

Halliday Meecham Architects Ltd

Garden House

Garden House

10-10-2023

Contents

H92 Rainscreen cladding1

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Tendering - Not Used

Type(s) of rainscreen cladding

120 Rainscreen cladding - Penthouse Level

1. Description: Replacement for Penthouse Cladding
2. Primary support structure: Existing SFS framing
3. Rainscreen cladding system
 - 3.1. Manufacturer: Metalline Architectural Fabrications, Hollies Park Road, Cannock, Staffordshire, WS11 1DB
Tel: 01543 456 930
Email: unity@metalline.co.uk
 - 3.2. Type: Drained and back-ventilated
 - 3.3. Fire performance requirements: As clause 470 for rainscreen cladding, clauses 480 and 485 for backing wall, and clause 490 for cavity fire barriers.
4. Rainscreen panel
 - 4.1. Manufacturer: Metalline Architectural Fabrications
 - 4.1.1. Product reference: Unity A2 SF (Secret Fix Cassette) Aluminium cladding
 - 4.2. Material: Aluminium
 - 4.3. Thickness: 3mm
 - 4.4. Finish/ Colour: Polyester Powder Coated (A2-s1, d0 Classification to EN 13501-1)
Colour to match existing
 - 4.5. Joint type: Open but baffled recess
 - 4.6. Joint width: 10mm
5. Air gap: minimum 25mm
6. Secondary support/ framing system: Aluminium support system comprising extruded vertical support rails with adjustable wall attachment brackets
 - 6.1. Material: Extruded aluminium to BS1474 in 6063/T6 grade alloy.
 - 6.2. Fasteners: Panels fixed to support rails through material face – rivet fix min 15mm from panel edge.
 - 6.2.1. Number and location: As fabricators structural design
7. Backing wall: Existing concrete slab/ metal studs
 - 7.1. Thermal insulation: as clause 775
 - 7.2. Breather membrane: as clause 785
8. Accessories: as recommended by manufacturer
9. Other requirements: Panel dimensions, spacing and setting out to match existing

120 Rainscreen cladding - To Projecting Bays Generally

1. Description: Replacement for Penthouse Cladding
2. Primary support structure: Existing SFS framing
3. Rainscreen cladding system
 - 3.1. Manufacturer: Metalline Architectural Fabrications, Hollies Park Road, Cannock, Staffordshire, WS11 1DB
Tel: 01543 456 930
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- 3.2. Type: Drained and back-ventilated
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4. Rainscreen panel
 - 4.1. Manufacturer: Metalline Architectural Fabrications
 - 4.1.1. Product reference: Unity A2 SF (Secret Fix Cassette) Aluminium cladding
 - 4.2. Material: Aluminium
 - 4.3. Thickness: 3mm
 - 4.4. Finish/ Colour: Anodised to match existing
 - 4.5. Joint type: Open but baffled recess
 - 4.6. Joint width: 10mm
5. Air gap: minimum 25mm
6. Secondary support/ framing system: Aluminium support system comprising extruded vertical support rails with adjustable wall attachment brackets
 - 6.1. Material: Extruded aluminium to BS1474 in 6063/T6 grade alloy.
 - 6.2. Fasteners: Panels fixed to support rails through material face – rivet fix min 15mm from panel edge.
 - 6.2.1. Number and location: As fabricators structural design
7. Backing wall: Existing concrete slab/ metal studs
 - 7.1. Thermal insulation: as clause 775
 - 7.2. Breather membrane: as clause 785
8. Accessories: as recommended by manufacturer
9. Other requirements: Panel dimensions, spacing and setting out to match existing

General requirements/preparatory work

210 Design

1. Rainscreen cladding system and associated features: Complete detailed design in accordance with this specification and the preliminary design drawings and submit before commencement of fabrication.
2. Related works: Coordinate in detailed design.

220 Specification

1. Compliance standards: The Centre for Window and Cladding Technology (CWCT) 'Standard for systemised building envelopes'.
2. Reference information: For the duration of the contract, keep available at the design office, workshop and on site copies of:
 - 2.1. The Centre for Window and Cladding Technology (CWCT) 'Standard for systemised building envelopes'.
 - 2.2. Publications invoked by the CWCT 'Standard for systemised building envelopes'.

230 Information to be provided during detailed design

1. Submit the following cladding particulars
 - 1.1. A schedule of detailed drawings and dates for submission for comment.
 - 1.2. A schedule of loads that will be transmitted from the rainscreen cladding to the structure.
 - 1.3. Proposed fixing details and systems relevant to the structural design and construction with methods of adjustment and tolerances.
 - 1.4. A schedule of fabrication tolerances/ size tolerances.

- 1.5. A detailed testing programme in compliance with the Main Contract master programme.
- 1.6. A detailed fabrication and installation programme in compliance with the Main Contract master programme.
- 1.7. Proposals to support outstanding applications for Building Regulations consents or relaxations.

232 Quality plan

1. **Requirement:** Submit during detailed design.
2. **Content:** In accordance with BS EN ISO 9001 and including the following:
 - 2.1. Name of the quality manager.
 - 2.2. Quality assessment procedures.
 - 2.3. Inspection procedures to be adopted in checking the work.
 - 2.4. Stages at which check lists will be used and samples of the lists.
 - 2.5. List of work procedures on the correct use of materials or components, both off site and on site.
 - 2.6. List of product information with latest revisions.
 - 2.7. Subcontractors involved in the work.
 - 2.8. Subcontractors quality plans.
 - 2.9. Storage, handling, transport and protection procedures.
 - 2.10. Procedure for registering and reporting non compliances.
 - 2.11. Maintenance procedures and calibration records.
 - 2.12. Certification that completed work complies with specification.
 - 2.13. Check list register to ensure all items have been inspected and non-compliances discharged.

240 Product samples

1. **General:** Before commencing detailed design, submit labelled samples of: The penthouse and bay cladding panels .

250 Samples of fixings

1. **General:** During detailed design, submit labelled samples of each type of fixing, together with manufacturers' recommended torque figures.

Design/performance requirements

310 CWCT 'Standard for systemised building envelopes'

1. **General:** Unless specified or agreed otherwise comply with:
 - 1.1. Part 2 - Loads, fixings and movement.
 - 1.2. Part 3 - Air, water and wind resistance.
 - 1.3. Part 4 - Operable components, additional elements and means of access.
 - 1.4. Part 5 - Thermal, moisture and acoustic performance.
 - 1.5. Part 6 - Fire performance.
 - 1.6. Part 7 - Robustness, durability, tolerances and workmanship.
2. **Project performance requirements specified in this subsection:** Read in conjunction with CWCT performance requirements.

350 Deflection under wind load

1. Requirement: For listed components, at positive and negative applications of the design wind pressure, normal deflections are not to exceed: those defined by calculation given the location and height of the cladded areas.
2. Additional stiffness to CWCT 'Standard for systemised building envelopes' clause 3.5.4.2: Not allowed

370 Appearance and fit

1. Requirement: Design rainscreen wall:
 - 1.1. To ensure position and alignment of all parts and features as shown on preliminary design drawings.
 - 1.2. To accommodate deviations in the primary support structure.
2. Primary support structure: Before commencing installation of rainscreen cladding system, carry out survey sufficient to verify that required accuracy of erection can be achieved.
 - 2.1. Give notice: If the structure will not allow the required accuracy or security of erection.
 - 2.2. Design tolerances: To be determined by assessment of existing SFS structure
3. Rainscreen envelope zone tolerances
 - 3.1. Width: Refer to CWCT, clause 7.4.3 and 7.4.4 for further guidance
 - 3.1.1. Critical reference location: Existing datum
4. Maximum permitted component and installation tolerances: Panel length ± 2 mm Panel width ± 1 mm

430 Thermal properties

1. Method for calculating the thermal transmittance (U-value) of the rainscreen wall: Weighted U-value.
2. Average U-value of rainscreen wall: 0.30W/m²K minimum
3. Method for assessing thermal transmittance (U-value) of assemblies: By calculation

450 Air and Vapour control layer

1. Condensation risk within rainscreen wall: Determine using the method described in BS 5250, Annex D. Where required, provide a suitable air and vapour control layer to ensure that damage and nuisance from condensation is reduced.

460 Sound transmittance

1. Minimum weighted sound reduction index (R_w) to BS EN ISO 717-1
 - 1.1. Between internal and external surfaces of rainscreen clad wall: As determined by acoustic report
2. Minimum weighted standardized level difference (D_{nTw}) to BS EN ISO 717-1.
 - 2.1. Between adjacent floors abutting rainscreen clad wall: NA
 - 2.2. Between adjacent rooms on same floor abutting rainscreen clad wall: NA

470 Fire performance of rainscreen cladding

1. Standard: In accordance with the CWCT 'Standard for systemised building envelopes', section 6 and TN 98.
2. Reaction to fire
 - 2.1. External surfaces: To BS EN 13501-1, Class A2-s1, d0 or better
 - 2.2. Internal (cavity) surfaces: To BS EN 13501-1, Class A2-s1, d0 or better

3. **Verification of fire performance:** In accordance with the CWCT 'Standard for systemised building envelopes', section 6 and TN98

480 Fire resistance of backing wall

1. **Minimum periods and criteria:** as existing performance

485 Internal reaction to fire of backing wall

1. **Class (minimum):** BS EN 13501-1, Class A2-s1, d0

490 Fire resistance of cavity fire barriers

1. **Standard:** To BS EN 13501-2
2. **Requirement:** To resist the passage of flame and smoke for not less than 30 minutes' integrity, 15 minutes' insulation 60 minutes' integrity, 60 minutes' insulation.

495 Durability

1. **Relevant agents or degradation mechanisms:** as BS 7543
2. **Design life of the rainscreen cladding system:** Not less than 25 years
3. **Secondary components:** Submit details together with required maintenance regime, replacement periods and methods of replacement.

497 Lightning protection system

1. **Rainscreen components used as part of lightning protection system:** re-instate existing system after replacement of cladding

Testing - Not Used

Products

710 Aluminium alloy framing sections

1. **Standards:** To BS EN 755 alloy EN AW-6063 and suitable for the specified finish.
2. **Structural members:** To comply with BS EN 1999-1-1, -3 and -4.

712 Aluminium alloy sheet

1. **Standards:** To BS EN 485, BS EN 515 and BS EN 573.
2. **Alloy, temper and thickness:** Suitable for the application and specified finish.

715 Carbon steel framing sections/ reinforcement

1. **Standards:** To the relevant parts of BS 7668, BS EN 10029, BS EN 10025 or BS EN 10210.
2. **Thickness:** Suitable for the application, and for galvanizing or other protective coating.

730 Mechanical fixings – material requirements

1. **Stainless steel:** To BS EN ISO 3506 grade A2 generally, grade A4 when used in severely corrosive environments.
2. **Carbon steel:** To BS 4190 and suitable for galvanizing or other protective coating.
3. **Aluminium:** To BS EN 755.

735 Fixings and fasteners

1. **Type and use:** Reviewed and approved by manufacturers. Submit confirmatory information on request.

2. **Dimensions:** Not less than recommended by their manufacturers.
3. **Adjustment capability:** Sufficient in three dimensions to accommodate primary support structure and rainscreen cladding fabrication/ installation tolerances.

760 Gaskets

1. **Material**
 - 1.1. Noncellular rubber to BS 4255-1.
 - 1.2. Cellular rubber to ASTM-C509-06.
2. **Durability:** Resistant to oxidation, ozone and UV degradation.

770 General sealants

1. **Selection:** In accordance with BS 6213 from:
 - 1.1. Silicone.
 - 1.2. One part polysulfide.
 - 1.3. Two part polysulfide.
 - 1.4. One or two part polyurethane.
2. **Classification and requirements:** To BS EN ISO 11600.
3. **Reaction to contact products and finishes:** Stable and compatible.

775 Thermal insulation Behind Rainscreen

1. **Material:** Mineral wool to BS EN 13162
 - 1.1. **Properties:** Durable, rot and vermin proof and not degradable by moisture or water vapour.
2. **Product reference:** Rockwool Duo Slab
3. **Thickness:** 50mm
4. **Recycled content:** as manufactured
5. **Fixing:** Attached to the outer face or supported within the backing wall so as not to bulge, sag, delaminate or detach during installation or in situ during the life of the rainscreen cladding.
6. **U-value:** to achieve existing external wall u-value or minimum 0.30

785 Breather membrane

1. **Manufacturer:** Obex Protection Ltd
 - 1.1. **Contact details**
 - 1.1.1. **Address:** Nunnery Park, Nunnery Way, Worcester, WR4 0SX
 - 1.1.2. **Telephone:** +44 (0) 1905 337800
 - 1.1.3. **Web:** www.obexuk.com
 - 1.1.4. **Email:** sales@obexuk.com
 - 1.2. **Product reference:** Cortex 0200FR
2. **Standard:** To BS EN 13859-2.
3. **Reaction to fire:** Class A2-s1,d0 (EN 13501-1)
4. **UV resistance:** Excellent.
5. **Continuity:** No breaks. Minimize joints.
 - 5.1. **Penetrations and abutments:** Attach to breather membrane with tape. Achieve full bond.
 - 5.2. **Laps:** Not less than 150 mm, bond with tape. Achieve full bond.
6. **Tape:** As recommended by breather membrane manufacturer.
7. **Repairs:** Lapped patch of breather membrane material secured with continuous band of tape on edges.

8. Junctions at flashings, sills, gutters etc. Overlap and allow free drainage to exterior.

786 EPDM To Cladding Generally

1. Standard: To BS EN 13859-2.
2. Material: As supplied
3. Manufacturer: [OBEX Protection Ltd](#)
 - 3.1. Contact details
 - 3.1.1. Address: Unit 12
Horn Hill Road
Nunnery Park
Worcester
Worcestershire
United Kingdom
WR4 0SX
 - 3.1.2. Telephone: [+44 \(0\)1905 337800](tel:+44(0)1905337800)
 - 3.1.3. Web: <https://obexuk.com/>
 - 3.1.4. Email: Sales@obexuk.com
 - 3.2. Product reference: OBEX CORTEX 0200FR ISM Interface Sealing Membrane
4. Continuity: No breaks. Minimize joints.
 - 4.1. Penetrations and abutments: Attach to breather membrane with tape. Achieve full bond.
 - 4.2. Laps: Not less than 150 mm, bond with tape. Achieve full bond.
5. Tape: As recommended by breather membrane manufacturer.
6. Repairs: Lapped patch of breather membrane material secured with continuous band of tape on edges.
7. Junctions at flashings, sills, gutters etc. Overlap and allow free drainage to exterior.

Finishes

810 Protective coating of carbon steel framing sections/ reinforcement

1. Treatment: All surfaces to one of the following:
 - 1.1. Hot dip galvanized to BS EN ISO 1461.
 - 1.2. An appropriate equivalent coating to BS EN ISO 12944 and BS EN ISO 14713-1 and -2.

820 Protective coating of carbon steel mechanical fixings

1. Treatment: All surfaces to one of the following:
 - 1.1. Hot dip galvanized to BS EN ISO 1461.
 - 1.2. Sherardized to BS EN ISO 17668, Class 30 coating thickness and passivated.
 - 1.3. Zinc plated to BS EN ISO 2081, coating designation of FE//Zn//C for an iridescent (yellow passivate) chromate conversion coating or FE//Zn//D for an opaque (olive green) chromate conversion coating.

830 Powder coating

1. Requirement: As section Z31.

Fabrication and installation

910 Generally

1. Electrolytic corrosion: Take necessary measures to prevent.

2. **Identification of products:** Mark or tag to facilitate identification during assembly, handling, storage and installation. Do not mark surfaces visible in the complete installation.

912 Metalwork

1. **Requirement:** As section Z11, unless specified otherwise in this section.

922 Fixings/ adhesives application

1. **Requirement:** As section Z20, unless specified otherwise in this section.

925 Sealant application

1. **Requirement:** As section Z22, unless specified otherwise in this section.

930 Assembly

1. **Location:** Carry out as much assembly as possible in the workshop.
2. **Joints:** Other than movement joints and designed open joints, must be rigidly secured, reinforced where necessary and fixed with hairline abutments.
3. **Displacement of components in assembled units:** Submit proposals for reassembly on site.

960 Preliminary rainscreen cladding installation

1. **Requirement:** Complete an area of cladding as set out below for inspection and approval of appearance.
2. Part of penthouse apartment .

970 Rainscreen cladding installation

1. **Tightening mechanical fasteners:** To manufacturer's recommended torque figures. Do not overtighten fasteners intended to permit differential movement.
2. **Protective coverings:** Remove only where necessary to facilitate installation and from surfaces which will be inaccessible on completion.

980 Interfaces

1. **Installation:** Locate flashings, closers etc. correctly and neatly overlap cladding to form a weathertight junction.

985 Damage

1. **Repairs:** Do not repair cladding without approval.
 - 1.1. **Approval:** Will not be given where the proposed repair will impair performance or appearance.
2. **Record of repairs:** Prepare schedule or record on drawings for inclusion in the maintenance manual.

995 Maintenance

1. **Maintenance manual:** Incorporate details within the Building Manual in accordance with CWCT 'Standard for systemised building envelopes', clause 7.6.1.
 - 1.1. **Materials certification and test reports to be included:** all relevant to clause 120

Ω End of Section



Specification created using NBS Chorus