, or size required by the hydraulic calculation.
- Flush joint Aluminium pipework for external use:
- Pipes, fittings and accessories to: BS 2997
- Manufacturer: As above

- Reference: Flush joint aluminium downpipe system
- Size: 100mm diameter
- Type/grade: 6063 TF alloy
- Finish: Polyester powder coated to BS EN 12206-1:2004
- Colour: To be advised
- Fixing: Pipe clip fixed at maximum 2.0m centres. Plug and screw to wall with number 12 x 50mm round head twin thread screws and washers bright zinc plated to BS 1706:1960 Class ZN3. Seal internal spigot
- joints with Dow corning 791 silicone sealant allowing for a 3-4 mm vertical thermal movement gap.
- Accessories: Bends, Branches, Access Pipes, Offsets, Shoes, Rainwater Heads, Pipe Clips.
- **ROOF 4**
- All existing rain water goods are to be removed
- New hopper and downpipe to be installed to R4. Refer to architects drawings
- **ROOF 5**
- All existing rainwater pipes and gutters to be removed and replaced with the following system.
- Rainwater Drainage Systems – GENERAL
- Gravity Rainwater Drainage System.
- Rainwater outlets, gutters, pipework and accessories as per detail sections below
- System Performance
- Design Standard: To BS EN 12056-3:2000, clauses 3-7 and National Annexes
- Collection and Distribution of Rainwater: Complete, and without leakage or noise nuisance
- Design Parameters: Design rate of rainfall as per BS EN 12056-3:2000, National Annex NB.2 - Category 1
- **PRODUCTS**
- Beaded deep-run cast-aluminium gutter, nominal 113 x 75 mm, or larger where required by the hydraulic calculation.
- Gutters and fittings to: BS 8530 (formerly BS 2997)
- Manufacturer: proposed by the Contractor and identified in the technical submission.
- Submit current technical contact details, product literature, finish samples, hydraulic capacity data and project-specific layout with the tender technical submission.
- Reference: Heritage cast aluminium rainwater system
- Profile: Half Round beaded deep run
- Size: 113 x 75mm
- Outlet Size: 100mm
- Type/grade: Made from LM2 and LM6 grades of Aluminium alloy to BSEN1559:1997, BSEN 1676:1997 and BSEN 1706:1998
- Finish: Polyester powder coated to BS EN 12206-1:2004
- Colour: To be advised
- Jointing: Gutter lengths or fittings are overlapped at the joint with a spigot and socket. Slots are provided for fixing using M6 mushroom head aluminium screws with nuts and washers. Seal evenly across the
- joints with Dow Corning 791.
- Fixing: Fascia bracket fixed at 915mm centres and at each fitting using number 12x38mm round head twin thread screws and washers bright zinc plated.
- Flush-jointed cast-aluminium downpipe, nominal 150 mm diameter, or size required by the hydraulic calculation.
- Flush joint Aluminium pipework for external use:

- Pipes, fittings and accessories to: BS 2997
- Manufacturer: As above
- Reference: Flush joint aluminium downpipe system
- Size: 100mm diameter
- Type/grade: 6063 TF alloy
- Finish: Polyester powder coated to BS EN 12206-1:2004
- Colour: To be advised
- Fixing: Pipe clip fixed at maximum 2.0m centres. Plug and screw to wall with number 12 x 50mm round head twin thread screws and washers bright zinc plated to BS 1706:1960 Class ZN3. Seal internal spigot
- joints with Dow Corning 791 silicone sealant allowing for a 3-4 mm vertical thermal movement gap.
- Accessories: Bends, Branches, Access Pipes, Offsets, Shoes, Rainwater Heads, Pipe Clips.
- **NOTE: NEW GULLY TRAPES ARE TO BE INSTALLED AT GROUND LEVEL AT THE LOCATION OF ALL THE NEW 150MM RAIN WATER DOWN PIPES**

26. LEAF GUARDS

- GUTTER GUARDS BLACK 100-115mm to be installed on the new gutters on roof 5.
- Provide stainless-steel parapet outlet leaf guards to roof outlets on Roofs 1, 2, 3 and 4. Guards shall be corrosion resistant, robust, tamper resistant, removable for cleaning and securely clamped within the outlet without reducing required hydraulic capacity.

27. PROPOSED ROOFLIGHTS

- Following the removal of the existing roof system, existing rooflights and associated upstands and flashings the contractor shall provide and install all new rooflights in the area of works to the specification below.
- Following removal and disposal of existing rooflights the successful contractor shall prepare and alter the existing openings to suit the sizing of the proposed new rooflights.
- Infill sections of the proposed rooflights shall consist of mechanically fixed 225 x 44mm C16 grade Timber joists with heavy-duty stainless-steel joist hangers followed New timber decking shall consist of 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015, All plywood shall be WBP bonded first grade and shall be faced with veneer as specified. One side shall be completely free from joints and surface defects. Joints and minor blemishes will be permitted on the reverse side only. Where both sides of the plywood are exposed, these shall be totally free of joints and surface defects
- Provide 2 No. 900 x 900 mm flat-glass rooflights comprising a factory-matched flat-glass weathering unit and electrically opening insulated kerb/base unit with double glazing. Units shall fit the prepared openings shown, achieve the specified thermal, air, water, wind and safety performance, and be suitable for the complete warm-roof build-up.
- All proposed new rooflight shall be installed with a minimum 150mm upstand above the finish roof level or minimum required by manufacture whichever is greater.
- The Proposed systems shall be suitable for roof pitches between 2° and 15°.
- Perimeter upstand shaft to be constructed as per Manufacturers installation guidelines.
- Provide a complete airtight window-sealing system to the internal face of each rooflight and 50 mm rigid PIR insulation board with declared thermal conductivity not exceeding 0.022

W/mK to the warm side of the rooflight shaft, maintaining continuity of insulation and avoiding thermal bridging.

- Contractor shall provide new MDF rooflight shaft lining to all proposed rooflights as per existing detail, contractor shall provide a timber structure consisting of 100x44mm timber together with alterations to the existing ceiling to provide the new shafts.
- Contractor to include for painting of the proposed new lining to the following specification:
- Manufacturer: Refer to Architects Finish document
- Surfaces: Uncoated.
- Preparation: All joints, nail/screw heads to be filled, fully sanded and cleaned down.
- Initial / Undercoats: Water based Satinwood undercoat
- Number of coats: 1 no. coats.
- Finishing coats: Water based Satinwood.
- Number of coats: 2no. coats.
- Total Number of coats: 3no. top coats.
- **Curved-glass rooflight systems shall comprise the following complete factory-matched components:**
- All opening rooflights shall be electrically operated and supplied with wall controls, rain sensor, concealed or protected actuators, power supplies and all interfaces necessary for safe automatic closing. Provide manual override and commissioning demonstration.
- Top cover shall consist of an ISU 2093 - Flat glass top unit
- Base shall consist of an CVU 0220Q - Electric base unit 2-layer glazing
- U-VALUE - Urc, ref 300 - 0.75 W/(m²K), Arc, ref 300 - 4.1Area m²
- Laminated insulated glass unit for safety, The outer glass of the top unit is strength-tested in tough weather conditions. Toughened outer glass is attached with high-strength weather-proof sealant.
- Insulating glass unit with inner laminated glass (P4A)
- Sound insulation 39 db**
- Burglary resistant as standard***
- Installation accessories shall be provided as required, ZCU 0015 **Extension kerb 150mm**, ZZZ 210U Frame fixing kit

28.PROPOSED FLAT ROOF ACCESS DOOR & ACCESS LADDER SYSTEMS.

- **Flat Roof Access Door**
- Provide 1 No. proprietary insulated flat-roof access hatch/door sized to suit the existing structural opening, complete with thermally broken kerb, weather seals, safe opening restraints, secure locking and compatible waterproofing flange.
- Proposed Roof Access Door shall be installed to Manufactures / Warm roof system details.
- Roof access door size [cm] - 92x130, Size symbol 18k.
- DRL Uw=0.67 W/m² K according to EN14351-1:2006+A2:2016
- Mounted on the roof surface
- The whole structure is insulated
- Fully assembled product.
- The frame is constructed of multi-chamber PVC profiles filled with insulation material.
- The sash is filled with a sandwich panel to ensure perfect thermal insulation performance.
- The sash can be opened up to 60°. Gas springs facilitate opening and closing and the sash can be left in open position.

- ZBR lock shall be included to protect against accidental closure of the sash.
- Anti-slip tape on the base ensures safe access to the flat roof.
- Sizes of the roof access door are adjusted according to the size of loft ladder (loft ladders are sold separately - see Loft specification below)
- Suitable for roof pitches between 0° and 5°.
- **Roof Access Door Upstand**
- The proposed upstand shall be constructed as per requirements of the Access door Manufacture using 200mm X 44mm Treated Rough Sawn Timber construction timber is kiln dried and strength graded to a minimum grade of C 16 and complies with the requirements of IS-127 standard & I.S. EN 14081-1:2016+A1:2019.
- The upstand shall be constructed of the primary structure with a minimum 150mm upstand above the proposed roof finish at the highest perimeter contact point.
- The proposed upstand shall be constructed at a single level around the perimeter of the proposed roof with a tapered capping / fascia flashing, refer to specification below.
- Proposed upstand shall contain no air voids and all cavities shall be picked with Rigid PIR insulation to match the roof insulation and enclosed clad both sides with 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015 prior to the application of a vapour control layer / breather membrane.
- Proposed new aluminium fascia shall be backed with 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015
- **Metal Folding Section Ladder**
- Provide 1 No. proprietary insulated metal folding sectional loft ladder sized to suit the existing structural opening and access hatch, complete with handrail, non-slip treads, counterbalance and secure fixings. Confirm safe working load and compliance with relevant standards.
- Ceiling opening dimensions [cm] - 86x144
- U- Value = 1.1 W/m² K
- Designed in accordance with BS EN 1497: 2007 - Personal fall protection equipment. Rescue harnesses
- Code - 869336
- Stile ends
- White hatch
- Peripheral seal
- Ladder unloading mechanism built in handrail
- Non-slip treads
- Permissible loading of 200 kg hatch heat transmission coefficient U = 1.1 W /m²K
- Insulation thickness 3 cm
- Hatch thickness 3.6 cm

29. EXISTING RENDER & PAINT

- Contractor is to allow for making good of any damaged render and paint that occurs throughout the construction phase.
- Contractor to include for painting of all existing external concrete columns. All the concrete columns are located on the main block of the school.

- Contractor is to refer to structural engineers package for all the works carried out on the existing concrete columns.
- Apply three coats of high-performance exterior masonry coating suitable for existing concrete, including compatible preparation, primer and undercoat where required. Finish shall be weather resistant, vapour permeable, alkali resistant and suitable for the exposure; colour to be approved by the Architect and Client.

30. PROPOSED ABUTMENT FLASHINGS

- Contractor shall remove all existing abutment flashings within the area of works and provide new replacement flashings throughout as part of the new warm roof system. Refer Architects Drawings provided for insulated upstand details, to be read in conjunction the specification above for the new warm roof system.
- Code 5 lead to be used for all abutment flashings. Lead should be treated with patination oil to prevent staining of adjacent material etc.
- Contractor shall include for Provision for forming a new chase and installing lead counter-flashings to the existing render finish walls of adjoining buildings followed by making good to any damages caused to existing wall finishes upon completion of works.
- All lead outlets and abutments etc to be fitted in accordance with good roofing practice. All lead work to be carried out in accordance with recommendations of lead sheet association.uk

31. AIRTIGHTNESS REQUIREMENTS

- Airtightness at rooflights and roof repairs: provide a complete variable-vapour-resistance airtightness membrane system with compatible tapes, adhesives, primers, grommets and accessories. The system shall be suitable for the relevant substrates and moisture conditions, continuous with adjoining air-barrier elements and installed strictly to the manufacturer's current written instructions.
- The following represents a reasonable approach to the design of building envelopes to ensure acceptable levels of permeability:
 1. Appointment of an air barrier manager to co-ordinate and inspect the overall formation of the air tightness barrier.
 2. Identify the primary air barrier elements (e.g. sheathing, plaster, vapour control layer, breather membrane) from the design stage.
 3. Development of appropriate details and specification at construction stage to ensure continuity of the air barrier.
 4. Provide an on-site inspection regime and related quality control procedures so as to ensure that the design intention is achieved in practice.
- Building airtight envelope: Provide airtight structures in accordance with TGD-L. Care to be taken to avoid heat loss in the building envelope fabric through air leakage. In this context, envelope shall be the total area of floors, walls (including windows & doors), and ceilings bordering the building structure, including elements adjoining other heated or unheated spaces.
- Approach: The following represents a reasonable approach to the design of building envelopes to ensure acceptable levels of permeability:

- Appointment of an air barrier manager to co-ordinate and inspect the overall formation of the air tightness barrier.
- Identify the primary air barrier elements (e.g. sheathing, plaster, vapour control layer, breather membrane) from the design stage.
- Development of appropriate details and specification at construction stage to ensure continuity of the air barrier.
- Provide an on-site inspection regime and related quality control procedures so as to ensure that the design intention is achieved in practice.
- Testing requirements: Carry out air pressure testing for inclusion in subsequent calculations (e.g. DEAP)
- Testing standards: Air permeability shall be measures by means of pressure testing of a building prior to completion. The procedure for testing shall be as specified in IS EN 13829:2000 " Thermal performance of buildings: determination of air permeability of buildings: fan pressurised method". Additional guidance on testing procedures shall be as provided in Sections 2 & 4 of the BSRIA Guide "Airtightness testing for new dwellings" and CIBSE Technical manual TM 23 "Testing Buildings for Air Leakage". Permeability shall be calculated by dividing the air leakage rate in m3/hour by the envelope area in m2. The performance shall be assessed at 50 Pascal's pressure difference.
- Pressure standards: Air pressure testing shall be deemed satisfactory subject to achievement of an air permeability upper limit of 2m3/ (h.m2) or a lower air permeability upper limit as set out in any DEAP calculation carried out for the benefit of the development. Appropriate remedial measures shall be undertaken where the limit set is not achieved and a new test shall be carried out subsequently. Repeat testing shall be carried out until the envelope achieves a satisfactory level of air permeability. Building envelopes of a similar house type completed later than the most recent successful test shall have similar remedial work carried out and/or shall be subject to pressure testing. Where remedial work and a new test is required on any dwelling following initial testing, then the number of units requiring testing shall be increased by one for that dwelling type. Note that the test report shall contain a minimum of the information specified in Section 7 of IS EN 13829.
- Test reports: Air pressurisation test reports shall be presented to the architect as proof of performance and copies shall be included in the User Information Folder to be provided at Practical Completion.
- Approach: Infiltration of cold outside air shall be limited by the elimination of unintentional air paths. Measures to ensure this shall include:
 - Sealing the void between dry-lining and masonry walls at perimeter edges of openings such as doors & windows, and at the junctions with walls, floors and ceilings using continuous bands of bonding plaster.
 - Sealing vapour control membrane and associated necessary sealing accessories.
 - Provision and correct fitting of draught-stripping in the frames of openable elements of windows, doors and Rooflights.
 - Provision and correct fitting of draught-stripping in the frames of loft hatches etc.
 - Sealing of concealed services groups and pipework etc. at wall, floor, ceiling etc. penetrations of the building envelope.
- Airtightness system: provide a complete variable-vapour-resistance membrane and sealing system comprising membrane, tapes, adhesives, primers, grommets and project-specific details. Install the membrane on the warm side of insulation, flat and without sagging, with orientation as required by the proposed manufacturer. Demonstrate compatibility with timber, masonry, metal, rooflight frames and adjoining membranes.

- Airtightness adhesives and tapes: permanently elastic, non-ageing products free from softeners and halogenated compounds, with long-term adhesion appropriate to each substrate. Submit ageing, emissions, moisture and adhesion performance data and use primers where required by the manufacturer.
- Substrates: sealing products shall bond durably to airtightness membranes, vapour control layers, aluminium foils, timber, masonry, concrete, plaster and metal as applicable. Remove or repair unstable material and stabilise friable mineral substrates using a compatible system primer. Surfaces shall be clean, dry and free from dust, grease and silicone before application.
- Application: All surfaces shall be clean & free of dust, grease & silicone. A continuous adhesive bead of at least 3mm in diameter (depending on substrate) shall be applied to the clean surface. Two application methods are possible: Wet bonding: direct application of the vapour check to the adhesive immediately after application and while still wet, without applying force. One of the substrate material surfaces needs to be permeable to ensure evaporation of the adhesive solvent. Dry bonding for impermeable surfaces: Allow adhesive bead to dry for a period of 1-3 days after application. The vapour check shall then be pressed onto the dry adhesive.

32.EXISTING SERVICES AND ROOF PENETRATIONS

- Existing data and power cables to be temporarily propped during roof works & construction.
- Contractor to ensure that all live cables are temporarily turned off where possible and safety procedures are applied when dealing with all services on the existing roof.
- Contractor to ensure existing cables are not damaged during and after roof works.
- Contractor to carefully remove any of the services penetrating through the roof. These are mainly located on R3 & R4.
- Contractor is to allow for new pipes/ soil vent pipe caps when installing the new roof system. Location of roof penetrations to remain the same.

33.PROPOSED FASCIA

- Provide a proprietary powder-coated aluminium interlocking fascia system to Roof 3.
- Fascia profile: three-bend factory-finished aluminium profile, or project-specific profile of equivalent geometry approved through the technical submission, complete with all corners, joints, support brackets and fixings.
- Proposed Fascia is to be installed from the top of the new proposed parapet to the top of the painted concrete on the facades. The painted Concrete can be seen at the top of the façade in the image below.



- This Fascia is to also be installed on roof 5 where the fascia is being removed as they are rooting.

34. FALL ARREST SYSTEM

- Provide a complete horizontal fall-restraint lifeline system and associated personal protective equipment to the flat roofs for maintenance access. A competent specialist shall design the system to prevent users reaching a fall position wherever reasonably practicable and shall submit the layout, calculations, rescue strategy and certification before installation.
- Contractor to include for proposed system to be installed and personnel training and system operation demonstration for school facilities team member by system provider upon completion of proposed works
- The Architect's drawings indicate a provisional layout only. The appointed fall-protection specialist shall survey the roofs and provide the final system design, anchor locations, structural loads, fixing details and coordination drawings for review before work commences.
- Refer to Architect's drawings for location of roof access and redirection / anchor point locations
- Contractor to Allow for Fall protection systems to Roof Sections (Roof A & Roof C), to be read in conjunction with architect's drawings.
- System to include:
 - PPE Required Full body Harness
 - 5.0m Adjustable type lanyard
 - Compatible travelling shuttle for the horizontal lifeline system.
 - Deformable or energy-absorbing lifeline support posts compatible with the roof build-up and structural substrate.
- Stainless-steel horizontal fall-restraint cable system with all terminations, intermediate supports, corner units, tension indicators, labels and accessories.
- Training and operation demonstration

- Contractor to allow for 4 No. Toggle fixings to each anchor point, fixed through roof decking.
- Additional structure will be required locally where existing decking is less than 18mm, existing roof asphalt to be repaired and made good.
- Lifeline support post and base assembly suitable for fixing through the roof build-up to the verified structural plywood or other accepted substrate.
- Lifeline anchor post fixed into 18mm plywood.
- Installed Single Anchor Point complying to BS EN 795:2012 Class A & CEN TS 16 415.
- System support posts have been tested on 18mm plywood sheets with insulation and have been designed to progressively collapse under stress to reduce loading on the system and roof.
- System support bases fixed through membrane, insulation and to plywood using toggle fixings.
- Use of a fall restraint system
- A restraint system should not be used in a situation in which it might unexpectedly be relied upon to perform a fall arrest function, for example where there is a risk of a fall over an edge or where there is a risk of a fall through a surface made of fragile material, as this could lead to serious injury to the user. The Work at Height Regulations 2005 specifically require steps to be taken to prevent any person from falling through any fragile material.
- Re-direction anchors
- When accessing the roof edge at gable ends or at corners operatives may need to use re-direction anchors to reduce/eliminate the risk of swing fall. Failure to use these re-direction anchors may result in the operative falling and becoming suspended over the building or hitting the ground below.
- Extreme care should be taken when using an adjustable lanyard to ensure that the user does not adjust the lanyard such that he or she could reach a position from which a fall from height could occur.
- Provide, install, inspect, test, certify and demonstrate the fall-protection system in accordance with the specialist designer's accepted design, installation and user instructions.

• SPECIALIST FALL-PROTECTION SYSTEM DESIGN

1. DESIGNED TO THE "SAFETY, HEALTH AND WELFARE AT WORK ACT (2005)", "BUILDING REGULATIONS, BS 7883:2005 "CODE OF PRACTICE FOR THE DESIGN, SELECTION, INSTALLATION, USE AND MAINTENANCE OF ANCHOR DEVICES CONFORMING TO BS EN 795
2. THE PORTIONS OF THE STRUCTURE THAT SUPPORT THE SKYWAY SAFETY EQUIPMENT SHALL BE DESIGNED BY THE PROJECT STRUCTURAL ENGINEER/ ARCHITECT FOR THE RESULTING FORCES AND MOMENTS DUE TO THE LOADS SHOWN ON DRAWING. LOADS SHOWN ARE ULTIMATE LOADS UNLESS NOTED OTHERWISE.
3. ALL STRUCTURAL STEEL ELEMENTS GRADE S275
4. ALL HOLLOW STRUCTURAL SECTIONS TO BE GRADE S195T CARBON STEEL SEAMLESS TUBE, EN 10255 NON ALLOY TUBES SUITABLE FOR WELDING AND THREADING EN 10240 INTERNAL & EXTERNAL PROTECTIVE COATING FOR STEEL TUBE
5. ALL BOLTS TO BE GRADE 8.8 WITH U_t=830 MPa OR TYPE 304 STAINLESS STEEL WITH U_{sb}=700 MPa.

HORIZONTAL LIFELINE GENERAL NOTES:

1. PRE-ENGINEERED HORIZONTAL LIFELINE SYSTEM & RELATED COMPONENTS ARE THE RESPONSIBILITY OF KEE SAFETY GROUP
2. SYSTEM LOADING FROM KEE SAFETY TESTING IS AVAILABLE ON REQUEST
3. ALL CABLE / ANCHOR POINT SYSTEMS TESTED TO EN795:2012 & CEN TS 16415:2013

• SPECIALIST FALL-PROTECTION SYSTEM INSTALLATION

INSTALLATION:

1. HORIZONTAL LIFELINE, SUPPORT POSTS & SAFETY ANCHORS TO BE SUPPLIED AND INSTALLED BY OTHERS.
2. TWO SETS OF PERSONAL PROTECTIVE EQUIPMENT, (PPE) FOR SOLE USE WITH THE SYSTEM TO BE SUPPLIED BY OTHERS. (TO BE CONFIRMED)
3. GENERAL CONTRACTOR/ARCHITECT TO VERIFY THAT THE LOCATION OF THE EQUIPMENT SUPPLIED BY OTHERS DOES NOT CONFLICT WITH OTHER EQUIPMENT, ETC...
4. WATERPROOFING / ROOFING BY OTHERS.
5. ALL RETAINING BOLTS MUST HAVE A MINIMUM OF TWO THREADS EXPOSED.
6. THIS SAFETY SYSTEM SHOULD NOT BE LOAD TESTED WITHOUT PRIOR CONSULTATION.
7. THE SUPPLIER IS TO BE NOTIFIED OF ALL CHANGES TO AND/OR DEVIATIONS FROM THESE DRAWINGS.

• SPECIALIST FALL-PROTECTION SYSTEM USE

HORIZONTAL LIFELINE USER NOTES:

1. THE HORIZONTAL LIFELINE SYSTEM HAS BEEN DESIGNED AS A FALL ARREST SYSTEM TO ALLOW A MAXIMUM OF THREE (3) USERS TO SAFELY ACCESS TO THE ROOF EDGE.
2. WORKERS MUST ATTACH TO A HORIZONTAL LIFELINE PRIOR TO ACCESSING ANY AREA WITHIN 2.5m OF THE ROOF EDGE AND REMAIN CONTINUOUSLY TIED OFF WHEN WORKING WITHIN 2.5m OF THE EDGE OR OPEN ROOFLIGHT.
3. ONLY APPROVED COMPONENTS MAY BE USED IN CONJUNCTION WITH THE HORIZONTAL LIFELINE SYSTEM, ie: HARNESSSES , SHOCK ABSORBING LANYARD, ETC...
4. ALL OPERATIVES MUST BE TRAINED PRIOR TO SYSTEM USE. CONTACT 046-9241771 FOR MORE INFORMATION.

USAGE:

1. ALL EQUIPMENT MUST BE INSPECTED ONCE A YEAR TO CONFIRM THAT IT IS IN GOOD WORKING ORDER. ANY DAMAGED OR DETERIORATED ITEMS MUST BE REPAIRED OR REPLACED.
2. YIELDING OF THE EQUIPMENT AND/OR SUPPORTING STRUCTURE MAY OCCUR IN THE EVENT OF A FALL. A THOROUGH INSPECTION OF THE EQUIPMENT AND THE SUPPORTING STRUCTURE IS TO BE CONDUCTED WHEN THE EQUIPMENT HAS BEEN USED IN A FALL. DAMAGED COMPONENTS MUST BE REPAIRED OR REPLACED.
3. WORKERS MUST ATTACH THEIR FULL BODY HARNESS TO A CABLE SYSTEM OR ANCHOR POINT WITH A SUITABLE LANYARD. PLEASE CONTACT FOR MORE INFORMATION
4. WORKERS MUST TIE OFF TO A CABLE SYSTEM OR ANCHOR POINT PRIOR TO APPROACHING TO, (AND REMAIN CONTINUOUSLY TIED OFF WHEN WORKING WITHIN), 2.5m OF THE ROOF EDGE OR OPEN ROOFLIGHT.

35.ACCESS LADDER

- Refer to Architects Roof Plan and Elevations for the Location of the 4no Access Ladders.
- Aluminium Access Ladders comply with BS5395 and BS4211

- Safety cages on all ladders over 2.5m as per BS5395
- Wire mesh can be added to safety cages to enhance safety
- All ladder components to be aluminium, suitable for internal and external use
- Lockable door to be provided to restrict unauthorised access
- Coordinate each external access ladder with the fall-protection specialist's design, including safe transition, landing, gate and adjacent anchorage.
- Provide 1 No. proprietary aluminium safety-cage ladder system through a competent specialist subcontractor to provide safe access to the single- and two-storey roofs for maintenance.
- The proposed access ladder system shall consist of aluminium with powder coated finish.
- The Proposed system shall include a straight run ladder with the following assembly items and equipment included:
 - - Front exit ladder with self-closing safety gate, Front exit / ladder connection kit
 - - Exist landing platform
 - - Cage crinoline
 - - 600mm width ladder
 - - Mounting brackets / kits
 - - Ladder connecting kits as required
 - - Complete ladder security door kit (delivered pre-assembled, fixed on ladder with hooks or hinges)
 - - Ladder assembly by bolt kits (provided)
 - - Assembly of crinolines by fixing clips (provided)
 - - screw/bolts stainless (provided)
- Submit the proposed safety-cage ladder manufacturer's technical data, project-specific fabrication drawings, structural fixing design, finish, certification, inspection requirements and maintenance instructions before manufacture.
- Anchor points are to be installed for each of the ladders. Contractor is to engage specialist for suitable location of these anchor points.

36. WORKS TO EXISTING FOUL WATER DRAINAGE PIPES

- Contractor to allow for the careful remove of existing Soil Vent pipe and external foul water drainage pipes shown on the proposed north elevation to allow for the works to the concrete columns indicated in the structural engineer's tender package.
- These pipes and fittings are to be carefully stored through out the construction phase to allow for the pipes to be refitted at the end when the works to the concrete columns are complete.
- These works are to be leased with the school for when they can be carried out as the toilets connecting to these soil vent pipes will be out of order while this work is being done

4.0 - APPENDIX A

MCLOUGHLIN ARCHITECTURE SCHEDULE OF TENDER DOCUMENTS

McLoughlin Architecture Documents are subject to copyright. Any variation in documents to be reported to Architect. Contractors Must Verify specifications prior to Starting Work. The following documents have been provided for tender stage:

DOC REF.	DOCUMENT TITLE
MCL Specification Documents	
2207- Spec- T01	MCLA Specification (This Document)
MCL Health & Safety Documents	
2207- RA	Risk Assessment
2207- PS&HP	Preliminary Safety and Health Plan
2207- AF1	Completed AF1 Form
Appendix – Additional Information	
Manufactures Specification / Product Data	
Planning Permission & Conditions	

4.1 - APPENDIX B**MCLOUGHLIN ARCHITECTURE SCHEDULE OF TENDER DRAWINGS**

McLoughlin Architecture Drawings are subject to copyright. Use Dimensions Only. Do Not Scale. Any variation in drawings to be reported to Architect. Contractors Must Verify Dimensions on Site prior to Starting Work. The following drawings have been provided for tender stage:

DWG NO.	SIZE	DRAWING TITLE
MCL Architectural Drawings		
2207	SV001	EXISTING SITE LAYOUT
2207	SV100	EXISTING GROUND FLOOR PLAN
2207	SV101	EXISTING FIRST FLOOR PLAN
2207	SV200	EXISTING ELEVATIONS
2207	T001	PROPOSED SITE LAYOUT
2207	T100	WORKS TO EXISTING GROUND FLOOR PLAN
2207	T101	FIRST FLOOR CEILING PLAN
2207	T102	PROPOSED PHASING PLAN
2207	T103	ROOF PLAN REMOVAL OF EXISTING ROOF SYSTEM
2207	T104	PROPOSED ROOF PLAN
2207	T200	PROPOSED ELEVATIONS
2207	T300	PROPOSED ROOF DETAILS
Additional Consultants		
		Roofing system specialist technical submission

N.B

ANY VARIATION TO THE PRICING OF THIS TENDER PACKAGE IS TO BE HIGHLIGHTED BY THE TENDERING CONTRACTOR AS AN APPENDIX TO THEIR TENDER RETURN.

END OF DOCUMENT.