NBS Specification of Works

in regard to

TAVISTOCK GUILDHALL

for

TAVISTOCK TOWN COUNCIL

Gillespie Yunnie Architects
The Lower Tweed Mill
Shinners Bridge
Dartington, Devon
TQ9 6JB

TENDER ISSUE

26 APRIL 2019

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JOB REF: 1041			**JOB TITLE: The Guildhall**									
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				MEDIA: Paper = P, Cad = C, PDF = pdf								
NAME			**COMPANY**									
Tavistock Town Council			(TTC) Client									
Tavistock Heritage Trust			(THT)									
James Coates			Hydrock (Structural Engineers)									
Nick Sendall			Method (M+E Engineers)									
Colin Fearon			Exhibition Designers									
Carrrie Blogg			Project Manager									
Trevor Humphreys			Quantity Surveyor									
TBC			General Contractors									
Lucy Davis			Devon Building Control									
METHOD: Post = **P,** Email = **E,** FTP = **ftp,** Dropbox **= DP**				**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**

Tavistock – The Guildhall

Section **: C20** Revision : **T1**

DEMOLITIONS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	Mar 2019

C20 Demolition

GENERAL REQUIREMENTS

110 DESK STUDY/ SURVEY

Contractor to be aware of the historic importance of the building, all parts of which are Grade II* listed, and all historic fabric, other that shown to be removed is to be carefully protected and retained.
This includes windows, doors, columns, walls, roof and floor structures.
The Contractor is to provide a method statement setting out precautions that will be taken to prevent damage to the internal and external fabric.

- Specific elements to be retained within the working area and requiring protection as follows:

Existing windows & external doors including glazing - except where shown to be removed on fabric repair drawings and schedules.
Internal doors where shown retained.
Existing staircases (except ladder stair to second floor)- Protect all parts and elements, in particular those used for access to the working area.
Cast and wrought iron elements – including columns, posts and balustrades.
Existing floor finishes where retained.
Historic cells
Courtroom joinery and fittings
Magistrates Room
Fireplaces

- Scope: Before starting deconstruction/ demolition work, examine available information, and carry out a survey of:
  - the structure or structures to be deconstructed/ demolished,
  - the site on which the structure or structures stand, and
  - the surrounding area.
- Report and method statements: Submit, describing:
  - Form, condition and details of the structure or structures, the site, and the surrounding area.

Extent:
-Type, location and condition of adjoining or surrounding premises that might be adversely affected by removal of the structure or structures, or by noise, vibration and/ or dust generated during deconstruction/ demolition.
-Identity and location of services above and below ground, including those required for the Contractor's use, and arrangements for their disconnection and removal.
-Form and location of flammable, toxic or hazardous materials, including lead-based paint, and proposed methods for their removal and disposal.
-Form and location of materials identified for reuse or recycling, and proposed methods for removal and temporary storage.
-Proposed programme of work, including sequence and methods of deconstruction/ demolition.
-Details of specific pre-weakening required.
-Arrangements for protection of personnel and the general public, including exclusion of unauthorized persons.
-Arrangements for control of site transport and traffic.

120 EXTENT OF DECONSTRUCTION/ DEMOLITION

- General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures as shown on drawings:

Drawing refs. 1041-GA-100, GA-102, GA-104.

130 GROUNDWORKS

- Old foundations, slabs and the like: Break out in locations and to the extents stated.
- **Notify CA and Archaeologist of any uncovered historic fabric, antiquities or remains.**
- Contaminated material: Remove, and carry out remediation required by the Enforcing Authority.

140 BENCH MARKS

- Unrecorded bench marks and other survey information: Give notice when found. Do not remove marks or destroy the fabric on which they are found.

150 FEATURES TO BE RETAINED

- General: Keep in place and protect the following: as indicated on drawings.

SERVICES AFFECTED BY DECONSTRUCTION/ DEMOLITION

210 SERVICES REGULATIONS

- Work carried out to or affecting new and/ or existing services: Carry out in accordance with the byelaws and/ or regulations of the relevant Statutory Authority.

220 LOCATION OF SERVICES

- Services affected by deconstruction/ demolition work: Locate and mark positions.
- Mains services marking: Arrange with the appropriate authorities for services to be located and marked.
  - Marking standard: In accordance with National Joint Utilities Group 'Guidelines on the positioning and colour coding of underground utilities' apparatus'.

230 SERVICES DISCONNECTION ARRANGED BY CONTRACTOR

- General: Arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment owned by those authorities prior to starting deconstruction/ demolition.

232 SERVICES DISCONNECTION ARRANGED BY EMPLOYER AND CONTRACTOR

- Responsibility: The Employer will arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment owned by those authorities prior to deconstruction/ demolition, as follows: as agreed
- Disconnection of remaining services: Arrange with the appropriate authorities. Remove fittings and equipment not owned by those authorities.
- Timing: Do not start deconstruction/ demolition until disconnections are completed.

240 DISCONNECTION OF DRAINS

- General: Locate, disconnect and seal disused foul and surface water drains.
- Sealing: Permanent, and within the site.

250 LIVE FOUL AND SURFACE WATER DRAINS

- Drains and associated manholes, inspection chambers, gullies, vent pipes and fittings:
  - Protect; maintain normal flow during deconstruction/ demolition.
  - Make good any damage arising from deconstruction/ demolition work.
  - Leave clean and in working order at completion of deconstruction/ demolition work.
- **Other requirements: Protect and bund drains as required to avoid contaminated wash from entering system, eg during façade cleaning.**
- **Complete drainage survey to Structural Engineer requirements** to include where blockage exists in rear courtyards which prevented full survey and surface water connections in front / Guildhall Square lightwell.

260 SERVICE BYPASS CONNECTIONS

- General: Provide as necessary to maintain continuity of services to occupied areas of the site on which the deconstruction/ demolition is taking place and to adjoining sites/ properties.
- Minimum notice to adjoining owners and all affected occupiers: 72 hours, if shutdown is necessary during changeover.

270 SERVICES TO BE RETAINED

- Damage to services: Give notice, and notify relevant service authorities and/ or owner/ occupier regarding damage arising from deconstruction/ demolition.
- Repairs to services: Complete as directed, and to the satisfaction of the service authority or owner.

DECONSTRUCTION/ DEMOLITION WORK

310 WORKMANSHIP

- Standard: Demolish structures in accordance with BS 6187.
- 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 work: Experienced in the assessment of risks involved and methods of deconstruction/ demolition to be used.

315 TEMPORARY WORKS DESIGN

- **TEMPORARY WORKS REQUIRED TO BE CONTRACTOR DESIGN. DESIGN AND METHOD STATEMENTS TO BE PREPARED FOR SE APPROVAL PRIOR TO DEMOLITION COMMENCING.**

320 GAS OR VAPOUR RISKS

- Precautions: Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.

330 DUST CONTROL

- General: Reduce airborne dust by periodically spraying deconstruction/ demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris.
- Lead dust: Submit method statement for control, containment and clean-up regimes.

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

350 ADJOINING PROPERTY
- Temporary support and protection: Provide. Maintain and alter, as necessary, as work proceeds. Do not leave unnecessary or unstable projections.
- Defects: Report immediately on discovery.
- Damage: Minimize. Repair promptly to ensure safety, stability, weather protection and security.
- Support to foundations: Do not disturb.

360 STRUCTURES TO BE RETAINED
- Extent: All – except where shown as being removed.
- Parts which are to be kept in place: Protect.
- Interface between retained structures and deconstruction/ demolition: Cut away and strip out with care to minimize making good.

370 PARTLY DEMOLISHED STRUCTURES
- General: Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Make secure outside working hours.
- Temporary works: Prevent overloading due to debris.
- Access: Prevent access by unauthorized persons.

380 DANGEROUS OPENINGS
- General: Provide guarding at all times, including outside of working hours. Illuminate during hours of darkness.
- Access: Prevent access by unauthorized persons.

390 ASBESTOS-CONTAINING MATERIALS - KNOWN OCCURRENCES
- General: Materials containing asbestos are known to be present

REFER TO ASBOSTOS REPORT

- Removal: submit proposals .

391 ASBESTOS-CONTAINING MATERIALS - UNKNOWN OCCURRENCES
- Discovery: Give notice immediately of suspected asbestos-containing materials when discovered during deconstruction/ demolition work. Avoid disturbing such materials.
- Removal: Submit statutory risk assessments and details of proposed methods for safe removal.

410 UNFORESEEN HAZARDS
- Discovery: Give notice immediately when hazards such as unrecorded voids, tanks, chemicals, are discovered during deconstruction/ demolition.
- Removal: Submit details of proposed methods for filling, removal, etc.

420 OPEN BASEMENTS, ETC
- Temporary support: Leave adequate buttress walls or provide temporary support to basement retaining walls up to ground level.

- Safety: Make remaining sections of retaining and buttress walls safe and secure.
- Water movement: Make holes in basement floors to allow water drainage or penetration (depending on water table). Provide a hole for every 10 m sq, not less than 600 mm in diameter.

450 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 deconstruction/ demolition work: Property of the Contractor except where otherwise provided / noted with agreement of client.
- Action: Remove from site as work proceeds where not to be reused or recycled for site use.

511 EMPLOYER'S PROPERTY
- Components and materials to remain the property of the Employer: **All elements as noted and requested by exhibition designer.**

520 RECYCLED MATERIALS
- Materials arising from deconstruction/ demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
- Evidence of compliance: Submit full details and supporting documentation.
-Verification: Allow adequate time in programme for verification of compliance.
- **Other requirements: Hurdwick Stone removed to create new openings to be carefully set aside for reuse in stonework fabric repair work.**

END OF WORK SECTION

Tavistock – The Guildhall

Section **: C40** Revision : **T4**

HISTORIC FABRIC CLEANING

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Jan 19
T2	*105, 230 + 118 + 119*	Draft Tender	Feb 19
T3	105 + 110	Draft Tender	March 19
T4	105, 118, 230	Tender	April 19

C40 HISTORIC FABRIC CLEANING

To be read with Preliminaries/ General conditions.

105 SUMMARY OBJECTIVES FOR CLEANING TREATMENTS :

- **A - Unpainted INTERNAL Rubble Stone**:
  Generally unpainted rubble walls do not require any treatment apart from a dry clean using a vacuum cleaner to remove loose surface material.

- **B - Painted INTERNAL + EXTERNAL rubble stone + INTERNAL Granite Window + Door Surrounds and Walls / Ceiling to Cells + Cell Corridor:**
  The intention is to remove heavy gloss paint films using a steam cleaning method. The aim should be to remove the majority of the paint area, although small areas of deeply embedded paint can remain, where these do not impact on the overall appearance. Sample area to be agreed with CA.

- **C - EXTERNAL Hurdwick Stone (inc. Chimneys) + Granite Details Inc. Pinnacles and String Course.**
  The intention is to remove staining using a steam cleaning method following removing moss and algal growth with a soft wire brush.
  The aim should be to lightly remove the majority of the staining and organic growth, although small areas can remain in order to maintain the structural integrity of the stonework. Sample area to be agreed with CA.

- **D – Brickwork / Stonework**:
  Generally unpainted isolated brick / stonework surfaces (Internal infills + External Buttresses etc) do not require any treatment apart from a dry clean using a vacuum cleaner to remove loose surface material.

- **E - Painted secondary timber structure (timber soffits, beam cladding etc).**
  The aim is to remove surface flaking only, generally retaining existing paint surfaces, which should be achieved using light sanding using a wetted abrasive. Note that lead paints may be present.

- **F - Existing timber floors under new raised floors**: Existing timber boards will be retained in their current condition. Vacuum clean only prior to laying of new raised floors.

  G – Guildhall Square Lightwells + Internal Granite Flagstones: The intention is to remove staining using a steam cleaning method following removing moss and algal growth (external) / general dirt (Internal) with a soft wire brush. Pressure washing (C40 342) can be considered following review sample area if steam clean is not successful.

- **H - Existing Concrete Paving to Courtyard E3 Courtyard:** Pressure wash concrete paving.

110 SCOPE OF WORK – B: INTERNAL + EXTERNAL PAINTED RUBBLE STONE WALLING + Door Surrounds and Walls / Ceiling to Cells + Cell Corridor:

Drawing refs: GA-150 + GA222.
All paint to be removed in G31 + Party Wall and External Walls of G32, Courtyard Wall of G29, G30, G61. External: E3 Gateway Courtyard Outbuildings + Lower Wall Section Opposite.
NOTE: Extent of Cleaning of Victorian Cells LG04 + LG08 to be agreed with Exhibition Designer.
Do not clean masonry walls which are to be removed.
Cleaning method as clause 352

112 SCOPE OF WORK – C: EXTERNAL Hurdwick Stone (inc. Chimneys) + Granite Details Inc. Pinnacles and String Course

Drawing refs: GA-220, GA-222 + GA224.
Extent as indicated on drawings
Cleaning method as clause 352

115 SCOPE OF WORK – E: INTERNAL PAINTED TIMBER

Drawing refs: GA-150
All paint on timber to be removed in G31 to allow for redecoration.
Cleaning method as 105 E.

118 SCOPE OF WORK – G: EXTERNAL GUILDHALL SQUARE LIGHTWELL GRANITE + INTERNAL GRANITE FLAGSTONES

Drawing refs: GA-200 + GA-150
Extent as indicated on drawings – All lightwell floor surfaces + Cell Corridor areas
Cleaning method as clause 352

119 SCOPE OF WORK – G: EXTERNAL E3 COURTYARD CONCRETE PAVING

Drawing refs: GA-200
Extent as indicated on drawings – All floor surfaces in E3
Cleaning method as clause 342

120 RELATED REPAIR AND REMEDIAL WORKS
- Work to be carried out before cleaning work: Asbestos removal.

142 REMOVAL OF FITTINGS
- Timing: Before commencement of cleaning work.
- Disturbance to surfaces: Minimize.
- Items for disposal: _____ .
- Items to be kept for reuse: _____ .

160 PROTECTION

- Surfaces not designated for cleaning: Prevent damage, including marking and staining.
- Openings: Prevent ingress of water, cleaning agents and detritus.
  - Vents and grilles: Seek instructions before sealing up.
- Temporary mechanical fastenings:
  - In masonry: Locate in joints.
  - In other surfaces: Seek instructions.
- Additional protection: Ensure timber floors protected from chemical stripping to columns.

175 CONTROL AND DISPOSAL OF WASH WATER AND DETRITUS

- Disposal: Safely. Obtain approvals from relevant Authority.
- Control of wash water: Collect and divert to prevent ingress and damage to building fabric and adjacent areas.
- Above and below ground drainage systems: Keep free from detritus and maintain normal operation.

180 COLD WEATHER

- Cleaning procedures using water: Do not use when air temperature is at or below 5°C. Protect damp surfaces from frost.
- Chemical cleaning agents: Do not use when surface temperatures are below those recommended by manufacturer.

190 CLEANING GENERALLY

- Operatives: Appropriately trained and experienced for each type of cleaning work.
  - Evidence of training: Submit on request.
- Control of cleaning: Confine cleaning processes and materials to designated areas. Prevent wind drift.
- Detritus: Remove regularly. Dispose of safely.
- Monitoring: Frequently check results of cleaning compared to approved trial samples. If results established by trials are not achieved, seek instructions.
- Modifications to cleaning methods and materials: Seek instructions.

215 RECORD OF CLEANING WORKS

- Written report: Record cleaning methods and procedures used for each type of surface and deposit.
  - Content: Relevant attributes of cleaning methods used including:
    Equipment and settings.
    Dwell times.
    Number of applications.
    Ambient temperatures.
- Additional documentation: Before and after photographs of all affected areas.
- Submission: At completion of cleaning works.

230 TRIAL SAMPLES

Internal gloss paint on Rubble Wall removal

- Trial sample reference: T1
- Surface: **Existing gloss paint of rubble stone.**
- Location/ Size: 1.5m x 1.5m.
- Type of soiling: paint films – possibly containing lead constituents

- Cleaning methods: High temperature steam cleaning/chemical softening as clause 352.
- Records: Maintain written/photographic records of each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

Internal gloss paint on Granite Window Surrounds removal
- Trial sample reference: T2
- Surface: **Existing gloss paint of Granite.**
- Location/ Size: 1.5m x 1.5m.
- Type of soiling: paint films – possibly containing lead constituents
- Cleaning methods: High temperature steam cleaning as clause 352.
- Records: Maintain written/photographic records of each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

External Stonework Cleaning
- Trial sample reference: T3
- Surface: **Hurdwick Stone.**
- Location / Size: Internal Lightwell Wall – TBC / 1.5m x 1.5m
- Type of soiling: Water Staining / Organic Growth
- Cleaning methods: High temperature steam cleaning as clause 352.
- Records: Maintain written/photographic records of each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

NOTE: GREAT CARE REQUIRED DUE TO SOFT POROUS NATURE OF HURDWICK STONE.

External Chimney Cleaning
- Trial sample reference: T4
- Surface: **Hurdwick Stone.**
- Location / Size: Location – Butchers Hall Face of Trowtes House Chimney / Size: 1m x 0.5m
- Type of soiling: Water Staining / Organic Growth
- Cleaning methods: High temperature steam cleaning as clause 352.
- Records: Maintain written/photographic records of each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

NOTE: GREAT CARE REQUIRED DUE TO SOFT POROUS NATURE OF HURDWICK STONE.

Pinnacle Cleaning
- Trial sample reference: T5
- Surface: **Granite**
- Location / Size: Location – Butchers Hall Face of Pinnacle / Size: 1m x 0.5m
- Type of soiling: Water Staining / Organic Growth
- Cleaning methods: High temperature steam cleaning as clause 352.
- Records: Maintain written/photographic records of each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

String Course Cleaning Courtroom
- Trial sample reference: T6
- Surface: **Granite**
- Location / Size: Location – Butchers Hall Face of Courtroom: 1m x 0.5m
- Type of soiling: Water Staining / Organic Growth
- Cleaning methods: High temperature steam cleaning as clause 352.

- Records: Maintain written/photographic records of each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

String Course Cleaning Trowtes House

- Trial sample reference: T7
- Surface: **Hurdwick Stone**
- Location / Size: Location – Butchers Hall Face of Courtroom: 1m x 0.5m
- Type of soiling: Water Staining / Organic Growth
- Cleaning methods: High temperature steam cleaning as clause 352.
- Records: Maintain written/photographic records of each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

External Granite Sett / Paving

- Trial sample reference: T8
- Surface: **Granite**
- Location / Size: Location – Lightwell by Courtroom Entrance: 1m x 0.5m
- Type of soiling: Water Staining / Organic Growth
- Cleaning methods: High temperature steam cleaning as clause 352.
- Prepare grout sample for CA Approval.
- Records: Maintain written/photographic records of each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

Internal Granite Flagstones

- Trial sample reference: T9
- Surface: **Granite**
- Location / Size: Location – SE Corner of Cell 2 – 0.5m x 0.5m
- Type of soiling: General Staining
- Cleaning methods: High temperature steam cleaning as clause 352.
- Prepare grout sample for CA Approval.
- Records: Maintain written/photographic records of each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

PRODUCTS/ EQUIPMENT

300 COMPATIBILITY OF CHEMICAL PRODUCTS

- Products: Compatible and produced by the same manufacturer.

312 SURFACE BIOCIDES

- Types: Registered by the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.
- Compatibility with surface: Free from staining or other harmful effects.

342 PRESSURIZED WATER CLEANING EQUIPMENT

- Manufacturer: Contractors Choice
- Operational pressure: Manufacturers recommendation for **H**: Concrete Paving
- Nozzles: Manufacturers recommendation for **H**: Concrete Paving

352 STEAM CLEANING OF MASONRY WALLS

- Process: High temperature steam cleaning, in conjunction with chemical softening where required. NOTE: GREAT CARE REQUIRED DUE TO SOFT POROUS NATURE OF HURDWICK STONE.

- Product reference: Thermatech high temperature steam system in conjunction with Thermavac recovery system or Equal Approved. Suggested Subcontractors:

  Richard Burrows
  Williams and Burrows
  07432 117304
  info@williamsandburrows.co.uk

  Jamie Fairchild
  Restorative Techniques
  67a Gloucester Road,
  Rudgeway,
  Bristol BS35 3SG / 01454 417831
  Allan Giles
  Alberny Restorations LTD
  Hazelwood
  Claycastle
  Haselbury-Plucknett
  Somerset
  TA18 7PE
  01460 73038
  albernyrestorations@gmail.com

- Pre softening system.
- Use additional chemical softening only where required to ensure removal of existing paint layers on internal walls. Product reference: TBC by Contractor

- Restorative Polyurethane Softener A thixotropic cream for softening polyurethane and oil based household gloss and oil, polyurethane and alkyd based masonry paints. Water-soluble. Brush, roller or spray application. Apply in accordance with manufacturers recommendations.

- Alternatively Contractor may propose an alternative DOFF or other manufacturer based steam removal and recovery system subject to approval of sample areas.

APPLICATION

412 REMOVAL OF LOOSELY ADHERED DEPOSITS
- Timing: Before commencement of other cleaning methods.
- Surfaces: Prevent damage, including abrasion.

422 BIOCIDE APPLICATION
- Preparation: Remove loose material by abrasion. .
- Surfaces: Prevent damage, including abrasion.
- Biocide treatment: Appropriate solutions to kill growths and inhibit further growths.
  - Dead growths: Remove.

442 ABRASIVE BLOCKS
- Types: Suitable grades of carborundum or gritstone.
- Application: Lubricate with water. Remove detritus.

- Abrasive power tools: Prohibited.

452 ABRASIVES CLEANING
- Surfaces: Minimize abrasion.
  - Ingrained deposits: Seek instructions.
- Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.
- Detritus: Remove with clean water.

462 WATER SPRAY CLEANING (MOUNTED NOZZLES)
- Surfaces: Minimize water run-off. Prevent damage.
- Adjustment of washing cycle and nozzle positions: Regularly to achieve optimum cleaning performance.

472 PRESSURIZED WATER CLEANING
- Surfaces: Prevent damage, including abrasion.
- Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.

482 STEAM CLEANING
- Surfaces: Prevent damage, including abrasion.
- Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.

495 TESTING PH VALUES FOR CHEMICAL CLEANING
- pH indicator: To distinguish pH values between 1–14.
- Testing before cleaning:
  - Clean rinsing water, wetted surfaces and joints: Test for pH. Record as ‘control’ values.
- Testing after water rinsing and neutralization:
  - Wetted surfaces and joints: Record pH values.
  - Acceptance criteria: _____ .

500 CHEMICAL CLEANING
- Surfaces: Prevent damage, including discolouration, bleaching and efflorescence.
- Product variables (including concentrations, dwell times and number of applications): Adjust for each surface to achieve optimum cleaning performance.
- Application: To wetted surfaces.
  - Drying out: Prevent, unless recommended otherwise by cleaning product manufacturer.
- Removal of chemicals and neutralization: As recommended by product manufacturer, including rinsing with clean water.
  - Additional treatment: Where water rinsing is insufficient to neutralize surface, apply compatible neutralizing agent.
  - Surfaces and joints: Minimize absorption of chemicals. Prevent damage, including abrasion.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: C41** Revision : **T1**

REPAIRING/ RENOVATING/ CONSERVING MASONRY

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1	-	TENDER	Jan 2019

C41 REPAIRING/ RENOVATING/ CONSERVING MASONRY

To be read with Preliminaries/ General conditions.

GENERAL/ PREPARATION

Tavistock Guildhall is Grade II* Listed, and forms part of a highly significant collection of buildings. It must be treated with special consideration and care reflecting its national historic importance.

110 SCOPE OF WORK

- **This section deals with the external stonework and masonry repair.**
  Refer to Fabric Repair Drawings: GA 216, GA220, GA222, GA224.
  - Where identified existing stones are significantly damaged or eroded then stones are to be refaced with 125mm reclaimed Hurdwick (**Refer 145**) and repoint locally around stone. Reface stonework on like for like basis, only with salvaged Hurdwick stone.
- Lightly brush down all loose stone faces until stable. Re-point those areas of stonework only where existing pointing is missing or loose using an agreed lime mortar mix. Note: It is not proposed to remove existing sound cement pointing as part of the current repair package. **Pointing to be tooled to match existing unless agreed otherwise with Conservation Officer.**
- Repoint Chimneys (50%). Allowance for consolidating structural cracking using stainless steel dowel system and repointing of cavities. Reset Chimney Pots in Lime Haunching (6no.).
- Resin repair to Granite Window Head above window GW02.
- Records of masonry to be repaired: Before starting work, use measurements and photographs as appropriate to record bonding patterns, joint widths, special features, etc.
- Identification of masonry units to be removed, replaced or repaired: Mark clearly, but not indelibly, on face of masonry units or parts of units to be cut out and replaced. Transcribe markings to drawings / photographs.

120 SITE INSPECTION

- Purpose: To confirm type and extent of repair/ renovation/ conservation work shown on drawings and described in survey reports and schedules of work.
- Parties involved: Architect / Client / Conservation Officer .
- Timing: TBC
- Instructions issued during inspection: _____ .

125 REMOVAL OF FITTINGS/ FIXTURES

- Items to be removed, and reinstated on completion of repair work: unless agreed / confirmed with Architect / CA .
  - Treatment following removal: Lime mortar repair to be confirmed with Architect .
  - Masonry fabric and surfaces: Do not damage during removal of fittings/ fixtures.

130 REMOVAL OF PLANT GROWTHS FROM MASONRY

- Plants, root systems and associated soil/ debris: Carefully remove from joints, voids and facework.
- Removal of roots: Where growths cannot be removed completely without disturbing masonry seek instructions.

- Unwanted plants close to masonry: Where removal of root system is not possible or desirable, cut through stem as close to the ground as possible. Remove bark from stump and apply herbicide paste. Leave stump to wither.

140 RECORD OF WORK

- General: Record work carried out to masonry clearly and accurately using written descriptions, sketches, drawings and photographs, as necessary.
- Specific records: _____ .
- Documentation: Submit on completion of the work.
  - Number of sets: _____ .

145 EXISTING STONE AVAILABLE FOR RE-USE WITHIN THE WORKS

- Contractor may utilise any supply of existing surplus Hurdwick where deemed appropriate for inclusion within the works as specified.
- Location: There are small quantities of Hurdwick stone available to be reclaimed:

Suggested sources
- New Openings formed in Hurdwick walls in Courtroom and Trowtes House (Free Issue)
- Tavistock Catholic Church. Contact: Richard Burrows – 07432 117304. (Payment to be agreed)

- Characteristics and re-use of existing stone as Clause 210
- Existing stones may be shaped or cut as required to suit new locations.
  Sizes and profiles: To match existing masonry. Maintain existing joint widths.
- Sinkings for fixings, joggles and lifting devices: Accurately aligned and positioned in relation to existing masonry.
- Marking: Mark each block/ dressing clearly and indelibly on a concealed face to indicate the natural bed and position in the finished work.

WORKMANSHIP GENERALLY

150 POWER TOOLS FOR REMOVAL OF MORTAR

- Usage: not permitted except by prior approval by CA

155 PUTLOG SCAFFOLDING

- Usage: _____ .

160 PROTECTION OF MASONRY UNITS AND MASONRY

- Masonry units: Prevent overstressing during transit, storage, handling and fixing. Store on level bearers clear of the ground, separated with resilient spacers. Protect from adverse weather and keep dry. Prevent soiling, chipping and contamination. Lift units at designed lifting points, where provided.
- Masonry: Prevent damage, particularly to arrises, projecting features and delicate, friable surfaces. Prevent mortar/ grout splashes and other staining and marking on facework. Protect using suitable nonstaining slats, boards, tarpaulins, etc. Remove protection on completion of the work.

165 STRUCTURAL STABILITY

- General: Maintain stability of masonry. Report defects, including signs of movement, that are exposed or become apparent during the removal of masonry units.

170 DISTURBANCE TO RETAINED MASONRY

- Retained masonry in the vicinity of repair works: Disturb as little as possible.
- Existing retained masonry: Do not cut or adjust to accommodate new or reused units.
- Retained loose masonry units and those vulnerable to movement during repair works: Prop or wedge so as to be firmly and correctly positioned.

180 WORKMANSHIP

- Skill and experience of site operatives: Appropriate for types of work on which they are employed.
  - Documentary evidence: Submit on request.

185 ADVERSE WEATHER

- General: Do not use frozen materials or lay masonry units on frozen surfaces.
- Air temperature: Do not bed masonry units or repoint:
  - In cement gauged mortars when ambient air temperature is at or below 3°C and falling or unless it is at least 1°C and rising, unless mortar has a minimum temperature of 4°C when laid and the masonry is adequately protected.
  - In hydraulic lime:sand mortars when ambient air temperature is at or below 5°C and falling or unless it is at least 3°C and rising.
  - In nonhydraulic lime:sand mortars in cold weather, unless approval is given.
- Temperature of the work: Maintain above freezing until mortar has fully set.
- Rain, snow and dew: Protect masonry by covering during precipitation, and at all times when work is not proceeding.
- Hot conditions and drying winds: Prevent masonry from drying out rapidly.
- New mortar damaged by frost: Rake out and replace.

190 CONTROL SAMPLES

- General: Complete an area of each of the following types of work (0.5m x 0.5m typical), and arrange for inspection before proceeding with the remainder:

  - **CS1**: Refacing of Hurdwick Stone. Location Riverside Elevation at low level.
  - **CS2**: Repointing of Hurdwick Stone. Location Riverside Elevation at low level.
  - **CS3**: Repointing of Granite Pinnacle. Location Riverside Elevation
  - **CS4**: Repointing of Hurdwick Stone Chimney. Location Riverside Elevation

MATERIALS/ PRODUCTION/ ACCESSORIES

210 STONE CHARACTERISTICS

- Requirements: Free from vents, cracks, fissures, discolouration, or other defects which may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked in accordance with shop drawings prepared by the supplier.

215 SAMPLES & SAMPLE PANELS/LOCATIONS

- Provide samples of the following materials and workmanship:
  a) Sample of Hurdwick walling to match existing

220 RECORDING PROFILES

- Profiles: Take measurements from existing masonry units, as instructed, to allow accurate matching of replacements.

- Recording in situ: If there are no suitable joints to allow use of inserts, seek instructions.
- Drawings and templates: Prepare as necessary. Templates must be clearly and indelibly marked to identify use and location.

250 STONE ORIENTATION

- Orientation of natural bed:
  - In plain walling: Horizontal.
  - In projecting stones and copings: Vertical and perpendicular to wall face.

DISMANTLING/ REBUILDING

300 DISMANTLING MASONRY FOR REUSE

- Masonry units to be reused: Remove carefully and in one piece.
- Treatment: Clean off old mortar, organic growths and dirt, and leave units in a suitable condition for rebuilding.
- Identification: Mark each unit clearly and indelibly on a concealed face, indicating its original position in the construction. Transcribe makings to drawings/ photographs.

305 LIME MORTAR FOR STONE BEDDING

As per 'Butchers Hall' Specification

310 LIME MORTAR FOR HURDWICK REPOINTING

- As per 'Butchers Hall' Specification with finer aggregate size – TBC by Sample.
  'Butchers Hall' Mix:
  -2.5 Parts CLS26 Sand
  -1 Part St Astier 3.5 NHL Hydraulic Lime Mortar

  Supplier:
  Cornish Lime Company
  Brimms Park, Old Callywith Road
  Bodmin, Cornwall.
  PL31 2DZ.
  Tel: 01208 79779

- Areas to be pointed should be thoroughly dampened down the day before and again immediately before mortar is applied.
- Pointing to be well packed in but finished full, flush with the surface of the masonry. **Pointing to be tooled to match existing unless agreed otherwise with Conservation Officer.**
- The pointing should not be re-worked until the initial set has occurred. To expose the aggregate the surface should be scrapped back with a small pointing tool when it is placed (hydraulic).
- Mortar to be kept constantly damp until hydraulic set is complete.
- Mortar must be tended and protected to ensure the complete carbonation of the lime (following hydraulic set): The mortar should loose its moisture slowly and be protected.

315 LIME MORTAR FOR GRANITE REPOINTING

- As per 'Butchers Hall' Specification with finer aggregate size – TBC by Sample.
  'Butchers Hall' Mix:
  -2.5 Parts CLS26 Sand
  -1 Part St Astier 3.5 NHL Hydraulic Lime Mortar

  Supplier:
  Cornish Lime Company
  Brimms Park, Old Callywith Road
  Bodmin, Cornwall.
  PL31 2DZ.
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- Mortar to be kept constantly damp until hydraulic set is complete.
- Mortar must be tended and protected to ensure the complete carbonation of the lime (following hydraulic set): The mortar should loose its moisture slowly and be protected.

325 LIME MORTAR FOR HISTORIC STONE FLOOR REPAIRS

2 parts St Astier Tradiblanc HL5 Formulated Lime
5 parts CLS28 Silver Grey Sand - Good clean sharp sand to match colour of stone floor pointing sand

REPLACEMENTS AND INSERTIONS

330 PREPARATION FOR REFACING / REPLACING MASONRY

- Defective material: Carefully remove to the extent agreed (not more than 3 or 4 stones in one area at a time). Do not disturb, damage or mark adjacent retained masonry.
- Contractor to ensure stability of surrounding stonework
- Existing metal fixings, frame members, etc: Report when exposed.
- Redundant metal fixings: Remove.
- Recesses: Remove projections and loose material; leave joint surfaces in a suitable condition to receive replacement units. Protect from adverse weather if units are not to be placed immediately.

340 REFACING MASONRY INC. FIXINGS

- Refacing: New stonework facing (minimum 125mm depth) to be carefully inserted and bedded in and are to be individually cramped to neighbouring stones if required by SE Specification.
- Austenitic Stainless steel grade 316 or ceramic T-armatures to be used to anchor refaced stone. Resin fix armature into place in accordance with Manufacturers

reccomendations + SE Specification. Number and spacing of armatures will vary on each individual repair.
- Contractor to inform CA if in their opinion it is necessary to dress back further than shown on the drawings or as instructed.
- Finish of dressed stone to match existing.

385 LAYING REPLACEMENT MASONRY UNITS
- Exposed faces of new material: Keep to agreed face lines.
- Faces, angles and features: Align accurately. Set out carefully to ensure satisfactory junctions with existing masonry and maintain existing joint widths.
- Joint surfaces: Dampen to control suction as necessary.
- Laying units: On a full bed of mortar, all joints filled.
- Exposed faces: Keep clear of mortar and grout.

390 GROUTING JOINTS
- Grout mix: As per 305.
- Joints that cannot be fully filled with bedding mortar: Grout thoroughly around replacement masonry units.
- Grouting: Keep grout back from exposed face to allow for the depth of pointing, using an approved temporary sealing material. Prevent grout staining exposed face.

405 BONDED DOWELS
- Dowels: Austenitic Stainless steel grade 316 as per SE Details / Specification to fix Parapet stones. To stop at least 75mm back from outside face of new stone.
- Adhesive: As per SE Details. Parapet Stone bed with lime mortar on top of lead parapet coping.
- Holes for dowels: Suitably sized and accurately aligned in masonry background and in rear of replacement/ insert stone; clean and dry.
- Other requirements: Do not use adhesive to bond stones at joints unless instructed. Lead sealant to be used around dowel at parapet location through lead coping.

410 CORRODED METAL FIXINGS
- Not to be removed from external walls without prior approval of CA

TOOLING/ DRESSING STONE IN SITU

450 WEATHERING LEDGES AT JOINTS
- Locations: Where stones project or are recessed.
- Requirement: Carefully weather the ledge, to approval.
- Method: Suitably graded carborundum blocks or tooling as appropriate.

455 DESCALING STONE
- Requirement: Carefully remove loose scaling and powdering from stones to the extent agreed.
- Method: Suitable bristle brushes or carborundum blocks. Do not use wire brushes.

458 REDRESSING STONE
- Requirement: Carefully dress back stones to the extent agreed.
- Method: Suitably graded carborundum blocks or tooling as appropriate.

POINTING/ REPOINTING

810 PREPARATION FOR REPOINTING

- Existing mortar: Working from top of wall downwards, remove unsound mortar carefully, without damaging adjacent masonry or widening joints, to a minimum depth 30mm using handtools
  - Cement rich mortar that is sound is to be retained. Small compressed air tools may be necessary to remove incomplete sections of cement rich mortar
  - Loose or friable mortar: Seek instructions when mortar beyond specified recess depth is loose or friable and/ or if cavities are found.
  - Limit raking out to small areas (1m2) if there is any danger of stonework become loosened during raking out and repointing.
- Raked joints: Remove dust and debris.
- Masonry to be washed down to remove dust and thoroughly dampened before repointing to reduce suction.

840 POINTING WITH TOOLS/ IRONS

- General: Press mortar well into joints using pointing tools/ irons that fit into the joints, so that they are fully filled.
- Face of masonry: Keep clear of mortar. Use suitable temporary adhesive tape on each side of joints where necessary. Finish joints neatly.

860 BRUSHED FINISH TO JOINTS

- Timing: After initial mortar set has taken place remove laitance and excess fines by brushing / scrapping, to give a coarse texture. Do not compact mortar.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: C52** Revision : **T2**

FUNGUS/ BEETLE ERADICATION

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Feb 19
T2	-115, *120*	Tender	April 19

C52 FUNGUS/ BEETLE ERADICATION

To be read with Preliminaries/ General conditions.

115 SURVEY AND REPORT
- Survey generally:
  - Purpose: To ascertain nature and extent of fungal/ beetle attack. To ascertain sources and extent of any dampness.
  - Timing: Before starting eradication work carry out survey and submit survey report.
- Survey report content:
  - Description of investigation methods.
  - Factors affecting execution of the work: Identify problematic site conditions and restrictions, including the presence of bats, barn owls, other protected species or breeding birds.
  - Laboratory results identifying attacking organisms. Plan and section drawings or annotated photographs, defining extent of attack.
  - Proposals for eradication treatments and procedures, including measures to halt damp penetration and promote drying out.
  - Measurements of wood moisture content, with identification of instances above 20%.
  - Identification of neighbouring buildings that may be involved in attack.
  - Associated work: Nature and extent of repair/ replacement work required to load bearing constructions and to the building fabric in general.
  - Other information: Any considered relevant.

120 ASSOCIATED WORK
- Work shown to be necessary by survey:
  Undertake timber repairs to rafter ends, joist ends, wall plates and supports as required following survey – CONTRACTOR DESIGN ITEM

140 OPENING UP/ CUTTING OUT/ REMOVAL OF BUILDING FABRIC
- Extent: Submit proposals.
- Retained building fabric: Maintain stability and do not damage.

150 DRYING OUT OF BUILDING FABRIC
- Drying conditions: Establish as soon as possible.
- Drying methods: _____ .

162 PREPARATION GENERALLY FOR PRESERVATIVE/ FUNGICIDE TREATMENTS TO TIMBERS/ MASONRY
- Furnishings/ components/ finishes within treated areas: Prevent staining and other adverse effects.
- Water supplies: Do not contaminate.
- Electrical equipment and supplies: Isolate circuits as required and prevent ingress of treatment fluids.
- Cleanliness: Remove loose material, dust and debris from surfaces to be treated.

210 DRY ROT
- Fruiting bodies: Do not disturb. If heat treatment is not employed, spray with fungicide.
  - Removal: Remove carefully. Clean surfaces.
- Infected material to be removed: Remove carefully, causing minimum disturbance and damage to adjacent building fabric; dispose of safely at a tip approved by a waste regulation authority. Prevent contamination of other parts of the building.

- Infected material to be retained: _____ .

220 WET ROT
- Decayed timber to be removed: Cut out until sound timber is reached.
  - Disposal of previously treated timber: At a tip approved by a waste regulation authority.
- Decayed timber to be retained: _____ .

230 BEETLE INFESTATION
- Infected timber: Cut, scrape and trim back to sound timber where heat treatment is not employed. Remove debris immediately and dispose of safely at a tip approved by a waste regulation authority. Prevent contamination of other parts of the building.

240 SALVAGED MATERIALS
- Sound, uninfected materials: Give notice before reusing/ recycling.

310 TIMBER PRESERVATIVES/ MASONRY FUNGICIDES GENERALLY
- Products: Registered by the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.
- Application: In accordance with statutory conditions of approval given on product labels and as manufacturers' recommendations.

318 TIMBER PRESERVATIVE TREATMENT
- Preservative type: Contractors Choice
- Tint: _____ .
- Treatment method: _____ .

323 TIMBER PRESERVATIVE TREATMENT
- Manufacturer: Contractors Choice
  - Product reference: Submit proposals.
- Tint: _____ .
- Treatment method: _____ .

338 MASONRY FUNGICIDE TREATMENT
- Fungicide type: Contractors Choice
- Tint: _____ .
- Treatment method: _____ .

343 MASONRY FUNGICIDE TREATMENT
- Manufacturer: Contractors Choice
  - Product reference: Submit proposals.
- Tint: _____ .
- Treatment method: _____ .

355 DRILLING TIMBER FOR INJECTION OF PRESERVATIVES
- Sizes and location of holes: Submit proposals.
- Sealing holes after treatment: _____ .
- Approval of appearance: Obtain approval of first few holes before completing remainder.

390 GUARANTEE
- Type: Insurance protection. Administered by an independent insurance protection company.

- Guarantee period from completion of installation (minimum): **20 years.**
- Documentation: Provide certificates/ guarantees at completion of installation.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: E05** Revision : **T2**

INSITU CONCRETE / LIMECRETE

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	March 19
T2	*800*	Tender	April 19

E05 IN SITU CONCRETE CONSTRUCTION GENERALLY

To be read with Preliminaries/ General conditions.

210 CONTRACTOR'S STRUCTURAL DESIGN
- Design responsibility: Refer to SE Specification
- Requirement:
  - Generally: As section B50.
  - Structure: Complete the design and prepare reinforcement drawings and schedules in accordance with the designated code of practice and to satisfy the specified performance criteria by SE.
  - Additional requirements: Refer to SE Specification
- Member sizes and locations: Refer to SE Specification
- Design and production information: Refer to SE Specification

215 CONTRACTOR'S STRUCTURAL DETAILING OF REINFORCEMENT
- Responsibility: Refer to SE Specification
- Requirement: Complete the detailing/ scheduling of reinforcement in accordance with the designated code of practice.
- Design information:
  - Designed reinforcement: Refer to SE Specification
  - Additional reinforcement: Provide and adjust spacing of reinforcement as required by designated code of practice for the control of cracking.
- Reinforcement:
  - Order of priority when clashes occur: Refer to SE Specification
  - Other detailing requirements: Refer to SE Specification

220 STRUCTURAL DESIGN PROVIDED
- Description: Refer to SE Drawings and Specification
- Requirements:
  - Generally: As section B50.
  - Additional requirements: Refer to SE Specification

223 STRUCTURAL DRAWINGS AND SCHEDULES
- Standards:
  - Drawings: To Refer to SE Drawings and Specification

225 TEMPERATURE RECORDS
- Requirement: Throughout period of concrete / limecrete construction record:
  - Daily:
  - Under adverse temperature conditions: Temperature at commencement and end of placing.
  - Location: In the shade, close to the structure.

235 OPENINGS, INSERTS AND FIXINGS
- Requirement: Collate all information.
- Submit: Details where openings, inserts and fixings can only be accommodated by adjustments to reinforcement.
- Locate reinforcement: To ensure specified minimum cover at openings and inserts and to be clear of fixing positions.

250 STRUCTURAL TESTING
- Requirement: Refer to SE Specification
- Method/ standard: Refer to SE Specification

  - Timing: Refer to SE Specification
- Report: Refer to SE Specification
  - Submission: Refer to SE Specification

290 ACCURACY OF CONSTRUCTION
- Setting out: To BS 5964-1.
- Geometrical tolerances: Refer to SE Specification
  - Conflicts: Notwithstanding tolerances specified elsewhere, do not exceed requirements for compliance with the designated code of practice.
  - Substitution of alternative requirements: _____ .

300 LEVELS OF STRUCTURAL CONCRETE FLOORS
- Tolerances (maximum):
  - Level of floor: Refer to SE Specification
  - Steps in floor level: Refer to SE Specification

310 SURFACE REGULARITY OF CONCRETE FLOORS TO BS 8204 - GENERAL
- Standard: To BS 8204-1 or -2.
- Measurement: From underside of a 2 m straightedge (between points of contact) placed anywhere on surface and using a slip gauge..

430 SURFACE CRACKING
- Method of measurement: Refer to SE Specification
- Maximum crack width: Refer to SE Specification
- Action: Should cracks occur that are wider than the maximum crack width:
  - Survey: Frequency and extent of such cracks and investigate cause.
  - Report: Findings together with recommendations for rectification.

610 SPECIALLY CONSTRUCTED SAMPLE
- Location: To approval.
- Description: Limecrete
- Placing, compaction and curing of the concrete is identical to that proposed for the element or part of the building.
- Inspection of samples: Give notice.
- Commencement of related parts of the Works: Do not proceed until instructed.

800 LIMECRETE FLOOR CONSTRUCTION

- Location: G24 + G25 + Part G27 (Top of Steps Under Stairs).
- Description: Sublime Floor (Insulated Limecrete Floor)
- Supplier: Ty-Mawr.
- Substrate: Excavate Subsoils to Required levels with Layer 1: Ty-Mawr Geotextile Membrane Over (Wrekin Multitrack 1000)
- Aggregate: 120mm (minimum) Glaspor SG600 (Recycled Foamed Glass Insulating Gravel) with Layer 2: Ty-Mawr Geotextile Membrane and Ty-Mawr Geogrid Structural Roll Over
- SubLime Slab Limecrete Mix:
  3 Parts Ty-Mawr Slabbing Recycled Aggregates
  1 Parts Ty-Mawr Hydraulic Lime Binder (Secil - NHL5) and Synthetic Fibres (1kg per tonne dry slab mix). Add sufficient water to make a stiff but workable mix (Allow 20mins to mix).
- Depth: 100mm.
- Method: All to Ty-Mawr Recommendations.
  Lay and tamp to shuttering level, float the floor to an appropriate finish to accept floor finish.

- Other Requirements: 40mm EcoCork Board Perimeter Edge Insulation to depth of Slab.
- Radon: Contractor to confirm with Building Control if Radon barrier is required. No radon barrier throughout building complex and breathable limecrete construction should prevent build-up of Gas under slab. If required Radon barrier should be installed between Glaspor and Limecrete under Geogrid mesh and above Puncture protection sheet. Refer to Ty-Mawr for further details and J40 140 for spec.
- Protection: All to Ty-Mawr Recommendations.
  Ensure floor does not dry/cure too quickly or too slowly. Ensure room is well ventilated with ambient temperatures between 10 and 18 degrees without direct heat application. Wetting may be required in warm dry weather.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: G20** Revision : **T1**

Carpentry/Timber Framing/First Fixing

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	Feb 19

G20 CARPENTRY/ TIMBER FRAMING/ FIRST FIXING

To be read with Preliminaries/ General conditions.

GENERAL

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.

115 CONTRACTOR'S STRUCTURAL DESIGN

- Design responsibility: Design and details to be agreed.
- Requirement:
  - Generally: As section B50/B51.
    Modifications: none.
  - Design: Complete the design in accordance with the designated code of practice to satisfy specified performance criteria.
  - Service class: to be confirmed.
  - Additional requirements: none .
- Design and production information:
  - Drawings: Showing locations and size of members.
- Timing of submissions: to be agreed and with sufficient time for considered comment.

120 STRUCTURAL DESIGN PROVIDED

- Description: trimming to existing joists at new openings and roof plenums, new timber framed partitions.
- Requirements:
  - Generally: As section B50/B51.
  - Additional requirements: none .

150 STRENGTH GRADING OF TIMBER

- Grader: A company currently registered under a third party quality assurance scheme operated by a certification body approved by the UK Timber Grading Committee.

160 GRADING AND MARKING OF SOFTWOOD

- 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

210 STRUCTURAL SOFTWOOD (GRADED DIRECT TO STRENGTH CLASS) FOR STRUCTURAL USE GENERALLY

- Grading standard: To BS 4978, BS EN 14081-1, or other national equivalent and so marked.
- Strength class to BS EN 338: C24
- Treatment:
  - Preservative treatment: CCA impregnation to NBS section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8. Design service life: 40 years.
  - Fire retardant treatment: FR2 where loadbearing.
  - Inform CA of selected manufacturer and process before commencement of any preservative treatment.

211 STRUCTURAL SOFTWOOD (GRADED DIRECT TO STRENGTH CLASS) FOR TRIMMING NEW OPENINGS

- Grading standard: To BS 4978, BS EN 14081-1, or other national equivalent and so marked.
- Strength class to BS EN 338: C24
- Treatment:
  - Preservative treatment: CCA impregnation to NBS section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8. Design service life: 40 years.
  - Fire retardant treatment:
  - Inform CA of selected manufacturer and process before commencement of any preservative treatment.
- Fixings. Noggins and trimming members fixed in accordance with Structural Engineers details
- No direct fixing into existing cast iron joists, beams or flagstones

213 STRUCTURAL SOFTWOOD (GRADED DIRECT TO STRENGTH CLASS) FOR SOLE AND HEAD PLATES

- Grading standard: To BS 4978, BS EN 14081-1, or other national equivalent and so marked.
- Strength class to BS EN 338: as per structural engineer's specification
- Treatment:
  - Preservative treatment: CCA impregnation to NBS section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8. Design service life: 40 years.
  - Fire retardant treatment:
  - Inform CA of selected manufacturer and process before commencement of any preservative treatment.

214 STRUCTURAL SOFTWOOD (GRADED DIRECT TO STRENGTH CLASS) FOR TRIMMING ROOFLIGHTS

- Grading standard: To BS 4978, BS EN 14081-1, or other national equivalent and so marked.
- Strength class to BS EN 338: C24
- Treatment:
  - Preservative treatment: CCA impregnation to NBS section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8.

Design service life: 40 years.
- Fire retardant treatment:
- Inform CA of selected manufacturer and process before commencement of any preservative treatment.
- Fixings. Noggins and trimming members fixed in accordance with Structural Engineers details

250 STRUCTURAL HARDWOOD (GRADED DIRECT TO STRENGTH CLASS)
- Grading standard: To BS 5756 and so marked.
- Strength class to BS EN 338: To BS 4978 or BS EN 519 or other national equivalent and so marked.
- Surface finish: Painted unless otherwise indicated on drawings.
- Treatment:
  - Preservative treatment: CCA impregnation to NBS section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8.
  - Design service life: 40 years
  - Fire retardant treatment: FR2 where loadbearing

270 UNGRADED SOFTWOOD FOR INTERNAL NON STRUCTURAL USE
- 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: sawn generally, regularised for wall battens.
- Treatment:
  - Preservative treatment: CCA impregnation to NBS section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8.
  Design service life: 40 years..
  - Fire retardant treatment: none .

271 UNGRADED SOFTWOOD FOR ROOF BATTENS, COUNTERBATTENS AND FILLETS
- 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: sawn generally, regularised for wall battens.
- Treatment:
  - Preservative treatment: CCA impregnation to NBS section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8.
- Design service life: 40 years..
- Fire retardant treatment: none .

310 STRUCTURAL PLYWOOD
- Standard: To the relevant national standards and quality control procedures specified in BS 5268-2, and so marked.
- Type: Nordic Spruce.
- Grade: contractor to confirm with Architect
- Nominal thickness/ number of plies: 18mm
- Finish: Sanded.
- Treatment: CCA impregnation to NBS section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C8.

WORKMANSHIP GENERALLY

401 CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD AND HARDWOOD
- Dimensions: Dimensions in this specification and shown on drawings are target sizes as defined in BS EN 336.
- Tolerances: The tolerance indicators (T1) and (T2) specify the maximum permitted deviations from target sizes as stated in BS EN 336, clause 4.3:

- Tolerance class 1 (T1) for sawn surfaces.
- Tolerance class 2 (T2) for further processed surfaces.

402 CROSS SECTION DIMENSIONS OF NON-STRUCTURAL 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.

403 CROSS SECTION DIMENSIONS OF NON-STRUCTURAL HARDWOOD

- Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
- Maximum permitted deviations from finished sizes: As stated in BS EN 1313-2:
  - Clause 6 for sawn sections.
  - Clause NA.3 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 14081-1 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.

435 NOTCHES, HOLES AND JOINTS IN TIMBER

- 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: Retreat 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: 24%.
  - Covered in generally heated spaces: 20%.
  - Internal in continuously heated spaces: 20%.

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.
- Trussed rafters: Keep vertical during handling and storage.

520 EXPOSED END GRAIN
- Components: Seal exposed end grain of the following before delivery to site:.
- Sealer: Contractor's choice

530 PAINTED FINISHES
- Structural timber to be painted: Primed as specified before delivery to site.

540 CLEAR FINISHES
- Structural timber to be clear finished: Keep clean and apply first coat of specified finish before delivery to site.

550 EXPOSED TIMBER
- Planed structural timber exposed to view in completed work: Prevent damage to and marking of surfaces and arrises.

JOINTING TIMBER

570 JOINTING/ FIXING GENERALLY
- Generally: Where not specified precisely, select methods of jointing and fixing and types, sizes and spacings of fasteners in compliance with section Z20.

580 FRAMING ANCHORS
- Manufacturer: Contractor's choice .
- Material/ finish: Contractor's choice .
- Fasteners: Galvanized or sherardized square twist nails.
  - Size: Not less than size recommended by anchor manufacturer.
- Fixing: Secure using not less than the number of nails recommended by anchor manufacturer.

615 BOLT/ SCREW ASSEMBLIES
- Designation: To BSEN ISO 4018 and 4017 .
- Size: Contractor's to confirm
- Coating applied by manufacturer: as per manufacturer's recommendation
- Nuts and washers: Material grade and finish to suit bolts
- Washer dimensions: Diameter/ side length of washers in contact with timber faces to be minimum 3 times bolt diameter, with a thickness not less than 0.25 times bolt diameter.

630 BOLTED JOINTS
- Bolt spacings (minimum): To BS 5268-2, table 81.
- Holes for bolts: Located accurately and drilled to diameters as close as practical to the nominal bolt diameter and not more than 2 mm larger.
- Washers: Placed under bolt heads and nuts that would otherwise bear directly on timber. Use spring washers in locations which will be hidden or inaccessible in the completed building.
- Bolt tightening: So that washers just bite the surface of the timber. Ensure that at least one complete thread protrudes from the nut.
  - Checking: At agreed regular intervals up to Completion. Tighten as necessary.

640 BOLTED JOINTS WITH CONNECTORS
- Connectors: To BS EN 912.
  - Types and sizes: As shown on drawings.
  - Bolt hole: Where appropriate, size to suit bolt diameter.
  - Manufacturer: Contractor's choice .
- Bolts and washers: To BS 5268-2.

- Connector location: Where not otherwise shown, spacings, end and edge distances to be not less than Standard values to BS 5268-2, Section 6.
- Centres of bolt holes: Not more than 2 mm from positions shown on drawings.
- Assembly: Do not crush timber, deform washers or overstress bolts.

650 GLUED JOINTS

- Adhesive**:** To BS EN 301, type 1.
  - Compatibility: Where relevant, obtain manufacturer's confirmation that adhesive is compatible with preservative/ fire retardant treatment.
- Glued structural components: Fabricated to BS 6446 in clean, controlled workshop conditions.
- Anticipated equilibrium moisture content of timber in service: _____ .

670 ANTI-CORROSION FINISHES FOR FASTENERS

- Galvanizing: To BS 7371-6, with internal threads tapped and lightly oiled following treatment.
- Sherardizing: To BS 7371-8, Class 1.
- Zinc plating: To BS EN ISO 4042 and passivated.

ERECTION AND INSTALLATION

715 BONDED ANCHORS

- Manufacturer: contractor's choice to CA approval
- Size: to suit application
- Material/ finish: resin bonded
- Spacing/ edge distance (minimum): as per manufacturer's recommendation
  - Obtain instructions if specified spacing or edge distance cannot be achieved.
- Installation holes: Drilled to diameter and depth recommended by manufacturer. Clean and free from dust.
- Permeable sleeves: Use in conditions where otherwise loss of bonding agent would be unacceptably high.
- Installation/ tightening: To manufacturer's instructions.

721 EXPANSION ANCHORS

- Manufacturer: As specified by Structural Engineer
- Size: as above.
- Material/ finish: as above
  - Obtain instructions if specified spacing or edge distance cannot be achieved.
- Installation holes: Drilled to diameter and depth recommended by manufacturer. Clean and free from dust.
- Installation/ tightening: To manufacturer's instructions.

740 PRE-ERECTION CHECKING

- Timing: Not less than 10 days before proposed erection start date.
- Checklist:
  - Foundations and other structures to which timber structure will be attached: Check for accuracy of setting out.
  - Holding down bolts: 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.

760 TEMPORARY BRACING
- Provision: As necessary to maintain structural timber components in position and to ensure complete stability during construction.

770 ADDITIONAL SUPPORTS
- Provision: Position and fix additional studs, noggings and/ or battens to support edges of sheet materials, and wall/ floor/ ceiling mounted appliances, fixtures, etc. shown on drawings.
- Material properties: Additional studs, noggings and battens to be of adequate size and have the same treatment, if any, 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.
  - In external or inaccessible locations: Rot and corrosion proof.

780 WALL PLATES
- Position and alignment: To give the correct span and level for trusses, joists, etc.
- Bedding: Fully in fresh mortar.
- Joints: At corners and elsewhere where joints are unavoidable use nailed half lap joints. Do not use short lengths of timber.

784 JOISTS GENERALLY
- Centres: Equal, and not exceeding designed spacing.
- Bowed joists: Installed with positive camber.
- End joists: Positioned approximately 50 mm from masonry walls.

786 JOISTS ON HANGERS
- Hangers: Bedded directly on and hard against supporting construction. Do not use packs or bed on mortar.
- Joists: Cut to leave not more than 6 mm gap between ends of joists and back of hanger. Rebated to lie flush with underside of hangers.
- Fixing to hangers: A nail in every hole.

790 STANDARD JOIST HANGERS
- Standard: To BS EN 845-1.
- Size and type: To suit joist, design load and crushing strength of supporting construction.
- Material/ finish: mild steel

795 TRIMMING OPENINGS
- Trimmers and trimming joists: When not specified otherwise, not less than 25 mm wider than general joists.

850 INSPECTION GENERALLY
- Structural timber-work: Give reasonable notice before covering up.

860 BOLTED JOINT INSPECTION
- Timing: Inspect all accessible bolts at the end of the Defects Liability Period and tighten if necessary.

870 ANCHOR TESTING

- Standard: To BS 5080-1 and -2.
- Preliminary tests: _____ .
- Proof tests: _____ .
- Test reports: Submit as soon as available.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: H13** Revision : **T1**

STRUCTURAL GLASS ASSEMBLIES

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		TENDER	FEB 2019

H13 STRUCTURAL GLASS ASSEMBLIES & FRAMELESS GLASS DOORS

To be read with Preliminaries/ General conditions.

Refer to drawing: C-384.

All glass balustrades, screens and doors to be measured from site prior to manufacture.

REFER TO L10 550, 555, 560 + 562 for details of External and Internal Glass Doors in Existing and New Openings.

120 GLASS SCREENS TO MEETING ROOMS: CLEAR GLASS

- Drawing reference(s): C-384.
- Screens to be equally split:
- Manufacturer and reference: Solaglas Limited or Equal Approved.
- Type: SGG SECURIT CLEAR or Equal Approved.
- Pane Material: refer to schedule- toughened
- Finish: Refer to schedule
- Edge Treatment: polished edges if exposed.
- Glazing channel: 35x55x5mm thick satin anodized aluminium glazing channel at head and base of screen. Channel length approx, 2375mm. Screen to be sat on proprietary rubber bedding strip. All by Solaglas or equal approved.

GENERAL REQUIREMENTS

Design

- Complete the detailed design of the Structural Glass Assembly in accordance with the preliminary design drawings and this specification.
- Co-ordinated detailed design with that for all related works.

Design/Performance Requirements

GENERALLY: Requirements specified in this section apply to the entire structural glass assembly, including flashings and junctions with adjacent parts of the building. Full allowance must be made for deflections and other movements.

INTEGRITY: Determine size(s) and thickness(es) of glass panes, types and locations of assembly fixings and supports and other structural requirements in accordance with BS6262 to ensure that the structural glass assembly will resist, dead loads and design live loads, and accommodate all deflections and thermal movements without damage.

GENERAL MOVEMENT: The structural glass assembly must accommodate anticipated building movement.

THERMAL SAFETY: Glass panes or units must resist thermal stress generated by orientation, shading, solar control and construction.

ACCURACY OF ERECTION: Allowing for manufacturing and installation tolerances, the maximum permitted deviation in glass joint width is +/- 2mm.

SECURITY: All threaded assembly fixings and assembly support fixings must be locked or pinned at the completion of structural glazing to prevent rotation due to building movement or unauthorised adjustment.

ELECTRICAL CONDUCTIVITY AND EARTH BONDING of the structural glass assembly must be in accordance with BS6651 and BS7671

DURABILITY: Products used in the structural glass assembly must not be liable to attack by fungi, insects or vermin.
Submit to the CA a schedule for the maintenance and replacement of sealant and secondary components.

PRODUCTS
Glass Generally
To BS952 and the relevant parts of:
BS EN 572 for basic soda lime silicate glass
BS EN 1096 for coated glass
BS EN 1748 for Borosilicate glass
BS EN ISO 12543 for laminated glass
- Panels to be free from obvious scratches, bubbles, cracks, rippling, dimples and other defects.
- Edges generally undamaged. Shells and chips not more than 2mm deep and extending not more than 5mm across the surface are acceptable if ground out. Edges must be flat ground and arrises slightly ground, suitable for sealant jointing.
- Dimensional tolerances measured before any thermal toughening heat/strengthening:
Pane dimensions < 1mm: +/- 1mm
Pane dimensions > 1mm: +/- 2mm
Pane squareness: Not more than 4mm difference in diagonal measurements
Hole positional tolerance: +/- 1mm from single datum point
Hole diameter tolerance: +/- 1mm
- Distortional tolerances measured after any thermal toughening/heat strengthening
Maximum bow: 0.2% of pane dimension
Maximum roller wave:
For 3 to 5mm glass: 0.5mm
For 6 to 10 mm glass: 0.3mm
For 12mm and thicker glass: 0.15mm
Maximum edge dip:
For 3 to 5mm glass: 0.8mm
For 6 to 10mm glass: 0.5mm
For123m and thicker glass: 0.25mm

THERMALLY TOUGHENED GLASS
- To BS 6206, Class A
- All edgework and holes must be completed before toughening

STAINLESS STEEL ASSEMBLY FIXINGS
- castings and machined fittings: To BS EN 10088-1, grade 1.4401 (BS 1449-2, grade 316)
- plate and strip: to BS EN 10088-2, grade 1.4401 (BS 1449-2, grade 316)
- bars, rods and sections: to BS EN 10088-3, grade 1.4401 (BS 1449-2, grade 316)
- fasteners: austenitic stainless steel, to BS EN 485, BS EN 515 and BS EN 573

FABRICATION AND INSTALLATION

WORKMANSHIP GENERALLY:
- Fabricate and install structural glass assemblies in accordance with specified requirements
- Fabricators and installers must employ competent structural glass assembly operatives. Provide records of their experience to the CA on request
- Machine cut and drill all glass, assembly fixings and assembly supports in the workshop.
- Site drill or cut into structure only in approved locations

STRUCTURAL GLAZING:
- Set out glazing straight, parallel, and truly aligned in level and plane. Orientate glass panes or units to ensure uniformity of appearance.
- Protect all installation tools to reduce risk of damage to glass

- Isolate metal surfaces of assembly fixings from direct contact with glass
- Tighten all assembly fixings/assembly support fixings to manufacturer's recommended torque figures
- Isolate dissimilar metal surfaces of assembly/assembly supports to prevent electrolytic corrosion

SEALED GLASS TO GLASS JOINTS
- sealant: A: silicone to BS 5889, type A or B, neutral curing where in contact or close proximity to other products and finishes which may be adversely affected by acetoxy curing
  B: UV Bond.
  Manufacturer and reference: Proprietary manufacturer
  Colour: clear
- As section Z22, unless specified otherwise in this section

PROTECTION AND FINAL CLEANING
- Remove any cement and plaster based spillage whilst wet.
- Prevent staining, scratching and other disfigurement during installation.
- Thoroughly clean glass and fixings/supports with mild detergent solutions as approved by the system manufacturer.

COMMON GENERAL REQUIREMENTS

211 DESIGN

- Structural glass assembly: Complete the design.
- Related works: Coordinate in the design.

225 INFORMATION TO BE PROVIDED BEFORE DETAILED DESIGN OF STRUCTURAL GLAZING
- Submittals:
- Detailed reports and calculations to prove compliance with design and performance requirements. Reports and calculations must be based on approved laboratory testing or computer modelling.
- Full details of structural sealant glazing design.

231 INFORMATION TO BE PROVIDED BEFORE FABRICATION OF STRUCTURAL GLAZING
- Submittals:
- Detailed drawings to fully describe fabrication and installation.
- Project specific fabrication, handling and installation method statements.
- A schedule of loads that will be transmitted from the structural glass assembly to the structure.
- Proposals for connections to and support from the building structure and building components.
- Proposals for amendments to primary supporting structure and for secondary supporting structure additional to that shown on preliminary design drawings.
- A detailed fabrication and installation programme in compliance with the Main Contract master programme.
- Recommendations for safe dismantling and recycling or disposal of products.

640 SEALED INSULATING GLASS UNITS
- Standards: To BS 5713 and/ or BS EN 1279.
- Colour of aluminium perimeter spacers: tbc
- Perimeter seals:
  - Resistant to UV light degradation on exposed edges.
  - Compatible with structural and weather sealants with which they come into contact.
- Assembly fixings: Hermetically sealed through or into units.
- Structural integrity: Fabricate units to transfer loads safely from glass panes to assembly fixings.

- Perimeter taping: Not permitted.

650 STAINLESS STEEL ASSEMBLY FIXINGS AND/ OR SUPPORTS
- Castings and machined fittings: To BS EN 10088-1, grade 1.4401.
- Plate and strip: To BS EN 10088-2, grade 1.4401.
- Bars, rods and sections: To BS EN 10088-3, grade 1.4401.
- Fasteners: Austenitic stainless steel, to BS EN ISO 3506-1 and -2, grade A4.

660 ALUMINIUM ALLOY ASSEMBLY FIXINGS AND/ OR SUPPORTS
- Extrusions: To BS EN 573-3, alloy designation EN AW-6063.
- Plate and strip: To BS EN 485, BS EN 515 and BS EN 573.

670 BRASS ASSEMBLY FIXINGS
- Castings, extrusions, stampings, plate, and strip: Brass of nominally 60% copper: 40% zinc content.

FABRICATION AND INSTALLATION

710 WORKMANSHIP GENERALLY
- Fabrication: Machine cut and drill glass, assembly fixings and assembly supports in the workshop.

720 SUITABILITY OF SUPPORTING STRUCTURE
- Pre-installation survey: Submit report.

760 DOORS
- Base supported doors: Allow for differential movement with suspended structural glass assemblies.
- Setting out: Provide head, jamb and bottom clearances required by the fittings/ ironmongery manufacturer.
- Fittings and ironmongery: Use matching fasteners supplied by the manufacturer.
- Completion: Check, adjust and lubricate to ensure correct functioning.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: H62** Revision : **T1**

Natural Slating

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	Jan 19

H62 NATURAL SLATING

To be read with Preliminaries/ General conditions.

TYPES OF SLATING

105 ROOF SLATING REPAIRS TO TROWTES HOUSE + COURTROOM
Drawings: GA – 216, C – 550 Detail A - 503

- **Scope:** Carefully inspect entire area of slate roofing and make repairs as necessary.
- Substrate: Existing Battens and Sarking felt
- Pitch: as existing – approximately 46 degrees (Trowtes House) + 42.5 degrees (Courtroom)
- Underlay: Existing Sarking Felt – **Check Condition** and replace sections if required.
- Battens:
  - Size: 50 x 50 nominal : To match existing only where required where existing batten are found to be defective.
  - Fixing: To match existing.
- Slates: **All sound existing Slates to be retained or refixed if loose.**
  Fix salvaged slates from Butchers Hall (725 x 350mm) or Pannier Market (600 x 300mm). Assume Butchers Hall Slates for Trowtes House.
  - Supplier: Tavistock Town Council – Client (Free Issue).
  - Size: To coordinate with existing
  - Head-lap (minimum): To coordinate with existing
  - Fixing: Two nails each slate. Gauge to coordinate with existing.
  - Accessories: coordinate with surrounding leadwork as required as H71.

  Other requirements: All slating and roofing to be completed in accordance with BS 5534, the Code of Practice for Slating and Tiling

110 ROOF RESLATING WITH COUNTERBATTENS TO PITCHED ROOFS

Drawings: GA – 216, C – 550 Detail B, C- 551 + A-501 + A-502.

- **Scope:** Carefully Remove existing slates to Police Station roof slopes and reslate.
- Substrate: Existing rafter and purlin roof.
- Pitch: As existing – approx. 34 deg
- Underlay: Du Pont Tyvek vapour permeable as clause 235.
- Counterbattens:
  - Size: 50x38mm treated sw laid flat
  - Fixing: fix through insulation zone into timber substrate using stainless steel insulation fixings. Helifix Inskew or similar installed to manufacturers details.
- Battens:
  - Size: 25x50mm treated sw.
  - Fixing: 50x 3.35mm annular shank galvanised nails
- Slates: In order of priority and ideally one slate type per roof pitch.
  A: Refix salvaged slates from Police Station (Free Issue). Guildhall Sq Facing.
  B: Fix salvaged slates from Pannier Market.
  - Supplier: Tavistock Town Council – Client (Free Issue). 600 x 300mm approx.

  C: Fix new slates
  - Supplier: Independent Slate Supplies

  Email: steve.gulliver@independentslatesupplies.com
  www.independentslatesupplies.com
  Tel: 01752 848 080
  Product reference: Del Castillo
  - Type: Dark blue Grey, thickness to match existing

- Size: To coordinate with existing (250x500mm nominal).
- Head-lap (minimum): 115mm
- Fixing: Two nails each slate. Slates holed for a 200mm gauge.

- Accessories: coordinate with surrounding leadwork as required as H71.

Other requirements: All slating and roofing to be completed in accordance with BS 5534, the Code of Practice for Slating and Tiling

SLATING GENERALLY

210 BASIC WORKMANSHIP

- General: Fix slating and accessories to make the whole sound and weathertight at earliest opportunity.
- Setting out: To true lines and regular appearance, with neat fit at edges, junctions and features.
- Fixings for slating accessories: As recommended by manufacturer.
- Gutters and pipes: Keep free of debris. Clean out at completion.

220 REMOVING EXISTING SLATING

- General: Carefully remove slates, battens, underlay, etc. with minimum disturbance of adjacent retained slating.
- Sort and grade existing slates. Discard damaged slates.
- Undamaged slates: Clean off algal growths and set aside for reuse.
- Submit typical examples of cleaned slates to be re-used to architect
- NOTE - areas for re-use of existing slates and replacement slates to be agreed.

235 VAPOUR PERMEABLE UNDERLAY

- Manufacturer: Dupont Tyvek
  - Product reference: Supro.
- Standard: BS 5534.
- Handling: Do not tear or puncture.
- Laying: Maintain consistent tautness.
- Vertical laps (minimum): 100 mm wide, coinciding with supports and securely fixed.
- Fixing: Galvanized steel, copper or aluminium 20 x 3 mm extra large clout head nails.
- Eaves: Where exposed, underlay must be BS 8747 Annex B, type 5U, or equivalent UV durable type.
- Penetrations: Use proprietary underlay seals or cut underlay to give a watertight fit around pipes and components.
- Ventilation paths: Do not obstruct.

245 BATTENS/ COUNTERBATTENS - TREATED

- Timber: Sawn softwood.
  - Species: In accordance wit BS 5534, clause 4.11.1.
  - Permissible characteristics and defects:

  Not to exceed limits in BS 5534, annex D.
  - Grading: Contractors choice.
  - Moisture content at time of fixing and covering (maximum): 22%.
- Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C8.

255 COUNTERBATTENS ON RIGID SARKING

- Fixing: Through rigid sarking into rafters at not more than 300 mm centres.

259 COUNTERBATTENS ON RAFTERS

- Fixing: Into rafters at not more than 300 mm centres.

265 BATTEN FIXING
- Setting out: Align parallel to ridge in straight horizontal lines to gauge of slates. Align on adjacent areas.
- Batten length (minimum): Sufficient to span over three supports.
- Joints in length: Square cut. Butt centrally on supports. Joints must not occur more than once in any group of four battens on one support.
- Additional battens: Provide where unsupported laps in underlay occur between battens.
- Fixing: Each batten to each support. Splay fix at joints in length.

270 BATTENS FIXED TO MASONRY
- Setting out: In straight horizontal lines. Align on adjacent areas.
- Batten length (minimum): 3 m.
- Fixing centres (maximum): 400 mm.

272 TIMBER FOR SLATING SUBSTRATE WORK
- Timber: Sawn softwood, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).
  - Moisture content at time of fixing and covering (maximum): 22%.
- Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C8.
  - Type: _____ .

275 SLATE FIXING
- Setting out: Lay slates with an even overall appearance with slightly open (maximum 5 mm) butt joints. Align tails.
- Slate thickness: Consistent in any one course. Lay with thicker end as tail.
- Ends of courses: Use extra wide slates to maintain bond and to ensure that cut slates are as large as possible. Do not use slates less than 150 mm wide.
- Top course: Head-nail short course to maintain gauge.
- Fixing: Centre nail each slate twice through countersunk holes 20-25 mm from side edges.
  - Nails: Copper clout to BS 1202-2 or aluminium clout to BS 1202-3.
  - Nail dimensions: Determine in accordance with BS 5534 to suit site exposure, withdrawal resistance and slate supplier's recommendations.

290 MORTAR BEDDING/ POINTING
- Mortar: As section Z21, 1:3 cement:sand, with plasticizing admixtures permitted.
  - Bond strength providing resistance to uplift: In accordance with BS 5534.
- Weather: Do not use in wet or frosty conditions or when imminent.
- Preparation of concrete and clay tile accessories to be bedded: Wet and drain surface water before fixing.
- Appearance: Finish neatly as work proceeds and remove residue.

ROOF SLATING EDGES/ JUNCTIONS/ FEATURES

305 GENERALLY
- Fittings and accessories: As recommended by slate supplier, do not improvise.
  - Exposed fittings and accessories: To match slate colour and finish.
- Cut slates: Cut only where necessary, to give straight, clean edges.
- Flashings: Fix with or immediately after slating. Form neatly.

325 FIRE SEPARATING WALLS

- Separating walls: Completely fill space between top of wall and underside of slates with mineral wool quilt to provide fire stopping.
- Boxed eaves: Completely seal air paths in plane of separating wall with wire reinforced mineral wool, not less than 50 mm thick, fixed to rafters and carefully cut to shape to provide fire stopping.

345 VENTILATED EAVES TO PARAPET GUTTER

- *Over Fascia ventilator:* ***If Required by Building Control Officer***
  - *Manufacturer: Glidevale.*
    Product reference: FV/250 .
  - *Fix to carry underlay, form drip into parapet gutter and provide free passage of air over insulation.*
- *Undercourse and first course slates: Fix with tails projecting 50 mm over gutter or to centre of gutter, whichever dimension is the lesser.*

365 UNVENTILATED EAVES

- Underlay support: treated sw fillet.
  - Continuous to prevent water retaining troughs.
- Gutter: Dress underlay or underlay support tray to form drip into gutter.
- Undercourse and first course slates: Fix with tails projecting 50 mm over gutter or to centre of gutter, whichever dimension is the lesser.

535 LEAD ROLL HIPS

- Underlay: Lay courses over hip.
  - Overlaps (minimum): 150 mm.
- Hip slates: Cut close to timber roll and fix to form a straight junction.

615 METAL VALLEYS

- Underlay: Cut to rake. Dress over tilting fillets to lap onto metal valley. Do not lay under metal.
- Roof slates: Cut extra wide slates adjacent to valley to fit neatly.
  - Valley width between slates: 300mm min

660 SIDE ABUTMENTS

- Underlay: Turn up not less than 100 mm at abutments.
- Abutment slates: Cut as necessary. Fix close to abutments.
- Soakers: Interleave with abutment slates. Fix by turning down over head of abutment slates.

670 TOP EDGE ABUTMENTS

- Underlay: Turn up not less than 100 mm at abutments.
- Top slate courses: Fix close to abutments.

680 RIDGE

- **A**: Existing clay ridge tiles cleaned and relaid on lime mortar bedding
- **B**: New ridge tile to match laid on lime mortar bedding.

690 ROOF WINDOWS

- Underlay: Turn up not less than 100 mm at window/frame surrounds under integral flashings/ soakers.
- Roof slates: Cut as necessary and fix closely all round.

840 VENTILATOR SLATES – (WHERE REQUIRED)

- Ventilator slates:
  Supplier: Independant Slate Supplies . 01752 848080
  Product reference: Nature vent
- Requirement: 500x250mm **or 600x300mm** to match slate size, and type.
- Positions: locate only on inner roof slopes where shown on the drawings
- Connect to 100mm SVP or extract as required and as directed by M&E services drawings

870 SAFETY SUPPORT SYSTEMS – If Required

- Provide flashings and proprietary sleeves through slate weathering layers to accommodate fall arrest system and proprietary cabling fixing points. Refer to specialists suppliers layouts.

871 SUNDRY ACCESSORIES – WEATHERING SLATES TO EXTRACT OUTLETS

- To match slate colour and roof pitch

VERTICAL SLATING EDGES/ JUNCTIONS

910 BOTTOM EDGES

- Slating substrate work: Fix timber tilting fillet to support bottom course of slates in correct vertical plane. Fix flashing to tilting fillet.
- Underlay: Dress over flashing.
- Undercourse and bottom course slates: Fix with tails neatly aligned.

920 TOP EDGES

- Top slate courses: Fix under abutment and make weathertight with flashings dressed down not less than 150 mm.

930 SIDE ABUTMENTS

- Slating substrate work: Chase abutment wall and insert stepped flashing.
  - Flashing: Return not less than 75 mm behind slating, overlapping underlay and battens. Turn back to form a vertical welt.
- Abutment slates: Cut and fix neatly.

950 ANGLES WITH SOAKERS

- Angle slates: Cut extra wide slates and fix to form a straight, close mitred junction.
- Soakers: Interleave with angle slates. Fix by nailing to battens at top edge.

960 JUNCTION WITH ROOF VERGES

- Slating substrate work: Fix additional slating batten parallel to and below verges.
- Course end slates: Splay cut slate and a half width slates to angle of verge rake. Fix to additional slating batten with cut edge parallel to and below verge.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: H71** Revision : **T3**

Lead Sheet Coverings/Flashings

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Jan 19
T2	*250, 270, 410, 472*	Draft Tender	March 19
T3	110, 230	Tender	April 19

H71 LEAD SHEET COVERINGS/ FLASHINGS

To be read with Preliminaries/ General conditions.

All leadwork to be in accordance with Lead Sheet Association recommended details

Miscellaneous Leadwork not covered by this Specification to replaced / installed to Lead Sheet Association recommended details and specification.

TYPES OF LEADWORK

110 FLAT LEAD ROOFING

Drawing references: A–504 + A-505

- Substrate: WBP plywood
- Underlay: Non woven geotextile.
- Type of lead: Rolled to BS EN 12588
  - Thickness: Code 5
- Pretreatment: apply patination to underside of sheets and allow to dry before laying.
- Joints in direction of fall: form in single length
- Eaves detail: Refer to drawings.
- Cross joints: Refer to drawings.
  - Spacing: Refer to drawings.
  - Alignment: Refer to drawings.
- Intermediate fixings: As required
- Ridge/ Hip detail: Refer to drawings.
- Refer to 310 for Wood Core Roll Specification.
- Roof drawn as non-ventilated. Contractor to confirm with Building Control and lead worker before commencing work.

200 ABUTMENT GUTTER LINING –Trowtes House Tower

Drawing references: GA - 216

- Substrate: WBP plywood layboards following roof pitch
- Underlay: Non woven geotextile.
- Type of lead: Rolled to BS EN 12588
  - Thickness: Code 5
- Pretreatment: apply patination to underside of sheets and allow to dry before laying.
- Joints in direction of fall: form in single length
- Cross joints: none.
- Outlets: Form leadwork to discharge into parapet gutter and then hopper.

230 PARAPET GUTTER LINING TO SLATE ROOFS – Trowtes House Only

Drawing references: GA–216 + A–500

- Substrate: WBP plywood stepped as per drawings to LSA Details.
- Underlay: Non woven geotextile
- Type of lead: Rolled to BS EN 12588.
  - Thickness: Code 5.
- Pretreatment: Apply thin coat of patination oil to underside and allow to dry before laying.

- Laying: Over WBP Plywood on tilting fillets to achieve 1:80 falls.
- Lengths: Not more than 1500mm.
  - Cross joints: Lapped not less than 300mm .
- Fixing: Welt edges. Nail top edge of each sheet.
- Gutter drawn as non-ventilated. Contractor to confirm with Building Control and lead worker before commencing work.

250 LEAD WEATHERING COPINGS TO PARAPETS

Drawing references: GA–216 + A–500 – A-505

- Substrate: existing masonry / bituminous render / liquid applied waterproofing
- Underlay: non woven geotextile underlay
- Type of lead: Rolled (milled) to BS EN 12588
  - Thickness: Code 5.
- Joints: welted .
  - Spacing: 2000mm max to suit centres between castellations – refer drawings.
- Edge details: Welted drips to outside face and fully lapped over new liquid applied parapet gutter waterproofing or existing bituminous render on gutter side.
- Fixing: continuous SS clips .
- Form with nominal fall to inside face

  NOTE: Parapet Stones to be removed and set aside until lead / waterproofing under is installed. Stones reset on lead coping with lime mortar and secured with stainless steel dowel to SE Details.

260 LEAD WEATHERING VERGE FLASHING TO ROOFLIGHTS

Drawing references: GA–216

- Substrate: Plywood sheathing
- Underlay: non woven geotextile underlay
- Type of lead: Rolled (milled) to BS EN 12588
  - Thickness: Code 5
- Joints: none – form in single section.
- Edge details: Welted drips to front and weathered over lead upstands to gutter side .
- Fixing: continuous SS clip to outside edge . engage with patent glazing bar to inside face.
- Form with nominal fall to outside face

270 ROOF ABUTMENT WITH SECRET GUTTER TO ABUTMENT WALLS

Drawing references: GA–216 + A-502 + A-503

- **Note** check existing upstand dimension from slate to underside coping and report**.**
- Lead secret gutter lining:
  - Thickness: Code 5.
  - Dimensions:
    Lengths: Not more than 1500 mm.
    End to end joints: Laps of not less than 250mm .
- Upstand: Not less than 65 mm above slates.
- Fixing: Dress into secret gutter and form a welted edge at side to be slates. Nail top edge of each sheet. Dress bottom end neatly into eaves gutter.
- Cover flashing. Form neat chase below coping in bed joint. Form code 4 cover flashing in max 1500mm length and secure in chase using lead wedges. Repoint.

- Secure free edge with ss clips at 400mm max centres.

310 RIDGE/ HIP ROLLS TO LEAD ROOFS

- Core: Rounded timber.
  - Size: 45mm
  - Shape: Tapered to a flat base 25-30 mm wide.
  - Fixing: To ridge/ hip board with brass or stainless steel countersunk screws at not more than 600 mm centres.
- Roof covering: Dress roofing sheets up roll to LSA Detail
  - Fixing: Nail each sheet at underlapping end.
- Lead capping:
  - Thickness: As roof covering.
  - Lengths: Not more than LSA Specification.
  - Wings: Extend not less than 75 mm on to roof.
  - Laps in length: Not less than 150 mm for ridges, 100 mm for hips.
  - Fixing: Secure wings with one copper or stainless steel clip per roofing bay and at each lap.

410 APRON FLASHINGS

- Lead:Milled lead sheet
  - Thickness: Code 5 .
- Dimensions:
  - Lengths: Not more than 1500mm
  - End to end joints: Laps of not less than 100 mm.
  - Upstand: Not less than 75 mm.
  - Cover to abutment: Not less than 200mm.
- Fixing: Lead wedges and flexible pointing at abutments.
  Terne coated stainless steel clips.

420 PROJECTING LEAD CAPPING – TO STRING COURSE + WINDOW HOODS to Trowtes House Stair Tower

Drawing references: GA–216, GA-220, GA-222, GA-225 + A-500 (DETAIL B)

- Lead: Milled lead sheet
  - Thickness: **Code 5 OR 6** TO LSA Recommendations.
- Dimensions:
  - Widths of panel: Not more than 1500mm between welts
  - Joints: Welted between sections. Provide intermediate fixing clips within welts at 200mm centres screwed into masonry substrate.
  - Front apron: Not less than required to form full 25mm drip – secure with continuous ss clips and welted drip detail.
- Abutment: Form neat chase and install lead wedges and flexible pointing at abutment with tower.

440 SOAKERS AND STEP ABUTMENT FLASHINGS

Drawing references: GA–216

- Lead soakers:
  - Thickness: Code 3.
  - Dimensions:
    Length: Slate/ tile gauge + lap + 25 mm.
    Upstand: Not less than 75 mm.

Underlay: Not less than 100 mm.
- Fixing: By roofer.

- Lead step flashings:
  - Thickness: Code 4.
  - Dimensions:
    Lengths: Not more than 1000mm .
    End to end joints: Laps of not less than 100 mm.
    Cover: Overlap to soaker upstands of not less than 65 mm.
  - Fixing: Lead wedges into existing or new bed joints course.

472 CHIMNEY FLASHINGS TO SLATE ROOFS

- Front apron:
  - Thickness: Code 5
  - Dimensions:
    Length: Width of chimney plus not less than 150 mm underlap to each side flashing.
    Upstand: Not less than 75 mm.
    Cover to roof: Not less than 175mm .
  - Fixing: Lead wedges into bed joint.
- Lead soakers:
  - Thickness: Code 3
  - Dimensions:
    Length: Slate/ tile gauge + lap + 25 mm.
    Upstand: Not less than 75 mm.
    Underlap: Not less than 100 mm.
- Lead step flashings:
  - Thickness: Code 4
  - Dimensions:
    Lengths: Not more than 1500 mm.
    End to end joints: Laps of not less than 100 mm.
    Front end: Turn 75 mm around chimney over apron.
    Cover: Overlap to soaker upstands of not less than 65 mm.
  - Fixing: Lead wedges at every course.
- Lead back gutter:
  - Thickness: Code 4
  - Dimensions:
    Length: Width of chimney plus not less than 100 mm overlap to each side flashing.
    Upstand: Not less than 100 mm.
    Gutter sole: Not less than 150 mm.
    Cover up roof: Not less than 225 mm.
- Lead back gutter cover flashing:
  - Thickness: Code 4
  - Dimensions:
    Length: Width of chimney plus not less than 100 mm overlap to each side flashing.
    Cover: Overlap to back gutter upstand of not less than 75 mm.
  - Fixing: Lead wedges into bed joint.

GENERAL REQUIREMENTS/ PREPARATORY WORK

510 WORKMANSHIP GENERALLY

- Standard: To BS 6915 and latest edition of 'Rolled lead sheet. The complete manual' published by the Lead Sheet Association.
- Fabrication and fixing: To provide a secure, free draining and completely weathertight installation.
- Operatives: Trained in the application of lead coverings/ flashings. Submit records of experience on request.
- Preforming: Measure, mark, cut and form lead prior to assembly wherever possible.
- Marking out: With pencil, chalk of crayon. Do no use scribers or other sharp instruments without approval.
- Bossing and forming: Straight and regular bends, leaving sheets free from ripples, kinks, buckling and cracks.
- Solder: Use only where specified.
- Sharp metal edges: Fold under or remove as work proceeds.
- Finished work: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
    - Protection: Prevent staining, discolouration and damage by subsequent works.

516 LEADWELDING

- In situ leadwelding: Is permitted, subject to completion of a 'hot work permit' form and compliance with its requirements.

520 LEAD SHEET

- Production method:
    - Rolled, to BS EN 12588, or
    - Machine cast and BBA certified, 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.

550 LIGHTNING PROTECTION

- Lead coverings: Attach to a lightning protection system where specified by M&E consultant. .
    - Electrical continuity: Provide between lead sheets. Discontinuous sections must be separately bonded.

555 LAYOUT

- Setting out of longitudinal and cross joints: Submit proposals.

560 CONTROL SAMPLES

- General: Complete areas of the finished work, and obtain approval of appearance before proceeding:
- H71/250 Parapet coping
  Size: 5m length.
- Location: Trowtes House and Police Station.

570 EXISTING METAL RETAINED

- Type/ Location/ Extent: Abutment and apron flashings inspect and agree measures of any suitable for retention on site.

- Cleaning: Remove dirt without damage to metal or adversely affecting other material.

585 EXISTING METAL REMOVED TO REMAIN THE PROPERTY OF THE EMPLOYER

- Type/ Location/ Extent: All existing flashings to be removed.
- Removal: Give notice when the metal is to be stripped.
  - Handling/ Storage: Keep for reuse by the Employer.

610 SUITABILITY OF SUBSTRATES

- Condition: Dry and free of dust, debris, grease and other deleterious matter.
NOTE: IF LEVELS DO NOT ALLOW RETENTION OF ASPHALT THEN ALLOW FOR CAREFUL REMOVAL AND FORMATION OF REQUIRED LEVELS.

620 PREPARATION OF EXISTING TIMBER SUBSTRATES

- Remedial work: Adjust boards to level and securely fix. Punch in protruding fasteners and plane or sand to achieve an even surface.
- Defective boards: Give notice.
- Moisture content: Not more than 22% at time of covering. Give notice if greater than 16%.

630 PLYWOOD UNDERLAY

- Standard: Manufactured to an approved national standard and to BS EN 636, section 8 (plywood for use in humid conditions).
  - Sheet size: 2400 or 1200 x 1200 mm and min. 18 mm thick.
- Moisture content: Not more than 22% at time of covering. Give notice if greater than 16%.
- Laying: Cross joints staggered and a 0.5 to 1 mm gap between boards.
- Fixing: With 25 mm annular ringed 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.
  - Nail heads: Set flush or just below the surface.

640 TIMBER FOR USE WITH LEADWORK

- Quality: Planed, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).
- Moisture content: Not more than 22% at time of fixing and covering. Give notice if greater than 16%.
- Preservative treatment: Organic solvent as section Z12 and Wood Protection Association Commodity Specification C8.

645 NEEDLE PUNCHED NONWOVEN POLYESTER GEOTEXTILE UNDERLAY

- Manufacturer: British Lead Mills or Equal Approved.
  - Product reference: Standard UNDERLAY or Equal Approved.
- Weight: 220 G/SQM

650 LAYING UNDERLAY

- Handling: Prevent tears and punctures.
- Laying: Butt or overlap jointed onto a dry substrate.
  - Fixing edges: With copper or stainless steel staples or clout nails.
  - Do not lay over roof edges but do turn up at abutments.
  - Wood core rolls: Fixed over underlay.
  - Protection: Keep dry and cover with lead at the earliest opportunity.

FIXING LEAD

705 HEAD FIXING LEAD SHEET

- Top edge: Secured 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.

710 FIXINGS

- Nails to timber substrates: Copper clout nails to BS 1202-2, or stainless steel (austenitic) clout nails to BS 1202-1.
  - Shank type: Annular ringed, helical threaded or serrated.
  - Shank diameter: Not less than 2.65 mm for light duty or 3.35 mm for heavy duty.
  - Length: Not less than 20 mm or equal to substrate thickness.
- Screws to concrete or masonry substrates: Brass or stainless steel to BS 1210, tables 3 or 4.
  - Diameter: Not less than 3.35 mm.
  - Length: Not less than 19 mm.
  - Washers and plastic plugs: Compatible with screws and lead.
- Screws to composite metal decks: Self tapping as recommended by the deck and lead manufacturer/ supplier for clips.

715 CLIPS

- Material:
  - Lead clips: do not use.
  - Stainless steel clips:
    Thickness: 0.46mm min .
    Grade: BS EN 10088, 1.4301(304) terne coated if exposed to view.
- Dimensions:
  - Width: 50 mm where not continuous.
  - Length: To suit detail.
- Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm.
- Fixing lead sheet: Welt clips around edges and turn over 25 mm.

760 CONTINUOUS CLIPS

- Material:
  - Lead continuous clips:
  - Thickness: 2 codes more than fixed component
  - Copper continuous clips:
  - Thickness: 0.7mm min .
  - Temper: BS EN 1172, designation R220 in welts, seams and rolls, R240 elsewhere.
  - Stainless steel continuous clips:
  - Thickness: 0.46mm min.
  - Grade: BS EN 10088, 1.4301(304).
- Dimensions:
  - Width: To suit detail.
- Fixing clips: Secure at 200mm max centres.
- Fixing lead sheet: Welt edge around continuous clip and dress down.

770 WEDGE FIXING INTO JOINTS/ CHASES

- Joint/ chase: Rake out to a depth of not less than 25 mm.
- Lead: Dress into joint/chase.
  - Fixing: Lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead.
- Sealant: grey flexible polysulphide mastic – contractors choice .
  - Application: As section Z22.

790 SCREW FIXING INTO JOINTS/ CHASES

- Joint/ chase: Rake out to a depth of not less than 25 mm.
- Lead: Dress into joint/ chase and up back face.
  - Fixing: Into back face with stainless steel screws and washers and plastics plugs at not more than 450 mm centres, at every change of direction, and with at least two fixings for each piece of lead.
- Sealant: grey flexible polysulphide mastic – contractors choice
  - Application: As section Z22.

JOINTING LEAD

810 FORMING DETAILS

- Method: Bossing or leadwelding except where bossing is specifically required.
- Leadwelded seams: Neatly and consistently formed.
  - Seams: Do not undercut or reduce sheet thickness.
  - Filler strips: Of the same composition as the sheets being joined.
  - Butt joints: Formed to a thickness one third more than the sheets being joined.
  - Lap joints: Formed with 25 mm laps and two loadings to the edge of the overlap.
- Bossing: Carried out without thinning, cutting or otherwise splitting the lead sheet.

840 WOOD CORED ROLL JOINTS WITHOUT SPLASH LAP

- Wood core:
  - Size: 45 x 45 mm round tapering to a flat base 25 mm wide.
  - Fixing to substrate: Brass or stainless steel countersunk screws at not more than 300 mm centres.
- Undercloak: Dress half way around core.
- Copper or stainless steel clips. Fix to core at not more than 450 mm centres. Do not restrict thermal movement of the undercloak.
- Overcloak: Dress around core with edge welted around ends of clips, finishing 5 mm clear of main surface.

845 WOOD CORED ROLL JOINTS WITH SPLASH LAP

- Wood core:
  - Size: 45 x 45 mm round tapering to a flat base 25 mm wide.
  - Fixing to substrate: Brass or stainless steel countersunk screws at not more than 300 mm centres.
- Undercloak: Dress three quarters around core.
  - Fixing: Nail to core at 150 mm centres for one third length of the sheet starting from the head.
- Overcloak: Dress around core and extend on to main surface to form a 40 mm splash lap.

860 DRIPS WITH SPLASH LAPS

- Underlap: Dress into rebate along top edge of drip.
  - Fixing: One row of nails at 50 mm centres on centre line of rebate.
- Overlap: Dress over drip and form a 40 mm splash lap.

865 DRIPS WITHOUT SPLASH LAPS

- Underlap: Dress into rebate along top edge of drip.
  - Fixing: One row of nails at 50 mm centres on centre line of rebate.
- Overlap: Dress over drip to just short of lower level.

880 WELTED JOINTS

- Joint allowance: 50 mm overlap and 25 mm underlap.
- Copper or stainless steel clips: Fix to substrate at not more than 450 mm centres.
- Overlap: Welt around underlap and clips and lightly dress down.

970 PATINATION OIL

- Manufacturer: Contractors choice.
- Location: exposed surface of all new leadwork, u/side of lead gutters as clause 230, rear surfaces of new lead dormer cladding.
  Application: As soon as practical, apply a smear coating to lead, evenly in one direction and in dry conditions.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: H73** Revision : **T2**

COPPER STRIP/ SHEET COVERINGS/ FLASHINGS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Mar 19
T2	*130*	Tender	April 19

H73 COPPER STRIP/ SHEET COVERINGS/ FLASHINGS

To be read with Preliminaries/ General conditions.

TYPES OF COPPER WORK

130 CLADDING INC. ROOF SLOPES

- **Refer to drawings: C330, C331, A451, A453, A455.**
  CONTRACTORS DESIGN INCLUDING DETAIL OF SECONDARY FIXINGS.
  SUBMIT FABRICATION DRAWINGS FOR APPROVAL BY CA / ARCHITECT
- Cladding system: RUUKKI LIBERTA ELEGANT 500
  Typical Panel Size: ~ 1000mm (w) x 498mm (h)
- **A:** Substrate: Ruukki Support Studs / Frames on WBP Plywood to provide ventilated façade. Façade
  - Preparation: To Manufacturers Recommendations
- Underlay: **P10 320** or as approved by Copper Manufacturer.
- Copper: AURUBIS
  -Temper: To Manufacturers Recommendations + EN 1172:1997
  - Thickness: 1.5mm
  - Finish: NORDIC BRONZE – TBC
  - **Perforated** by manufacturer 'art perforation' to bespoke pattern of ~20mm dia. holes.
  - EXTRA OVER for Backlit Ruukki EMOTION façade system by manufacturer providing variable colour backlighting.
- **B:** Vertical joints: Ruukki Elegant Secret Fix
  - Spacing: 5mm
  Ruukki Drawing: LRSP500DE-3
- **C:** Bottom edge detail: Ruukki Starting Fillet – ventilated.
- **D:** Cross joints: Ruukki Elegant Secret Fix
  - Spacing: 5mm
  Ruukki Drawing: LRSP500DE-2
- **E:** Corner Detail: Ruukki Corner Flashing – CA1EC1X – TBC
  Ruukki Drawing: LRSP500DE-4
- **F:** Head detail: Bespoke to be agreed with Ruukki / CA to form point to 'pinnacle' and be ventilated. Refer to Drawings.
  - Joints in direction of fall: Refer to indicative elevations to be agreed with manufacturer / subcontractor
  - Spacing: Refer to indicative elevations to be agreed with manufacturer / subcontractor
  - Eaves / Verge detail: Ventilated / Flush (~10-20mm joint)
  - Cross joints: Refer to indicative elevations to be agreed with manufacturer / subcontractor
  - Spacing: Refer to indicative elevations to be agreed with manufacturer / subcontractor
  - Ridge/ Hip detail: Ventilated / Flush (~10-20mm joint)
- **G:** Window detail: Ventilated.
  - Cill: Support Flasing, Storm Flashing and Sill Flashing.
  Ruukki Drawing: LRSP500DE-8
  - Reveal: Cover flashings and horizontal brace strip
  Ruukki Drawing: LRSP500DE-13 or 14 – To be agreed with CA.
  - Head: Starting Fillet, Cover Flashings and sealing strips:
  Ruukki Drawing: LRSP500DE-9 or 10 – To be agreed with CA.
- Other requirements: Ruukki Full System - Support Studs, Horizontal brace strips, SFS intec Screws and adjustable fasteners if required.
  VCL / Airtight layer: **P10 310**

250 WEATHERING TO COPINGS
- Substrate: WBP Plywood / Rigid Insulation
- Underlay: **P10 320** or as approved by Copper Manufacturer.
- Copper: AURUBIS
  - Temper: To Manufacturers Recommendations + EN 1172:1997
  - Thickness: 1.5mm
  - Finish: NORDIC BRONZE - TBC
- Joints: To Manufacturers / Subcontractors Recommendations
  - Spacing: To Manufacturers / Subcontractors Recommendations
- Edge details: To form drip to Manufacturers / Subcontractors Recommendations
- Fixing: To Manufacturers / Subcontractors Recommendations
- Other requirements: Manufacturers / Subcontractors Recommendations

420 COVER FLASHINGS IF REQUIRED
- Copper: AURUBIS
  - Temper: To Manufacturers Recommendations + EN 1172:1997
  - Thickness: 1.5mm
  - Finish: NORDIC BRONZE - TBC
- Dimensions:
  - Lengths: Not more than Manufacturers / Subcontractors Recommendations
  - End joints: Single lock welts.
  - Cover to roofing upstand: Not less than Manufacturers / Subcontractors Recommendations
- Fixing: To Manufacturers / Subcontractors Recommendations

470 FLASHINGS
- Copper: AURUBIS
  - Temper: To Manufacturers Recommendations + EN 1172:1997
  - Thickness: 1.5mm
  - Finish: NORDIC BRONZE - TBC
- Dimensions:
  - Lengths: Not more than Manufacturers Recommendations
- Fixing: To Manufacturers / Subcontractors Recommendations

490 RAINWATER GOODS
- Copper: AURUBIS
  - Thickness: To Manufacturers Recommendations
  - Finish: NORDIC BRONZE - TBC
- Dimensions: Hopper (~230mm (w) x 165mm (h)) and connecting swan necks + pipe to adjacent cast-iron hopper.
  - Lengths: Not more than Manufacturers Recommendations
- Fixing: To Manufacturers / Subcontractors Recommendations

GENERAL REQUIREMENTS/ PREPARATORY WORK

510 WORKMANSHIP GENERALLY
- Standard: Generally to CP 143-12 and latest editions of Copper Development Association publications.
- Fabrication and fixing: To provide a secure, free draining and completely weathertight installation.
- Operatives: Trained in the application of copper coverings/ flashings. Submit records of experience on request.
- Preforming: Measure, mark, cut and form copper prior to assembly wherever possible.

- Marking out: With pencil, chalk or crayon. Do not use scribers or other sharp instruments without approval.
- Folding: 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 mechanically.
- Sharp metal edges: Fold under or remove as work proceeds.
- Free edges: Fold under by 10 mm to provide additional stiffness.
- Finished copper work: Fully supported, adequately fixed to resist wind uplift and able to accommodate thermal movement without distortion or stress.
  - Protection: Prevent staining, discolouration and damage by subsequent works.

515 SOLDERING AND BRAZING
- In situ soldering and brazing: Not permitted.

516 SOLDERING AND BRAZING
- In situ soldering and brazing: Permitted, subject to completion of a ‘hot work permit’ and compliance with its requirements.

520 COPPER STRIP/ SHEET
- Standard: To BS EN 1172, rolled, material designation Cu-DHP.
  - Stamped or labelled with material condition designation, nominal thickness and finish.
- Manufacturer: AURUBIS through Ruukki.
  - Product reference: NORDIC BRONZE - TBC

530 INTEGRITY OF COPPER
- Requirement: Design coverings/ flashings and methods of attachment to prevent loss of weathertightness and permanent deformation due to wind pressure or suction.
- Structural requirements:
  - Wind loads: Refer to SE.

535 INTEGRITY OF COPPER
- Requirement: Design coverings/ flashings and methods of attachment to prevent loss of weathertightness and permanent deformation due to wind pressure or suction.
- Wind loads: Refer to SE.
- Structural requirements:
  - Generally: As section B50.
    Modifications: Refer to SE.
  - Design: Complete in accordance with the designated code of practice to satisfy specified performance criteria.

550 LIGHTNING PROTECTION
- Copper coverings: Attach the following to a lightning protection system: as recommended by Manufacturers.
  - Electrical continuity: Provide between copper strips/ sheets via welting of joints.

555 LAYOUT
- Setting out of longitudinal and cross joints: Refer to elevations and Submit proposals.

560 CONTROL SAMPLES
- General: Complete areas of the finished work, and obtain approval before proceeding:

- Size: 4no. 1000mm x 498mm panels
- Location: Facing South.

610 SUITABILITY OF SUBSTRATES
- Condition: Dry and free of dust, debris, grease and other deleterious matter.

630 PLYWOOD UNDERLAY
- Standard: Manufactured to an approved national standard and to BS EN 636, section 8 (plywood for use in humid conditions).
- Moisture content: Not more than 22% at time of covering.
- Laying: To façade manufacturer (Ruukki) reccomendations
- Fixing: To façade manufacturer (Ruukki) reccomendations

640 TIMBER FOR USE WITH COPPER WORK
- Quality: Planed, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).
- Moisture content: Not more than 22% at time of fixing and covering.
- Preservative treatment: Organic solvent as section Z12 and Wood Protection Association Commodity Specification C8.

655 LAYING UNDERLAY
- Handling: Prevent tears, punctures and removal of sanded finish.
- Laying: Overlap jointed, parallel to eaves, onto a dry substrate. Fix/ seal at edges and laps.
- Protection: Keep dry and cover with copper at the earliest opportunity.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: J31** Revision : **T1**

Liquid applied waterproof roof coatings

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	Jan 19

J31 LIQUID APPLIED WATERPROOF ROOF COVERINGS

To be read with Preliminaries/General Conditions.

TYPES OF COATING

110 COLD DECK ROOF COATING

HydrostopEU AH-25 Waterproofing System

Manufacturer: Quest Construction Products Limited
Distributor: SIG Design & Technology, Mannheim House, Gelders Hall Road, Shepshed, Leicestershire. LE12 9NH

- Web: www.singleply.co.uk.
- Email: info@sigdandt.co.uk.
- Tel: 01509 505 714
- Fax: 01509 505 475

Contact: Ian Hayward, Specification Manager. Mobile: 07768 307609

Substrate: Existing Asphalt (assumed to be structurally sound).

NOTE: IF LEVELS DO NOT ALLOW RETENTION OF ASPHALT THEN ALLOW FOR CAREFUL REMOVAL AND FORMATION OF REQUIRED LEVELS TO RECEIVE WATERPROOFING SYSTEM.
- Preparation : Ensure the surface of the existing system is smooth, clean and free from dust, grease and frost. Waterproof coating: AH-25 System
- System manufacturer: Quest Construction Products Limited, Eldon Way, Units 1 & 2 Biggleswade, Bedfordshire, SG18 8NH.

- Primer reference : Blocker Primer.

- Coating reference : HydrostopAH-25.

- Application : Wet-on-Wet. As clause 730 & 760.

- Reinforcement: AH-25 110g/m2 polyester fleece.

- Minimum coverage rate 0.8l/m2 base coat, 1.2l/m2 upper coat (2l/m2 minimum dependent on deck type).

- Colour: Slate Grey RAL7015.
Accessories: All as per SIG Design & Technology and Quest Construction Products Limited recommendations. Guarantee: The system to be installed by an approved SIG Design & Technology Installer. The AH-25 Waterproofing will carry a 25 year guarantee when installed in accordance with BS 6229:2018.

PERFORMANCE

210 ROOF PERFORMANCE
General: Firmly adhered, free draining and weather tight.

240 ATTACHMENT OF ROOF COVERING IN ACCORDANCE WITH BS EN 1991-1-4:2005
- 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 load data to be confirmed and agreed by SIG Design and Technology, Architect and Project Engineer.

- Windloads : Calculate to National Annex to BSEN1991-1-4:2005, Standard Method.

Wind speed (Vbmap): TBC
Altitude factor (Calt): TBC
Direction factor (Cdir): 1
Seasonal factor (Cseason): 1.
Probability factor (Cprop): 1.
Orography factor Co (Z): TBC
Exposure factor Ce (Z): TBC.
Correction Factor cr,T: TBC
Peak Velocity Pressure (qp): TBC External pressure coefficients (Cpe): TBC Internal pressure coefficients (Cpi): TBC

PRODUCTS

310 ANCILLARY PRODUCTS AND ACCESSORIES

- Types: Recommended by waterproof membrane manufacturer.

316B PRIMER for Blocking the migration of Asphaltic oils eliminating the risk of bleed through prior to applying AH-25 waterproofing system

- Type : Blocker primer.

Manufacturer:QuestConstructionProductsLimited.
Distributer: SIG Design & Technology, Mannheim House, Gelders Hall Road, Shepshed, Leicestershire, LE12 9NH.

- Product reference: Blocker Primer.

330 TIMBER TRIMS, ETC

- 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: Not required.

352 CARRIER MEMBRANE

- Type: AH-25 Fabric (110 g/m2).
- Manufacturer: Quest Construction Products Limited.
- Distributer: SIG Design & Technology, Mannheim House, Gelders Hall Road, Shepshed, Leicestershire, LE12 9NH. - Product reference: Reinforcing Membrane.

EXECUTION GENERALLY

410 ADVERSE WEATHER

Do not apply coatings:
- In wet conditions or at temperatures below 0°C, unless otherwise permitted by coating manufacturer.
- In high winds (speeds>7m/s), unless adequate temporary windbreaks are erected adjacent to working area.
- Unfinished areas of roof: Keep dry.

420 SUITABILITY OF SUBSTRATE

Substrates generally:
- Secure, clean ,dry, smooth, free from frost, contaminants, loose material, voids,

protrusions and organic growths.
- Compatible with coating system.
Preliminary work: Complete, including:
- Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.

- Fixing of battens, fillets and anchoring plugs/strips.
Moisture content and stability: Must not impair integrity of roof.

EXISTING SUBSTRATES

520 PRELIMINARY POWER WASH TO EXISTING COVERINGS
- Timing: Before renewing existing coverings, water jet clean all areas. Allow to dry.

525 RENEWING EXISTING SUBSTRATES/ COVERINGS
- Areas to be renewed: To Be Determined.
- Timing: Remove only sufficient substrates/ coverings as will be renewed and made weathertight on same day.

540 MAKING GOOD EXISTING MASTIC ASPHALT COVERING
Defective areas: Soften and carefully cut out.
- Hammers,chisels,etc.: Do not use to cut cold mastic asphalt.
- Substrate : Dryout.
- Separating membrane : Makegood.
- Masticasphalt: Patch level with existing surface into coats, the top coat lapped minimum 75mm onto existing mastic asphalt and to half its depth.

565 EXISTING GUTTERS / OUTLETS
Dirt, debris and build-up of previous coverings/ coatings: Remove to restore free flow of water.

570 EXISTING CRACKS/ GAPS
General: Rake out, clean and make good with sealants or repair systems recommended by coating manufacturer.

575 FINAL POWER WASH TO EXISTING COVERINGS General: Water jet cleans all areas. Allow to dry.

580 STERILIZATION TREATMENT TO EXISTING COVERINGS
Preliminary work: Complete including making good and cleaning down.
Biocidal solution: Apply to all areas previously subject to organic growth. Rinse thoroughly, Allow to dry.

ROOF COATING SYSTEM

710 ADHESION TESTS
- Requirement: Carry out a trial coating to determine priming requirements and/ or system suitability.

- Nature of test: Wet-on Wet AH-25.

- Test results: Submit and arrange for inspection.

720 APPLYING PRIMERS / CONDITIONERS
- Coverage per coat (minimum): Refer to Data Sheet of specific Primer
- Surface coverage: Brushed well in to ensure local or full area coverage according to type.
- Coats: Allow to dry before over coating.

730 LAYING CARRIER MEMBRANE

- Bond: Fully.

- Mechanical fixing: Not Required.

740 MOVEMENT JOINTS IN SUBSTRATE
- Seek project specific SIG Design & Technology advice.

750 PRELIMINARY LOCAL REINFORCEMENT
- Reinforcement strip: Apply to junctions at upstands, penetrations and outlets, joints and fixings in discontinuous unit substrates.
- Bedding: Preliminary coating application.
- Joints:Lap in length.
- Bond:Continuous over whole surface, with no air pockets.
- Condition at completion: Smooth.

760 APPLICATION OF ROOF COATINGS
- Thickness: 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.

- Edge trims: Apply coatings over horizontal leg of trim and into recess.

770 SKIRTINGS AND UPSTANDS
- Top edges of coatings: Where not protected by flashings, apply into chases cut to a minimum depth of 10 mm.
- Completion of chases: When coatings are fully cured, prepare chase and apply sealant as section Z22.

- Sealant: As Specified By Others. Colour: To Be Determined.

SURFACING

810 BLINDING
- Applying dusting powder: To coating surfaces at end of curing period to neutralize tackiness.

COMPLETION

910 INSPECTION
Coating surfaces: Check when cured for discontinuities.

- Defective areas: Apply another coating.

920 ELECTRONIC ROOF INTEGRITY TEST (If Applicable)
- Testing authority: Should test be required, SIG Design & Technology recommend the AWM Group or equivalent organisations.

- AWM GROUP

  Tel: 01765 603975
  Email: info@awmgroup.co.uk Web: www.awmgroup.co.uk

- Timing of test: Prior to, and on completion of waterproofing.

- Condition of roof prior to testing:

  - Waterproof membrane complete to a stage where integrity can be tested.

- Surface: Clean.

Test results and warranty: Submit on completion of testing.

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.

END OF WORK SECTION

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Section **: J40** Revision : **T2**

FLEXIBLE SHEET WATERPROOFING/ DAMP PROOFING

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Feb 19
T2	*+140*	Tender	April 19

J40 FLEXIBLE SHEET WATERPROOFING/ DAMP PROOFING

To be read with Preliminaries/ General conditions.

ALL TANKING AND BELOW GROUND WATER PROOFING TO BE CONTRACTORS DESIGN.

TYPES OF TANKING/ DAMP PROOFING

115 CONCRETE BLINDING TO HARDCORE BEDS

- Concrete: Designated GEN 1 or Standardized prescribed ST2.
  - Thickness: To Manufacturers requirements and SE detail
- Finish on completion: Float Finish Smooth.

140 LOOSE LAID POLYETHYLENE GAS RETARDANT DAMP PROOFING – IF REQUIRED BY BUILDING CONTROL.

- Substrate: Puncture Protection Sheet on GeoTextile Membrane on Insulated Hardcore as per Sublime Details (Ty-Mawr)
- Manufacturer: Visqueen
  - Product reference: Radon Membrane
- Thickness/ Gauge: 0.3mm
- Joints:
  - Surfaces to be joined: Clean and dry beyond full width of joint.
  - Laps (minimum): 150mm
  - Sealing: Taped with Visqueen Pro Single Sided Jointing Tape or Visqueen Gas Resistant Lap Tape to manufacturers details and recommendations
- Accessories: As required by Manufacturer / taped and sealed to existing stone walls dubbed out to give level finish. Protect after installation

180 SELF-ADHESIVE BITUMEN GAS RETARDANT DAMP PROOFING / TANKING

- Substrate: Concrete Blinding to be free of loose particles, dry and frost free. All to BS 8102:2009.
- Primer: HP Tanking Primer applied by brush or roller and allowed to fully dry.
- Manufacturer: VISQUEEN OR EQUAL APPROVED
  - Product reference: GR SAM
- Number of layers: One.
- Thickness/ Gauge: 2mm – EN1849-2
- Bonding: Full. Smooth out to exclude air.
- Joints:
  - Surfaces to be joined: Clean and dry beyond full width of joint.
  - Laps (minimum): 150mm to manufacturers specification.
  - Sealing: Roll to fully adhere. Cover with TreadGUARD 1500 as soon as possible.
- Accessories:
  - Visqueen High Performance (HP) Tanking Primer
  - Visqueen TreadGUARD 1500
  - Visqueen Detailing Strip
  - Visqueen Fixing Strip System
  - Visqueen Top Hat Unit

280 PROPRIETARY CRYSTALLINE ACTIVE MORTAR

- **Substrate:** Sound stable surfaces.

- Preparation: All concrete to be treated with Vandex Super must be clean and have an 'open' capillary system. Remove laitance, dirt, grease etc by means of high pressure water jetting, wet sandblasting or wire brushing. Faulty concrete in the form of cracks, honeycombing etc must be chased out, treated with Vandex Super and filled flush with Vandex Unimortar 1. Surfaces must be carefully prewatered prior to the Vandex application. The concrete surface must be damp but not wet.

- Manufacturer:

Safeguard Europe Ltd.
Redkiln Close,
Redkiln Way,
Horsham,
West Sussex,
RH13 5QLTel: 01403 210204
Fax: 01403 217529
Email: info@safeguardeurope.com

- **Product reference:** Vandex Super

- **Number of Coats:**

- For water retaining structures, internal concrete wall surfaces – Two coats of Vandex Super at 0.75 kg/m^2.

- Concrete slabs – Vandex Super at 1.00 kg/m^2 dry sprinkled and trowel applied to fresh concrete when this has reached initial set.

- Construction joints – Vandex Super at 1.5 kg/m^2 applied in slurry or dry powder consistency immediately prior to placing the next lift / bay of concrete.

- Undercoats: *Consult Safeguard Europe Ltd technical literature for details.*

- Thickness: *Consult Safeguard Europe Ltd technical literature for details.*

- Other requirements: *Consult Safeguard Europe Ltd technical literature for details.*

WORKMANSHIP

310 WORKMANSHIP GENERALLY
- Condition of substrate:
  - Clean and even textured, free from voids and sharp protrusions.
  - Moisture content: Compatible with damp proofing/ tanking.
- Air and surface temperature: Do not apply sheets if below minimum recommended by membrane manufacturer.
- Condition of membrane at completion:
  - Neat, smooth and fully supported, dressed well into abutments and around intrusions.
  - Completely impervious and continuous.

  - Undamaged. Prevent puncturing during following work.
- Permanent overlying construction: Cover membrane as soon as possible.

320 INSPECTION
- Give notice: Before covering any part of membrane with overlying construction.

330 PRIMERS
- Primer**:** Apply Visqueen High Performance Tanking Primer to all areas to be treated. Apply by mopping or brushing to achieve an even and full cover of the surface. Allow the primer to dry before applying GR SAM Tanking Membrane.
- Manufacturer**:** Visqueen Building Products, Maerdy Industrial Estate, Rhymney, Tradegar, NP225PY. Tel: 01685 804672 Fax: 01685 842580 Email: enquires@visqueenbuilding.co.uk Web: www.visqueenbuilding.co.uk
- Reference: Visqueen High Performance Tanking Primer

345 COLD APPLIED BONDING COMPOUNDS
- Type and application: As recommended for the purpose by the membrane manufacturer.

350 ANGLES IN BONDED DAMP PROOFING/ TANKING
- Preformed rot proof fillet to internal angles:
  - Size (minimum): 50 x 50 mm, splay faced.
  - Bedding: Bitumen mastic or bonding compound.
- Reinforcing strip to all angles:
  - Material: As damp proofing/ tanking.
  - Width (minimum): 300 mm.
  - Timing: Apply before main sheeting.
- Dressing of main sheeting onto adjacent surfaces (minimum): 100 mm.

360 JUNCTIONS WITH PROJECTING DPCS/ CAVITY TRAYS
- Use/location: All areas where adjoining Visqueen DPC extends beyond the wall or floor must be fully sealed to the Visqueen TorchOn Tanking Membrane. Expose concealed DPC as required.
- Preparation/Installation: Thoroughly clean away all mortar, debris and dirt from Visqueen DPCs, including any projecting portions of DPCs that will cause joint formation difficulties. Visqueen DPCs that project from the wall shall be fully lapped and sealed to the Visqueen TorchOn Tanking Membrane using Visqueen Zedex DPC Jointing Tape. NB Visqueen DPC material must not be torched onto directly. DPCs that do not project from the wall must be exposed to facilitate joint formation as required. If there is uncertainty on the method or practice of jointing the DPC to the tanking membrane seek the manufacturer's advice.

365 JUNCTIONS WITH FLUSH DPCS/ CAVITY TRAYS
- Adjoining surfaces: Clean and dry.
- Dpcs/ Cavity trays:
  - Expose edge where concealed.
  - Lap and fully bond/ seal sheeting to wall.
  - Dressing of sheeting beyond dpc/ cavity tray (minimum): 50 mm.
  - Bonding/ Sealing: as per manufacturers recommendations.

370 PREFORMED COLLARS FOR PIPES, DUCTS, CABLES, ETC.

- Use/location: Where these pass through DPM and tanking membranes, junctions must be made completely watertight using Visqueen PFU-105 Preformed Pipe Cloak (Top Hat) Units fully bonded/ sealed to both pipes and tanking. Finish the fix of these details using a stainless steel jubilee clip. NB Where non-standard Visqueen Preformed Units are specified supply detailed isometric drawings fully dimensioned for each Preformed Unit required. Alternatively contact Visqueen for guidance.
- Manufacturer: Visqueen Building Products, Maerdy Industrial Estate, Rhymney, Tradegar, NP225PY. Tel:01685804672 Fax:01685842580
- Email: enquires@visqueenbuilding.co.uk
- Web: www.visqueenbuilding.co.uk
- Reference: Visqueen Preformed Units

380 PROTECTION BOARDS FOR DAMP PROOFING/ TANKING

- Use/location: Cover DPM/ tanking with Visqueen TreadGUARD 1500.
- Preparation/Installation: Fix to Visqueen SA GR Tanking Membrane by means of Visqueen Jointing Tape, providing support as necessary to ensure protection board remains fully in contact with tanking and does not move during backfilling operations. All boards to be butt jointed and taped using Visqueen 100mm Girth Lap Tape.
- Manufacturer: Visqueen Building Products, Maerdy Industrial Estate, Rhymney, Tradegar, NP22 5PY. Tel: 01685 804672 Fax: 01685 842580 Email: enquires@visqueenbuilding.co.uk Web: www.visqueenbuilding.co.uk
- Reference: Visqueen TreadGUARD 1500

END OF WORK SECTION

Tavistock – The Guildhall

Section **: J42** Revision : **T1**

Single Layer Polymeric Sheet Coverings

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	Jan 17

J42 SINGLE LAYER POLYMERIC SHEET COVERINGS

To be read with preliminaries /general conditions

110 WARM ROOF COVERING: New Cell Roof

- **Substrate:** Existing Concrete / Screed / Asphalt Waterproofing.
  - **Preparation:** As clause 610F.
- **Roof covering system:** BAUDER SINGLE PLY THERMOFOL SYSTEM or EQUAL APPROVED.
- **System manufacturer:** Bauder Limited, 70, Landseer Road, Ipswich, Suffolk, IP3 0DH.
  Tel: 01473 257 671. Fax: 01473 230 761. **Email:** technical@bauder.co.uk
  Web: www.bauder.co.uk
- **Vapour control layer:** BauderTHERM DS1 Duo, 3.5 mm thick aluminium lined, elastomeric bitumen self-adhesive vapour barrier. Installation as clause 670B.
- **Insulation:** Bauder PIR Taper board, aluminium foil faced, highly efficient rigid urethane insulation Minimum: 125mm thick to achieve the required U value (refer Clause 230) on main roof. Perimeter gutter zone minimum 30mm. This product is fire resistant, has a zero ODP and a Green guide rating of 'A'. Installation as clause 680B.
- **Insulation to upstands:** 30 mm thick, flat board, fire resistant, zero ODP, highly efficient rigid urethane insulation for all vertical upstands to roof penetration. Installation as clause 681B. No insulation to parapet upstand.
- **Separating layer (loose laid):** TBC by Manufacturer.
- **Waterproof membrane:** Thermofol U15 FB, 1.5 mm thick polyester reinforced fleece backed waterproofing membrane, colour Anthracite, fully bonded by Bauder Spray Contact Adhesive. Installation as clauses 720C.
- **Lap joints:** All joints to be hot air or solvent welded, as clause 730A.
- **Details: -**
  Two dimensional detailing: formed using Thermofol pre-coated, pre-fabricated metal, or non-fleece backed membrane (colour and thickness as used for the flat areas), or used in combination where appropriate. Membrane to be either fully bonded using Bauder Full Bond Contact Adhesive or mechanically fixed according to the construction - refer to the Bauder Single Ply Installation Manual for further guidance.
  Three dimensional detailing: Complex three dimensional detailing to curves, pipes or awkward shapes to be formed using Thermofol un-reinforced D15 membrane. Otherwise Thermofol pre-formed corners must be used at intersections and returns.
  Detailing generally: to be carried out in accordance with clauses 760, 764A, 765A, 766A, 767A, 768A, 769, 770, 780A and the Bauder Single Ply Installation Manual.
- **Surface protection:** N/A
- **Accessories:**
  - Use of Bauder Mastic Sealant. Application as clause 901A.
  - Through Parapet Rainwater outlet (size as required to match drainage pipe work). Installation as clause 904A
- **Additional requirements:** 210, 310, 510A, 517, 520, 522, 523, 524, 530, 910, 940, 950B.
- **Other requirements:**
  - None.

115 WARM ROOF COVERING: Rear Extension Flat Roof

- **Substrate:** New Plywood
- **Preparation:** As clause 610B.

- **Roof covering system:** BAUDER SINGLE PLY THERMOFOL SYSTEM
- **System manufacturer:** Bauder Limited, 70, Landseer Road, Ipswich, Suffolk, IP3 0DH.
  Tel: 01473 257 671. Fax: 01473 230 761. **Email:** technical@bauder.co.uk
  Web: www.bauder.co.uk
- **Vapour control layer:** BauderTHERM DS1 Duo, 3.5 mm thick aluminium lined, elastomeric bitumen self-adhesive vapour barrier. Installation as clause 670B.
- **Insulation:** Bauder PIR Taper board, aluminium foil faced, highly efficient rigid urethane insulation Maximum 100mm thick to achieve the required U value (refer Clause 230). This product is fire resistant, has a zero ODP and a Green guide rating of 'A'. Installation as clause 680B.
- **Insulation to upstands:** 70mm total thickness for all vertical i.e. builders kerbs and changes of level. Installation as clause 681B.
- **Separating layer (loose laid):** N/A
- **Waterproof membrane:** Thermofol U15 FB, 1.5 mm thick polyester reinforced fleece backed waterproofing membrane, colour Anthracite, fully bonded by Bauder Spray Contact Adhesive. Installation as clauses 720C.
- **Lap joints:** All joints to be hot air or solvent welded, as clause 730A.
- **Details: -**
  Two dimensional detailing: formed using Thermofol pre-coated, pre-fabricated metal, or non-fleece backed membrane (colour and thickness as used for the flat areas), or used in combination where appropriate. Membrane to be either fully bonded using Bauder Full Bond Contact Adhesive or mechanically fixed according to the construction - refer to the Bauder Single Ply Installation Manual for further guidance.
  Three dimensional detailing: Complex three dimensional detailing to curves, pipes or awkward shapes to be formed using Thermofol un-reinforced D15 membrane. Otherwise Thermofol pre-formed corners must be used at intersections and returns.
  Detailing generally: to be carried out in accordance with clauses 760, 764A, 765A, 766A, 767A, 768A, 769, 770, 780A and the Bauder Single Ply Installation Manual.
- **Surface protection:** N/A
- **Accessories:**
  - Use of Bauder Mastic Sealant. Application as clause 901A.
  - Internal Rainwater outlet (size as required to match drainage pipe work). Installation as clause 904A
- **Additional requirements:** 210, 310, 510A, 517, 520, 522, 523, 524, 530, 910, 940, 950B.
- **Other requirements:**
  - None.

PERFORMANCE

210 ROOF PERFORMANCE

- **Roof covering:** Secure, free draining and weather-tight.

230 INSULATION

- **Thermal transmittance (U-Value) of roof:** 0.25 W/m²K
- **Finished Surface:** Suitably even, stable and robust to receive roof covering.
- **Insulation compliance:** To relevant British Standard or Agrément certified.

PRODUCTS

310 ANCILLARY PRODUCTS AND ACCESSORIES

- Types: Recommended by coating manufacturer

320 PRIMER

- **Type:** Any commercially available Bituminous Priming Solution meeting characteristics of BS 8217, clause 5.6.2. supplied by approved installer, or
  - **Bitumen cut back with volatile solvent. Characteristics when tested to BS EN 13357:**
    Volatile solvent content (minimum): 40% by mass.
    Viscosity (maximum) (STV at 25°C, 4 mm orifice): 10s.

320A FAST DRYING PRIMER

- **Type:** Any commercially available fast drying Bituminous Priming Solution meeting characteristics of BS 8217, clause 5.6.2., supplied by an approved installer.

330 TIMBER TRIMS, ETC

- **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:** Please note organic solvent based timber preservatives are not permitted, as these attack bitumen based materials.

EXECUTION GENERALLY

510A ADVERSE WEATHER

- **General:** Do not lay membrane at temperatures below 5°C or in wet or damp conditions.
- Provide temporary covers and drainage as required to keep finished areas of the roof dry.
- **Poor weather:** Suspend work in severe or continuously wet weather, unless an effective
  temporary roof is provided over the working area.
- If unavoidable wetting of the construction does occur, take prompt action to minimise and make good any damage.
- **Unfinished areas of roof:** Temporarily ballast incomplete areas of membrane as necessary to
  protect from wind action.

517 GENERAL WORKMANSHIP REQUIREMENTS

- Installation of the Bauder waterproofing system may only be carried out by approved Bauder contractors.
- Workmanship should comply with current Codes of Practice, BS6229 and Bauder Ltd installation instructions. All waterproofing materials and system components should be supplied by Bauder Ltd, unless otherwise stated, to be included within the guarantee. Non-compliant workmanship will not be permitted (even if the system is watertight). All such faults must be remedied, before the Guarantee can be issued.
- Any building work which is the responsibility of the roofing contractor and has a bearing on the life of the Bauder System should be carried out by properly trained and qualified tradesmen.
- Any structural damage, peculiarities or defects discovered that might affect the performance of the Bauder waterproofing, should be reported immediately to the client and Bauder in order that they may make a decision in overcoming the problem prior to waterproofing.

- The contractor is to ensure water tightness of the roof at all times.
- Where building works are to be carried out by other trades, following completion of the waterproofing, the contractor must make adequate provision for supplying protection to prevent damage to the new membranes. The final inspection will not be carried out by the independent surveyor until all associated trades are complete and the roof areas are clear from all debris and protection layers.
- All mechanical and electrical work to plant and equipment should be carried out by competent mechanical and electrical qualified tradesmen. All plant is to be reinstated and re-commissioned on completion of the roofing works in accordance with the client's detailed specification.
- Any lead work must be carried out by skilled tradesmen and in accordance with current codes of practice and the recommendations of the Lead Development Association.

520 INCOMPLETE WORK

- **End of working day:** Provide temporary seal to the deck to prevent water infiltration, ensuring that the insulation, if present, is protected.
- Ensure that the sequence of laying enables temporary sealing of loose membrane edges to be down on the slope and not against the flow of water.
- **On resumption of work:** Cut away tail of membrane from completed area and remove from roof.

522 PROTECTION AND STORAGE OF MATERIALS

- Store rolls of polymeric membrane and associated products in a clean, dry, well ventilated and cool conditions.
- Store materials designated by the manufacturers as temperature sensitive in facilities where temperature can be maintained at the recommended level.
- Insulation products must be kept dry and protected from wet weather during storage and installation.

523 PROTECTION OF WORK

- Ensure that from completion of the roof until practical completion:
- The roof is not used as a working platform, unless fully protected to the satisfaction of the CA.
- No paints, solvents or other volatile substances harmful to the membrane are allowed to come into contact with the roof surface.
- No building materials stored on the roof.
- Finished roof areas are adequately protected from damage by subsequent building operations.

524 HEALTH & SAFETY INFORMATION – ROOFING WORK

1. Suitable precautions must be taken to prevent accidents occurring when roofing systems are being installed.

2. The contractor must ensure that adequate measures are taken to effectively prevent injury to members of the public and other persons using the premises.

3. Where microwave equipment is installed at roof level, care must be taken to prevent persons working on the roof from being exposed to large doses of microwave radiation.

4. The contractor is responsible for providing adequate fire fighting equipment in the form of extinguishers during work on the roof. These should be kept in easily accessible locations and be suitably signed.

5. As far as roofs are concerned, edge protection in the form of scaffolding or a fixed structure should be in place to a height of 1.1 metres in accordance with the Workplace (Health, Safety and Welfare) Regulations 1992.

   Failing this, safety harnesses may be worn in exceptional circumstances where this is the only way of preventing falls.

   Means of access should be by fixed ladder, passenger hoist or scaffolding.

6. The contractor must ensure that suitable written method statements and risk assessments are available for the work being undertaken. In particular, it is essential that manual handling methods be fully assessed as roofing materials are heavy and can cause serious injury.

7. The contractor must ensure that suitable information about the roof covering is provided to the Client at the end of the work to ensure that work in future can be carried out safely. This information will form part of the Safety File.

8. All persons working on the roof should be provided with, and wear, suitable personal protective equipment and wet weather gear. Training must be provided to all contract staff on the safe use of the equipment.

9. The installer must observe Product Safety Datasheets, relevant to the materials being used.

10. Current CDM Regulations must be observed.

530 APPLYING PRIMERS

- **Coverage per coat (minimum):** As per manufacturer's recommendations.
- **Surface coverage:** Even and full.
- **Coats:** Fully bond. Allow volatiles to dry off thoroughly between coats.

SUBSTRATES/ VAPOUR CONTROL LAYERS/ WARM ROOF INSULATION

610B SUITABILITY OF SUBSTRATES (PLYWOOD)

- **Substrates generally:** Secure, clean, dry, smooth, free from frost, contaminants, voids and protrusions. The new WPB plywood, thickness as specified by client, should be BBA certified, conforming to BS EN 1995 & CPD/CE compliant, fixed directly to either the joists or firings using recommended fasteners.
- **Falls:** Where provided, the falls/cross-falls should be designed to 1:40 to achieve minimum finished falls of 1:80 to comply with drainage requirements of BS 6229:2003 and the SPRA design guide. No deflections or back-falls present if the deck is designed to achieve a 0° level finished surface.
- **Preliminary work:** Complete including:
  - Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
  - Fixing of battens, fillets and anchoring plugs/ strips.
- **Moisture content and stability of substrate:** Must not impair roof integrity.

- **Preparation:** All such items to be rectified as necessary to eliminate the possibility of puncturing the new waterproofing system. The joints in the plywood should be taped with 200mm wide strips of Bauder R333 taping strip. Lay centrally over substrate joints before laying vapour control layers or coverings. Adhere to substrate with bonding compound along edges only or intermittent strips of gaffer tape, prior to the self-adhesive vapour barrier being laid. Prime all areas receiving the vapour barrier with fast drying bitumen primer, as clause 320A, and allow it to dry.

610F SUITABILITY OF SUBSTRATES (CONCRETE)

- **Substrates generally:** Secure, clean, dry, smooth, free from frost, contaminants, voids and protrusions.
- **Falls:** Where provided, the falls/cross-falls should be designed to 1:40 to achieve minimum finished falls of 1:80 to comply with drainage requirements of BS 6229:2003 and the SPRA design guide. No deflections or back-falls present if the deck is designed to achieve a 0° level finished surface.
- **Preliminary work:** Complete including:
  - Grouting of deck slab joints, application of surface screed (including falls if specified).
  - Formation of abutment upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
  - Fixing of battens, fillets and anchoring plugs/ strips as required.
- **Moisture content and stability of substrate:** Must not impair roof integrity.
- **Preparation:** The new concrete/ screed deck to be allowed to cure thoroughly, remove rough edges, and surface defects. If the surface is very rough a skin screed of concrete to be applied to give a smooth surface. Prime all areas receiving the new waterproofing with bitumen primer, as clause 320, and allow it to dry.

640 FIXING TIMBER TRIMS

- **Fasteners:** fastener type/length appropriate and suitable to particular deck substrate.
- **Fixing centres (maximum):** 500 mm.

670B LAYING VAPOUR CONTROL LAYER

- **Attachment:** Cold applied and fully bonded to the deck. With metal decks the sheets should run in the direction of the crowns/troughs, with laps formed on the crowns of the deck to ensure that they are fully supported in accordance with manufacturers requirements.
- **Side and end laps:** minimum 100 mm, laid red over blue with all laps torch sealed to provide a 5-10 mm bitumen bead extrusion. Installation methods as recommended by manufacturer.
- **Penetrations:** Fully seal using bonding methods recommended by manufacturer.
- **Edges of insulation at roof edges, abutments, upstands, kerbs, penetrations and the like:** Edges of insulation at roof edges, abutments, upstands, kerbs, penetrations and the like: Enclose, with vapour control layer, dressed up level with the surface of insulation.
- Care should be taken to ensure adhesion when the temperature is below + 5º C.
- **Please note:** Should BauderTherm DS1 DUO Vapour barrier be specified and left exposed for longer than two weeks as a temporary waterproof layer, the burn off release foil and surface of the torch-activated adhesion stripes will be effected by the exposure to ultra violet. This minor issue can be resolved by using more heat to activate the bitumen stripes, but the process will be slightly slower than when using newly laid material.

670D LAYING VAPOUR CONTROL LAYER

- **Attachment:** Fully bonded to deck substrate in accordance with manufacturer's requirements. However for new concrete, the vapour barrier should be partially bonded (in the approved Bauder manner) to meet the requirements of the current codes of practice.
- **Side and end laps:** minimum 100 mm, with all laps torch sealed to provide a 5-10 mm bitumen bead extrusion. Installation methods as recommended by manufacturer. With metal decks the sheets should run in the direction of the crowns/troughs, with laps formed on the crowns of the deck to ensure that they are fully supported in accordance with manufacturer's requirements.
- **Penetrations:** Fully seal using bonding methods recommended by manufacturer.
- Edges of insulation at roof edges, abutments, upstands, kerbs, penetrations and the like: Enclose, with vapour control layer, dressed up level with the surface of insulation.

680B LAYING WARM ROOF INSULATION

- **Setting out:**
  - **Long edges:** Fully supported. (Where metal decking is specified, the long edges must be fully support and run at right angles to metal deck troughs).
  - **End edges:** Fully supported.
  - **Joints:** close butted together.
  - **End joints:** Stagger.
- **Bedding:** Fully bed into torch activated bonding stripes of vapour control layer surface.
- **Additional board layer (if applicable):** Where a second board layer is required to make up the total insulation thickness required, this should be off-set and staggered from the previous layer and bonded to the first layer of boards using Bauder insulation adhesive, applied in five equal strips across the board surface.
- **Protection to exposed edges of insulation:** A hard timber edge or similar protection should be incorporated at all exposed edges. See clauses 330 & 640.
- **Completion:** Boards must be in good condition, well-fitting and stable.

680C LAYING WARM ROOF INSULATION

- **Setting out:**
  - **Long edges:** Fully supported. (Where metal decking is specified, the long edges must be fully support and run at right angles to metal deck troughs).
  - **End edges:** Fully supported.
  - **Joints:** close butted together.
  - **End joints:** Stagger.
- **Bedding:** Bonded to the upper surface of the Vapour barrier using Bauder Polyurethane Insulation Adhesive. The adhesive should be applied in strips following the direction of the board length giving 6 no. 8 mm wide continuous and equally spaced adhesive beads within each 600 mm board width.
- **Multiple board layers:** Where the total thickness of insulation required is greater than can be achieved by a single standard board, then additional boards of the same product can be adhered to make up the total thickness required. These additional boards should be bonded using Bauder Insulation Adhesive applied in strips following the direction of the board length giving 6 no. 8 mm wide continuous and equally spaced adhesive beads within each 600 mm board width. The second layer of boards should be laid off-set and staggered. The insulation board joints must be taped with a suitable foil faced tape, this to ensure adhesive is applied to the tissue facing only. If in doubt contact Fixfast UK for advice on suitable tape for this application. Fixfast UK, Merlin House, Seven Mile Lane, Borough Green, Sevenoaks, Kent, TN15 8QY Tel: 0845 450 7483.

- **Protection to exposed edges of insulation:** A hard timber edge or similar protection should be incorporated at all exposed edges. See clauses 330 & 640.
- **Completion:** Boards must be in good condition, well-fitting and stable.

681B INSTALLING WARM ROOF INSULATION (INSULATED UPSTANDS)

- Bedding: Fully bonded to the vapour control layer by torch activating the membrane surface profiles. Joints to be close butted.
- Protective hard edge treated timber battens or Bauder Insulated upstand brackets (as appropriate to given detail situation) must be used at all right angled edges e.g. top edges of parapet walls or abutment upstands.

681D INSTALLING WARM ROOF INSULATION (INSULATED UPSTANDS)

- **Bedding:** Bonded to the upper surface of the Vapour barrier using Bauder Polyurethane Insulation Adhesive, following the guidance/installation instructions on the container. The adhesive should be applied in strips following the direction of the board length giving 4 no. 8 mm wide continuous and equally spaced adhesive beads within each 600 mm board width. Upstand insulation boards should be installed before the insulation to the flat areas so that the vertical upstand insulation is retained both at the base and at the top. At vertical wall abutments that are cavity insulated, retention is obtained by mechanical fixing of the Bauder pre-formed metal trim.
- **Protective hard edges:** treated timber battens or Bauder pre-formed metal trim (as appropriate to given detail situation) must be used at all right angled edges e.g. top edges of parapet walls or abutment upstands.

WATERPROOF COVERINGS/ ACCESSORIES

720C ADHESIVE BONDING OF WATERPROOF MEMBRANE

- **Attachment:** To be bonded directly to the surface of the Insulation. The adhesive for this application must be **Bauder Spray Contact Adhesive**. The adhesive is to be applied to the upper surface of the insulation in a full and continuous covering and to the fleece underside of the membrane in a full and continuous covering. The adhesive coverage rate is approximately 3-4 m²/kg, for a two coat application, however guidance should be sought from Bauder Ltd when installing onto Bauder tapered insulation. It is essential that the surface of the insulation is clean, dry and free from dust etc., before applying the adhesive. Care should be taken to ensure that the adhesive does not come into contact with the areas of the membrane that will require welding. The coated membrane should be applied directly onto the adhesive coated substrate after approximately 5-10 minutes of it being applied and then pressure rolled over its full surface area. All side and end laps to be hot air welded. Detailed instructions for the installation of the membrane can be found in the Bauder Installation Guide. Installation shall be carried out in accordance with the details given in the Bauder Installation Guide.
- **Note:** A range of approved hot air welding machines and accessories specifically designed for this operation are listed in the Bauder Installation Guide.
- **Installation:** Installation shall only be carried out by Bauder trained installers in strict accordance with the details given in the Bauder Installation Guide.

730A WELDED JOINTING

- **Laying:** Loose lay, do not wrinkle or stretch.
  - **Side and end joints:** manufacturer's/ supplier's recommendation
  - **Laps (minimum):** manufacturer's/ supplier's recommendation
  - **Preparation:** Clean and dry surfaces for full width of joint.
  - **Sealing:** Weld together (Hot Air or Solvent welded).

- **Condition at completion:** Fully sealed, smooth, weatherproof and free draining.
- **Accessories:** None

760 PERIMETER OF MEMBRANE

- **General:** Secure membrane at roof edge conditions, changes of plane, curb flashings, upstands to roof lights, etc. with mechanical fasteners.

764A PRE-FORMED PRE-COATED METAL FLASHINGS

- Thermofol Pre-Coated Metal sheet is available from Bauder for the formation of fabricated metal flashings, trims and terminations. A list of fabrication companies who already hold this material for bespoke flashing fabrication is available from Bauder Ltd. All detail designs if not in accordance with the design shown within our detail drawing attached must be submitted to Bauder for approval prior to fabrication.
- All Thermofol Coated Metal flashings must be mechanically attached using recommended fastenings installed at 250mm centres. The flashing must be sealed using Thermofol Tape 20 to the structure as shown in the attached detail drawing to ensure minimum air passage through or below the flashing. The chosen fastener supplier can give guidance as to the type of fastener required (fasteners must have counter sunk head style).

765A PERIMETER DETAILS FOR THERMOPLASTIC MEMBRANES

- **Upstands, edge trims, drips, kerbs, etc:** Secure Bauder Thermofol preformed pre-coated metal sections to roof structure with mechanical fasteners.
- Roof membrane: Dress over perimeter profile. Overlap beyond fasteners as per manufacturers recommendations
- Sealing: Weld together.

766A WATERPROOFING MEMBRANE (TWO DIMENSIONAL DETAILS)

- **Upstands, edge details, flashings etc:** Detail work requiring membrane is to be carried out with Bauder Thermofol membrane restrained beneath or welded directly to Thermofol Coated Metal as shown in the attached detail drawings. Thermofol Pre-Formed Corners must used for the formation of internal or external corner details.
- Special consideration must be given to the preparation required prior to hot air welding of the all laps within the Bauder Thermofol System.
- A list of suitable Hot Air Welding machines and accessories specifically designed for this operation is contained in the Bauder application manual/data sheets.

767A WATERPROOFING MEMBRANE (THREE DIMENSIONAL DETAILS)

- **Pipes, Roof Penetrations etc.:** Detail work requiring the membrane to be used in irregular angles is to be carried out with Bauder Thermofol D non-reinforced or Thermofol Pre-Formed Accessory detailing items. Special consideration must be given to the preparation required prior to the hot air welding of all detailing joints within the Bauder Thermofol System.
- Special consideration must be given to the preparation required prior to hot air welding of the all laps within the Bauder Thermofol System.
- A list of suitable Hot Air Welding machines and accessories specifically designed for this operation is contained in the Bauder application manual/data sheets.

768A COVER STRAPS TO THERMOFOL METAL

- Provision should be made to allow a 4mm gap between abutting sections in the Thermofol metal edge trim, for expansion/contraction. Supply and install Thermofol reinforced cover straps, 200mm in width fixed over the joints in the Thermofol metal edge trim to provide a smooth neat finish. The membrane should be welded to the

surface of the Thermofol metal leaving the centre section of the cover strap un-welded. The cover strap should be cut to remove visible 90º corners.

769 DETAILS GENERALLY

- The minimum recommended height for constructing waterproofing details is 150mm from the top of the waterproofing. Special attention should be paid to all structures such as rooflights, counter-flashings, window and door cills etc. These may have to be raised to enable a 150mm waterproofing detail to be formed. We cannot take responsibility for water ingress over waterproofing details the do not meet the minimum required height.

770 PERIMETER DETAILS FOR THERMOPLASTIC

- **Upstands, edge trims, drips, kerbs, etc:** Form flashings from waterproof membrane material.
- **Roof membrane:** Terminate in horizontal plane immediately adjacent to change in direction and secure with mechanical fasteners.
- **Flashings:** Dress over perimeter profile. Overlap horizontal roof membrane beyond perimeter securement, strictly in accordance with the manufacturer's recommendations.
- **Sealing:** Weld together.

780A ROOF PENETRATIONS THROUGH THERMOPLASTIC MEMBRANES

- **Roof membrane:** Cut around penetrations and secure to deck.
- **Flanged sleeve:**
  - **Type:** Form from Thermofol D 15 un-reinforced membrane, complete with base flange.
  - **Installation:** Dress over and around penetration.
  - **Roof membrane overlap to flange (minimum):** 50 mm beyond fasteners.
  - **Sealing:** Weld flange to roof membrane.
  - **Protection to top edge of sleeve:** Flashing or weathering cravat.

830A RAINWATER OUTLET ACCESS COVER (FOR PAVED LANDSCAPING AREAS)

- The contractor shall provide the specified Bauder rainwater access inspection covers over all internal rainwater outlets on completion of the contract.
- Where traditional paving slabs are specified, Bauder produces removable grille covers with adjustable feet (height adjustment range 60 mm to 90 mm), that is suitable for most situations.
- **Completion:** The feet of the unit should be manually adjusted so it finishes flush with the surrounding paved surface.

ACCESSORIES

901A MASTIC SEALANT

- Provision should be made to allow for the use of Bauder Sealant in conjunction with Bauder Sealant Primer at all abutments with the Thermofol system, and any other instances where a mastic seal is required.
- It is imperative that the primer is used to prepare the surfaces effectively to enable a long lasting key with the sealant.

904A INTERNAL OUTLET

- Internal rainwater outlet/s (suitable for PVC membranes) of the correct size is to be installed through the system and deck after creation of a suitable size diameter opening. The outlet should be secured using suitable fasteners.
- All vapour barrier edges should be sealed to the deck using Tape 03. Connection to the rainwater waste pipe should be made by others, details for this connection can be found in the product data pages. The outlet is designed to be connected into the standard spigot end connector on the rainwater waste pipe. The outlet spigot is universal length to cope with differing insulation thickness's and will require cutting down to the correct length. The Thermofol waterproofing membrane should be welded on to the outlets pre-attached PVC membrane (if present) or to the body of the outlet. Install the clip-fix leaf grille.

COMPLETION

910 INSPECTION

- **Interim and final roof inspections:** in accordance with the manufacturer's requirements for guarantee.
- **Notification:** It is the responsibility of the approved contractor to advise Bauder Ltd when the roof is ready for Final Inspection. The 'Final Inspection' of the waterproofing must be carried out and approved by Bauder Ltd prior to any landscaping products/materials being installed; otherwise a guarantee cannot be issued.
- **Other requirements:** Please also refer to preliminaries / general conditions.
- **Site contact details - Site Technician:** Darren Steward, Tel: 07912 379411
- **Technical Contact Details - Area Sales Manager:** Justin Mills, Tel: 07881 092467

940 COMPLETION

- **Roof areas:** Clean.
  - **Outlets:** Clear.
- **Work necessary to provide a weather-tight finish:** Complete.
- **Storage of materials on finished surface:** Not permitted.
- **Completed membrane:** Do not damage. Protect from traffic and adjacent or high level working.

950B GUARANTEE

- A 15 year guarantee is to be provided upon completion following a Final Inspection by Bauder. Details regarding the full terms and conditions of this guarantee are available separately from Bauder Ltd upon request. This system must installed by a trained Bauder installer to be eligible for guarantee.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: K10** Revision : **T6**

Gypsum Board Dry Linings / Partitions / Ceilings

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Feb 19
T2	*185, 205, 220, 236, 245, +210,+680*	Draft Tender	March 19
T3	210,	Draft Tender	March 19
T4	+255, 236	Tender	April 19
T5	205	Tender	April 19
T6	*185, 205, 220, 236, 245, 210, 680*	Tender	April 19

K10 GYPSUM BOARD DRY LININGS/ PARTITIONS/ CEILINGS

To be read with Preliminaries/ General conditions.

TYPES OF DRY LINING

185 WALL LINING SYSTEM ADHESIVE DABS ON BLOCKWORK / STONEWORK

- Manufacturer: British Gypsum, East Leake, Loughborough, Leicestershire LE12 6HX Website: *www.british-gypsum.com,* Tel: *0115 945 6123,*E-Mail: *bgtechnical.enquiries@bpb.com.*
  Product reference: DriLyner BASIC.
- Background: Smooth concrete/stonewall background without adequate mechanical key or suction.
- Parge coat: not required.
- Installation: As clause 620.
- Lining: One layer of 12.5mm Gyproc WallBoard./ Gyrpoc MR in WC
- Gyproc Sealant: As clause 516A, if required.
- Finishing: 2-3mm Thistle Skim coat plaster (General use) as clause 680
- Accessories: Stainless steel Thistle Thin plaster beads and associated trims.

205 LINING ON TIMBER STUD PARTITIONS

- Manufacturer: British Gypsum, East Leake, Loughborough, Leicestershire LE12 6HX Website: *www.british-gypsum.com,* Tel: *0115 945 6123,*E-Mail: *bgtechnical.enquiries@bpb.com.*
  Product reference: Timber Stud or Gypwall Classic
- Background: s/w timber battens (or Metal Studs if contractor preference)
- Parge coat: not required.
- Installation: As clause 620.
- Lining: One layer of 12.5mm Gyproc Soundbloc / Gyproc MR in WCs / Gyproc Fireline MR in S55 Tea Point and S54 2nd Floor WC.
- Insulation: 50mm Mineral Wool as per **P10 250.**
- Gyproc Sealant: As clause 516A, if required.
- Finishing: 2-3mm Thistle Skim coat plaster (General use) as clause 680
- Accessories: Stainless steel Thistle Thin plaster beads and associated trims.
- Junctions with existing walls: Create Lime mortar nib (to allow for undulations) NHL 2 hydraulic lime mortar nib 1part lime to 3 parts sharp sand. Nib formed to depth to enable minimum 15mm plasterboard overlap past last stud and allow min. 10mm shadow gap. Acoustic Sealant between stud and nib.

210 INFILL LININGS TO EXISTING DOOR WAYS

- **Refer to Detail: A-307.**
- Manufacturer: British Gypsum, East Leake, Loughborough, Leicestershire LE12 6HX Website: *www.british-gypsum.com,* Tel: *0115 945 6123,*E-Mail: *bgtechnical.enquiries@bpb.com.*
  Product reference: Timber Stud and Gypwall Classic
- Background: s/w timber battens and Metal Studs (width depends on existing wall depth.
- Parge coat: not required.
- Installation: To manufacturers recommendations.

- Lining: One layer of 12.5mm Gyproc Fireline (door / cavity side) and Two Layers of 12.5mm Fireline board (Room Side)
- Insulation: 25/50mm (depending on partition thickness) Mineral Wool as per **P10 250.**
- Gyproc Sealant: As clause 516A, if required.
- Finishing: 2-3mm Thistle Skim coat plaster (General use) as clause 680
- Accessories: Stainless steel Thistle Thin plaster beads and associated trims.
- Continuous Intumescent sealant and Compriband Strips to perimeter as per Detail.
- NOTE: floor and head track attached to structural floor/ soffit at centres to manufacturer's recommendation using suitable proprietary fixings.

220 PROPRIETARY SUSPENDED CEILING SYSTEM – EXTENDED DROP

- Standard: To BS EN 13964.
- Manufacturer: British Gypsum, East Leake, Loughborough, Leicestershire LE12 6HX Website: *www.british-gypsum.com,* Tel: *0115 945 6123,*E-Mail: *bgtechnical.enquiries@bpb.com*.
  British Gypsum contact:
  Product reference: **CasoLine MF.**
- Structural soffit: Timber joists
- Performance criteria:
  Fire resistance to BS 476: Part 21 or 22: n/a.
  Fire protection to steels BS 476: Part 23: n/a.
  Sound insulation: Airborne Rw 56 dB (Rw+Ctr 50 dB), Impact Lnw 68 dB.
  Sound Absorption Class: n/a.
  Cavity/Plenum depth: **Min. 275mm (varies)**
- Suspension system:
  Hangers: Gypframe MF8 Strap hanger or Gypframe FEA1 Steel angle fixed to soffit via Gypframe MF12 Soffit Cleats.
  Primary grid: Gypframe MF7 channels at 1200mm centres, suspended from hangers at 1200mm centres.
  Secondary grid: Gypframe MF5 sections at 450mm centres, fixed to primary grid with British Gypsum Wafer Head Jack-Point Screws or alternatively Gypframe MF9 clips.
  Perimeters: Gypframe MF6 channel.
- Lining: One layer of 15mm Gyproc Soundbloc.
  Fixing: As clause 591A.
  Screws: 25mm British Gypsum Drywall Screws.
- Cavity insulation: 100mm Mineral Wool as per **P10 240**.
  Recycled content: n/a.
- Gyproc Sealant: As clause 516A.
- Finishing: 2-3mm Thistle Skim coat plaster (General use) as clause 680
- Accessories: Gyproc Profilex access panels as clause 531A – as required.
  - *Please always refer to current literature by visiting www.british-gypsum.com*

236 SUSPENDED CEILING ON METAL FRAMING - MIMINUM DROP

- Manufacturer: British Gypsum, East Leake, Loughborough, Leicestershire LE12 6HX Website: *www.british-gypsum.com,* Tel: *0115 945 6123,*E-Mail: *bgtechnical.enquiries@bpb.com*.
  Product reference: **GypLyner UNIVERSAL.**
- Structural soffit: timber joists Joists / existing plasterboard / lath and plaster overboarded with 9.5mm plasterboard.
- Performance criteria:

Sound insulation: Airborne Rw 52 dB, Impact Lnw 66 dB.
Sound Absorption Class: n/a.
Cavity/Plenum depth: 120mm (max).

- Suspension system:
  Hangers: Gypframe GL6 Timber Connectors at 600mm centres.
  Grid: Gypframe GL1 lining channels at 450mm centres (max.), suspended from hangers at 600mm centres.
  Channel connectors: Gypframe GL3.
  Perimeters: Gypframe GL8 track.
- Lining: 15mm Gyproc Soundbloc./ 15mm Gyproc MR (WC only)
  NOTE: Double board above G32 to provide minimum. 60minute fire protection.
  Fixing: As clause 591A.
  Screws: 30mm & 45mm British Gypsum Drywall Screws.
- Cavity insulation: Mineral Wool – TBC 50mm typical as per **P10 240**.
  Recycled content: Up to 86%.
- Gyproc sealant: As clause 516A.
- Finishing: 2-3mm Thistle Skim coat plaster (General use) as clause 680
- Services fittings: Install as per manufacturers recommendations.
- Accessories: Gyproc Profilex access panels as clause 531A – as required.
- Other requirements:
  - *Please always refer to current literature by visiting www.british-gypsum.com*
  - *Allow 2 holes between fixings in GL6 timber connector when fixing to side of timber joist. Allow 50mm overlap of GL6 to vertical face of joist (creating 120mm cavity below joist).*

245 CEILING LINING ON TIMBER BATTENS

- Manufacturer: British Gypsum, East Leake, Loughborough, Leicestershire LE12 6HX Website: *www.british-gypsum.com,* Tel: *0115 945 6123,*E-Mail: *bgtechnical.enquiries@bpb.com*.
  Product reference: Gyproc Soundbloc (Ceiling) / Gyproc MR (WC+Tea Point) Wall Board (Roof)
- Background: Timber joists / Timber Battens
- Linings: 15mm Gyproc Soundbloc (Ceiling) / Gyproc MR (WC + Tea Point) / Wall Board (Roof)
  - Fixings: As clause 591A.
- Finishing: 2-3mm Thistle Skim coat plaster (General use) as clause 680
  - Primer/ Sealer: Gyproc sealant: As clause 516A.
  - *Please always refer to current literature by visiting www.british-gypsum.com*

255 ENCASEMENT SYSTEM (METAL FRAMING)

- Manufacturer: British Gypsum
  - Product reference: Encase
- Structural members: All Steelwork.
  - Extent of protection: All Exposed Sides (Typical 3).
- Fire performance:
  - Protection to structural steel: 60minutes minimum.
- Framing system: Sizes and spacing of framing and fixings as recommended by the board manufacturer.
- Linings: 1 layer - 15mm Fireline
- Finishing: Skimmed and Painted.
  - Primer/ Sealer: As required by Manufacturer
  - Accessories: As required by Manufacturer
- Other requirements: As required by Manufacturer

300 ENVIRONMENT – ISO14001: British Gypsum has ISO 14001 certification across the entire business including: mining, manufacture, distribution, and all ancillary services to support the business function.

305 GYPSUM BOARDS GENERALLY
- Standard:
  - Gypsum plasterboard to BS EN 520.
  - Fibre reinforced gypsum board to BS EN 15283-2.
  - Evidence of compliance: All sheets to be CE marked. Submit Declaration of Performance (DoP).

INSTALLATION

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.

326A PARGE COATS:
- Apply a continuous coat of Gyproc Soundcoat Plus at least 6mm thick to the entire surface of the background ensuring all cracked or unfilled joints are covered. Allow to set before following on with Gyproc plasterboard installation.

331A THERMAL SEALS FOR GYPROC LININGS:
- Manufacturer and reference: British Gypsum, 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.

335 ADDITIONAL SUPPORTS
- Framing: Accurately position and securely fix to give full support to:
  - Partition heads running parallel with, but offset from main structural supports.
  - Fixtures, fittings and service outlets. Mark framing positions clearly and accurately on linings.
  - Board edges and lining perimeters, as recommended by board manufacturer to suit type and performance of lining.

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.

375 NEW WET LAID BASES
- Dpcs: Install under full width of partitions/ freestanding wall linings.
- Material: Bituminous sheet or plastics.

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.

FIXING/FINISHING

435 DRY LININGS GENERALLY
- General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
- Cutting gypsum boards: Neatly and accurately without damaging core or tearing paper facing.
  - Cut edges: Minimize and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners.
- Fixings boards: Securely and firmly to suitably prepared and accurately levelled backgrounds.
- Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

445 CEILINGS
- Sequence: Fix boards to ceilings before installing dry lined walls and partitions.
- Orientation of boards: Fix with bound edges at right angles to supports and with ends staggered in adjacent rows.
- Two layer boarding: Stagger joints between layers.

455 METAL FRAMING FOR PARTITIONS/ WALL LININGS
- Setting out: Accurately aligned and plumb.
  - Frame/ Stud positions: Equal centres to suit specified linings, maintaining sequence across openings.
  - Additional studs: To support vertical edges of boards.
- Fixing centres at perimeters (maximum): 600 mm.
- Openings: Form accurately.
  - Doorsets: Use sleeved or boxed metal studs and/ or suitable timber framing to achieve strength grade requirements for framing assembly and adequately support weight of door.
  - Services penetrations: Allow for associated fire stopping.

475 METAL FURRINGS FOR WALL LININGS
- Setting out: Accurately aligned and plumb.
  - Vertical furring positions: Equal vertical centres to suit specified linings, maintaining sequence across openings. Position adjacent to angles and openings.
  - Additional vertical furrings: To support vertical edges of boards and at junctions with partitions.
  - Horizontal furring positions: To provide continuous support to edges of boards.
- Adhesive bedding to furrings:
  - Dabs: Length 200 mm (minimum). Located at ends of furrings and thereafter at 450 mm (maximum) centres.

- Junctions with partitions: Continuous bed with no gaps across cavity.

485 SUSPENDED CEILING GRIDS
- Setting out: Accurately aligned and level.
  - Grid members and hangers: Centres to suit specified linings and imposed loads.
  - Additional grid members: Provide bracing and stiffening at upstands, partition heads, access hatches, etc.
- Fixing: Securely at perimeters, grid joints, top and bottom hanger fixings.

505 INSTALLING MINERAL WOOL INSULATION
- Fitting insulation: Closely butted joints and no gaps. Use fasteners to prevent slumping or displacement.
- Services:
  - Electrical cables overlaid by insulation: Sized accordingly.
  - Ceilings: Cut insulation around electrical fittings, etc.

510 SEALING GAPS AND AIR PATHS
- Location of sealant: To perimeter abutments and around openings.
  - Pressurized shafts and ducts: At board-to-board and board-to-metal frame junctions.
- Application: To clean, dry and dust free surfaces as a continuous bead with no gaps.
  - Gaps greater than 6 mm between floor and underside of gypsum board: After sealing, fill with jointing compound

- Adhesive fixed wall lining systems:
  - Material: Adhesive compound.
  - Installation: Form in a continuous line with no gaps to provide a complete barrier to smoke and flame.

- Fixing at perimeters and joints: Secure, stable and continuous with no gaps, to provide a complete barrier to smoke and flame.
- Service penetrations: Cut and pack to maintain barrier integrity. Sleeve flexible materials. Adequately support services passing through barrier.
- Ceiling systems for fire protection: Do not impair fire resisting performance of ceiling system.

516A ACOUSTIC SEALANT:
- Manufacturer and reference: British Gypsum, Gyproc Sealant.
- Location: At junctions with adjoining structure, and at other airpaths.
- Apply as a continuous bead to clean, dry, dust free surfaces, leaving no gaps.
- After application of sealant, bulk fill gaps between floor and underside of plasterboard using Gyproc joint compound.

555 FIRE STOPPING AT PERIMETERS OF DRY LINING SYSTEMS
- Material: Tightly packed mineral wool or intumescent mastic/ sealant.
- Application: To perimeter abutments to provide a complete barrier to smoke and flame.

560 JOINTS BETWEEN BOARDS
- Tapered edged gypsum boards:
  - Bound edges: Lightly butted.

  - Cut/ unbound edges: 3 mm gap.
- Square edged plasterboards: 3 mm gap.
- Square edged gypsum fibre boards: 5 mm gap.

565 VERTICAL JOINTS
- Joints: Centre on studs.
  - Partitions: Stagger joints on opposite sides of studs.
  - Two layer boarding: Stagger joints between layers.

570 HORIZONTAL JOINTS
- Surfaces exposed to view: Horizontal joints not permitted. Seek instructions where height of partition/ lining exceeds maximum available length of board.
- Two layer boarding: Stagger joints between layers by at least 600 mm.
- Edges of boards: Support using additional framing.
  - Two layer boarding: Support edges of outer layer.

580 INSULATION BACKED PLASTERBOARD
- General: Do not damage or cut away insulation to accommodate services.
- Installation at corners: Carefully cut back insulation or plasterboard as appropriate along edges of boards to give a continuous plasterboard face, with no gaps in insulation.

590 FIXING GYPSUM BOARD TO METAL FRAMING/ FURRINGS
- Partitions/ Wall linings: Fix securely and firmly at the following centres (maximum):
  - Single layer boarding: To all framing at 300 mm centres. Reduce to 200 mm centres at external angles.
  - Multi-layer boarding: Face layer at 300 mm centres, and previous layers around perimeters at 300 mm centres.
- Ceilings: 230 mm. Reduce to 150 mm at board ends and at lining perimeters.
- Position of screws from edges of boards (minimum): 10 mm.
  - Screw heads: Set in a depression. Do not break paper or gypsum core.

591A FIXING PLASTERBOARD TO METAL SUPPORTS:
- Partitions/linings/casings:
  - Face layer: Fix securely to all supports at maximum 300mm centres (reduced to 200mm at external angles where recommended by the board manufacturer).
  - Previous layer of plank plasterboard: Install with long edges at right angles to studs, and fix securely to each stud using two screws.
  - Other previous layers: Fix securely to supports around the perimeter of each board at maximum 300mm centres.
- Ceilings: Fix securely to all supports at maximum 230mm centres (reduced to 150mm at board ends and at lining perimeters where recommended by the board manufacturer).
- Fix working from the centre of each board. Position screws not less than 13mm from cut edges and 10mm from bound edges of boards. Set heads in a depression; do not break paper or gypsum core.

592 FIXING INSULATION BACKED PLASTERBOARD TO METAL FURRINGS
- Fixing to furrings: In addition to screw fixings apply continuous beads of adhesive sealant to furrings.

595 DEFLECTION HEADS
- Fixing boards: Do not fix to head channels.

610 FIXING GYPSUM BOARD TO TIMBER
- Fixing to timber: Securely at the following centres (maximum):
  - Nails: 150 mm.
  - Screws to partitions/ wall linings: 300 mm. Reduce to 200 mm at external angles.
  - Screws to ceilings: 230 mm.
- Position of nails/ screws from edges of boards (minimum):
  - Bound edges: 10 mm.
  - Cut/ unbound edges: 13 mm.
- Position of nails/ screws from edges of timber supports (minimum): 6 mm.

620 FIXING GYPSUM BOARD WITH ADHESIVE DABS
- Setting out boards: Accurately aligned and plumb.
- Fixing to substrates: Securely using adhesive dabs.
- Adhesive dab spacings for each board:
  - Horizontally: One row along top edge and one continuous dab along bottom edge.
  - Vertically: One row along each edge and thereafter at intermediate spacings to suit size of board:

Thickness (mm)	Width (mm)	Dab centres (mm)
9.5	1200	400
9.5/12.5	900	450
12.5	1200	600

- Adhesive dab dimensions (width x length): At least 50–75 mm x 250 mm.
  - Position of dabs from edges/ ends of boards (minimum): 25 mm.

FINISHING

650 LEVEL OF DRY LINING ACROSS JOINTS
- Sudden irregularities: Not permitted.
- Joint deviations: Measure from faces of adjacent boards using methods and straightedges (450 mm long with feet/ pads) to BS 8212, clause 3.3.5.
  - Tapered edge joints:
    Permissible deviation (maximum) across joints when measured with feet resting on boards: 3 mm.
  - External angles:
    Permissible deviation (maximum) for both faces: 4 mm.
  - Internal angles:
    Permissible deviation (maximum) for both faces: 5 mm.

680 SKIM COAT PLASTER FINISH: (Hand applied only):
- Manufacturer and reference: **British Gypsum, Thistle Multi Finish Plaster.**
  Thickness: 2-3mm
- Pre-Treatment: Thistle Bond-IT (Glasroc H TILEBACKER & Gyproc Moisture resistant grade plasterboards), Thistle GypPrime (required for Rigidur H boards to control suction).
- Reinforcement:
  Joints/gaps/internal corners: Any gaps exceeding 3mm pre-filled and joints reinforced using Gyproc Joint Tape alternatively Thistle ProTape FT50 or FT100 may be used.

External corners: Thistle Thin Coat Angle Bead or Thin Coat Mini Mesh Bead.
Edges: Thistle Thin Coat Plaster Stop Bead to all door and window surrounds.

- Trowel/float to a tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.

695 INSTALLING BEADS/ STOPS

- Cutting: Neatly using mitres at return angles.
- Fixing: Securely using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.
- Finishing: After joint compounds/ plasters have been applied, remove surplus material while still wet from surfaces of beads exposed to view.

725 REPAIRS TO EXISTING GYPSUM BOARD

- Filling small areas with broken cores: Cut away paper facing, remove loose core material and fill with jointing compound.
  - Finish: Flush, smooth surface suitable for redecoration.
- Large patch repairs: Cut out damaged area and form neat hole with rectangular sides. Replace with matching gypsum board.
  - Fixing: Use methods to suit type of dry lining, ensuring full support to all edges of existing and new gypsum board.
  - Finishing: Fill joints, tape and apply jointing compound to give a flush, smooth surface suitable for redecoration.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: K11** Revision : **T4**

Rigid Sheet Flooring/Sheathing/Decking/Sarking

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Jan 19
T2	*310, 315, 316, 415, + 420. + 430*	Draft Tender	March 19
T3	+418	Draft Tender	March 19
T4	418,	Tender	March 19

K11 RIGID SHEET FLOORING/ SHEATHING/ DECKING/ SARKING/ LININGS/ CASINGS

To be read with Preliminaries/ General conditions.

TYPES OF FLOORING/ SHEATHING/ DECKING/ SARKING/ LINING/ CASING

110 WOOD-BASED SHEETS GENERALLY

- Standard: To BS EN 13986.
  - Evidence of compliance: All sheets to be CE marked. Submit Declaration of Performance (DoP).

310 PLYWOOD RAISED FLOORING TO EXHIBITION AREAS

Refer drawings: A-473

- Substrate: Existing timber joisted and boarded floors .
  - Additional supports: 50mm width sw bearers, height to achieve raised floor zone as shown on drawings.
- Flooring: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636, and so marked.
  - Type: Exterior Grade
  - Grade: II or better.
  - Nominal thickness/ number of plies: 25mm (17 Plys)
  - Edges: Square edged.
  - Other requirements. Provide full support bearers at perimeters
- Setting out: Long edges running across bearers. End joints central over bearers and staggered.
- Fixing to joists:
  - Fasteners: 50mm c/sunkscrews.
  - Fixing centres (maximum):
    Around floor perimeter and along short edges of each board: 150 mm.
    Along intermediate supports: 300 mm.
  - Fixing distance from edges: 25 mm from long edges and minimum 10 mm from short edges.
- Joint treatment: close butted.
- Expansion provision:
  - Clear expansion gap around perimeter of floor area and upstands: 15mm .
  - Intermediate expansion/ movement joints: As recommended by flooring manufacturer.
  - Provide removable access panels as required / specified by M&E Consultant
- Ventilation: Provide perimeter ventilation to match existing with new stainless steel perimeter floor grilles

315 PLYWOOD FLOORING TO NEW FLOORS

Refer drawings:

- Substrate: Existing and new timber joists to Structural Engineers spec..
  - Additional supports: Full depth noggins at all board joints as clause 930.
- Flooring: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636-2, and so marked.
  - Type: Exterior grade (WBP).
  - Grade: CC.
  - Nominal thickness/ number of plies: **18mm**, min 13 plys.

- Edges: Tongued and grooved all edges.
- Other requirements: -

- Setting out: Long edges running across joists. End joints central over joists and staggered.
- Fixing to joists:
  - Fasteners: C'sunk wood screws into pilot holes.
  - Fixing centres (maximum): to BS 8201

  Around floor perimeter and along short edges of each board: 150 mm.
  Along intermediate supports: 300 mm.
  - Fixing distance from edges: 25 mm from long edges and minimum 10 mm from short edges.
- Joint treatment: bonded with PVA adhesive.
- Expansion provision:
  -Clear expansion gap around perimeter of floor area and upstands: 10mm.
  -Intermediate expansion/ movement joints: As recommended by flooring manufacturer.

316 PLYWOOD OVERBOARDING TO EXISTING TIMBER FLOORS

Refer drawings: If required to level

- Substrate: Existing timber floorboards and timber joists.
- Preparation: carefully lift existing floorboards, remove redundant fixings and set aside to be relaid in existing positions where practicable.
- New flooring: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636, and so marked.
  - Type: Flooring Grade
  - Nominal thickness/ number of plies: 6-25mm
  - Edges: Tongued and grooved all edges.
  - Other requirements.
- Setting out: Long edges running perpendicular to existing joists.
- Fixings:
  - Do not direct fix into joists through acoustic clips. Floating floor only
- Joint treatment: close butted.
- Expansion provision:
  - Clear expansion gap around perimeter of floor area and upstands: 12mm .
  - Intermediate expansion/ movement joints: As recommended by flooring manufacturer.

415 PLYWOOD DECORATIVE SHEATHING TO WALLS

Refer drawings: GA-150

- Substrate: New Studwork / Existing Walls
- Preparation: Clean / Dry.
- Sheathing: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636, and so marked.
  - Type: Shuttering Grade softwood (whitewood) faced plywood.
  - Sheet size: 1220x2440mm
  - Nominal thickness/ number of plies: 15mm (11 plys).
  - Edges: Butt joints.
  - Other requirements.
- Setting out: Long edges of boards to run vertically. Refer to elevations.
- Fixings:
  - Adhesive fixed. Ensure temporary support whilst adhesive cures.

- Joint treatment: close butted.
  - Other requirements: Boards to be FSC certified.
- Provide sample of ply to CA to be approved.
- Finish. Note all plywood sheathing to be finished in Class O fire retardant and clear sealed (including cut edges)

418 PLYWOOD VANITY UNIT TOP + SHELVES + JOINERY

Refer drawings: C318 + C 311 + C312

- Substrate: New Studwork
- Preparation: Clean / Dry.
- Sheathing: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636, and so marked.
  - Type: Shuttering Grade softwood (whitewood) faced plywood.
  - Sheet size: 1220x2440mm
  - Nominal thickness/ number of plies: 25mm (17 plys) OR 50mm as noted.
  - Edges: Butt joints.
  - Other requirements.
- Setting out: Refer to elevations.
- Fixings:
  - Adhesive fixed. Ensure temporary support whilst adhesive cures.
- Joint treatment: close butted.
  - Other requirements: Boards to be FSC certified.
- Provide sample of ply to CA to be approved.
- Finish. Note all plywood sheathing to be finished in Class O fire retardant and clear sealed (including cut edges)
- Other: Concealed Fittings as needed inc. Shelf brackets.

420 PLYWOOD PATRESSING TO WALLS – IF REQUIRED

- Substrate: New plasterboard partitions.
- Preparation: Ensure joints taped and sealed.
- Sheathing: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636, and so marked.
  - Type: WBP plywood.
  - Sheet size: 1220x2440mm
  - Nominal thickness/ number of plies: 12mm (min. 9 plys).
  - Edges: Butt joints.
  - Other requirements: To Support grab rails and other equipment in WCs where not located on masonry walls.
- Setting out: Long edges of boards to run vertically. Refer to elevations.
- Fixings:
  - Adhesive fixed. On isolation pads on battens fixed to timber studs.
  - Other requirements: Boards to be FSC certified.
- Finish. Concealed behind plasterboard

430 ALUMINIUM LAMINATED PLYWOOD WALL CLADDING

- Substrate: sw battens
- Preparation: sw timber wall studs
- Sheathing: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636, and so marked.
  - Type: 15mm Plywood with laminated 0.7m aluminium panel
  - Finish: PPC to match lift (Bronze / Copper) – PEARL RAL – TBC.

  - Sheet size: 1220x2440mm
  - Nominal thickness/ number of plies: 15mm (min.11 plys).
  - Edges: 2mm open joints.
  - Other requirements: To Support grab rails and other equipment in WCs where not located on masonry walls.
- Setting out: Long edges of boards to run vertically.
- Fixings:
  - Secret Fixed on rear of boards to battens
  - Other requirements: Boards to be FSC certified.
- Finish. Satin.

515 PLYWOOD ROOF DECKING – FLAT WARM ROOF CONSTRUCTION

Refer drawings: C-332, A-451, A452, A-453, A-456

- Substrate: New timber joists and bearers.
  - Additional supports: Full depth noggins at all board joints as clause 930.
- Decking: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636-2, and so marked.
  - Type: Exterior grade (WBP)
  - Grade: BB or better
  - Nominal thickness/ number of plies: 25mm 17 plies .
  - Edges: Tongued and grooved all edges.
  - Other requirements: FSC certified .
- Setting out: Long edges running across supports. End joints central over joists and staggered.
- Fixing:
  - Fasteners: 50x3.35mm galvanised ring shank nails.
  - Fixing centres:

  Along each support: 25 mm from each long edge and at maximum 300mm centres between.

  Around perimeter of roof area: Maximum 150mm centres.
- Expansion provision:
  - Clear expansion gap around perimeter of roof area and upstands: 10 mm.
  - Intermediate expansion/ movement joints: As recommended by decking manufacturer.

  Allow for plywood upstands all round flat roof areas. Refer drawings.

  NOTE: Allow for 1:60 design falls to achieve a 1:80 flat roof formed in sw firrings.

615 PLYWOOD SARKING/ SHEATHING TO LEAD CLAD ROOF & CLADDING AND MISCELLANEOUS BOARDING

Refer drawings: A-504 + A-505

All substrates to leadwork to be in accordance with Lead Sheet Association recommended details which supersede the details below if conflicting.

- Substrate: Treated sw joists and studs
  - Additional supports: Noggins.
- Sarking: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636-2, and so marked.
  - Type: Exterior grade (WBP)
  - Grade: BB or better.
  - Nominal thickness/ number of plies: 25mm min 17 plies

- Edges: square butted
- Other requirements: FSC certified.

- Setting out: Long edges running across rafters. End joints central over studs/rafters and staggered.
- Fixing to each stud/rafter:
  - Fasteners: 50mm galvanised annular shank nails.
  - Fixing centres (maximum):

  Around roof perimeter and along short edges of each board: 150 mm.

  Along intermediate supports: 300 mm.
  - Fixing distance from edges: 25 mm from long edges and minimum 10 mm from short edges.

620 PLYWOOD SHEATHING TO CLADDINGS, GUTTER LININGS AND MISCELLANEOUS BOARDING

Refer drawings: A-500, A-502, A-503, A-504, A-505

- Substrate: Treated sw joists and studs or as shown on drawings
  - Additional supports: Noggins where necessary to board edges to give solid support..
- Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636-2, and so marked.
  - Type: Exterior grade (WBP)
  - Grade: II or better.
  - Nominal thickness/ number of plies: 18mm AND 25mm as Required.
  - Edges: square butted
  - Other requirements: FSC certified.
- Setting out: Joints central over studs and boards staggered.
- Fixing to each stud/rafter:
  - Fasteners: 50mm galvanised annular shank nails.
  - Fixing centres (maximum):

  Around roof perimeter and along short edges of each board: 150 mm.

  Along intermediate supports: 300 mm.
  - Fixing distance from edges: 25 mm from long edges and minimum 10 mm from short edges.

715 OSB3 FLOORINGS IN PLACE OF OR MAKING GOOD EXISTING SW BOARDED FLOORS.

Scope: Existing sw boarded floors where are not sounds are to be taken up and replaced with OSB3 of equivalent thickness.

- Substrate: Existing timber joists.
  - Condition: Sound and acceptably level. Ensure joists are at a maximum of 450mm centre. If not consult with Project Engineer.
  - Preparation: Gross irregularities removed or filled. Protruding fasteners removed or punched in. Boards should be conditioned by laying them in place at least 24hours before fixing. Do not fix to joists or noggins which have a moisture content of >20%.
- Board: OSB3 to an approved national standard.
  - Bonding quality to BS EN 300 / EN13986: Class 2 .
  - Appearance class to British Standard.
  - Finish: sanded.

- Thickness: **18 unless joists exceed span above.**
- Edges: Tongued and grooved
- Sheet size: as required.

- Setting out: End joints staggered and a 0.5-1 mm gap between adjacent sheets. Joints in underlay offset from joints in substrate. Min. 10mm gap to perimeter external walls.
- Fixing:
  - Fasteners: C/sunk wood screws into pilot holes

  Fastener heads: Set flush with sheet surface.
  - Fixing centres: 150 mm grid over each sheet commencing at centre. Maximum 100 mm centres around perimeter, set in 15-20 mm from edges.

755 HARDBOARD UNDERLAY OVER EXISTING BOARDED FLOORS

- Substrate: Existing floor boards where levelling required.
  - Condition: Sound and acceptably level.
  - Preparation: Gross irregularities removed or filled. Protruding fasteners removed or punched in.
- Underlay: Hardboard to BS EN 622-2.
  - Type: HB.
  - Thickness: 4.8 mm.
  - Sheet size: as required
- Setting out: smooth side uppermost, end joints staggered and a 1-2 mm gap between adjacent sheets. Joints in underlay offset from joints in substrate.
- Fixing:
  - Fasteners: 25mm annular ringed shank nails .

  Fastener heads: Set flush with sheet surface.
  - Fixing centres: 150 mm grid over each sheet commencing at centre. Maximum 100 mm centres around perimeter, set in 12 mm from edges.

WORKMANSHIP

910 INSTALLATION GENERALLY

- Timing: Building to be weathertight before fixing boards internally.
- Moisture content of timber supports (maximum): 18%.
- Joints between boards: Accurately aligned, of constant width and parallel to perimeter edges.
- Methods of fixing, and fasteners: As section Z20 where not specified otherwise.

915 DRYNESS OF CONCRETE/ SCREED SUBSTRATES FOR FLOATING FLOORS

- 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 4 days before testing.

920 VAPOUR CONTROL LAYER IN FLOATING FLOOR CONSTRUCTION

- Location: Immediately below floating layer.
- 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 board manufacturer.

- Excess material: Trimmed off neatly after fixing skirtings/ cover beads.
- Condition of membrane before laying flooring: Clean and dry.

925 BATTENS FOR FLOATING FLOORS
- Timber quality: 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 (maximum): 16%.

930 ADDITIONAL SUPPORTS
- Additional studs, noggings/ dwangs (Scot) and battens:
  - Provision: In accordance with board manufacturer's recommendations and as follows:
    Tongue and groove jointed rigid board areas: To all unsupported perimeter edges.
    Butt jointed rigid board areas: To all unsupported edges.
  - Size: Not less than 50 mm wide and of adequate thickness.
  - Quality of timber: As for adjacent timber supports.
  - Treatment (where required): As for adjacent timber supports.

940 BOARD MOISTURE CONTENT AND CONDITIONING
- Moisture content of boards at time of fixing: Appropriate to end use.
- Conditioning regime: Submit proposals.

950 MOISTURE CONTENT TESTING
- Test regime and equipment: Submit proposals.
- Test results: Submit record of tests and results.

960 FIXING GENERALLY
- Boards/ Sheets: Fixed securely to each support without distortion and true to line and level.
- Fasteners: Evenly spaced in straight lines and, unless otherwise recommended by board manufacturer, in pairs across joints.
  - Distance from edge of board/ sheet: Sufficient to prevent damage.
- Surplus adhesive: Removed as the work proceeds.

975 METAL WALL FRAMING
- Setting out: Framing accurately aligned, vertical and securely fixed to surrounding structure at maximum 600 mm centres. All board edges supported.

976 MINERAL WOOL INSULATION TO METAL FRAMING
- Installation: Neat and secure with close butted joints and no gaps. Where insulation is not self supporting, fixed at head of frame using clips or other suitable proprietary fixings.

980 OPEN JOINTS
- Perimeter joints, expansion joints and joints between boards: Free from plaster, mortar droppings and other debris.
- Temporary wedges and packings: Removed on completion of board fixing.

990 ACCESS PANELS
- Size and position: Agree before boards are fixed.
- Additional noggings/ dwangs (Scot), battens, etc: Provide and fix as necessary.

K11 Rigid sheet flooring, sheathing, decking

END OF WORK SECTION

Tavistock – The Guildhall

Section**: K21** Revision: **T1**

WOOD STRIP/ BOARD FINE FLOORING/ LININGS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		TENDER	01.03.19

K21 WOOD STRIP/ BOARD FINE FLOORING/ LININGS

To be read with Preliminaries/ General conditions.

TYPES OF FLOORING/ LINING

145 ENGINEERED OAK FLOORING

- Substrate: Plywood Deck + Lime Crete Floor
  - Preparation: To manufacturers recommendations. Ensure substrate is sound. level and clear of debris and site waste.
- Vapour control layer: N/A.
- Resilient layer: Not required.
- Strips/ Boards: 220mm wide. 20mm Thick with 6mm Wearing Layer.
  - Manufacturer/ Supplier: Beach Bros, Exeter or Equal Approved.
    Product reference: Engineered Oak
    Colour/ Pattern: Nature Grade.
  - Method of fixing: Fully Adhered to manufacturers recommendations.
- Other requirements: Premium Hardwax oil finish with hardener protection to manufacturers recommendations.

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.

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.

FIXING/ FINISHING

310 VAPOUR CONTROL LAYER INSTALLATION

- Location: Immediately below _____ .
- 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.

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.

340 ACCESS PANELS
- Size and position: Agree before strips/ boards are fixed.
- Additional noggings/ dwangs (Scot), battens, etc: Provide and fix as necessary.

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.

360 EXPANSION PROVISION
- Expansion gaps:
  - Edges of flooring: Parallel to lie of strips/ boards and to manufacturers recommendations.
  - 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.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: L10** Revision : **T5**

WINDOWS/ ROOFLIGHTS/ SCREENS/ LOUVRES

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Jan 19
T2	*480.*	Draft Tender	Feb 19
T3	500	Draft Tender	March 19
T4	500, 555, 560, 562	TENDER	APRIL 19
T5	560	TENDER	APRIL 19

L10 WINDOWS/ ROOFLIGHTS/ SCREENS/ LOUVRES

To be read with Preliminaries/ General conditions.

GENERAL

110 EVIDENCE OF PERFORMANCE
- Certification: Provide independently certified evidence that all incorporated components comply with specified performance requirements.

115 TIMBER PROCUREMENT
- Timber (including timber for wood based products): Obtained from well managed forests and/ or 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.
  - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
- Certification scheme: FSC

120 SITE DIMENSIONS
- Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
- Designated items: new or replacement window units. New louvre units.

140 CONTROL SAMPLES
- Procedure:
-
  - Obtain approval of appearance and quality before proceeding with works to the remaining quantity.

- Designated items:
  As identified within the sections.

PRODUCTS

210 REFURBISHMENT OF EXISTING TIMBER VERTICAL SLIDING SASH WINDOWS

- **Drawing reference(s): C-355 to C-361**
- **Scope**: these windows range from early phase historically important timber sash windows to modern replacement sash windows. Care and restraint should be taken in undertaking all repair works. If in doubt about any element consult the CA.
  Overview: Where existing windows are serviceable and shown as retained as indicated on the GA and C series drawings, these are to be repaired and fully overhauled using traditional methods and upgraded to improve air tightness and acoustic performance.

The presumption should be to retain of as much existing timber as practical, commensurate with ensuring a properly sound and fully operational window unit. Replacement timber to be of equivalent or better quality than the existing timber.

The Contractor to allow for the following works to each unit:

OPTION A:

- Ease and release sash frames by removal of paint build up, label and remove for refurbishment.
- Carefully remove existing internal staff beads, parting beads and sash cords.
- Clean and overhaul axle pulleys and sash weights for re-use.
- Undertake and repairs to sash boxes and frames –see below
- Adjustments made to ensure min 3mm gap between upper sash face and parting bead face.
- New parting bead installed into the existing parting bead groove.
- Sash weights are adjusted to balance sashes.
- Sashes re-hung and checked to ensure easy sliding.
- New staff beads mitred or butt jointed and fitted by pinning, or easy release clips.
- Exposed bare wood is painted with white acrylic primer to BS 5082.
- Refurbish existing or fit new ironmongery as scheduled or as required for normal operation.

OPTION B: Works as per Option A plus:

- Mid rail and lower rail of bottom sash routed to receive profile of pile carrier.
- Pile seals fitted into the mid and bottom rails of lower sash and the new staff beads.

- **Sash Boxes, frame and sills.**
- Assess condition of all timber members, paying particular attention to external sills. Allow for cutting out and replacement of deteriorated sills using seasoned hardwood to match existing profiles, and using two-part epoxy wood adhesive.
- Remove all paint coatings from surrounds, linings and sills using hot air gun
- Prepare surfaces for redecoration as spec section M60/123

Sashes

- Assess condition of all timber members, paying particular attention to bottom sash rails.
  Allow for cutting out and replacement of deteriorated rails using well seasoned deal or redwood to match existing profiles and using two-part epoxy wood adhesive.
- Remove deteriorated external glazing beads/putties.
- Check condition of glazing bars – replace sections as required.
- Glazing: replace broken or cracked or missing panes with clear annealed glass.L40/210 or Laminated safety glass where indicated on the schedules –
- Reglaze using stainless steel sprags and traditional puttied beads.
- Generally all putties to be renewed.

Re-assembly

- Provide new sw parting and staff beads to match existing profiles.
- Trial assemble sashes in openings and plane/adjust as required
- Refix axle pulleys and rehang sashes using red spot white cotton braided cords. Check operation of sashes and adjust weights as required. Refix pocket cover.
- Provide and fix 2 no unfinished brass sash lifts per bottom sash.

- Provide and fix 1 No. sash lock per window. (clean & recycle existing historic sash locks where present)
- Timber treatment: apply 2 coats of Sadolins wood preserver to all prepared surfaces in accordance with Manufacturer's recommendations.
- Decoration: Primer, 1 no undercoats, and 2 finishing coats to all external surfaces as M60/123. Decorate internally as M60/150.
- Ensure free operation of sashes following painting.

220 REFURBISHMENT OF EXISTING TIMBER CASEMENT WINDOWS.

- **Drawing reference(s): C-355 to C-361**
- **Scope**:. Care and restraint should be taken in undertaking all repair works. If in doubt about any element consult the CA.
- **Overview**: These windows cover a number of different configurations.
  Where existing windows are servicable and shown as retained as indicated on the GA and C series drawings, these are to be repaired and fully overhauled using traditional methods and upgraded to improve air tightness and acoustic performance.
  The presumption should be to retain of as much existing timber as practical; commensurate with ensuring a properly sound and fully operational window unit. Replacement timber to be of equivalent or better quality than the existing timber.

- The Contractor to allow for the following works to each unit:
- Ease and release opening casements by removal of paint build up, label and remove for refurbishment.
- Remove ironmongery, hinges and label for refurbishment and re-use.
- Assess and undertake repairs to frames, sills and surrounds in situ.
- Exposed bare wood is painted with white acrylic primer to BS 5082.
- Refurbish existing or fit new ironmongery as scheduled or as required for normal operation.
- **Frames and sills.**
- Assess condition of all timber members, paying particular attention to external sills. Allow for cutting out and replacement of deteriorated sills using seasoned hardwood to match existing profiles as per schedules, and using two-part epoxy wood adhesive.
- Remove all paint coatings from surrounds, linings and sills using hot air gun
- Timber treatment: apply 2 coats of Sadolins wood preserver to all prepared surfaces in accordance with Manufacturer's recommendations.
- Prepare surfaces for redecoration as spec section M60/123

Casements

- Assess condition of all timber members, paying particular attention to bottom rails. Allow for cutting out and replacement of deteriorated rails using well seasoned deal or redwood to match existing profiles and using two-part epoxy wood adhesive.
- Remove deteriorated external sw beads/putties and replace with new.
- Check condition of glazing bars – replace sections as required.
- Timber treatment: apply 2 coats of Sadolins wood preserver to all prepared surfaces in accordance with Manufacturer's recommendations.
- Glazing: replace broken or cracked or missing panes with clear annealed glass.L40/210 or Laminated safety glass where indicated on the schedules.
- Reglaze using stainless steel sprags and traditional puttied beads or sw glazing beads as existing profiles.

Re-assembly

- Trial assemble casements in openings, with hinges and plane/adjust as required
- Refix ironmongery following refurbishment, or replace with new as scheduled.
- Decoration: Primer, 1 no undercoats, and 2 finishing coats to external surfaces as M60/123.
- Internally paint as M60/150
- Ensure free operation of opening casements following painting.

310 REFURBISHMENT OF EXISTING STEEL WINDOWS (Crittall type):
Drawing reference(s): C-355 to C-361

- **Scope & Overview**:
  Steel windows to be refurbished are of predominantly galvanized steel W20 section and single glazed. The majority of units have central opening lights with pivot hinges, secured by friction pivots and pull catches.
  Steel windows and timber subframes (where present) may be refurbished wherever practicable in-situ.
  It is however expected that windows with more significant corrosion or defects, (repair codes 3,4) or where the timber subframe (where present) requires replacement or significant repair will need to be removed for off-site repair.
- Specialist subcontractor with experience of Crittall refurbishment will need to assess each window and determine suitability for in-situ or off-site repair.

In-situ frame refurbishment: Allow for the following works:
Remove putties and paints, and de-glaze where appropriate to properly inspect and address frame defects.
Strip down or remove casements, and correct any minor frame deviations/damage.
Locate and remove corrosion to all fixed frames and corroded elements preventing full functionality of the window or opening light using mechanical means taking finishes back to bare metal. Replace/weld in new elements as required.
Treat surface corrosion, abrade surfaces and feather back loose galvanized surfaces prior to applying suitable high build anti corrosion paint systems before finishing as M60/120.
Refit casements and adjust.
Refurbish/replace friction pivot hinges, control handle/stay, spring catch. Renew cords if present.
Provide restricting sidearms to all opening lights within 950mm of adjacent floor levels to allow max clear opening of 100mm.
Check condition of sub sills. Allow for cutting out and replacement face of deteriorated sills using hardwood to match existing profiles as clause 420.

- Fixing: Retain existing fixings in good condition, where new fixings are necessary refix in same manner as existing, over decorate exposed heads of fixing.
- Lime mortar mix as spec ref: C41/310 , between frame and existing masonry. Prior to pointing with lime mortar seal frame edge to masonry with silicone sealant as clause 810 and 800A
- Decoration: timber sub-frame, where present, prepare and decorate to match frame colour as M60/123.
- Other requirements: provide a test panel of an in-situ refurbished Crittall type window units for approval by the CA prior to completion remainder of windows.

Off-site frame refurbishment:
Label and mark units prior to careful removal, retaining timber sub frames.

- Remove and take away units for full factory refurbishment, as highlighted on the drawings. Strip down, correct any frame deviations, replace defective parts, treat corrosion and fully regalvanise and prime for on-site finishing.
- Reglaze as L40.210 using clear single glazing and puttied beads.
- Check condition of sills. Allow for cutting out and replacement face of deteriorated sills using hardwood as per schedule to match existing profiles as clause 420.

- Fixing: fix to timber sub-frame, present using stainless steel screws (if screw heads are exposed to view then tops to be powder coated to match the frame) refer also to clause 420. If no timber sub-frame present refix in previous position using sleeved 'rawplugs', over decorated exposed heads of fixing.
- Lime mortar mix as spec ref: Z21/311, between frame and existing masonry. Prior to pointing with lime mortar seal frame edge to masonry with silicone sealant as clause 810 and 800A
- Decoration: timber sub-frame, present, decorate to match frame colour as above
- Other requirements: **provide as a test panel an-off-site refurbished Crittall type window units and reinstate, for approval by the CA**

General requirements – all units
- Weathertightness: To BS 6375:Part 1.
  Exposure category (Design wind pressure): 1600 (Pa).
- Operation and strength characteristics: To BS 6375: Part 2.
- Glazing details: L40/210 using traditional puttied beads. Note areas which require safety glazing.
- Ironmongery/accessories: As indicated on schedules
- Other requirements: - decorate externally only as M60/120
  - clean down frames and glazing internally

480 NEW / REPLACEMENT ROOFLIGHTS
Drawing reference(s): GA-116
Conservation Rooflight
- Manufacturer: The Rooflight Company
  Web: www.therooflightcompany.co.uk
  Email: info@therooflightcompany.co.uk
  Tel: +44 (0)1993 833108
  Fax: +44 (0)1993 831066
  Address: Wychwood Business Centre, Milton Road, Shipton-under-Wychwood, Oxfordshire OX7 6XU
- Product reference: Conservation Rooflight®
- Size: CR-1 (1no.) / CR-9 (5no, Individual + 9no. in sets of linked 3s) Total: 14no. / CR-14/2 (1no.)
- Colour: Black (RAL 9005)
- Glazing details: 4 mm SGG PLANITHERM® Total + (Low E) toughened inner, 16 mm argon cavity, 4 mm SGG PLANILUX® Toughened outer
- Ironmongery: Brass. Manual Pole winder and Winding crank
  - Electric Operation for Rooflights above stairs only: RF01 + RF07.
- Additional requirements: Lining Bars – Option 1 6no. for linking 3 sets of 3no. CR9s above Trowtes House. RF08, RF09 + RF10.
- Blind: Not required

- Accessories: Flashing Kit if required – Contractors choice.

NOTE: Contractor to investigate whether between rafter construction is required to install rooflights flush with roof surface or if rooflights can be installed on rafters. Mock up on site to be agreed with Architect / CA.

500 ALUMINIUM WINDOWS + DOOR – LG02 + F48 – EXTENSION

- Manufacturer: Schueco OR EQUAL APPROVED
Drawing reference(s): C330-C334, A453 + A454.
- Product reference: Fixed Units + Single Door with extended vertical mullion extrusion extensions and cill profiles. CONTRACTOR DESIGN – FABRICATION DRAWINGS REQUIRED FOR APPROVAL BY CA / ARCHITECT
- Supplier: Camel Glass or Equal Approved. Contact: Martin Sharrock email: MSharrock@camelglass.co.uk
  - Finish as delivered: Completely finished unless agreed otherwise with CA.
    - Thermal performance (U-value maximum): Up to 1.6 W/Km2K
    - Glazing details: 4mm Diamant – 20mm 90% Argon – 4mm Planitherm total or Equal Approved
    - Beading: as per manufacturers details.
    - Ironmongery/ Accessories: as per manufacturers details.
    - Fixing: as per manufacturers details.
    - Additional: Bronze ANODIZED Finish - TBC

550 FRAMELESS GLASS DOORS WITH FIXED GLASS SIDE AND OVERPANELS: FIRE STATION DOORS / GROUND FLOOR ENTRANCE DOOR - GD.02:

- **Drawing reference(s): C390**
- Manufacturer: DORMA UK Glass Division toughened glass assembly, Wilbury Way Hitchin, Hertfordshire, SG4 OAB. or equal approved
- Supplied and installed by Veon Glass Ltd, Totnes. Tel: 01803 269517 / 07786 706592.
  E: simon@veonglass.com. Or Equal Approved Supplier.
  FABRICATION DRAWINGS REQUIRED FOR APPROVAL BY CA / ARCHITECT
- Product reference: pair of frameless glass entrance doors with arched overpanel and fixed side panels.
- **Doors:** Fixed arched overpanel and fixed side panels and inward opening doors to GD.02
- Door leaf material: Toughened safety glass to BS 6206. Fittings produced to ISO 9001. Fittings cycle tested to 500.000 operations, DIN standard 18263. Maximum width of door leafs: 1200mm. Door leaf width approx. 870mm (Site Measure Req'd) Maximum weight of door leafs: 120kgs.
- Thickness: 12mm thick toughened glass to be used compliant to BS 6262.
- Colour: Finish required: Bronze or Satin marine grade stainless steel (700) - TBC
- Decoration: manifestation for the door leafs to assist the Disability Discrimination Act (DDA), as per drawings
- Door rails/ Patch fittings:
- 2off 100mm high TP bottom rails, prepared to accept key locks.
  1offUS20 and 1off GK50 locking patch fittings
  1off GK 20 double overpanel strike box c/w door stops.
  2off PT 20 top patch fittings.
  2off PT 25 overpanel patch fittings complete with 15mm diameter pivot pins.
- Material/ Finish: Bronze or Satin marine grade stainless steel (700) - TBC

- Peripheral fixings:
- Lock: Position: as per manufacturers recommendations
  2 off double Europrofile cylinders keyed to pass.
  2off US 10 corner deadlocks to suit Europrofile cylinders.
- Floor springs: 2off BTS 75V floor springs, EN 1-4, hold open at 90deg. 2off BTS 75V cover plates.
- Pull handles: 2off push pad / internal pull bar handles
  - Size: 1000mm long x 75mm wide push panel on flood board side / 1000mm tall x 25mm diameter handle on internal side.
  - Material/ Finish: Bronze or Satin stainless steel (700) – TBC.
- Additional ironmongery/ accessories: Automated opening from push pad adjacent to door. Internal top rail required to mount actuator.

555 FRAMELESS GLASS DOOR RIVERSIDE ENTRANCE DOOR - GD.07:

- **Drawing reference(s): C330**
- Manufacturer: DORMA UK Glass Division toughened glass assembly, Wilbury Way Hitchin, Hertfordshire, SG4 OAB. or equal approved.
- Supplied and installed by Veon Glass Ltd, Totnes. Tel: 01803 269517 / 07786 706592.
  E: simon@veonglass.com. Or Equal Approved Supplier.
  FABRICATION DRAWINGS REQUIRED FOR APPROVAL BY CA / ARCHITECT
- Product reference: Single frameless glass entrance door with arched head.
- **Doors:** Inward opening arched head door to GD.07
- Door leaf material: Toughened safety glass to BS 6206. Fittings produced to ISO 9001. Fittings cycle tested to 500.000 operations, DIN standard 18263. Maximum width of door leafs: 1200mm. Door leaf width approx. 1020mm (Site Measure Req'd) Maximum weight of door leafs: 120kgs.
- Thickness: 12mm thick toughened glass to be used compliant to BS 6262.
- Colour: Finish required: Bronze or Satin marine grade stainless steel (700) - TBC
- Decoration: manifestation for the door leafs to assist the Disability Discrimination Act (DDA), as per drawings
- Door rails/ Patch fittings:
- 1off 100mm high TP bottom rails, prepared to accept key locks.
  1offUS20 and 1off GK50 locking patch fittings
  1off GK 20 double overpanel strike box c/w door stops.
  1off PT 20 top patch fittings.
  1off PT 25 overpanel patch fittings complete with 15mm diameter pivot pins.
- Material/ Finish: Bronze or Satin marine grade stainless steel (700) - TBC
- Peripheral fixings:
- Lock: Position: as per manufacturers recommendations
  1 off double Europrofile cylinders keyed to pass.
  1off US 10 corner deadlocks to suit Europrofile cylinders.
- Floor springs: 1off BTS 75V floor springs, EN 1-4, hold open at 90deg. 1off BTS 75V cover plates.
- Pull handles: 1off pull bar handle
  - Size: 1000mm tall x 25mm diameter handle on both sides.
  - Material/ Finish: Bronze or Satin stainless steel (700) – TBC.
- Additional ironmongery / accessories: Automated opening from push pad adjacent to door. Additional framing may be required to mount actuator.

560 FRAMELESS GLASS DOORS WITHIN NEW STEEL LININGS – NON FIRE DOORS

- **Drawing reference(s): C-011**
- Manufacturer: DORMA UK Glass Division toughened glass assembly, Wilbury Way Hitchin, Hertfordshire, SG4 OAB or equal approved.
- Supplied and installed by Veon Glass Ltd, Totnes. Tel: 01803 269517 / 07786 706592.
  E: simon@veonglass.com. Or Equal Approved Supplier.
  FABRICATION DRAWINGS REQUIRED FOR APPROVAL BY CA / ARCHITECT
- Product reference: Typical pair of frameless glass doors – 1D15 (Single Door)
- **Doors:** Doors to swing both ways and have stop at 90deg.
- Door leaf material: Toughened safety glass to BS 6206. Fittings produced to ISO 9001. Fittings cycle tested to 500.000 operations, DIN standard 18263. Maximum width of door leafs: 1200mm. Maximum weight of door leafs: 120kgs.
- Thickness: 12mm thick toughened glass to be used compliant to BS 6262.
- Colour: Finish required: Bronze or Satin marine grade stainless steel (700).
- Decoration: manifestation for the door leafs to assist the Disability Discrimination Act (DDA), TBC
- Door rails/ Patch fittings:
  2off 100mm high TP bottom rails, locking.
  1offUS20 and 1off GK50 locking patch fittings
  1off GK 20 double overpanel strike box c/w door stops.
  2off PT 20 top patch fittings.
  2off PT 25 overpanel patch fittings complete with 15mm diameter pivot pins.
- Material/ Finish: Bronze or Satin marine grade stainless steel (700) - TBC
- Peripheral fixings:
- Lock: Position: as per manufacturers recommendations
  4 off double Europrofile cylinders keyed to pass.
  2off US 10 corner deadlocks to suit Europrofile cylinders.
- Floor springs: 2off BTS 75V floor springs, EN 1-4, hold open at 90deg. 2off BTS 7 5V cover plates.
- Pull handles: Pull bar handles
  - Size: 1125mm long x 25mm diameter
  - Material/ Finish: Bronze or Satin stainless steel (700) - TBC
- Additional ironmongery/ accessories:

562 'FRAMELESS' GLASS DOORS WITHIN NEW STEEL LININGS – FIRE DOORS

- **Drawing reference(s): C-014**
- Manufacturer: LUNAX – Vetrotech Saint Gobain or equal approved. Supplied and installed by Veon Glass Ltd, Totnes. Tel: 01803 269517 / 07786 706592.
  E: simon@veonglass.com. Or Equal Approved LUNAX Supplier.
  FABRICATION DRAWINGS REQUIRED FOR APPROVAL BY CA / ARCHITECT
- Product reference: Single 'frameless glass' **FD30 S** Firedoors – **EI30**
- Doors: Door to swing both ways
- Door leaf material: Toughened safety glass to BS 6206. Fittings produced to ISO 9 001. Maximum Dimensions: 1150mm wide x 2300mm tall or 1000mm wide x 2645mm tall, maximum area 2.65 m²
- Thickness: 20mm thick toughened glass to be used compliant to BS 6262. Glass to be translucent depending on location.
- Colour: RAL 9005 - TBC

- Decoration: manifestation for the door leafs to assist the Disability Discrimination Act (DDA), TBC
- Door rails/ Patch fittings: As required by manufacturer + 80 X 40MM Hardwood (meranti or equivalent) sub frame (Min. 600kg/m2 density) to perimeter with rebated graphite strip seal (5x50mm) to manufacturers details.
- Material/ Finish: RAL 9005 - TBC
- Peripheral fixings: As required by manufacturer
- Lock: Position: as per manufacturers recommendations
  1off double Europrofile cylinders keyed to pass.
  1off US 10 corner deadlocks to suit Europrofile cylinders.
- Floor springs: 1off floor springs, no hold open, 1 off cover plates.
- Pull handles: Pull bar handles – Model T
  - Size: 1125mm long x 25mm diameter
  - Material/ Finish: Bronze or Satin stainless steel (700) - TBC
- Additional ironmongery/ accessories: As required by manufacturer

650 EXTERNAL METAL LOUVRES TO PLANT ROOM WINDOW

Drawing ref: C-360

Scope : New fixed weathering louvre panels to courtyard level window. The units are to be a bespoke fabrication and formed in stainless steel sections to resist corrosive flue gases.
Window to be replaced with louvres for plantroom to M+E Specification and Architect Approval within existing timber subframe. Subframe to be prepared, with painted finish. External vertical metal bars over window to be carefully removed, any damaged surrounds to be made good

- Material: Colour coated 304 grade stainless steel
  - Finish as delivered: Organic Powder coating. Note that surfaces will require key blasting to provide a key for the coating.
- Fire resistance rating: To M+E Engineers Specification
- Number of louvre banks: single.
- Louvre blade pitch and angle: Max angle to M+E Engineers Specification. Submit proposals.
- Blanking panels: none.
- Accessories/ Other requirements:
  - Bridging sections between adjacent louvre banks.
  - Stainless steel bird / insect mesh to inside face.
  - Colour coated head flashing – refers details.
- Fixing: Corrosion resistant fixings into surrounds.
- Drawings: Shop drawings to be submitted to CA for comment prior to fabrication.

EXECUTION

710 PROTECTION OF COMPONENTS

- General: Do not deliver to site components that cannot be installed immediately or placed in clean, dry floored and covered storage.
- Stored components: Stack vertical or near vertical on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.

730 PRIMING/ SEALING

- Wood surfaces inaccessible after installation: Prime or seal as specified before fixing components.

740 CORROSION PROTECTION
- Surfaces to be protected: Metal surfaces taken back to bare.
- Protective coating: Two pack
  - Timing of application: Before fixing components.

750 BUILDING IN
- General: Not permitted unless indicated on drawings.
  - Brace and protect components to prevent distortion and damage during construction of adjacent structure.

760 REPLACEMENT WINDOW INSTALLATION
- Standard: To BS 8213-4.

765 WINDOW INSTALLATION GENERALLY
- Installation: Into prepared openings.
- Gap between frame edge and surrounding construction:
  - Minimum: 5mm
  - Maximum: 10mm .
- Distortion: Install windows without twist or diagonal racking.

770 DAMP PROOF COURSES IN PREPARED OPENINGS
- Location: Ensure correct positioning in relation to window frames. Do not displace during fixing operations.

780 FIXING OF WOOD FRAMES
- Standard: As section Z20.
- Fasteners: stainless steel screws into masonry plugs . Reuse existing fixings holes where possible.
  - Spacing: When not predrilled or specified otherwise, position fasteners not more than 150 mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 450 mm centres.

781 FIXING OF STEEL FRAMES
- Standard: As section Z20.
- Fasteners: stainless steel screws into masonry plugs .
  - Spacing: When not predrilled or specified otherwise, position fasteners not less that 50 mm and not more than 190 mm from ends of each jamb, adjacent to each hanging point of opening lights and at maximum 900 mm centres.

790 FIRE RESISTING FRAMES
- Gap between back of frame and reveal: Completely fill with _____ .

800 BACKFILLING OF STEEL FRAME SECTIONS
- Windows fixed direct into openings: After fixing, fill back of steel frame with waterproof cement fillet.

810 SEALANT JOINTS AROUND TIMBER FRAMES
- Sealant:
  - Manufacturer: Adshead Ratcliffe or equal approved

Product reference: Arbokol 1000 or equal approved

- Colour: grey - TBC
- Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.

820 IRONMONGERY

- Fixing: In accordance with any third party certification conditions applicable. Assemble and fix carefully and accurately using fasteners with matching finish supplied by ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.
- Checking/ Adjusting/ Lubricating: Carry out at completion and ensure correct functioning.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: L20** Revision : **T4**

DOORS/ SHUTTERS/ HATCHES

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		DRAFT TENDER	JAN 2019
T2	*273, 430, 440 + 400 + 638*	DRAFT TENDER	FEB 2019
T3	+270	DRAFT TENDER	MAR 2019
T4	115, 273, 400, 440	TENDER	APRIL 19

L20 DOORS/ SHUTTERS/ HATCHES

To be read with Preliminaries/ General conditions.

GENERAL

110 EVIDENCE OF PERFORMANCE

- Certification: Provide independently certified evidence that all incorporated components comply with specified performance requirements.

112 TIMBER PROCUREMENT

- Timber (including timber for wood-based products): Obtain from well managed forests and/ or 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.
- Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
- Certification scheme: FSC.

115 FIRE RESISTING DOORS/ DOOR ASSEMBLIES/ DOORSETS

- Door products: As defined in BS EN 12519.

CONTRACTOR DESIGN IF BESPOKE

- Evidence of fire performance: Provide certified evidence, in the form of a product conformity certificate, directly relevant fire test report or engineering assessment, that each door/ door assembly/ doorset supplied will comply with the specified requirements for fire or smoke resistance if tested to BS 476-22, BS EN 1634-1 or BS EN 1634-3. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.
- Components, assemblies or sets will be marked to the relevant product standard and/ or third party certification rating.

120 NON FIRE RESISTING DOORS/ DOOR ASSEMBLIES/ DOORSETS

- Provide certified evidence, in the form of a product conformity certificate or engineering assessment, that each door/ doorset/ assembly supplied will comply with the specified requirements to BS EN 14351-1. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.
- Components and assemblies will be marked to the relevant product standard and/ or third party certification rating.

150 SITE DIMENSIONS

- Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
- Designated items: All door sets which are intended to fit into existing openings.

170 CONTROL SAMPLES

- Procedure:

Finalize component details.
Fabricate one of each of the following designated items as part of the quantity required for the project.

Obtain approval of appearance and quality before proceeding with manufacture of the remaining quantity.

- **Designated items:**
- Weather stripping to existing loading doors.
- Pair of facsimile timber boarded doors

PRODUCTS

210 MATCHBOARDED DOORS IF REQUIRED
- Manufacturer: _____ .
- Product reference: _____ .
- Finish as delivered: _____ .

215 EXTERNAL MATCHBOARDED DOORS IF REQUIRED
- Standard: Generally to BS 459.
- Wood species: _____ .
- Preservative treatment: _____ .
- Moisture content on delivery: _____ .
- Finish as delivered: _____ .

270 BESPOKE EXTERNAL WOOD DOORS WITH GLAZED PANELS
- Materials: Generally to BS EN 942.
  - Species: Siberian Larch or Equal Approved and FSC Certified. Heartwood to grade 2 or 3. (BS EN 350-2)
  - Appearance class: Virtually Knot Free – J5/10.
- Assembly:
  - Adhesive: Joiners Choice to BS EN 204
  - Joinery workmanship: As section Z10.
  - Accuracy: To BS 4787-1.
- Preservative treatment: None required as Heartwood for 30 – 60 year life.
- Moisture content on delivery: 13-19%
- Finish as delivered: Prepared for Site Decoration.
- Glazing/ Infill details: Double Glazed Safety Glass to BS 6262-4
  - Manifestation: N/A
  - Beading: External Tmber Beading
- Thermal performance (U-value maximum): Target: 1.8 W/m2k - Exemption as fitted in existing frame.
- Other requirements: Perimeter Weather Seals. Fit in existing frames if condition allows. New Ironmongery as per Schedule.

272 REPAIRS TO EXISTING EXTERNAL TIMBER DOORS + FIRE STATION DOORS
- Drawing reference(s): C-370 and C371

- **Overview**: This clause covers remedial joinery and repair work to existing external doors and Fire Station doors, based upon a survey of doors and classification of indicative Repair Codes as follows: Contractors to survey existing doors and advise the CA if additional repairs are considered necessary.

Repair Code 1.
No timber repairs identified.
Remove existing ironmongery and refurbish fittings to be retained as clause P80/ 305
- Prepare door leafs for redecoration as M60/123
- Assume that Code 1 works may be carried out with doors retained in-situ

Repair Code 2.
Superficial repairs. Allow for the following works:
- All works included in Repair Code 1
- Cut out non-structural surface defects and piece-in new wood, plane flush and prime.
- Remove loose material from open or cracked joints, fill using and prime for decoration.
- Assume that Code 2 works may be carried out with doors retained in-situ

Repair Code 3.
Significant repairs. Allow for the following works:
- All works included in Repair Codes 1 and 2
- Replace damaged or missing beads to match existing profiles.
- Replace damaged or missing glazing bars
- Remove plywood gusset panels.
  Cut out damaged or decayed sections of timber back to sound wood, typically to base of stiles, scarf in new wood to match existing profiles and prime for decoration.
  Replace split, or cupped boarding with new sections to match existing profiles and prime for decoration
  Replace damaged or missing weatherboards to loading bay doors

Repair Code 4.
Major repairs. Allow for the following works:
- All works included in Repair Codes 1, 2, and 3
  Replacement of primary members where rotten or badly damaged with new timber sections.
- Reform, reassemble and re-glue joints where frames have twisted or dropped out of square.
- Undertake alterations/modifications to leaves as described in the schedules.

Removal of and re-hanging of doors:
- Where doors are to be removed first label all door leafs and hinges.
- Remove doors from their openings, either by lifting off by unbolting, or unscrewing hinges.
- During the period where leaves are removed store flat on timber plates to avoid distortion of the frames.
- All existing ironmongery and door furniture removed to be clearly labelled with the door ref number and kept together in bags for refurbishment and refixing. P80 / 305
- Once repairs are complete re-fix existing doors in original positions using new fixings.
- Adjust door leaves, plane meeting surfaces where necessary and lubricate hinges to ensure ease of operation.

Workmanship:
- Undertake repairs specified in this clause using well seasoned timber of species and characteristics to match the existing. Do not use timber with shakes, splits, large knots or other defects.
- Cut all joints square to line and plane, dismantling and adjusting the meeting surfaces as necessary to ensure a close fit. Ensure that new timbers are cut and trimmed to old including and deformation of the existing member.
- Prime surfaces to be jointed or filled with Sikkens Componex Primer, and fully bed in new wood using Sikkens Componex WR Filler and non-ferrous screws.
- Fill surface cracks and open joints using Sikkens Componex WR Filler following application of Componex Primer.

273 DOOR MODIFICATIONS – FIRE UPGRADING OF EXISTING INTERNAL DOORS OPENING ONTO ESCAPE ROUTES

- **Drawing reference(s): GA-160, GA-162, GA-164 + C-380 to C-384.**

- Door references: GD22, !D06, ID07, 2D10

Overview: This clause covers upgrading the fire performance of existing historic timber door sets, including doors with glazed over-panels, by adding intumescent smoke seals to doors / frames together with a intumescent system finish to the lobby / stair side of the door only. Clear Fire resistant glazing (7mm Pilkington Pyrodor Plus) to any glazed panels is also required to achieve 30min FR set in 10x2mm Interdens Intumescent material both sides of beading.

Manufacturer: Envirograf Intumescent Systems Ltd or similar to architects approval.
Envirograf House
Barfrestone
DOVER, Kent,
CT15 7JG Telephone: +44 (0) 1304 842 555

- System Reference: **ES/RFC/WS**
- Product 103 - Intumescent coating to upgrade doors and panelled doors to fire rated doors.
- 2 No coat paint system to be applied in satin white finish - TBC .
  Corridor side to be decorated as clause M60/195
- Notes: To provide 1/2hr fire protection system to be applied fully in accordance with manufacturer's instructions.
- Preparation: Lightly sand (wet sand) and make good existing finish finishes to receive new coatings. Note, lead paints may be present. Take preventative measures accordingly.
- Intumescent smoke seals to be by Envirograf, aluminium rebated channels, **30mm x 4mm** routed into door edges with appropriate seals as advised by Envirograf for smoke where required.

Regional Distributor:
International Fire Ltd
Unit A12 Kingsley Close,
Lee Mill Ind. Est.
Lee Mill
Devon
PL21 9LL
Contact: Chris Collins 01752 690997

275 REPAIRS TO EXISTING INTERNAL TIMBER DOORS
- Drawing reference(s): C-380 to C-384.

- **Overview**: This clause covers remedial joinery and repair work to existing internal timber doors including panelled doors and part glazed based upon a survey of doors and classification of indicative Repair Codes as follows: Contractors to survey existing doors and advise the CA if additional repairs are considered necessary.

NOTE: Fire upgrades covered by Clause 273.

Repair Code 1.
No timber repairs identified.
Remove existing ironmongery and refurbish fittings to be retained

- Prepare door leafs for redecoration as M60/150
- Assume that Code 1 works may be carried out with doors retained in-situ

Repair Code 2.
Superficial repairs. Allow for the following works:
- All works included in Repair Code 1
- Cut out non-structural surface defects and piece-in new wood, plane flush and prime.
- Remove loose material from open or cracked joints, fill using and prime for decoration.
- Assume that Code 2 works may be carried out with doors retained in-situ

Repair Code 3.
Significant repairs. Allow for the following works:
- All works included in Repair Codes 1 and 2
- Replace damaged or missing beads to match existing profiles.
- Replace damaged or missing glazing bars
- Replace Glass where noted.
- Remove plywood gusset panels.
  Cut out damaged or decayed sections of timber back to sound wood, typically to base of stiles, scarf in new wood to match existing profiles and prime for decoration.
  Replace split, or cupped boarding with new sections to match existing profiles and prime for decoration

Repair Code 4.
Major repairs. Allow for the following works:
- All works included in Repair Codes 1, 2, and 3
  Replacement of primary members where badly damaged with new timber sections.
- Reform, reassemble and re-glue joints where frames have twisted or dropped out of square.
- Undertake alterations/modifications to leaves as described in the schedules.

Removal of and re-hanging of doors:
- Where doors are to be removed first label all door leafs and hinges.
- Remove doors from their openings, either by lifting off by unbolting, or unscrewing hinges.
- During the period where leaves are removed store flat on timber plates to avoid distortion of the frames.
- All existing ironmongery and door furniture removed to be clearly labelled with the door ref number and kept together in bags for refurbishment and refixing.
- Once repairs are complete re-fix existing doors in original positions using new or existing fixings.
- Adjust door leaves, plane meeting surfaces where necessary and lubricate hinges to ensure ease of operation.

Workmanship:
- Undertake repairs specified in this clause using well seasoned timber of species and characteristics to match the existing. Do not use timber with shakes, splits, large knots or other defects.
- Cut all joints square to line and plane, dismantling and adjusting the meeting surfaces as necessary to ensure a close fit. Ensure that new timbers are cut and trimmed to old including and deformation of the existing member.
- Prime surfaces to be jointed or filled with suitable Primer, and fully bed in new wood using appropriate Filler and non-ferrous screws.
- Fill surface cracks and open joints using appropriate Filler following application of suitable Primer.

400 BESPOKE INTERNAL WOOD PANELLED DOORS & FRAMES –

Door reference(s): F36-cpd-02, GD40

Door leaves

- Materials: Generally to BS EN 942.
  - Species: Joinery quality softwood to BS 942 table NA1 –or as required to achieve fire rating.
  - Minimum density 450kg/m3
  - Appearance class: Replica to match adjacent doors.
- Thickness- to match adjacent doors.
- Assembly:
  - Adhesive: - Adhesive: To be Urea Formaldehyde adhesive (e.g. Cascamite or Resorcinol)
  - Joinery workmanship: As section Z10.
  - Door leaf framing to match adjacent doors.
  - Accuracy: To BS 4787-1.
- Preservative treatment: Desired service life – 30 years .
- Moisture content on delivery: 9-13%.
- Finish as delivered: Primed for site decoration
- smoke seals – none
- Undercuts: to match adjacent doors.

Frames

- Materials: Generally to BS EN 942.
  - Species:– Joinery quality softwood to BS 942 table NA1 or as required to meet fire resistance.
  - Minimum density 450kg/m3
  - Appearance class: J20 - J30.
  - Thickness – to match adjacent doors.
- Assembly:
  - Adhesive: To be Urea Formaldehyde adhesive (e.g. Cascamite or Resorcinol)
  - Joinery workmanship: to match adjacent doors.
- Preservative treatment: Desired service life – 30 years.
- Moisture content on delivery: 9-13 % .
- Finish as delivered: primed for site decoration.
- Fixing: Plugged and screwed into surrounds.
- NOTE: FRAMES NOT REQUIRED FOR GD40 AS ON ‘HOOK ON’ PIN HINGES

Architraves

Painted one or two piece sw architraves sizes as indicated on details.
Moisture content on delivery: 9-13 % .

- Finish as delivered: primed for site decoration .
- Fixing: Plugged and screwed into surrounds.

410 WOOD DOORSETS

- Manufacturer: _____ .
  - Product reference: _____ .
- Door leaf:
  - Facings: _____ .
  - Lippings: _____ .
  - Finish as delivered: _____ .
- Frame and architraves:
  - Wood species: _____ .

  - Finish as delivered: _____ .
- Preservative treatment: _____ .
- Glazing/ Infill details: _____ .
  - Manifestation: _____ .
  - Beading: _____ .
- Ironmongery: _____ .
- Perimeter seals: _____ .
- Thermal performance (U-value maximum): _____ .
- Other requirements: _____ .
- Fixing: _____ .

430 NON FIRE RATED FLUSH DOORSETS TO WC'S / MISCELLANEOUS

- **Drawing reference(s): C-380 to C-384.**

- Materials: Generally to BS EN 942.
- Door leaf:
  - Core: 44mm solid core to Contractors choice.
  - Facings: Flush MDF both sides.
  - Lippings: 6mm square edged hardwood to long edges
  - Finish as delivered: Spray finished as M60/112.
- Frame and architraves:
  - Wood species: Softwood.
  - Appearance class to BS EN 942: J30 high quality joinery
  - Finish as delivered: Pre primed for site decoration .
- Preservative treatment: N/A.
- Glazing/ Infill details: none
  - Manifestation: none.
  - Beading: none.
- Moisture content on delivery: 9-13 %.
- Ironmongery: Refer Schedule.
- Perimeter seals: none .
- Thermal performance (U-value maximum): N/A.
- Fixing: Screwed and plugged with recessed timber inserts.
  Other requirements: bottom of WC doors to be typical 10mm above floor level to achieve transfer ventilation – M+E Consultant to confirm requirements.
- Additional Features: Metal Clad Outer face PPC Bronze to GD43 / V grooves in MDF Face of GD46.

NOTE: REFER TO L10 560 for 'Frameless Glass' Standard Doors.

440 FIRE RATED DOORSETS TO PROTECTED ESCAPE ROUTES + PLANT SPACES ETC

- **Drawing reference(s): C-380 to C-384.**

  - Materials: Generally to BS EN 942.

  Performance: min. FD 30 S.
  The door and frame assembly should perform as a unit in accordance with BS 476 Part 22 to achieve the required fire resistance – CONTRACTOR DESIGN
- Door leafs:
  - Core: 44mm min. 30 min FR rated solid core.
  - Facings: pre-finished MDF both sides.
  - Lippings: Min 6mm square hardwood to long edges.
  - Finish as delivered: Spray finished as M60/112
- Frame and architraves:

- Wood species: Hardwood – (to achieve fire resistance)
- Appearance class to BS EN 942: J30 high quality joinery
- Finish as delivered: Pre primed for site decoration .

- Preservative treatment: N/A.
- Glazing/ Infill details: Fire Rated Clear Glazed Vision Panel to 2D02, 2D03, 2D10+ 2D11 Only – Refer to Schedule.
  (7mm Pilkington Pyrodor Plus or equal approved)
  - Manifestation: Refer to Door Schedule.
  - Beading: Hardwood beads/stops to achieve fire performance.
- Moisture content on delivery: 9-13 %.
- Ironmongery: Refer Schedule.
- Perimeter seals: Intumescent and smoke seals as required to meet fire rating.
- Thermal performance (U-value maximum): N/A.
- Fixing: Screwed and plugged with recessed timber inserts.
  Other requirements: Submit test data/evidence of fire performance.

NOTE: REFER TO L10 562 for 'Frameless Glass' Fire Doors – CONTRACTOR DESIGN

638 CEILING ACCESS HATCHES

- Location: As required - Refer to M+E Drawings
- Manufacturer: Gyproc Profilex FR1
- Performance: 60min. Fire Rated
- Operation: Concealed Hinge
- Size: Refer to M+E Drawings and Specification. (Typical: 600 x 400mm).
- Finish: Plasterboard Finish on Steel Panel with Concealed Beaded frame. Finished to match surrounding Wall
- Lock: Concealed Operation

EXECUTION

710 PROTECTION OF COMPONENTS
- General: Do not deliver to site components that cannot be installed immediately or placed in clean, dry, floored and covered storage.
- Stored components: Stacked on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.

730 PRIMING / SEALING
- Wood surfaces inaccessible after installation:
- Primed or sealed as specified before fixing components.

740 CORROSION PROTECTION
- Surfaces to be protected: All new steel components/units
  Protective coating: Hot dipped galvanised or a suitable marine tested powder coating with min 15 year warranty
  Supplier to provide details.

750 FIXING DOORSETS
- Timing: After associated rooms have been made weathertight and the work of wet trades is finished and dried out.

760 BUILDING IN
- General: Not permitted unless indicated on drawings.

770 DAMP PROOF COURSES ASSOCIATED WITH BUILT IN WOOD FRAMES
- Method of fixing: To backs of frames using galvanized clout nails.

780 DAMP PROOF COURSES IN PREPARED OPENINGS
- Location: Correctly positioned in relation to door frames. Do not displace during fixing operations.

790 FIXING OF WOOD FRAMES
- Spacing of fixings (frames not predrilled): Maximum 150 mm from ends of each jamb and at 600 mm maximum centres.

800 FIXING OF LOOSE THRESHOLDS
Spacing of fixings: Maximum 150 mm from each end and at 600 mm maximum centres.

809 FIRE RESISTING/ SMOKE CONTROL DOORS/ DOORSETS/ ROLLER SHUTTERS/ CURTAINS
- Installation: By a firm currently registered under a third party accredited fire door installer scheme in accordance with instructions supplied with the product conformity certificate, test report or engineering assessment.

820 SEALANT JOINTS
- Sealant:
  - Manufacturer: Ardex or similar.
    Product reference: to suit application.
  - Colour: to match components.

  Application: Triangular fillets finished to a flat or slightly convex profile.

830 FIXING IRONMONGERY GENERALLY
- Fasteners: Supplied by ironmongery manufacturer.
  Finish/ Corrosion resistance: To match ironmongery.
- Holes for components: No larger than required for satisfactory fit/ operation.
- Adjacent surfaces: Undamaged.
- Moving parts: Adjusted, lubricated and functioning correctly at completion.

840 FIXING IRONMONGERY TO FIRE RESISTING DOOR ASSEMBLIES
- General: All items fixed in accordance with door leaf manufacturer's recommendations ensuring that integrity of the assembly, as established by testing, is not compromised.
- Holes for through fixings and components: Accurately cut.
  Clearances: Not more than 8 mm unless protected by intumescent paste or similar.
  Lock/ Latch cases for fire doors requiring > 60 minutes integrity performance: Coated with intumescent paint or paste before installation.

850 LOCATION OF HINGES
- Primary hinges: Where not specified otherwise, positioned with centre lines 250 mm from top and bottom of door leaf.
- Third hinge: Where specified, positioned _____ .
- Hinges for fire resisting doors: Positioned in accordance with door leaf manufacturer's recommendations.

860 INSTALLATION OF EMERGENCY EXIT DEVICES
- Standard: Unless specified otherwise, install panic bolts/ latches in accordance with BS EN 1125.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: L30** Revision : **T3**

STAIRS/ LADDERS/ WALKWAYS/ HANDRAILS/ BALUSTRADES

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		DRAFT TENDER	JAN 2019
T2	*+560*	DRAFT TENDER	FEB 2019
T3	305,	TENDER	MAR 2019

L30 STAIRS/ LADDERS/ WALKWAYS/ HANDRAILS/ BALUSTRADES

To be read with Preliminaries/ General conditions.

PRELIMINARY INFORMATION/ REQUIREMENTS

115 TIMBER PROCUREMENT
- Timber (including timber for wood based products): Obtained from well managed forests and/ or 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.
  - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
- Certification scheme: FSC.

130 SITE DIMENSIONS
- Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
  - Designated items: Proposed upgrades to all existing stair balustrades, check heights and existing section sizes. .

COMPONENTS

231 STAIR 2 – ALTERATIONS / EXTENSION TO INTERNAL TIMBER STAIRCASE

Refer drawing: C-320

- Components: New flight from first floor to Second Floor
  - Treads: Existing and new joinery quality sw.
  - Risers: Existing and new joinery quality sw
  - Strings: Existing and new joinery quality sw
  - Newels: new joinery quality sw to match existing profile
  - Guarding: new joinery quality sw to match existing profile
  - Handrails: new hardwood to match existing profiles
- Timber: Generally to BS EN 942.
  - Appearance class: J30 for new components.
  - Moisture content at time of installation: 9-13%.
- Adhesive: Contractors choice
- Finish as delivered:
  - New timber components primed to receive painted finish.
  - Existing components to be sanded back and prepared for redecoration.
- Workmanship: To section Z10.
- Other requirements:
  - Submit shop drawings for comment.
  - All profiles to match existing sections/sizes

300 GUILDHALL SQUARE Railings – ALTERATIONS TO ALLOW FOR FITTING OF FLOOD BOARDS

Refer drawing: C-391

- Components: New steel channels welded to backface of cast iron railing posts to accept flood boards.
  - Finish as delivered:
    - Galvanised to receive on site painted finish.
      Colour: Juniper BS12B29.
    - Existing components prepared for weld
    - Proprietary seals to line steel channels.
    - Workmanship: To section Z11.
- Components: Flood boards.
  - External grade painted and lipped WBP plywood (~18-25mm) in two linked sections.
  - Lower section to be shaped to match existing stone coping and rubber seal fitted. DPM fitted to face of plank and weighted at installation.
- Other requirements:
  - Submit shop drawings for comment.

305 FLOOD BOARDS

Refer drawing: C-390, C-392. To be provided at all 'at risk' entrances. GD01, GD02, GD03 Gates to Lightwell on Guildhall square (2no.), GD07 + GD45.

- Components: New external grade hardwood battens to accept flood boards.
  - Finish as delivered:
    - On site painted finish.
    - Workmanship: To section Z10.
- Components: Steel Channel set into Threshold / Alternative slot set into threshold stone.
  Finish as delivered:
  - Galvanised.
  - Workmanship: To section Z11.
- Components: Flood boards.
  - External grade painted and lipped WBP plywood (~18mm) in linked sections to ease handling.
- Other requirements:
  - Submit shop drawings for comment.

555 PURPOSE MADE BALUSTRADING TO NEW EXTERNAL LIFT AREA

Refer drawings: A-460

- Component material, grade and finish as delivered: Galvanised and Powder Coated Dark Grey / Green to match existing railings – **Juniper BS12B29.**
  - Guarding: Steel Rod Balustrade with Bottom rail fixed with resin or into internal face of retaining wall and Single Mid Rail located ~ 100mm from top of balustrade
    Circular Section balusters
    Refer to drawings. Typical Centres ~100mm

- Metalwork: to section Z11.
- Other requirements: Measure from site dims - submit fabricators drawings for approval.

560 PURPOSE MADE HANDRAIL TO NEW EXTERNAL LIFT AREA

Refer drawings: A-460

- Component material, grade and finish as delivered: Galvanised and Powder Coated: **Anodic Bronze – TBC.**
- 3no. Circular Brackets: Hidden screwed and fixed with resin into internal face of courtyard wall
- Circular Section Balustrade – 42mm nominal.

Refer to drawings.

- Metalwork: to section Z11.
- Other requirements: Measure from site dims - submit fabricators drawings for approval.

590 APPLIED STAIR NOSINGS TO STAIRS

- **Overview**: The timber stairs from Courtroom down to cells to be fitted with new nosings.

- Standard: BS 8300
- Manufacturer: National Stair Nosings.
- Product ref: TBC
- Colour: TBC
- Length: 700mm approx. measure from site dim.

INSTALLATION

610 MOISTURE CONTENT
- Temperature and humidity: Monitor and control internal conditions to achieve specified moisture content in wood components at time of installation.

620 PRIMING/ SEALING/ PAINTING
- Surfaces inaccessible after assembly/installation: Before fixing components, apply full protective/decorative treatment/coating system.

630 CORROSION PROTECTION OF DISSIMILAR MATERIALS
- Components/ substrates/ fasteners of dissimilar materials: Isolate using washers/ sleeves or other suitable means to separate materials to avoid corrosion and/ or staining.

640 INSTALLATION GENERALLY
- Fasteners and methods of fixing: To section Z20.
- Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
- Temporary support: Do not use stairs, walkways or balustrades as temporary support or strutting for other work.
- Applied finishes: Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as finish manufacturer's recommendation before application.

COMPLETION

910 INSPECTION
- Timing: two weeks prior to practical completion.
- Period of notice (minimum): 3 days.

920 DOCUMENTATION
- Contents:
  - Copies of structural design calculations/ test reports.
  - General product information.
  - Installation information.
  - Inspection and maintenance reports.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: L40** Revision : **T2**

General Glazing

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	JAN 2019
T2	*550, +300*	Tender	MAR 2019

L40 GENERAL GLAZING

To be read with Preliminaries/ General conditions.

GENERAL REQUIREMENTS

110 PREGLAZING
- Preglazing of components: Not permitted.

130 REMOVAL OF GLASS/ PLASTICS FOR REUSE
- Existing glass/ plastics and glazing compound, beads, etc: Remove carefully, avoiding damage to frame, to leave clean, smooth rebates free from obstructions and debris.
- Deterioration of frame/ surround: Submit report on defects revealed by removal of glazing.
  - Affected areas: Do not reglaze until instructed.
- Reusable materials: Clean glass/ plastics, beads and other components that are to be reused.

150 WORKMANSHIP AND POSITIONING GENERALLY
- Glazing generally: In accordance with BS 6262 series.
- Integrity: Glazing must be wind and watertight under all conditions with full allowance made for deflections and other movements.
- Dimensional tolerances: Panes/ sheets to be within ± 2 mm of specified dimensions.
- Materials:
  - Compatibility: Glass/ plastics, surround materials, sealers, primers and paints/ clear finishes to be used together to be compatible. Avoid contact between glazing panes/ units and alkaline materials such as cement and lime.
  - Protection: Keep materials dry until fixed. Protect insulating glass units and plastics glazing sheets from the sun and other heat sources.

151 PREPARATION
- Surrounds, rebates, grooves and beads: Cleaned and prepared by others.

152 PREPARATION
- Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing; ensure compliance with any certified installation requirements.

155 GLASS GENERALLY
- Standards: To BS 952 and relevant parts of:
  - BS EN 572 for basic soda lime silicate glass.
  - BS EN 1096 for coated glass.
  - BS EN 1748-1-1 for borosilicate glass.
  - BS EN 1748-2-1 for ceramic glass.
  - BS EN 1863 for heat strengthened soda lime silicate glass.
  - BS EN 12150 for thermally toughened soda lime silicate safety glass.
  - BS EN 12337 for chemically strengthened soda lime silicate glass.
  - BS EN 13024 for thermally toughened borosilicate safety glass.
  - BS EN ISO 12543 for laminated glass and laminated safety glass.
- Panes/ sheets: Clean and free from obvious scratches, bubbles, cracks, rippling, dimples and other defects.
  - Edges: Generally undamaged. Shells and chips not more than 2 mm deep and extending not more than 5 mm across the surface are acceptable if ground out.

160 LINEAR PATTERNED/ WIRED GLASS
- Alignment: Vertical/ Horizontal as appropriate, and pattern matched across adjacent panes in close proximity.

165 HEAT SOAKING OF THERMALLY TOUGHENED GLASS
- Standard: To BS EN 14179.
  - Holding period (minimum): 2 hours .
  - Mean glass temperature: 290° ±10°C.
- Certified evidence of treatment: Submit.
- Designated locations: any overhead glass .

180 BEAD FIXING WITH PINS
- Pin spacing: Regular at maximum 150 mm centres, and within 50 mm of each corner.
- Exposed pin heads: Punched just below wood surface.

181 BEAD FIXING WITH SCREWS
- Screw spacing: Regular at maximum 225 mm centres, and within 75 mm of each corner.

TYPES OF GLAZING

210 PUTTY FRONTED SINGLE GLAZING TO CRITTALL WINDOWS

- **Drawing references:** C-355 to C-361
- **Scope.** Repair/replace damaged, opaque or broken panes to existing windows as required**.** Refer to window repair schedules.
- Pane material: 4mm clear float glass.
- Surround: pre-treated metal surround – refer to spec L10/310
  - Sealer: as recommended for metal window.
- Type of putty: approved for metal window application – pre-coloured to window frame finish
- Glass installation:
  - Glass: Located centrally in surround using setting and location blocks, and secured with glazing sprigs/ cleats/ clips at 300 mm centres.
  - Finished thickness of back bedding after inserting glazing (minimum): 1.5 mm.
  - Front putty: Finished to a smooth, neat triangular profile stopping 2 mm short of sight line. Surface lightly brushed to seal putty to glass and left smooth with no brush marks.
- Sealing putty: Seal as soon as sufficiently hard but not within 7 days of glazing. Within 28 days apply either:
  - The full final finish, suitably protected until completion and cleaned down and made good as necessary,
- Opening lights: Keep in closed position until putty has set sufficiently to prevent displacement of glazing when opened.

212 PUTTY FRONTED SINGLE GLAZING TO REFURBISHED TIMBER SLIDING SASH AND CASEMENT TYPE WINDOWS

- **Drawing references:** C-355 to C-361
- **Scope.** Repair/replace damaged or broken panes to existing windows as required**.** Refer to window repair schedules.

- Pane material: 4 or 6mm clear float glass. Thickness subject to pane size. If profiles do not allow use 3mm 'horticultural' glass.
- Surround: pre-treated timber surround – refer to spec **L10/250**
  Sealer: as recommended for timber window
- Type of putty: approved for wooden window application – pre-coloured to window frame finish

- Apply sufficient putty to produce not less than 1.5 mm finished thickness of back bedding after inserting glazing.
- Locate glazing centrally in surround using setting and location blocks, and secure with glazing sprigs/cleats/clips at 150 mm centres.
- Apply front putty and finish to a neat triangular profile stopping 2 mm short of sight line. Lightly brush surface to seal putty to glass and leave smooth with no brush marks.
- Seal putty as soon as sufficiently hard but not within 7 days of glazing. Within 28 days apply The full final finish, suitably protected until completion and cleaned down and made good as necessary.
- Opening lights: Keep in closed position until putty has set sufficiently to prevent displacement of glazing when opened.

300 DOUBLE GLAZED UNIT FIXED IN PERIMETER CHANNEL TO PROVIDE ACOUSTIC SEPARATION TO WCs

Drawing references: C-319 – Typical 1100mm x 450mm – 4no.

- Pane material: Float glass .
- Inner pane: 4mm glass.
- Outer pane: 4mm glass
- Spacer: 20mm maximum warm edge type with foil edge taped.
- Units to be gas filled.
- Standard: to BS EN 1279

- Glazing installation: Install unit in perimeter channel frame with appropriate setting and location blocks and sealant to provide acoustic + draught seal.
- Finish: PPC 'Bronze' – Pearl RAL TBC

550 GLASS MIRRORS TO WC'Ss

- **Drawing references. C-315 to C-319**
-
- Mirror material: Float glass, silvered to give maximum reflection, free from tarnishing, discoloration, scratches and other defects visible in the designed viewing conditions.
  - Thickness: Min 6mm .
  - **A:** Rectangular – 1250 x 350mm per Accessible WC (2no.). Located 600mm above floor away from washbasin – Location to be agreed.
    B: Rectangular – 1180 x ~760mm to fit cupboard above sink (1no).
    C: Rectangular / Triangular – 1140/550 x 1155 mm to fit wall above sink (1no).
    D: Rectangular – 750 x 450mm to fit alcove above sink (2no).
    E: Rectangular – ~1730 x ~515mm to suit cupboard door size (fitted internally)
  - Backing: 18mm Plywood backing panel, inset 20mm within mirror diameter
  - Edge treatment: ground edges
- Fixing method: adhesive fixed to backing, secret clip fixing to partition walls.
- Installation: Fixed accurately and securely, to provide a flat surface giving a distortion free reflection.

630 GRAPHIC MANIFESTATION TO GLAZED SCREENS

- Door reference(s): GD?
- Type: Applied self adhesive PVC film to inside face of new glass.
- Manufacturer: Contractors Choice .
- Colour: TBC
- Application: Carried out by a firm approved by the film manufacturer in accordance with manufacturer's recommendations.
  - Ambient air temperature at time of application: Above 5°C.
- Installed film: Fully adhered to the glass with no peeling, and free from bubbles, wrinkles, cracks or tears. If External suitable for long term (15 years+) external use

Design: TBC by client
- Art work: submit to CA for approval.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: M10** Revision : **T1**

Cement Based Levelling / Wearing Screeds

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	March 19

M10 CEMENT BASED LEVELLING/ WEARING SCREEDS

To be read with Preliminaries/ General conditions.

TYPES OF SCREED

130 PROPRIETARY QUICK DRYING LEVELLING SCREEDS

- Substrate: Rigid insulation with slip membrane to manufacturers specification.
- Screed manufacturer: ARDEX UK Ltd SIMILAR OR EQUAL APPROVED
- Web: www.ardexcpdacademy.com
- Email: info@ardex.co.uk
- Address: Homefield Road, Haverhill, Suffolk, CB9 8QP
- Tel: +44(0)1440714939.
- Fax:+44(0)1440716667.
  - Product reference: A 23 or EQUAL OR SIMILAR APROVED
    ARDEX A 23 is a special cement for producing a rapid hardening floor screed for internal use which allows ceramic tiles to be fixed after 48 hours, natural stone after 72 hours, and resilient floor coverings after six days. ARDEX A 23 is used to produce bonded, unbonded and floating screeds in internal locations where early foot traffic is required and where rapid drying is essential, e.g. to allow ceramic/ porcelain tiles to be laid after 48 hours. It can be installed on ground supported concrete slabs if an effective damp proof membrane is present. ARDEX A 23 is not suitable as a wearing surface.
- Screed construction: Floating Screed.
  - Reinforcement for crack control: Steel reinforcement mesh.
- Thickness
  - Nominal: **75mm**
  - Minimum: 75mm.
- Mix:
  - Cement: 1:7.
  - Proportions: Manufacturer's standard.
- In situ crushing resistance (ISCR) category: as BS 8204-1 and clause 335.
  - Mass of test weight: 2kg.
- Flatness/ Surface regularity class: SR2.
- Finish: as clause 540 .
  - To receive: Linoleum / Marmoleum
- Other requirements: movement joints, preformed pipe ducts.

GENERALLY/ PREPARATION

210 SUITABILITY OF SUBSTRATES

- General:
  - Suitable for specified levels and flatness/ regularity of finished surfaces. Consider permissible minimum and maximum thicknesses of screeds.
  - Sound and free from significant cracks and gaps.
- Concrete strength: In accordance with BS 8204-1, Table 2.
- Cleanliness: Remove plaster, debris and dirt.
- Moisture content: To suit screed type. New concrete slabs to receive fully or partially bonded construction must be dried out by exposure to the air for minimum six weeks.

215 SURFACE HARDNESS OF SUBSTRATES TO RECEIVE POLYMER MODIFIED WEARING SCREEDS
- General: Substrates must restrain stresses that occur during setting and hardening of wearing screeds.
- Test for surface hardness: To BS EN 12504-2 using a rebound hammer with compliance values as follows:
  - Rebound hammer value (minimum):
    Screed thickness 15 mm or less: 25.
    Screed thickness greater than 15 mm: 30.
- Report: Submit details of areas where substrate surface hardness does not comply with these values.

220 PROPRIETARY LEVELLING/ WEARING SCREEDS
- General: Materials, mix proportions, mixing methods, minimum/ maximum thicknesses and workmanship must be in accordance with recommendations of screed manufacturer.

250 CONDUITS UNDER FLOATING SCREEDS
- Haunching: Before laying insulation for floating screeds, haunch up in 1:4 cement:sand on both sides of conduits.

251 CONDUITS CAST INTO OR UNDER SCREEDS
- Reinforcement: Overlay with reinforcement selected from:
  - 500 mm wide strip of steel fabric to BS 4483, reference D49, or
  - Welded mesh manufactured in rolls from mild steel wire minimum 1.5 mm diameter to BS 1052, mesh size 50 x 50 mm.
- Placing reinforcement: Mid depth between top of conduit and the screed surface.
  - Width of reinforcement (minimum): 300 mm.

255 PIPE DUCTS/ TRUNKING
- Preformed access ducts: Before laying screed, fix securely to substrate and level accurately in relation to finished floor surface.

270 PARTIALLY BONDED CONSTRUCTION
- Preparation: Generally in accordance with BS 8204-1.
- Substrate surface: Brushed finish with no surface laitance.
  - Texture of surface: Suitable to accept screed and achieve a bond over complete area.

290 FLOATING CONSTRUCTION – RIGID INSULATION
- Refer P10 290 + 290A

BATCHING/ MIXING

302 CEMENTS
- Cement types: In accordance with BS 8204-1, clause 5.1.3.

305 AGGREGATES
- Sand: To BS EN 13139.
  - Grading limits: In accordance with BS 8204-1, Table B.1.
- Coarse aggregates for fine concrete levelling screeds:
  - Standard: To BS EN 12620.
  - Designation: 4/10.
- Lightweight aggregates: In accordance with BS 8204-1, Annex A.

307 ADMIXTURES
- Standard: In accordance with BS 8204-1, Table 1.
- Calcium chloride: Do not use in admixtures.

310 BATCHING WITH DENSE AGGREGATES
- Mix proportions: Specified by weight.
- Batching: Select from:
  - Batch by weight.
  - Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Use accurate gauge boxes. Allow for bulking of damp sand.

311 BATCHING WITH LIGHTWEIGHT AGGREGATES
- Standard: In accordance wtih BS 8204-1, Annex A.
- Mix proportions: Specified by volume.
- Batching: Use accurate gauge boxes.

330 MIXING
- Water content: Minimum necessary to achieve full compaction, low enough to prevent excessive water being brought to surface during compaction.
- Mixing: Mix materials thoroughly to uniform consistency. Mixes other than no-fines must be mixed in a suitable forced action mechanical mixer. Do not use a free fall drum type mixer.
- Consistency: Use while sufficiently plastic for full compaction.
- Ready-mixed retarded screed mortar: Use within working time and site temperatures recommended by manufacturer. Do not retemper.

335 IN SITU CRUSHING RESISTANCE (ISCR)
- Standards and category: In accordance with BS 8204-1, Table 4.
  - Testing of bonded and unbonded screeds: To Annex D.
  - Testing of floating levelling screeds: To Annex E.

340 ADVERSE WEATHER
- Screeds surface temperature: Maintain above 5°C for a minimum of four days after laying.
- Hot weather: Prevent premature setting or drying out.

LAYING

350 SCREEDING TO FALLS
- Minimum screed cover: Maintain at the lowest point.
- Falls: Gradual and consistent.
  - Gradient (minimum): 1:80

355 FLATNESS/ SURFACE REGULARITY OF FLOOR SCREEDS
- Standard: In accordance with BS 8204-1, Table 5.
- Test: In accordance with BS 8204-1, Annex C.
- Sudden irregularities: Not permitted.

365 FLATNESS/ SURFACE REGULARITY OF ROOF SCREEDS
- Sudden irregularities: Not permitted.
- Deviation of surface: Measure from underside of a 2 m straightedge (between points of contact), placed anywhere on surface.
  - Permissible deviation (maximum): 6 mm.

375 COMPACTION OF SCREEDS
- General: Compact thoroughly over entire area.
- Screeds over 50 mm thick: Lay in two layers of approximately equal thickness. Roughen surface of compacted lower layer then immediately lay upper layer.

382 STAIR SCREEDS
- Construction: Fully bonded to treads, risers and landings.
- Risers: Form using fine finish formwork.
- Wearing screed surfaces: Make good with compatible cement:sand mix. Wood float. When hardened remove laitance.

392 GENERAL REINFORCEMENT
- Steel fabric: In accordance with BS 4483.
- Installation: In accordance with BS 8204-1.

405 JOINTS IN LEVELLING SCREEDS GENERALLY
- Laying screeds: Lay continuously using 'wet screeds' between strips or bays. Minimize defined joints.
- Daywork joints: Form with vertical edge.

415 BAY JOINTS BONDED WEARING SCREEDS
- Bay sizes:
  - Area (maximum): tbc.
  - Length:breadth ratio (maximum): 3:2.
- Location of bay joints: as per architects drawings.

435 FORMED JOINTS IN WEARING SCREEDS
- Temporary forms: Square edged with a steel top surface and in good condition.
- Placing screed: Compact thoroughly at edges to give level, closely abutted joints with no lipping.

450 SEALANT FOR SAWN JOINTS IN WEARING SCREEDS
- Type: as clause 452.
- Preparation and application: As section Z22.

FINISHING/ CURING

510 FINISHING GENERALLY
- Timing: Carry out all finishing operations at optimum times in relation to setting and hardening of screed material.
- Prohibited treatments to screed surfaces:
  - Wetting to assist surface working.
  - Sprinkling cement.

520 WOOD FLOATED FINISH
- Finish: Slightly coarse, even texture with no ridges or steps.

530 SMOOTH FLOATED FINISH
- Finish: Even texture with no ridges or steps.

540 TROWELLED FINISH TO LEVELLING SCREEDS
- Floating: To an even texture with no ridges or steps.

- Trowelling: To a uniform, smooth but not polished surface, free from trowel marks and other blemishes, and suitable to receive specified flooring material.

550 TROWELLED FINISH TO WEARING SCREEDS
- Floating: To an even texture with no ridges or steps.
- Trowelling: Successively trowel at intervals, applying sufficient pressure to close surface and give a uniform smooth finish free from trowel marks and other blemishes.

560 DEWATERED TROWELLED FINISH TO WEARING SCREEDS
- Dewatering: Immediately after compaction of wearing screeds, remove water using a vacuum process.
- Floating: Without delay, power float to an even texture with no ridges or steps.
- Trowelling: Successively trowel at intervals, applying sufficient pressure to close surface and give a uniform smooth finish free from trowel marks and other blemishes.

600 POWER GROUND FINISH TO WEARING SCREEDS
- Floating: To an even surface with no ridges or steps. Immediately commence curing.
- Grinding: When concrete is sufficiently hard for sand particles not to be torn from surface, remove 1-2 mm from surface to give an even glass-paper texture, free from blemishes and trowel marks.
- Cleaning: Remove dust and wash down. Resume curing without delay.

650 CURING
- General: Prevent premature drying. Immediately after laying, protect surface from wind, draughts and strong sunlight. As soon as screed has set sufficiently, closely cover with polyethylene sheeting.
- Curing period (minimum): Keep polyethylene sheeting in position for seven days.
- Drying after curing: Allow screeds to dry gradually. Do not subject screeds to artificial drying conditions that will cause cracking or other shrinkage related problems.

670 ROOF SCREEDS
- Protection: Cover screeds during wet weather. When weathertight coverings are laid, screeds must be as dry as practicable.

700 ABRASION TESTING OF WEARING SCREEDS
- Test method: To BS EN 13892-4.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: M20** Revision : **T4**

PLASTERED / RENDERED / ROUGHCAST COATINGS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Feb 19
T2	*+320, + 330*	Draft Tender	March 19
T3	160	Tender	April 19
T4	320	Tender	April 10

M20 PLASTERED/ RENDERED/ ROUGHCAST COATINGS

To be read with Preliminaries/ General conditions.

TYPES OF COATING

160 PROPRIETARY RENDER TO EXTERNAL RETAINING WALLS

- Background: Dense Blockwork Retaining Wall.

- Preparation: To manufacturer's recommendations – obtain manufacturer's advice on priming of the board prior to applying the render system.

- Manufacturer: UK Marmorit GmbH or equal Approved

- Product reference: Marmorit Render Only System or equal Approved

- Undercoats: Types: Marmorit SM 700. (2 coats)

- Thickness (excluding dubbing out): 8mm.

- Final coat: Types: Marmorit Conni S

- Thickness: 1mm.

- Finish: Plastic float / Spray applied. Colour generally Off White / Light Grey - TBC

- Accessories: Stop beads, bellcast beads, movement beads, corner beads, mesh reinforcement etc all by Marmorit.

- Movement joints to be confirmed by CA.

200 GYPSUM PLASTER SKIM ON CEMENT GAUGED UNDERCOATS

- Substrate: Existing Gypsum Plaster / Plaster Board
- Preparation: Remove Paint and apply bonding treatment to suit substrate as recommended by manufacturer.
- Finish Coat: Gypsum plaster to BS EN 13279-1, class B.
  - Manufacturer: British Gypsum
    Product reference: Thistle Multi Finish Plaster.
  - Thickness: 2-3mm.
  - Finish: Smooth, Trowel/float to a tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.

320 LIME:SAND HYDRAULIC RENDER ON MASONRY WALLS

Scope: As Noted on Finishes Drawings: **GA150, 152, 154.**
Substrate: Existing Masonry Wall.
Preparation: Remove existing Render. Brush Clean + Bonding Agent As required by Manufacturer.

Hydraulic render coat

- Lime manufacturer: St Astier supplied by Cornish Lime Company or Equal Approved (Ty-Mawr / Mike Wye)
- Product reference/ Type: NHL 3.5
- Sand supplier: Cornish Lime Company.

Undercoats (2no.):
- Mix: 1:2.5 lime:sand
- Sand: CLS 28
- Thickness: 8-12 mm

Final coat:
- Mix: 1:2.5 lime:sand
- Sand: CLS 35
- Thickness: 3-6mm
- Finish: sponge float and breathable paint

All renders to be prepared in accordance with manufacturers instructions. Details as follows: http://www.stastier.co.uk/nhl/guides/nhlrend.htm

- Ensure applied render coats are properly cured prior to applying next coat in accordance with tanking manufacturers recommendations.
- Protect finished work as clause 885.

330 PROPRIETARY LIME:SAND SKIM COAT
- Substrate: Existing Lime Plaster
  - Preparation: Brush Clean + Bonding Agent As required by Manufacturer.
- Manufacturer: Ty-Mawr or Equal Approved..
- Number of coats: 2no.
  - Product reference: Lime Top Coat (Finish) Plaster
  - Thickness: 3mm (Total) – 2no. 1.5mm coats.
- Accessories: As required.
- Other requirements: All to manufacturers recommendations.

GENERAL

410 CONTROL SAMPLES
- Complete sample areas, being part of the finished work, in locations as follows:

External rendering M20/150: 5m2 on southwest elevation.

420 UNIFORMITY OF COLOUR AND TEXTURE
- General: Maintain consistent colour and texture. Obtain materials from one source. Mix different loads if necessary.

440 READY TO USE CEMENT GAUGED RENDER MORTARS
- Standard: Generally to BS 4721, using materials specified in this section.
- Time and temperature limitations: Use within limits prescribed by mortar manufacturer.

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

450 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.
- Mixes: Of uniform consistence and free from lumps. Do not retemper or reconstitute mixes. - Contamination: Prevent. Keep plant and banker boards clean.

470 COLD WEATHER
- General: Do not use frozen materials or apply coatings to frozen or frost bound backgrounds.
- External work: Avoid when air temperature is at or below 5°C and falling or below 3°C and rising.

Maintain temperature of work above freezing until coatings have fully hardened.
- Internal work: Take all necessary precautions to enable internal coating work to proceed without damage when air temperature is below 3°C.

PREPARING BACKGROUNDS

510 SUITABILITY OF BACKGROUNDS

- General: Suitable to receive coatings/ backings.

- 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: Remove dirt, dust, efflorescence and mould, and other contaminants incompatible with coatings.

531 ROUGHENING FOR KEY
- Backgrounds: Roughen thoroughly and evenly.

- Depth of surface removal: Minimum necessary to provide an effective key.

BACKINGS/ BEADS/ JOINTS

640 BEADS/ STOPS GENERALLY

- Location: External angles and stop ends except where specified otherwise.

- Corners: Neat mitres at return angles.

- Fixing: Secure, using longest possible lengths, plumb, square and true to line and level, ensuring

full contact of wings with background.

- External render: Fix mechanically.
- Finishing: After coatings have been applied, remove surplus material while still wet, from surfaces of beads/ stops which are exposed to view.

673 PLASTERING OVER CONDUITS/ SERVICE CHASES

- General: Prevent cracking over conduits and other services.

- Services chased into background: Isolate from coating by covering with galvanized metal lathing.

Fixed at staggered centres along both edges.

PLASTERING

710 APPLICATION GENERALLY

- General: Apply 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 localised 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
- General: Finish new plasterwork flush with original face of existing plasterwork to form a seamless junction.

720 DUBBING OUT
- General: To correct background inaccuracies.

- 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.

777 SMOOTH FINISH
- Appearance: A tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks. Avoid water brush, excessive trowelling and over polishing.

778 WOOD FLOAT FINISH
- Appearance: An even overall texture. Finish with a dry wood float as soon as wet sheen has disappeared.

RENDERING

810 APPLICATION GENERALLY
- General: Apply 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: Prevent excessively rapid or localized drying out.

815 FLATNESS/ SURFACE REGULARITY OF RENDERING TO RECEIVE CERAMIC TILES
- Sudden irregularities: Not permitted.
- Deviation of render surface: Measure from underside of a 2 m straight edge placed anywhere on surface.
- Permissible deviation (maximum): 3 mm.

820 DUBBING OUT FOR RENDERING
- General: To correct background inaccuracies. - Thickness of any one coat (maximum): 16 mm.

- Total thickness (maximum): 20 mm. Seek instructions where this will be exceeded.
- Mix: As undercoat.
- Application: Achieve firm bond. Allow each coat to set sufficiently before the next is applied. Comb surface of each coat.

830 ANCHORED MESH REINFORCEMENT
- Application of first undercoat: Through and round mesh to fully bond with solid background.

840 UNDERCOATS GENERALLY

General: Rule to an even surface. Comb to provide a key for the next coat. Do not penetrate the coat.

- Undercoats on metal lathing: Work well into interstices to obtain maximum key.

880 CURING AND DRYING

- General: Prevent premature setting and uneven drying of each coat.

- Curing coatings: Keep each coat damp by covering with polyethylene sheet and/ or spraying with water.

- Curing period (minimum): To manufacturer's recommendation.

- Final coat: Hang sheeting clear of the final coat.

- Drying: Allow each coat to dry thoroughly, with drying shrinkage substantially complete before applying next coat.

- Protection: Protect from frost and rain.

WATERPROOF RENDERING

905 BACKGROUNDS FOR WATERPROOF RENDERS

- Preparation: In accordance with render/ waterproofing compound manufacturer's recommendations.

- Leaks: Prevent leaks from cracks, porous patches and other defective areas subject to water pressure and liable to admit water.

- Holes for fasteners: Minimize. Form and seal before coatings applied. Do not make any holes after coatings have been applied.

930 APPLICATION OF WATERPROOF RENDERS

- General: Achieve good adhesion and effective waterproofing.

- Joints: Minimize.

- Joints in successive coatings: Stagger by at least 100 mm and splay edges. Do not locate joints at angles.

- Internal angles: Form fillets after applying first coat. Form smooth round coves after applying final coat.

- Cross scratching/ combing coatings: Prohibited.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: M40** Revision : **T2**

Stone / Concrete / Ceramic tiling / mosaic

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Feb 19
T2	*115, +116,*	Tender	March 19

M40 STONE / CERAMIC TILING / MOSAIC

To be read with Preliminaries/ General conditions.

TYPES OF TILING/ MOSAIC

110 FLOOR TILING – IF REQUIRED
- Tiles: Porcelain.
  - Manufacturer/ Supplier: MOSA - TBC .
    Product reference: Terra Greys - TBC
  - Colour: TBC .
  - Finish: TBC .
  - Size: 600x600mm - TBC
  - Thickness: 12mm - nominal.
  - Slip potential:
    Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2, -3: TBC.
    Surface roughness (Rz) (minimum) BS 1134: TBC .
    Ramp test class: TBC.
  - Recycled content: TBC.
- Background/ Base: TBC
  - Preparation: TBC.
- Intermediate substrate: Schulter Ditra Matting in Adhesive Bed.
- Bedding: TBC.
  - Reinforcement: TBC.
  - Adhesive to BS EN 12004: TBC.
- Joint width: TBC.
- Grout: TBC.
  - Type/ classification: TBC.
  - Admixture: TBC .
- Movement joints: TBC.
- Accessories: TBC.

115 WALL TILING
- Tiles: Porcelain.
  - Manufacturer/ Supplier: MOSA - TBC .
    Product reference: Lines - TBC
  - Colour: White - TBC .
  - Finish: TBC .
  - Size: 300x300mm - TBC
  - Thickness: 7-10mm - nominal.
  - Slip potential:
    Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2, -3: TBC.
    Surface roughness (Rz) (minimum) BS 1134: TBC .
    Ramp test class: TBC.
  - Recycled content: TBC.
- Background/ Base: 12mm WBP Plywood
  - Preparation: TBC.
- Intermediate substrate: 10mm WEDI BOARD
- Bedding: TBC.

- Reinforcement: TBC.
- Adhesive to BS EN 12004: TBC.
- Joint width: TBC.
- Grout: TBC.
  - Type/ classification: TBC.
  - Admixture: TBC .
- Movement joints: TBC.
- Accessories: TBC.
- Also to boxing out around concealed cisterns

116 WALL SPLASHBACK TILING

- Tiles: Porcelain.
  - Manufacturer/ Supplier: MOSA - TBC .
    Product reference: Lines / Fuse - TBC
  - Colour: Light Grey - TBC .
  - Finish: TBC .
  - Size: 150x150mm - TBC
  - Thickness: 7-10mm - nominal.
  - Slip potential:
    Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2, -3: TBC.
    Surface roughness (Rz) (minimum) BS 1134: TBC .
    Ramp test class: TBC.
  - Recycled content: TBC.
- Background/ Base: 18mm WBP Plywood / Wedi Board
  - Preparation: TBC.
- Bedding: TBC.
  - Reinforcement: TBC.
  - Adhesive to BS EN 12004: TBC.
- Joint width: TBC.
- Grout: TBC.
  - Type/ classification: TBC.
  - Admixture: TBC .
- Movement joints: TBC.
- Accessories: TBC.

118 S3 - TILED SKIRTING

- Tiles: Porcelain.
  - Manufacturer/ Supplier: MOSA - TBC .
    Product reference: Terra Greys
  - Colour: TBC .
  - Finish: TBC .
  - Size: 100mm - TBC
  - Thickness: 7-10mm - nominal.
  - Slip potential:
    Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2, -3: TBC.
    Surface roughness (Rz) (minimum) BS 1134: TBC .
    Ramp test class: TBC.
  - Recycled content: TBC.
- Background/ Base: 12mm WBP Plywood
  - Preparation: TBC.

- Intermediate substrate: 10mm WEDI BOARD
- Bedding: TBC.
  - Reinforcement: TBC.
  - Adhesive to BS EN 12004: TBC.
- Joint width: TBC.
- Grout: TBC.
  - Type/ classification: TBC.
  - Admixture: TBC .
- Movement joints: TBC.
- Accessories: TBC.

GENERAL

210 SUITABILITY OF BACKGROUNDS/ BASES
- Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thickness of bedding.
- New background drying times (minimum):
  - Concrete walls: 6 weeks.
  - Brick / block walls: 6 weeks.
  - Rendering: 2 weeks.
  - Gypsum plaster: 4 weeks.
- New base drying times (minimum):
  - Concrete slabs: 6 weeks.
  - Cement:sand screeds: 3 weeks.

215 FALLS IN THE BASES
- General: Give notice if falls are inadequate.

250 SAMPLES
- General: Submit representative samples of the following: Ground floor porcelain tiles to bedrooms and bathrooms.

PREPARATION

370 NEW IN SITU CONCRETE
- Backgrounds/ bases to be tiled: Remove mould oil, surface retarders and other materials incompatible with bedding.

380 NEW PLASTER
- Plaster: Dry, solidly bedded, free from dust and friable matter.
- Plaster primer: Apply if recommended by adhesive manufacturer.

390 PLASTERBOARD BACKGROUNDS
- Boards: Dry, securely fixed and rigid with no protruding fixings and face to receive decorative finish exposed.

450 PREPARING CONCRETE BASES FOR UNBONDED BEDDING - WITHOUT SEPARATING LAYER
- Surface finish: Smooth.

- Surface preparation: Dampen lightly before laying mortar bed.

451 PREPARING CONCRETE BASES FOR UNBONDED BEDDING
- Separating layer: Polyethylene sheet.
  - Thickness: 500 gauge.
  - Lap at joints: 100 mm.

460 SMOOTHING UNDERLAYMENT
- Type: Recommended by adhesive manufacturer.
- Condition: Allow to dry before tiling.

470 INTERMEDIATE SUBSTRATE
- Type: Tile Backing Board
  - Manufacturer: WEDI
    Product reference: Building Board
  - Thickness: 10mm
- Fixing system: To Plywood substrate on timber or MF Studs or Solid Wall. All to manufacturers recommendations.
  - Substrate surface: Secure, true and even.
- Joints: Close butt.
  - Treatment: To manufacturers recommendations.
- Penetrations: Seal.
- Accessories: Wedi 610 Adhesive Sealant / Wedi Tools Reinforcement Tape

480 TILED ACCESS PANELS
- Type: Magnet / Aluminium Brackets
Manufacturer: Schulter or Equal Approved
Model: REMA.
- Substrate: Tile Backing Board
  - Manufacturer: WEDI
    Product reference: Building Board
  - Thickness: 10mm
  - Substrate surface: Secure, true and even
  - Accessories: As Required.

FIXING

510 FIXING GENERALLY
- Colour/ shade: Unintended variations within tiles for use in each area / room are not permitted.
  - Variegated tiles: Mix thoroughly.
- Adhesive: Compatible with background/ base. Prime if recommended by adhesive manufacturer.
- Use of admixtures with cementitious adhesives: Only admixtures approved by adhesive manufacturer.
- Cut tiles: Neat and accurate.
- Fixing: Provide adhesion over entire background/ base and tile backs.
- Final appearance: Before bedding material sets, make adjustments necessary to give true, regular appearance to tiles and joints when viewed under final lighting conditions.
- Surplus bedding material: Clean from joints and face of tiles without disturbing tiles.

530 SETTING OUT
- Joints: True to line, continuous and without steps.
  - Joints on walls: Horizontal, vertical and aligned round corners.
  - Joints in floors: Parallel to the main axis of the space or specified features.
- Cut tiles: Minimize number, maximize size and locate unobtrusively.
- Joints in adjoining floors and walls: Align.
- Joints in adjoining floors and skirtings: Align.
- Movement joints: Where locations are not indicated, submit proposals.
- Setting out of _____ : Drawing references: _____ .
- Setting out of _____ : Submit proposals.

550 FLATNESS/ REGULARITY OF TILING/ MOSAICS
- Sudden irregularities: Not permitted.
- Deviation of surface: Measure from underside of a 2 m straightedge with 3 mm thick feet placed anywhere on surface. The straightedge should not be obstructed by the tiles and no gap should be greater than 6 mm, i.e. a tolerance of + 3 mm.

560 LEVEL OF TILING ACROSS JOINTS
- Deviation (maximum) between tile surfaces either side of any type of joint:
  - 1 mm for joints less than 6 mm wide.
  - 2 mm for joints 6 mm or greater in width.

570 MORTAR BEDDING
- Bedding mix:
  - Cement: Portland to BS EN 197-1, type CEM I/42.5.
  - Sand for walls: Fine aggregate to BS EN 13139.
    Grading designation: 0/2 (CP or MP) category 2 fines.
  - Sand for floors: Fine aggregate to BS EN 13139.
    Grading designation: 0/4 (MP) category 1 fines and between 20%-66% passing a 0.5 sieve.
- Batching: Select from:
  - Batch by weight.
  - Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Use accurate gauge boxes. Allow for bulking of damp sand.
- Mixing: Mix materials thoroughly to uniform consistence. Use a suitable forced action mechanical mixer. Do not use a free fall type mixer.
- Application: At normal temperatures use within two hours. Do not use after initial set. Do not retemper.

578 CRACK CONTROL REINFORCEMENT
- Type to BS 4483: _____ .
- Installation: Place centrally in depth of bed. Lap not less than 100 mm and securely tie together with steel wire.
- Corners: Avoid a four layer build at corners.

590 COVED TILE SKIRTINGS
- Sequence: Bed solid to wall before laying floor tiles.
- Bedding: _____ .

600 SIT-ON TILE SKIRTINGS
- Sequence: Bed solid to wall after laying floor tiles.

- Bedding: _____ .

650 ADHESIVE BED - NOTCHED TROWEL METHOD (WALLS)
- Application: By 3 mm floated coat of adhesive to dry background in areas of approximately 1 m sq. Comb surface.
- Tiling: Press tiles firmly onto float coat.

651 ADHESIVE BED - NOTCHED TROWEL AND BUTTERING METHOD (WALLS)
- Application: By floated coat of adhesive to dry background in areas of about 1 m sq. Comb surface.
- Tiling: Apply thin even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles. Press tiles firmly onto float coat.
- Finished adhesive thickness: 3 mm or within the range allowed by the adhesive manufacturer.

652 ADHESIVE BED - BUTTERING METHOD (WALLS)
- Tiling: Apply even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles.
- Finished adhesive thickness: 3 mm or within the range allowed by the adhesive manufacturer.

660 ADHESIVE BED - NOTCHED TROWEL METHOD FOR MESH BACKED MOSAIC (WALLS)
- Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
- Placing mosaic sheets: Hang in horizontal rows, working downwards. Stagger vertical joints. Prevent slippage of sheets. Lightly beat mosaics into adhesive.
- Width, plane and alignment of joints between sheets: To match joints between mosaic tiles.

661 ADHESIVE BED - NOTCHED TROWEL METHOD FOR PAPER FACED MOSAIC (WALLS)
- Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
- Preparing mosaic sheets: Pregrout. Remove surplus before fixing.
- Placing mosaic sheets: Hang in horizontal rows, working downwards. Stagger vertical joints.
- Width, plane and alignment of joints between sheets: To match joints between mosaic tiles.
- Paper face: Before adhesive hardens completely, remove paper face. Complete grouting. Wash off glue from face of mosaic.

710 ADHESIVE BED - NOTCHED TROWEL AND BUTTERING METHOD (FLOORS)
- Application: Floated coat of adhesive to dry base and comb surface.
- Tiling: Apply coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles. Press tiles firmly onto float coat.
- Finished adhesive thickness: Within range allowed by manufacturer.

711 ADHESIVE BED - BUTTERING METHOD (FLOORS)
- Tiling: Apply even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles.
- Finished adhesive thickness: Within the range allowed by the adhesive manufacturer.

730 SEMIDRY CEMENT:SAND BEDDING (FLOORS)
- Mortar bedding mix: 1:3.5-4 cement:sand.
  - Water content: A film of water must not form on surface of bed when fully compacted.
- Preparation: Dampen base.
- Laying: Lay suitably small working areas of screeded bed. Compact thoroughly to level.
  - Finished bed thickness (minimum): _____ .
  - Finished bed thickness (maximum): _____ .
- Tiling: Within two hours and before bedding sets, evenly coat backs of tiles with neat cement slurry. Beat tiles firmly into position.

MOVEMENT JOINTS/ GROUTING/ COMPLETION

805 SEALANT MOVEMENT JOINTS WITH METAL EDGINGS _____
- Edging material: _____ .
  - Size: _____ .
  - Bedding: Bed in 1:3 cement:sand.
- Installation: Centre over joints in base. Set to exact finished level of floor.
  - Fixing to base: _____ .
- Joint width: _____ .
- Sealant: _____ .
  - Colour: _____ .
  - Preparation and application: As section Z22.

815 SEALANT MOVEMENT JOINTS _____
- Joints: Extend through tiles and bedding to base/ background. Centre over joints in base/ background.
  - Width: _____ .
- Sealant: _____ .
  - Colour: _____ .
  - Preparation and application: As section Z22.

825 STRIP MOVEMENT JOINTS _____
- Manufacturer: _____ .
  - Product reference: _____ .
  - Colour: _____ .
- Joint width: _____ .
- Fixing to base: _____ .
- Joints: Extend through tiles and bedding to base.

855 CEMENT:SAND GROUTING MIX
- Grout mix:
  - Cement: _____ .
  - Sand (Fine aggregate):
    Joint widths of 6 mm or greater: To BS EN 13139, grading designation 0/2 (FP or MP), category 2 fines.
    Joint widths of 3-6 mm: _____ .
  - Proportions (cement:sand): _____ .
  - Pigment: _____ .

- Admixture: _____ .
- Mixing: Mix thoroughly. Use the minimum of clean water needed for workability.

875 GROUTING
- Sequence: Grout when bed/ adhesive has set sufficiently to prevent disturbance of tiles.
- Joints: 6 mm deep (or depth of tile if less). Free from dust and debris.
- Grouting: Fill joints completely, tool to profile, clean off surface. Leave free from blemishes.
  - Profile: _____ .
- Polishing: When grout is hard, polish tiling with a dry cloth.

885 COLOURED GROUT
- Staining of tiles: Not permitted.
- Evaluating risk of staining: Apply grout to a few tiles in a small trial area. If discoloration occurs apply a protective sealer to tiles and repeat trial.

END OF WORK SECTION

Tavistock – The Guildhall

Section**: M50** Revision: **T1**

Rubber / Plastics / Cork / Lino / Carpet Tiling / Sheeting

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		TENDER	March 19

M50 RUBBER/ PLASTICS/ CORK/ LINO/ CARPET TILING/ SHEETING

To be read with Preliminaries / General conditions.

TYPES OF COVERING

130 BCARPET ROLL FLOORING ON EXISTING SCREED

- Location: G27 – THT Office
  Refer drawings: GA-150
- Base: Existing Screed Floor
- Fitting: **strictly in accordance with manufacturer's recommended details**

Tretford Commercial
Ribbed Roll Carpet
Pile Content – 80% Goat Hair / 15% Nylon / 5% Viscose.
Secondary Backing - Jute
Pile weight of 1200g /m2.
Suitable for heavy wear areas.

Preparation: Clean, dry, and dust free in accordance with BS8230.
Relative humidity < 75%.
Fabricated Underlay: min. 8mm Underlay – Cloud 9 Contract – Ball and Young Ltd on min. 3mm surface leveling compound if required.
Manufacturer: Tretford
Product Reference: Tretford Cord Roll
Size: 2m wide
Colour / Pattern: 523 LARCH - TBC
Accessories: [TBA**]**
Other Requirements: Gradus / Schluter Threshold strips
Method of laying: To manufacturers recommendations: Styccobond F3 permanent bond adhesive, manufactured by F Ball & Co Ltd or other equal and approved. See F Ball & Co Ltd NBS Plus page for details.Carpet 100% adhered to underlay.

140 CARPET ROLL FLOORING ON NEW FLOORING

- Location: Lobby Areas / Partner Services
  Refer drawings: GA-152, GA-154
- Base: Plywood floor deck / Acoustic Floor Deck to SE Details
- Fitting: **strictly in accordance with acoustic floor manufacturer's recommended details**

Tretford Commercial
Ribbed Roll Carpet
Pile Content – 80% Goat Hair / 15% Nylon / 5% Viscose.
Secondary Backing - Jute
Pile weight of 1200g /m2.
Suitable for heavy wear areas.

Preparation: Clean, dry, and dust free in accordance with BS8230.
Relative humidity < 75%.
Fabricated Underlay: min. 8mm Underlay – Cloud 9 Contract – Ball and Young
Manufacturer: Tretford
Product Reference: Tretford Cord Roll
Size: 2m wide
Colour / Pattern: 523 LARCH - TBC
Accessories: [TBA**]**
Other Requirements: Gradus / Schluter Threshold strips
Method of laying: To manufacturers recommendations: Styccobond F3 permanent bond adhesive, manufactured by F Ball & Co Ltd or other equal and approved. See F Ball & Co Ltd NBS Plus page for details.Carpet 100% adhered to underlay.

145 CARPET ROLL FLOORING ON EXISTING FLOORING

- Location: TTC Offices, F45 - Courtroom,
  Refer drawings: GA-152
- Base: Existing Substructure / Floorboards
- Fitting: **To manufacturers details**

Tretford Commercial
Ribbed Roll Carpet
Pile Content – 80% Goat Hair / 15% Nylon / 5% Viscose.
Secondary Backing - Jute
Pile weight of 1200g /m2.
Suitable for heavy wear areas.

Preparation: Clean, dry, and dust free in accordance with BS8230.
Relative humidity < 75%.
Fabricated Underlay: min. 8mm Underlay – Cloud 9 Contract – Ball and Young
Manufacturer: Tretford
Product Reference: Tretford Cord Roll
Size: 2m wide
Colour / Pattern: 523 LARCH - TBC
Accessories: [TBA**]**
Other Requirements: Gradus / Schluter Threshold strips
Method of laying: To manufacturers recommendations: Styccobond F3 permanent bond adhesive, manufactured by F Ball & Co Ltd or other equal and approved. See F Ball & Co Ltd NBS Plus page for details.Carpet 100% adhered to underlay.

148 STAIR CARPET

- Location: All Stairs (Except Spiral Staircase)
  Refer drawings: GA-150, GA-152 + GA-154.
- Base: Existing Substructure / Floorboards
- Fitting: **To manufacturers details**

Tretford Commercial
Ribbed Roll Carpet
Pile Content – 80% Goat Hair / 15% Nylon / 5% Viscose.
Secondary Backing - Jute
Pile weight of 1200g /m2.
Suitable for heavy wear areas.

Preparation: Clean, dry, and dust free in accordance with BS8230.
Relative humidity < 75%.
Fabricated Underlay: min. 8mm Underlay – Cloud 9 Contract – Ball and Young
Manufacturer: Tretford
Product Reference: Tretford Cord Roll
Size: 2m wide
Colour / Pattern: 523 LARCH - TBC
Accessories: [TBA**]**
Other Requirements: Gradus AKXT5A (Aluminium with Insert in 'Snowdrift' or to achieve 30 point difference with carpet colour) TBC or Equal Approved
Method of laying: To manufacturers recommendations: Styccobond F3 permanent bond adhesive, manufactured by F Ball & Co Ltd or other equal and approved. See F Ball & Co Ltd NBS Plus page for details.Carpet 100% adhered to underlay.

150 LINOLEUM SHEETING

- Location: Refer to Finishes Drawings: GA150, GA152 + GA154.
- Base: Varies – New Screed / Liquid applied leveling compound as recommended by manufacturer to cover existing solid floors / OSB Sub Floor to be fitted with 5.5mm plywood (conforming to BS8203:2017 Annex A) fabricated underlay.
- Installation: to be carried out by an experienced installer
- Preparation: Subfloor to be dry, rigid and smooth
- Fabricated underlay: as required by flooring manufacturer
- Flooring roll: to remove excess adhesive
- Manufacturer: FORBO Marmoleum
  Product reference: SOLIDS - CONCRETE
- Slip Resistance:
- BS EN 685 class: 22
- Width: 2m wide sheet
- Thickness: 2.5mm (3.5mm provides additional Sound Reduction)
- Colour/ pattern: Satellite / Liquid Clay - TBC
- Adhesive (and primer if recommended by manufacturer): Elastocol
- Seam welding: as recommended by manufacturer
- Cleaning and maintenance shall be in accordance with manufacturers instructions
- Accessories: Floor trims if required, to be from the Gradus range: please contact Gradus Ltd, 01625 428922. Samples to be submitted to Architect for approval.

GENERAL REQUIREMENTS

210 WORKMANSHIP GENERALLY

- Base condition after preparation: Rigid, dry, sound, smooth and free from grease, dirt and other contaminants.
- Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks and stains.

220 SAMPLES

- Covering samples: Before placing orders, submit representative sample of each type.

250 LAYOUT – ROLL MATERIALS

- Setting out of seams: Agree setting out for sheeting types M50/ 130/140.

251 LAYOUT – SEAMS IN ROLL MATERIALS

- Setting out: Minimize occurrences of seams and cross seams.
- Cross seams: Not permitted

270 EXTRA MATERIAL

- Provision of extra material: At completion, hand to Employer extra material of each type of covering to extent of: **area TBC BY CA**

330 COMMENCEMENT

- Required condition of works prior to laying materials:
  - Building is weathertight and well dried out.
  - Wet trades have finished work.
  - Paintwork is finished and dry.
  - Conflicting overhead work is complete.
  - Floor service outlets, duct covers and other fixtures around which materials are to be cut are fixed.
- Notification: Submit not less than 48 hours before commencing laying.

340 CONDITIONING

- Prior to laying: Condition materials by unpacking and separating in spaces where they are to be laid. Maintain resilient flooring rolls in an upright position. Unroll carpet and keep flat on a supporting surface.

- Conditioning time and temperature (minimum): As recommended by manufacturer with time extended by a factor of two for materials stored or transported at a temperature of less than 10°C immediately prior to laying.

350 ENVIRONMENT
- Temperature and humidity: Before, during and after laying, maintain approximately at levels which will prevail after building is occupied.
- Ventilation: Before during and after laying, maintain adequate provision.

PREPARING BASES

410 NEW BASES
- Suitability of bases and conditions within any area.
- Commencement of laying of coverings will be taken as acceptance of suitability.

420 EXISTING BASES
- Notification: Before commencing work, confirm that existing bases will, after preparation, be suitable to receive coverings.
- Suitability of bases and conditions within any area.
- Commencement of laying of coverings will be taken as acceptance of suitability.

430 NEW WET LAID BASES
- Base drying aids: Not used for at least four days prior to moisture content testing.
- Base moisture content test: Carry out in accordance with BS 5325, Annexe A or BS 8203, Annexe A.
  - Locations for readings: In all corners, along edges, and at various points over area being tested.
- Commencement of laying coverings: Not until all readings show 75% relative humidity or less.

440 SUBSTRATES TO RECEIVE THIN COVERINGS
- Trowelled finishes: Uniform, smooth surface free from trowel marks and other blemishes. Abrade suitably to receive specified floor covering material.

460 SMOOTHING/ LEVELLING UNDERLAYMENT COMPOUND IF REQUIRED
- Type: Contratcors Choice
- Manufacturer: Flowcrete UK ltd or Equal Approved

470 BASES FROM WHICH EXISTING FLOOR COVERINGS HAVE BEEN REMOVED
- Substrate: Clear of covering and as much adhesive as possible. Skim with smoothing underlayment compound to give smooth, even surface.

530 PARTICLEBOARD FLOORING
- Substrate: Boards securely fixed, level and free from surface sealers and contaminants.
  - Gaps between boards: Not more than 1 mm.
  - Priming: As required by covering adhesive manufacturer.
- Equilibrium moisture content at time of laying covering: As in service conditions.

560 UNDERLAY
- Substrate: chipboard / plywood / existing floor boards
- Fitting: **strictly in accordance with manufacturer's recommended details**
  - Gaps between boards: Not more than 1 mm.
  - manufacturer: Ball and Young Ltd
- Product: Cloud 9 Contract (8mm)

LAYING COVERINGS

620 COLOUR CONSISTENCY
- Finished work in any one area/ room: Free from banding or patchiness.

640 ADHESIVE FIXING GENERALLY
- Adhesive type: As specified, as recommended by covering/ underlay manufacturer, or as approved.
- Primer: Type and usage as recommended by adhesive manufacturer.
- Application: As necessary to achieve good bond.
- Finished surface: Free from trowel ridges, high spots caused by particles on the substrate, and other irregularities.

650 SEAMS
- Patterns: Matched.
- Joints: Tight without gaps.

690 SEAM BONDING CARPET
- Carpet types: M50/130/140
- Seaming adhesive application: Continuous bead to edges.
- Joints: Securely bonded, free of air bubbles.

720 DOORWAYS
- Joint location: On centre line of door leaf.

740 EDGINGS AND COVER STRIPS
- Manufacturer & type: Schlüter Systems / Gradus
- Size: Schluter-Schiene-E / ANT27
- Finish: Stainless steel
- Fixing: Secure with edge of covering gripped. Use matching fasteners where exposed to view.

770 SKIRTINGS
- Types: Refer **- P20/115**
- Fixing: Secure with top edge straight and parallel with floor.

780 TRAFFICKING AFTER LAYING
- Covering types: **kick 'n' stick clear protector to all newly laid carpets, & Megasheild Anti-slip protector to main traffic areas until hand-over COMPLETION**

880 WASTE
- Spare covering material: Retain suitable material for patching. On completion submit pieces for selection. Hand over selected pieces to Employer.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: M60** Revision : **T5**

Painting - Clear finishing

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Jan 19
T2	*195*	Draft Tender	Feb 19
T3	120, +160	Draft Tender	March 19
T4	120, +170, + 180	Draft Tender	March 19
T5	110, 111, +165	Tender	March 19

M60 PAINTING/ CLEAR FINISHING

To be read with Preliminaries/ General conditions.

NOTE: ALL COLOURS TO BE CONFIRMED WITH CA / CLIENT

COATING SYSTEMS

110 EMULSION PAINT TO NEW PLASTERBOARD WALLS

- Manufacturer: Dulux trade OSA
  - Product reference: Supermatt emulsion .
- Surfaces: Plasterboard with skim coat
  - Preparation: As recommended by manufacturer.
- Initial coats: Mist coat to new plaster
  - Number of coats: 1 No.
- Undercoats: none
- Finishing coats: Super matt emulsion thinned up to 1 part clean water to 5 parts paint
  - Number of coats: 2 No.
  - Colour: Typical – To match F+B 'Strong White'

111 BREATHABLE PAINT TO EXISTING PLASTER WALLS /CEILINGS

- Manufacturer: Auro.co.uk
- Product : 321 matt emulsion
- Surface(s): Existing internal walls.
  Preparation: Remove all loose and heavy paint films. Note. Some existing paints may contain lead. Take appropriate safety precautions.
- Initial coat(s): 1no. primer coat diluted with 10% waterP20
- Finishing coats: 2 no. top coats
- Colour:
  - Typical – To match F+B 'Strong White' - TBC
  - F44 (Magistrates Room) – To match F+B 'DeNimes' – TBC (WALLS ONLY)
  - TTC Office Areas – 'Sky Blue' to match existing – TBC
  - Lift Lobby Areas – To Match F+B 'Off Black' / 'Downpipe' / RAL9021 - TBC

112 SPRAY PAINT FINISH (OFF SITE): TO INTERNAL DOORS / INTERNAL CABINET DOORS

- **Drawing References : C-380 to C-384**
-
- Manufacturer: Proprietary manufacturer
- Surface(s): MDF. Preparation: MDF to be sealed with approved primer
- Coating system: Acid catalyst lacquer – matt finish
- Colour: White RAL 9010 - TBC

120 PAINT FINISH TO REFURBISHED AND NEW GALVANISED STEEL WINDOWS + OTHER METALWORK ELEMENTS inc. Courtroom Tie Bars

- **Drawing Refs:** C-355 to C-361

- Components: Mild steel galvanized existing and new window frames.
-
- EXISTING STEEL– PREPARATION FOR OVERCOATING

- Burn off all existing paintwork unless coatings suitably unsound that paint can be removed with a firm edge using brushes and scrapers and lightly abrade the underlying galvanised surface.
- Exposed/corroded steel finish: Manually clean to BS EN ISO 8501-1, grade St2. Leave a clean but unpolished dry surface.
- Existing coatings finish: Feather into areas of bare metal or different coatings. Abrade to give a good key. Leave a clean, dry surface.
- Primer: Apply one brush coat to bare steel areas. Remove coating edges that lift as a result of priming, and reprime.
- Approval: Agree the condition of the prepared surface with the Architect before proceeding.
- Coating conditions: ensure the coating is applied within the environment recommended by the manufacturer
- Extent of coating: All surfaces are to receive the full specification of coating. To ensure the full application of the coating to all surfaces allow each side to dry before coating the remaining side.

- NEW GALV STEEL– PREPARATION FOR COATING
- Remove oil and grease using Prep 88. Lightly abrade surface in accordance with paint manufacturers requirements.

- **Coating systems.**
- Manufacturer: Spencer Coatings Ltd
- Supplier: Maker Coatings ltd.

- Primer coat: (where required), ProtegaBond ST200 aluminium filled epoxy primer.
- Finishing coats: Apply two coats of Viterlac 305 @ 75 - 100 microns per coat DFT
- Colours:

  WINDOWS: White - TBC to match existing
  RAINWATER GOODS AND OTHER METAL WORK: Colour: Juniper BS12B29.

  NOTES-
  Any Timber subsills to be prepared and redecorated as M60/123.
  Crittall windows to be decorated on both sides.

123 SATIN PAINT FINISH TO EXISTING / NEW TIMBER WINDOWS/DOORS

- **Drawing Refs:** C-355 to C-361

- Manufacturer: Akzo Nobel Woodcare (O.S.A)
- Surface(s): existing decorated timber sash and casement windows
  Preparation: Remove loose and damaged existing coatings to solid surface. Sand down and fill any holes in timber work with appropriate filler.
- Primer: prime any bare timber following preparation with 2 no. coats as follows
- Initial coat(s): New and bare timber - 2no. undercoats Sikkens Rubbol Primer Plus
  Existing prepared timber – 1 no. undercoat Sikkens Rubbol Primer Plus
  (2 coats if significant colour change)
- Primer Colour: Grey
- Finishing coats: 2no. brushed top coats Sikkens Rubbol Satura Plus
- Colour: White - TBC to match existing

150 EGGSHELL PAINT TO INTERNAL DOORS, FRAMES, SKIRTINGS TRIMS

- Manufacturer: Dulux trade diamond high performance Eggshell OSA
- Product reference: Dulux diamond high performance acrylic Eggshell

- Surfaces: New primed door blanks and door frames. Surfaces must be clean, dry, free from all defective or poorly adhering material, dirt, grease, wax etc.
  - Preparation: New or bare surfaces should be primed with an appropriate Dulux Trade primer. Thoroughly rub down previously painted surfaces, using 'wet flatting' methods where possible, then wipe off with a damp, lint free cloth. Treat any knots in wood with an appropriate knotting solution. Any surface defects should be filled with the appropriate Trade Polyfilla.
- Initial coats:.
  - Number of coats: 1 no primer coat using an appropriate Dulux Trade primer
- Finishing coats:.
  - The normal finishing process is 2 full coats of Dulux Trade Eggshell Finish. However, where a strong colour change is required, then a coat of an appropriate coloured Dulux Trade Undercoat may be necessary.
    Colour - White RAL 9010 - TBC

160 DECORATIVE WOODSTAIN/ VARNISH/ PRESERVATIVE - EXTERNAL

- Manufacturer: OSMO or Equal Approved.
  - Product reference: Natural Oil Wood Stain
- Surfaces: Prepare as per **L20 272.**
  - Preparation: As required by Manufacturer.
- Initial coats: Natural Oil Wood Stain
  - Number of coats: 2no.
  - Colour Tone: TBC with site sample for each door.
- Finishing coats: Natural Oil Wood Stain - Clear
  - Number of coats: 1no. 701 Cleat Matt.

165 DECORATIVE WOODSTAIN/ VARNISH/ PRESERVATIVE - INTERNAL

- Manufacturer: OSMO or Equal Approved.
  - Product reference: Wood Wax or Polyx-Oil Tints to suit existing courtroom fittings
- Surfaces:
  - Preparation: As required by Manufacturer.
- Initial coats: Natural Oil Wood Stain
  - Number of coats: 2no.
  - Colour Tone: TBC with site samples on plywood and hardwood.
- Finishing coats: Not required.

170 LIME WASH MASONRY COATING

- Manufacturer: Ty-Mawr / Mike Wye / Cornish Lime or Equal Approved.
  - Product reference: Lime Wash
  - Colour: White / Off White – Sample Area required.
- Surfaces:
  - Preparation: make good stonework where required by re-pointing / dubbing out. Clean and dampen surface before applying lime wash. Shelter coat may be required in some areas where surface condition is uneven / unsuitable for direct coating.
- Initial coats:
  - Number of coats: 3 (minimum).

  Use as thin as possible with stiff long haired brush. Gentle mist between coats.
- Finishing coats:
  - Number of coats: 1

180 FLOOR PAINT COATING – SPIRAL STAIR (ALL LEVELS iNC. TO ROOF)

- Manufacturer: DULUX ARMSTEAD or equal approved.
  - Product reference: DULUX TRADE FLOOR SHIELD or Equal Approved
- Surfaces: Existing Timber Stairs
  - Preparation: As recommended by manufacturer. Remove any existing lino. Adhesive and paint. Sand with medium grade sandpaper so surface is level and keyed ready for paint.

- Initial coats:
  - Number of coats: 1
- Finishing coats:
  - Number of coats: 2
- Slip resistance: Stair Nosing Non-Slip Strips required.
  - Manufacturer: Gradus AKXT5A (Aluminium with Insert in 'Snowdrift' or to achieve 30 point difference with floor paint colour) TBC or Equal Approved.
- Colour: ASH GREY – TBC. Sample Required.

182 EXTERNAL PAINT FINISH TO NEW GALVANISED STEEL ELEMENTS

- Components:

a. New galvanised mild steel elements, including balustrades, and loading bay guardings
Colour: Dark Grey / Green to match existing railings – Juniper BS12B29

Prepare the galvanised surface to paint manufacturers recommendations
- Coating conditions: ensure the coating is applied within the environment recommended by the manufacturer
- Extent of coating: All surfaces are to receive the full specification of coating. To ensure the full application of the coating to all surfaces allow each side to dry before coating the remaining side.

- **Coating system.**
- Manufacturer: Spencer Coatings. Or equal approved.
- Supplier: Maker Coatings Ltd
- Product: Viterlac 305 Vinyl Acrylic Primer/finish coat
  Apply two coats of Viterlac 305 @ 75 – 100 microns per coat DFT.
- Colours: as indicated above
- Refer to manufacturers data sheet on product use.
  Following installation on site allow for touching up damaged paint finish in-situ, feather back edges of adjacent paint to provide a smooth surface to accept the touch-up paint

195 SPECIAL COATING INTUMESCENT COATING TO EXISTING TIMBER DOORS TO BE UPGRADED TO FIRE DOORS

- **Drawing Refs: C-380 to C-384. Door Refs:** GD22, !D06, ID07, 2D10

Manufacturer: Envirograf
- Ref: ESRFC
- Multi coat intumescent paint system.
  Refer to L20-273 for details of door upgrades and preparation.

GENERAL

210 COATING MATERIALS

- Manufacturers/suppliers: Obtain materials from any of the following:
-
  - **Akzo Nobel Industrial Coatings Ltd.**
    Unit 04a Mercer Way
    Shadsworth Business Park
    Blackburn Lancashire - BB1 2QZ
    01254 687950

  - **Dulux Trade**

Wexham Road
Slough
Berkshire
SL2 5DS

- **Spencer Coatings Group**
  Axalta Coating Systems West Bromwich UK Ltd.
  Kelvin Way
  West Bromwich
  West Midlands
  B70 7JZ

  Corroless Corrosion Control
  Kelvin Way
  West Bromwich
  West Midlands B70 7JZ

- **Maker Coating Systems Ltd**
  Oak Business Units, 18 Thorverton Rd,
  Exeter EX2 8FS
  Telephone - 01392 822600
  Fax - 01392 829479
  Mobile - 07787 776595

  E-mail - phil@makercoating.com
  Web - https://makercoatingonline.co.uk

- Selected manufacturers: Submit names before commencement of coating work.

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

- All internal and external stonework.
- ~~Internal surfaces of windows~~

~~250 SURFACES TO BE CLEANED BUT NOT COATED~~

- ~~Roof trusses,~~
- ~~Internal surfaces of windows~~

280 PROTECTION

- 'Wet paint' signs and barriers: Provide where necessary to protect other operatives and general public, and to prevent damage to freshly applied coatings.

300 CONTROL SAMPLES

- Sample areas of finished work: Carry out, including preparation, as follows:

320 INSPECTION BY COATING MANUFACTURERS

- General: Permit manufacturers to inspect work in progress and take samples of their materials from site if requested.

321 INSPECTION OF WORK STAGES
- Inspection: Give prior notice when each stage is ready for inspection.

PREPARATION

400 PREPARATION GENERALLY
- Standard: In accordance with BS 6150.
- Refer to any pre-existing CDM Health and Safety File.
- Refer to CDM Construction Phase Plan where applicable.
- 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: Metal signs.
- Replacement: Refurbish as necessary, refit when coating is dry.

425 IRONMONGERY
- Removal: Before commencing work remove ironmongery from surfaces to be coated.
- Replacement: Refurbish as necessary; refit when coating is dry.

430 EXISTING IRONMONGERY
- Refurbishment: Remove old coating marks. Clean and polish.

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 or other hazardous materials.
  - 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.

451 PREVIOUSLY COATED SURFACES - BLAST CLEANING
- Operatives:
  - Trained/ experienced in blast cleaning.
  - Submit evidence of training/ experience on request.
- Dust and nuisance: Minimize.

456 PREVIOUSLY COATED SURFACES - BURNING OFF
- Risk assessment and method statement: Prepare, and obtain approval before commencing work.
- Adjacent areas: Protect from excessive heat and falling scrapings.
- Exposed resinous areas and knots: Apply two coats of knotting.
- Removed coatings: Dispose of safely.

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.

490 PREVIOUSLY COATED STEEL
- Defective paintwork: Remove to leave a firm edge and clean bright metal.
- Sound paintwork: Provide key for subsequent coats.
- Corrosion and loose scale: Take back to bare metal.
- Residual rust: Treat with a proprietary removal solution.
- Bare metal: Apply primer as soon as possible.
- Remaining areas: Degrease.

500 PREPRIMED STEEL
- Areas of defective primer, corrosion and loose scale: Take back to bare metal. Reprime as soon as possible.

511 GALVANIZED, SHERARDIZED AND ELECTROPLATED STEEL
- White rust: Remove.
- Pretreatment: Apply one of the following:
  - Mordant solution to blacken whole surface.
  - Etching primer recommended by coating system manufacturer.

521 UNCOATED STEEL - MANUAL CLEANING
- Oil and grease: Remove.
- Corrosion, loose scale, welding slag and spatter: Remove.
- Residual rust: Treat with a proprietary removal solution.
- Primer: Apply as soon as possible.

531 UNCOATED STEEL - BLAST CLEANING

- Oil and grease: Remove.
- Blast cleaning:
  - Atmospheric conditions: Dry.
  - Abrasive: Suitable type and size, free from fines, moisture and oil.
  - Surface finish: To BS EN ISO 8501-1, preparation grade _____ .
- Primer: Apply as soon as possible and within four hours of blast cleaning.

541 UNCOATED ALUMINIUM/ COPPER/ LEAD
- Surface corrosion: Remove, and lightly key surface.
- Pretreatment: Etching primer, if recommended by coating system manufacturer.

552 UNCOATED PVC-U
- Dirt and grease: Remove. Do not abrade surface.

560 UNCOATED CONCRETE
- Release agents: Remove.

570 UNCOATED MASONRY/ RENDERING
- Loose and flaking material: remove.

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

590 UNCOATED PLASTERBOARD
- Depressions around fixings: Fill with stopper/ filler.

601 UNCOATED PLASTERBOARD - TO RECEIVE TEXTURED COATING
- Joints: Fill, tape and feather out with materials recommended by textured coating manufacturer.

611 WALL COVERINGS
- Retained wall coverings: Check that they are in good condition and well adhered to substrate.
- Previously covered walls: Wash down to remove paper residues, adhesive and size.

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.

631 PREVIOUSLY PAINTED WINDOW FRAMES
- Paint encroaching beyond glass sight line: Remove.
- Loose and defective putty: Remove.
- Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.
- Finishing:
  - Patch prime, reputty as necessary, and allow to set.
  - Seal and coat as soon as fully set.

640 EXTERNAL POINTING TO EXISTING FRAMES
- Defective sealant pointing: Remove.
- Joint depth: Approximately half joint width; adjust with backing strip if necessary.
- Sealant:
  - Manufacturer: Contractors choice.
  - Preparation and application: As section Z22.

651 EXISTING GUTTERS

- Dirt and debris: Remove from inside of gutters.
- Defective joints: Clean and seal with suitable jointing material.

APPLICATION

711 COATING GENERALLY
- Application: 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.

730 WORKSHOP COATING OF CONCEALED JOINERY SURFACES
- General: Apply coatings to all surfaces of components.

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

740 CONCEALED METAL SURFACES
- General: Apply additional coatings to surfaces that will be concealed when component is fixed in place.
  - Components: _____ .
  - Additional coatings: _____ .

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 VARNISHING WOOD
- First coat: _____ .
  - Brush well in and lay off avoiding aeration.
- Subsequent coats: Provide light key and smooth along the grain between coats.

770 EXTERNAL DOORS
- Bottom edges: Prime and coat before hanging doors.

780 BEAD GLAZING TO COATED WOOD
- Before glazing: Apply first two coats to rebates and beads.

790 LINSEED OIL PUTTY GLAZING
- Setting: Allow putty to set for seven days.
- Sealing:
  - Within a further 14 days, seal with a solvent-borne primer.
  - Fully protect putty with coating system as soon as it is sufficiently hard.
  - Extend finishing coats on to glass up to sight line.

800 GLAZING
- Etched, sand blasted and ground glass: Treat or mask edges before coating to protect from contamination by oily constituents of coating materials.

810 WATER REPELLENT
- Application: Liberally flood surface, giving complete and even coverage.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: N10** Revision : **T3**

General Fixtures / Fittings / Equipment

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	March 19
T2	*+154*	Draft Tender	March 19
T3	+240	Tender	April 19

N10 GENERAL FIXTURES/ FURNISHINGS/ EQUIPMENT

To be read with Preliminaries/ General conditions.

SITE DIMENSIONS

- Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
- Before starting work on designated items each opening must be measured on site and recorded on shop drawings to ensure accurate fabrication Make formers as necessary to record out of plumb or square openings.

Produce shop fabrication drawings and seek the CA's approval before commencing any fabrication.

CONTROL SAMPLES

- Procedure:
  - Finalize component details.
- Fabricate one of each of the following designated items as part of the quantity required for the project.
- Obtain approval of appearance and quality before proceeding with manufacturer of the remaining quantity.

PRODUCTS

110 PURPOSE MADE CUPBOARDS – General WC Etc.

Refer to drawings

- To BS 6222 and BS EN 1153.
  Surface finishes performance to BS 6222:Part 3.
  Carcassing and shelves: - 18mm mdf shelves with Melamine finish to all exposed faces
  Cupboard doors:- 18mm mdf,
  Finish:- Spray paint finish as M60/112
  Other accessories: as required or noted.
  Blum clip profile door hinge 71T 9550 for thick doors at maximum 500mm centres, 173L6100 cruciform mounting plate. Julius Blum UK Ltd 01908 285700
  Other requirements:
  - Handless doors with groove to open on top edge (plinth) / bottom edge (wall)
  - Mirror Finish to **S54 as per L40 550 B.**
  - Lockable

145 PURPOSE MADE BASE AND WALL KITCHEN UNITS – Kitchenette / Tea Point

- Standard: ALL to BS 6222-2 and -3 and BS EN 14749.
  ALL to be mdf with spray applied acid catalyst lacquer finish.
- Finish / Colour: refer to M60/112
  - Carcasses to be white melamine veneered chipboard.
- Manufacturer: To Contractors choice
  - Product reference: To Contractors choice
- Dimensions: refer to drawings
- Worktop: Refer to **N10 200**
  - Finish / Colour: refer to drawings
- Doors and drawer fronts:
  - Material: ALL to be mdf with spray applied acid catalyst lacquer finish
  - Thickness: 25mm
  - Finish / colour: refer to drawings **C310 + C311.**

- Side panels:
  - Material: ALL to be mdf with spray applied acid catalyst lacquer finish
  - Thickness: 25mm
  - Finish / colour: refer to drawings
- Plinths and shelves:
  - Material: white melamine veneered chipboard.
  - Thickness: TBC
  - Finish / colour: refer to drawings.
- Sinks: under counter / stainless steel refer clause 350.
  Standard: To BS EN 13310.
- Taps: brushed stainless steel monoblock mixer tap – Paini Cox Monoblock Tap Brushed Finish or similar to architects approval refer to clause 350.
  Other accessories: Blum clip profile door hinge 71T 9550 for thick doors at maximum 500mm centres, 173L6100 cruciform mounting plate. Julius Blum UK Ltd 01908 285700
  Other requirements: tbc

148 PURPOSE MADE BASE KITCHEN UNITS WITHIN CUPBOARDS TO REAR OF COURTROOM – F46

- Standard: ALL to BS 6222-2 and -3 and BS EN 14749.
  ALL to be mdf with spray applied acid catalyst lacquer finish.
- Finish / Colour: To match existing courtroom fittings – Sample Required.
  - Carcasses to be white melamine veneered chipboard.
- Manufacturer: To Contractors choice
  - Product reference: To Contractors choice
- Dimensions: refer to drawings
- Worktop: Refer to **N10 210**
  - Finish / Colour: refer to drawings – White - TBC
- Doors and drawer fronts:
  - Material: ALL to be mdf with spray applied acid catalyst lacquer finish
  - Thickness: 25mm
  - Finish / colour: refer to drawings **C341.**
- Side panels:
  - Material: ALL to be mdf with spray applied acid catalyst lacquer finish
  - Thickness: 25mm
  - Finish / colour: refer to drawings
- Plinths and shelves:
  - Material: white melamine veneered chipboard.
  - Thickness: TBC
  - Finish / colour: refer to drawings.
- Sinks: under counter / stainless steel refer clause 350.
  Standard: To BS EN 13310.
- Taps: brushed stainless steel monoblock mixer tap – Paini Cox Monoblock Tap Brushed Finish or similar to architects approval refer to clause 350.
  Other accessories: Blum clip profile door hinge 71T 9550 for thick doors at maximum 500mm centres, 173L6100 cruciform mounting plate. Julius Blum UK Ltd 01908 285700
  Other requirements: tbc

150 PURPOSE MADE BASE CUPBOARDS TO REAR OF COURTROOM – F46

- Standard: ALL to BS 6222-2 and -3 and BS EN 14749.
  ALL to be hardwood veneered plywood carcasses and inset panels with hardwood cornice, door framing / stiles, nosings, edgings, lippings, skirting / plinth, beading with finish to match existing courtroom joinery
- Finish / Colour: stained/oiled/waved to match existing courtroom fittings. Refer: **M60 165**
  - Carcasses to be 18mm veneered plywood
- Manufacturer: Bespoke by joiner

  - Product reference: N/A
- Dimensions: refer to drawings and site measure.
- Shelving: 50 o/a formed by 2no. 25mm Plywood with Hardwood Lippings or framed to suit.
  - Finish / Colour: stained/oiled/waved to match existing courtroom fittings. Refer: **M60 165**
- Doors::
  - Material: Hardwood framed stiles with veneered plywood inset panels
  - Thickness: 0/A min. 38mm or to suit joiners recommendation
  - Finish / colour: refer to drawings **C341.**
- Side panels:
  - Material: veneered plywood
  - Thickness: 25mm
  - Finish / colour: stained/oiled/waved to match existing courtroom fittings. Refer: **M60 165**
- Plinths:
  - Material: hardwood or veneered plywood
  - Thickness: 25mm
  - Finish / colour: stained/oiled/waved to match existing courtroom fittings. Refer: **M60 165**
- Cornice:
  - Material: Hardwood to match existing courtroom cornice.
  - Finish / colour: stained/oiled/waved to match existing courtroom fittings. Refer: **M60 165**

  Other accessories: Blum door hinges for thick doors at maximum 500mm centres

  Other requirements:
    - Handless doors with ROUTED HANDLE in stile as per drawing **C341.**
    - Mirror Finish as per **L40 550 E** to rear face of 2no. doors
    - Lockable

152 PURPOSE MADE WALL PANELING TO REAR OF COURTROOM – F46

- Standard: ALL to BS 6222-2 and -3 and BS EN 14749.
  ALL to be hardwood stiles / framing with veneered plywood inset panels and hardwood dado moulding / beading
- Finish / Colour: stained/oiled/waxed to match existing courtroom fittings. Refer: **M60 165**
  - Panels to be 12/15mm veneered plywood
- Manufacturer: Bespoke by joiner
  - Product reference: N/A to match existing courtroom panels.
- Fixings: SW battens to suit.
- Dimensions: refer to drawings and site measure.
  - Material: hardwood
  - Thickness: 25mm
  - Finish / colour: stained/oiled/waved to match existing courtroom fittings. Refer: **M60 165**
- Dado / Moulding:
  - Material: Hardwood to match existing courtroom dado panels.
  - Finish / colour: stained/oiled/waved to match existing courtroom fittings. Refer: **M60 165**
- Window Cill: 3no. 25mm Thick.
  - Material: Hardwood veneered plywood to match existing courtroom finish.
  (Dado rail as hardwood lipping)
  - Finish / colour: stained/oiled/waved to match existing courtroom fittings. Refer: **M60 165**

154 PURPOSE MADE TIMBER PEGS – G30 or as required.

- Standard: ALL to be Oak
- Finish / Colour: natural
- Manufacturer: Bespoke by joiner
  - Product reference: N/A
- Fixings: Secret Fix
- Dimensions: Circular section with formed notch on top side – refer to drawings
  - Material: oak
  - Thickness: 25mm dia. X 50mm length

155 PURPOSE MADE CUPBOARDS FOR SERVICES / EQUIPMENT – IF REQUIRED
- Refer to drawings to M+E Specification
- Standard: ALL to BS 6222-2 and -3 and BS EN 14749.
- Dimensions of cupboard to be adjusted to suit services, to provide typical min. 100mm clear access to all sides of equipment.
- Door fronts:
  - Material: To be mdf with white painted finish
  - Thickness: 25mm
  - Size: To suit opening, to allow full access.
  - Finish / colour: White
- Other accessories: Blum clip profile door hinge 71T 9550 for thick doors at maximum 500mm centres, 173L6100 cruciform mounting plate. Julius Blum UK Ltd 01908 285700
  Other requirements: Cylinder lock TBC

160 SEALANT
- Sealant: silicone based to BS 5889, Type B with fungicide.
- Manufacturer: Ardex or equal approved
- Colour: White.
- Application: As section Z22.

200 WORKTOPS 1
KITCHENETTE + TEAPOINT
Cleaners Cpd. Worktops: 50mm thick dark grey laminate finished with mitred front edge return.
- Dimensions: refer to drawings C310 + C311
- Exposed edges: NONE
- Support: PLINTH UNITS

210 WORKTOPS 2
COURTROOM
Cleaners Cpd. Worktops: 50mm thick white laminate finished with mitred front edge return.
- Dimensions: refer to drawings C310 + C311
- Exposed edges: NONE
- Support: PLINTH UNITS

240 BLINDS – BLACK OUT
- Standard: To BS EN 13120.
- Manufacturer: Silent Gliss or equal approved
  - Product reference: Dim Out Blind – SG 4730 (chain) / SG 4770 or SG 4780 (1W05+ 1W10) (electric)
- Type: Black Out Roller Blind
- Dimensions: Bespoke varies to suit window. Blind to slide in existing window reveal slot in Courtroom (F45/F46)
  - Type: Fabric
  - Finish/ Colour: Dark Grey – Black Out.
- Operation: Chain operated (F44) / Electric (F45/F46)
- Accessories/ Other requirements: As required to suit installation.

350 SINKS, TAPS, TRAPS AND WASTES
- Sinks:
  - Standard: To BS EN 13310.
  - Manufacturer: Teka Products Limited (UK)
    01235 861916
    www.tekauk.com info@teka.co.uk

Product reference: Linea Undermount.
- Configuration: Single square sink.
- Overall size: 400 x 400.
- Material: 18/10 Stainless Steel.

Colour and finish: Natural SS.
- Tap/ chainstay/ overflow holes: As supplied.
- Taps: Brushed stainless steel monoblock mixer.
  - Manufacturer: Paini Cox.

  Product reference: Quad Monobloc Mixer.
  - Operation: 2 side levers.
  - Material: Brushed stainless steel.
- Wastes: Strainer waste supplied with sink.
  - Standard: To BS EN 274-1, -2 and -3.
- Traps: White polypropylene.
  - Standard: To BS EN 274-1, -2 and -3.
  - Manufacturer: To contractors choice.
  - Depth of seal (minimum): 75 mm.

500 UNDERCOUNTER INTEGRATED FRIDGE FREEZER

Specification A+
- Manufacturer: Electrolux or equal approved
- Product reference: Built in concealed A + rated fridge freezer
- Colour and finish: as per kitchen cupboard door
- Service connections: to m + e spec.

EXECUTION

710 MOISTURE CONTENT OF WOOD AND WOOD BASED BOARDS
- Temperature and humidity: During delivery, storage, 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

Methods of fixing and fastenings to be as section Z20 unless specified otherwise.

740 TAPS
- Fixing: Secure, watertight seal with the appliance.
- Positioning: Hot tap to left of cold tap as viewed by the user of the appliance.

750 WASTES AND OVERFLOWS
- Bedding: Waterproof jointing compound.
- Fixing: With resilient washer between appliance and backnut.

760 SEALANT POINTING:
- Sealant: Silicone based to BS 5889, Type B with fungicide.

  Colour: white

  Manufacturer and reference: proprietary manufacturer
- Application: As section Z22.

770 TRIMS
- Lengths: Wherever possible, unjointed between angles or ends of runs.
- Running joints: Where unavoidable, obtain approval of location and method of jointing.
- Angle joints: Mitred

COMPLETION

910 GENERAL
- Doors and drawers: Accurately aligned, not binding. Adjusted to ensure smooth operation.
- Ironmongery: Checked, adjusted and lubricated to ensure correct functioning.

920 APPLIANCES
- Test: Ensure that all functions and features work correctly.
- Documentation: Submit guarantees, instruction manuals, etc.

END OF WORK SECTION

Tavistock Guildhall

Section **: N13** Revision : **T2**

SANITARY APPLIANCES AND FITTINGS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	March 19
T2	*429, 458*	TENDER	APRIL 19

N13 SANITARY APPLIANCES AND FITTINGS

To be read with Preliminaries/ General conditions.

PRODUCTS

300 WCS AND CISTERNS TO LG.07, LG.10 + G.61

- WC standard: To DEFRA WC suite performance specification or approved by relevant water company.
- Type: Close Coupled
- Pan:
  - Standards: BS EN 37 and BS EN 997.
  - Manufacturer: Duravit
    Product reference: **Darling New: 213809**
  - Material: Vitreous China.
- Seat and cover:
  - Standard: BS 1254.
  - Manufacturer: Duravit
    Product reference: **006989**
  - Material: Plastic / Soft Close
  - Finish/ Colour: White
- Cistern:
  - Manufacturer: Duravit: Darling New Cistern: **093110**
  - Material: Plastic
- Flushing arrangement:
  - Manufacturer: To Suit Cistern
  - Operating control: dual-flush pushbutton
  - Water supply connection: Bottom Left Supply
  - Flush volume: 6/3 litre
- Flush pipe: Included with the flushing valve.
  - Material: Plastic
- Accessories: As Required to Function

301 WC AND CISTERN TO S.54

- WC standard: To DEFRA WC suite performance specification or approved by relevant water company.
- Type: Wall Hung
- Pan:
  - Standards: BS EN 37 and BS EN 997..
  - Manufacturer: Duravit
    Product reference: Darling New: Wall Mounted Compact: **254909**
  - Material: Vitreous China.
- Seat and cover:
  - Standard: BS 1254.
  - Manufacturer: Duravit
    Product reference: **006989**
  - Material: Plastic.
  - Finish/ Colour: White
- Pan connector:
  - Standard: To BS 5627.
  - Manufacturer: Duravit or similar approved.
  - Colour: to match pan.
- Cistern:
  - Manufacturer: Geberit Duofix 12cm or equal approved.
  - Material: Plastic
- Flushing arrangement:
  - Manufacturer: Geberit Duofix Omega 30 or equal approved.

- Operating control: dualflush pushbutton with white finish
- Water supply connection: Side or Bottom as required.
- Flush volume: Dual Flush

- Flush pipe: Included with the flushing valve.
  - Material: Plastic
- Accessories: fixing kit, concealed support frame (Geberit Duofix or equal approved), connectors and standpipes, tundish overflows.

320 UNISEX ACCESSIBLE WC Doc M Pack TO LG.01

- WC standard: To DEFRA WC suite performance specification or approved by relevant water company.
- Type: Back to Wall
- Pack:
  - Standards: BS EN 37 and BS EN 997.
  - Manufacturer: Ideal Standard or similar to architects approval.
    Product reference: Doc M Contour 21 + Back to Wall Pack **RH S0686**
  - Finish/ Colour: (AC) White
- Pan
  - Back to Wall rimless WC pan
  - Material: Vitreous China – BS3402
- Cistern:
  Product reference: Watersaving delay fill Conceala Cistern
  - Material: Plastic
- Flushing arrangement:
    Product reference: **Spatula Lever**
  - Water supply connection: As per Manufacturer
  - Flush volume: 6litrel
  - Material: plastic .
- Accessories:
  - basin – Contour 21 37cm S2474
  - grab rails
  - hinged support rail with toilet roll holder
  - seat no cover with retaining buffers,
  - copper tails on TMV3 mixer tap.

325 UNISEX ACCESSIBLE WC Doc M Pack TO F.41

- WC standard: To DEFRA WC suite performance specification or approved by relevant water company.
- Type: Close Coupled
- Pack:
  - Standards: BS EN 37 and BS EN 997.
  - Manufacturer: Ideal Standard or similar to architects approval.
    Product reference: Doc M Contour 21 + Back to Wall Pack **LH S0683**
  - Finish/ Colour: (AC) White
- Pan
  - Close Coupled rimless WC pan
  - Material: Vitreous China – BS3402
- Cistern:
  Product reference: Watersaving delay fill Conceala Cistern
  - Material: Plastic
- Flushing arrangement:
    Product reference: **Spatula Lever**
  - Water supply connection: As per Manufacturer
  - Flush volume: 6litrel
  - Material: plastic .
- Accessories:
  - basin – Contour 21 37cm S2474
  - grab rails

- hinged support rail with toilet roll holder
- seat no cover with retaining buffers,
- copper tails on TMV3 mixer tap.

335 WASH BASINS TO WCs TO LG.07, LG.10

- Manufacturer: Duravit
  - Product reference: Happy D.2 Handrinse Basin: **070950**
- Size: 500 x 360mm
- Water supply fittings: 54908 Pillar Tap 50 (without pop-up waste)
  - Water supply temperature (maximum): To M&E details
  - Flow rate (maximum): To M&E details
  - Manufacturer: Keuco or similar approved
  - Material: Chrome plated
    Product reference: **54908010100**
  - Operation: Lever head action 90° with ceramic discs
  - Quantity: according to schedule
- Wastes:
  - Standards: To BS EN 274-1, -2 and -3.
  - Manufacturer: Duravit or similar approved
    Product reference: Continuous flow waste
  - Material: chrome plated
- Pedestal:
  - Duravit Happy D.2 Semi Pedestal: **085832.**
- Traps:
  - Standards: To BS EN 274-1, -2 and -3.
  - Manufacturer: Concealed – Contractors Choice.
  - Size: to suit washbasin - contractor to confirm
  - Material: Contractors Choice.
  - Depth of seal (minimum): 75 mm.

340 WASH BASINS TO WC TO S.54 + G.61

- Manufacturer: Duravit or similar approved.
  - Left tap hole product reference: **Architec 076635..09**
- Size: 360 x 380mm
- Water supply fittings: 54908 Pillar Tap 50 (without pop-up waste)
  - Water supply temperature (maximum): To M&E details
  - Flow rate (maximum): To M&E details
  - Manufacturer: Keuco or similar approved
  - Material: Chrome plated
    Product reference: **54908010100**
  - Operation: Lever head action 90° with ceramic discs
  - Quantity: according to schedule
- Wastes:
  - Standards: To BS EN 274-1, -2 and -3.
  - Manufacturer: Duravit or similar approved
    Product reference: Continuous flow waste **005024**
  - Material: chrome plated
- Traps:
  - Standards: To BS EN 274-1, -2 and -3.
  - Manufacturer: Vado or similar approved.
    Product reference: Contemporary bottle trap **PEX-461/UK-1.1/4-C/P**
  - Size: to suit washbasin - contractor to confirm
  - Material: chrome plated
  - Depth of seal (minimum): 75 mm.

350 CLEANERS SINK TO LG.03
- Manufacturer: Washware Essentials Ltd or similar approved
  - Product reference: **SSCS** Cleaners sink with front support legs, ss hinged bucket grating and 150mm high splash back
- Size: 490mm wide. 370mm front to back. 430x268x150mm deep bowl. 150mm high splashback
- Material: Stainless steel with a satin finish
- Finish: Satin
- Water supply fittings: 6 Inch Wall Mounted Lever Operated Sink Taps (pair)
  - Water supply temperature (maximum): To M&E spec
  - Flow rate (maximum): To M&E spec
  - Manufacturer: Bristan or similar approved
  - Material: high polished chrome

  Product reference: **bsl6**
  - Operation: Twin Lever ¼ turn
  - Quantity: according to sanitaryware schedule
- Wastes: supplied with 38mm combined waste & overflow fitting with plug & chain
  - Standards: To BS EN 274-1, -2 and -3.
  - Manufacturer: to contractors choice
- Traps:
  - Standards: To BS EN 274-1, -2 and -3.
  - Manufacturer: to contractors choice

429 CLOTHES/TOWEL HOOKS to back of Doors to all WC's [including disabled] or adjacent walls refer to drawings.
- Manufacturer: Glutz or D-Line or SDS London or similar to architects approval
- Product reference: Glutz professional COOL LINE TCH16/1/SSS / D-Line 14.5605.02.002**.** Material: brushed stainless steel / bronze finished if available.

436 HANDRAILS AND GRAB BARS TO LG.01 + F.41
- Manufacturer: Ideal Standard or similar approved
  - Included in DOC M Pack.
- Diameter: 35mm
- Material: Polyester coated aluminium
- Finish/ Colour: Dark Grey

446 SANITARY TOWEL DISPOSAL BINS TO G.61, LG.10 (2no.), LG.01, F.41, S.54.
- Manufacturer: Dolphin or similar approved .
  - Product reference: **BC980** Dolphin Stainless Steel Sanitary Bin
- Material: Stainless steel.

458 SOAP DISPENSERS TO G.61, LG.10 (1no.), LG.07 (1no.), LG.01, F.41, S.54.
- Manufacturer: Dolphin or similar approved.
  - Product reference: **BC924PS** Dolphin Prestige Surface Mounted Soap Dispenser
- Material: Satin Stainless steel.

460 TOILET BRUSH HOLDERS TO G.61, LG.10 (2no.), LG.07 (2no.), LG.01, F.41, S.54.
- Manufacturer: Dolphin or similar approved .
  - Product reference: **BC727** Dolphin Toilet Brush Set
- Material: Satin stainless steel

462 TOILET PAPER HOLDERS TO TO G.61, LG.10 (2no.), LG.07 (2no.), LG.01, F.41, S.54.
- Manufacturer: Dolphin or similar approved
  - Product reference: **BC936** Stainless Steel Jumbo Roll Dispenser.
- Material/ finish: Satin stainless steel.

472 HAND DRIERS TO TO G.61, LG.10 (1no.), LG.07 (1no.), LG.01, F.41, S.54.
- Standard: To BS EN 60335-2-23.

- Manufacturer: To M+E Manufacturer specification or Equal Approved.
  Allow for Dyson Airblade V.
  - Product reference: **AB08** (Spayed nickel) EB5
- Operation: Touch-free operation
- Heater power rating: 1600W
- Enclosure:
  - Colour: AB08 Sprayed nickel moulded plastic
- Fixing arrangement: Refer to manufacturers recommendations
- Ingress protection to BS EN 60529: Water ingress protection to IP24

488 CHANGING UNIT TO LG.01 + F.41
- Manufacturer: Dolphin or similar approved
  - Product reference: **BC100EH**
- Type: A surface wall mounted, plastic, horizontally hinged baby changing table
- Size: 870 mm wide x 406 mm high. Projection when closed - 102 mm. Projection when open - 457 mm.
- Material: High density polyethylene
- Finish/ Colour: White

580 SEALANT FOR POINTING
- Type: silicone based to BS 5889, Type B with fungicide.
- Manufacturer: Ardex or similar approved.
- Colour: White (Typical).

EXECUTION

610 INSTALLATION GENERALLY
- Assembly and fixing: Surfaces designed to falls to drain as intended.
- Fasteners: Nonferrous or stainless steel.
- Supply and discharge pipework: Fix before appliances.
- Fixing: Fix appliances securely to structure. Do not support on pipework.
- Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes being jointed or bedded.
- Appliances: Do not use. Do not stand on appliances.
- On completion: Components and accessories working correctly with no leaks.
- Labels and stickers: Remove.

613 COMPATIBILITY OF COMPONENTS
- General: Each sanitary assembly must consist of functionally compatible components, preferably obtained from a single manufacturer.

620 NOGGINGS AND BEARERS
- Noggings, bearers, etc. to support sanitary appliances and fittings: Position accurately. Fix securely.

650 INSTALLING WC PANS
- Floor mounted pans: Screw fix and fit cover caps over screw heads. Do not use mortar or other beddings.
- Seat and cover: Stable when raised.

670 INSTALLING CISTERNS
- Cistern operating components: Obtain from cistern manufacturer.
  - Float operated valve: Matched to pressure of water supply.
- Overflow pipe: Fixed to falls and located to give visible warning of discharge.
  - Location: Agreed, where not shown on drawings.

710 INSTALLING TAPS
- Fixing: Secure against twisting.

- Seal with appliance: Watertight.
- Positioning: Hot tap to left of cold tap as viewed by user of appliance.

720 INSTALLING WASTES AND OVERFLOWS

- Bedding: Waterproof jointing compound.
- Fixing: With resilient washer between appliance and backnut.

755 SEALANT BEDDING AND POINTING

- Pointing: Joints between appliances and walls, floors etc.

END OF WORK SECTION

Tavistock Guildhall

Section **: N25** Revision : **T1**

PERMANENT ACCESS AND SAFETY EQUIPMENT

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		TENDER	APRIL 19

N25 PERMANENT ACCESS AND SAFETY EQUIPMENT

To be read with Preliminaries/ General conditions.

TYPES OF SYSTEM/ EQUIPMENT

210 PERSONAL FALL PROTECTION EQUIPMENT

- Type: FALL ARREST HARNESS + LIFELINE / ROPE GRAB / LANYARDS
- Manufacturer: Pammenter + Petrie or Equal Approved.
  - Allow 2 sets.
- Anchorage device: Refer **N25 220**
- Accessories/ Other requirements: As recommended by manufacturer
- Installation: In accordance with BS 7883 by the system manufacturer or a contractor approved by the system manufacturer.
- Structural anchors: Type recommended by the system manufacturer to suit the structure/ fabric into which they will be fixed.

220 SINGLE POINT ANCHORAGE DEVICES

- Standard: To BS EN 795.
- Type: Removable Safety Eyebolts
- Manufacturer: Latchways / Safety at Height (Soll)/ Scorpio Safety System or Equal Approved.
  - Product reference: Removable Safety Eyebolts (High Level for fall arrest system) and Ladder Bolts (Low Level to secure ladder)
- Material/ Finish: stainless steel.
- Locations: as per manufacturers recommendations. Allow for:
  - Police Station Rear Elevation: 6 High / 6 Low
  - Trowtes House Rear Elevation: 5 High / 5 Low
  - New Cells: 4 High (pair on each side). Protection pads required for ladders on flat roof to spread point load.
  - All other Elevations: Agreed by client to be cleaned by current arrangements as within reach of client 'cherry picker'.
- Installation: In accordance with BS 7883.
  - Resin Fix anchor socket into stonework.
- Other requirements: Provide with each anchor:
  - A backing disc giving the manufacturer's name and telephone number and the date of installation.
  - A certificate of compliance with testing and examination requirements of BS EN 365.
  - Removable eyebolts specified to have minimum visual impact on historic fabric.

DESIGN/ PERFORMANCE REQUIREMENTS

420 WIND LOADING FROM EXISTING DATA

- General: Design the access/ safety system to withstand specified wind loads with equipment in position of maximum exposure and in parked position.

430 SAFETY

- General: The equipment as installed must have no irregularities/ projections capable of inflicting personal injury.
- Finished surfaces and edges of all accessible parts: Regular and smooth.

440 DESIGN LIFE/ MAINTENANCE PROGRAMME
- Design life of access/ safety system: as per ,manufacturers recommendations.
- Schedule for maintenance and for replacement of components: Submit.

460 ASSESSMENT/ TESTING OF ANCHOR DEVICES
- Design and testing of anchors: To BS EN 795.

FABRICATION, ASSEMBLY AND INSTALLATION

510 FABRICATION AND ASSEMBLY GENERALLY
- Machine cutting, drilling and assembly: Carry out as much as possible in the workshop. Obtain approval for any reassembly on site.
- Dissimilar metal surfaces of assembly components/ supports/ fixings: Isolate to prevent electrolytic corrosion.

520 PROTECTION
- General: Do not deliver to site any components or assemblies that cannot be installed immediately or unloaded into a suitable well protected storage area.

535 EXECUTION GENERALLY
- Structural members: Do not modify, cut notch or make holes in structural members without permission.
- Frameworks: Assemble and brace, including temporary members required for installation.
  - Temporary support: Do not use access systems as temporary support or strutting for other work.
- Bolted joints:
  - Contact between dissimilar metals: Avoid.
  - Bolts and washers: Select types, sizes and quantities of fasteners or packings and spacings to retain supported components without distortion or loss of support.
- Welded joints: Comply with latest edition of National Structural Steelwork Specification (NSSS), Section 5.
- Finished components: Smooth, free from distortion, cracks, burrs and sharp arrises.

540 MECHANICAL FIXINGS
- Materials: Unless otherwise recommended by equipment manufacturer:
  - Connecting bolts and other fixings fully accessible for inspection: Carbon steel hot dip galvanized to BS 7371-6.
  - Nuts: Tapped after galvanizing.
  - Cast-in anchors and other fixings not accessible for routine inspection: Austenitic stainless steel, grade 1.4401 (316) to BS EN 10088-1.

550 FASTENERS, INSERTS AND BOLTS FOR BUILDING IN
- Supplier: Equipment manufacturer/ supplier.

560 FIXINGS FOR SECURING EQUIPMENT
- Adjustment capability: Adequate three dimensional adjustment to accommodate building structure/ fabric irregularities.

570 FIXING ANCHOR INSTALLATION
- Site drilling or cutting into structure/ fabric: Permitted only in approved locations.

- Distance between all fixing devices and edges of supporting material: Not less than recommended by fixing manufacturer.

610 IDENTIFICATION AND REGISTRATION LABELS FOR EQUIPMENT
- Provision: Provide and fix to each piece of equipment a permanent label giving:
  - Manufacturer's name, address and telephone number.
  - Name and/ or reference code of model.
  - Serial number and year of manufacture.
  - Maximum load (in kilograms) that may be sustained by the equipment.
- Location: In positions such that labels can be easily read.

615 CE MARKING AND DECLARATION OF CONFORMITY OF PERMANENTLY INSTALLED SUSPENDED ACCESS EQUIPMENT
- Marking: Equipment to be clearly labelled with a CE mark indicating conformity with the current edition of the Supply of Machinery (Safety) Regulations.
- Declaration of conformity: Provide for the complete installation a declaration of conformity with Machinery Directive 2006/42/EC together with certificates of incorporation for parts not supplied or installed by the main equipment manufacturer or supplier.

640 MARKING OF ANCHOR DEVICES
- Provision: Provide on or near each anchor device a label or other clear marking giving:
  - Manufacturer's name and telephone number.
  - Serial number and year of manufacture of device.
  - Maximum number of personnel that may be attached to the device at any one time.
  - Requirements for energy absorbers, ground clearance, etc.
- Anchor devices intended solely for use with personal protective equipment: Indicate restriction of use by pictogram or other suitable marking on or near the device.

810 SERVICE/ MAINTENANCE
- General: Following acceptance of the completed installation, service and maintain the equipment for the period stated below as and at intervals recommended by the manufacturer. Such maintenance to include a 'call-out' service during normal working hours to maintain the equipment in an acceptable and safe condition.

820 OPERATING INSTRUCTIONS
- Equipment and accessories: Where appropriate, mark in such a way that it is possible to identify the correct mode of operation for their safe use.

830 OPERATING AND MAINTENANCE MANUAL
- General: Provide, for inclusion in the Building Manual, printed instructions and recommended procedures to be established by the Employer for operating and routinely maintaining the equipment. Provide diagrams where appropriate.
- Content:
  - Instructions for assembling/ erecting equipment for use.
  - Comprehensive operating instructions, including safety and emergency procedures, for all motions including upward, downward and lateral travel, and slew.
  - Servicing and planned maintenance procedures, including assembly instructions where maintenance necessitates dismantling of machinery parts.
  - List of replacement parts, with references.
  - Recommended procedures for testing equipment.

840 AS INSTALLED DRAWINGS

- General: After commissioning/ testing of the equipment provide as installed drawings for inclusion in the Building Manual.
  - Number of sets: _____ .
- Drawing content:
  - Contractor's name and contract number.
  - Location and date of installation.
  - Manufacturer's name, model and type numbers.
  - General arrangement of the complete installation.
  - Electrical circuit wiring diagrams complete with details and ratings of all items of equipment.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: P10** Revision : **T4**

Sundry Insulation/Proofing Work

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Jan 19
T2	*240, 250. 290, 290A,*	Draft Tender	March 19
T3	+128	Draft Tender	March 19
T4	290	Tender	April 19

P10 SUNDRY INSULATION/ PROOFING WORK

To be read with Preliminaries/ General conditions.

125 INSULATION LAID BETWEEN AND OVER CEILING TIES/ JOISTS

Drawing refs: A-305

- Manufacturer: Knauf UK.
  Product reference: Earthwool Loftroll 40.
- Material: Mineral wool roll.
- Thickness: two layers of 150mm laid at right angles to each other.
- Installation requirements:
  - Installation standard: BS EN 13162
  - Joints: Butted, no gaps.
  - Insulation at perimeter: Carried over wall plates.
  - Eaves ventilation: ensure unobstructed path, step insulation as required.
  - Service holes: Sealed, and debris removed before laying insulation.
  - Electric cables overlaid by insulation: Sized accordingly.
  - Water cistern platforms: INSULATE SEPARATELY.

  -Other requirements: Overlay insulation with Tyvek Supro or similar breather membrane with edges taped and sealed.

128 INSULATION LAID BETWEEN AND OVER CEILING TIES/ JOISTS

Drawing refs: C332, C333, C334, A451,

- Manufacturer: Knauf UK.
  Product reference: Earthwool or equal approved.
- Material: Mineral wool roll.
- Thickness: one layer of 100mm as required on details.
- Installation requirements:
  - Installation standard: BS EN 13162
  - Joints: Butted, no gaps.
  - Insulation at perimeter: Carried over wall plates.
  - Service holes: Sealed, and debris removed before laying insulation.
  - Electric cables overlaid by insulation: Sized accordingly.

150 RIGID INSULATION FITTED BETWEEN + BELOW RAFTERS – WARM PITCHED ROOF

Drawing refs: A-305

- Manufacturer: Kingspan
- Product: K107 Pitched Roof Board
- Material: rigid board.
- Facing: composite foil faced
- Thickness: 2 Layers - 70mm. Total: 140mm
- Installation requirements:
- Joints: Butted, no gaps to trusses.
- Fasteners: Mechanically fix to rafters to manufacturers recommendations.
- Overlay insulation with breather membrane to external face.
- Air space above insulation: NONE

- Ensure continuous vapour barrier to inside face with all joints taped. Refer to P10 310.
- Battens below to create service void and avoid puncturing membrane.

175 RIGID INSULATION FITTED BETWEEN TIMBER WALL STUDS @ 2ND FLOOR DWARF WALLS

Drawing refs: C-551

- Manufacturer: Kingspan
- Product: K112 Framing Board
- Material: rigid board.
- Facing: composite foil faced
- Thickness: 1 Layers - 100mm.
- Installation requirements:
- Joints: Butted, no gaps to trusses.
- Fasteners: Mechanically fix to studs to manufacturers recommendations.
- Air space beyond insulation: LOFT VOID
- Ensure continuous vapour barrier to inside face with all joints taped. Refer to P10 310.

240 ACOUSTIC INSULATION WITHIN FLOOR VOIDS

Drawings: A-306

- **Scope:** Mineral wool batts within floor voids to improve acoustic performance.
- Manufacturer: **Isover or Equal Approved**
  - Product reference: **Spacesaver**
    - Thickness: 50/100mm depending on depth of ceiling void
- Number of layers: 1
- Installation requirements: Only fit where noted on drawings.
  - Fit between existing timber joists supported by 'chicken wire' or on MF Ceiling frame.
  - Joints: Butted with no gaps.

250 ACOUSTIC INSULATION WITHIN STUD PARTITIONS

Drawings: A-300

- **Scope:** Mineral wool batts within stud partitions to improve acoustic performance.
- Manufacturer: **Isover / Rockwool or Equal Approved**
  - Product reference: **Acoustic Partition Roll (APR 1200) / Flexi**
    - Thickness: 50mm
- Number of layers: 1
- Installation requirements: Only fit where noted on drawings.
  - Fit between timber studs
  - Joints: Butted with no gaps.

290 FLOATING CONSTRUCTION – RIGID INSULATION

- Manufacturer: Celotex or EQUAL OR SIMILAR APPROVED

Address: Lady Lane Industrial Estate, Hadleigh, Ipswich, Suffolk,IP7 6BA Web: www.celotex.co.uk Email: info@celotex.co.uk
Tel: 01473 822093 Fax: 01473 820880

- Product reference: GA4000
- Face size (length x width): 1200x2400mm
- Thickness (nominal): 75mm Ground Floor.
- Thermal conductivity: 0.022W/mK
- Surface Spread of Flame to BS 476-7: Class 1
- Water Vapour resistance to BS EN 12086: >150 MNs/g.
- Placement: Secure against concrete slab substrate.
- Lay with tight butt joints. Continue up at perimeter abutments for full depth of screed as per clause 290A.
- Separating layer: Type: 500 gauge polythene sheet – Visqueen or Contractors Choice.

290A FLOATING CONSTRUCTION – INSULATION TO PERIMETER OF SLAB

- Manufacturer: Celotex or EQUAL OR SIMILAR APPROVED
Address: Lady Lane Industrial Estate, Hadleigh, Ipswich, Suffolk,IP7 6BA Web: www.celotex.co.uk Email: info@celotex.co.uk
Tel: 01473 822093 Fax: 01473 820880

- Product reference: GA4000 or similar

- Thickness (nominal): 25mm

- Thermal conductivity: 0.022W/mK

- Surface Spread of Flame to BS 476-7: Class 1

- Water Vapour resistance to BS EN 12086: >150 MNs/g.

- Placement: Secure against concrete slab substrate.

- Lay with tight butt joints. Between screed and adjacent wall.

310 VAPOUR CONTROL / Air Tight LAYER

- Manufacturer: Tyvek or similar approved.
  - Product reference: Airguard Control or similarly approved
- Material:.Plastic and rubber vapour control layer - Spunbonded polypropylene and ethylen, butylacrylate copolymer coating
  - Minimum vapour resistance: ≥ 10.5 %
- Installation requirements:
  - Setting out: Joints minimized.
  - Method of fixing: Strictly in accordance with manufacturer's instructions. No sagging.
  - Joints: At supports only, lapped 150 mm minimum.
  - Openings: Membrane fixed to reveals.
  - Joints and edges: Sealed with double sided tape with vapour resistivity not less than the vapour control layer.
- Penetrations: Sealed.

320 BREATHER MEMBRANE

- Manufacturer: Tyvek or similar approved
  - Product reference: Supro or similar approved

- Installation requirements:
  - Setting out: Joints minimized. Membrane to form a continuous barrier to prevent water, snow and wind blown dust reaching the substrate.
  - Method of fixing: to manufacturer's recommendation
  - Joints: Lapped 100 mm minimum horizontally and 150 mm minimum vertically.
  - Openings: Membrane fixed to reveals.
  - Bottom edges: Membrane lapped over flashings, sills, etc. to allow free drainage to the exterior.
- Penetrations: Sealed.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: P12** Revision : **T2**

FIRE STOPPING SYSTEMS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		DRAFT TENDER	JAN 2019
T2	*120,*	TENDER	APRIL 19

P12 FIRE STOPPING SYSTEMS

To be read with Preliminaries/ General conditions.

GENERAL

110 FIRE STOPPING SYSTEM TO HEAD AND SOLE OF PLASTERBOARD COMPARTMENT WALLS

- Product: Gyproc Firestrip linear intumescent strip
- Intumescent seal to maintain 60 minutes fire rating of compartment wall.
- Install in accordance with manufacturers details to achieve fire resistance.

111 FIRE STOPPING SYSTEM TO JAMBS OF COMPARTMENT WALLS + FLOORS

- Penetration seal/ Gap filler: Intumescent sealant to maintain 60 minutes fire rating of compartment wall. Product to contractors choice, suitable for joint width, and fire rating.

120 FIRE STOPPING SYSTEM ACROSS ROOF + COMPARTMENT WALLS

- **Party Wall with Museum and head of walls surrounding S53 Lobby**
- Fire resistance: 60 minutes .
- Manufacturer: Envirograf UK
- Product ref: Intumescent Fire-stop block 50x150mm
- Compressible Intumescent fire stop to maintain 1 hr fire rating over party / Compartment wall.
- Install to manufacturers directions.
- Use intumescent paint strip below copper coverings as clause 121

130 FIRE STOPPING SYSTEM TO INDIVIDUAL SERVICES PENETRATIONS

- Fire resistance: 60 minutes .
- Penetration seal: Intumescent sealant to maintain 1 hr fire rating of party wall with Museum. Product to contractors choice, suitable for joint width, and fire rating.

140 FIRE STOPPING SYSTEM TO MULTIPLE SERVICES PENETRATIONS

- Fire resistance: 60 minutes .
- Board barrier: Fire stopping board to contractors choice, meeting current BS or equal standard and maintaining fire resistance as required.
- Capping sealant: As required, to manufacturers recommendations-/ Colour: white.

150 LOOSE FIRE STOPPING GENERALLY

- Fire resistance: Rockwool or similar mineral wool insulation, Generally 60 minutes performance rating. thickness as required to maintain fire rating of adjacent structure.

160 LINEAR GAP SEALING TO PARTITION/CEILING/EXISTING WALL JUNCTIONS-

Intumescent sealant to maintain 1 hr fire rating of party wall. Product to contractors choice, suitable for joint width, and fire rating.

161 LINEAR GAP SEALING TO GAPS BETWEEN EXISTING BEAMS

- Fire resistance: 60 minutes .
- Gap width or height (nominal): varies
- Gap filler: Compriband intumescent expanding foam strip or similar approved
- Colour: black

SYSTEM PERFORMANCE

210 DESIGN
- Design: Complete the design of the fire stopping system.
- Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

240 FIRE PERFORMANCE OF 60 MINUTES COMPARTMENT FLOORS
- Resistance to fire: 60 minutes .
- Reaction to fire: Class 0 .
- Smoke resistance:
  - Air leakage rate (maximum): 3 m3/sqmh .

242 FIRE PERFORMANCE OF 30 MINUTES COMPARTMENT FLOORS
- Resistance to fire: 30 minutes .
- Reaction to fire: Class 0 .
- Smoke resistance:
  - Air leakage rate (maximum): 3 m3/sqmh .

244 FIRE PERFORMANCE OF 60 MINUTES COMPARTMENT WALLS
- Resistance to fire: 60 minutes .
- Reaction to fire: Class 0 .
- Smoke resistance:
  - Air leakage rate (maximum): 3 m3/sqmh .

260 DESIGN LIFE
- Effective design life: 25 years .

PRODUCTS

305 PRODUCT CERTIFICATION
- Certification: For products specified generically, submit evidence of compliance with the specification.
- Acceptable evidence:

EXECUTION

620 WORKMANSHIP GENERALLY
- Gaps: Seal gaps between building elements and services, to provide fire resistance and resist the passage of smoke.
- Adjacent surfaces: Prevent overrun of sealant or mortar on to finished surfaces.

640 INSTALLING BOARDING
- Position of boarding: soffit or vertical boarding .
- Framing: To all edges.
- Bedding: Only if required to meet fire resistance.
- Multiple board layers: Stagger joints between layers.
  - Joints: Fill any gaps .
- Fixing: Screwed and plugged.

660 APPLYING INTUMESCENT FOAM
- New joints: Remove builder's debris, mortar droppings, grease, and other contaminants.
- Old joints: Clean and remove existing sealant from each joint.
- Priming: Lightly moisten substrate with water.
- Application: Fill joint to approximately half its depth, and allow foam to expand to face of joint.
- Trimming: Cut neatly flush to adjacent surfaces .

670 APPLYING INTUMESCENT MORTAR
- Sequence: Install mortar after services are permanently installed.
- Loose dust and combustible materials: Remove from the opening.
- Shuttering: Install suitable shuttering panels to the faces of the opening.
- Temperature: Do not apply mortar when it could be damaged by frost.
- Powder:water ratio: To manufacturers details.
- Mortar cure: Do not disturb mortar before final set has taken place.
- Shuttering: Remove after mortar has cured.

680 INSTALLING INTUMESCENT PILLOWS
- Number of pillows (per m sq of opening): As recommended by manufacturer.
- Orientation of bags: horizontal

690 APPLYING INTUMESCENT PUTTY
- Sequence: Install putty after services are permanently installed.
- Loose dust and combustible materials: Remove from the opening.

710 INSTALLING MINERAL WOOL BATTS
- Installing batts: Fit tight into void between the penetrating services and the surrounding construction to form a solid barrier.
  - Brackets: Only if needed .
- Face of batts: Flush with the surface of wall, floor or soffit.
- Joints between batts: close butted .
- Gaps between services and barrier: Seal with fire resisting sealant.

730 FIXING PIPE COLLARS
- Collar fixing: Screw fixed to surrounds .
- Gap around collar: Max. 25mm
- Length of wraps: project min 50mm each side of the element.

740 INSERTING SEALANT BACKING MATERIAL
- Preparation: Removed debris from service penetration.
- Installation: Ensure close fit into chase.

745 APPLYING SEALANTS GENERALLY
- Application: As section Z22.

750 APPLYING CAPPING SEALANT
- Preparation: De grease as required
- Priming: As recommended by sealant manufacturer .
- Depth of sealant: min 10mm.
- Temperature: Do not apply water based sealants when they could be damaged by frost.

COMPLETION

910 CLEANING
- Masking tapes: Remove.
- Cleaning: Clean off splashes and droppings. Wipe down finishes.

920 INSPECTION
- Notice for inspection (minimum): 7 days

END OF WORK SECTION

Tavistock – The Guildhall

Section **: P20** Revision : **T2**

UNFRAMED ISOLATED TRIMS/ SKIRTINGS/ SUNDRY ITEMS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	March 19
T2	*+120, +125. +130, +140, + 151-159*	Tender	March 19

P20 UNFRAMED ISOLATED TRIMS/ SKIRTINGS/ SUNDRY ITEMS

To be read with Preliminaries/ General conditions.

105 S1 / S2 - SOFTWOOD – REPLICA SKIRTINGS

- Quality of wood and fixing: To BS 1186-3.
  - Species: Contractors choice.
  - Class: Softwood
- Moisture content at time of fixing: 9-13%.
- Preservative treatment: n/a.
- Fire rating: to BS EN 13501-1, Class A2.
- Profile: Square edged .
  - Finished size: To match existing within room.
- Finish as delivered: prepared and primed.
- Finish: Paintgrade, colour white - TBC by client
- Fixing: No visible fixings - Contractors Choice – Depends on location.

110 S4 - SOFTWOOD – TALLER SKIRTINGS

- Quality of wood and fixing: To BS 1186-3.
  - Species: Contractors choice.
  - Class: Softwood
- Moisture content at time of fixing: 9-13%.
- Preservative treatment: n/a.
- Fire rating: to BS EN 13501-1, Class A2.
- Profile: Square edged .
  - Finished size: 25x195mm .
- Finish as delivered: prepared and primed.
- Finish: Paintgrade, colour white - TBC by client
- Fixing: No visible fixings - Contractors Choice – Depends on location.

115 S5 - SOFTWOOD – STANDARD SKIRTINGS

- Quality of wood and fixing: To BS 1186-3.
  - Species: Contractors choice.
  - Class: Softwood
- Moisture content at time of fixing: 9-13%.
- Preservative treatment: n/a.
- Fire rating: to BS EN 13501-1, Class A2.
- Profile: Square edged .
  - Finished size: 18x119mm .
- Finish as delivered: prepared and primed.
- Finish: Paintgrade, colour white - TBC by client
- Fixing: No visible fixings - Contractors Choice – Depends on location.

120 SOFTWOOD - ARCHITRAVES – NA1

- Quality of wood and fixing: To BS 1186-3.
  - Species: Contractors choice.
  - Class: Softwood
- Moisture content at time of fixing: 9-13%.
- Preservative treatment: n/a.
- Fire rating: to BS EN 13501-1, Class A2.
- Profile: Square edged .
  - Finished size: 18x70mm .
- Finish as delivered: prepared and primed.
- Finish: Paintgrade, colour white - TBC by client
- Fixing: No visible fixings - Contractors Choice – Depends on location.

125 SOFTWOOD - ARCHITRAVES – NA2

- Quality of wood and fixing: To BS 1186-3.
  - Species: Contractors choice.
  - Class: Softwood
- Moisture content at time of fixing: 9-13%.
- Preservative treatment: n/a.
- Fire rating: to BS EN 13501-1, Class A2.
- Profile: Square edged .
  - Finished size: 18x90mm .
- Finish as delivered: prepared and primed.
- Finish: Paintgrade, colour white - TBC by client
- Fixing: No visible fixings - Contractors Choice – Depends on location.

130 TILE EDGING TO BATHROOMS

- Manufacturer & type: Schlüter Systems or equal approved – tel: 01530 813396
- TO WHITE TILING
  Size: Schluter powder coated aluminium
- colour: White: Jolly W, (RAL 9010)
- TO WHITE MOSAIC TILING
  Size: Schluter-Quadec brushed stainless steel [-EB]

140 SHADOW ANGLE TRIM TO TOP + BOTTOM OF EXTERNAL FACES OF LG02 'BRONZE' WALL CLADDING

- Refer to Drawings: **GA150**
- Material: aluminium angle trim
- Thickness: 1.5mm
- Finish: powder coated to match Bronze Cladding
- Depth: 15-25mm to allow for floor + ceiling finish fitting into shadow gap
- Fixing: method of fixing to be recommended by manufacturer
- Metalwork: As section Z11.
- Submit sample of trim and screws to CA for approval prior to ordering

151 T1 – HARDWOOD THRESHOLD EDGING STRIP AT JUNCTION BETWEEN ENG. TIMBER FLOOR FINISH AND EXISTING FLOOR FINISH

- Refer to Drawings: **GA150 – GA154**
- Timber Species: To match Engineered floor finish – K21 145
- Type: Square Edge – Level Threshold or slight ramp to suit minor level change.
- Size: To suit opening width
- Fixing: Screwed and Plugged To suit surface
- Submit sample of edging strip to CA for approval

152 T2 - PROPRIETORY THRESHOLD STRIP AT JUNCTION BETWEEN ENG. TIMBER FLOOR FINISH AND CARPET FLOOR FINISH

- Refer to Drawings: **GA150 – GA154**
- Manufacturer: Schlüter Systems – tel: 01530 813396 or equal approved
- Type: Schluter-Reno Range - TK or equal approved
- Size: To suit any level change and opening width
- Finish: Anodized Aluminium – Antique Brushed Bronze if available in UK.
- Fixing: To suit surface
- Metalwork: As section Z11.
- Submit sample of trim and screws to CA for approval prior to ordering

153 T3 - PROPRIETORY THRESHOLD STRIP AT JUNCTION BETWEEN 'BRONZE' RAMP FINISH AND LINO FLOOR FINISH – IF REQUIRED

- Refer to Drawings: **GA150 – GA154**
- Manufacturer: Schlüter Systems – tel: 01530 813396 or equal approved

- Type: Schluter- Reno U / Schiene Range or equal approved
- Size: To suit any level change and opening width
- Finish: Anodized Aluminium – Antique Brushed Bronze if available in UK.
- Fixing: To suit surface
- Metalwork: As section Z11.
- Submit sample of trim and screws to CA for approval prior to ordering

154 T4 - PROPRIETORY THRESHOLD STRIP AT JUNCTION BETWEEN 'BRONZE' RAMP FINISH AND EXISTING FLOOR FINISH – IF REQUIRED

- Refer to Drawings: **GA150 – GA154**
- Manufacturer: Schlüter Systems – tel: 01530 813396 or equal approved
- Type: Schluter-Reno U / Schiene Range or equal approved
- Size: To suit opening width
- Finish: Anodized Aluminium – Antique Brushed Bronze if available in UK.
- Fixing: To suit surface
- Metalwork: As section Z11.
- Submit sample of trim and screws to CA for approval prior to ordering

155 T5 - HARDWOOD THRESHOLD EDGING STRIP AT JUNCTION BETWEEN ENG. TIMBER FLOOR FINISH AND EXISTING FLOOR FINISH

- Refer to Drawings: **GA150 – GA154**
- Timber Species: To match Engineered floor finish – K21 145
- Type: Micro Bevelled Edge – Level Threshold or slight ramp to suit minor level change.
- Size: To suit opening width
- Fixing: Screwed and Plugged To suit surface
- Submit sample of edging strip to CA for approval

156 T6 - PROPRIETORY THRESHOLD STRIP AT JUNCTION BETWEEN ENG. TIMBER FLOOR FINISH AND 'BRONZE' RAMP FINISH

Refer to Drawings: **GA150 – GA154**

- Manufacturer: Schlüter Systems – tel: 01530 813396 or equal approved
- Type: Schluter-Reno U / Schiene Range or equal approved
- Size: To suit opening width
- Finish: Anodized Aluminium – Antique Brushed Bronze if available in UK.
- Fixing: To suit surface
- Metalwork: As section Z11.
- Submit sample of trim and screws to CA for approval prior to ordering

157 T7 - PROPRIETORY THRESHOLD STRIP AT JUNCTION BETWEEN 'BRONZE' RAMP AND CARPET FLOOR FINISH

Refer to Drawings: **GA150 – GA154**

- Manufacturer: Schlüter Systems – tel: 01530 813396 or equal approved
- Type: Schluter-Reno – TK or equal approved
- Size: To suit opening width
- Finish: Anodized Aluminium – Antique Brushed Bronze if available in UK.
- Fixing: To suit surface
- Metalwork: As section Z11.
- Submit sample of trim and screws to CA for approval prior to ordering

158 T8 - HARDWOOD THRESHOLD STEP NOSING AT JUNCTION BETWEEN ENG. TIMBER FLOOR FINISH AND CARPET FLOOR FINISH

- Refer to Drawings: **GA150 – GA154**
- Timber Species: To match Engineered floor finish – K21 145
- Type: Bevelled Step Edge – to suit transition / door threshold
- Size: To suit opening width
- Fixing: Screwed and Plugged To suit surface
- Submit sample of edging strip to CA for approval

159 T9 - PROPRIETORY THRESHOLD STRIP AT JUNCTION BETWEEN LINO FLOOR FINISH AND CARPET FLOOR FINISH

- Refer to Drawings: **GA150 – GA154**
- Manufacturer: Schlüter Systems – tel: 01530 813396 or equal approved
- Type: Schluter-Reno Range – TK / V / T or equal approved
- Size: To suit any level change and opening width
- Finish: Anodized Aluminium
- Fixing: To suit surface
- Metalwork: As section Z11.
- Submit sample of trim and screws to CA for approval prior to ordering

EXECUTION

510 INSTALLATION GENERALLY

- Joinery workmanship: As section Z10.
- Metal workmanship: As section Z11.
- Methods of fixing and fasteners: As section Z20 where not specified.
- Straight runs: To be in one piece, or in long lengths with as few joints as possible.
- Running joints: Location and method of forming to be agreed where not detailed.
- Joints at angles: Mitred unless shown otherwise.
- Position and level: To be agreed where not detailed.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: Q24** Revision : **T1**

BLOCK PAVING

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	Feb 19

Q24 INTERLOCKING BRICK/ BLOCK ROADS/ PAVINGS

To be read with Preliminaries/ General conditions.

TYPES OF PAVING

115 PERMEABLE CONCRETE BLOCK PAVING
Refer to External Works Plan GA200.

- Subgrade improvement layer: To SE Details .
  - Compacted thickness: To SE Details .
- Geotextile below granular sub-base: To SE Details .
- Granular sub-base: To SE Details .
  - Compacted thickness: To SE Details .
- Geotextile below laying course:
  - Manufacturer: Marshalls or equal approved.
    Product reference: MT120 Filtration Fleece
    + MG15 Laying GeoGrid (optional)
- Laying course:
  - Material: To SE Details .
  - Compaction: In accordance with BS 7533-3. Determine by trial the depth of loose bedding material needed to ensure specified bedding course thickness after final compaction of paving.
  - Nominal thickness after compaction: To SE Details .
- Blocks: To BS EN 1338.
  - Manufacturer: Marshalls plc
    +44 (0)330 0574472
    Product reference: **Conservation Priora Permeable Paving**
  - Sizes: 600 x 400mm / 65mm Thick
  - Special blocks: As required
  - Spacer nibs: As required
  - Colour/ Finish: Silver Grey – TBC with Conservation Officer / Client
  - Requirements:
    Permeability: 5296 L/second/hectare
- Jointing:
  - Material: To Manufacturers Details
  - Joint width: To Manufacturers Details
  - Conventional sand jointing: To Manufacturers Details
- Setting out:
  - Bond: Half Bond - To be agreed on site.
  - Features: _____ .
- Accessories: As required by manufacturer.

EXECUTION

200 EXECUTION GENERALLY - CONCRETE BLOCK AND CLAY PAVER PAVING

- Standard: In accordance with BS 7533-3.

202 CONCRETE CONSERVATION PAVING TO RECESSED MANHOLE COVERS

- **Refer to External Works Plan GA200**
- Recessed manhole covers: D400 loading to engineers details and specification.
- Bedding: high strength epoxy mortar bedding as clause 590, thickness 20mm.

- Jointing: As clause 595
- Overall nominal thickness of bedding and flags with recessed frame is 70mm.
- Sets to BS EN 1342
- Supplier: Marshalls
- Paver **Conservation Priora Permeable Paving**
- Colour: To match adjacent paving.
- Finish: To match adjacent paving.
- Sizes: To match adjacent paving.
- Bond: To match adjacent paving.

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

220 SAMPLES
- General: Before ordering, submit samples of 5 pavers that are representative of colour and appearance.

230 CONTROL SAMPLES
- General: Carry out sample area of finished work:
  - Location: Adjacent to brock buttresses
  - Size (minimum): 1.2m x 1.2m
- 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.

451 LAYING GEOTEXTILE SHEET FOR PERMEABLE PAVING
- Jointing: to Manufacturers details

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: _____ .
- 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.

490 LAYING PERMEABLE PAVING
- General: to manufacturers details and specification

500 REGULARITY OF PAVED SURFACES
- Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface):
  - Precast concrete paving blocks and clay pavers for flexible pavements: 10 mm.

- Difference in level between adjacent paving units (maximum): 2 mm.
- Sudden irregularities: Not permitted.

505 REGULARITY OF PAVED SURFACES
- Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
- Joints between paving units or utility access covers:
  - Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
  - Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
  - Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
- Sudden irregularities: Not permitted.

COMPLETION

600 SEALER/ STABILIZER FOR NEW BLOCKS AND SETTS
- Surface preparation: _____ .
- Sealer/ Stabilizer:
  - Manufacturer: _____ .
    Product reference: _____ .
  - Application: To dry paving.
    Method: _____ .
    Number of coats: _____ .
    Coverage: _____ .

605 CLEANING/ SEALER/ STABILIZER FOR EXISTING BLOCKS AND SETTS
- Surface preparation: _____ .
- Cleaner:
  - Manufacturer: _____ .
    Product reference: _____ .
- Sealer/ Stabilizer:
  - Manufacturer: _____ .
    Product reference: _____ .
  - Application: After thorough cleaning, apply to dry paving.
    Method: _____ .
    Number of coats: _____ .
    Coverage: _____ .

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

END OF WORK SECTION

Tavistock – The Guildhall

Section **: Q25** Revision : **T2**

FLAG NATURAL STONE PAVING

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Jan 19
T2	*200, 201, 202*	Tender	Feb 19

Q25 FLAG NATURAL STONE PAVING

To be read with Preliminaries/ General conditions.

GENERAL

105 MATERIAL SAMPLES

- Before placing orders submit for approval representative samples of specified colours and finishes of granite setts and granite flags. Ensure that all delivered materials match agreed samples.

107 TESTING OF STONE

- Provide test reports for each granite type to BS EN 1341 & BS EN 1342 and requirements of clauses 210.

108 TESTING OF BEDDING AND JOINTING MORTARS

- Initial test reports and data sheets: Provide to show proposed mix design complies with the performance requirements set out in this document for approval by the CA.
- Cube testing of bedding mortars. The strength of bedding mortars shall be checked on site using cube tests. Cube test of mortar formed with the same compaction as occurs within the bedding mix shall be taken from the sample panels. The cubes shall be covered in damp hessian and stored adjacent to the panels until time of testing. A minimum of 3 cube tests shall be taken from each sample panel. During laying cubes of bedding mortar shall be taken at the rate of one cube per 100m2 for flag paving to confirm consistency and adequacy of construction. The contractor shall keep records of the location of each sample taken. The testing results shall immediately be given to the CA.
- Core testing of jointing mortars for flag paving shall be 8mm diameter. A minimum of 3 pull out core tests shall be taken from each sample panel. The pull out load should be recorded, depth of joint mortar measured and strength of mortar tested. During laying core tests of each jointing mortar mix shall be taken at the rate of one core per 100m2 for flag paving to confirm consistency and adequacy of construction. Test at 28 days once design strength of mortar has been achieved. The contractor shall keep records of the location of each sample taken. The testing results shall immediately be given to the CA.

115 CONTROL SAMPLES

- Complete sample areas in approved locations as part of the finished work. Approval to be obtained by CA before proceeding.
- Sample panels ready for inspection post grouting to demonstrate accurate finish after cleaning.
- Contractor to organise and complete sample panels sufficiently in advance of the main paving works to allow time for inspections, testing and approvals to take place and the desired quality to be achieved to the satisfaction of the CA.
- New granite flagstone paving (180mm thick) panel 3m x 3m

118 QUALIFIED LABOUR

- The contractor to ensure that all labour undertaking paving works are suitably experienced and qualified. Labour to hold relevant NVQ or City & Guilds qualifications as pavior masons. Provide details of labour experience as requested by the CA.

120 TRANSPORTATION, HANDLING AND STORAGE.

- Natural stone materials shall be supplied to the site with all shaping and machining completed off site. During transportation the material shall be protected and packaged to ensure that no damage occurs (e.g. chipping of edges) and that the material is protected from the elements. Any metal banding used shall be corrosion resistant. Any chipped or damaged material will be rejected on delivery.
- During all stages of their transportation, storage, handling and installation, the top surfaces of flagstones and the machined and finished surfaces to be protected from damage or staining.
- The contractor shall store all stone units, on packers, on a clean, free draining surface and shall prevent contact with soil or sub grade materials. Stone units shall be stored with soft non staining packers or spacers between units.
- Notwithstanding the requirements of clause 240, unless otherwise approved by the CA in writing, vacuum assisted lifting systems, either manual or machine mounted, shall be used to handle, maneuver and place individual stone flags.

122 MARKING AND LABELLING

- The following information shall be supplied either on the packaging or on the delivery note.
- The petrographical name of the stone
- The commercial name of the stone
- The name and address of the supplier
- The name and location of the quarry
- The name, number and date of the relevant standard (BS EN 1341:2000 or BS EN 1342:2001)
- The declared value or marking designation classes
- Surface finish.

125 ADVERSE WEATHER

- Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
- Laying of flagstones shall be carried out in dry weather or with the use of suitable protective measures, such as tented enclosures, which will be used to ensure that the bedding remains dry until slabs have been lain. In addition bedding and jointing to be adequately protected from rapid drying by the wind or sun.
- Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
- Paving with mortar joints and/ or bedding: Protect from frost damage, rapid drying out and saturation until mortar has hardened.
- Stockpiled bedding sand: Protect from saturation.

130 CEMENTITIOUS BASES AND SUB-BASES

- General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.

135 CONDITION OF SUB-BASES/ BASES BEFORE LAYING BEDDING COURSE

- Trenches and excavation of soft or loose spots in subgrade: Filled and compacted as specified.
- Granular surfaces: Sound, clean, smooth and close-textured enough to prevent migration of bedding materials into the sub-base during compaction and use, free from movement under compaction plant and free from compaction ridges, cracks and loose material.

- Prepared existing and new bound bases: Sound, clean, free from rutting or major cracking and cleared of sharp stones, projections or debris.
- Sub-base level tolerances: To BS 7533-7, Annex A.
- Levels and falls: Accurate and within the specified tolerances.
- Drainage outlets: Within 0 to -10 mm of the required finished level.
- Cementitious sub-bases: Cured for the minimum times specified in BS 7533-4, clause 4.5.3.
- Cementitious bases and sub bases to be protected from moisture loss, with polythene sheeting or a proprietary curing membrane, if not covered by another pavement course within 2 hours of completion.

179 SETTING OUT

- Setting out of paving and courtyard related features shown on Gillespie Yunnie Architects planning drawing 1005/M/001.

181 DESIGN FALLS

- Falls for drainage are set out on Gillespie Yunnie Architects planning drawing 1005/M/001.

184 LAYING PAVINGS

- Cut paving units cleanly and accurately with masonry saw, without spalling, to give neat junctions with edgings and adjoining finishes.
- Lines and levels of finished surface to be smooth and even, with falls to prevent ponding.
- Bedding of units: Firm so that rocking or subsidence does not occur or develop.
- Slopes: Lay paving units upwards from the bottom of slopes.
- Appearance: Even and regular with even joint widths and free of mortar and sand stains.

188 LEVELS OF PAVING

- Permissible deviation from specified levels to be ± 6 mm generally. Sett paving 3-6mm above surface drainage channels and 3mm above kerbs to allow for settlement.

192 REGULARITY

- Sudden irregularities: Not permitted.
- Maximum variation in relation to the geometry of the surface, variation in gap under a 3 m straight edge placed anywhere on the surface to be not more than 5mm for new sett and flag paving.
- Difference in level between adjacent blocks/ pavers/ setts (maximum): 2 mm.
- The line and level of the finished surface shall be smooth and have an even overall appearance with even joints and joint widths and regular falls to prevent ponding.

196 PROTECTION

- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
- Materials storage: Do not overload pavings with stacks of materials.
- Handling: Do not damage paving unit corners, arrises, or previously laid paving.
- Access: Restrict access to paved areas to prevent damage from site traffic and plant.
- After laying and jointing, all natural stone paving areas bedded on mortar, shall be kept free from pedestrians for a period of 2 days or until bedding strength of

5N/sqmm is reached. Vehicle access will not be permitted until the bedding and jointing design strengths specified are achieved.

- Access to paved areas shall be restricted as necessary to prevent damage by site traffic, public traffic and other site operations. Paving shall be suitably protected by either plywood or polythene sheeting in a manner approved by CA to prevent damage from site operations or traffic.
- No trafficking of natural stone paved areas, including pedestrians traffic prior to completion of jointing work and the expiry of appropriate curing period.
- 'HERAS' type temporary fencing (EOA) shall be used to secure the site from unauthorised access, to protect the public from site operations and to allow the works to be executed in a phased manner.

197 JOINT MAINTENANCE

- During the maintenance period flagstone, setts, building abutments, junctions with courtyard furniture etc shall be regularly checked and maintained by the contractor. Inspections of paving material shall be carried out at intervals not exceeding two months. Where joints have suffered deterioration, all loose material shall be removed and the joints refilled and topped up in accordance with the Specification or to any other means approved by the CA prior to refilling and topping up.
- Loose material in joints shall be raked out or removed by mechanical brushing, water jetting or other means approved by the CA prior to refilling and topping up.
- During maintenance operations the contractor shall ensure that the flagstones, setts etc are sufficiently protected from damage or staining.
- At the end of the maintenance period the contractor shall undertake final cleaning operations and shall ensure that all paving joints are in a sound and secure condition, including removing and topping up damaged, loose or deteriorated joint material.

SLAB/ FLAG PAVING

200 GRANITE PAVING TO MATCH GUILDHALL SQUARE PAVING

- **Refer to External Works Plan GA200.**
- Granular sub-base: Subbase to SE specification.
  Bedding: full mortar bed with compacted thickness of not less than 30mm as Specification clause 300A.
- Supplier: Same supplier as Guildhall Square public realm works.
  Allow for: Marshalls
- Stone: Granite as clause 210.
  Allow for: Umbriel - Portugal
- Colour: Same specification as Public realm works.
  Allow for:: Mid/Dark Grey
- Finish: Same specification as Public realm works.
  Allow for: Flamed
- Special treatment: "corduroy" hazard ridges to slabs at top and bottom of steps
- Sizes: Same specification as Public realm works. Nominal 600 x 600mm x 50mm indicated.
- Tolerance: ± 2mm in plan, ± 3mm diagonally corner to corner, ± 4 mm in depth.
- Width of joints max. 10mm. Refer to clause 335A. or to match Public Realm Works
- Bond: Same specification as Public realm works. Half Bond Shown.

Q25 Flag Natural Stone Paving

201 GRANITE PAVED STEPS

- **Refer to External Works Plan GA200 + A-458**
- Concrete sub-base: Reinforced concrete step foundation and sub base to SE specification.
  Bedding 20mm thick high strength mortar bed as clause 310, full depth slurry jointing as clause 335.
  Nominal thickness of bed is 20mm.
- Supplier: Same supplier as Guildhall Square public realm works.
  Allow for: Marshalls
- Stone: Granite as clause 210.
  Allow for: Umbriel - Portugal
- Colour: Same specification as Public realm works.
  Allow for: Mid/Dark Grey
- Finish: Same specification as Public realm works.
  Allow for: Flamed.
- Special treatment: 30 x 10mm shadow gap cut into lower front edge. Inset bronze coloured threshold strips set into top surface.
- Size: Max. 1275mm Min. 885mm x 250mm x 170mm rise.
- Tolerance: ± 3mm in plan, ± 6mm diagonally corner to corner, ± 4 mm in depth.
- Width of joints 10mm max or tp match Public Realm Works.

202 GRANITE PAVING TO RECESSED MANHOLE COVERS

- **Refer to External Works Plan GA200**
- Recessed manhole covers: D400 loading to engineers details and specification.
- Bedding: high strength epoxy mortar bedding as clause 590, thickness 20mm.
- Jointing: As clause 595
- Overall nominal thickness of bedding and flags with recessed frame is 70mm.
- Sets to BS EN 1342
- Supplier: Same supplier as Guildhall Square public realm works.
  Allow for: Marshalls
- Stone: Granite as clause 210.
  Allow for: Umbriel - Portugal
- Colour: Same specification as Public realm works.
  Allow for: Mid/Dark Grey
- Finish: Same specification as Public realm works.
  Allow for: Flamed
- Tolerance: ± 2mm in plan, ± 3mm diagonally corner to corner, ± 4 mm in depth.
- Width of joints 10mm. Refer to clause 335A. or to match Public Realm Works
- Bond: Same specification as Public realm works.
- Cutting: Use a diamond masonry saw to neatly cut stone against frame. Minimum cut length of stone 150mm.
- Approval: Seek approval of the paving unit layout from the contract administrator before proceeding with mortar bedding.

210 STONE REQUIREMENTS FOR NEW FLAG PAVING

- Standard to BS EN 1341:2001
- Fabric: The rock from which the flagstones are manufactured shall not contain any fabric or structure, whether mineralogical or otherwise, which would adversely bring its strength (in any direction) below the minimum requirement as described below or otherwise affect its durability, performance or appearance.
- Tolerance: as stated in clauses 200A, 201 & 202
- Flatness of surface: to BS EN 1341 tables 4 & 5.

- Freeze/thaw resistance: class 1 resistant when tested in accordance with EN 12372
- Minimum compressive strength: 60-80 MPa
- Minimum flexural strength: 6 Mpa when tested in accordance with EN 12372
- Slip resistance: USRV of the top surface of the flagstones shall not be less than 40 (wet) as tested by the TRL pendulum tester using TRL rubber according to the procedure outline in BS EN 1341:2001
- Appearance: Submit reference samples for all stone samples.
- Testing: Provide initial tests in accordance with the requirements of BS EN 1341:2001 and the above listed performance criteria.
- Additional tests required:
- Aggregate Abrasion Value (AAV): Provide test results in accordance with BS 812 pt 113
- Aggregate Impact Value (AIV): Provide test results
- Magnesium Sulphate soundness: Provide test results in accordance with BS 812 pt 1221
- Point load test: Provide test results.

230 ACCEPTANCE OF NEW STONE

- Fractures and laminations shall not be permitted. The material shall be free of flaws or other weaknesses natural or induced, which might, in the opinion of the CA, affect its strength or durability in any direction. Flags shall be sound and free of holes and other quarry marks. Edges and arrises shall be protected at all times against damage. Chipped edges on top surfaces shall not be permitted.
- The colour of flagstones shall be to the CA's satisfaction, whose approval shall be based upon control samples provided by the contractor at the commencement of the works.

235 CUTTING STONE FLAGS

- Cutting delivered stone flags or slabs should be avoided. If diagonal cutting of flags is required to achieve a level change, obtain permission from the CA before cutting.
- Where required flagstones shall be cut neatly and accurately with an appropriate diamond masonry saw, without spalling, to give neat edges and junctions. Uneven and rough cut edges will not be acceptable.
- Cutting shall be carried out off site or in suitably protected dedicated area of the site to prevent nuisance to the public from dust and noise. Dust suppression equipment approved by the CA, shall be used at all times when cutting is being carried out.
- All flagstones shall be cut to accurate sizes such that no joint exceeds 10mm with a tolerance of ± 2mm. Where flagstones are laid against kerb or channel units with radii less than 25metres, flagstones shall be cut to fit the radius and extra care shall be taken to ensure that the joint with the kerb or channel unit does not exceed the joint dimension listed above.
- Flagstones shall be arranged neatly around manholes covers, drainage covers and building entrances. Laying patterns are to relate to Gillespie Yunnie Architects setting out drawing 1005/M/001, 1005/M/010 & 1005/M/011. Patterns around such features shall match laying patterns on adjacent surfaces; cuts to be minimsed. Small cut elements to be avoided. Where flags require to be cut at such locations, gaps and joints shall not exceed the joint dimension described in clause 335A.

- The contractor must organise the laying of the slabs such that all areas are laid with natural stone without leaving any spaces more than 10mm in any direction around street furniture, building lines or similar obstacles.
- The minimum length of any slab shall not be less than its width
- Joints are to staggered by a minimum of 150mm
- Stone cutting must take place in secure areas away from the public as agreed with the CA. All reasonable measures must be taken to avoid dust and noise.

240 LIFTING AND LAYING FLAGS

- In order to protect the flagstones from edge chipping and to prevent displacement of the bedding screed, a manual vacuum lifting system may be used for slabs up to 600mm x 600mm. Solid stone steps and flagstones over 600mm x 600mm shall be laid/lifted using a pneumatic suction lifting system. Lifting capacities of manual and machine vacuum assisted systems are approximately 130kg and 500kg respectively.
- All stone shall be dropped vertically into place and not 'slid' across the screed or other flagstones. No 'walking' of flagstones into place shall be permitted whether across freshly prepared bedding screed or completed flagstone paving.

300 FULL MORTAR BEDDING

- Mortar to BS 7533-4 and section Z21
- Mix: The slabs shall be laid on a well crushed whin or coarse sand and cement mortar mixed to reach required strength. Whin or coarse sand shall have a grading between2-6mm.
- Minimum compressive strength: 20N/mm2 achieved within 28 days
- Consistency: The bedding shall have a moisture content of 6-7% such that it is damp but not wet when squeezed or to collapse when squeezed. The contractor shall ensure that the bedding material remains at the same moisture content until the slabs have been laid and completed after which a light hosing with water will be allowed.
- Premix: The bedding shall be premixed and delivered to site with a retarder to allow at least 8 hours working. Materials not used during each shift must be discarded.
- Accelerators: May be added to the premix to reduce curing time, details must be submitted to CA for approval.
- Thickness: The bedding shall be laid 40-50mm thick before compaction such that the compacted thickness will not be less than 30mm.
- Testing: Cube testing as clause 108
- Spread and level mortar to give the specified average nominal thickness after bedding of slabs, flags, setts.
- Lay slabs/flags and setts on a full mortar bed and bed down to line and level with a maul.
- Every care must be taken to avoid spillage of mortar on to the surface of the slabs and any such material must be removed immediately. All footwear and equipment used on top of the laid stone products must be free from cement.

310 HIGH STRENGTH EPOXY RESIN BEDDING MORTAR

- Product: Cembuild EP-R9F High strength epoxy resin mortar or similar approved.
- Supplier: Instarmac Group PLC
  Phone:01827 872244
  Fax: 01827 874466
- Thickness: 20mm

- Product pot life 30 minutes
- Training: Ensure operatives receive manufacturers training in the use of the product before work commences.
- Application: To manufacturers instructions
  Apply to surfaces free from dust, oil and other loose materials
  Prime surfaces using Instarmac supplied primer before applying cembuild EP-R9F
  Avoid inhalation of fumes and other contact with skin or eyes.

335 LIQUID MORTAR JOINTS

- General: To BS 7533-4 and section Z21.
- Mortar for jointing: Wet slurry fine Portland PFA cement: tinted sand grout mixed to achieve required strength.
- Minimum compressive strength of grout: 40N/mm2 in accordance with BS 4551-1. Design strength shall be achieved within 28 days.
- Sand: Grade M of F to BS 882 tinted grey.
- Mortar Colour: To be approved during sample panel construction. Colour may be varied on CA's instruction by the addition of coloured pigments, alteration of cement type or use of coloured sands.
- Mortar shall be sodium chloride and frost resistant and allow the passage of water after mortar has cured.
- Testing: Core testing as clause 108.
- Premix: Mortar shall be premixed and delivered to site as a dry mix to be mixed with water on site.
- Joint width: 10mm wide joints finished flush with slabs. Maintain joint width by the use of joint spacers which are to be removed prior to jointing. Minimum overlap of joints from one course to the next to be minimum 150mm.
- Joint tolerance: ± 2mm. Joint widths outside this tolerance will not be accepted.
- When the surface of the paving is dry and rain is not expected, carefully and thoroughly fill joints between slabs using a soft rubber squeegee to ensure that all joints are fully filled. Excess material to be struck off and the slabs cleaned with a stiff wire brush and sawdust prevent staining. No grout staining shall be permitted. The area should not be opened to traffic in any form until the jointing material has achieved the design strengths listed above.
- Method statement: Before starting the jointing the contractor shall produce a method statement and carry out a trial panel (as clause 115) to demonstrate the cleaning regime.
- Immediately after completing joints, cover paving with polythene sheeting for not less than three days.
- Movement Joints: Provide as clause 360

360 MOVEMENT JOINT TO FLAG PAVING

- Include joints every 6m extending through concrete base slab.
- Joint Filler: Compressible cellular rubber or plastics compatible with the specified sealant. Build in as the work proceeds.
- Joint width 10mm
- Barrier (Joint Breaker): As recommended by sealant manufacturer.
- Position filler and barrier accurately to fully support sealant at the recommended distance from exposed faces of units.
- Colour: To match paving, to be approved by CA
- Application: As section Z22.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: R10** Revision : **T3**

RAINWATER GOODS AND SYSTEMS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Jan 2019
T2	+390	Draft Tender	Feb 2019
T3	*375*	Tender	Mar 2019

R10 RAINWATER DRAINAGE SYSTEMS

To be read with Preliminaries/ General conditions.

GENERALLY

020 HISTORIC SENSITIVITY OF THE BUILDING AND STRUCTURE
Tavistock Guildhall is Grade 2* listed and must be treated with special consideration and care reflecting its national historic importance.

030 SUPERVISION: this sensitive element of the works is to be under the close constant control of competent trade supervisors to ensure satisfactory quality and progress

110 GRAVITY RAINWATER DRAINAGE SYSTEMS

Scope
The existing system of perimeter parapet gutters draining into hoppers and downpipes is to be retained and overhauled.
- Existing cast iron downpipes in good condition to be inspected, dismantled, overhauled and refixed in existing positions.
- Existing cast iron downpipes in poor condition to be replaced in existing positions.
- Redundant cast iron and UpVC downpipes to be removed

Refer to Drawings: GA216, GA220, GA222, GA224.

SYSTEM PERFORMANCE

221 COLLECTION AND DISTRIBUTION OF RAINWATER
- General: Complete, and without leakage or noise nuisance.

230 DESIGN PARAMETERS – GENERAL
- Roof and gutter construction and finish: _____ .
- Design rate of rainfall: As BS EN 12056-3, National Annex NB.2.
  - Category: _____ .
- Design life of building: 100 years

PRODUCTS

375 NEW CAST IRON RAINWATER DOWN PIPES + BRACKETS + HOPPERS

- Standard: To BS EN 877, Agrément certified.
- Manufacturer: Hambaker Rainwater (Saint Gobain) or Equal Approved.
  - Product reference: **Classical**
- Coupling type: As Required
- Nominal size: 75mm (Eared)
- Finish as supplied: Primed.
- Finish: Site Painted Dark Grey / Green to match existing railings – RAL TBC with Client
- Brackets: As Required
  - Fixings: As Required
    Size: As Required.
- Accessories: As Required inc:
  - Hoppers: A484 - 300mm wide.

390 SLOT DRAINAGE CHANNEL

Drawing reference(s): C-333, C-390, A-458, A-460,

MultiDrain M150DS Brickslot or similar approved
Manufacturer: ACO Technologies plc.
Web:www.aco.co.uk. Tel:+44 (0)1462 816666.
Product reference: M150DS Brickslot.
Stainless steel edged channel and stainless steel slot top.
Fall: Constant invert
Invert depth: 100 mm
Grating: BrickSlot access unit stainless steel
Accessories: As required.
- Connect to nearest below ground surface water drainage location as per SE Details

EXECUTION

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
- 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.

616 SETTING OUT EAVES GUTTERS – LEVEL
- Setting out: Level and as close as practical to the roof.
- Outlets: Aligned with connections to below ground drainage.

630 INSTALLING RAINWATER OUTLETS
- Fixing: Secure. Fix before connecting pipework.
  - Method: _____ .
- Junctions between outlets and pipework: Accommodate movement in structure and pipework.

635 FIXING 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.
  - 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: Generally Use existing fixing locations.
- Distance between bracket fixing centres (maximum): to existing centres

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.

675 CUTTING COATED PIPEWORK AND GUTTERS
- Cutting: Recoat bare metal.

680 FIXING INSULATION TO INTERNAL PIPELINES AND GUTTERS
- Fixing: Secure and neat. Provide continuity at supports and leave no gaps. Fix split pipe insulation with the split on 'blind' side of pipeline.
  - Method: _____ .
- Timing: Do not fit insulation until completion of pipe airtightness or leakage testing.

685 IDENTIFICATION OF INTERNAL RAINWATER PIPEWORK
- Standard: In accordance with Water Regulations Advisory Scheme (WRAS) Information and guidance note 9-02-05 and BS 8515.

690 ELECTRICAL CONTINUITY – PIPEWORK
- Joints in metal pipes with flexible couplings: Clips (or suitable standard pipe couplings) supplied for earth bonding by pipework manufacturer to ensure electrical continuity.

695 ELECTRICAL CONTINUITY – GUTTERS
- Joints in metal gutters: Purpose made links supplied by the gutter manufacturer to ensure electrical continuity.

700 ACCESS FOR TESTING AND MAINTENANCE
- General: Install pipework and gutters with adequate clearance to permit testing, cleaning and maintenance, including painting where necessary.
- Access fittings and rodding eyes: Position so that they are not obstructed.

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.

905 INTERNAL PIPEWORK TEST – ENGLAND, WALES, IRELAND AND NORTHERN IRELAND
- Preparation: Temporarily seal open ends of pipework with plugs.
- Test apparatus: Connect a 'U' tube water gauge and air pump to pipework via a plug.

- Testing: Pump air into pipework until gauge registers 38 mm.
- Required performance:
  - Allow a period for temperature stabilization, after which the pressure of 38 mm is to be maintained without loss for at least 3 minutes.

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.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: X12** Revision : **T1**

VERTICAL LIFTING PLATFORM LIFTS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		TENDER	FEB 2019

X12 VERTICAL LIFTING PLATFORM SYSTEMS

To be read with Preliminaries/ General conditions.

GENERAL

110 LIFT 1 - INTERNAL VERTICAL PLATFORM LIFT

- System manufacturer: CIBES
- Vertical lifting platform type: APL 5000
  ECO SILENT SYSTEM
- Standard: To BS EN 81-41.
- Self-supporting structure
- Ramps: Level Threshold Required
- Landing controls: As Per Manufacturer
- Pit Depth: 70mm (typical with no ramp)
- Size: 1100 x 1467mm
- Number of Stops: 4no. (3 floors, first floor has two opposing exits)
  - Ground Floor to Second Floor: Approx. 6245mm
- Colour:
  - Enclosure: Black Grey – RAL7021 - Standard Colour - TBC
  Vinyl Applied Graphic Signage: Light Bronze - TBC
  - Platform: Anodic Bronze - TBC
- Floor: Safestep – Grey - TBC
- Glass: Clear - Door Only.
- Door Height: 2200mm @ GF + 1F. 2100mm @ 2F if possible.
- Access: Controlled - Refer to M+E Specification.

120 LIFT 2 – EXTERNAL VERTICAL PLATFORM LIFT

- System manufacturer: CIBES
- Vertical lifting platform type: APL 5000
  EXTERNAL GRADE ENCLOSURE
- Standard: To BS EN 81-41.
- Self-supporting structure with SE specified steel frame to support rainscreen cladding with laser cut openings and integrated LED lighting.
- Ramps: Level Threshold Required
- Landing controls: As Per Manufacturer
- Pit Depth: 70mm (typical with no ramp)
- Size: 1100 x 1467mm
- Number of Stops: 2no. (2 floors 90deg. exits)
  - Lower Ground Floor to First Floor: Approx. 3535mm
- Colour:
  - Enclosure: Anodic Bronze – Premium Colour - TBC
  Vinyl Applied Graphic Signage: Light Bronze - TBC
  - Platform: Anodic Bronze - TBC
- Floor: Safestep – Grey - TBC
- Glass: 1no. Clear Panel at First floor (facing river). Door: Clear Glass.
- Door Height: 2200mm - Single Hinged.
- Access: Open Access.

130 LIFT 3 – EXTERNAL SHORT VERTICAL PLATFORM LIFT

- System manufacturer: Amalgamated Platform Lifts
- Vertical lifting platform type: APL 6
  Prestige Platform Lift.
- Ramps: Level Threshold Required

- Landing controls: As Per Manufacturer
- Pit Depth: Depends on lifting height required.
- Size: Standard. 1400 x 900mm - TBC
- Number of Stops: 2no. Open Through
  - Street level to Lower Ground Floor: Approx. 760 - 900mm
- Colour:
  - Enclosure Cladding: Anodic Bronze – TBC
  - Platform Posts: Dark Green / Grey to match railings - **Juniper BS12B29.**
- Floor: Granite Paving to match adjacent surfaces
- Glass: Balustrading
- Door: Single Hinged.
- Load Rating: 400 – 500kg.
- Access: Controlled - Refer to M+E Specification.

140 LIFT4 - INTERNAL STEP LIFT

- System manufacturer: Liftup
- UK Supplier: Platform Lift Company + Others.
  e: Adam@platformliftco.co.uk
  Tel: 01256 896000
- Model: Flexstep
- Standard: To BS 6440.
- Ramps: Level Threshold Required
- Landing controls: As Per Manufacturer
- Pit Depth: None. Excavation required to Trowtes House Only
- Size: 1160 x 1735mm (Total) / 900 x 1495mm (platform)
- Number of Stops: 1no. (1 floor)
  - Lower Ground Floor to Ground Floor: Approx. 605mm (4 rises)
- Colour:
  - Balusters: Black Grey – RAL7021 – TBC
  - Hand Rails: Anodic Bronze - TBC
- Floor: TBC
- Glass: Clear Glass Balustrade to Top of Steps – Option.
- Clear Height min. 2000mm above steps to new opening bronze lining.
- Access: Open Access.

SYSTEM PERFORMANCE

210 DESIGN

- Design: Complete the design of the vertical platform lift systems with assistance from Manufacturer.
- Proposals: Submit drawings, technical information, calculations and manufacturers' literature for CA Approval.

COMPLETION

910 TESTING AND COMMISSIONING

- Standards: BS / EN
- Operational tests: Undertake.
- Test certificate: Submit.
  - Number of copies: 2 .

920 ELECTRICAL INSPECTION AND TESTING
- Electrical inspection and testing: In accordance with BS 7671.

935 EQUIPMENT LABELLING
- Switches, controls, enclosures and terminations: Clearly and indelibly label describing their purpose. Identify the off position.

940 SPARES AND CONSUMABLES
- Supply the following spares:
  - Deliberately operated devices: As Recommended by Manufacturer
  - Detectors: As Recommended by Manufacturer
  - Protective switches: As Recommended by Manufacturer
  - Lamps for enclosure or lift car lighting: 2 sets per Lift

970 DOCUMENTATION
- Operation and maintenance instructions: Submit.
- Record drawings: Submit.
- Certificates: Submit.
  - Number of copies: 2
- Instruction manual: Submit.
  - Number of copies: 2
- Log book: Individual for each lift.
  - Type: Hardback cover embossed with the lift name and unique lift identification reference with A4 lined paper, minimum 100 pages.

975 TRAINING
- Timing: Before completion.
- Scope to include:
  - Daily lift operation.
  - Routine and general maintenance.
  - Emergency passenger release procedure.

980 MAINTENANCE
- Servicing and maintenance: Undertake.
  - Duration: Prepare Proposals for routine maintenance

END OF WORK SECTION

Tavistock – The Guildhall

Section **: Z10** Revision : **T1**

Purpose Made Joinery

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1	-	Tender	Jan 2019

Z10 PURPOSE MADE JOINERY

To be read with Preliminaries/ General conditions.

110 FABRICATION
- Standard: To BS 1186-2.
- Sections: Accurate in profile and length, and free from twist and bowing. Formed out of solid unless shown otherwise.
  - 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.
  - Countersink screws: Heads sunk at least 2 mm below surfaces visible in completed work.
- Adhesives: Compatible with wood preservatives applied and end uses of timber.

120 CROSS SECTION DIMENSIONS OF TIMBER
- General: Dimensions on drawings are finished sizes.
- Maximum permitted deviations from finished sizes:
  - Softwood sections: To BS EN 1313-1:-
    Clause 6 for sawn 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 as recommended by main treatment solution manufacturer.

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

210 LAMINATED PLASTICS VENEERED BOARDS/ PANELS
- Fabrication: To British Laminated Plastics Fabricators Association Ltd (BLF) fabricating standards.
- Balancing veneer: From decorative veneer manufacturer and of similar composition. Applied to reverse side of core material.
- Finished components: Free from defects, including bow, twist, scratches, chipping, cracks, pimpling, indentations, glue marks, staining and variations in colour and pattern.
- Joints visible in completed work: Tight butted, true and flush.

220 WOOD VENEERED BOARDS/ PANELS
- Core material and veneers: Conditioned before bonding.
- Setting out: Veneer features and grain pattern aligned regularly and symmetrically unless instructed otherwise.
- Balancing veneer: Applied to reverse side of core material.

  - Moisture and temperature movement characteristics: As facing veneer.
- Veneer edges: Tight butted and flush, with no gaps.
- Tolerance of veneer thickness (maximum): ± 0.5 mm.
- Finished components: Free from defects, including bow, twist, scratches, chipping, splits, blebs, indentations, glue marks and staining.
- Surface finish: Fine, smooth, free from sanding marks.

250 FINISHING

- Surfaces: Smooth, even and suitable to receive finishes.
  - Arrises: Eased unless shown otherwise on drawings.
- End grain in external components: Sealed with primer or sealer as section M60 and allowed to dry before assembly.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: Z11** Revision : **T3**

PURPOSE MADE METALWORK

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Draft Tender	Jan 2019
T2	*+100, +110, +120*	Draft Tender	Mar 2019
T3	120, + 130	Tender	April 19

Z11 PURPOSE MADE METALWORK

To be read with Preliminaries/ General conditions.

100 SL1 - NEW STEEL LINERS TO NEW OPENINGS
Refer to Finishes Drawings: GA150 -154 + Detail Drawings: C010, C012.

- Description. Steel liner acting as cover plate to new cut wall surfaces.
- Constructed from 8mm sheet steel to fit into new openings as shown on drawings.
- N.B. All openings dimensions differ. All liners to be site measured to fit each opening.
- Material: Mild steel with ground edges ready for decoration.
- Fixings to be flush countersunk fixings into subframe as shown on drawings
- Coatings: Bronze PPC Offsite Finish – Pearl RAL TBC.
- Fittings: Ramped Lining (G31>G32) to include integrated handrails. (Refer C012)

110 SL2 - NEW STEEL LINERS TO NEW OPENINGS with DOORS
Refer to Finishes Drawings: GA150 -154 + Detail Drawings: C011, C013.

- Description. Steel liner acting as cover plate to new cut wall surfaces.
- Constructed from 8mm sheet steel to fit into new openings as shown on drawings.
- N.B. All openings dimensions differ. All liners to be site measured to fit each opening.
- Material: Mild steel with ground edges ready for decoration.
- Fixings to be flush countersunk fixings into subframe as shown on drawings
- Coatings: Bronze PPC Offsite Finish – Pearl RAL TBC.
- 'Frameless' Glass Doors to be fitted as per **L10 560** or **L10 562.**
- Fittings:
  - GD23 - Ramped Lining to include integrated handrails on glass door and lining. (Refer C013)
  - 1D11 – Ramped Lining to include integrated handrails (Refer C012)
  - 2D07 – Stepped Lining to include integrated handrails (Refer C012)

120 'BRONZE DIAMOND' PLATE RAMPS
Refer to Finishes Drawings: GA150 -152 + Detail Drawings: C012, C013.

- Description. Bronze alloy non-slip aluminium ramps.
- Constructed from stamped aluminium sheet to fit into new openings as shown on drawings.
- N.B. All openings dimensions differ. All liners to be site measured to fit each opening.
- Material: Aluminium or EQUAL APPROVED.
- Fixings to be flush countersunk.
- Coatings: Bronze Offsite Finish

130 EXTERNAL SIGNAGE
Refer to GA120 + C330

- Description. Bronze Signage as per Neighbouring Butcher's Hall and Pannier Market Signage.
- Constructed from 2 layers of aluminium sheet with cut letters and spacers to achive backlighting.
  Site measure for each sign and confirm text with Client / CA.
- Material: Aluminium or EQUAL APPROVED.
- Fixings to be flush countersunk.
- Coatings: Dark Grey with Bronze Internal Offsite Finish

PRODUCTS

310 MATERIALS GENERALLY

- Grades of metals, section dimensions and properties: To appropriate British Standards. When not specified, select grades and sections appropriate for the purpose.
- Prefinished metal: May be used if methods of fabrication do not damage or alter appearance of finish, and finish is adequately protected.

- Fasteners: To appropriate British Standards and, unless specified otherwise, of same metal as component being fastened, with matching coating or 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.
- Steels with 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.
- Carbon steel sheet and strip for cold forming: To BS EN 10111.
- Narrow strip, formable steel and steel for 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.
- Carbon steel flat products for cold forming: To BS EN 10130 and BS EN 10131.
- Uncoated carbon steel narrow strip for cold forming: To BS EN 10139 and BS EN 10140.
- Narrow strip steel for general engineering purposes: To BS EN 10132-1, -2, and -3.
- Carbon steel flat products for vitreous enamelling: To BS EN 10209.

360 COATED STEEL FLAT PRODUCTS
- Hot dip zinc coated carbon steel sheet and strip for cold forming: To BS EN 10346 and BS EN 10143.
- Hot dip zinc coated structural steel sheet and strip: To BS EN 10143 and BS EN 10346.
- Hot dip zinc-aluminium (za) coated sheet and strip: To BS EN 10346.
- Hot dip aluminium-zinc (az) coated sheet and strip: To BS EN 10346.
- Organic coated flat products: To BS EN 10169.

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, carbon 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 10088-3.
- 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, -2, -3 and -5.
  - 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.

420 COPPER ALLOY PRODUCTS
- Sheet, strip, plate and circles for general purposes: To BS EN 1652.
- Sheet and strip for building purposes: To BS EN 1172.
- Rods: To BS EN 12163.
- Profiles and rectangular bars: To BS EN 12167.
- Wire: To BS EN 12166.
- Tubes: To BS EN 12449.

FABRICATION

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.

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.

527 WELDING TO BALLUSTRADES
- Welding procedures:
  - Method and standard: Metal Arc to BS EN 1011 .
  - Welding Procedure Specification (WPS): not required .
- Preparation:
  - Joint preparation: Clean thoroughly.
  - Surfaces of materials that will be self-finished and visible in the completed work: protect from weld splatter.
- Jointing:
  - Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
  - Dissimilar metals: _____ .
  - Strength requirements: Welds to achieve design loads.
  - Heat straightening: _____ .
  - Complex assemblies: Agree priority for welding members to minimize distortion caused by subsequent welds.
  - Tack welds: Use only for temporary attachment.
  - Jigs: Provide to support and restrain members during welding.

- Filler plates: as required .
- Lap joints: Minimum 5 x metal thickness or 25 mm, which ever is greater.
- Weld terminations: Clean and sound.

530 STAINLESS STEEL FABRICATION
- Guillotining or punching: Do not use for metal thicknesses greater that 10 mm.
- Thermal cutting:
  - Carbonation in the heat affected zone: Remove, after cutting.
- Bending:
  - Plates or bars: Cold bending radius not less than material thickness.
  - Tubes: Cold bending radius not less than 2 x tube diameter.
- Welding: In addition to general welding requirements:
  - Protect adjacent surfaces from weld spatter.
  - Pickle all welds before post fabrication treatments.
- Protection: Provide protection to fabricated components during transit and on site.

555 BRAZING
- Standard: To BS EN 14324.
- Testing:
  - Destructive testing: To BS EN 12797.
  - Nondestructive testing: To BS EN 12799.

FINISHING

710 FINISHING WELDED AND BRAZED JOINTS VISIBLE IN COMPLETE WORK
- Standard: To BS EN ISO 8501-3.
  - Preparation grade: _____ .
- Butt joints: Smooth, and flush with adjacent surfaces.
- Fillet joints: Neat.
- Grinding: Grind smooth where indicated on drawings.

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

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

760 ZINC AND CADMIUM PLATING OF IRON AND STEEL SURFACES
- Zinc plating: To BS EN ISO 2081.
- Cadmium plating: To BS EN ISO 2082.

770 CHROMIUM PLATING
- Standard: To BS EN ISO 1456.

780 GALVANIZING
- Standard: To BS EN ISO 1461.
- Preparation:
  - Vent and drain holes: Provide in accordance with BS EN ISO 14713-1 and -2. Seal after sections have been drained and cooled.
  - Components subjected to cold working stresses: Heat treat to relieve stresses before galvanizing.
  - Welding slag: Remove.
  - Component cleaning: To BS EN ISO 8501-3.
  - Grade: standard –suitable for marine envoronment .

COMPLETION

910 DOCUMENTATION
- Submit:
  - Manufacturer’s maintenance instructions.
  - Guarantees, warranties, test certificates, record schedules and log books.

920 COMPLETION
- Protection: Remove.
- Cleaning and maintenance: Carry out in accordance with procedures detailed in fabricators' guarantees.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: Z12** Revision : **T1**

Timber Treatment

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	Feb 19

Z12 PRESERVATIVE/ FIRE RETARDANT TREATMENT

To be read with Preliminaries/ General conditions.

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

120 COMMODITY SPECIFICATIONS
- Standard: In accordance with the Wood Protection Association (WPA) publication 'Industrial wood preservation specification and practice'.

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

140 COPPER-ORGANIC PRESERVATIVE TREATMENT
- Solution:
  - Manufacturer: _____ .
    Product reference: _____ .
  - Colour: _____ .
  - Application: High pressure impregnation.
- Moisture content of wood:
  - At time of treatment: Not more than 28%.
  - After treatment: Timber to be surface dry before using.

150 WATER-BASED ORGANIC PRESERVATIVE TREATMENT
- Solution:
  - Manufacturer: _____ .
    Product reference: _____ .
  - Application: High pressure impregnation.
- Moisture content of wood:
  - At time of treatment: Not more than 28%.
  - After treatment: Timber to be surface dry before use.

160 ORGANIC SOLVENT PRESERVATIVE TREATMENT
- Solution:
  - Manufacturer: _____ .
    Product reference: _____ .
  - 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.

165 WATER BASED MICROEMULSION PRESERVATIVE TREATMENT
- Solution:
  - Manufacturer: _____ .
    Product reference: _____ .
  - Application: Double vacuum + low pressure impregnation.

- 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.

167 BORON COMPOUND PRESERVATIVE TREATMENT
- Solution:
  - Manufacturer: _____ .
    Product reference: _____ .
  - Application: High pressure impregnation.
- Moisture content of wood:
  - At time of treatment: Not more than 28%.
  - After treatment: Timber to be surface dry before using.

180 RECYCLED TIMBER CONTAINING CREOSOTE OR CHROMIUM/ ARSENIC BASED PRESERVATIVE
- Usage: _____ .

210 FIRE RETARDANT TREATMENT
- Standard: In accordance with the Wood Protection Association (WPA) publication 'Industrial flame retardant treatment of wood and wood-based panel products'.
- Solution type: _____ .
  - Manufacturer: _____ .
    Product reference: _____ .
  - Application: Vacuum + pressure impregnation.
- Moisture content of wood:
  - At time of treatment: _____ .
  - After treatment: Timber to be redried slowly at temperatures not exceeding 60°C to minimize distortion and degradation.

610 MAKING GOOD TO PRESERVATIVE TREATMENT ON SITE
- Preservative solution: Compatible with off-site treatment.
- Application: In accordance with preservative manufacturer's recommendations.

620 MAKING GOOD TO FIRE RETARDANT TREATMENT ON SITE
- Fire retardant: Compatible with off-site treatment.
- Application: In accordance with fire retardant manufacturer's recommendations.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: Z20** Revision : **T1**

FIXINGS AND ADHESIVES

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	April 19

Z20 FIXINGS AND ADHESIVES

To be read with Preliminaries/ General conditions.

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:
  - Steel: To BS 1202-1 or BS EN 10230-1.
  - Copper: To BS EN 1202-2.
  - Aluminium: To BS 1202-3.

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

350 PLUGS
- Type: 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:
  - Wood screws (traditional pattern).
    Standard: To BS 1210.
  - Wood screws.
    Pattern: Parallel, fully threaded shank or twin thread types.
- 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.
  - 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.
  - Thermosetting wood adhesives: To BS EN 12765.
  - Thermoplastic adhesives: To BS EN 204.

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 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.

END OF WORK SECTION

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Section **: Z21** Revision : **T2**

MORTARS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	April 19
T2		Tender	April 19

Z21 MORTARS

To be read with Preliminaries/ General conditions.

SE Specification to supersede this specification where any conflict exists.

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 GAUGED MASONRY MORTARS
- Standard: To 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 MORTARS
- 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 limestone cement, CEM II/A-L or CEM II/A-LL.
    Portland slag cement, CEM II/B-S.
    Portland fly ash cement, CEM II/B-V.
  - 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 Portland cement:
  - Type: To BS EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
    To BS EN 197-1 fly ash cement, CEM II/B-V and CE marked.
  - Strength class: 32.5, 42.5 or 52.5.
- Masonry cement: To BS EN 413-1 and CE marked.
  - Class: MC 12.5.

180 ADMIXTURES FOR SITE MADE CEMENT GAUGED MORTARS
- Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
- Other admixtures: Submit proposals.
- Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

190 RETARDED READY TO USE CEMENT GAUGED MORTAR
- Standard: To 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.

LIME:SAND 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.

330 READY PREPARED LIME PUTTY
- Type: Slaked directly from CL 90 quicklime to BS 890, using an excess of water.
  - Maturation: In pits/ containers that allow excess water to drain away.
  - Density of matured lime putty: 1.3–1.4 kg/litre.
- Maturation period before use (minimum): _____ .

335 READY PREPARED LIME PUTTY
- Manufacturer: _____ .
  - Product reference: _____ .
- Maturation period before use (minimum): _____ .

340 POZZOLANIC ADDITIVES FOR NONHYDRAULIC LIME:SAND MORTARS
- Manufacturer/ Supplier: _____ .
  - Product reference: _____ .
- Mixing: Mix thoroughly into mortar during knocking up.

345 ADMIXTURES FOR HYDRAULIC LIME:SAND MORTARS
- Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
- Prohibited admixtures: Calcium chloride, ethylene glycol 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 LIME:SAND 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: _____ .
  - Product reference: _____ .
- 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): _____ .

390 KNOCKING UP NONHYDRAULIC LIME:SAND 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.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: Z22** Revision : **T1**

SEALANTS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	April 19

Z22 SEALANTS

To be read with Preliminaries/ General conditions.

PRODUCTS

310 JOINTS _____
- 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: _____ .

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.

END OF WORK SECTION

Tavistock – The Guildhall

Section **: Z31** Revision : **T1**

POWDER COATINGS

Revision History

Revision	*Clauses altered*	*Issue*	*Date*
T1		Tender	Jan 2019

Z31 POWDER COATINGS

To be read with Preliminaries/ General conditions.

120 POWDER COATING MATERIALS
- Manufacturer: Obtain from one only of the following: Contractors choice
- Selected manufacturer: Submit details before commencement of powder coating including:
  - Name and contact details.
  - Details of accreditation schemes.
  - Technical data of product including current Agrément certificates.

210 WORKING PROCEDURES
- Comply with the follow following standards.
  - Aluminium components: To BS 6496 or BS EN 12206-1.
  - Steel components: To BS EN 13438.
  - Safety standards: To British Coatings Federation 'Code of safe practice – Application of thermosetting powder coatings by electrostatic spraying'.

220 POWDER COATING APPLICATORS
- Applicator requirements:
  - Approved by powder coating manufacturer.
  - Currently certified to BS EN ISO 9001.
  - Comply with quality procedures, guarantee conditions, standards and tests required by powder coating manufacturer.
  - Applicator to use only one plant.
  - Selected applicator: Submit details before commencement of powder coating including: Name and contact details.
    Details of accreditation schemes.

225 GUARANTEES
- Powder coating manufacturer and applicator guarantees:
  - Submit sample copies before commencement of powder coating.
  - Submit signed project specific copies on completion of work.

230 CONTROL SAMPLES
- Sequence: Prior to ordering materials for the works, obtain approval of appearance for:
  - Powder coated samples: Of various grades and forms of background metal to be used, showing any colour, texture and gloss variation.
  - Fabrication samples: Showing joint assembly, how powder coating is affected and how any cut metal edges are finished and protected.
- Samples to include the following information:
  - Product reference.
  - Colour.
  - Reference number.
  - Name.
  - Gloss level.

235 INDEPENDENT INSPECTION AT PLANT
- Requirement: Contractors/ suppliers of the following designated components must commission an approved Independent Inspection Authority to carry out acceptance inspections to confirm that powder coating application complies with this specification.
  - Designated components: _____ .
- Acceptance inspections: Carry out for each variation of colour and finish of each component work package at applicator's plant prior to any fabrication of units, in accordance with the following:
  - Where three of more production runs are required for application of coatings, not less than three acceptance inspections must be carried out in accordance with BS 6001-1, general inspection level 2, with an acceptance quality limit of 1%.

  - Where less than three production runs are required for application of coatings, one acceptance inspection must be carried out in accordance with BS 6001-2, with a limiting quality of 5% where the probability of acceptance is 10%.
- Components failing inspection: Reprocess or replace and reinspect.
- Inspection reports: Independent Inspection Authority must submit copies.

250 COMPONENT DESIGN
- Condition of components to be powder coated:
  - To comply with relevant recommendations of BS 4479-1, -3, and -4.
  - Of suitable size to fit plant capacity.
  - Of suitable thickness to withstand oven curing.

310 PRETREATMENT OF ALUMINIUM COMPONENTS
- Condition of components to be pretreated:
  - Free from corrosion and damage.
  - All welding and jointing completed and finish off as specified.
  - Free from impurities including soil, grease, oil.
  - Suitable for and compatible with the pretreatment process.
- Conversion coating requirements:
  - Chromate system: To BS 6496 or BS EN 12206-1.
  - Chromate-free system: To BS EN 12206-1. Submit details before using.
- Rinsing requirements: Use demineralized water. Drain and dry.

320 PRETREATMENT OF STEEL COMPONENTS
- Condition of components to be pretreated:
  - Free from corrosion and damage.
  - All welding and jointing completed and finish off as specified.
  - Free from impurities including soil, grease, oil.
  - Suitable for and compatible with the pretreatment process.
- Conversion coating requirements: To BS EN 13438.
- Rinsing requirements: Use demineralized water. Drain and dry.

430 EXTENT OF POWDER COATINGS
- Application: To visible component surfaces, and concealed surfaces requiring protection. Coated surfaces will be deemed ‘significant surfaces’ for relevant BS 6496 or BS EN 13438 performance requirements.

435 APPLICATION OF POWDER COATINGS
- Surfaces to receive powder coatings: Free from dust or powder deposits.
- Powder colours: Obtain from one batch of one manufacturer.
- Commencement of powder coating: To be continuous from pretreatment.
- Jig points: Not visible on coated components.
- Curing: Controlled to attain metal temperatures and hold periods recommended by powder coating manufacturer.
- Stripping and recoating of components: Only acceptable by prior agreement of powder coating manufacturer. Stripping, pretreatment and powder coating are to be in accordance with manufacturer’s requirements.
- Overcoating of components: Not acceptable.

440 PERFORMANCE AND APPEARANCE OF POWDER COATINGS
- For aluminium components:
  - Standard: To BS 6496 or BS EN 12206-1.
- For steel components:
  - Standard: To BS EN 13438.
- Visual inspection after powder coating: Significant surface viewing distances to be as specified in the relevant Standard, unless specified otherwise.
- Colour and gloss levels: To conform with approved samples.

450 ALUMINIUM ALLOY FABRICATIONS
- Units may be assembled:
  - Before powder coating.
  - From components powder coated after cutting to size.
  - Where approved, from components powder coated before cutting to size.
- Exposure of uncoated background metal: Not acceptable.
- Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.

460 STEEL FABRICATIONS
- Unit assembly: Wherever practical, before powder coating.
- Exposure of uncoated background metal: Not acceptable.
- Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.

470 FIXINGS
- Exposed metal fixings: Powder coat together with components, or coat with matching repair paint system applied in accordance with the powder coating manufacturer's recommendations.

480 DAMAGED COMPONENTS – REPAIR/ REPLACEMENT
- Before delivery to site: Check all components for damage to powder coatings. Replace damaged components.
- Site damage: Submit proposals for repair or replacement.

510 PROTECTION
- Powder coated surfaces of components: Protect from damage during handling and installation, or by subsequent site operations.
- Protective coverings: Must be:
  - Resistant to weather conditions.
  - Partially removable to suit building in and access to fixing points.
- Protective tapes in contact with powder coatings: Must be:
  - Low tack, self adhesive and light in colour.
  - Applied and removed in accordance with tape and powder coating manufacturers' recommendations. Do not use solvents to remove residues as these are detrimental to the coating.
- Inspection of protection: Carry out monthly. Promptly repair any deterioration or deficiency.

535 DOCUMENTATION
- Submit the following information for each batch of powder coated components:
  - Supplier.
  - Trade name.
  - Colour.
  - Type of powder.
  - Method of application.
  - Batch and reference number.
  - Statutory requirements.
  - Test certificates.
  - Maintenance instructions.

540 COMPLETION
- Protection: Remove.
- Cleaning and maintenance of powder coatings: Carry out in accordance with procedures detailed in powder coating manufacturer and applicator guarantees.

END OF WORK SECTION