38 MILLFIELD LANE, LONDON N6 6JB

REMEDIAL WORKS

SPECIFICATION

TENDER ISSUE

CONTENTS

GENERAL NOTES:

1 This specification is to be read in conjunction with specifications by CDM Parntership for building services works.
[CDM Partnership 10A Albion Road, Dunstable, Bedfordshire. Tel: 01582-472457]

2 All specifications are to be read in conjunction with the Preliminaries.

A05 SCOPE OF WORKS:

To be read with Preliminaries/General conditions

100 GENERAL OUTLINE SCOPE OF WORK:

The following is an outline description of the scope of Works. Refer to drawings and specifications for detailed requirements.

1.0 **GENERAL PREPARATION AND PROTECTION**

1.1 Provide a **temporary roof** over working areas sections 2.0, 3.0 and 5.0 below.
1.2 Provide temporary protection to all parts of the building adjacent to or directly affected by the conduct of the Works.
1.3 Provide special protection to terrace glass balustrades and other elements described.
1.4 Disconnect and make safe existing mains electricity supply/supplies to electrical fittings affected by the Works. Carefully unfix and remove existing electrical fittings, set aside, store and protect for re-installation. Refer to electrical specification by CDM Partnership.
1.5 Existing Security systems and fittings: will be disconnected by the Employer before commencement. Protect fittings from damage, effects of dust/debris, etc during the works.
1.6 Take up and/or unfix other items to be set aside and protected during the works, for subsequent re-installation.

2.0 **TERRACE CANOPY ROOF FINISH AND ASSOCIATED WORKS**
BAP drawing series references: AA2

2.1 **2 No. Roof outlets at high level roofs**:
At each outlet:
2.1.1 Modify existing fabric-membrane outlet assembly.
2.1.2 Modify existing lead capping.
2.1.3 Install new aluminium rainwater head and short length of rainwater pipe, colour coated finish. Rainwater head of special manufacture,

2.2 **Work to Aluminium Box Gutter**
2.2.1 Remove and discard existing lead cladding (inner and outer) and capping to gutter fascia.
2.2.2 Unfix plywood fascia from box gutter/roof construction, and set aside for re-use.
2.2.3 Dismantle PVC-u 110mm diameter rainwater pipe, branch and hopper to terrace rainwater outlet. Set aside for re-use.
2.2.4 Unfix/dismantle box gutter and discard.
2.2.5 Remove and discard canopy roof finish, as item 2.3.1 below.
2.2.6 Install new aluminium box gutter with special rainwater head.
2.2.7 Modify 110mm rainwater pipe to length for new rainwater head and reinstate. Reinstate terrace branch and rainwater head
2.2.8 Refix gutter plywood fascia.
2.2.9 Install new lead cladding and capping to gutter fascia, dressed into gutter with lead detailing to at gutter end/ end abutment to brickwork to suit.

2.3 **Canopy Roof finish**
2.3.1 Remove and discard existing single ply membrane and asphalt roof finishes.
2.3.2 Remove vertical timber T&G cladding. Set aside for re-installation. (Refer to Section 2.4 below)
2.3.3 Prepare for and install new single layer roof finish, fully adhered to new plywood roof lining.

2.4 **Timber cladding to roof beams and roof abutments**

2.4.1 For installation of single layer roof membrane, item 2.3 above:
Remove and set aside existing vertical T&G timber cladding at roof beam sides and ends, cantilever roof abutments. Discard plywood end cladding to roof beams. Existing window frames adjoining roof areas, are to remain in position.

2.4.2 Remove and discard cladding fixing battens and hair felt layer.

2.4.3 Install new breather membrane, support battens and thermal insulation.

2.4.3 After completion of roofing work, reinstate T&G timber cladding, fixed to new support battens. including new timber cladding at ends of roof beams.

2.4.4 Re-coat timber cladding.

3.0 **TERRACE WATERPROOFING AND ASSOCIATED WORKS**
BAP drawing series references: AA3

3.1 Existing terrace irrigation system
Disconnect irrigation pipework and fittings. Set aside for re-use. On completion of other works, re-install system within new drainage channel. New channel grating to provide for zones for pipe risers.

3.2 Remove and discard the following:
Ceramic tiled finish to terrace and perimeter upstands, waterproofing membrane, cement sand screed, thermal insulation boarding, drainage channel and grating.

3.3 Protect and maintain existing bituminous vapour control layer. Mke good as item 3.11 below.

3.4 Carefully remove reside of sealant adjacent to glass balustrade, using sealant digester.

3.5 Unfix, dismantle and set aside for re-use the existing PVC rainwater head and pipework to the terrace rainwater outlet. Reinstate on completion of terrace waterproofing works.

3.6 Cut out for, install new bitumen damp-proof course and lead cover flashings at 215mm and 343mm thick brickwork at south elevation and make good facing brickwork.

3.7 Cut away and renew facing brickwork brick-on-edge top course and damp-proof course at 340mm wide brick wall.

3.8 Cut away 3 courses of brick-on-end courses and 110mm thickness from external face of 343mm brickwork at south elevation, terrace wall..

3.9 Install new PVC rainwater side outlet. Build outlet spigot into brickwork. Generally make good brickwork around spigot.

3.10 Apply new liquid applied waterproofing membrane to face of brickwork.

3.11 Re-form facing brickwork, removed at item 3.8.

3.12 Install lead capping and saddle to top of south end wall. Install lead cover flashings at low level of south wall.

3.11 Make good any defects and/or damage to the existing bituminous felt vapour control layer, found on opening up. Extend height of perimeter felt upstands. (Part of waterproofing works by specialist sub-contractor).

3.12 Form softwood edge reinforcement along all sides and ends of new drainage channel.

3.14 Supply and lay new bituminous faced tapered thermal insulation boarding. (Part of waterproofing works by specialist sub-contractor).

3.15 Supply and lay new liquid applied water proofing membrane over new insulation boarding and to face and top surfaces of terrace perimeter upstands. (Part of waterproofing works by specialist sub-contractor).

3.16 Supply and install new stainless steel channel grating and grating support frame.

3.17 Supply and install new ceramic tile finish to terrace and to face and top surfaces of terrace perimeter upstands, adhesive fixed to waterproof membrane

3.18 Renew sealant pointing between ceramic tiling and glass balustrade.

3.19 Internal repairs and redecorations to rectify damage by rainwater penetration.

3.20 Various miscellaneous work, including removal of wardrobes, installaton of an acoustic wall lining and floor finish.

4.0 **CONSERVATORY VENTILATION WORKS**
BAP drawing series references: AA4

4.1 Installation of split air conditioning equipment with associated builders work.

5.0 **GUTTER TO GLASS ROOF OVER MAIN ENTRANCE**
. BAP drawing series references: AA5

5.1 Carefully dismantle existing timber shelf and lining to Hall lobby. Record existing assembly details and component locations. Set aside store and protect, then re-assemble after gutter works are complete.
5.2 Install new insulated internal rainwater pipe and cover plate in stainless steel, with new rainwater outlet to existing gutter and PVC-U pipework connection to existing internal rainwater down pipe at rear of Hall lobby cupboard.
Work to be carried out by specialist glazing/stainless steel sub-contractor.
5.3 Apply new liquid applied water proofing membrane to face of brickwork above entrance area glass roof (Part of waterproofing works by specialist sub-contractor).

6.0 *(Not used)*

7.0 *(Not used)*

8.0 **DRIVE AREA NEXT TO MAIN ENTRANCE DOOR**
BAP drawing series references: AA8

8.1 Excavate for and install new concrete blockwork paving, with perimeter blockwork kerb on insitu concrete strip foundation. The work includes adjustment to levels of existing inspection cover and frame and yard gully grating.

9.0 **LEAD FLASHINGS: GROUND FLOOR BEDROOM WINDOWS**
BAP drawing series references: AA9

9.1 Cut out brickwork: modify existing lead cavity tray to form stop-ends; replace facing brickwork incorporating plastic weep-holes.
9.2 Install new hardwood trim to head of window frame over-panel.
9.3 Modify leadwork.

115 PROGRAMME OF WORK:

1. The Employer wishes to conduct the remedial works because the existing construction is considered to be defective. It is likely that the Employer will seek to recover the cost of the work from those responsible for the alleged defects. The Employer has therefore appointed experts for the purpose of investigating and reporting defects and recovering the costs of remedying them.

   To assist in recording the defects, the existing construction must be dismantled and removed in a controlled manner that enables their condition to be recorded and existing construction to be assessed. Where this is to be done, specific instructions will be issued to the Contractor.

   TENDERERS SHALL THEREFORE ALLOW:

   A A total of 3 (three) working days, in addition to the number of days otherwise required for dismantling and removing the existing terrace and canopy roof constructions

   B For providing attendance to facilitate removals in a manner that allows the condition of the existing construction to be recorded by the Employer's technical experts. No additional/specialist plant or tools will be required, other than those necessary for the specified dismantling work.

   C During the dismantling and removal of existing construction, to provide attendance for the retention and storage of sections and/or components required for examination by others and for litigation

   The additional time for investigations, as above, may be concurrent with other Contract Works, but nonetheless, will impede the general progress of the works, and Tenderers shall allow accordingly.

2 Those responsible for the original works may appoint their own technical experts and legal representatives. Such appointees will have the right to attend site to observe the opening up/removals, the conduct of any condition surveys, and to inspect the new Works.

   They will not be allowed on site except by prior arrangement with, and accompanied by, the Employer's representatives. Additionally, they will have no authority to direct labour, to authorise work, to inhibit the progress of the works or to remove materials from site. They should however be provided with reasonable assistance.

   TENDERERS SHALL THEREFORE ALLOW

   Provision of general assistance for liasing with and receiving other representatives on site, and for directing them to Employer's representatives

C20 Dismantling & Removals

To be read with Preliminaries/General conditions

GENERAL REQUIREMENTS

100 GENERAL SCOPE OF DISMANTLING AND/OR REMOVAL WORKS IN THIS SECTION
Subject to retention requirements and works specified elsewhere:
Dismantle, remove and discard existing terrace finishes, for the extent shown on drawings.
Remove and set aside timber roof cladding for the extent shown on drawings.
Remove and discard existing canopy roof finishes.
Remove and discard existing lead cladding, weathering and flashings, for the extent shown on drawings.
Unfix, dismantle and discard the existing aluminium box gutter.
Dismantle and set aside for re-installation, the existing PVC-U rainwater pipe, branch pipe and rainwater head.

110 DESK STUDY/ SURVEY
Scope: Before commencing dismantling work, examine available information, carry out a survey of the site, building structure and construction.
Report and method statements: Submit, describing:
-Form, condition and details of the structures, site and surrounding area.
-Form, location and removal methods of any flammable, toxic or hazardous materials.
-Measures for limiting noise, vibration, dust, etc during removal of construction.
-Sequence and method of dismantling including details of associated work to construction adjacent to existing framing.
-Arrangements for protection of personnel and exclusion of unauthorized persons.
-Arrangements for control of site transport and traffic.
-Proposed programme of dismantling work.
-Special requirements:
Protection of the interior of the building from all adverse weather.

150 FEATURES TO BE RETAINED AND PROTECTED
General: Keep in place and protect the following:
All elements of the existing construction not subject to the remedial works and elements of construction designated to be reinstalled or reinstated.

160 FEATURES TO BE REMOVED, SET ASIDE AND RE-INSTALLED
Unfix and remove the following, store and protect the following:
-Existing terrace planters, which the Contractor shall temporarily re-locate to the front garden, then reinstate to the original locations on the terrace after completion of the remedial works but prior to completion of the contract.
-Existing roof timber vertical T&G cladding.
-Plywood fascia to canopy roof
On completion of new work, re-install at existing locations.

SERVICES AFFECTED BY DISMANTLING AND REMOVALS

210 SERVICES REGULATIONS
Work carried out to or which affects new or existing services: Carry out in accordance with the Byelaws or Regulations of the relevant Statutory Authority.

220 LOCATION OF SERVICES
Services affected by the Works: Locate and mark positions.
Mains services: Arrange with the appropriate authorities for location and marking of positions.
Standard: In accordance with National Joint Utilities Group (NJUG) 'Guidelines on the positioning and colour coding of utilities' apparatus'.

231 DISCONNECTIONS TO BE ARRANGED BY EMPLOYER
General: The Employer will arrange for disconnection and removal of fittings and equipment prior to commencement of the works, as follows:
Security installation

232 DISCONNECTIONS TO BE ARRANGED BY THE CONTRACTOR
Disconnect and make safe the following:
General electrical services. Refer to Section V90.

270 DAMAGE TO SERVICES THAT ARE TO REMAIN
Notify the service authority or owner of damage arising from the execution of the works.
Repairs: Complete as directed and to the satisfaction of the service authority or Employer.

DISMANTLING AND REMOVAL WORK

310 WORKMANSHIP STANDARD
Generally in accordance with BS 6187 but with SPECIAL SKILL AND CARE APPROPRIATE TOO, AND SUITABLE FOR THE CONDUCT OF THE REMEDIAL WORKS, TO ENSURE THAT DAMAGE OR DISTURBANCE DOES NOT OCCUR TO ELEMENTS OF CONSTRUCTION THAT ARE TO BE RETAINED AND WITH MINIMAL INTRUSION TO THE OCCUPIERS OF THE BUILDING.
General operatives:
Appropriately skilled and experienced for the type of work.
Holding or in training to obtain relevant CITB Certificates of Competence.
Site staff responsible for supervision and control of the work:
Experienced in the assessment of risks involved and methods of dismantling to be used.

340 HEALTH HAZARDS
Precautions: Protect occupiers of the building and site operatives from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.

360 CONSTRUCTION TO BE RETAINED
Parts which are to be kept in place:
Protect against the weather, impact and accidental damage.
Tender to include proposals for measures to protect elements to be retained.
Extent of work:: Generally, cut away and strip out with care to reduce the amount of making good to a minimum.

370 PARTLY DISMANTLED CONSTRUCTION
Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Keep safe outside working hours.
Temporary works: Prevent debris from overloading.
Unauthorised persons: Prevent access.

391 ASBESTOS CONTAINING MATERIALS
None would have been permitted in the existing construction, but if presence suspected:
Discovery: Give notice immediately of suspected asbestos containing materials discovered during dismantling and removal work. Avoid disturbing such materials.
Methods for safe removal. Submit details and statutory risk assessments.

410 UNFORESEEN HAZARDS
Unrecorded voids, tanks, chemicals, etc. discovered during demolition: Give notice.
Methods for safe removal, filling, etc: Submit details.

440 SITE CONDITION AT COMPLETION
Debris: Clear away and leave the site in a tidy condition.

MATERIALS ARISING

510 CONTRACTOR'S PROPERTY
Components and materials arising from the dismantling work:
Become the property of the Contractor except where required by the Employers technical experts for the purpose of litigation. Refer to clause A05/115. Otherwise, remove from site as work proceeds.

520 RECYCLED MATERIALS
Materials arising from demolition work: May not be recycled or reused elsewhere in the project.

E10 Mixing/casting/curing in situ concrete

To be read with Preliminaries/General conditions.

CONCRETE

101 SPECIFICATION
Concrete generally: To BS 8500-2.
Exchange of information: Provide concrete producer with information required by BS 8500-1, clauses 4 and 5.

110 BASIC DESIGNATED CONCRETE FOR EXTERNAL WORKS
Designation: ST4.
Coarse recycled aggregates: not permitted.
Consistence class: contractor’s choice
Additional requirements: Submit proposals.

125 SUBSTITUTION OF STANDARDIZED PRESCRIBED CONCRETE FOR DESIGNATED CONCRETE
General: Conform to BS 8500-2, clause 9.
Substitution: In accordance with BS 8500-1, table A. 13.
Proposals: Submit for each substitution, stating reasons.
Site mixing: permitted.

MATERIALS, BATCHING AND MIXING

215 READY-MIXED CONCRETE
Production plant: Currently certified by a body accredited by UKAS to BS EN 45011 for product conformity certification of ready-mixed concrete .
Source of ready-mixed concrete: Obtain from one source if possible . Otherwise, submit proposals .
Name and address of depot: Submit before any concrete is delivered .
Delivery notes: Retain for inspection .
Declarations of nonconformity from concrete producer: Notify immediately .

218 SITE MIXED CONCRETE
Batching by mass:
Restrictions: none
Accuracy of measuring devices: To BS EN 206-1, clause 9.6.2.2.
Tolerances for quantity of constituent material: To BS EN 206-1, table 21.
Batching by volume:
Restrictions: Maximum pour size 0.5 m3.
Mixing: To BS 8000-2.1, subsections 2, 3 and 4.

225 CHANGES TO SPECIFICATION
Changes to specification of fresh concrete (outside concrete producer's responsibility): prohibited.

415 ADMIXTURES
Calcium chloride and admixtures containing calcium chloride: Do not use .

PLACING/ COMPACTING/ CURING AND PROTECTING

620 TEMPERATURE OF CONCRETE
Objective: Limit maximum temperature of concrete to minimize cracking during placing, compaction and curing. Take account of:
-High temperatures and steep temperature gradients: Prevent build-up during first 24 hours after casting. Prevent coincidence of maximum heat gain from cement hydration with high air temperature and/ or solar gain.
-Rapid changes in temperature: Prevent during the first seven days after casting.
Proposals for meeting objective: Submit.

630 PREMATURE WATER LOSS
Requirement: Prevent water loss from concrete laid on absorbent substrates.
-Underlay: Select from:
Polyethylene sheet: 250 micrometres thick.
Building paper: To BS 1521, grade B1F.
-Installation: Lap edges 150 mm.

648 ADVERSE TEMPERATURE CONDITIONS
Requirement: Submit proposals for protecting concrete when predicted ambient temperatures indicate risk of concrete freezing or overheating.

650 SURFACES TO RECEIVE CONCRETE
Cleanliness of surfaces immediately before placing concrete: Clean with no debris, tying wire clippings, fastenings or free water .

660 INSPECTION OF SURFACES
Notice: Give notice to allow inspections of reinforcement and surfaces before each pour of concrete.
-Period of notice: Obtain instructions.

670 TRANSPORTING
General: Avoid contamination, segregation, loss of ingredients, excessive evaporation and loss of workability . Protect from heavy rain.
Entrained air: Anticipate effects of transport and placing methods in order to achieve specified air content .

680 PLACING
Records: Maintain for time, date and location of all pours.
Timing: Place as soon as practicable after mixing and while sufficiently plastic for full Compaction.
Temperature limitations for concrete: 30°C (maximum) and 5°C (minimum), unless otherwise specified. Do not place against frozen or frost covered surfaces.
Continuity of pours: Place in final position in one continuous operation up to construction joints. Avoid formation of cold joints.
Discharging concrete: Prevent uneven dispersal, segregation or loss of ingredients or any adverse effect on the formwork or formed finishes.
Thickness of layers: To suit methods of compaction and achieve efficient amalgamation during compaction.
Poker vibrators: Do not use to make concrete flow horizontally into position, except where necessary to achieve full compaction under void formers and cast-in accessories and at vertical joints.

690 COMPACTING
General: Fully compact concrete to full depth to remove entrapped air. Continue until air bubbles cease to appear on the top surface.
Areas for particular attention: Around reinforcement, under void formers, cast-in accessories, into corners of formwork and at joints.
Consecutive batches of concrete: Amalgamate without damaging adjacent partly hardened concrete.
Methods of compaction: To suit consistence class and use of concrete.

818 CURING PERIODS GENERALLY
Minimum periods: When not otherwise indicated to BS 8119-1

840 PROTECTION
Prevent damage to concrete, including:
-Surfaces generally: From rain, indentation and other physical damage.
-Surfaces to exposed visual concrete: From dirt, staining, rust marks and other disfiguration.
-Immature concrete: From thermal shock, physical shock, overloading, movement and vibration.
-In cold weather: From entrapment and freezing expansion of water in pockets, etc.

850 CONCRETE REPAIRS
[Refer to specification J31/14]

INCLUDE THE FOLLOWING CONCRETE REPAIRS TO VERTICAL AND HORIZONTAL SURFACES OF RC UPSTANDS AT TERRACE PERIMETER, EXPOSED BY REMOVAL OF EXISTING CERAMIC TILING.

THIS WORK MAY BE DELETED, BY INSTRUCTION, IN THE EVENT THAT ADHESION TESTS CONFIRM THAT THE NEW WATERPROOF MEMBRANE (SECTION J31) CAN BE SATISFACTORILY BONDED TO THE EXISTING WATERPROOFING MEMBRANE.

Drawing references: 6822-AA3-01, 02, 03 04.
Manufacturer: BASF Construction Chemicals UK, Swinton, Manchester. Tel: 0161-794 7411
Product: FEBOND SBR
Type: Bonding admixture for cementitious repair system.
Removal of existing waterproofing membrane:
Use mechanical methods to remove the concrete surface sufficiently, so that any membrane residues do not impair application of the new membrane, in accordance with instruction issued by Kemper Systems Limited.
Concrete repair:
Prepare and clean concrete surfaces, use and apply Febond SBR as a surface primer and additive to Ordinary Portland cement sluury/repair mortar, all in accordance with BASF instructions.
Concrete surface: smooth.
Curing: Allow repair to cure before commencing Kemperol works.

F10 Brick/ block walling

To be read with Preliminaries/ General conditions.

TYPES OF WALLING

100 SCOPE OF WORK IN THIS SECTION
The building is Listed Grade II. Removal and renewal of brickwork must be carried out with care and skill. The work shall be carried out only by a brickworker, qualifying as follows:
- A firm that can demonstrate a high level of experience and skill in brickwork.

Tender submission: Submit details of the proposed brickwork contractor that would undertake the work in the event of a successful tender.

110 CLAY FACING BRICKWORK
Bricks: Bespoke handmade manufacture to order.
Manufacturer:
Coleford Brick & Tile
The Royal Forest of Dean Brickworks
Cinderford, Gloucestershire, GL14 3JJ
Tel: 01594-822160
Product reference: **COTSWOLD BUFF**
Dimensions: 215x102.5x65mm
Type: Frogged
Special shapes:
Solid bricks without frogs but with 10x25mm rebate along one long edge.
Dimensions: 215x102.5x65mm. For rebate dimensions refer to drawings.
Type: solid
Number required: TBA
Corner brick-on-end, faced on 2 No. long sides.
Dimensions: 105x105x215mm
Type: solid.
Number required: 3
Mortar: As section Z21.
Standard:To BS EN 998-2.
Mix: Group 3
Additional requirements:
Use factory pre-mixed lime/sand coloured mortar dry mix.
Manufacturer: Tarmac Mortar, Buxton. Tel: 08701-116116
Colour reference: Y111 **or** Y113 (Buff). Refer to clause 740.
NOTE:
The house is Listed Grade II and remedial brickwork subject to special requirements for matching to the existing. Colour reference to be confirmed before Commencement and subject to acceptance by the Local Planning Authority of the reference panel, Clause 740. Allow for providing special (non-standard) coloured mortar, using sands and/or pigments provided by Tarmac Mortars. A further sample panel will be required.
Brickwork:
Bond: To follow existing.
Joints: Flush.
Features: Brick-on-end courses.

TESTING

410 COMPRESSIVE STRENGTH OF MORTAR FOR EACH WALLING TYPE
Testing MAY be required, subject to instructions.
Testing authority: A UKAS Accredited laboratory.
Test method: BS EN 1015-11.

Site tests: During construction, specimens to be prepared for every 150 sq m of each walling type, or for every storey of the building, whichever is the more frequent. Half of the specimens to be tested at seven days and the remainder at 28 days.
Mean compressive strength of mortar at 28 days to be not less than the following:

Min. N/mm² (MPa)	Max. N/mm² (MPa)	Min. N/mm² (MPa)	Max. N/mm² (MPa)
3.6	6.5	2.5	4.5

Results: Submit.

WORKMANSHIP GENERALLY

460 MORTAR GROUPS

Mix proportions: For a specified group select a mix design from the following:

Group	1	2	3	4
PC*:lime:sand with or without air entraining additive				
	1:0-0.25:3	1:0.5-4.5	1:1:5-6	1:2:8-9
Masonry cement:sand containing PC* and lime in approx ratio 1:1, and anair entraining additive				
	-	1:3	1:3.5-4	1:4.5
Masonry cement:sand containing PC* and inorganic materials other than limeand air entraining additive				
	-	1:2.5-3.5	1:4-5	1:5.5-6.5
PC*:sand and air entraining additive				
	1:3	1:3-4	1:5-6	1:7-8

PC* = Portland cement
Batching: Mix proportions by volume.
Mortar type: Continuous throughout any one type of masonry work.

500 LAYING GENERALLY
Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
Bond where not specified: Half lap stretcher.
Vertical joints in facework: Even widths. Plumb at every fifth cross joint.

505 CUTTING OUT AND RE-FORMING BRICKWORK.
NOTE: THIS WORK REQUIRES SKILL AND CARE.
Carefully cut out for the minimum extent required for associated works. Leave adjacent brickwork toothed for subsequent re-forming facing brickwork. Refer to F30/500 for installation of new DPCs in existing brickwork.

506 INSTALLATION OF DAMP PROOF COURSE AND LIQUID APPLIED DAMP PROOF MEMBRANES
For installation and/or application of damp-proof course or liquid applied damp proof membrane: Flush point the face of cut brickwork or 'bag out'. Remove sharp edges, high points, powdery or flaking surfaces. Seal open textured surfaces with a cement/sand slurry. Provide a surface

sufficiently smooth, clean and dry, free of frost, oil or grease to receive damp proofing materials. Obtain written confirmation from the damp proof course installer and/or damp proof membrane applicator, that prepared surface(s) are suitable for their work.

520 ACCURACY

Courses: Level and true to line. Faces, angles and features: Plumb.
Permissible deviations:

Dimension	**Permissible deviation (mm)**
Position in plan of any point or specified fair face in relation to the nearest building grid line at the same level	+/-10
Length (unless otherwise defined by adjacent construction):	
Up to 5 m	+/-10
5 to 10 m	+/-15
10 to 20 m	+/-20
Over 20 m	+/-30
Height:	
Up to 3 m	+/-5
3 to 6 m	+/-10
Over 6 m	+/-25
Level of bed joints:	
Up to 5 m long	+/-5
5 to 10 m long	+/-10
Over 10 m long	+/-25
Straightness in any 5 m length	+/-10
Vertically:	
In any 3 m height	+/-10
In o/a height of building exceeding 6 m	+/-20
Thickness:	
Overall thickness of walls or width of piers (subject to the following)	+/-5
Difference in thickness of a wall or width of a pier at any two points 3 m apart	+/-10

535 HEIGHT OF LIFTS IN WALLING USING CEMENT GAUGED OR HYDRAULIC LIME MORTAR

Quoins and advance work: Rack back.
Lift height (maximum): 1.2 m above any other part of work at any time.
Daily lift height (maximum): 1.5 m for any one leaf.

545 LEVELLING OF SEPARATE LEAVES
Locations for equal levelling of cavity wall leaves: As follows:
- Every course containing vertical twist type ties or other rigid ties.
- Every third tie course for double triangle/ butterfly ties.
- Courses in which lintels are to be bedded.

560 COURSING BRICKWORK
Gauge: Four brick courses including bed joints to 300 mm.

580 LAYING FROGGED BRICKS
Single frogged bricks: Frog uppermost.
Double frogged bricks: Larger frog uppermost.
Frog cavity: Fill with mortar.

645 ACCESSIBLE JOINTS NOT EXPOSED TO VIEW
Jointing: Struck flush as work proceeds.

690 ADVERSE WEATHER
General: Do not use frozen materials or lay on frozen surfaces.
Air temperature requirements: Do not lay bricks/ blocks:
- In cement gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
- In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising.
- In thin joint mortar glue when outside the limits set by the mortar manufacturer.

Temperature of walling during curing: Above freezing until hardened.
Newly erected walling: Protect at all times from:
- Rain and snow.
- Drying out too rapidly in hot conditions and in drying winds.

ADDITIONAL REQUIREMENTS FOR FACEWORK

710 THE TERM FACEWORK
Definition: Applicable in this specification to brick walling finished fair.

730 BRICK SAMPLES
General: Before placing orders with suppliers submit for approval of appearance labelled samples of facing bricks at clause 110
Selection of samples: Representative of the range in variation of appearance.

740 FINISHED MASONRY WORK REFERENCE PANELS
General: Before proceeding to construct the following walling types, construct panels as specified. Give notice when panels are dry.
Selection of masonry units: Reasonably representative of the average quality of the whole order to be delivered .
Panel type:
- Walling type: F10/110.
  Location: To be agreed .
  Size: 450mm high x 900mm width.
  Other requirements:
  In the panel, include **both** specified mortar colours for review. Obtain 25kg bag of mortar mix of each colour, from Tarmac Mortar for the reference panel.

750 COLOUR CONSISTENCY OF MASONRY UNITS
Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
Finished work: Free from patches, horizontal stripes and racking back marks.

760 APPEARANCE
Brick selection: Do not use units with damaged faces or arrises.
Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
Quality control: Lay masonry units to match relevant reference panels.
Setting out: To produce satisfactory junctions and joints with built-in elements and components.
Coursing: Evenly spaced using gauge rods.
Lifts: Complete in one operation.
Methods of protecting facework: Submit proposals.

790 PUTLOG SCAFFOLDING
Use: Not permitted in facework.

830 CLEANLINESS
Facework: Keep clean.
Mortar on facework: Allow to dry before removing with stiff bristled brush.
Removal of marks and stains: Rubbing not permitted.

850 BRICKWORK REPLACEMENT
[Refer to specification J31/14]

INCLUDE THE FOLLOWING BRICKWORK REPLACEMENT TO BE CARRIED OUT AT THE TERRACE SOUTHERN WALL, FOR THE AREA OF BRICKWORK TO RECEIVE NEW TERRACE WATERPROOFING MEMBRANE.

THIS WORK MAY BE DELETED (BY INSTRUCTION) IN THE EVENT THAT ADHESION TESTS CONFIRM THAT THE NEW WATERPROOF MEMBRANE (SECTION J31) CAN BE SATISFACTORILY BONDED TO THE EXISTING WATERPROOFING MEMBRANE.

Drawing references: 6822-AA3-01, 02, 03 04.
Removal:
Cut out brickwork of thickness 110mm nominal, for the area to receive new waterproofing membrane. Remove half-brick of headers at cross-bonded brickwork.
Re-construct:
Using new facing bricks, as clause F10/110, laid half-lap stretcher bond, solidly bedded all round and flush jointed to receive waterproofing membrane.
Procedure:
The work is to be carried out in sections, each section not exceeding 600mm length, This work is NOT to be carried out concurrently with other brickwork removals for DPC insertion and/or waterproofing works to brickwork, specification section J30, but in a carefully sequenced manner. Before commencement of this work, submit proposals for the methodology and sequencing to be followed, for comment by the Architects.

860 TEMPORARY BRACING OF BRICKWORK
Install temporary bracing to the top of 215mm and 340mm wide brick terrace screen wall, south elevation.

The bracing shall be designed and constructed to prevent horizontal movement of the top of the walls. It is envisaged that the bracing will be designed as part of the temporary roof scaffolding assembly and constructed so that bracing engages the full length of the wall, including the 340mm wide section of brickwork below the projection of the terrace canopy roof.

Maintain the bracing during the process of removing/re-installing brickwork for application of the waterproofing membrane (section J30), application of waterproofing roofing (section J31) and DPC installation (section F30).

Submit proposals for bracing prior to Commencement.

F30 ACCESSORIES/SUNDRY ITEMS FOR BRICK WALLING

To be read with Preliminaries/General conditions.

CAVITIES

120 CLEANLINESS: Clean off surplus mortar from joints on cavity faces as the work proceeds. Keep cavities, ties and dpcs free from mortar and debris with laths or other suitable means.

132 WEEP HOLES:
Form with plastics perpend units to manufacturer's recommendations at locations shown on drawings immediately above base of cavity membrane and lead dpcs. .
Manufacturer and reference:
Rytons Building Products Limited
Kettering. Tel: 01536-511874
Product: RYTWEEP
Colour: Clear.

140 WALL TIES
Drawing reference: 6822-AA3-03
Manufacturer: Helifix Ltd. 21 Warple Way, London. Tel: 020-8735-5222
Product: STAR TIE
Material: stainless steel grade 304
Length: 155mm
Spacing: 450x450mm maximum, staggered pattern.
Embedment in backing brickwork: 70mm
Cavity: 10mm nominal (mortar filled)
Embedment in outer brickwork (reformed) 75mm
Installation:
Install into existing (retained) brick joints in accordance with Helifix instructions. New liquid applied waterproofing membrane (J30/130) to be applied to the surface of the ties by 10mm maximum. Ties built into new outer brick facing.

FLEXIBLE DAMP PROOF COURSES

330 DAMP PROOF COURSE:
Manufacturer: Icopal Limited, Manchester Tel: 0161-865-4444
Product: NUBIT damp proof course.
Accessories: Factory preformed external and internal corners.
Installation:
Generally as clause 415. Brickwork surfaces to receive the damp proof course by hot bonding, must firstly be flush pointed to provide a smooth surface without sudden changes in level, then primed using a coat of Icopal Xtra-Seal Quick Drying Primer, applied to all surfaces and allowed to dry.
Installation to existing brickwork: As clause 500

390 JUNCTIONS/STOP ENDS FORMED IN SITU:
Where preformed junction cloaks/stop ends cannot be used, form three dimensional changes of shape in dpcs and/or cavity trays carefully and neatly to ensure a fully watertight installation, using folds wherever possible to achieve the required shape.
Seal all laps using torching in accordance with manufacturer's recommendations.

400 COLD WEATHER WORKING: In cold weather warm dpc rolls before unrolling, to avoid cracking.

401 HORIZONTAL DPCS:
Lay in continuous lengths on a full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles.
Width of dpc to be at least full width of masonry leaf unless otherwise specified. Do not cover edges of dpc with mortar.
Where there are separate dpcs in each leaf of a cavity wall, ensure that edges do not project into the cavity.
Immediately lay at least one further course of masonry on a thin even bed of fresh mortar. Keep finished joint thickness as close to normal as practicable.

402 FACEWORK:
Leading edge of dpcs to project 5 mm from face of wall at all locations.

SEALANT

405 SEALANT IN CONTACT WITH PVC
Sealant: ARBOSIL 1096 one part silicone sealant
Manufacturer: Adshead Ratcliffe 01773-826661
Colour: BLACK
Width: nominally 10mm
Application: As section Z22 and in accordance with the manufacturers recommendations.
Ensure that joints extend through tiles and bedding to substrate

INSTALLATION OF DPCS

415 HORIZONTAL DPCs GENERALLY
Placement: In continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles.
Width: At least full width of leaf unless otherwise specified. Edges of dpc not covered with mortar or projecting into cavity.
Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course.
Overall finished joint thickness: As close to normal as practicable.

500 INSTALLATION OF NEW DPC INTO EXISTING BRICKWORK

A working demonstration of the installation will be given by a representative of Icopal Limited.
Contact **SIMON MALLOY** Tel: 07976-821549
Allow for all necessary liaison, preparation and attendance for the demonstration.
DPC installation shall not commence prior to this demonstration, and all DPC work subsequently carried out shall conform with the method demonstrated.

Method:
For the overall length of the wall, of thicknesses 215mm and 340mm, cut out sections of brickwork in sequence. **WORK AT ONE SECTION ONLY AT A TIME** and allow accordingly in the contract Master Programme. **NOTE: CONSIDERABLE SKILL AND CARE IS REQUIRED FOR THIS WORK.**

At each section, cut out brickwork for a height of 3 courses above DPC highest level, and length 700mm max (subject to brick bonding) leaving ends toothed to adjacent work. Prepare/prime surfaces for and install a length of DPC, hot bonded to faces of brickwork below and behind the DPC. Allow for flush pointing brickwork faces to receive DPC by hot bonding. Refer to specification section F10.

After installing first length of DPC, make good brickwork to opening above, with mortar beds solidly filled. The joint to existing retained brickwork is to be solidly filled with mortar, then packed by driving in slips of natural slate to below the surface of the joint so that pointing continues over. Use sand-bed joints at DPC lap positions for ease of subsequent removal. Allow 5 days for mortar to cure. At next consecutive section, cut out brickwork for a length 600mm max (subject to brick bonding) and remove sand-bedded bricks. Repeat DPC installation, forming 100mm laps between lengths of DPC sealed together by hot bonding. Repeat process until overall length of DPC is complete.

Commence at the internal corner with glazed doors to Living Room. Form 75mm high stop end to the DPC at this end. The final section to be 225mm length of brickwork at western end of wall, a short length to ensure adequate structural support of brickwork above during the last stage of the process.

Set leading edges of DPC 5mm beyond face of brickwork. Protect free edges of DPC from damage where located over the rebate for lead tuck. If an edge becomes damaged, cut out brickwork again and install new length of DPC material, method as before.

Make good adjoining areas of brickwork disturbed during the work.

G20 General carpentry

To be read with Preliminaries/ General conditions.

GENERAL

100 SCOPE OF WORK IN THIS SECTION
The removal of existing timber cladding and associated elements of construction for roofing works, and subsequent re-installation of the cladding.
Plywood installation for single layer roofing is included in section J42.
Reinstatement of plywood fascia to aluminium box gutter.
Softwood framing/encasement to air conditioning unit pipework and electrical cabling

105 TIMBER PROCUREMENT
Timber (including timber for wood based products): Obtained from well-managed forests/ plantations in accordance with:
-The laws governing forest management in the producer country or countries.
-International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
Documentation: Provide either:
-Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied, or
-Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.

150 STRENGTH GRADING OF TIMBER
Grader: Any company currently registered under a third party quality assurance scheme operated by a certification body approved by the UK Timber Grading Committee.
Grading and marking of timber:
- Timber of a target/finished thickness less than 100 mm and not specified for wet exposure: Graded at an average moisture content not exceeding 20% with no reading being in excess of 24% and clearly marked as 'DRY' or 'KD' (kiln dried).
- Timber graded undried (green) and specified for installation at higher moisture contents: Clearly marked as 'WET' or 'GRN'.
- Structural timber members cut from large graded sections: Regraded to approval and marked accordingly.

PRODUCTS

270 UNGRADED NONSTRUCTURAL SOFTWOOD
Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
Surface finish: wrot .
Treatment: CCA impregnation to NBS section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C5, Service life: 60 years .
Moisture content at time of erection: As clause 450.

315 TIMBER FOR DRAINAGE CHANNEL EDGE REINFORCEMENT
Quality: Planed, free from wane, pitch pockets, decay and insect attack (except ambrosia beetle damage).
Moisture content at time of covering (maximum): 22%.
Preservative treatment: CuAz as section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8.
Type/desired service life: 60 years

WORKMANSHIP GENERALLY

402 CROSS SECTION DIMENSIONS OF NONSTRUCTURAL SOFTWOOD
Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
Maximum permitted deviations from finished sizes: As stated in BS EN 1313-1:
-Clause 6 for sawn sections.
Clause NA.2 for further processed sections.

420 WARPING OF TIMBER
Bow, spring, twist and cup: Not greater than the limits set down in BS 4978 or BS EN 519 for softwood, or BS 5756 for hardwood.

430 SELECTION AND USE OF TIMBER
Timber members damaged, crushed or split beyond the limits permitted by their grading: Do not use.
Notches and holes: Position in relation to knots or other defects such that the strength of members will not be reduced.
Scarf joints, finger joints and splice plates: Do not use without approval.

440 PROCESSING TREATED TIMBER
Cutting and machining: Carry out as much as possible before treatment.
Extensively processed timber: Re-treat timber sawn lengthways, thicknessed, planed, ploughed, etc.
Surfaces exposed by minor cutting-drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

450 MOISTURE CONTENT
Moisture content of wood and wood based products at time of installation: Not more than:
-Covered in generally unheated spaces: 15%.
-Covered in generally heated spaces: 15%.
-Internal in continuously heated spaces: 12%.

451 MOISTURE CONTENT TESTING
Procedure: When instructed, test timber sections with an approved electrical moisture meter.
Test sample: Test 5% but not less than 10 lengths of each cross-section in the centre of the length.
Test results: 90% of values obtained to be within the specified range. Provide records of all tests.

510 PROTECTION
Generally: Keep timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.
Timber and components: Store under cover, clear of the ground and with good ventilation. Support on regularly spaced, level bearers on a dry, firm base. Open pile to ensure free movement of air through the stack.

520 EXPOSED END GRAIN: Not permitted in finished work.

JOINTING TIMBER

570 JOINTING/FIXINGS GENERALLY
Generally: select methods of jointing and fixing and types, sizes and spacings of fasteners in compliance with section Z20.

670 FASTENERS:
Material: ONLY austenitic stainless steel, to BS EN ISO 3506-1 and 2, grade A4

ERECTION AND INSTALLATION

740 PRE-ERECTION CHECKING
Timing: Not less than 10 days before proposed erection start date.
Checklist:
-Steelwork and other components to which timberwork will be attached: Survey for accuracy of setting out. Submit survey results to Architects.
-Fixings: Check for position, protruding length, condition and slackness.
Inaccuracies and defects: Report without delay.
Erection: Obtain permission to commence.

750 MODIFICATIONS/REPAIRS
Defects due to detailing or fabrication errors: Report without delay.
Methods of rectification: Obtain approval of proposals before starting modification or remedial work.
Defective/damaged components: Timber members/ components may be rejected if the nature and/or number of defects would result in an excessive amount of site repair.

770 ADDITIONAL SUPPORTS
Provision: Position and fix additional studs, noggings and/ or battens to support edges of sheets materials, and wall/ floor/ ceiling mounted appliances, fixtures, etc.
Material properties: Additional studs, noggings and battens to be of adequate size and have the same preservation treatment as adjacent timber supports.

775 BEARINGS
Timber surfaces which are to transmit loads: Finished to ensure close contact over the whole of the designed bearing area.
Packings: Where provided, to cover the whole of the designed bearing area.
-Crushing strength: Not less than timber being supported.
-At external locations: Rot and corrosion proof.

H21 Timber weatherboarding

To be read with Preliminaries/ General conditions.

100 SCOPE OF WORK IN THIS SECTION
As clause A05/100-2.4

105 REMOVAL OF EXISTING CLADDING
Existing vertical, tongued and grooved, Vee jointed cladding is pinned to support battens, partly by surface fixing, partly secret fixed through tongues. Carefully remove each board without damage to timber surface or tongues. Remove and discard all fastenings.
Inspect each board for existing defects that will impair the specified re-fixing method, eg split tongues. Report to architect.
Identify each board and record the location where originally installed. Store in batches corresponding to the original installed locations, and protect during other works.
Subsequently, re-fix boards as specified in their original locations..
Existing plywood cladding at end of roof beams is to be discarded. Supply and install new Utile cladding at these locations.

110 VERTICAL TIMBER CLADDING
Drawing references: 6822-AA2-01, 05, 07, 08
Substrate: Plywood faced timber framed roof beams and timber framed external walls.
Breather membrane: (New) as clause 130
Battens: (New)
-Size: 15x32mm Finished size.
-Centres: As detailed on drawings.
-Fixing: screw fixed at 400mm centres using stainless steel flat c/s screws.
Boarding: (New)
Location: Beam end cladding:
Quality of timber: Generally to BS EN 942. (exposed surfaces):
-Species: UTILE.
-Grading: In accordance with Table D.1 of BS EN 942
-Appearance class: J5. Knots on arrises: not permitted where exposed to view.
Not permitted: Reaction wood, splits, biological attack, wane. Loose or unsound knots: only permitted on concealed faces.
Finish: Translucent coating as Section M60.
-Profile: Boards square edged. Bottom edge splayed back 10 degrees nominal..
-Finished face dimension (overall width): to suit overall width of roof beam with timber cladding re-installed.
-Finished thickness: to match existing T&G cladding (approx 25mm)
-Moisture content at time of fixing: 15%.
Preservative Treatment:
Standard: To NBS section Z12 and Wood Protection Association Commodity
Specification: as section Z12
Type: as section Z12/160.
Method of fixing to each support: as clause 160.
Other requirements:
Install over new thermal insulation as clause P10/115.
Coated finish as section M60.

120 CONTROL SAMPLE
General: Complete an area of boarding in an approved location and obtain approval of appearance before proceeding.

130 BREATHER MEMBRANE
Material: Geotextile
Manufacturer: DuPont Tyvek. Tel 01275-879770.
Product reference: TYVEK HOUSEWRAP
Installation: Fix carefully and neatly to provide a complete barrier to water, snow and wind

blown dust. Extend membrane below lowest timber member and into reveals of openings. Instal membrane around external and internal corners.
Laps: Horizontal: 100 mm. Vertical: 150 mm and staggered, to shed water away from substrate.
Fixing: Austenitic stainless steel staples at 600mm centres horizontally and 300mm centres vertically, and within 100mm from openings, abutments, etc.

135 BATTENS
Timber: Regularized softwood free from decay, insect attack (except ambrosia beetle damage) and with no knots wider than half the section width.
Preservative treatment: as section Z12.
-Standard: To NBS section Z12 and Wood Protection Association Commodity Specification C8.
-Type: as section Z12.
Moisture content: Not exceeding 20% at time of fixing.

141 FIXING BATTENS TO FRAMING/ SHEATHING
Setting out: In straight, vertical lines at centres coincident with vertical framing members.
Batten length (minimum): 1200 mm.
Installation: Where sheathing is provided, fix through sheathing into framing as clause 110. Fastener heads to finish flush with or slightly below batten face.

145 TREATED TIMBER
Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

150 SURFACE TREATMENT
Finishing system: Before fixing boards, apply first coat of specified system to all surfaces. Apply liberally to end grain.

160 FIXING BOARDING
Existing:
Generally re-fix existing tongued and grooved, vee jointed vertical cladding by secret nail fixing through tongues into support battens. Head fixings (concealed by lead capping) through board thickness.
Fix boards using 50 x 2.65mm round lost head nails in austenitic stainless steel.
Do not use original fixing holes though tongues. To avoid splitting tongues, **pre-drill fixing holes** at new locations using a power tool, for new secret fixings.
New:
Fix new cladding at ends of roof beams by nail fixing into edges of T&G boards at head and 300mm vertical centres. Nails as above. Punch nail heads below surface.
Generally:
Fix boards securely to give flat, true surfaces free from undulations, lipping, splits, hammer marks and protruding fasteners.
Movement: Allow for movement of boards and fixings to prevent cupping, springing, excessive opening of joints or other defects.

WORKMANSHIP

670 GENERALLY:
-Standard generally: HIGH QUALITY EXTERNAL JOINERY
-Standard: To BS 644, BS 1186-2 & 3, BS 8000-5 and section Z10

H71 LEAD SHEET COVERINGS/FLASHINGS

To be read with Preliminaries/General conditions.

100 SCOPE OF WORK IN THIS SECTION
Shall be carried out **only** by a specialist leadworking contractor, qualifying as follows:
- A current full member of the Lead Contractors Association (LCA).
- Vetted by the LCA for general leadwork and achieving a vetted grade 'Excellent'.
- A firm that can demonstrate a high level of experience and skill in general lead roofing work.
Tender submission: Submit details of the proposed leadwork contractor that would undertake the work in the event of a successful tender.

TYPE(S) OF LEADWORK

120 MODIFICATION TO LEAD CAPPING (OVER 2 No. RAINWATER OUTLETS, HIGH LEVEL ROOF)
Drawing references: 6822-AA2-03, detail 2-04.
Base: Single layer membrane rainwater chute.
Preparation included in this section: None
Underlay
Existing type of lead: code 4/5 subject to survey.
Existing Longitudinal joints: none.
Existing cross joints: welted joints. Lapped. Corner joints leadwelded.
Existing bottom edge detail: External edge clipped. Internal (roof side) edge dressed down.
Requirements:
At each outlet:
Un-fasten outer edge clips, sufficiently to carry out the following:.
With lead capping remaining insitu, cut out to form outlets slots in the outer and rear lower edges. Re-fix and re-dress lead clips. Do not disturb adjoining lead welding at corner.

125 LEAD WEATHERING. (UNIT 1) EXISTING ROOF BEAM (SOUTH ELEVATION)
Drawing references: 6822-AA2-05, 06.
Base: Existing roof timberwork.
Preparation included in this section.
None to timberwork. Cut back end of existing leadwork for the specified length of the new weathering unit and form welted joint connection.
Underlay: One layer of building paper, Class A to BS 1521. Sheet edges overlapped 100mm
Type of lead: milled as clause 550, code 5. Leadwelded to shape.
Longitudinal joints: none.
Spacing: n/a
Cross joints: Welted joint with adjoining existing lead, as clause 770.
Spacing: n/a
Bottom edge detail: Welted and clipped as clause 725.
Head detail: head nailed as clause 710.
Intermediate fixings: None
Other requirements: Finishing as clause 880.

130 LEAD SADDLE (UNIT 2) BELOW ALUMINIUM BOX GUTTER
Drawing references: 6822-AA2-04, 05, 06.
Base: Brickwork
Preparation included in this section: none.
Underlay: One layer GEOTEC 220PY polyester geotextile felt, loose laid, by Cookson Industrial Materials Ltd. Tel. 091-261-0161.
Type of lead: milled as clause 550, code 5. Leadwelded to shape.
Longitudinal joints: none.
Spacing: n/a
Cross joints: None
Spacing: n/a
Bottom edge detail: Bottom edge dressed down to face of brickwork.
Head detail: n/a
Intermediate fixings: Fix horizontal edge of lead to top of brickwork/ timberwork using 2 No. centre screw fixings, each with washer.
Other requirements:
Faces in contact with brickwork to be coated with high-build, bitumen based paint.
Wedge fixed to brickwork as clause 840.
Finishing as clause 880.

135 LEAD CAPPING (UNIT 3) TOP OF 340mm BRICKWORK
Drawing references: 6822-AA2-04, 05, 06.
Base: New brickwork.
Preparation included in this section: None
Underlay: One layer GEOTEC 220PY polyester geotextile felt, loose laid, by Cookson Industrial Materials Ltd. Tel. 091-261-0161.
Type of lead: milled as clause 550, code 5. Leadwelded to shape. Form external corners by leadwelding as shown LSA manual Vol 3, fig 66.
Longitudinal joints: none
Spacing: n/a
Cross joints: none
Spacing: n/a
Bottom edge detail: Welted and clipped, as clause 725.
Head detail: n/a
Intermediate fixings: none.
Other requirements:
Faces in contact with brickwork to be coated with high-build, bitumen based paint.
Finishing as clause 880.

140 LEAD CAPPING (UNIT 4) TOP OF 215mm BRICKWORK
Drawing references: 6822-AA2-04, 05, 06.
Base: Existing brickwork.
Preparation included in this section: None.
Underlay: One layer GEOTEC 220PY polyester geotextile felt, loose laid, by Cookson Industrial Materials Ltd. Tel. 091-261-0161.
Type of lead: milled as clause 550, code 5.
Abutment to 340mm brickwork: Leadwelded to shape. Wedge fixed to brickwork as clause 840. Form external corners by leadwelding as shown LSA manual Vol 3, fig 66. Fix horizontal edge of lead to top of 340mm wide brickwork using 2 No. centre screw fixings each with washer.
Longitudinal joints: none
Spacing: n/a
Cross joints: 2 No. welted joints as clause 770.
Spacing: as shown on drawing No. 6822-AA2-06.
Bottom edge detail: Welted and clipped, as clause 725.
Head detail: n/a
Intermediate fixings: none
Bottom edge detail: Welted and clipped, as clause 725.
Other requirements:
Faces in contact with brickwork to be coated with high-build, bitumen based paint.
Finishing as clause 880.

145 LEAD WEATHERING. (UNIT 5) EXISTING ROOF BEAM (NORTH ELEVATION)
Drawing references: 6822-AA2-07.
Base: Existing roof timberwork.
Preparation included in this section to timberwork. Cut back edge of existing lead for specified length of weathering unit for new welted joint.
Underlay: One layer of building paper, Class A to BS 1521. Sheet edges overlapped 100mm
Type of lead: milled as clause 550, code 5. Leadwelded to shape.
Longitudinal joints: none
Spacing: n/a
Cross joints: welted joint with adjoining existing lead, as clause 770.
Spacing: n/s
Bottom edge detail: Welted and clipped as clause 725.
Head detail: head nailed as clause 710.
Intermediate fixings: none.
Other requirements: Finishing as clause 880.

150 LEAD WEATHERING: TOP OF TIMBER ROOF BEAMS
Drawing references: 6822-AA2-02, 03, 04, 05, 06, 07, 08.
Base: Existing roof timberwork.
Preparation included in this section: None.
Underlay: One layer of building paper, Class A to BS 1521. Sheet edges overlapped 100mm
Type of lead: Milled as clause 550, code 5. Form external corners by leadwelding as shown LSA manual Vol 3, fig 66. Form upstand behind lead cladding at high level roof fascia, by leadwelding.
Longitudinal joints: None.
Spacing: n/a
Cross joints: 1 No. welted joints as clause 770.
Spacing: As shown drawing No. 6882-AA2-06.
Bottom edge detail: Welted and clipped, as clause 725.
Head detail: none
Intermediate fixings: none.
Other requirements:
Unclip lower edge of existing lead fascia cladding for installation of lead capping. Cut away lower edge over roof beam to allow fascia cladding to seat properly, dress down lead and re-fix to existing clips.
Finishing as clause 880.

155 LEAD CLADDING: FASCIA TO ALUMINIUM BOX GUTTER (CANOPY ROOF)
Drawing reference: 6822-AA2-01, AA2-02
Base: 18mm plywood (existing re-instated)
Preparation included in this section: subject to inspection after removal of existing leadwork.
Underlay: One layer of building paper, Class A to BS 1521. Sheet edges overlapped 100mm
Outer cladding:
Type of lead: milled as clause 550, code 5
Longitudinal joints: None
Spacing: n/a
Cross joints: Vertical welted joints and clipped, as LSA Manual Vol. 2, fig 19
Spacing: 1000mm centres maximum.
Bottom edge detail: welted and clipped as LSA manual Vol. 2, fig 103.
Head detail: head nailed as clause 710.
Intermediate fixings: none.
Other requirements:
At north elevation end, install Code 4 flashing between outer cladding and roof timberwork, to conceal end of aluminium gutter, as shown on drawing 6822-AA2-07.
At south end of fascia, form lead details and leadweld to lead saddle (unit 2) as shown on drawing 6822-AA2-02.

Inner cladding:
Type of lead: milled as clause 550, code 4.
Longitudinal joints: None.
Spacing: n/a
Cross joints: vertical joints lapped 100mm, staggered with welted joints in outer fascia.
Spacing: 1000mm.
Bottom edge detail: Neatly dress across lower edge of plywood fascia and turn into outer cladding lower edge welt, as LSA Manual Vol 2, fig 103. Carefully cut lead close to each timber cross beam .Head detail: head nailed as clause 710, with top edge turned down 50mm to cover fixing heads.
Intermediate fixings: none.
Fascia capping:
Type of lead: milled as clause 550, code 4
Longitudinal joints: None.
Spacing: n/a
Cross joints: welted joints and clipped, as LSA Manual Vol. 2, fig 19
Spacing: 1500mm maximum
Bottom edge detail (outer): Dressed down over outer cladding and clipped at 500mm centres maximum.
Bottom edge detail (inner over box gutter): Dress down over box gutter bracing bars.
Intermediate fixings:
Screw fix into new countersunk recesses at top edge of plywood facsia at 400mm centres and covered with lead soldered dot.
General:
Other requirements: Finishing as clause 880.

160 LEAD WEATHERING AND COVER FLASHINGS.
BRICKWORK, TERRACE LOW-LEVEL, SOUTH ELEVATION.
Drawing references: 6822-AA3-01, 03, 04
Base: New brickwork.
Preparation included in this section: None.
Underlay: One layer GEOTEC 220PY polyester geotextile felt, loose laid, by Cookson Industrial Materials Ltd. Tel. 091-261-0161.
Weathering:
Type of lead: milled as clause 550, code 5
Longitudinal joints: None
Spacing: n/a
Cross joints: 2 No.welted joints as clause 770, between parts 1, 2 & 3.
Spacing: As shown on drawing 04.
Bottom edge detail: Welted and clipped, as clause 725
Head detail: None generally. Wedged fixed into brick joint as clause 840
Intermediate fixings: none
Other requirements:
Component No.1 formed in two parts leadwelded together with welted edge adjacent to glass balustrade, sealant filled and continuously clipped, as shown on drawings.
Cover flashings (2 No. outer and inner wall faces):
Type of lead: milled as clause 550, code 5
Longitudinal joints: None
Cross joints: Ends lapped 100mm. Spacing 1200mm.
External corners: Leadwelded as shown
Head detail: Wedged and sealed as clause 830.
General:
Other requirements:
Faces in contact with brickwork to be coated with high-build, bitumen based paint.
Finishing as clause 880.

165 MODIFICATIONS TO LEAD FLASHING,
WINDOW HEADS, GROUND FLOOR, WEST ELEVATION
Drawing references: 6822-AA9-01
Base: n/a.
Preparation included in this section: none.
Underlay: none required.
Type of lead: Existing.
Head detail: Not surveyed.
Intermediate fixings: Not surveyed.
Longitudinal joints: n/a
Cross joints: None existing.
Bottom edge detail: Dress down over new hardwood trim at top of frame.
Other requirements:
Turn up flashing at each end to form stop-ends, as detailed.

GENERAL REQUIREMENTS/PREPARATORY WORK

510 WORKMANSHIP GENERALLY:
Cut, joint and dress lead neatly and accurately, to provide fully waterproof coverings/flashings, free from ripples, kinks, buckling and cracks.
Comply with BS 6915 and current good practice as described in the latest editions of BS 6915 and 'The Lead Sheet Manual' published by the Lead Sheet Association, unless specified or agreed otherwise.
Do no use scribers or other sharp instruments to mark out lead.
Use solder only where specified.
Ensure that finished leadwork is fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.

516 IN SITU LEADWELDING
Is permitted, subject to completion of a "hot work permit" form and compliance with its requirements.

520 LAYOUT: agree setting out of joints, drips, and laps with the CA before beginning work.

530 CONTROL SAMPLE(S):
Complete area(s) of the finished work in approved location(s) as follows, and obtain approval of appearance from the CA before proceeding:
Lead fascia cladding as clause 155. 2 No. bays, inner and outer cladding, plus capping.
Lead weathering to roof beam 1 No.
Lead capping, clause 135.
Lead weathering as clause 125, 1 No.

550 LEAD SHEET:
Production method:
- Rolled, to BS EN 12588, or
- Machine cast, Agrément certified and to code thicknesses with a tolerance (by weight) of ±5%, or
- Sand cast, from lead free from bitumen, solder, other impurities, inclusions, laminations, cracks, air, pinholes and blowholes; to code thicknesses but with a tolerance (by weight) of ±10%.

Identification: Labelled to show thickness/ code, weight and type.

570 EXISTING LEAD TO BE REMOVED
Will become the property of the Contractor. The scrap value of such lead must be estimated by the Contractor, itemised separately in the tender, and set against the tender sum.

610 SUITABILITY OF BASES:
Bases to be dry and free of dust, debris, grease and other deleterious matter.
Laying of lead will be taken as joint acceptance by the Main Contractor and Subcontractor of the suitability of bases.

620 PREPARATION OF EXISTING TIMBER BASES:
Inform CA of any defective boards and comply with instructions for replacement. Ensure that all boards are securely fixed. Punch in any protruding fastenings and plane or sand as necessary to achieve an even surface.

630 PLYWOOD UNDERLAYMENT:
To BS 6566, or other equal and approved national standard, WBP bonding, 6 mm thick, sheet size 1200 x 1200 mm.
Ensure that existing boards are securely fixed and acceptably level. Remove or fill any gross irregularities.
Punch in any protruding fastenings.
Lay sheets with cross joints staggered and a 0.5 to 1 mm gap between boards.
Fix with 24 mm annular ring shank copper or stainless steel nails, at 300 mm grid centres over the area of each sheet and at 150 mm centres along edges, set in 10 mm from perimeter edges.
Ensure that fastenings are driven well in, with heads set flush with surface.

650 TIMBER FOR USE WITH LEADWORK:
Planed, free from wane, pitch pockets, decay and insect attack except pinhole borers.
Moisture content: Not more than 22% at time of covering.
Preservative treatment: CCA as section Z12 and British Wood Preserving Association Commodity Specification C8.

FIXING/JOINTING LEAD

710 HEAD FIXING LEAD SHEET:
Where not specified otherwise, secure top edge of lead sheets with TWO rows of fixings, 25 mm and 50 mm from top edge of sheet, at 75 mm centres in each row, evenly spaced and staggered.
Sheets less than 500 mm deep may be secured with one row of fixings, 25 mm from top edge of sheet and evenly spaced at 50 mm centres.

715 FIXINGS:
Where not specified otherwise, fix lead sheet to timber substrates with:
Copper clout nails to BS 1202: Part 2, table 2, with annular ring, helical ring or serrated shank, length not less than 20 mm, shank diameter not less than 3.35 mm and head diameter not less than 8 mm, or
Stainless steel (austenitic) clout nails with annular ring, helical ring or serrated shank, length not less than 19 mm, shank diameter not less than 2.65 mm and head diameter not less than 8 mm.
Where not specified otherwise, fix lead sheet to concrete or masonry substrates with:
Brass or stainless steel screws to BS 1210, table 3, length not less than 19 mm and diameter not less than 3.35 mm; with washers of the same material and plastics plugs of length and diameter to suit screws.

720 CLIPS:
Generally 50 mm wide where not specified to be continuous, length to suit detail.
Copper clips to be cut from 0.7 mm thick sheet to BS 2870, temper grade 1/4H, dipped in solder if exposed to view.
Stainless steel clips to be cut from 0.46 mm sheet to BS 1449: Part 2, grade 304, terne coated if exposed to view.
Unless specified otherwise fix each clip with two fastenings not more than 50 mm from edge of lead sheet. Clips welted around edges of sheets to be turned over 25 mm.

724 CONTINUOUS CLIPS:
Copper continuous clips to be cut from 0.7 mm thick sheet to BS 2870.
Stainless steel continuous clips to be cut from 0.46 mm thick sheet to BS 1449: Part 2, grade 304.
Unless specified otherwise fix at 200 mm centres.
Welt edge of lead sheet around continuous clip and dress down.

725 LOWER EDGE FIXING
Welt lower edge 75mm and clip at 250mm maximum centres, using copper clips, as shown LSA Vol 3, fig 10.

770 WELTED JOINTS:
Form with a 50 mm overlap, 25 mm underlap and copper or stainless steel clips as clause 720 at not more than 450 mm centres. Welt overlap and clips around underlap, loosely turn over and lightly dress down. All as Lead Sheet Manual, Vol 3, fig 2.

810 FORMING OF DETAILS BY LEADWELDING .
Leadwelded seams must be neatly and consistently formed. Do not undercut or otherwise reduce the thickness of the sheets at seams. Filler strips are to be of the same composition as the sheets being joined. Butt joints are to be formed to a thickness one third more than the sheets being joined. Lap joints are to be formed with 25 mm laps and two loadings to the edge of the overlap.

830 WEDGE FIXING INTO DAMP PROOF COURSE JOINTS:
Drawing ref: Lead Sheet Manual, Vol 1 Appendix A, fig. 8
Dress lead into pre-formed joint. Fix with lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead.
Prepare joint and apply sealant as section Z22.
Sealant: ARBOKOL 1000, one part polysulphide sealant by Adshead Ratcliffe & Co Ltd. Apply to foam backing strip in accordance with manufacturer's instructions.
Colour: BUFF subject to Architect's approval.
Sample: complete sample length of sealant for approval by the Architect for the visual standard of application and colour, before lead sealant work is generally carried out.

840 WEDGE FIXING INTO JOINTS/CHASES:
Carefully rake out joint/chase to a depth of not less than 25 mm.
Dress lead into joint/chase and fix with lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead.
Prepare joint/chase and apply sealant as section Z22.
Sealant: as clause 830

880 FINISHING: As soon as practical, apply a smear coating of patination oil, evenly in one direction and in dry conditions, to all exposed areas of leadwork.

J30 LIQUID APPLIED DAMP PROOFING

To be read with Preliminaries/General Conditions.

TYPE(S) OF COATING

130 COLD APPLIED DAMP PROOFING
Substrate: Prepare brickwork as clause F10/506. PVC surfaces as clause 204.
Primer: RIW Flexiseal Primer.
Application of primer: Number of coats 1 No. minimum.
Coverage per coat (minimum) : 10m² / litre.
Coating: Moisture curing polyurethane elastomer.
Manufacturer: RIW Limited, Arc House, Terrace Road South, Binfield, RG42 4PZ.
Tel : 01344 397777 Fax : 01344 862010
Product reference: **RIW FLEXISEAL** .
Application : Number of coats: 2 No. (1st coat Grey, 2nd coat Black).
Coverage per coat (minimum): 2m² / kg.
Reinforcement : Not required.
Blinding: Not required.

EXECUTION

204 PREPARATION OF PVC-U SURFACES TO RECEIVE COATING
Lightly abrade surfaces of PVC-U rainwater outlet before priming.

205 SUITABILITY OF SUBSTRATE
Substrates generally :
-Smooth, even textured, clean, dry and frost free.
-Within tolerances for level and surface regularity.
-Vertical and horizontal surfaces : Correctly prepared and free from irregularities.
-Moisture content and stability of substrate : Must not impair integrity of finished tanking / damp proofing.
Preliminary work : Complete including:
-Chases.
-External angles.
-Formation of upstands and kerbs.
-Movement joints.
-Penetrations / Outlets.

206 APPLICATION IN STAGES:
Where application cannot be carried out in a single area, but in sections co-ordinated with cutting out and re-forming facing brickwork which must be carried out in sequential stages, apply coating in areas that allow subsequent applications to lap/bond to that previously applied. Protect the surface area of the coating at laps to receive subsequent application. Allow coatings to fully cure before overlaying with re-formed brickwork, and allow accordingly in the Master Programme for the Works.

207 PRIMERS
Application : Uniform, continuous coverage.

210 COATING APPLICATION
Adjacent surfaces exposed to view in finished work : Protect.
Coatings :
Apply in dry atmospheric conditions when primer is tacky. Allow to dry when used on bituminous surfaces.
-Uniform, continuous coverage. Do not allow to pool in hollows.
-Firmly adhered to substrate and free from imperfections.

-Prevent damage to finished coatings.
-Penetrations : Impervious.
-Final covering : Apply as soon as possible after coating has hardened.

220 COLD APPLIED COATINGS
Thinning : Not permitted unless recommended by manufacturer.
Successive coats :
Allow to dry before applying next.
Apply at right angles to previous.

235 MODIFIED COATINGS
Air and surface temperatures : Do not apply if below minimum recommended by coating manufacturer.
Curing: Keep dry until fully cured.

260 JUNCTIONS WITH DPC's
DPC's: Clean, all edges fully exposed.
Coverage: Fully coat dpc and overlap adjacent surfaces by (minimum) 75mm.

COMPLETION

310 INSPECTION
Interim and final inspections: Inspect and submit reports for each area of application.

330 PROTECTION OF COATINGS
Coated surface: Protect until coating has cured.

340 OVERLAY CONSTRUCTION
Timing: Carry out as soon as possible after tanking and protection are complete.
Ensure coating is not damaged during following construction.

J31 LIQUID APPLIED WATERPROOF ROOF COATINGS KEMPER

To be read with Preliminaries/General Conditions.

10A **WARM DECK ROOF COATING (TERRACE WATERPROOFING)**

Drawing references: 6822-AA3-01, 02, 03.

Substrate:

Existing concrete screed overlaid with bituminous sheet vapour control layer;
RC upstands and brickwork abutment. overlaid with Procor 4R vulcanised rubber membrane.

Preparation:

Ensure all surfaces are dry, sound and contamination free.

Preparation for thin bed cementitous screed below insulation: Refer to clause 30.

Vapour control layer:

Existing Bituminous sheet to be retained. Refer to clause 215.

Gutter edge reinforcement:

Timber kerbs with stainless steel bracing straps. Refer to details.

Insulation:

Refer to cut to falls drawing by Kemper Systems Limited, as appended.

Kempertherm TR

Tapered CFC & HCFC free rigid polyisocyanurate insulation board with a 3mm bituminous upper facing and multi-layer Kraft and metal facing on the lower face.

Manufacturer: Kemper System Limited

Fall: 1:60 – to project specification

Attachment: Kemperfix Adhesive Type 1 (Manufacturer: Kemper System Limited).

Preparation prior to waterproofing: Ensure surface is clean and dry. Joints between boards to be butted together and installed closely butted to timber edge reinforcement.. All joints and perimeter edges should be sealed during priming with 75mm wide Kemperol 20 reinforcement strip to prevent loss of waterproofing resin between the boards during application.

Waterproof coating: 2 part Polyurethane.

System manufacturer: Kemper System Ltd, Kemper House, Mill Lane, Winwick Quay, Warrington. WA2 8RJ,T: +44 (0)1925 445532, F: +44 (0)1925 575096,

Primer references:

Kempertec D-Primer (for insulation surface, timber, VCL overlap)

Kempertec EP-Primer for RC perimeter upstands, brickwork abutments and 2K-PUR Finish

Coating reference: Kemperol 2K-PUR

-Application: Two-coat wet on wet @ 3.0 kg/m².

-Reinforcement: Kemperol 165 non-woven Polyester Reinforcement fleece.

-Minimum dry film thickness: 2mm.

-Colour: Anthracite

Finish : Kempertec EP Primer with natural quartz

Protection – Ceramic tiles to project specification.

12 **GLASS ROOF GUTTER WATERPROOFING**

Drawing references: 6822-AA5-01, 02, 03, 04.

Substrate:

Existing stainless steel gutter, cladding and brickwork.

Preparation: Ensure all surfaces are dry, sound and contamination free.

Glazing specialist responsible for the gutter works to remove structural sealant between the glass roof and brickwork, in advance of Kemperol materials.

Waterproof coating: 2 part Polyurethane.

System manufacturer: Kemper System Ltd, Kemper House, Mill Lane, Winwick Quay,

Primer references:

Kempertec EP-Primer for stainless steel , brickwork abutments and 2K-PUR Finish

Coating reference: Kemperol 2K-PUR

-Application: Two-coat wet on wet @ 3.0 kg/m².

-Reinforcement: Kemperol 165 non-woven Polyester Reinforcement fleece.

-Minimum dry film thickness: 2mm.

-Colour: Anthracite.

Extent of application: As shown on drawings.
Finish: none
Protection: none.
Ancillary works to be carried out by the leadwork sub-contractor:
Existing lead flashing below window cill over the membrane, is to be carefully lifted for the application of the membrane. Refer to drawing AA5-03. When the membrane is fully cured, dress the lead down.

14 SPECIAL ADHESION TEST

Purpose:
The existing Procor 4R waterproof membrane is to be removed from surfaces of RC upstands and brickwork. In the event that the condition and adhesion of the membrane does not permit full removal, the membrane will be retained, primed and overlaid with the specified Kemperol system. To ensure that Kemperol materials can be applied satisfactorily, an adhesion test will be conducted in advance of the general Kemperol works.
Test: To be conducted by Kemper Systems Ltd. Tel: 01925-445532
Contact: Mark Bruchez (Technical Development Manager)
Programme:
Give 10 days notice to Kemper Systems Limited, of the removal of existing tiling and readiness for their site inspection of the existing Procor 4R membrane.
1 day for site inspection by Kemper Systems Limited
2 days for site application and curing of Primer and Waterproofing.
2 days for test evaluation and issue of instructions.
Test Failure:
Should the test show that Kemperol materials cannot be satisfactorily applied to the existing Procor 4R membrane, instructions will be issued for the removal of the existing material by mechanical means, including scabbling, and repairs to the surfaces of concrete and brickwork in readiness for application of Kemperol materials. **Refer also to specification clause E10/850 and F10/850**

15A ROOFING GENERALLY

Substrates: Secure, clean, dry, smooth, free from frost, contaminants, voids and protrusions.
Adverse weather: Do not apply coatings in wet or windy conditions or at temperatures below 5°C, unless otherwise permitted by coating manufacturer.
- Unfinished areas of roof: Keep dry.
- Completed coatings: Firmly adhered, fully sealed, smooth, weatherproof and free draining.

Preparation Generally:
Before applying roof coatings ensure that:

- Surfaces to be coated are firmly fixed, clean, dry, smooth, and free from frost, contaminants, loose material, voids, protrusions and organic growths.

- All preliminary work including formation of upstands, kerbs, box gutters, sumps, grooves, chases, expansion joints, etc. and fixing of battens, fillets, anchoring plugs/strips, etc. is complete and satisfactory.

- Lead and Metal
  Any lead or metal surfaces should be wire brushed to remove any loose or friable material prior to being wiped with a cloth impregnated with Kemperol MEK Universal Cleaner.
  Existing lead flashing should be pinned back and secured prior to the application of the Kemperol system.

- Brickwork
  Voids and cracks in brickwork to be suitably filled.
  Mortar joints in brickwork are filled level.
  Any cracks in concrete should be investigated.

- Plywood
  Any voids greater than 2mm should be filled prior to the application of the system.
  Joints in plywood sheets should be taped with 50mm, reinforced, self adhesive, tape to prevent loss of resin between the boards.
  All areas should be swept to remove dust and debris, which could cause the system to de-bond.
  Any damaged boards should be replaced.
  Surface should be free from contaminates to allow suitable adhesion of the waterproofing system.

30 THIN BED CEMENTITIOUS SCREED
To be installed only by a Kemper System Limited Preferred (sub) Contractor.
Manufacturer:
Natural Cement Distribution Limited, Barnsley. Tel: 01226-38113
Product: NATCEM AC.
Substrate: as clause 215
Primer:
Prime areas to receive screed using Kempertec EP primer with natural quartz scatter. Priming to be carried out before installation of timber edge reinforcement.
Screeding:
In accordance with the manufacturers instructions and Kemper Systems Limited recommendations. to be carried out after installation of timber edge reinforcement.

35A LAYING WARM DECK ROOF INSULATION
To be installed only by a Kemper System Limited Preferred (sub) Contractor.
The Kemper System Preferred (sub) Contractors shall comply with Kemper System Limited Handling and Laying Instructions.

50A APPLICATION OF ROOF COATINGS
Waterproofing System: To be applied only by a Kemper System Limited Preferred (sub) Contractor.

PRIMERS

KEMPERTEC D-PRIMER
(For insulation surfaces, timber and VCL overlaps)
Solvent free two part primer based on polyurethane resin. Kit sizes 1kg, 2.5kg and 5kg.
Application: Ensure that surface to be primed is compatible and has been prepared to the required standard. Check ambient and substrate conditions before application.

Apply by brush or perlon roller to seal the surface of the substrate. Working time is approximately 25 minutes @ 23°C. The coverage rate for is typically 0.3 kg/m2 depending on substrate porosity and surface profile.

Curing:
Typically rainproof after 3 hours @ 23°C. Drying time is typically 12 hours. Allow the primer to dry thoroughly before overcoating. Maximum overcoating time is 8 days. If left longer then the substrate should be re-primed. To avoid recoating the wet primer can be overscattered with Kemperdur kiln dried quartz.

Application conditions: air temperature >= + 5°C and substrate is minimum +3°C above the dew point. Joints in the substrate should be taped to prevent loss of resin during application. Working and curing times depend on ambient conditions.

Health and Safety: Refer to Material Safety Data Sheet.

KEMPERTEC EP PRIMER WITH NATURAL QUARTZ
(For RC upstands and brickwork abutments)
Two-part solvent free epoxy resin based primer for concrete and brickwork substrates.

Application:
To ensure that the surface (Existing Procor 4R membrane) to be primed is compatible, an adhesion test will be carried out on site, in advance of the roofing works, by Kemper Systems Limited. Refer to clause 14.

Check ambient and substrate conditions before application.

Apply to the cured waterproofing membrane by roller to a coverage rate of around 0.4 kg/m^2. Whilst wet, over-scatter the primer with Kemperdur kiln-dried quartz 0.4-0.8mm, at a coverage of around 1 kg/m2.

Curing:
Rainproof after 6 hours @ 23^{o}C. Rainproof after 6 hours, drying time is typically 16 hours. Walk-on time and overcoating time is typically 16 hours. Allow the primer to cure for 2 days before overlaying.

Special Instructions:
Application conditions: air temperature min + 10^{o}C and substrate is minimum +3^{o}C above the dew point. For temperatures between 5^{o}C and 10^{o}C use Kempertec EP5 Primer instead. Working and curing times depend on ambient conditions.

Health and Safety: Refer to Material Safety Data Sheet.

WATERPROOFING MEMBRANE
Kemperol 2K-PUR with Kemperol 165 Fleece

A two component, waterproofing system based on polyurethane resin.
Reinforcement: Kemperol 165 polyester reinforcement fleece. Typical resin coverage rate for this fleece is 3.0kg/m².

Application: Apply by brush or roller to the correct coverage. Two-thirds of the resin is to be applied first, into which Kemperol fleece is embedded and saturated. Final one-third of resin applied whilst first application still wet. Minimum 50mm laps in the reinforcement.

Carry out application of the upstands and details first before proceeding with the main roof area. Where possible the minimum upstand height should be 150mm above finished level. Working time of the mixed material is approximately 30 minutes at 20°C.

Curing: The system is rainproof after 2 hours, can be walked on after 16 hours and fully cured after 3 days depending on ambient conditions.

The system is rainproof after 2 hours, can be walked on after 16 hours and fully cured after 3 days depending on ambient conditions. If ambient temperatures are below 10°C, add Kemperol A2K-PUR Accelerator to Component A. The minimum application temperature is +5°C and rising. The temperature of the substrate should be at least 3°C above the dew point. Relative humidity should be below 85%.

Health and Safety: Refer to Material Safety Data Sheet.

INSPECTION
Coating surfaces: Check when cured for discontinuities.
Defective areas: Apply another coating.

FINISH

Kempertec EP Primer with natural quartz
Two-part solvent free epoxy resin based primer for concrete substrates.

Application:
Ensure surface to be primed is compatible and has been prepared to the required standard. Check ambient and substrate conditions before application.

As a mechanical key for Tiles:
Apply to the cured waterproofing membrane by roller to a coverage rate of 0.5 kg/m^2. Whilst wet, overscatter the primer with Kemperdur kiln-dried quartz 0.4-0.8mm, at a coverage of around 1 kg/m2.

Curing:
Rainproof after 6 hours @ 23^{o}C. Rainproof after 6 hours, drying time is typically 16 hours. Walk-on time and overcoating time is typically 16 hours. Allow the primer to cure for 2 days before overlaying.

Special Instructions:
Application conditions: air temperature min + 10^{o}C and substrate is minimum +3^{o}C above the dew point. For temperatures between 5^{o}C and 10^{o}C use Kempertec EP5 Primer instead. Working and curing times depend on ambient conditions.

Health and Safety: Refer to Material Safety Data Sheet.

PROTECTION

Promenade tiles to project specification (by others).
Tiles adhered to manufacturer's recommendations.

PERFORMANCE

210 ROOF PERFORMANCE

Before commencing application, protect adjacent surfaces that could be adversely affected by spray, splashing or run-off of coatings or spillages.
Apply coatings to provide a firmly adhered, free draining and completely weatherproof roof.
Ancillary products and accessories, where not specified, to be types recommended for the purpose by the coating manufacturer.
Use operatives trained in the application of liquid applied roof coatings. Submit evidence of training to CA on request.
For preparatory repairs to existing coverings use operatives trained in the application of those coverings.

EXISTING SUB-STRATE.

215 EXISTING VAPOUR CONTROL LAYER.

Material:
Understood to be a sand finished polyester reinforced bituminous 'torch-on' felt. (To be verified on opening up).
Condition:
Following the removal of existing terrace construction, of the extent specified, the Kemper System Limited Preferred (Sub) Contractor shall inspect the condition of the existing bituminous vapour control layer and forward a written report to the Architects. The installation of thermal insulation and Kemperol works shall not commence until this report has been reviewed by the Architects and approval issued to proceed.

If the vapour control layer is found to be either damaged, discontinuous or perforated (eg by building services, conduit, etc) further instructions will be issued for remedial work to the layer to be carried out by the Kemperol sub contractor.

PRODUCTS

310 ANCILLARY PRODUCTS AND ACCESSORIES
Types: Recommended by coating manufacturer.

315 TIMBER FOR DRAINAGE CHANNEL EDGE REINFORCEMENT
Refer to Section G20

315 METAL DRAINAGE CHANNEL GRATING AND SUPPORT
Refer to Section R10

341 PROPRIETARY PVC RAINWATER OUTLET
Manufacturer/supplier: CMS Ltd. Tel: 01942-895999.
Product reference:
Thro' Wall Outlet ref 'RD 100 PAR PVC' with coupling ref. 'CON 100' for 100x100mm outlet.
Installation:
Refer to drawings. Build outlet into brickwork, installed to falls, and screw fix to face of brickwork, before commencement of insulation/ Kemperol works. Roof insulation thickness: 32mm at outlet.
Preparation of outlet surfaces in contact with waterproofing:
To be carried out by the Kemperol (sub) contractor
Mechanically abrade surfaces to receive waterproofing membrane.
Type of grate/ Fittings: none.
Accessories: none.

342 SEALANT JOINTS BETWEEN BRICKWORK AND RAINWATER OUTLET (clause 341)
Sealant: ARBOSIL 1096 one part silicone sealant
Manufacturer: Adshead Ratcliffe 01773 826661
Colour: Grey
Width: nominally 10mm
Application: As section Z22 and in accordance with the manufacturers recommendations.
Apply to closed cell backing rod.

APPLICATION OF ROOF COATINGS

760 Thickness: Apply the correct number and thickness of coats appropriate to the specified system. Use litre or kilogram/m² calculations and wet/dry film thickness readings to ensure correct coverage. Monitor by taking wet/ dry film thickness readings.
Continuity: Maintain full thickness of coatings around angles, junctions and features.
Rainwater outlets: Form with watertight joints.
Drainage systems: Do not allow liquid coatings to enter piped rainwater or foul systems.

COMPLETION

910 INSPECTION
Coating surfaces: Check when cured for pinholes and discontinuities.
- Defective areas: Apply another layer of coating.

920 ELECTRONIC ROOF INTEGRITY TEST
Method: LeakTector equipment.
Testing authority: United Kingdom Accreditation Service (UKAS) approved independent laboratory or an alternative approved by the CA.
Timing of test: Subject to the programme but at least 2 weeks before Practical Completion.
Condition of roof prior to testing:
- Coating: Complete to a stage where integrity can be tested but before installation of Kempertec EP Primer with natural quartz finish (to facilitate any repairs found required to the membrane)
- Surface: Clean.
Test results: Submit.
Waterproof integrity certificate: On completion of testing, submit.

925 CHANNEL GRATING SUPPORT FRAME
Specification reference: R10/380
Installation:
Support frame to be adhesive fixed to the Kemperol membrane, solidly bedded using BAL Fastflex bedding adhesive, as clause M40/105. **Frame installation is to be carried out by the Kemperol sub-contracto**r in collaboration with the ceramic tiling sub-contractor who shall ensure that the frame is installed to the correct line/level for subsequent tiling.
Timing of installation: After electronic roof integrity test, clause 920, but prior to flood test as clause 930.
Installation of channel gratings: sub-contractor carrying out work optional.

930 FLOOD TEST
Condition of roof prior to testing:
- Coating: Complete.
- Surface: Clean.

Timing of test: After drainage channel grating support frame is installed complete.
Outlet: Cover and seal. .
Flood level:
Submit proposals. Not higher than existing timber threshold to sliding tilt-turn door/screen
Flood duration: 48 hours.
Inspection: Regular to detect leaks.
Completion of test: Slowly drain roof. Do not overload or flood outlets.
Test results: Submit.

940 COMPLETION
Roof areas: Clean.
- Outlets: Clear.
- Flashings: Dressed into place.

Work necessary to provide a weathertight finish: Complete.
Storage of materials on finished surface: Not permitted.
Completed coatings:
Protect against damage from traffic and adjacent or high level working. No solvents or other chemicals harmful to the coatings are allowed to come into contact with the membrane. No building materials are stored on the membrane. Finished roof areas are adequately protected from damage by subsequent building operations.

J42 SINGLE LAYER POLYMERIC SHEET ROOF COVERINGS

To be read with Preliminaries/ General conditions and Sarnafil Ltd project specific specification, Appendix A

100 SCOPE OF WORK IN THIS SECTION
Installation of 12mm thickness plywood roof lining as a substrate: Calculations and installation of a vapour control layer if required by clauses 220 and 225; Installation of Sarnafil single layer roofing membrane.
Modification of existing membrane RWO chute at high level roofs.

ALL WORKS ARE TO BE CARRIED OUT BY A (SUB) CONTRACTOR APPROVED BY SARNAFIL LIMITED.

TYPES OF COVERING

130 COLD ROOF COVERING
Substrate: Existing cold timber roof deck with asphalt and single ply membrane finish.
Preparation:
Remove and discard existing roof finishes. Remove residue of asphalt material from the T&G decking, sufficiently for following works. Supply and install 12mm thick plywood, of suitable grade and quality for the Sarnafil works, installed as detailed on drawing AA2-02.
-Roof covering:
Manufacturer: Sarnafil Ltd, Robberds Way, Bowthorpe, Norwich, NR5 9JF
Tel 01603 748985, Fax 01603 743054
Waterproof membrane: Sarnafil G410-12ELF Lacquered Reinforced PVC Membrane
Thickness: 1.2mm
Colour: Lead Grey
Attachment: Fully adhered as clause 720A and 721B

131 HIGH LEVEL ROOF OUTLETS. MODIFICATION OF RAINWATER CHUTE.
Drawing reference: 6822-AA2-03
Carefully cut existing membrane chute to fit new aluminium hopper, as shown. Do not over-cut.

PERFORMANCE

201 MANUFACTURER'S GUARANTEE
In order to comply with the 10 year Sarnafil insurance backed guarantee, the work is to be carried out by a Sarnafil Ltd Registered (sub)-Contractor.

For the purpose of issuing the Guarantee, the General Contractor shall agree a detailed method of work statement and programme of works with the Sarnafil Ltd registered (sub)-contractor before the commencement of the Sarnafil works.

202 STANDARDS GENERALLY
The requirements of all relevant British Standards and Industry Codes of Practice should be complied with at all times.

210 ROOF PERFORMANCE
Roof covering: Secure, free draining, weathertight and in accordance with clause 530

220 AVOIDANCE OF INTERSTITIAL CONDENSATION: (ROOF AREA 2)
Note:
The existing construction, thermal insulation and vapour control layer in this roof area are unknown. For the purpose of these calculations, the Sarnafil sub-contractor shall locally open up a small area of roof deck to establish, so far as possible, the type, thickness, etc of the existing materials used. He shall then re-fix the boarding, and produce the required calculations, a copy of which is to be forwarded to the Architects before implementing the main Sarnafil work. When producing calculations required by this clause, the Sarnafil sub-contractor shall state his survey observations, together with any assumptions made in the absence of reliable survey data.

Determine: Interstitial condensation risk of roof construction as recommended in BS 6229.
Basic design data:
-Outdoor notional psychrometric conditions, winter:
Temperature: -5°C.
Relative humidity: 90%.
Vapour pressure: 0.36 kPa.
Duration: 60 days.
-Outdoor notional psychrometric conditions, summer:
Temperature: 18°C.
Relative humidity: 65%.
Vapour pressure: 1.34 kPa.
Duration: 60 days.
-Indoor notional psychrometric conditions:
Temperature: 21 deg C.
Relative humidity: 55% RH.
Vapour pressure: 1.28 kPa .
-Winter interstitial condensate (warm roof):
-Calculated amount (maximum): 0.35 kg/m².
-Calculated annual net retention: Nil.
-Vapour control layer: If necessary, provide a suitable membrane or sealed deck so that damage and nuisance from interstitial condensation do not occur.

225 AVOIDANCE OF INTERSTITIAL CONDENSATION: (ROOF AREA 2)
Note: Refer to note at clause 220.

Determine: Interstitial condensation risk of roof construction as recommended in BS 5250, Annex D.
-Vapour control layer: If necessary, provide a suitable membrane so that damage and nuisance from interstitial condensation do not occur.

240A ATTACHMENT OF ROOF COVERING
Note: the soffit of the existing timber deck (ex 25mm thick T&G pine) must not be pierced by new fasteners.

Requirement: Determine methods of attachment to resist wind loads. Provide for relative movement of materials and effects of vapour pressure. Do not reduce performance of vapour control layer.
Wind loads: Calculate to BS 6399-2 incorporating Amendment 1, Hybrid Method.
-Basic wind speed (V_b): 20.5 m/s
-Altitude factor (S_a): 1.069
-Direction factor (S_d): 0.780
-Seasonal factor (S_s): 1.000
-Probability factor (S_p): 1.000
-Terrain and building factor (S_b): 1.459
-Size effect factor (C_a): 1.000

PRODUCTS

310A ANCILLIARY PRODUCTS AND ACCESSORIES
Types: Recommended by Sarnafil Ltd.
- Flashings: Sarnametal

325 ADHESIVE
-Type: As suggested by Sarnafil Ltd
-Manufacturer: As recommended by Sarnafil Ltd
Product reference: Sarnacol 2142s / Sarnacol 2170

330A TIMBER TRIMS, ETC
Quality:
Planed. Free from wane, pitch pockets, decay and insect attack except ambrosia beetle damage.
Moisture content: Not exceeding 22% at time of covering. Plywood suitable for the intended membrane overlay and adhesive fixing.
-Preservative treatment: To British Wood Preserving and Damp-roofing Association Commodity Specification C8.
-Type: To suit the application and approved by Sarnafil Limited.
-If treated timber is in direct contact with Sarnafil membrane: only aqueous, salt-based preservative is to be used.

345 PERIMETER TRIMS
Type: Galvanised steel sheet with Sarnafil membrane factory laminated
Manufacturer: Sarnafil Ltd.
Product reference: Sarnametal.
Colour: Lead Grey
Size: refer to drawings.

355 MECHANICAL FASTENERS, WASHERS, PRESSURE PLATES, ETC.
Note: the soffit of the existing timber deck (ex 25mm thick T&G pine) must not be pierced by new fasteners.

-Type: In accordance with the current addition of the British board of Agrèment MOAT 55 'UEAtc Supplementary guide for the assessment of mechanically fastened roof waterproofing' for Class 2 fasteners or a suitable alternative recommended in writing by Sarnafil Ltd.
-Manufacturer: SFS intec Ltd
-Product reference: As clause 681B.

375 MINOR MOVEMENT JOINTS IN SUBSTRATES
Manufacturer: Sarnafil Ltd
Product reference: Aluminium Tape
Size: 50mm wide
Colour: Silver

EXECUTION GENERALLY

510 ADVERSE WEATHER
General: Do not lay membrane at temperatures below 5°C or in wet or damp conditions unless effective temporary cover is provided over working area.
Unfinished areas of roof: Keep dry and protect edges of laid membrane from wind action.

520A INCOMPLETE WORK
End of working day: Provide temporary seal to prevent water infiltration.
On resumption of work: Cut away tail of any contaminated Sarnafil membrane from completed area and remove from roof.

530 EXECUTION GENERALLY
Install sheets, laps, Sarnabars, etc neatly. Repeat details are to identical and handed where applicable. Random layout will not be acceptable. The appearance of individual details is to be advised prior to commencement for consideration by the Architect.

550 CONTROL SAMPLE
Type of covering: Full roof build up to show all interfaces.
Sample area: One bay of roof area type 1 (Cold Roof).
Location: To be agreed.
Approval: Obtain Architects approval for appearance only before proceeding with the remain work.

560 GUARANTEE(S):
On completion of the roofing works and prior to Practical Completion, issue an insurance backed, fully completed Sarnafil Product Guarantee (or guarantees) in the name of the Employer, indemnifying workmanship and materials, for a period of 20 years.

SUBSTRATES/ VAPOUR CONTROL LAYERS/ WARM ROOF INSULATION

610 SUITABILITY OF SUBSTRATES
Surfaces to be covered: Secure, clean, dry, smooth, free from frost, contaminants, voids and protrusions.
Preliminary work: Complete, including:
-Grading to correct falls.
-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 integrity of roof.

625 REMOVING EXISTING COVERINGS
Mechanical stripping: Permitted/Not permitted
Exposed timber deck substrate: Do not damage.

660 JOINTS IN RIGID BOARD SUBSTRATES (IF APPLICABLE)
Cover strip: Lay centrally over substrate joints before laying vapour control layers or coverings.
Adhere to substrate with bonding compound along edges only.

WATERPROOF COVERINGS/ ACCESSORIES

710A MECHANICAL FIXINGS GENERALLY
The soffit of the existing timber deck (ex 25mm thick T&G pine) must not be pierced by new fasteners.

720A ADHESIVE BONDING OF WATERPROOF MEMBRANE
-Laying membrane:
-On a continuous even coating of adhesive.
-Do not wrinkle or stretch.
-Condition at completion:
-Fully bonded with no air pockets.
- Surface: Smooth.
- Mechanically fix the Sarnafil membrane at all perimeters, change of plane and upstands.

721B FULLY ADHERED MEMBRANE: Extract from Sarnafil Specification.
Note: the soffit of the existing timber deck (ex 25mm thick T&G pine) must not be pierced by new fasteners.

Membrane
Adhere Sarnafil G410-12ELF Lead Grey fleece backed glass fibre carried roofing membrane to the substrate using an appropriate Sarnacol adhesive. Hot air weld minimum 80mm side laps and end coverstrips. Fleece backed Sarnafil membrane is butt jointed at roll ends and weathered with Sarnafil G410-12EL Lead Grey coverstrip, welded on each side of the roll end.

Sarnacol 2142S adhesive is not suitable for use in temperatures remaining below 5°C for prolonged periods and on roof pitches >10° without additional restraints.

In the main area of the roof use a water filled, foam covered roller to ensure that the membrane achieves intimate contact with the substrate. For sloping, vertical and detail work a lambswool roller should be used.

Install Sarnafil peelstops to the perimeter of the roof, at all internal angles of roof detail and around all roof penetrations. Peelstops can be fastened into the abutment if possible. Fix at maximum 250mm centres with Sarnafil SBF fasteners.

730A WELDED JOINTING
Side and end joints: for the
-Laps (minimum): 80 mm
-Preparation: Clean and dry surfaces for full width of joint.
-Sealing: Heat weld together.
-Condition at completion: Fully sealed and watertight.
Accessories: Not required.

760A PERIMETER OF SARNAFIL MEMBRANE
General: Secure Sarnafil membrane with a Sarnabar and PVC cord at roof edge conditions, changes of plane, curb flashings, upstands to roof lights, etc. with Sarnafil approved mechanical fasteners.

770A PERIMETER DETAILS
Upstands, edge trims, drips, kerbs, etc: Form flashings from Sarnafil waterproof membrane material. Edge trims and drips to be formed from Sarnametal.
Roof membrane: Terminate Sarnafil membrane in horizontal plane immediately adjacent to change in direction and secure with a Sarnabar and PVC cord.
Flashings: Dress Sarnafil membrane flashing over the Sarnabar. Overlap horizontal Sarnafil roof membrane beyond the Sarnabar by (minimum): 50mm.
Sealing: Hot air weld the overlap.

COMPLETION

910A INSPECTION
Inspection of the roof installation whilst in progress and/or on completion must be made by Sarnafil Ltd Field Technicians. Copies of Sarnafil Ltd site reports of intrim and final inspection to be fowarded to the architects by the Sarnafil Ltd Registered Contractor.

920 ELECTRONIC ROOF INTEGRITY TEST
Testing authority: An approved independent testing laboratory, to the approval of the Architects
Timing of test: Immediately prior to Practical Completion.
Condition of roof prior to testing:
-Sarnafil membrane complete to a stage where integrity can be tested.
-Surface: Clean.
Test results: Submit.
Waterproof integrity certificate: On completion of testing, submit.

940A COMPLETION
Roof areas: Clean.
Outlets: Clear.
Work necessary to provide a weathertight finish: Complete.
Storage of materials on finished surface: Not permitted.
Completed membrane: Do not damage. Protect against damage from traffic and adjacent or high level working.
Request the Sarnafil Guarantee and forward to the Architect.
The roof has to be finally inspected by Sarnafil Ltd and is to be to their written satisfaction, a copy of which shall be forwarded to the Architects prior to, and as a condition to Practical Completion.

K10 PLASTERBOARD DRY LININGS/CEILINGS

To be read with Preliminaries/General conditions.

TYPE(S) OF DRY LINING

165 INSULATED WALL LINING ON METAL FRAMING: BEDROOMS 1& 3
Drawing reference(s): 6822-AL0-01.
Metal framing:
Manufacturer and reference:
British Gypsum GYPLYNER UNIVERSAL
Background: Existing/ repaired plaster wall finish to external walls.
Cavity width (Background to frame): 25 mm.
Framing: As recommended for the purpose by the board manufacturer, fabricated from galvanized mild steel sheet to BS EN 10142 designation Fe PO2 G Z 275 NA - C.
Framing centres: 600 mm vertical.
Bracket centres: Not more than 800 mm.
Fixings: In accordance with manufacturer's instructions.
Cavity insulation: none
Accessories: Fixings/fittings for electrical services installation.
Lining:
Manufacturer and reference:
Kingspan Insulation. Tel: 0870-850855
Product: KOOTHERM K18
Thickness: 92.5mm overall (including 12.5mm gypsum wallboard.
Fixings: As clause 590.
Acoustic sealant: As clause 515.
Finishing: Taped seamless finish as clause 670, suitable for painted finish.
Primer/sealer: Two coats of British Gypsum Gyproc Drywall Sealer.
Other requirements:
New softwood skirting to match existing. Painted finish.
Wall surface: painted finish as section M60.

245 CEILING LINING ON TIMBER. BEDROOM 2
Drawing reference(s): 6822- APPEND C-01
Background: Existing timber battening fixed to structural soffit
Lining: 1 layer 12.5mm thick British Gypsum DUPLEX Wallboard, tapered edged boards.
Fixing: As clause 610, using using using British Gypsum Drywall screws. Length of screw in accordance with British Gypsum fixing recommendations.
Finishing: Taped seamless finish as clause 670, suitable for painted finish.
Primer/sealer: One coat of British Gypsum Gyproc Drywall Sealer.
Accessories: BG Drywall Plastic Edgebead, adhesive fixed.
Other requirements: refer to drawing.

250 ACOUSTIC WALL LINING BEDROOM 1
Drawing reference(s): 6822-AL0-01
Background: Existing plastered blockwork wall.
Lining:
Manufacturer and reference:
Instacoustic Ltd; Hogwood Business Park, Wokingham, Berks RG40 4PZ. Tel: 0118-973-9560.
Contact: karl Kitchener. Mobile: 07825-177945
Wall system: AS28
Overall depth: 70-75mm.
Assembly details: (REFER TO SPECIFICATION APPENDIX D)
Components:
Isolating strip installed at floor and ceiling levels, and vertically at abutting walls.
Acoustic sealant as supplied by the manufacturer and clause 515.

Installation: in accordance with manufacturer's instructions.
Electrical installation (to/ behind lining): Refer to electrical specification, section V90.
Wall lining: 12.5mm Gyproc wallboard. Mechanically fixed to aluminium framing system.
Finishing: Taped seamless finish as clause 670, suitable for painted finish.
Primer/sealer: Two coats of British Gypsum Gyproc Drywall Sealer.
Other requirements:
New softwood skirting to match existing. Painted finish M60. New timber strip flooring with perimeter expansion joint (K21/120) to be installed after installation of acoustic lining. The lining assembly to provide for fixing the skirtings at required level.
Wall surface: painted finish as section M60.

GENERALLY/ PREPARATION

315 EXISTING FIXTURES, SERVICES, ETC: Ensure that surface mounted pipework, conduit, cables, electrical outlets, fixtures, appliances, fixing brackets, clips, skirtings, architraves, etc., are removed from existing backgrounds which are to be lined.

325 PREPARATION OF SOLID BACKGROUNDS:
Complete all cutting, chasing, plugging and making good.
Remove all loose material by brushing thoroughly.
Remove all oil, grease, wallpaper, etc. by scrubbing with water and detergent. Rinse with clean water and allow to dry.
For adhesive fixed wall linings, adjust suction of background as necessary using primers or bonding agents recommended for the purpose.

331A THERMAL SEALS FOR GYPROC LININGS:
-Manufacturer and reference: British Gypsum Ltd, Gyproc Dri Wall Adhesive or Gyproc Sealant.
-Before/during installation of dry lining system, fully seal all airpaths around the perimeter of the background and around structural openings and service penetrations through the background. Apply as a continuous fillet, leaving no gaps.

355 ADDITIONAL SUPPORTS FOR FIXTURES AND FITTINGS:
Provide or ensure provision of accurately positioned and securely fixed framing to support fixtures, fittings and services. After fixing boards, mark positions of framing for following trades.

365 ADDITIONAL SUPPORTS FOR BOARD EDGES AND PERIMETERS:
Provide or ensure provision of additional framing, accurately positioned and securely fixed, to give full support to board edges and lining perimeters in accordance with board manufacturer's recommendations.

385 SERVICE PENETRATIONS:
The dry lining contractor must liaise with the Main Contractor and other contractors to ensure that fire resistance and other specified performance requirements are not impaired by service penetrations.
In particular:
Form framed openings accurately for grouped services, ducts, etc. allowing for associated fire barriers.
Provide insulation backings to recessed electrical outlets and switches as recommended by the plasterboard manufacturer.

395 CONTROL SAMPLE(S):
Complete area(s) of finished work in approved locations as follows and obtain approval of appearance before proceeding:
Insulated plasterboard lining as clause 165.

405 PLASTERBOARD GENERALLY:
To BS 1230:Part 1, types 1 to 5 with exposed surface and edge profiles suitable to receive the specified finish.

FIXING/FINISHING

435 DRY LINING GENERALLY:
Fixing, jointing and finishing materials and accessories, where not specified otherwise, to be as recommended by the board manufacturer.
Handle and store materials in accordance with BS 8212, section 5. Do not use damaged boards.
Use operatives properly trained for dry lining work and who have attended a recognised training scheme.
Fix boards only in areas which have been made weathertight. Prevent frost damage.
Cut boards neatly and accurately without damage to core or tearing of paper facing. Keep cut edges to a minimum and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners.
Fix boards securely and firmly to suitably prepared and accurately levelled backgrounds. Set heads of fastenings in a depression; do not break paper or gypsum core. Finish neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

445 CEILINGS:
Fix boards to ceilings before walls and partitions. Fix boards with bound edges at right angles to supports and with ends staggered in adjacent rows.

515 ACOUSTIC SEALANT:
Sealant: A type recommended by the board manufacturer.
Location: To perimeter junctions with walls, floors, ceilings and around openings.
Before fixing boarding, apply as a continuous bead to clean, dry, dust-free surfaces, leaving no gaps.
After application of sealant, fill gaps greater than about 6 mm with jointing compound recommended by plasterboard manufacturer.

560 JOINTS BETWEEN BOARDS:
Tapered edged plasterboards: Lightly butted. Leave a 3 mm gap where cut/unbound edges occur.
Square edged plasterboards to be finished with textured plastic compound: 3 mm gap.
Square edged fibre reinforced gypsum boards: 5 mm gap.

565 JOINTS GENERALLY:
Centre joints on support. .

570 HORIZONTAL JOINTS:
Horizontal joints will not be permitted in surfaces exposed to view except where the height of partition/lining exceeds the maximum available length of board. Agree positions of joints where not specified. Ensure that edges of boards are supported by additional framing.

580 INSULATION BACKED PLASTERBOARD:
Avoid damage to insulation and do not cut away to accommodate services. Carefully cut back insulation or plasterboard as appropriate along edges of boards at angles to give a continuous plasterboard face, with no gaps in the insulation.

590 FIXING PLASTERBOARD TO METAL SUPPORTS:
Fix securely to all supports, working from the centre of each board using proprietary drywall screws at the following maximum centres:
- Partition/wall linings: 300 mm centres (reduced to 200 mm at external angles where recommended by the board manufacturer).
- Ceilings: 230 mm centres (reduced to 150 mm at board ends and at lining perimeters where recommended by the board manufacturer).
Position screws not less than 10 mm from the edge of the board. Set heads in a depression; do not break paper or gypsum core.
Type and length of screws as recommended in BS 8212, section 2.2.3, unless specified otherwise.

610 FIXING PLASTERBOARD TO TIMBER SUPPORTS:
Fix securely to all supports working from the centre of each board using the specified method of fixing at the following maximum centres:
Nails: 150 mm centres.
Drywall screws: 300 mm centres for partitions/wall linings (reduced to 200 mm at external angles where recommended by the board manufacturer) and 230 mm centres for ceilings.
Position fixings not less than 10 mm from bound edges, 13 mm from cut/unbound edges and not less than 6 mm from the edge of the timber support.
Type and length of fixings as recommended in BS 8212, section 2.2.3, unless specified otherwise.

670 TAPED SEAMLESS FINISH TO PLASTERBOARD:
Manufacturer: British Gypsum Ltd
Joint compound: One or more of the following Gyproc products:
-Easi-Fill
-Joint Filler
-Joint Cement
-Ready Mix Joint Cement
-Lite-Mix Joint Cement
Joints/gaps/internal corners: Gyproc Joint Tape
External corners:
Primer/sealer:
Lightly sand cut edges of boards to remove paper burrs. Apply PVAC sealer to exposed cut edges of boards and any other plaster surfaces to which tape is to be applied.
Fill all joints, gaps and internal angles with joint compound and cover with continuous lengths of tape, fully bedded. Reinforce external angles, stop ends, etc. with the specified bead/corner tape.
When set, cover with joint compound, feathered out to give a flush, smooth, seamless surface.
Spot nail/screw depressions with joint compound to give a flush surface.
Fill minor indents. After joint, angle and spotting treatments have dried, lightly sand to remove any minor imperfections.
Apply specified primer/sealer to give a continuous consistent texture to surface of boards.

690 RIGID BEADS/STOPS:
Manufacturer and reference: as clause 255
Material: PVC.

695 BEADS/STOPS GENERALLY:
Cut neatly using mitres at return angles. Fix securely using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with background.
After joint compounds/plasters have been applied, remove surplus material while still wet from surfaces of beads which are exposed to view.

720 MINOR DAMAGE IN EXISTING PLASTERBOARD:
Where not specified otherwise, repair small areas of broken board by cutting away the paper, removing loose core material and filling with joint filler. Apply PVAC sealer to exposed plaster and cut edge of paper before filling. Finish off to give a flush, smooth surface ready for redecoration.

K21 Wood strip flooring

To be read with Preliminaries/ General conditions.

100 SCOPE OF WORK IN THIS SECTION

Bedroom 1: Installation of wood flooring to area of existing wardrobe No.1 to be removed, using flooring material supplied by the Employer to match existing.

Bedroom 2: Renovation of existing wood flooring damaged by water penetration.

105 WORKS GENERALLY

Shall be carried out **only** by a specialist flooring contractor, qualifying as follows:

- A current member of The British Wood Flooring Association (BWFA). Tel: 01788-522171 www.bwfa.co.uk
- A firm that can demonstrate a high level of experience and skill in installation of timber flooring and work in accordance with BWFA installation manual.

Tender submission:
Submit details of the proposed flooring contractor that would undertake the work in the event of a successful tender.

106 MATERIAL:

For work in this section, the Employer wishes to use a supply of wood board/strip that was surplus when the existing timber floor finish was laid. The quantity available and its condition have not been ascertained. Other materials requirements, such as battening, are not available.

Before tendering, inspect this board/strip supply and measure its moisture content. With the tender, submit the details obtained and confirm the suitability of the material for the work and that the quantity is adequate for the area to be laid.

Should the above inspection show the condition of the material to be unsuitable for the work, or the quantity inadequate, provide a rate for supplying new timber board/strip to match the existing. Provide a sample of the new material upon request.

107 EXISTING TIMBER FLOOR FINISH

No construction details are available of the existing timber floor finish. On removal of the existing Wardrobe 1, the Architect will inspect the finish and may issue instructions to vary the specification of the new work.

TYPES OF FLOORING

120 BATTENED WOOD FLOORING (BEDROOM 1)

Substrate: 150-225mm thick, ground floor RC floor slab over asphalt damp proof membrane, slab overlaid with 100mm thick cement:sand screed. Constructed c1970. (Details not verified by survey).
Trafficking: domestic/ light pedestrian.
Heating system:
Existing underfloor heating system. Not to be extended to area of new floor finish.
Preparation:
Allow for removing any loose friable, damaged or otherwise unsuitable screed; general repairs or making good to the screed; and for laying a thin bed cementitious levelling compound.
Batten system:
To match existing. Allow for 36x36mm softwood battens installed at centres to suit thickness of floor finish.
Installation: Fixed.
Thermal insulation between battens: none.
Vapour control layer:
To match existing and clause 370. Allow for installing polythene sheeting of suitable gauge. Lap/seal to existing vapour control layer.
Strips/ Boards: Free from decay, through splits and insect attack (including ambrosia beetle damage, unless permitted in the class/ grade specified). Planed all round.

Manufacturer/ Supplier: Optional
Wood species: MAPLE and to match existing.
Appearance class/ Grade: BS EN 942, Grade J2 and to match existing.
Finished face width: To match existing
Finished thickness: To match existing
Edges: To match existing.
Moisture content at time of fixing: 6-8% or as required for underfloor heating.
Method of fixing: Allow for secret nail fixing to match existing. (subject to verification).
Perimeter: Allow for expansion. Joint covered by timber skirting.
Finish: 3 coats of lacquer, product/ type to match existing.
Accessories: None.
Other requirements:
New finish to be installed after acoustic wall lining (K10/250) has been installed.
Direction of board/strip to follow existing. Tongue direction to follow existing. Allow for removing and renewing existing boards/strips at existing edge of new floor finish, so that board/strip header joints are properly staggered and stave ends do not coincide.

112 REPAIRS TO FLOORING: BEDROOM 2
Locally screen mesh (preferable) or sand area of existing wood flooring damaged by water penetration to remove staining. Prepare and apply finish sealing coat. Work as clause 370.

GENERAL/ PREPARATION

210 WORKMANSHIP GENERALLY
Moisture content of timber supports: 12-14%.
Methods of fixing and fasteners: As section Z20 where not specified.
Protection: Protect from dirt, stains and damage using suitable coverings and boards laid as the work proceeds.

220 ENVIRONMENTAL CONDITIONS
General requirements prior to starting work specified in this section: Building weathertight, wet trades completed and affected areas dried out.
Temperature and humidity before, during and after installing strips/ boards: Maintained at levels approximating to those which will prevail after building is occupied.

230 HEATING SYSTEM
Operating mode: continuous, subject to flooring manufacturer's guarantee.
Room temperatures for which the system has been designed: 20-22 deg C.
Operation up to Completion: submit proposals.

250 FIXTURES
Fixtures around which strip flooring is to be fixed: Installed before starting work specified in this section.

260 DRYNESS OF CONCRETE/ SCREED SUBSTRATES FOR FLOORING
Relative humidity above substrate when tested with a hygrometer to BS 8201, Appendix A (maximum): 75%.
-Test points: All corners, around perimeter, and random points over area being tested.
Drying aids: Turned off for not less than four days before testing.

270 STRIP/ BOARD MOISTURE CONTENT TESTING
Test regime and equipment: Submit proposals.
Test results: Submit record of tests and results.

280 EXISTING WOOD FLOORING
Condition: Boards securely fixed and acceptably level. Protruding fasteners punched in or countersunk.

290 CONTROL SAMPLES
None required: All new work to match existing.

FIXING/ FINISHING

310 VAPOUR CONTROL LAYER INSTALLATION
Location: Immediately below boards/strips or to match existing.
Installation:
-Joints: Overlapped by minimum 150 mm and sealed with vapour resistant tape.
-Treatment of membrane at perimeter of flooring and upstands: Turned up and sealed to top face of flooring using a method approved by the strip/ board manufacturer.
Excess material: Trimmed off neatly after fixing skirtings/ cover beads.
Condition of membrane before laying flooring: Clean and dry.

325 FLOORING BATTENS
Quality of timber: Free from decay, insect attack (except ambrosia beetle damage) and with no knots wider than half the width of the section.
Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C8.
-Type/ Desired service life: 30 years .
Moisture content at time of laying: 12-14%.

330 FIXING BATTENS
General: Battens spaced evenly, packed or adjusted as necessary to give a true, level, finished surface, and fixed securely.

335 TREATED TIMBER
Surfaces exposed by minor cutting and drilling: Treated with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

350 FIXING STRIPS/ BOARDS
Strips/ Boards: Fixed securely to each support with flat, true surfaces free from undulations, splits, hammer marks, scratches and protruding fastenings.
Movement of timber: Allowed for when positioning strips/ boards and fastenings to prevent cupping, springing, opening of joints or other defects.
Heading joints (where permitted): End matched, butted and, where applicable, positioned centrally over supports and distributed across the flooring to achieve a random effect.
Surface fixing: As recommended by the manufacturer. Surface nailing to have heads punched below surface and stopped with a coloured filler recommended by the flooring manufacturer.

360 EXPANSION PROVISION
Expansion gaps:
-Edges of flooring: Parallel to lie of strips/ boards and 1.5 - 3.0mm wide.
-Ends of flooring: 10 mm wide.
Spacer blocks and debris: Removed before fixing skirtings/ cover fillets.
Intermediate expansion/ movement joints: Formed as recommended by flooring manufacturer/ supplier.

370 FINISH TO FLOORING
Exposed fastener heads: Punched or set below surface and filled with stopping to match wood.
Strips/ Boards: Sanded to give a clean, smooth and flush surface free from score marks.
Finish:
3 coats of wood lacquer/sealer, product and type to match existing. Ensure inter-product compatibility with existing finish. Apply new coating in accordance with manufacturer's instructions.

M20 PLASTERED COATINGS

To be read with Preliminaries/General conditions.

TYPE(S) OF COATING

200 PROPRIETARY CEMENT RENOVATING PLASTER
Substrate: Existing brickwork and blockwork walls; existing reinforced concrete soffit.
-Preparation: as clause 500 and 510.
Manufacturer: Sovereign Chemicals Limited. Tel: 01229-870800.
Undercoats:
Product reference: RENDERLITE RENOVATING PLASTER.
-Thickness (excluding dubbing out and keys): 8mm RC soffit. 11mm walls.
Final coat:
-Product reference: RENDERLITE FINISH PLASTER.
-Thickness: 2-3mm
-Finish: smooth for painted decoration
Accessories: none.

215 LIGHTWEIGHT GYPSUM PLASTER
Location: Various
Background: brickwork & blockwork (densities unknown) walls.
Preparation: as clause 512.
Undercoat(s):
Premixed lightweight bonding plaster to BS 1191: Part 2
Manufacturer: British Gypsum
Proprietary reference: Thistle Bonding
Thickness (excluding dubbing out): 11mm nominal
Final coat:
Premixed lightweight finish plaster to BS 1191: Part 2
Proprietary reference: Thistle Multi Finish.
Thickness: 2-3mm
Finish: Smooth for painted as clause 780.
Accessories: Metal lath reinforcement over chases as clause 670.

GENERAL REQUIREMENTS FOR WORKMANSHIP

410 BASIC WORKMANSHIP:
Comply with the clauses of BS 8000: Part 10 which are relevant to this section.

435 CONTROL SAMPLE(S):
Complete sample area(s), being part of the finished work, in approved location(s) as follows, and obtain approval of appearance before proceeding:
Item 3 M20/215
Item 11 M20/200

440 UNIFORMITY OF COLOUR AND TEXTURE:
Once samples of coatings have been approved do not change type or proportion of constituent materials. Ensure that supplies of materials are sufficient to give consistent and uniform colour and texture. Obtain each material from one source and mix different loads if necessary.

490 SCAFFOLDING/STAGING:
Use independent scaffolding to avoid putlog holes and other breaks in coatings.

MATERIALS AND MARKING OF MORTAR

430 READY-TO-USE CEMENT GAUGED PLASTER
Time and temperature limitations: Use within limits prescribed by mortar manufacturer
-Retempering: Restore workability with water only within prescribed time limits.

565 SBR BONDING AGENT:
Manufacturer: Sovereign Chemicals Limited. Tel: 01229-870800.
Product reference: SBR BONDING AGENT.

690 EXPANDED METAL LATH
Manufacturer and reference: optional
Material: stainless steel to BS 1499 Part 2: 1985 Grade 304S1E
Form: Diamond lath
Fixing: masonry nails as directed by the manufacturer
Location/use: Reinforce plaster chases for services.

495 MIXING
Render mortars (site prepared):
-Batching: By volume. Use clean and accurate gauge boxes or buckets.
-Mix proportions: Based on damp sand. Adjust for dry sand.
-Lime:sand: Mix thoroughly. Allow to stand, without drying out, for at least 16 hours before using.
Mixes: Of uniform consistence and free from lumps. Do not retemper or reconstitute mixes.
Contamination: Prevent intermixing with other materials.

497 COLD WEATHER
General: Do not use frozen materials or apply coatings on frozen or frost bound substrates.
Internal work: Take precautions to enable internal coating work to proceed without detriment when air temperature is below 3°C.

PREPARING BACKGROUNDS

500 PREPARATION FOR RENOVATION PLASTERWORK (CLAUSE 200)
Proprietary products: where specified below.
Manufacturer: as clause 200.
Remove existing plaster, for the extent specified.
Apply MASONRY STERILISING WASH, diluted with water in the ratio 4 parts water to 1 part Sterilising Wash. Apply a second and third application where contamination is severe.
Leave open and allow the surface to dry.
Apply a first application of ANTI SULPHATE, diluted 1:1 with clean water. Leave overnight and repeat with neat Anti-Sulphate the following morning. Allow to soak in. Programme re-plastering work so that first plaster coat is applied within three working days.
Apply a bonding coat consisting of 1 part SBR BONDING AGENT to 1 part water, mixed with fresh Ordinary Portland Cement (OPC) until a thin yoghurt like consistency is achieved. Brush on a thin coat (approx 1mm thick) to the wall/soffit. Plaster up while still tacky.
This bonding coat will improve adhesion and is sulphate resistant.

Replaster using Sovereign Renderlite Renovating Plaster gauged with 1:4 Sovereign SBR Bonding Agent:water as the backing coat.

510 PREPARATION GENERALLY
Remove existing loose or water damaged plaster finish, by hackning back to face of blockwork, brickwork or concrete. Dust and loose material to be removed. Extent of contamination of the blockwork by salt residue, the result of rainwater penetration, to be assessed on opening up, and appropriate remedial work specified. Pre-treat all background areas as specified in clause 500.

512 SUITABILITY OF SUBSTRATES
Soundness: Free from loose areas and significant cracks and gaps.
Cutting, chasing, making good, fixing of conduits and services outlets and the like: Completed.
Tolerances: Permitting specified flatness/ regularity of finished coatings.
Cleanliness: Free from dirt, dust, efflorescence and mould, and other contaminants incompatible with coatings.

527 RAKING OUT FOR KEY
Joints in existing masonry: Rake out to a depth of 13 mm (minimum).
Dust and debris: Remove from joints.

541 BONDING AGENT APPLICATION
General: Apply evenly to substrate to achieve effective bond of plaster/ render coat.
Protect adjacent joinery and other surfaces.

510 KEYING/BONDING:
Prepare backgrounds as specified for the type of coating to be applied. Where not specified, comply with BS 8000:Part 10, clause 2.2.2.2. Methods other than those specified may be submitted for approval.

551 REMOVAL AND RENEWAL OF EXISTING PLASTER/ RENDER
Location and extent: Agree, at least on a provisional basis, before work commences.
Minimize extent of removal and renewal.

566 REMOVING DEFECTIVE EXISTING PLASTER
Plaster for removal: Detached, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
Hollow, detached areas: remove.
Stained plaster: remove.
Removing defective plaster. Cut back to a square, sound edge.
Faults in substrate (structural deficiencies, damp, etc.): Submit proposals.
Cracks:
Fine hairline cracking/ crazing: Leave.
Other cracks: cut out to a width of 75mm minimum.
Dust and loose material: Remove from exposed substrates and edges.

568 EXISTING DAMP AFFECTED PLASTER
Plaster affected by water penetration: Remove where specified to be removed.
Perished and salt contaminated masonry:
-Mortar joints: Rake out.
-Masonry units: Prepare as clause 500.
Faults in substrate (structural deficiencies, additional sources of damp, etc.): Submit proposals.
Drying out substrates: Establish drying conditions. Leave walls to dry for as long as possible before plastering.
Dust and loose material: Remove from exposed substrates and edges.

BACKINGS/BEADS/JOINTS/FEATURES

645 DISSIMILAR SOLID BACKGROUNDS:
Where not shown otherwise on drawings, continue coatings without break across joints between dissimilar solid backgrounds which are in the same plane, reinforcing with lathing as BS 8000: Part 10, clause 2.2.2.3.

673 PLASTERING OVER CONDUITS/ SERVICE CHASES
General: Prevent cracking over conduits and other services.
Services chased into substrate: Isolate from coating by covering with metal lathing, fixed at staggered centres along both edges.

670 JOINTS BETWEEN BOARDS AND SOLID BACKGROUNDS
which are both to be plastered: Fill and scrim except where specified otherwise.

PLASTERING

710 APPLICATION GENERALLY
Application of coatings: Firmly and in one continuous operation between angles and joints. Achieve good adhesion.
Appearance of finished surfaces: Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
-Accuracy: Finish to a true plane, to correct line and level, with angles and corners to a right angle unless specified otherwise, and with walls and reveals plumb and square.
Drying out: Prevent excessively rapid or localized drying out.

715 FLATNESS/ SURFACE REGULARITY
Sudden irregularities: Not permitted.
Deviation of plaster surface: Measure from underside of a straight edge placed anywhere on surface.
-Permissible deviation (maximum) for plaster not less than 13 mm thick: 3 mm in any consecutive length of 1800 mm.

718 JUNCTION OF NEW PLASTERWORK WITH EXISTING
New plasterwork: Finish flush with original face of existing plasterwork to form a seamless junction.

720 DUBBING OUT
General: Correct substrate inaccuracies.
New smooth dense concrete and similar surfaces: Dubbing out prohibited unless total plaster thickness is within range recommended by plaster manufacturer.
Thickness of any one coat (maximum): 10 mm.
Mix: As undercoat.
Application: Achieve firm bond. Allow each coat to set sufficiently before the next is applied. Cross scratch surface of each coat.

725 UNDERCOATS GENERALLY
General: Rule to an even surface. Cross scratch to provide a key for the next coat.
Undercoats on metal lathing: Work well into interstices to obtain maximum key.
Undercoats gauged with Portland cement: Do not apply next coat until drying shrinkage is substantially complete.

780 SMOOTH FINISH:
Trowel or float to produce a tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks. Do not use water brush and avoid excessive trowelling and over polishing.

M40 CERAMIC TILING

To be read with Preliminaries/General conditions.

TYPE(S) OF TILING/MOSAIC

100 SCOPE OF WORK IN THIS SECTION:
The supply and laying of fully vitrified porcelain tiles to the general terrace area, vertical and horizontal surfaces of terrace perimeter upstands and south terrace wall. Tiling is to be laid to the new stainless steel channel grating and support frame, finished level to follow the grating support frame.

NOTE:
The Employer has available a supply of new tiles of the type specified, but an earlier production batch, and these are to be incorporated in the Works. The quantity available is 24 boxes at 5 No. per box. Size 450x450mm. The Contractor shall allow for these new tiles in his calculation of the overall quantity of tiles required to carry out the work, and shall allow to the Employer the cost of such tiles in his rate(s) for the work.

The Employer's tiles were produced by the manufacturer in a previous production batch and the colour/pattern differ slightly to the current supplies now available. However, the variation is minor and the Employer is content for the tiles from the earlier batch to be used, provided that existing and further new tiles are adequately mixed during laying. The Contractor shall include for any additional tile mixing thereby required.

105 CERAMIC TILING TO TERRACE
Drawing reference(s): 6822-AA3-01,02, 03, 04
Tiles: Fully vitrified porcelain
Manufacturer: Casalgrande Padana,
Product:
GRESPLUS (formerly Monoplus) PALATINO tile.
Style/colour: AUGUSTO and as approved sample.
Size and thickness: 450 x 450x 9.5 mm
Finish: Standard.
Background/Base: Waterproofing membrane as clause J31/10A.
Preparation: Remove surface contaminants, loose, unbound grit/sand, etc.
Bedding: thick bed solid as clauses 700 & 710.
Adhesive:
Manufacturer: Building Adhesives Limited, stoke on Trent. Tel: 01782-591100
Products:
BAL Fastflex. 3-6mm solid bed, all voids filled.
Joint width: 3mm
Grout:
BAL Wide Joint Grout used in conjuction with BAL Admix GT1
Colour: Grey
Movement joints: None
Accessories: Stress relieving joints as clause 825.
Perimeter joints: Sealant infill as clause 815
Joint between glass balustrade and tiling at perimeter upstand as clause 816.
Additional requirement:
Take special measures to protect the Kemperol waterproofing membrane during tiling works, prior to the membrane being overlaid by completed tiling. Submit proposals for such special protection prior to commencing tiling work.

GENERALLY

210 SUITABILITY OF BACKGROUNDS/BASES:
Before starting work ensure that backgrounds/bases:
Are such as to permit specified flatness/regularity of finished surfaces, bearing in mind the permissible minimum and maximum thicknesses of the bedding material.
Is fully cured. Obtain written confirmation from the applicator of the liquid applied waterproofing membrane that the membrane is ready to be overlaid with the ceramic tiling.

215 FALLS IN THE BASE:
Before starting work, check that where required, falls have been provided in the base. Inform the CA if the falls are inadequate. Do not attempt to provide falls by increasing or decreasing the specified thickness of the bedding material.

250 TILE SAMPLE:
Before placing orders submit a representative sample of the specified tile for approval.
Ensure that delivered materials are from the same batch and match approved samples.

260 CONTROL SAMPLE(S):
Complete sample area(s), being part of the finished work in approved location(s) as follows, and obtain approval of appearance before proceeding:
1 No. bay of general tiling, including abutment to drainage channel grating support frame, at an approved location .

PREPARATION

310A EXISTING BACKGROUNDS/BASES GENERALLY:
Remove surface contaminants, loose, unbound grit/sand, etc. Report other form of contaminants found, such as oil, grease, indicating lack of adequate protection or improper constructon practices.
Backgrounds/bases to be dry before fixing tiles.

FIXING

510 FIXING GENERALLY:
Check that there are no unintended colour/shade variations within tiles.
Thoroughly mix new tiles with the supply of tiles supplied by the Employer.
Thoroughly mix variegated tiles.
Check that adhesive is compatible with background/base. Use a primer where recommended by the adhesive manufacturer.
Cut tiles neatly and accurately to achieve the specified joint width.
Unless specified otherwise, fix tiles so that there is adhesion over the whole of the background/base and tile backs with no voids in the adhesive bed.
Before bedding material sets make adjustments necessary to give true, regular appearance to tiles and joints when viewed under final lighting conditions.
Clean surplus bedding material from joints and face of tiles without disturbing tiles.

520 ADVERSE WEATHER:
Do not fix tiles if the temperature is below 5 deg C or in damp conditions.
Do not use frozen materials or apply finishes to frozen or frost covered surfaces.
Comply with manufacturers' recommendations for minimum/maximum temperatures when using proprietary adhesives.
Take adequate precautions to protect work from inclement weather, frost and premature drying out.

530 SETTING OUT OF TILING:
Set out at shown on drawings.
Joints to be true to line, continuous and without steps.
Joints on perimeter upstands to be truly horizontal, vertical and in alignment with joints in the terrace floor tiling.
Joints in the terrace floor to be parallel to the main axis of the space or specified features.
Cut tiles/slabs to be kept to the minimum, as large as possible and in unobtrusive locations.

540 LEVEL OF CERAMIC FLOOR TILING:
Permissible deviation from the design datum (to fall) to be +/-3 mm.

550 FLATNESS/REGULARITY OF CERAMIC FLOOR TILING:
Sudden irregularities not permitted. When checked with a 3 m straightedge with 3 mm thick feet at each end, placed anywhere on the surface, the straightedge should not be obstructed by the tiles and no gaps should be greater than 4.5 mm or less than 1.5mm.

560 LEVEL OF TILING ACROSS JOINTS:
Maximum deviation between tile or slab surfaces either side of a joint, including movement joints to be:
1 mm for joints less than 12 mm wide.
1.5 mm for joints 12 mm or greater in width.

600 SIT-ON TILING AT PERIMETER UPSTANDS AND UPSTAND TOP SURFACES.
Bed solid to wall with specified adhesive after laying floor tiles. Leave 10mm joint, full depth, for specified sealant infill. Ensure vertical and horizontal joints at upstands match and align with joints in floor tiling.

700 ADHESIVE BED-CERAMIC FLOOR TILES:
Prepare and apply the adhesive to the base in strict accordance with the manufacturers instructions and product data sheets.
Use a notched trowel with 8mm x 8mm notches at 16mm centres to attain a 3mm finished bed depth.
Notches in adhesive are to be in one direction only- orientated to the direction of laying so that as the tile/unit is laid the air in the notches can escape towards the open edge.
Strictly observe the adhesive bed open time-approx 10 minutes-stated by the manufacturer and do not lay more adhesive than that into which tiles/units can be successfully bedded in this time.
Comply with the recommendations made by the manufacturer regarding use of the adhesive in warm weather conditions.

710 THICK BED ADHESIVE - SOLID (FLOORS):
Apply floated coat of adhesive to dry base and comb the surface with the recommended solid bed trowel. Apply adhesive to backs of tiles as necessary to fill any depressions or keys. Press tiles firmly into position to give finished bed thickness within the range recommended by the manufacturer.

780 CHECKING TILE ADHESION:
As work proceeds and before the bedding has set, carefully remove random tiles as directed and in the presence of the CA to verify that there is the specified adhesion. Remove the initial adhesive, butter the removed tiles with fresh adhesive with the specified combed trowel-(see clause 700)- and refix.

GROUTING/COMPLETION

815 SEALANT FILLED JOINTS AT FLOOR EDGE, VERTICAL CORNERS AND ADJACENT TO NEW GRATING SUPPORT FRAME.
Sealant: ARBOMERIC MP20 one part sealant
Manufacturer: Adshead Ratcliffe 01773 826661
Colour: Grey
Width: nominally 10mm
Application: As section Z22 and in accordance with the manufacturers recommendations.
Ensure that joints extend through tiles and bedding to substrate

816 SEALANT FILLED JOINT BETWEEN TILING AND GLASS BALUSTRADE
Sealant: ARBOSIL 1096 one part silicone sealant
Manufacturer: Adshead Ratcliffe 01773 826661
Colour: Grey
Width: nominally 10mm
Application: As section Z22 and in accordance with the manufacturers recommendations.
Ensure that joints extend through tiles and bedding to substrate

825 STRIP MOVEMENT JOINTS
Manufacturer and reference:
Schluter Systems Limited, Coalville. Tel 01530-813396
Product: DILEX-BWB
Colour: GREY
Joint width: 10 mm
Joint height: 10mm
Fixing: Solidly bed in adhesive to exact finished level of floor. Ensure that joints extend through tiles and bedding to base (waterproof.membrane).

875 GROUTING:
Grout tiles as soon as possible after bedding has set sufficiently to prevent disturbance of tiles.
Ensure that joints are 6 mm deep (or the depth of the tile if less), and are free from dust and debris.
Mix and apply grout in accordance with manufacturers instructions and product data sheet.
Fill joints completely, tool to an approved profile, clean off surface and leave free from blemishes.
Polish wall tiling with a dry cloth when joints are hard.

885 COLOURED GROUT:
Check the potential risk of staining by applying the grout to a few tiles in a small trial area. If discolouration occurs apply a protective sealer to the tiles and repeat the trial.

910 PROTECTION GENERALLY:
Adequately protect and keep clean all completed areas during the laying of the floor. Clean off any droppings immediately.

915 PROTECTION EXTERNALLY:
Keep tiling dry and adequately protect from adverse weather, frost and premature drying until the bedding has fully set.

920 PROTECTION OF COMPLETED TILING:
Protect and keep completed floors clear of traffic for at least 6 hours and permit only light traffic for the next 24 hours. Maintain protection under contract Completion.

M60 Painting/clear finishing

To be read with Preliminaries/General conditions.

COATING SYSTEMS

100 COLOURS/SHADES:
To be selected by the Employer.

110 EMULSION PAINT PLASTERED WALL AND CEILING SURFACES
Manufacturer: As clause 210
Product reference: DULUX TRADE
Surfaces: Interior new and existing plaster.
Preparation:
One coat of Weathershield MultiSurface Fungicidal Wash to existing surfaces.
As clauses 400 & 440.
Initial coats: Vinyl Matt
Number of coats: One thinned coat of selected shade.
Undercoats: Vinyl Matt.
Number of coats: One of selected shade.
Finishing coats: Vinyl Matt.
Number of coats: One of selected shade.

115 EMULSION PAINT PLASTERBOARD LINED WALL AND CEILING SURFACES
Manufacturer: As clause 210.
Product reference: DULUX TRADE
Surfaces: Interior new and existing plasterboard.
Preparation: As clauses 400 & 440.
Initial coats: Vinyl Matt
Number of coats: One thinned coat of selected shade.
Undercoats: Vinyl Matt
Number of coats: One of selected shade.
Finishing coats: Vinyl Matt
Number of coats: One of selected shade.

150 EGGSHELL/ SATIN PAINT TO INTERIOR NEW JOINERY SURFACES.
Manufacturer: As clause 210.
Product reference: DULUX TRADE
Surfaces: Interior new timber.
Preparation: As clauses 400 & 440
Initial coats: Quick Drying Wood Primer Undercoat
Number of coats: One thinned coat.
Undercoats: Satinwood
Number of coats: One of selected shade.
Finishing coats: Satinwood
Number of coats: One of selected shade.

151 EGGSHELL/ SATIN PAINT TO INTERIOR EXISTING PAINTED JOINERY SURFACES.
Manufacturer: As clause 210.
Product reference: DULUX TRADE
Surfaces: Interior existing painted timber.
Preparation: As clauses 400 & 440
Undercoats: Satinwood
Number of coats: One of selected shade.
Finishing coats: Satinwood
Number of coats: One of selected shade.

152 DECORATIVE WOODSTAIN TO INTERIOR EXISTING STAINED JOINERY SURFACES
(**Subject to verification of details of the existing applied coating system)**
Manufacturer: As clause 210.
Product reference: DULUX TRADE
Surfaces: Existing interior joinery
Preparation: As clauses 400 & 440.
Initial coats: Protective Woodsheen
Number of coats: One of selected shade.
Finishing coats: Protective Woodsheen
Number of coats: One of selected shade.

160 DECORATIVE WOODSTAIN TO ROOF TIMBER CLADDING (NEW)
Manufacturer: As clause 210.
Product reference: DULUX TRADE
Surfaces: New timber (Utile)
Preparation:
One coat of Weathershield Exterior Preservative Basecoat over all faces and edges before final fixing.
After fixing, as clauses 400 & 440.
Initial coats: Weathershield Aquatech Woodstain (Semi-Transparent Colour)
Number of coats: One of selected shade.
Finishing coats: Weathershield Aquatech Woodstain (Semi-Transparent Colour)
Number of coats: One of selected shade.

161 DECORATIVE WOODSTAIN TO ROOF TIMBER CLADDING (EXISTING RE-INSTALLED)
Manufacturer: As clause 210.
Product reference: DULUX TRADE
Surfaces: Existing timber (Utile)
Preparation:
After fixing, as clauses 400 & 440.
Initial coats: Weathershield Aquatech Woodstain (Semi-Transparent Colour)
Number of coats: One of selected shade.
Finishing coats: Weathershield Aquatech Woodstain (Semi-Transparent Colour)
Number of coats: One of selected shade.

GENERALLY

210 COATING MATERIALS
Manufacturers: Obtain materials from any of the following:
ICI Paints, Slough.

215 HANDLING AND STORAGE
Coating materials: Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer's batch number.
Materials from more than one batch: Store separately. Allocate to distinct parts or areas of the work.

220 COMPATIBILITY
Coating materials selected by contractor:
Recommended by their manufacturers for the particular surface and conditions of exposure. Compatible with each other. Compatible with and not inhibiting performance of preservative/fire retardant pretreatments.

240 SURFACES NOT TO BE COATED
Internal door frames and door leaves
Internal surfaces of window frames Bedroom 1, Bedroom 2, Office, Bedroom 3 (except overpanel)

250 SURFACES TO BE CLEANED BUT NOT COATED
(Refer also to General Contract Preliminaries)

280 PROTECTION
'Wet paint' signs and barriers: Provide where necessary to protect other operatives and Employer, and to prevent damage to freshly applied coatings.

300 CONTROL SAMPLES
Sample areas of finished work: Carry out, including preparation, as follows:
Types of coating Nature of sample
M60/ 110 (Plastered walls)
M60/160-161.
Approval of appearance: Obtain before commencement of general coating work.

PREPARATION

400 PREPARATION GENERALLY
Standard: In accordance with BS 6150.
Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
Substrates: Sufficiently dry in depth to suit coating.
Efflorescence salts: Remove.
Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
Surface irregularities: Remove.
Joints, cracks, holes and other depressions: Fill flush with surface, to provide smooth finish.
Dust, particles and residues from preparation: Remove and dispose of safely.
Water based stoppers and fillers:
Apply before priming unless recommended otherwise by manufacturer.
If applied after priming: Patch prime.
Oil based stoppers and fillers: Apply after priming.
Doors, opening windows and other moving parts:
Ease, if necessary, before coating.
Prime resulting bare areas.

420 FIXTURES AND FITTINGS
Removal: Before commencing work remove: fitted shelving, electrical fittings
Replacement: Refurbish as necessary, refit when coating is dry.

440 PREVIOUSLY COATED SURFACES GENERALLY
Preparation: In accordance with BS 6150, clause 11.5.
Contaminated or hazardous surfaces: Give notice of:
Coatings suspected of containing lead.
Substrates suspected of containing asbestos.
Significant rot, corrosion or other degradation of substrates.
Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
Alkali affected coatings: Completely remove.
Retained coatings:

Thoroughly clean to remove dirt, grease and contaminants.
Gloss coated surfaces: Provide key.
Partly removed coatings:
Additional preparatory coats: Apply to restore original coating thicknesses.
Junctions: Provide flush surface.
Completely stripped surfaces: Prepare as for uncoated surfaces.

461 PREVIOUSLY COATED WOOD
Degraded or weathered surface wood: Take back to provide suitable substrate.
Degraded substrate wood: Repair with sound material of same species.
Exposed resinous areas and knots: Apply two coats of knotting.

471 PREPRIMED WOOD
Areas of defective primer: Take back to bare wood and reprime.

481 UNCOATED WOOD
General: Provide smooth, even finish with arrises and moulding edges lightly rounded or eased.
Heads of fasteners: Countersink sufficient to hold stoppers/fillers.
Resinous areas and knots: Apply two coats of knotting.

580 UNCOATED PLASTER
Nibs, trowel marks and plaster splashes: Scrape off.
Overtrowelled 'polished' areas: Key lightly.

590 UNCOATED PLASTERBOARD
Depressions around fixings: Fill with stoppers/ fillers

622 ORGANIC GROWTHS
Dead and loose growths and infected coatings: Scrape off and remove from site.
Treatment biocide: Apply appropriate solution to growth areas and surrounding surfaces.
Residual effect biocide: Apply appropriate solution to inhibit re-establishment of growths.

APPLICATION

700 PAINTING GENERALLY:
Comply with BS 8000:Part 12, Section 3.2 and additional requirements in this specification.

710 PRIMING JOINERY:
- Before priming preservative treated timber ensure that any cut surfaces have been retreated.
- Liberally coat all end grain, allow to soak in and then recoat.

711 COATING GENERALLY
Application standard: In accordance with BS 6150, clause 9.
Conditions: Maintain suitable temperature, humidity and air quality during application and drying.
Surfaces: Clean and dry at time of application.
Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.
Overpainting: Do not paint over intumescent strips or silicone mastics.
Priming coats:
-Thickness: To suit surface porosity.
-Application: As soon as possible on same day as preparation is completed.
Finish:
-Even, smooth and of uniform colour.
-Free from brush marks, sags, runs and other defects.
-Cut in neatly.
Doors, opening windows and other moving parts: Ease before coating and between coats.

720 PRIMING JOINERY
Preservative treated timber: Retreat cut surfaces with two flood coats of a suitable preservative before priming.
End grain: Coat liberally allow to soak in, and recoat.

731 SITE COATING OF CONCEALED JOINERY SURFACES
General: After priming, apply additional coatings to surfaces that will be concealed when fixed in place.
-Components: concealed surfaces of timber roof cladding.
-Additional coatings: one.

751 STAINING WOOD
Primer: Apply if recommended by stain manufacturer.
Application: Apply in flowing coats and brush out excess stain to produce uniform appearance.

760 COMPLETION:
Ensure that opening lights and other moving parts move freely.
Remove all masking tape and temporary coverings.

PAINTING, STAINING AND CLEANING SCHEDULE					
Room/Area	**Walls** (9)	**Ceiling** (10)	**Skirtings** (8)	**Doorset(s)** (7)	**Window**
Bedroom 1	M60/110-115	M60/110-115	M60/150-151	M60/250	M60/250
Bathroom 1	none	none	none	M60/250	none
Bedroom 2	M60/110-115	M60/110-115	M60/150-151	M60/250	M60/250
Office	M60/110-115	M60/110-115	M60/150-151	M60/250	M60/250
Bedroom 3	M60/110-115	M60/110-115	M60/150-151	M60/250	M60/152 (1) M60/250
Pool Room	none	none	none	M60/250	none
Bathroom 2	none	none	none	M60/250	n/a
Laundry	none	none	none	M60/250	n/a
Hall -Lower level	M60/250	M60/250	M60/250	M60/250	n/a
Stairwell	M60/250	M60/250	M60/250 (2)	M60/250	n/a
Lounge	none	none	none	M60/250	none
Kitchen/Dining	none	none	none	M60/250	none
Entrance Lobby	M60/110-115 (3)	none	none	M60/250	n/a
WC	none	none	none	M60/250	none
Entrance Area	none	none	n/a	M60/250 (6)	n/a
Conservatory	TBC	TBC	TBC	TBC	TBC
Staff Flat	No work	No work	No work	No work	No work
Exterior					
Terrace	M60/250 (4)	n/a	n/a	M60/250 (5)	n/a
Roof cladding	M60/160-161	n/a	n/a	n/a	n/a

Notes:

(1) Internal overpanel only, subjected to water damage.

(2) Including timber handrails.

(3) Extent specified at Appendix A, Schedule of Internal Work.

(4) Glass balustrades, both sides.

(5) Glass and frames of tilt-slide glazed doorsets.

(6) Timber door to Entrance Lobby and main entrance glazed door, side and overpanel.

(7) Doorsets to be cleaned after temporary protection removed.

(8) All skirtings.

(9) All wall surfaces

(10) Plastered perimeter areas and plasterboard central area.

N10 Fixtures and Fittings

To be read with Preliminaries/General conditions.

100 SCOPE OF WORK IN THIS SECTION:
The dismantling and re-installation of Hall Cupboard existing timber lining.
Removal and reinstatement of various fittings and fitments. Refer to Appendix A: Schedule of Internal Works.

EXECUTION

110 METHOD FOR WORK TO HALL CUPBOARD.
For the purpose of installing new stainless steel rainwater pipework and modifying existing PVC-U pipework within the duct at the rear of the Hall Lobby cupboard, carefully carry out the following:

- Unfix and remove existing double leaves and hinges of the cupboard doorset. Leave frame in place. Install and maintain special protection during the work.
- Unfix and remove existing hinged duct cover/door leaf.
- Unfix, dismantle and remove existing timber cupboard lining and associated framework including upper shelf and metal hanging rail.
- The construction is generally screw fixed together. Retain screws for re-installation or replace any lost screws to match existing.
- Store and protect removed components during the works.
- On completion of other works, re-instate and re-fix all components in their original state.

Before commencing, accurately record the condition of the lining, details of assembly and existing location of the components, in readiness for re-installation.

If the timberwork/lining is damaged, repair and/or make good.

710 MOISTURE CONTENT OF WOOD AND WOOD BASED BOARDS
Temperature and humidity: During storage, re-fixing and to handover maintain conditions to suit specified moisture contents of timber components.
Testing: When instructed, test components with approved moisture meter to manufacturer's recommendations.

720 INSTALLATION GENERALLY
Joinery workmanship: As section Z10.
Metalwork materials and workmanship: As section Z11
Fixing and fasteners: As section Z20.
Services: maintain
Workmanship generally: In accordance with manufacturer’s instruction and good practice.

COMPLETION

910 GENERAL
Doors: Accurately aligned, not binding. Adjusted to ensure smooth operation.
Ironmongery (if used): Checked, adjusted and lubricated to ensure correct functioning.
Curtain tracks: Check operating correctly, properly adjusted, undamaged and all components installed as existing.
Shelving: secure and undamaged.

P10 Sundry insulation

To be read with Preliminaries/ General conditions

PRODUCTS

110 INSULATION: GLASS ROOF RAINWATER PIPE
Drawing references: 6822-AA5-02
Material: Extruded polystyrene.
Standard: As applicable.
Manufacturer: Knauf Insulation, St Helens. Tel: 01744-766666
Product: POLYFOAM
Thickness: 25mm
Specially cut to non-standard thickness. Available from Johnson Insulations. Tel 020-8539-8444
Installation:
Adhesive fixed to stainless steel rainwater pipe using adhesive suitable for insulation material. Install over full area of steelwork. Joints tightly butted. Leave no gaps.

115 INSULATION INSTALLED BEHIND TIMBER ROOF CLADDING
Drawing references: 6822-AA2-01, 02, 03, 04, 05, 07, 08.
Material: as clause 110
Standard: As applicable.
Manufacturer & product: as clause 110
Thickness: 12mm
Non-standard thickness. Special cutting available from Johnson Insulations. Tel 020-8539-8444
Installation:
Cut to area. Friction fit behind cladding. Joints tightly butted. Leave no gaps.

INSTALLATION

120 GENERALLY
Before commencing, ensure that all work to backing is complete, holes filled, sealed, etc and all debris has been removed.
Cut boards to install in single sheets without butt joints, except at changes of direction.
Fix securely to prevent slumping/displacement but without undue compression. Fix securely, with Closely butt joints, leaving no gaps. Seal joints at junctions/ends of lengths with adhesive tape.

125 FIXING INSULATION TO GUTTER
Fixing: Secure and neat. Provide continuity over supports and leave no gaps.
Method: adhesive fixed to faces of rainwater pipe.
Timing: Do not fit insulation until after completion of pipe air-tightness and leakage testing.

P20 UNFRAMED ISOLATED TRIMS/SKIRTINGS/SUNDRY ITEMS

To be read with Preliminaries/General conditions.

151 NEW SOFTWOOD SKIRTINGS.
Quality of timber and fixing: To BS 1186:Part 3.
Species: Softwood
Class: Class J30 to BS EN 942, and to CA's approval of control sample as clause 152.
Moisture content at time of fixing: 8 to 12%
Profile: To match existing. Approx 25x125mm finished size.
Fixing:
Countersunk, plugged, screwed to plastered blockwork at 600mm centres maximum.
Adhesive fixed to insulated plasterboard lining.
No joints between corners. Corner joints mitre cut.
Finish: Painted as M60/150.

152 CONTROL SAMPLES: After finalisation of all details, prepare and/or supply one of each of the following, as part of the quantity required for the project and obtain approval of appearance before proceeding with the purchase of materials and manufacture of the remaining quantity:
- length of uncoated skirting.

155 NEW HARDWOOD WINDOW TRIM
Drawing reference: 6822-AA9-01
Substrate: Existing hardwood timber frames.
Trim:
Quality of timber: Generally to BS EN 942. (exposed surfaces):
-Species: UTILE.
-Grading: In accordance with Table D.1 of BS EN 942
-Appearance class: J5. Knots on arrises: not permitted where exposed to view.
Not permitted: Reaction wood, splits, biological attack, wane. Loose or unsound knots: only permitted on concealed faces.
Finish: Suitable for translucent coating as Section M60.
-Profile: As shown, Dimensions to be verified on site before manufacture.
-Moisture content at time of fixing: 15%.
Preservative Treatment:
Standard: To NBS section Z12 and Wood Protection Association Commodity
Specification: as section Z12
Type: as section Z12/160.
Method of fixing: Screw fixed at 500mm centres maximum using stainless steel screws.
Other requirements:
Coated finish as section M60/152 or 161

510 INSTALLATION GENERALLY:
Joinery workmanship to be as section Z10 unless specified otherwise.
Methods of fixing and fastenings to be as section Z20 unless specified otherwise.
Straight runs to be formed in single lengths wherever possible.
All joints at angles to be mitred unless specified otherwise.
Moisture content of timber and wood based boards to be maintained during storage and installation within the range specified for the component.

Q20 Granular sub-bases to pavings

To be read with Preliminaries/ General conditions.

110 THICKNESSES OF SUB-BASE/SUBGRADE IMPROVEMENT LAYERS
Thicknesses: See sections:
Q24 Interlocking pavings.

130 HERBICIDES
Herbicide: To approval.
Application: To subgrade of interlocking paving.

140 EXCAVATION OF SUBGRADES
Final excavation to form subformation level: Carry out immediately before compaction of subgrade.
Soft spots and voids: Give notice.
Wet conditions: Do not excavate or compact when the subgrade may be damaged or destabilized.

145 PREPARATION/ COMPACTION OF SUBGRADES
Timing: Immediately before placing sub-base.
Compaction: Thoroughly, by roller or other suitable means, adequate to resist subsidence or deformation of the subgrade during construction and of the completed roads/ pavings when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

150 SUBGRADES FOR VEHICULAR AREAS
Preparation and treatment: To Highways Agency 'Specification for highway works', clauses 616 and 617.

210 HIGHWAYS AGENCY TYPE 1 GRANULAR MATERIAL
Material: Highways Agency 'Specification for highway works', clause 803 (Type 1) or approved equivalent.
Testing (if required): As clause 803.5.

220 FROST SUSCEPTIBLE GRANULAR MATERIAL
Definition: To Highways Agency 'Specification for highway works' clause 801.17.
Limitations: Do not use within 450 mm of the final surface of the paving.
Testing: Test materials used if required and supply certificates.

225 SULFATE CONTENT
Slag and other granular materials placed within 500 mm of cement-bound materials, concrete pavements, structures or products: To Highways Agency 'Specification for highway works' clause 801.2.

230 PLACING GRANULAR MATERIAL GENERALLY
Preparation: Loose soil, rubbish and standing water removed.
Structures, membranes and buried services: Ensure stability and avoid damage.

240 LAYING GRANULAR SUB-BASES FOR VEHICULAR AREAS
General: Spread and levelled in layers. As soon as possible thereafter compact each layer.
Standard: Highways Agency 'Specification for highway works' clause 801.3-801.15.
At drainage fittings, inspection covers, perimeters and where local excavation and backfilling has taken place: Take particular care to compact fully.

310 ACCURACY

Permissible deviation (maximum) from required levels, falls and cambers:

	Roads Parking areas	Footways Recreation areas
Subgrade	+ 20 mm - 30 mm	± 20 mm
Sub-base	+/-20mm .	+/-12mm .

320 BLINDING

Locations: Surfaces to receive sand bedded interlocking brick or block paving to sections Q24.
Material: Sand, fine gravel, PFA or other approved.
Finish: Close, smooth, compacted surface.

330 COLD WEATHER WORKING

Frozen materials: Do not use.
Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.

340 PROTECTION

Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.
Subgrades and sub-bases: Prevent damage from construction traffic, construction operations and inclement weather.

Q24 Interlocking brick/ block roads/ pavings

To be read with Preliminaries/ General conditions

TYPES OF PAVING

110 CONVENTIONAL CONCRETE BLOCK PAVING TO DRIVE AREA
Drawing reference(s): 6822-AA8-02
Granular sub-base: Q20/210.
-Thickness: 100mm – 150mm.
Geotextile:
- Manufactuer: Terram Limited Tel: 01495-757722
- Product reference: Non woven Geotextile membrane.
(not required)
Laying course:
-Material: In accordance with BS 7533-3.
Category: IV
-Method of screeding, in accordance with BS 7533-3: Pre-compacted.
-Nominal thickness after compaction: 25-40mm.
Blocks: To BS EN 1338:
-Manufacturer: LAKELAND PAVERS. Penrith, Cumbria. Tel: 017684-83890
Product reference: DERWENTSTONE. **(Provisional)**
-Sizes: 105x140x50mm. **(Provisional)**
-Special blocks: 20mm thick blocks, disk cut from standard blocks.
-Colour/ Finish: CHARCOAL **(Provisional)**
-Recycled content: None.
Jointing:
-Material: In accordance with BS 7533-3.
-Joint width: 2-5 mm.
Sealer/ Stabilizer:: Joints treated with an approved joint stabiliser.
Setting out:
-Bond: stretcher.
-Features:
Mortar bedded margins as clause 385
Mortar bedded blocks over garage floor slab as clause 386

EXECUTION

200 EXECUTION GENERALLY - CONCRETE BLOCK AND CLAY PAVER PAVING
Standard: In accordance with BS 7533-3.

211 COLOUR BANDING
General: Unless premixed by manufacturer, select blocks from at least 3 separate packs in rotation, to avoid colour banding.

220 SAMPLES
General: Before ordering, submit samples of a standard block that is representative of colour and appearance.

230 CONTROL SAMPLE
Type: Mortar bedded blocks over garage floor slab.
General: Carry out sample area which is part of the finished work:
-Location: Contractor's discretion..
-Size (minimum): 600mm length.
-Features to be included: (not applicable)
Give notice: When ready for inspection.
Timing: Obtain approval of appearance before proceeding.

240 ADVERSE WEATHER
General: Do not use frozen materials or lay bedding on frozen or frost covered sub-bases.

385 MORTAR BEDDED MARGINS
Foundation:
-Size: as shown on drawings.
-Concrete: As section E10/110.
Bedding:
-Thickness: 10 mm minimum to 40 mm maximum.
-Mortar: As section Z21 1:3-4 cement:sand
Laying: Bed units on foundation, and secure with continuous mortar haunching.
-Keep exposed faces clean and free from mortar.
Jointing: 1:3-4 cement:sand with colouring pigment, as clause 420. Colour to be advised.

385 MORTAR BEDDED BLOCKS OVER GARAGE RC FLOOR SLAB
Foundation: Existing RC slab
-Size: as shown on drawings.
Blocks:
As clause 110, disk cut to 20mm thickness
Bedding:
-Thickness: Varies. Refer to drawing. .
-Mortar: As section Z21 using an approved epoxy resin polymeric mortar
Laying:
Bed units on foundation and secure with continuous mortar bed.
-Keep exposed faces clean and free from mortar.
Jointing:
As clause 420 using an approved epoxy resin polymeric mortar with colouring pigment, colour to be advised.

420 TOOLED JOINTS IN MORTAR BEDDED UNITS
Jointing: Butter ends of units with bedding mortar as work proceeds, to fill joints.
-Joint width: 10mm.
-Finish: Tool to a neat flush profile.

450 LAYING GEOTEXTILE SHEET FOR CONVENTIONAL PAVING
Location: Immediately below laying course.
Jointing: in accordance with manufacturer;s instructions for ground stabilization.
Laying: Fit neatly at edge restraints and other features that interrupt the sand laying course, e.g. drainage fittings, channels, manholes and kerbs.
-Edge detail: Turn sheet up to form an upstand against features.
Height (minimum): Thickness of sand laying course.

452 PREPARED EXISTING AND NEW BOUND BASES (ROADBASES)
Condition before placing laying course: Sound, clean, free from rutting or major cracking and cleared of sharp stones, projections or debris.

485 LAYING BLOCKS/ PAVERS/ SETTS
Setting out: Start from an edge restraint.
Cutting: Cleanly, accurately and vertically, without spalling. Do not mark or damage visible surfaces. Cut edges: Turn inwards where possible; do not position against edge restraints or other features.
In situ mortar or concrete infill: at abutment with existing drainage channel
Compaction: Vibrate to produce thoroughly interlocked paving of even overall appearance with regular joints and accurate to line, level and profile. Do not mark or damage paving units, kerbs and adjacent work.
-Concrete blocks and clay pavers: In accordance with BS 7533-3, Annex F, to site category required for laying course material.

COMPLETION

600 SEALER/ STABILIZER FOR NEW BLOCKS
Surface preparation: In accordance with manufacturer's instructions.
Sealer/ Stabilizer:
-Manufacturer: Marshalls.
Product reference: Keyband joint stabilizer.
-Application: To dry paving.
Method: In accordance with manufacturer's instructions. .
Number of coats: as above.
Coverage: as above

615 COMPLETION OF PAVING
Final compaction of the surface course: In accordance with BS 7533-3.
Vacuum cleaning machines: Not allowed.

R10 Rainwater drainage systems

To be read with Preliminaries/ General conditions.

100 SCOPE OF WORK IN THIS SECTION

A Supply and installation of new aluminium box gutter to canopy roof and connection to existing PVC-U rainwater pipe assembly.

B Supply and installation of new stainless steel grating and support frame to Terrace drainage channel.

C Supply and installation of new special aluminium rainwater head and rainwater pipe assemblies to high level roof outlets.

D Works to existing PVC-U rainwater pipework.

PRODUCTS

311 ALUMINIUM BOX GUTTER TO CANOPY ROOF
Drawing references: 6822-AA2-05
Standard: Heavy grade gutter system to BS 2997.
Manufacturer:
Guttercrest Limited, Victoria Road, Oswestry, Shropshire SY11 2HX Tel: 01691-663300
-Product reference: Standard box gutter with special aluminium rainwater head.
Profile: Rectangular gutter. Rainwater head as shown on drawings.
Type/ Thickness: 2mm thickness.
Nominal size: Gutter 150mm wide x 100mm high.
Jointing:
Manufacturer's standard internal welded butt strap, with silicone sealant and butyl seals and riveted. Site applied butyl seals, sealant and riveted, method and materials recommended by the manufacturer.
Finish:
Gutter: Mill finish
Rainwater Head: Polyester powder coated to BS 6497
Colour: BLACK (RAL 9005)
Brackets: not required
Fixings:
Gutter screw fixed to fascia/roof construction using stainless steel screws to suit manufacturer's screw holes.
Size: Screw size recommended by gutter manufacturer.
Accessories:
Continuous plastic leaf guard to gutter, Netlon ref STR7005 plastic mesh, site cut to length/width and twice tied to each gutter bracing using PVC cable ties, colour black.

360 SEALANT FOR GUTTERS
Type: Arbosil 1090 Grey. Butyl tape: Arboseal GZ 12x3mm. Or otherwise as recommended..

380 TERRACE DRAINAGE CHANNEL GRATING AND SUPPORT.
Drawing references: 6822-AA3-01, 02, 03
Manufacturer:
Blucher UK Limited, Tadcaster LS24 9SG Tel: 01937-838000
Project reference: Refer to Blucher **PRELIMINARY** quotation dated 14th April 2009, Project No. 9222.
Fabrication:
All grating components to be manufactured to project specific requirements. Allow for fabrication and delivery within the contract Master Programme.
Product references:
Grating:
Type: WEDGE GRATING
Material: AISI 304/EN 1.4301 austentitic stainless steel.
Size: 194mm (width) x 25mm (height) Length 999mm Standard length (subject to fabrication details)
Load class: pedestrian.
Installation: loose laid in support frame.
Grating support:
Type: Bespoke fabrication.
Material: AISI 304/EN 1.4301 austentitic stainless steel.
Size: as shown on drawings.
Additional requirements:
Selected gratings modified to allow irrigation pipework risers from drainage channel. Refer to drawings. Details of modifications to be finalised prior to grating fabrication.
Installation of support frame:
Adhesive fixed to Kemper membrane Installation to be carried out by the Kemperol sub-contractor. Refer to clause J31/925

390 ALUMINIUM RAINWATER HEADS AND DOWNPIPE
Drawing references: 6822-AA2-03
Manufacturer: Alumasc Exterior Building Products Ltd Tel: 01744-648400
Contact: Ivan Colvil (Technical Manager; Rainwater & Drainage)
Product references:
Rainwater Head: **Non standard dimensions and shape, with internal lugs for leafguard mesh**.
Material: aluminium
Thickness: 3mm
Finish: Polyester powder coated to BS 6496. Colour: Graphite grey
Rainwater pipe:
RW33 pipe with socket: 72 x 72mm Special length. Shoe RW33/SH
Finish: Polyester powder coated to BS 6496. Colour: Graphite grey
Pipe clips with extension base to suit site dimensions. Screws, fittings, etc as required.
Installation: In accordance with manufacturer's instructions.
Fabrication:
Rainwater head manufactured to project specific requirements. Allow for fabrication and delivery within the contract Master Programme.
Accessories:
Plastic leaf guard, as clause 311. Cut and tied in place using plastic cable ties.

425 EXISTING PVC-U PIPEWORK – SEALED
Generally:
Carefully dismantle existing RWP, branch pipe to Terrace rainwater outlet and rainwater head. Store and protect during other works. Re-instate assembly on installation of new aluminium gutter. Adjust length of pipe to suit new aluminium rainwater head. Supply and install new pipe seals and other fittings as necessary to ensure the assembly is watertight and secure on completion.
Standard: To BS EN 1329-1 or BS 4514, Kitemark certified.
Manufacturer: Polypipe. Verify on dismantling assembly.
-Product reference: unknown. Verify on dismantling assembly.
Recycled content: unknown.
Nominal size: 110mm diameter x 3.2mm to BS1329-1. Branch 68mm diameter pipework.

Colour: Black.
Brackets: standard.
-Fixings: Renew all bracket fixings using stainless steel or brass screws in plastic plugs.
Size: to match existing
Accessories: as may required by outlet to rainwater head.

EXECUTION

500 GUTTER INSTALLATION GENERALLY
Installation shall only be carried out by installers of proven experience of the product. Refer to Guttercrest Limited for experienced gutter sub-contractors. .

600 PREPARATION
Work to be completed before commencing work specified in this section:
-Below ground drainage. Alternatively, make temporary arrangements for dispersal of rainwater without damage or disfigurement of the building fabric and surroundings.
-Painting of surfaces which will be concealed or inaccessible.

605 INSTALLATION GENERALLY
Install in accordance with manufacturer's instructions.
Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.
Plastics and galvanized steel pipes: Do not bend.
Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
Protection:
-Fit purpose made temporary caps to prevent ingress of debris.
-Fit access covers, cleaning eyes and blanking plates as the work proceeds.

615 SETTING OUT EAVES GUTTERS - TO FALLS
Installation: Aluminium gutter clause 311, install to fall as permitted by existing roof construction..
Setting out: To true line and even gradient to prevent ponding or backfall. Position high points of gutters as close as practical to the roof and low points not more than 50 mm below the roof.
Outlets: Align with connections to below ground drainage.

635 FIXING EXISTING PVC-U PIPEWORK
Pipework: Fix securely, plumb and/ or true to line.
Branches and low gradient sections: Fix with uniform and adequate falls to drain efficiently.
Externally socketed pipes and fittings: Fix with sockets facing upstream.
Additional supports: Provide as necessary to support junctions and changes in direction.
Vertical pipes:
-Provide a loadbearing support at least at every storey level.
-Tighten fixings as work proceeds so that every storey is self supporting.
-Wedge joints in unsealed metal pipes to prevent rattling.
Wall and floor penetrations: Isolate pipework from structure.
-Pipe sleeves: As section P31.
-Masking plates: Fix at penetrations if visible in the finished work.
Expansion joint pipe sockets: Fix rigidly to buildings. Elsewhere, provide brackets and fixings that allow pipes to slide.

640 FIXING VERTICAL PIPEWORK
Bracket fixings: refer to clause 635
Distance between bracket fixing centres (maximum): refer to clause 635.

650 JOINTING PIPEWORK AND GUTTERS
General: Joint with materials and fittings that will make effective and durable connections.
Jointing differing pipework and gutter systems: Use adaptors intended for the purpose.
Cut ends of pipes and gutters: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.
Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.
Junctions: Form with fittings intended for the purpose.
Jointing material: Strike off flush. Do not allow it to project into bore of pipes and fittings.
Surplus flux, solvent jointing materials and cement: Remove.

660 JOINTING EXTERNAL PIPEWORK
Jointing: in accordance with manufacturer's instructions.

700 ACCESS FOR TESTING AND MAINTENANCE
Access fittings and rodding eyes: Maintain existing PVC-U pipework assembly.

COMPLETION

900 TESTING GENERALLY
Dates for testing: Give notice.
-Period of notice (minimum): 7 days.
Preparation:
-Pipework: Complete, securely fixed, free from defects, obstruction and debris before testing.
Testing:
-Supply clean water, assistance and apparatus.
-Do not use smoke to trace leaks.
Records: Submit a record of tests.

910 GUTTER TEST
Preparation: Temporarily block all outlets.
Testing: Fill gutters to overflow level and after 5 minutes closely inspect for leakage.

915 MAINTENANCE INSTRUCTIONS
General: At completion, submit printed instructions recommending procedures for maintenance of the rainwater installation, including full details of recommended inspection, cleaning and repair procedures.

920 IMMEDIATELY BEFORE HANDOVER
Construction rubbish, debris, swarf, temporary caps and fine dust which may enter the rainwater system: Remove. Do not sweep or flush into the rainwater system.
Access covers, rodding eyes, outlet gratings and the like: Secure complete with fixings.

R11 Above ground (foul) drainage systems

To be read with Preliminaries/ General conditions.

100 SCOPE OF WORK IN THIS SECTION

NOTE: THE EXISTING DISPOSAL SYSTEM IS A COMBINED SURFACE WATER AND FOUL WATER SYSTEM.

A Manufacture, fabrication, supply and installation of new stainless steel insulated rainwater collection pipe and cover plate to main entrance glass roof.

B Supply and modifications to existing PVC-U internal rainwater pipe for, and connection to the new stainless steel pipe at item A above.

Associated works to Lobby cupboard timber lining and fittings are described at Section N10. Associated application of liquid applied waterproofing membrane is described at section J31/12.

105 The specialist sub-contractor that originally installed the glazing and roof gutter was:

Eagle Structural Glazing and Weathersealing Limited
Unit 7, Imperial Park
Rawreth Lane
Rayleigh
Essex SS6 9RS
Tel: 01268-782307
Contact: Mr T de Witt.

This company has been consulted on the proposed modifications and is available for carrying out the work described in this Section. Refer to Preliminaries.

GENERAL

125 SPECIAL PROTECTION
For works described in this section, supply, install and maintain special protection to the following existing elements of construction within the building:

Wall and ceiling finishes.
Ceramic and/or quarry tile flooring
Timber floor finishes.
Carpeting.
Staircase metalwork and fittings
Staircase handrails.
Timber doorsets and associated panelling, linings, ironmongery and fittings.
Internal structural glazing and glazed balustrades and associated fittings.
Non-structural glazing.
Sanitary fittings and associated pipework, water cistern and accessories of all kinds.
Electrical installation and fittings.

The special protection shall include a temporary **dust proof screens** constructed between the interior working area and other parts of the interior of the building. Refer to drawings.

The Contractor's protection shall prevent damage to, and contamination by dust and debris to the above, during all stages of the work, in particular when cutting out and re-forming brickwork and

blockwork, drilling and cutting of metalwork, installing new pipework and fixings and applying sealant.

The protection shall be maintained until completion of the work has been certified or otherwise as approved by the Architects.

Prior to general Commencement, the Contractor shall provide the Architect with a **Method Statement and/or description** of his proposed special protection, for review and comment by the Architect. The Contractor shall amend his proposals in response to any comments by the Architects and no work shall commence until all such comments have been addressed and incorporated in the Contractor's proposed special protection measures.

126 HALL LOBBY CUPBOARD
For the purpose of installing new stainless steel rainwater pipework and modifying existing PVC-U pipework within the duct at the rear of the Hall Lobby cupboard, the existing timber lining is to be temporarily removed, then reinstated. Refer to Section N10.

PRODUCTS

150 MODIFICATIONS TO PVC-U PIPEWORK (DUCT AT REAR OF LOBBY CUPBOARD)
Standard: To BS EN 1329-1, Kitemark certified.
Weather resistance, connectors to WC pans, opening dimensions of access fittings, design of swept fittings, stand off dimensions of pipe and fitting brackets and requirements for adaptors and plugs: To BS 4514.
Manufacturer: Marley Extrusions
Product reference: Soil components to BS 4514 and as shown on drawings.
Nominal size: 110mm diameter
Colour: Grey
Brackets: Barrel pipe clip and back plate
Fixings: screw fixed to blockwork
Size: to suit fittings.
Accessories: none.

155 FLEXIBLE CONNECTOR:
Manufacturer: McAlpine Plumbing Products Ltd
Product reference: WC-F26P with plain end.
Nominal size: 110mm diameter
Jointing: Ring seal

160 STAINLESS STEEL RAINWATER PIPE AND COVER PLATE TO GLASS ROOF GUTTER
Drawing references: 6822-AA5-01, 02, 03, 04, 05
Existing loose laid, perforated metal leaf guards: Remove, set aside and protect, reinstate on completion of the works in this section.
New Rainwater pipe:
Fabrication: Manufacture in two parts for ease of site installation.
Material: stainless steel as clause 200.
Thickness: not less than 2mm.
Finish: Generally mill finish, with brushed satin grain to surfaces of support angle visible in the completed assembly.
Jointing: between units: Push fit with elastomeric joint rings to BS 7874 and BS EN 681-1. and suitable sealant system.
Manufacture: fully welded workshop pre-fabrication to provide a watertight enclosure.
Threaded openings: To suit outlet connector and thread sealant.
Product reference: Bespoke fabrication.
Nominal sizes: Refer to drawing. Verify all dimensions by site survey before manufacture.
Brackets: refer to drawing
Fixings: Stainless steel screws. Refer to drawing
Size:
New Internal Cover Plate:
Fabrication: Cover plate to thermal insulation, with retrun flanges end plate one end of rainwater pipe.
Material: stainless steel as clause 200
Thickness: not less than 2mm
Manufacture: fully welded fabrication in one unit. Welds ground smooth for specified finish.
Product reference: Bespoke fabrication.
Nominal sizes: refer to drawing.
Finish: Visible surfaces, 240 grit, brush satin grain finished with grain running longitudinally.
to sample before manufacture. as clause 250.
Fixings: screw fixed to support angle of refer to drawing
New Rainwater Outlet connectors: 2 No. required
Manufacture: machined from solid stainless steel bar.
Material: stainless steel as clause 200
Screw thread: TBD
Sealant bedding and thread seal: Suitable one part silicone or polysuphide sealant.
Accessories:
Thermal insulation: as Section P10/110
Liquid applied waterproofing as section J31/12
Re-instate leaf guards, as above.

MATERIALS

200 STAINLESS STEEL SHEET
Standards: To the relevant parts of BS EN 10029, BS EN 10048, BS EN 10051, BS EN 10095, BS EN 10258, BS EN 10259 and BS EN 10088-2, austenitic, grade 1.4301 (304) only .

210 MECHANICAL FIXINGS - MECHANICAL REQUIREMENTS
Stainless steel: To BS EN ISO 3506 grade A4 only.

215 ADHESIVES
General: Shall not be degradable by moisture, saline, or water vapour. Include temperature range of -20 to +120 ^{o}C

220 FIXINGS AND FASTENERS
Dimensions: Not less than recommended by their manufacturers.
Adjustment capability: Sufficient in three dimensions to accommodate primary support.

225 GASKETS
Material:
- Noncellular rubber to BS 4255-1.
- Cellular rubber to ASTM-C509.

Durability: Resistant to oxidation, ozone and UV degradation.

230 GENERAL SEALANTS
Selection: In accordance with BS 6213 from:
- Silicone to BS 5889.
- One part polysulfide to BS 5215.
- Two part polysulfide to BS 4254.
- One or two part polyurethane.

Reaction to contact products and finishes: Stable and compatible.

231 STRUCTURAL GLAZING SEALANTS
Sealant: One or two part neutral curing structural silicone sealant, suitable for site application.
Manufacturer and Product reference: Discretionary. To be selected by the glazing specialist undertaking the works.
Colour: Black.
Application: As section Z22.

240 FIXING INSULATION TO GUTTER
Fixing: Secure and neat. Provide continuity at supports and leave no gaps.
Method: adhesive fixed to faces of rainwater pipe.
Timing: Do not fit insulation until completion of pipe airtightness or leakage testing.

250 SAMPLES
Before commencing manufacture of the rainwater pipe and cover plate, supply a sample of the following for approval of appearance by the Architect:
Brush satin finish to cover plate.
Weld to be used for stainless steel sheet.
Obtain written approval before proceeding.

FABRICATION AND INSTALLATION

300 WORKMANSHIP GENERALLY
Fabrication: Machine cut, weld, drill assembly components in the workshop.
Installation: Submit proposals before cutting and drilling into structure in positions other than shown on detailed design drawings.

310 SUITABILITY OF SUPPORTING STRUCTURE
Pre-installation survey: Submit report if required accuracy or security of structural glazing cannot be achieved.

320 PROTECTION AND FINAL CLEANING:
Prevent staining, scratching and other disfigurement during installation and by following trades.
At Practical Completion or when otherwise agreed with the CA, remove any protective coverings and thoroughly clean glass and fixings/supports with mild detergent solutions approved by the system manufacturer.

325 STAINLESS STEEL WORKMANSHIP GENERALLY:
Fabricate, weld and fix stainless steel components to provide a secure, free draining and completely watertight installation.
Operatives must be trained in the fabrication and manufacture of stainless steel components. Submit records of their experience to the CA on request.
Measure, mark, cut and form stainless steel prior to assembly wherever possible.
Use scribers discreetly for marking out stainless steel. Do not use other sharp instruments.
Fold material with mechanical or manual presses to give straight, regular and tight bends, leaving panels free from ripples, kinks, buckling and cracks. Use hand tools only for folding details that cannot be pressed.
Fold under or remove any sharp metal edges as work proceeds.
Do not use sealants in joints to attain waterproofing.
Use solder only where specified.
Ensure that finished stainless steel work is fully supported, adequately fixed but also able to accommodate thermal movement without distortion or stress.
Ensure that finished stainless steel work is protected against staining, discolouration and damage by subsequent works.
Panel flatness : The terned stainless steel panels are to be formed on appropriate equipment in order to obtain optimum flatness. Ripples, kinks, wavy edges etc. are not acceptable.
Works sequencing : Must allow for forming upstands and downstands, upon setting the position of the elements and subsequent site measurements. Cutting and bending already fixed components will not be permitted.

326 STAINLESS STEEL WELDING AND FABRICATION
Preparation: Clean surface of material as required. Clamp material to be welded tightly over entire length.
Joint type: To suit components and to form watertight fabrication.
Welding process: Tig. As section Z11
Post welding finishing: Remove surplus weld metal by mechanical finishing: hammering, brushing, grinding, polishing and buffing to an approved standard for visual appearance and in readiness for the specified surface finish.

326 IN SITU WELDING is not permitted.

327 STAINLESS STEEL CONTROL SAMPLE(S):
Before commencing general fabrication, supply the following samples:
Continuous welding
Brush satin grain finish, 100x100mm sample on the specified material.
Obtain approval of appearance from the CA before proceeding:

328 STAINLESS STEEL FIXINGS:
All fixings to be made through pre-formed holes.

EXECUTION

400 INSTALLATION GENERALLY
Standard: To BS EN 12056-5.
Components: From the same manufacturer for each type of pipework.
Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.
Plastics and galvanized steel pipes: Do not bend.
Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
Concealed or inaccessible surfaces: Decorate before starting work specified in this section.
Protection:
-Purpose made temporary caps: Fit to prevent ingress of debris.
-Access covers, cleaning eyes and blanking plates: Fit as the work proceeds.

410 PVC-U PIPE ROUTES
General: The shortest practical, with as few bends as possible.
-Bends in wet portion of soil stacks: Not permitted.
-Routes not shown on drawings: Submit proposals before commencing work.

415 FIXING PVC-U PIPEWORK
Pipework: Fix securely plumb and/ or true to line. Fix discharge stack pipes at or close below socket collar or coupling.
Branches and low gradient sections: Fix with uniform and adequate falls to drain efficiently.
Externally socketed pipes and fittings: Fix with sockets facing upstream.
Additional supports: Provide as necessary to support junctions and changes in direction.
Vertical pipes: Provide a load bearing support not less than every storey level. Tighten fixings as work proceeds so that every storey is self supporting.
Wall and floor penetrations: Isolate pipework from structure, e.g. with pipe sleeves.
-Masking plates: Fix at penetrations if visible in the finished work.
Expansion joint sockets: Fix rigidly to the building.
Fixings: Allow the pipe to slide.

420 FIXING VERTICAL PVC-U PIPEWORK GENERALLY
Bracket fixings: as described.
Distance between bracket fixing centres (maximum): as manufacturer's instructions.

425 JOINTING PVC-U PIPEWORK - GENERALLY
General: Joint with materials, fittings and techniques that will make effective and durable connections.
Jointing differing pipework systems: With adaptors intended for the purpose.
Cut ends of pipes: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.
Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.
Junctions: Form with fittings intended for the purpose.
Jointing material: Do not allow it to project into bore of pipes and fittings.
Surplus flux, solvent jointing materials and cement: Remove from joints.

430 JOINTING PIPEWORK - PVC-U
Jointing: Ring seal

440 ACCESS FOR TESTING AND MAINTENANCE
General: Install pipework with adequate clearance to permit testing, cleaning and maintenance, including painting where necessary.
Access fittings and rodding eyes: Position to avoid obstruction.

COMPLETION

500 TESTING GENERALLY
Dates for testing: Give notice.
-Period of notice (minimum): 7days.
Preparation:
-Pipework: Securely fixed and free from obstruction and debris.
-Traps: Filled with clean water.
Testing:
-Supply clean water, assistance and apparatus.
-Do not use smoke to trace leaks.
Records: Submit a record of tests.

510 PIPEWORK AIRTIGHTNESS TEST
Preparation:
-Open ends of pipework: Temporarily seal using plugs.
-Test apparatus: Connect a 'U' tube water gauge and air pump to pipework via a plug or through trap of an appliance.
Testing: Pump air into pipework until gauge registers 38 mm.
Required performance: Pressure of 38 mm is to be maintained without loss for at least three minutes.

520 SIPHONAGE AND BACK PRESSURE TESTS
Method:
-WC pans: Test by flushing.
-Other appliances: Test by filling to overflow level, then removing the plug.
Number of tests: Test each appliance three times. Recharge traps before each test.
Self siphonage testing: Test each appliance individually.
Induced siphonage and back pressure testing: Test by discharging the following numbers of appliances simultaneously on each stack:
-WCs: one number.

530 PRE-HANDOVER CHECKS
Temporary caps: Remove.
Permanent blanking caps, access covers, rodding eyes, floor gratings and the like: Secure complete with fixings.

S14 Irrigation system

To be read with Preliminaries/ General conditions.

100 SCOPE OF WORK IN THIS SECTION
Work in this section is to be undertaken only by a plumber or specialist irrigation contractor with the qualifications and suitable experience and conversant with the materials and components of the system.

The existing terrace planter irrigation system:
Take out pipework supplies from planters and disconnect system from water supply (Terrace level).
Disconnect/un-couple distribution pipework, as permitted by the component parts of the system, but to the minimum extent necessary.

Inspect all components of the system for condition and suitability for re-installation. Submit report including condition of components considered to be defective and recommendations for any renewals and replacement.
Prepare a written record of the locations/arrangement of the component parts. Submit.

Carefully lift component parts clear of the terrace and temporarily locate at an approved location in the front garden. Lay components on, and overlay with polythene sheeting to provide protection during the course of other works.

The mains water supply pipework (copper) is located surface fixed to the face of the south wall and passing through this wall to the terrace side, terminating in a stop valve. Refer to drawing 6822-AA3-03. Note the requirement to temporarily remove this pipework, lagging and stop-valve to facilitate terrace works, then reinstate the supply. Instructions will be issued for renewing materials and fittings, if required.

On completion of terrace waterproofing and associated works, reinstate the system by installing it within the new drainage channel, utilising openings in channel gratings for riser branch pipes to planters. Connect the irrigation system to the water supply, test and commission. Submit report.

The following clauses identify the general requirements for the work.

GENERAL

110 IRRIGATION SYSTEM (EXISTING)
General description of the existing:

Source: Mains.
Meters: None installed.
Backflow prevention device: As existing.
Storage: none.
Pumps: None installed.
Duty assist/ Standby pumps: None installed .
Supply pipeline: Copper.
-Insulation: foamed plastic
Draw-off taps/ valves: copper.
Distribution pipelines: thermoplastic
Insualtion: none
Filters: None installed (subject to inspection).
Outlets: dripper pipes to planters (subject to inspection).
Power supply: local.
-Metering: Not applicable.
-RCD protection: not applicable.

Distribution: cabling.
-Accessories: (subject to inspection).
Controls: (subject to inspection)

PERFORMANCE

200 DESIGN AND DETAILING
None required. Existing installation is to be temporarily removed, then re-installed.

PRODUCTS

300 GENERALLY
All existing components are to be re-installed.
Regardless of the condition of existing components, allow for renewing gaskets, washers and the like, as necessary to ensure that reinstalled pipework is watertight and functions properly.

362 COPPER PIPELINE FOR GENERAL USE
General Note:
Re-install existing pipework and fittings. If the condition of existing pipework and/or fittings does not allow re-installation, instructions will be issued to renew as follows:

Standard: To BS EN 1057, Kitemark certified.
Manufacturer: optional.
-Product reference: optional.
Temper: Half hard R250.
Wall thickness (nominal):
-OD 6, 8, 10 and 12 mm: 0.6 mm.
-OD 15 mm: 0.7 mm.
-OD 22 and 28 mm: 0.9 mm.
-OD 35 and 42 mm: 1.2 mm.
Jointing generally: Integral lead free solder ring capillary fittings to BS EN 1254-1, Kitemark certified.
Connections to equipment: Select from:
-Compression fittings: To BS EN 1254-2, Kitemark certified.
-Fittings with threaded ends: To BS EN 1254-4.
Supports: in accordance with manufacturer's recommendations.

372 THERMOPLASTICS PIPELINE FOR GENERAL DISTRIBUTION
General Note:
Re-install existing pipework and fittings. If the condition of existing pipework and/or fittings does not allow re-installation, instructions will be issued to renew as follows:

Standard: To BS 7291.
Material: To match existing.
Jointing: compression fittings to match existing.
Supports: none required.

378 INSULATION TO EXTERNAL SUPPLY PIPELINES
General Note:
Re-install existing insulation. If the condition of existing insulation does not allow re-installation, instructions will be issued to renew as follows:

Type: Preformed flexible closed cell or mineral fibre split tube.
-Thickness: To match existing.
Recycled content: not applicable

380 GENERAL PIPELINE FITTINGS
General Note:

Re-install existing fittings. If the condition of existing fittings does not allow re-installation, instructions will be issued to renew as follows:

Valves, stop valves, draw-off taps, pressure reducing valves, solenoid valves, regulators, filters, and the like are to match existing and be re-installed in accordance with manufacturer's instructions and clause 610.

435 TAPE LINES/ DRIPPER SYSTEMS

General Note:

Re-install existing fittings to planters. If the condition of existing fittings does not allow re-installation, instructions will be issued to renew as follows:

Manufacturer: To match existing.
-Product reference: To match existing.
Operating pressure: 70-210 kPa.
Discharge: as existing.
Emitters: as existing.
Accessories: as existing.

440 SYSTEM DEVICES

General Note:

Components, such as controllers, water meters, electronic timers, etc are to be reinstated. If such equipment fails to function properly on commissioning after reinstallation, instructions will be issued to re-new (to match existing).

EXECUTION

610 INSTALLATION GENERALLY

Standard: In accordance with the relevant parts of BS 6700, BS 7562-5 and BS EN 2484-4, water supply regulations and the requirements of the water supply undertaker.
Generally:
-Fixing: Secure and neat in locations and depths suitable for the purpose.
-Outlets and valves: Adequately support to prevent pipes being strained during peration.
-Open ends of pipes: Temporarily seal with purpose made plugs or blanking caps to prevent ingress of dirt, insects or rodents during installation.
Equipment, components and accessories:
-Store in original packaging in dry conditions.
-Where appropriate, securely fix parallel or perpendicular to the enclosing structure.
Corrosion resistance: In locations where moisture is present or may occur, provide corrosion resistant fittings/ fixings and avoid contact between dissimilar metals by use of suitable washers, gaskets, etc.
Performance: Free from leaks and the audible effects of expansion, vibration and water hammer.
Access: Allow adequate space for inspection, servicing and maintenance.

612 PIPELINE INSTALLATION

Appearance: Install pipes straight, and parallel or perpendicular to walls, floors, ceilings, and other building elements.
Joints, bends and offsets: Minimize.
Access: Locate runs to facilitate installation of equipment, accessories and insulation and allow access for maintenance.
Electrical equipment: Install pipelines 150 mm (minimum) clear of electrical equipment. Do not run pipelines through electrical enclosures or above distribution boards, controllers or outlets.
Insulation: Allow space around pipelines to fit insulation without compression.
Drains and vents: Fix pipelines to falls. Fit draining taps at low points and vents at high points.
Thermal expansion and contraction: Allow for thermal movement of pipelines. Isolate from structure. Prevent noise or abrasion of pipelines caused by movement. Sleeve pipelines passing through walls, floors or other building elements.

613 SUPPORTS FOR COPPER PIPELINES
Spacing: Fix securely and true to line at the following maximum centres:
-15 and 22 mm pipe OD: 1.2 m horizontal, 1.8 m vertical.
-28 and 35 mm pipe OD: 1.8 m horizontal, 2.4 m vertical.
-42 and 54 mm pipe OD: 2.4 m horizontal, 3.0 m vertical.
Additional supports: Locate within 150 mm of connections, junctions and changes of direction.

615 FITTING INSULATION TO EXTERNAL SUPPLY PIPELINES
Location: Where exposed to air and where less than 750 mm below ground level.
Installation:
-Fixing: Securely and neatly in accordance with manufacturer's recommendations and with the split on 'blind' side of pipeline.
-Over fittings and at supports: Continuous leaving no gaps.
-Timing: Do not fit insulation until completion of testing.

616 JOINTS IN COPPER PIPELINES
Preparation: Cut pipes square. Remove burrs.
Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
Bends: Do not use formed bends on exposed pipework, except for small offsets. Form changes of direction with radius fittings.
Adaptors for connecting dissimilar materials: Purpose designed.
Substrate and plastics pipes and fittings: Do not damage, e.g. by heat when forming soldered joints.
Flux residue: Clean off.

617 JOINTS IN THERMOPLASTICS PIPELINES
Fittings and accessories for joints: Proprietary to match existing.
Preparation: Cut pipes square. Remove burrs.
Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
Compression fittings: Do not over tighten.

620 ELECTRICAL WORK
Standard: To BS 7671.

COMPLETION

910 TESTING
Standard: To BS EN 12484-5.
Notice (minimum): 3 days.
Condition of pipework and equipment prior to testing: Correctly installed, secure and clean.
Pressure testing: Joints, fittings and components must be free from leaks and signs of physical distress when tested for at least 1 hour as follows:
Systems fed directly from the mains: Apply a test pressure equal to 1.5 times the maximum pressure to which the installation or relevant part is designed to be subjected in operation.
Systems fed from storage: Apply a test pressure equal to the pressure produced when the storage cistern is filled to its normal maximum operating level.
Other test procedures: As recommended by the manufacturer and required by the water undertaker.
Test results: Submit.

911 INSPECTION TESTING
Standard: To BS 6700, clause 6.1.12.

912 FLUSHING AND DISINFECTION
Standard: To BS 6700, clause 6.1.10.

920 COMMISSIONING
Equipment: Check and adjust operation of equipment and controls.
Outlets: Check operation of outlets for satisfactory rate of flow.

925 INSPECTION AND TESTING OF ELECTRICAL SYSTEMS
Standard: To BS 7671.
Notice before commencing tests (minimum): 24 hours.
Labels and signs: Fix securely before system is tested.
Switching: Check correct operation of all switching devices over at least one switching cycle.

930 DOCUMENTATION
General Note: Applicable to new components only.

Submit prior to completion:
- Full technical description of each system installed.
- Manufacturers' operating and maintenance instructions for all equipment and controls.
- Manufacturers' guarantees and warranties.
- Operating instructions for the system as a whole giving optimum settings for all controls.
- Record drawings showing the location of circuits, fittings, pipes, apparatus and operating controls.
- Electrical inspection and completion certificates.

Number of copies: one.

940 OPERATING TOOLS
General Note: Applicable to new components only.

Tools: Supply tools for operation, maintenance and cleaning purposes.
Keys: Supply keys for valves, vents and cabinets.

Z10 Purpose made joinery

To be read with Preliminaries/ General conditions.

100 GENERAL SCOPE OF WORKS IN THIS SECTION
Disamantling and re-construction of timber lining and framing to the Hall Lobby Cupboard, and associated joinery work.

To be read in conjunction with performance requirements set out in other sections.

110 FABRICATION
Standard: Generally to BS 1186-2 and BS 1186-3, and as specified section L10-20.
-Sections: Accurate in profile and length, and free from twist and bowing. Formed out of solid or laminated sections to Contractor's detailed design.
-Machined surfaces: Smooth and free from tearing, wooliness, chip bruising and other machining defects.
-Joints: Tight and close fitting.
-Assembled components: Rigid. Free from distortion.
-Screws: Provide pilot holes.
-Screws of 8 gauge (4 mm diameter) or more and screws into hardwood: Provide clearance holes.
-Fixings generally: as existing.
-Adhesives generally: Compatible with wood preservatives applied and end uses of timber.

120 CROSS SECTION DIMENSIONS OF TIMBER
-General: Dimensions shown on Contractor's detailed drawings are to be finished sizes.
-Maximum permitted deviations from finished sizes:
-Softwood sections: To BS EN 1313-1:- Clause 6 for sawn sections.
Clause NA.2 for further processed sections.
-Hardwood sections: To BS EN 1313-2:- Clause 6 for sawn sections.
Clause NA.3 for further processed sections.

130 PRESERVATIVE TREATED WOOD
-Cutting and machining: Completed as far as possible before treatment.
-Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
-Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

140 MOISTURE CONTENT
-Wood and wood based products: Maintained within range specified for the component during manufacture, transportation and site storage.

250 FINISHING
-Surfaces: Smooth, even and suitable to receive specified finishes.
-Arrises: Eased unless otherwise agreed.
-End grain in external components: Sealed with end grain sealer as section M60 and allowed to dry before assembly.

Z11 Purpose made metalwork

To be read with Preliminaries/ General conditions.

100 GENERAL SCOPE OF WORKS IN THIS SECTION
Manufacture, fabrication and installation of purpose made stainless steel rainwater pipework and cover plate to the main entrance glazed roof; Manufacture, fabrication and installation of stainless steel terrace drainage grating; Manufacture and fabrication of aluminium box gutter and rainwater outlet; manufacture and aluminium rainwater head and pipework to high level roofs.

To be read in conjunction with performance requirements set out in other sections.

310 METAL PRODUCTS
-Standards: Generally, as specified in the following clauses.
-Fasteners: Generally, same metal as component, with matching coating and finish.

320 STEEL LONG AND FLAT PRODUCTS
-Hot rolled structural steels (excluding structural hollow sections and tubes): To BS EN 10025-1.
-Fine grain steels, including special steels: To BS EN 10025-3 and -4.
-Improved atmospheric corrosion resistance: To BS EN 10025-5.

330 STEEL PLATE, SHEET AND STRIP
-Plates and wide flats, high yield strength steel: To BS EN 10025-6.

340 HOT ROLLED STEEL PLATE, SHEET AND STRIP
- Flat products, high yield strength for cold forming: To BS EN 10149-1, -2 and -3.
- Low carbon steel sheet and strip for cold forming: To BS EN 10111.
- Narrow strip, formable and general engineering purposes: To BS 1449-1.8 and BS 1449-1.14.

350 COLD ROLLED STEEL PLATE, SHEET AND STRIP
- Steel sections: To BS EN 10162.
- Flat products, high yield strength micro-alloyed steels for cold forming: To BS EN 10268.
- Low carbon steel flat products for cold forming: To BS EN 10130 and BS EN 10131.
- Uncoated mild steel narrow strip for cold forming: To BS EN 10139 and BS EN 10140.
- Narrow strip, general engineering purposes: To BS EN 10132-1, -2, and -3.
- Low carbon steel flat products for vitreous enamelling: To BS EN 10209.

360 STEEL COATED FLAT PRODUCTS
-Hot dip zinc coated low carbon steel sheet and strip for cold forming: To BS EN 10327 and BS EN 10143.
-Hot dip zinc coated structural steel sheet and strip: To BS EN 10143 and BS EN 10326.
-Hot dip zinc-aluminium (za) coated sheet and strip: To BS EN 10326 and 10327.
-Hot dip aluminium-zinc (az) coated sheet and strip: To BS EN 10327.
-Organic coated flat products: To BS EN 10169-1.

370 STEEL STRUCTURAL HOLLOW SECTIONS (SHS)
-Non alloy and fine grain steels, hot finished: To BS EN 10210-1 and -2.
-Non-alloy and fine grain steels, cold formed welded: To BS EN 10219-2.
-Weather resistant steels, hot finished: To BS 7668.

380 OTHER STEEL SECTIONS
-Equal flange tees: To BS EN 10055.
-Equal and unequal angles: To BS EN 10056-1 and -2.
-Wire, mild steel for general engineering purposes: To BS 1052.
-Wire and wire products, general: To BS EN 10218-2.
-Tubes:
-Seamless circular: To BS EN 10297-1.
-Seamless cold drawn: To BS EN 10305-1.
-Welded and cold sized square and rectangular: To BS EN 10305-5.
-Welded circular: To BS EN 10296-1.
-Welded cold drawn: To BS EN 10305-2.
Welded cold sized: To BS EN 10305-3.

400 STAINLESS STEEL PRODUCTS
-Chemical composition and physical properties: To BS EN 10088-1.
-Sheet, strip and plate: To BS EN 10088-2.
-Semi-finished products bars, rods and sections: To BS EN 10088-3.
-Wire: To BS EN 1088-3.
Tubes:
-Welded circular: To BS EN 10296-2.
-Seamless circular: To BS EN 10297-2.

410 ALUMINIUM ALLOY PRODUCTS
Designations:
Designation system, chemical composition and forms: To BS EN 573-1 to -4.
Temper designations: To BS EN 515.
-Sheet, strip and plate: To BS EN 485-1 to -4.
-Cold drawn rods, bars and tubes: To BS EN 754-1 and -2.
-Extruded rods, bars, tubes and profiles: To BS EN 755-1 and -2.
-Drawn wire: To BS EN 1301-1, -2 and -3.
- Rivet, bolt and screw stock: To BS 1473.
-Structural sections: To BS 1161.

510 PREPARATION FOR APPLICATION OF COATINGS
-General: Complete fabrication, and drill fixing holes before applying coatings.
-Paint, grease, flux, rust, burrs and sharp arrises: Remove.

515 FABRICATION GENERALLY
-Contact between dissimilar metals in components: Avoid.
-Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.
-Moving parts: Free moving without binding.
-Corner junctions of identical sections: Mitre.
-Prefinished metals: Do not damage or alter appearance of finish.

520 COLD FORMED WORK
-Profiles: Accurate, with straight arrises.

525 ADHESIVE BONDING
-Preparation of surfaces of metals to receive adhesives:
-Degrease.
-Abrade mechanically or chemically etch.
-Prime: To suit adhesive.
-Adhesive bond: Form under pressure.

530 THERMAL CUTTING OF STAINLESS STEEL
Carbonation in the heat affected zone: Remove, after cutting, by machining or acid pickling.

535 WELDING/ BRAZING GENERALLY
-Surfaces to be joined: Clean thoroughly.
-Tack welds: Use only for temporary attachment.
-Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
-Surfaces of materials that will be self-finished and visible in completed work: Protect from weld spatter.
-Flux residue, slag and weld spatter: Remove.

540 WELDING OF STEEL
-Method: Metal arc welding to BS EN 1011-1 and -2.

545 WELDING OF STAINLESS STEEL
Method: TIG welding to BS EN 1011-3.
Butt welds: Double bevel.

550 WELDING OF ALUMINIUM ALLOYS
Method: TIG or MIG welding to BS EN 1011-4.

565 FINISHING WELDED AND BRAZED JOINTS VISIBLE IN COMPLETE WORK
- Butt joints: Smooth, and flush with adjacent surfaces.
-Fillet joints: Neat.
-Grinding: Grind smooth where indicated on drawings.

570 LIQUID ORGANIC COATING FOR ALUMINIUM ALLOY COMPONENTS
-Standard: To BS 4842.

585 GALVANIZING
-Standard: To BS EN ISO 1461.
-Vent and drain holes:
-Location: To be agreed before fabrication.
-Sealing after galvanizing: Required. Submit proposals.

Z12 Preservative treatment

To be read with Preliminaries/ General conditions.

100 GENERAL SCOPE OF WORKS IN THIS SECTION
SUPPLY AND APPLICATION of timber preservative applications to new timber used for external timber cladding.

To be read in conjunction with performance requirements set out in other sections.

110 TREATMENT APPLICATION
-Timing: After cutting and machining timber, and before assembling components.
-Preservative processor: Accredited and Licensed by manufacturer of specified treatment solution.
-Certification: For each batch of timber provide a certificate of assurance that treatment has been carried out as specified.

120 COMMODITY SPECIFICATIONS
-Standard: Current edition of the British Wood Preserving and Damp-proofing Association (BWPDA) Manual

130 PRESERVATIVE TREATMENT SOLUTION STRENGTHS/ TREATMENT CYCLES
-General: Select to achieve specified service life and to suit treatability of specified wood species.

160 ORGANIC SOLVENT PRESERVATIVE TREATMENT or
WATER BASED MICROEMULSION PRESERVATIVE TREATMENT
Solution:
Manufacturer & product reference: To be selected by Contractor.
Hazard class: 3.1 to BS 8417.
Required service life: 30 years.
Suitability:
For external hardwood joinery above damp-proof course level, the specified timber with translucent coating finish (specification section M60)
Application: Double vacuum + low pressure impregnation, or immersion.
Moisture content of wood at time of treatment: As specified for the timber/ component at time of fixing.
After treatment, timber to be surface dry before use.

161 ORGANIC SOLVENT PRESERVATIVE TREATMENT or
WATER BASED MICROEMULSION PRESERVATIVE TREATMENT
Solution:
Manufacturer & product reference: To be selected by Contractor.
Hazard class: 3.0 to BS 8417.
Required service life: 30 years.
Suitability:
For external softwood and plywood (section G20) above damp-proof course level.
Application: as clause 160
Moisture content of wood at time of treatment: as clause 160.

Z20 Fixings and adhesives

To be read with Preliminaries/ General conditions.

100 GENERAL SCOPE OF WORKS IN THIS SECTION
SELECTION, SUPPLY AND INSTALLATION of fasteners and fixings.

To be read in conjunction with performance requirements set out in other sections.

PRODUCTS

310 FASTENERS GENERALLY
Materials: To have:
-Bimetallic corrosion resistance appropriate to items being fixed.
-Atmospheric corrosion resistance appropriate to fixing location.
-Appearance: Submit samples on request.

320 PACKINGS
-Materials: Noncompressible, corrosion proof.
-Area of packings: Sufficient to transfer loads.

330 NAILED TIMBER FASTENERS
Nails: **USE ONLY**
-Stainless steel to BS EN 10088-2, austenitic, grade 1.4301 (304) generally, grade 1.4401 (316) when used externally or in severely corrosive environments.
-Copper: To BS EN 1202-2.

340 MASONRY FIXINGS
-Light duty: Plugs and screws.
-Heavy duty: Expansion anchors or chemical anchors.

350 PLUGS
-Type: Dense nylon proprietary types to suit substrate, loads to be supported and conditions expected in use.

360 ANCHORS
Types:
-Expansion: For use in substrate strong enough to resist forces generated by expansion of anchor.
-Adhesive or chemical:
For use in substrate where expansion of anchor would fracture substrate.
For use in irregular substrate where expansion anchors cannot transfer load on anchor.
-Cavity: For use where the anchor is retained by toggles of the plug locking onto the inside face of the cavity.

370 WOOD SCREWS
Type: Contractor's option to relevant BS/EN Standard.
Material: **USE ONLY**
-Stainless steel to BS EN 10088-2, austenitic 1.4301 (304) generally, 1.4401 (316) when used externally or in severely corrosive environments.
-Copper: To BS EN 1202-2.
Washers and screw cups: Where required are to be of same material as screw.

380 MISCELLANEOUS SCREWS
Type: To suit the fixing requirement of the components and substrate.
Material: as clause 370.
Pattern: Self-tapping, metallic drive screws, or power driven screws.
Washers and screw cups: Where required to be of same material as screw.

390 ADHESIVES GENERALLY
Standards:
-Hot-setting phenolic and aminoplastic: To BS 1203.
-Thremosetting wood adhesives: To BS EN 12765.
Polyvinyl acetate thermoplastic adhesive: To BS 4071.

410 POWDER ACTUATED FIXING SYSTEMS
Types of fastener, accessories and consumables: As recommended by tool manufacturer.

EXECUTION

610 FIXING GENERALLY
Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
-Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion.
-Appearance: Fixings to be in straight lines at regular centres.

620 FIXING THROUGH FINISHES
Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

630 FIXING PACKINGS
-Function: To take up tolerances and prevent distortion of materials and components.
-Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.
-Locations: Not within zones to be filled with sealant.

640 FIXING CRAMPS
-Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.
-Fasteners: Fix cramps to frames with screws of same material as cramps.
-Fixings in masonry work: Fully bed in mortar.

650 NAILED TIMBER FIXING
-Penetration: Drive fully in without splitting or crushing timber.
-Surfaces visible in completed work: Punch nail heads below wrot surfaces.
-Nailed timber joints: Two nails per joint (minimum), opposed skew driven.

660 SCREW FIXING
-Finished level of countersunk screw heads:
-Exposed: Flush with timber surface.
Concealed (holes filled or stopped): Sink minimum 2 mm below surface.

670 PELLETED COUNTERSUNK SCREW FIXING
-Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
-Pellets: Cut from matching timber, match grain direction and glue in to full depth of hole.
-Finished level of pellets: Flush with surface.

680 PLUGGED COUNTERSUNK SCREW FIXING
-Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
-Plugs: Glue in to full depth of hole.
-Finished level of plugs: Projecting above surface.

690 USING POWDER ACTUATED FIXING SYSTEMS
-Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.
-Operatives: Trained and certified as competent by tool manufacturer.

700 APPLYING ADHESIVES
Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.
Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Z21 Mortars

To be read with Preliminaries/ General conditions.

CEMENT GAUGED MORTARS

110 CEMENT GAUGED MORTAR MIXES
Specification:
Proportions and additional requirements for mortar materials are specified elsewhere.

120 SAND FOR SITE MADE CEMENT GAUGED MASONRY MORTARS
Standard: To BS EN 13139.
Grading: 0/2 (FP or MP).
Fines content where the proportion of sand in a mortar mix is specified as a range (e.g. 1:1: 5-6):
Lower proportion of sand: Use category 3 fines.
Higher proportion of sand: Use category 2 fines.
Sand for facework mortar: Maintain consistent colour and texture. Obtain from one source.

131 READY-MIXED LIME/ SAND FOR CEMENT GAUGUED MASONRY MORTARS
Standard: To BS 4721 or BS EN 998-2.
Lime: Nonhydraulic to BS EN 459-1.
- Type: CL 90S.
Pigments for coloured mortars: To BS EN 12878.

135 SITE MADE LIME/ SAND FOR CEMENT GAUGED MASONRY MORTRS
Permitted use: Where a special colour is not required and in lieu of factory made ready-mixed material.
Lime: Nonhydraulic to BS EN 459-1.
- Type: CL 90S.
Mixing: Thoroughly mix lime with sand, in the dry state. Add water and mix again. Allow to stand, without drying out, for at least 16 hours before using.

160 CEMENTS FOR MORTARS
Cement: To BS EN 197-1 and CE marked.
- Types: Portland cement, CEM I.
Portland slag cement, CEM II-S.
Portland fly ash cement, CEM II-V or W.
- Strength class: 32.5, 42.5 or 52.5.
White cement: To BS EN 197-1 and CE marked.
- Type: Portland cement, CEM I.
- Strength class: 52.5.
Sulfate resisting cement: To BS 4027 and Kitemarked.
- Strength class: 42.5.
Masonry cement: To BS 5224 and Kitemarked.
- Class: MC 12.5 (with air entraining agent).

180 ADMIXTURES FOR SITE MADE CEMENT GAUGED MORTARS
Air entraining (plasticizing) admixtures: To BS 4887-1 and compatible with other mortar constituents.
Other admixtures: Submit proposals.
Prohibited admixtures: Calcium chloride and any admixture containing calcium chloride.

190 RETARDED READY TO USE CEMENT GAUGED MORTAR
Standard: To BS 4721 or BS EN 998-2.
Lime for cement:lime:sand mortars: Nonhydraulic to BS EN 459-1.
- Type: CL 90S.
Pigments for coloured mortars: To BS EN 12878.
Time and temperature limitations: Use within limits prescribed by mortar manufacturer.

- Retempering: Restore workability with water only within prescribed time limits.

200 STORAGE OF CEMENT GAUGED MORTAR MATERIALS
Sands and aggregates: Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.
Factory made ready-mixed lime:sand/ ready to use retarded mortars: Keep in covered containers to prevent drying out or wetting.
Bagged cement/ hydrated lime: Store off the ground in dry conditions.

210 MAKING CEMENT GAUGED MORTARS
Batching: By volume. Use clean and accurate gauge boxes or buckets.
- Mix proportions: Based on dry sand. Allow for bulking of damp sand.
Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
- Mortars containing air entraining admixtures: Mix mechanically. Do not overmix.
Working time (maximum): Two hours at normal temperatures.
Contamination: Prevent intermixing with other materials.

LIMESAND MORTARS

310 LIME/ SAND MORTAR MIXES
Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

320 SAND FOR LIME/ SAND MASONRY MORTARS
Type: Sharp, well graded.
- Quality, sampling and testing: To BS EN 13139.
- Grading/ Source: As specified elsewhere in relevant mortar mix items.

345 ADMIXTURES FOR HYDRAULIC LIME/ SAND MORTARS
Air entraining (plasticizing) admixtures: To BS 4887-1 and compatible with other mortar constituents.
Prohibited admixtures: Calcium chloride and any admixture containing calcium chloride.

350 STORAGE OF LIME/ SAND MORTAR MATERIALS
Sands and aggregates: Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.
Ready prepared nonhydraulic lime putty: Prevent drying out and protect from frost.
Nonhydraulic lime:sand mortar: Store on clean bases or in clean containers that allow free drainage. Prevent drying out or wetting and protect from frost.
Bagged hydrated hydraulic lime: Store off the ground in dry conditions.

360 MAKING LIME/ SAND MORTARS GENERALLY
Batching: By volume. Use clean and accurate gauge boxes or buckets.
Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
Contamination: Prevent intermixing with other materials, including cement.

370 SITE PREPARED NONHYDRAULIC LIMESAND MORTARS
Mixing: Mix materials thoroughly by compressing, beating and chopping. Do not add water.
- Equipment: Roller pan mixer or submit proposals.
Maturation period before use (maximum):

380 READY TO USE NONHYDRAULIC LIME/ SAND MORTARS
Manufacturer: F10/110.
- Product reference: F10/110.
Materials: Select from:
- Lime putty slaked directly from quicklime to BS EN 459-1 and mixed thoroughly with sand.
- Quicklime to BS EN 459-1 slaked directly with sand.
Maturation period before use (maximum): As manufacturer’s instructions..

390 KNOCKING UP NONHYDRAULIC LIMESAND MORTARS
Knocking up before and during use: Achieve and maintain a workable consistency by compressing, beating and chopping. Do not add water.
- Equipment: Roller pan mixer or submit proposals.

400 MAKING HYDRAULIC LIME/ SAND MORTARS
Mixing hydrated hydraulic lime:sand: Follow the lime manufacturer's recommendations for each stage of the mix.
- Water quantity: Only sufficient to produce a workable mix.
Working time: Within limits recommended by the hydraulic lime manufacturer.

Z22 Sealants

To be read with Preliminaries/General conditions.

100 GENERAL SCOPE OF WORKS IN THIS SECTION
Supply and application of new sealant systems.

To be read in conjunction with performance requirements set out in other sections.

PRODUCTS

310 JOINTS GENERALLY:
-Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

EXECUTION

610 SUITABILITY OF JOINTS
-Presealing checks:
-Joint dimensions: Within limits specified for the sealant.
-Substrate quality: Surfaces regular, undamaged and stable.
-Joints not fit to receive sealant: Submit proposals for rectification.

620 PREPARING JOINTS
- Surfaces to which sealant must adhere:
-Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
-Clean using materials and methods recommended by sealant manufacturer.
-Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
-Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
-Protection: Keep joints clean and protect from damage until sealant is applied.

630 APPLYING SEALANTS
-Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
-Environmental conditions: Do not dry or raise temperature of joints by heating.
-Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
-Sealant profiles:
-Butt and lap joints: Slightly concave.
-Fillet joints: Flat or slightly convex.
-Protection: Protect finished joints from contamination or damage until sealant has cured.

APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D

APPENDIX D