

Sheppard Robson

UBS MANCHESTER

L30: Stairs/ ladders/ walkways/ handrails/
balustrades

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Contents

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To be read with preliminaries/ general conditions.

4 Sub-contractor's design responsibility

1. Based on the JCT guide to the use of Performance Specifications, the following are the requisite performance levels for Sub-Contractor design:
2. **Performance Level 1: Prescriptive Specification (no design by Sub-Contractor)**
 - 2.1. The Sub-Contractor is to construct the work in accordance with production information and a prescriptive specification provided by others and has no design responsibility.
 - 2.2. The Sub-Contractor is responsible for materials and workmanship and the provision of product manufacturer's guarantees and warranties where required.
3. **Performance Level 2: Performance Specification (no 'in context' design by the Sub-Contractor)**
 - 3.1. The Sub-Contractor's design input is limited to the selection of 'off the shelf' products that satisfy the performance specification and construction of the works using the selected components.
 - 3.2. The Sub-Contractor is responsible for materials and workmanship, design input in selecting products and the provision of product manufacturer's guarantees and warranties where required.
4. **Performance Level 3: Performance Specification (simple 'in context' design)**
 - 4.1. The Sub-Contractor's design input is limited to the selection of 'off the shelf' products that satisfy the performance specification, adapting them as necessary to suit the Specifier's design and constructing the works using the selected components as adapted.
 - 4.2. The Sub-Contractor is responsible for materials and workmanship, design input in selecting and adapting products and the provision of product manufacturer's guarantees and warranties where required.
5. **Performance Level 4: Performance Specification (complex 'in context' design)**
 - 5.1. The Sub-Contractor is to provide detail design and production information, including a prescriptive specification of products and construct the works in accordance with that design using selected components adapted as necessary.
 - 5.2. The Sub-Contractor is responsible for materials and workmanship and for design input. May obtain product manufacturers' guarantees and warranties for Client.

8 Sub-contractor's design scope performance level 4

1. **The Performance Level 4:** Work associated with this Work Package is specified in the following clause(s) of this Work Package Section: All.
2. These clauses should be read in conjunction with the general clauses of the associated specifications.

Sub-contract preliminaries**13 Contractor's design**

1. The work specified in this Section shall be designed by the Contractor based on the Employer's Requirements.
2. **Production information:** Shall be prepared by the Contractor, in conjunction with the Design Team, as necessary to procure and construct the work.

20 The scope of the works

1. **The Contractor:** Is entirely responsible for the detailed design, manufacturing, fixing, jointing, and installation of the works shown on the drawings and specified in this work section, including all necessary or required accessories and ancillary work.
2. The Contractor is responsible for coordinating the detail design of related and adjacent work to maintain the specified performance at all interfaces.
3. The Contractor is responsible for ensuring that all materials used are compatible with those of adjacent works so as not to compromise the specified performance or life expectancy of the works.

25 Generally

1. The design, fabrication, installation and performance requirements specified are intended to establish a minimum performance level and general principles. The Contractor shall be responsible for achieving or surpassing the design and performance criteria for all components.

30 Tender/ contract drawings

1. **Drawings:** Have been prepared as scheduled. Information shown is schematic and indicative of the design proposals for the basic functional and architectural requirements. The drawings do not indicate a detailed solution, nor do they prejudice the submission of alternative proposals complying with the specified requirements.

35 Read in conjunction with

1. **The following documents:**
 - 1.1. The Structural Engineer's Report, including associated documentation and Drawings.
 - 1.2. The Fire Strategy Report, including associated documentation and Drawings.
 - 1.3. The M&E/ Services Report, including associated documentation and Drawings.
 - 1.4. The Acoustic Report, including associated documentation and Drawings.
 - 1.5. The specialist joinery contractor's documentation and associated Drawings

43 Compliance with current regulations

1. **The Contractor:** Shall ensure that the works described in this section are compliant with the current editions of:
 - 1.1. The Building Regulations (England):.

45 Approvals

1. **The Contractor:** Shall provide all drawings, calculations, and other technical information as may be required to submit the Contractor's proposals to the Building Control Officer/Approved Inspector/Fire Officer.
2. The Contractor shall provide all drawings, calculations, specifications, other technical information together with any risk assessments or risk analysis as may be required to contribute to the fire safety information required under Regulation 38 of the Building Regulations.

46 Approvals

1. The Contractor shall provide all drawings, calculations, and other technical information as may be required to submit the Contractor's proposals to the Principal Designer and/or Health and Safety Officer.

47 Compliance and approvals

1. The Contractor shall ensure that works described in this Section are compliant with the requirements of the Building Insurer/ Warranty Provider.

2. The Contractor shall provide all drawings, calculations, and other technical information as may be required to submit the Contractor's proposals to the Building Insurer/ Warranty Provider.

48 Compliance

1. The Contractor shall ensure that works described in this Section are compliant with the project fire safety requirements set out in Section B05: Whole project fire safety.

55 Production information

1. Shall be provided by the Contractor as follows: As stipulated in the AMC/SR Section.
2. Design and production information procedures shall comply with: The AMC/SR Section.
3. Design and production information shall include all interfaces of related and adjacent work.

60 Accuracy of contract works

1. In addition to any more stringent requirements specified elsewhere, the Works shall be constructed to the degrees of accuracy specified in clause A33:312.
2. Not less than 15 days before commencing the work specified in this section confirm, by survey relative to the Contractor's setting-out points, that the locations of all relevant previously-built works are correct taking account of all specified tolerances. The results of this survey shall be provided.
3. If the surveyed locations of the relevant previously-built works will not allow the works specified in this section to be completed within the specified degrees of accuracy, the Contractor is to immediately seek instructions before proceeding.

70 Warranty

1. **The Contractor:** Shall warrant that he has exercised, and will exercise, all reasonable skill and care in:
 - 1.1. The design of the Works insofar as the Works have been or will be designed by the Contractor.
 - 1.2. The selection of materials and goods for the Works insofar as such materials and goods have been or will be selected by the Contractor.
 - 1.3. The satisfaction of any performance specification or requirement insofar as such performance specification or requirement is included or referred to elsewhere in this specification.

80 Design life of the installation

1. **The design life of the building:** 60 years, as defined in BS ISO 15686-1.
2. **The design life:** Of the components, assemblies, and installations, as defined in BS ISO 15686-1 and specified in this Section, is 35 years.
3. **Provide:** In the Building Manual specified in Section A37, information on the methods for replacing all components and assemblies with a design life less than that of the building or less than that of the installation of which they form part.

85 Building manuals

1. Are required and shall comply with: Section A37.

Preliminary information/ requirements

111 Design

1. **Design standard:** Unless stated otherwise, all components shown on the drawings and described in this specification have been designed to BS 5395 where applicable.

2. **Completion of design:** Finalise details to meet structural and safety requirements of BS 5395 and BS 6180.
3. **Type of activity:** Type of activity/ occupancy category to BS EN 1991-1-1:
 - 3.1. **Loadings:**
 - 3.1.1. **Occupancy Class:** To be agreed to meet Building Control Requirements.
 - 3.1.2. **Uniformly distributed load:** Shall be compliant with the British Standards specified for the intended use and as agreed with the Structural Engineer to meet Building Control Requirements.
 - 3.1.3. **Concentrated load:** Shall be compliant with the British Standards specified for the intended use and as agreed with the Structural Engineer to meet Building Control Requirements.

114 Sustainability criteria

1. **For sustainability:** Refer to Section Z40.

115 Timber procurement

1. In strict accordance with the BREEAM requirements. Refer to Section Z40, and associated BREEAM Report. Deviations from the BREEAM report will not be acceptable, unless agreed in writing by the BREEAM assessor to augmented the BREEAM score.

116 Thermal movement

1. **Design:** To take account of all temperature changes, local climatic conditions, temperature differentials, etc. to ensure that no buckling, distortion, or damage, to components, joints, or fixings occurs.

130 Site dimensions

1. **Procedure:** Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
 - 1.1. **Designated items:** All.

Components

461 Walkways REVISED

1. **Description:** Raised / elevated platform on a steel structure above level 05 roof.
2. **Manufacturer:** Elefant Gratings T/A PcP Gratings Ltd., or equivalent.
 - 2.1. **Product reference:** Metal Mesh Gratings
3. **Supporting structure:** To SE specification.
4. **Component material, grade and finish as delivered**
 - 4.1. **Flooring:** Galvanised steel bar grating.
 - 4.1.1. **Slip resistance value of finish - water wet (minimum):** >36 PTV.
5. **Workmanship:**
 - 5.1. **Metalwork:** To section Z11.
6. **Accessories:** As recommended by manufacturer to complete the system.

551 Balustrade(s) and handrail(s) - External roof area REVISED

1. **Description:** Purpose made metal balustrade and handrail with concealed fixings formed from Flat Plate Sections with a powder coated factory finish.
2. **Manufacturer and reference:** Specialist Contractor
Submit proposals.

3. Dimensions, configuration and layout
 - 3.1. As indicated on the Architect's Drawings.
 - 3.2. Comply with the requirements of Approved Documents K and M of the Building Regulations.
4. Metalwork materials:
 - 4.1. Balustrade:
 - 4.1.1. Materials: Mild steel in accordance with Z11.
 - 4.1.2. Finish/Colour: RAL to match wall rain screen system 30% - polyester powder coated. Finish shall be confirmed by Client.
 - 4.1.3. Construction/Fixing:
 - 4.1.3.1. Balusters shall be Mechanically fixed to substrate with concealed fixings.
 - 4.1.3.2. Balusters shall be welded/ mechanically prefixed to handrails at the factory, prior to application of the finish and shall appear seamless.
5. Handrail:
 - 5.1. Materials: Mild steel in accordance with Z11.
 - 5.2. Finish/Colour: Finish shall be confirmed by Client.
 - 5.3. Construction/Fixing:
 - 5.3.1. Handrails shall be welded/ mechanically prefixed to balusters at the factory, prior to application of the finish and shall appear seamless.
6. Workmanship:
 - 6.1. Metalwork: As section Z11.
 - 6.2. Fixings: As Section Z20.
 - 6.3. Powder coatings: As Section Z31.

552 Balustrade(s) and handrail(s) - BAL01 REVISED

1. Description: Stainless Steel handrail and metal balustrades with incorporated LED light - To specialist subcontractor design.
2. Manufacturer and reference: Specialist Contractor Submit proposals.
3. Dimensions, configuration and layout
 - 3.1. As indicated on the Architect's Drawings.
 - 3.2. Comply with the requirements of Approved Documents K and M of the Building Regulations.
4. Metalwork materials:
 - 4.1. Balustrade:
 - 4.1.1. Materials: Mild steel in accordance with Z11.
 - 4.1.2. Finish/Colour: PPC Aluminium balustrade - Colour to Match Interpon / Akzo Nobel / Himba 2525 Matt / YW274F
 - 4.1.3. Construction/Fixing:
 - 4.1.3.1. Balusters shall be Mechanically fixed to substrate with concealed fixings.
 - 4.1.3.2. Balusters shall be welded/ mechanically prefixed to handrails at the factory, prior to application of the finish and shall appear seamless.
5. Handrail:
 - 5.1. Materials: Stainless Steel.
 - 5.2. Light: Allow for incorporated LED light.
 - 5.3. Construction/Fixing:
 - 5.3.1. Handrails shall be welded/ mechanically prefixed to balusters at the factory, prior to application of the finish and shall appear seamless.

6. Workmanship:
 - 6.1. Metalwork: As section Z11.
 - 6.2. Fixings: As Section Z20.
 - 6.3. Powder coatings: As Section Z31.

553 Balustrade(s) and handrail(s) - BAL02 REVISED

1. Description: Atrium general transparent balustrade - Circulation.
2. Manufacturer and reference: Specialist Contractor
Submit proposals.
3. Dimensions, configuration and layout
 - 3.1. Refer to 71-series Architect's Drawings.
 - 3.2. Comply with the requirements of Approved Documents K and M of the Building Regulations.
4. Timber materials:
 - 4.1. Balustrade:
 - 4.1.1.Materials: See through metal balustrade with stainless steel handrail
 - 4.1.2.Finish/Colour: PPC to match Interpon / Akzo Nobel / Himba 2525 Matt / YW274F
 - 4.1.3.Construction/Fixing:
 - 4.1.3.1. Balusters shall be Mechanically fixed to substrate with concealed fixings.
 - 4.1.3.2. Build up and spacing of the metal posts to further developed with the stair and balustrade specialist.
5. Handrail:
 - 5.1. Materials: Stainless steel handrail
 - 5.2. Finish/Colour: Interpon / Akzo Nobel / Himba 2525 Matt / YW274F
 - 5.3. Construction/Fixing:
 - 5.3.1.Handrails shall be welded/ mechanically prefixed to balusters at the factory, prior to application of the finish and shall appear seamless.
6. Workmanship:
 - 6.1. Metalwork: As section Z11.
 - 6.2. Fixings: As Section Z20.
 - 6.3. Powder coatings: As Section Z31.

554 Balustrade(s) and handrail(s) - BAL03 REVISED

1. Description: Atrium general opaque balustrade - Breakout spaces.
2. Manufacturer and reference: Specialist Contractor
Submit proposals.
3. Dimensions, configuration and layout
 - 3.1. Refer to 71-series Architect's Drawings.
 - 3.2. Comply with the requirements of Approved Documents K and M of the Building Regulations.
4. Materials:
 - 4.1. Balustrade:
 - 4.1.1.Materials: Opaque balustrade with stainless steel handrail. Acoustic board.
 - 4.1.2.Finish/Colour: PPC to match Interpon / Akzo Nobel / Himba 2525 Matt / YW274F
 - 4.1.3.Acoustic performance: Class A. To match acoustic requirements
 - 4.1.4.Construction/Fixing:
 - 4.1.4.1. Balusters shall be Mechanically fixed to substrate with concealed fixings.

- 4.1.4.2. Build up and spacing of the metal posts to further developed with the stair and balustrade specialist.

5. Handrail:

- 5.1. **Materials:** Build up and spacing of the metal posts to further developed with the stair and balustrade.
- 5.2. **Finish/Colour:** Stainless Steel Handrail
- 5.3. **Construction/Fixing:**
 - 5.3.1. Handrails shall be welded/ mechanically prefixed to balusters at the factory, prior to application of the finish and shall appear seamless.

6. Workmanship:

- 6.1. **Metalwork:** As section Z11.
- 6.2. **Fixings:** As Section Z20.
- 6.3. **Powder coatings:** As Section Z31.

555 Balustrade(s) and handrail(s) - BAL04 REVISED

1. **Description:** Wall mounted Core stairs handrail.
2. **Manufacturer and reference:** Specialist Contractor
Submit proposals.
3. **Dimensions, configuration and layout**
 - 3.1. As indicated on the Architect's Drawings. Refer to 24-series.
 - 3.2. Comply with the requirements of Approved Documents K and M of the Building Regulations.
4. **Handrail:** Stainless steel tube to BS EN 100088.
 - 4.1. **Materials:** Mild steel in accordance with Z11.
 - 4.2. **Finish/Colour:** Stainless steel, satin finish.
 - 4.3. **Construction/Fixing:**
 - 4.3.1. Wall mounted on brackets.
 - 4.3.2. Brackets should be welded to concrete / mechanically prefixed to handrails at the factory.
5. **Workmanship:**
 - 5.1. **Metalwork:** As section Z11.
 - 5.2. **Fixings:** As Section Z20.

556 Balustrade(s) and handrail(s) - BAL05 REVISED

1. **Description:** Core stairs central balustrade.
2. **Manufacturer and reference:** Specialist Contractor
Submit proposals.
3. **Dimensions, configuration and layout**
 - 3.1. As indicated on the Architect's Drawings. Refer to 24-series.
 - 3.2. Comply with the requirements of Approved Documents K and M of the Building Regulations.
4. **Guarding:** Barrier loading: Uniformly distributed load: 1.5kN/m².
 - 4.1. **Infill:** Mild steel plate between first 2 balusters and at end of stair.
 - 4.2. **Fixings:** Concealed, mild steel.
 - 4.3. **Balusters:** Mild steel flats.
 - 4.4. **Top rail:** Mild steel flat.
 - 4.5. **Base plate:** Mild steel flat fixed to substrate.
 - 4.6. **Finish:** Satin polished.

5. **Handrail:** Stainless steel tube to BS EN 100088.
 - 5.1. **Materials:** Mild steel in accordance with Z11.
 - 5.2. **Finish/Colour:** Stainless steel, satin finish.
 - 5.3. **Construction/Fixing:**
 - 5.3.1. Wall mounted on brackets.
 - 5.3.2. Brackets should be welded to concrete / mechanically prefixed to handrails at the factory.
6. **Workmanship:**
 - 6.1. **Metalwork:** As section Z11.
 - 6.2. **Fixings:** As Section Z20.
7. **Finish:**
 - 7.1. **Fixing:** Stainless steel Brackets at max. 800mm centres.
8. **Accessories:** End caps.
External, internal and odd angle corners (98° to 165°).
Removable kit for service ducts.

558 Balustrade(s) and handrail(s) - BAL07 REVISED

1. **Description:** Forum Stairs Guardrail– To specialist subcontractor design.
2. **Manufacturer and reference:** Specialist Contractor
Submit proposals.
3. **3. Dimensions, configuration and layout:**
 - 3.1. Refer to 30-series Architect's Drawings.
 - 3.2. Comply with the requirements of Approved Documents K and M of the Building Regulations.
4. **4. Metalwork materials**
 - 4.1. **Guarding**
 - 4.1.1. **Performance requirements_ uniformly distributed load:** 1.5kN/m2.
 - 4.1.2. **Materials:** Stainless steel.
 - 4.1.3. **Finish:** Brushed.
 - 4.1.4. **Construction/Fixing**
 - 4.1.4.1. Mechanically base fixed with stainless steel brackets.
 - 4.1.4.2. Balusters shall be mechanically prefixed to handrails at the factory.
5. **Handrail:**
 - 5.1. **Materials:** Hardwood.
 - 5.2. **Finish / Colour:** European Oak to match to match tones of FL11A.
 - 5.3. **Construction / Fixing:**
 - 5.3.1. Handrails shall be mechanically prefixed to balusters at the factory, prior to application of the finish and shall appear seamless.
6. **5. Workmanship**
 - 6.1. **Metalwork:** As section Z11.
 - 6.2. **Fixings:** As Section Z20.

559 Balustrade(s) and handrail(s) - BAL08 REVISED

1. **Description:** Forum Stairs Glass Guarding– To specialist subcontractor design.
2. **Manufacturer and reference:** Specialist Contractor
Submit proposals.
3. **3. Dimensions, configuration and layout:**

- 3.1. Refer to 30-series Architect's Drawings.
- 3.2. Comply with the requirements of Approved Documents K and M of the Building Regulations.
- 3.3. Comply with the requirements of Approved Documents K and M of the Building Regulations.
4. Metalwork materials
 - 4.1. Capping
 - 4.1.1. Materials: Stainless steel.
 - 4.1.2. Finish: Brushed.
 - 4.1.3. Construction / Fixing: Clear silicone sealant.
 - 4.2. Panel
 - 4.2.1. Material: Clear, low iron, toughened, laminated safety glass.
 - 4.2.2. Construction: Mechanically base fixed with mild steel clamping plate.
 - 4.2.3. Joints: Dry but jointed.
5. Workmanship
 - 5.1. Metalwork: As section Z11.
 - 5.2. Fixings: As Section Z20.

591 Applied stair nosings - FL64 REVISED

1. Description: Core Stairs nosing. Vinyl Contrasting nosing strip to be included in vinyl with edge trim as required.
2. Standard: In accordance with BS 8300-2.
3. Manufacturer: Gradus, or equivalent.
 - 3.1. Product reference: GA1413BA
4. Material: Aluminium
5. Size – outer dimensions (rise x going): Refer to drawings.
 - 5.1. Profile: Manufacturer's standard
 - 5.2. Slip resistance value – water wet (minimum): PTV of ≥ 36 to BS 7976 to riser and tread.
6. Colour
 - 6.1. Channel/ Frame: Bronze anodised finish
 - 6.2. Inserts: Manufacturer's standard
7. Accessories: As required from manufacturer to complete the system

592 Rigid stair nosings to feature stairs

1. Description: Extruded aluminium stair nosing.
2. Standard: In accordance with BS 8300-2.
3. Manufacturer: [Gooding Aluminium Ltd](#), or equivalent.
 - 3.1. Product reference: [Stair Nosings - Premium \(GA 1413 PREMIUM STAIR NOSING, 90° RAKED BACK EDGE, 30 mm FACE\)](#)
4. Profile: Raked back edge.
5. Base section
 - 5.1. Material: Aluminium.
 - 5.2. Finish: Bronze anodised finish.
6. Size
 - 6.1. Rise x going: Refer to drawings. To comply with accessibility requirements.
7. Inserts

- 7.1. Material: Aluminium.
- 7.2. Colour: Bronze anodised finish.
- 8. Size – outer dimensions (rise x going): Refer to drawings.
 - 8.1. Slip resistance value – water wet (minimum): PTV of ≥ 36 (wet and dry) to BS 7976 to riser and tread.

Installation

608 Workmanship

- 1. Where applicable, the works shall be carried out in accordance with the manufacturer's recommendations.
- 2. Works off-site and on-site shall comply with the manufacturer's health and safety guidance along with any relevant advice published by the Health and Safety Executive.
- 3. Operatives shall be trained, experienced and appropriately skilled in the installation of the works and, where applicable, be recommended by the system/ product manufacturer.

610 Moisture content

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

616 Pre-finished components

- 1. **Requirement:** Maintain in protective wrappings until completion of contract.

620 Priming/ Sealing/ Painting

- 1. **Surfaces inaccessible after assembly/installation:** Before fixing components, apply full protective/decorative treatment/coating system.

630 Corrosion protection of dissimilar materials

- 1. **Components/ substrates/ fasteners of dissimilar materials:** Isolate using washers/ sleeves or other suitable means to separate materials to avoid corrosion and/ or staining.

636 Fixing generally

- 1. **Fasteners and methods of fixing:** To section Z20 unless specified otherwise. Fixings to be secure to prevent pulling away, deflection, distortion, or other movement during use.
- 2. **Structural members:** Do not modify, cut, notch or make holes in structural members except as indicated on drawings or as otherwise agreed.
- 3. **Temporary support:** Do not use stairs, walkways, balustrades, etc. as temporary support or strutting for other work.
- 4. **Distortion:** Do not distort components during fixing. Check all opening parts, after installation, for correct operation and adjust as necessary. Do not plane, cut, or sand, joinery to remedy distortion.
- 5. **Fix:** Loose trims, cills, thresholds, and the like in unjointed lengths between angles and ends of runs. Mitre angle joints.
- 6. **Clear-finished joinery work:** Screwed and pelleted unless specified otherwise.

Completion

910 Inspection

- 1. **Timing:** Two weeks after request.
- 2. **Period of notice (minimum):** Five working days

920 Documentation

1. Contents
 - 1.1. Copies of structural design calculations/ test reports.
 - 1.2. General product information.
 - 1.3. Installation information.
 - 1.4. Inspection and maintenance reports.
2. Number of copies: 1 digital PDF copy.
3. Submission: Two weeks after request.

Deleted clauses

311 Proprietary - CL41A **DELETED**

Ω End of Section

