

SOAS into Senate House

Specification for architectural works

L10 Windows/ Rooflights/ Screens/ Louvres

28731-SOAS-A-SPC-GEN-XX-L10

Created by: GM

Checked by: EF

Approved by:MD

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Mace Information Handling Classification: Unrestricted

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L

Windows/Doors/Stairs

L10
Windows/ Rooflights/ Screens/ Louvres
Revision C3

Section Revision History

| No. | Purpose | |
|-----|-------------------------|--------------|
| | | 3rd Dec 2014 |
| C1 | CONSTRUCTION | 4th Dec 2014 |
| C2 | ISSUED FOR CONSTRUCTION | 2nd Apr 2015 |
| C3 | ISSUED FOR CONSTRUCTION | 7th May 2015 |

Clauses amended in Revision C3

| No. | Clause | |
|------|-------------------------------|---------|
| 316 | STEEL WINDOWS | Revised |
| 317 | STEEL WINDOWS AND DOORS | Revised |
| 317A | STEEL WINDOWS AND DOORS | Revised |
| 320 | STEEL WINDOWS | Added |
| 322 | STEEL GLAZED SECONDARY SCREEN | Added |
| 580 | SECONDARY GLAZING SYSTEM | Revised |
| 590 | SECONDARY GLAZING SYSTEM | Added |

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.

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: All windows.

140 CONTROL SAMPLES

- Procedure:
 - Finalise 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.
- Designated items: Frame section sample all types.

PRODUCTS**205 WINDOW MATERIALS SPECIFICATION**

- Minimum BRE 'Green Guide to Specification Online' rating: B.

314 WORKS TO EXISTING INTERNAL WINDOWS In classrooms and cellular offices to corridors on floors 1, 2 and 3

- Original ventilation internal windows to be refurbished in accordance with specifications by Donald Insall Associates.
- Windows are to be fixed shut and sealed closed including and acoustic seal.

316 STEEL WINDOWS SEE DRAWING NO SOAS-A-SHL-GEN-XX-914 FOR WINDOW NOS .

- Manufacturer and reference: Crittall Windows Ltd or similar approved, Corporate W20 range with 'Genuine' steel glazing bars
- Generally manufactured in accordance with BS 6510, W20 section.
- Weathertightness: To BS 6375: Part 1. Exposure category (Design wind pressure): 1200 (Pa) see Table AA
- For air permeability, water tightness and wind resistance data see Table AA
- Operation and strength characteristics: To BS 6375: Part 2
- Construction: All frames have welded corners and are flat and square within normal manufacturing dimensional tolerances of +/-1.5mm.
 - Glazing bars to be hot tenon riveted.
 - Galvanising; All components including steel attachments, coupling members and ancillaries to be hot-dipped after manufacture to BS EN ISO 1461:1999
 - Glazing details: External windows to be glazed with units comprising:

1) DG unit

U-value: approximately 1.2W/m²K

Outer * 4mm Pilkington Optifloat Clear toughened

Cavity 8 mm Xenon filled with black spacer

Inner * 4mm Pilkington K Glass S, toughened

U-value: 1.2W/m²K

2) DG unit

30 Fire Rated (Integrity Only)

U-value: approximately 1.2W/m²K

Outer 6mm 'Pyrocet XPS'

Cavity 6 mm Xenon filled with black spacer

Inner * 4mm Pilkington K Glass S, toughened

Set in fire rated taped system, capped all round inside and out with FR silicone sealant, steel bead studs

3) Single glazed secondary 30' (integrity) fire rated glass: 6mm 'Pyrocet XPS', set in fire rated taped system, capped all round inside and out with FR silicone sealant, steel bead studs

4) Single glazing to W-G01-1 & W-G01-5 to cloister

6mm* Pilkington Optifloat Clear toughened, bead glazed in to match existing arrangement, verify detail on site.

* glass thickness to be subject to window pane size and confirmed by window supplier

DG units to have a center pane U value of 1.2 W/m²/K compliant with Part L 2010.

Weatherstripping: Gaskets complying with BS 4255: Part 1 manufactured from EPDM secured into grooves of opening frame with adhesive.

Ironmongery/accessories: See clause 326.

Finish as delivered: Galvanised & Duralife polyester powder coated in a range of colours (see clause 328)

| TYPE OF OPENING LIGHT | EXPOSURE CATEGORY (Pa) | AIR PERMEABILITY: Y: Not More than 16m ³ /h/m JOINT, AT (Pa) | WATER TIGHTNESS NO LEAKAGE, AT (Pa) | WIND RESISTANCE NO DAMAGE & ONLY PERMISSIBLE DEFLECTION, AT (Pa) |
|-----------------------------|------------------------------|---|---|---|
| Corporate™ W20 | | | | |
| Horizontal Fixed | 1200 | 300 | 100 | *1200 |
| Side Hung Open Out | 2000 | 300 | 300 | 2000 |

(Revised - L10 revision C3 - 7th May 2015)

317 STEEL WINDOWS AND DOORS TO FIRE ESCAPE WINDOW TYPE W3 AND W4 SEE PROPOSED WINDOW SCHEDULE

- Clause/ Location: Fire escape at ground floor Malet Street
 - Drawing nos: 28731-SOAS-A-SHL-GEN-XX-914
 - Manufacturer: CRITTALL or similar approved
 - Product Reference: Double leaf outward opening door system.
 - Acoustic Rating (Rw): System to achieve 32dB reduction
 - Performance: Overall average 'U' value to achieve 2.0w/m²K
Exposure category to EN 14351-1/ Design wind load: 21.5m/s
 - Door: Nominal thickness: 44mm
Facings: 1.2mm Zintec
Edges: Interlock & Welded
 - Finish: All steel powdercoated RAL white to match existing
Glazing Infill details: DG unit as clause (316, 2) - see also L40/515B
Beading: internal
Manifestation design tbc
 - Frame: Single rebated
 - Ironmongery/Accessories: Doors need to be DDA compliant and provide safe fire egress from building, both leaves to open to provide clear exit width.
Doors to be fitted with anti-finger hinge profile.
Doors to be fitted with flush threshold.
Doors fitted with drip bar to bottom of door leaf.
Doors fitted with surface mounted anti-finger trap hinges.
Doors fitted panic bar hardware
See clause 326
 - Fixing: Steel door shall be installed in complete accordance with the information published by Crittall UK fabricators (or similar approved).
 - Guarantee's: Year Manufacturers for Doorset & Ironmongery
 - Standard: To BS 6510.
- Material: as delivered .
- Window section: W20 .
 - Operation and strength characteristics: To BS 6375-2.
 - Fixing: Screwed to brick reveal as clause 781 .
 - Other requirements: insulated extruded steel kick panel with RAL powder coated finish in white to match existing
- (Revised - L10 revision C3 - 7th May 2015)

317A STEEL WINDOWS AND DOORS TO W2. SEE PROPOSED WINDOW SCHEDULE

- Clause/ Location: See drawings listed below
- Drawing nos: 28731-SOAS-A-SHL-GEN-XX-914
- Manufacturer: CRITTALL or similar approved
- Product Reference: Double leaf outward opening door/window system.
- Acoustic Rating (Rw): System to achieve 35dB reduction
- Performance: Overall average 'U' value to achieve 1.5w/m2K
Exposure category to EN 14351-1/ Design wind load: 21.5m/s
- Door: Nominal thickness: 44mm
Facings: 1.2mm Zintec
Edges: Interlock & Welded
- Finish: All steel powdercoated RAL white to match existing
- Glazing Infill details: Generally DG unit (as clause 316, 1) - see also L40 General requirements
Beading: internal
Manifestation design tbc.
Single glazing to W-G01-1 & W-G01-5, refer (316, 4) Bead glazed in to match existing arrangement, verify detail on site.
- Frame: Single rebated
- Ironmongery/Accessories: Doors need to be DDA compliant and provide safe fire egress from building.
Doors to be fitted with anti-finger hinge profile.
Doors to be fitted with flush threshold.
Doors fitted with drip bar to bottom of door leaf.
Doors fitted with surface mounted anti-finger trap hinges.
Doors fitted panic bar hardware
See clause 326
- Fixing: Steel door shall be installed in complete accordance with the information published by Crittall UK fabricators (or similar approved).
- Guarantee's: Year Manufacturers for Doorset & Ironmongery
- Standard: To BS 6510.
 - Material: as delivered .
 - Window section: W20 .
- Operation and strength characteristics: To BS 6375-2.
- Fixing: Screwed to brick reveal as clause 781 .
- Other requirements: insulated extruded steel kick panel with RAL powder coated finish in white to match existing
(Revised - L10 revision C3 - 7th May 2015)

320 STEEL WINDOWS TO W1 SEE PROPOSED WINDOW SCHEDULE

- Clause/ Location: See drawings listed below
- Drawing nos: 28731-SOAS-A-SHL-GEN-XX-914
- Manufacturer: CRITTALL or similar approved
- Product Reference: As L10/316.
- Performance: Exposure category to EN 14351-1/ Design wind load: 21.5m/s
- Door: Nominal thickness: 44mm
 - Facings: 1.2mm Zintec
 - Edges: Interlock & Welded
- Finish: All steel powdercoated RAL white to match existing
- Glazing Infill details: Generally single glazed unit (as clause 316, 4) - see also L40 General requirements
 - Beading: internal
 - Bead glazed in to match existing arrangement, verify detail on site.
- Frame: Single rebated
- Ironmongery/Accessories: See clause 326
 - Standard: To BS 6510.
 - Material: as delivered .
 - Window section: W20 .
- Operation and strength characteristics: To BS 6375-2.
- Fixing: Screwed to brick reveal as clause 781 .
(Added - L10 revision C3 - 7th May 2015)

322 STEEL GLAZED SECONDARY SCREEN 60/60 minutes FR

System & Provider: Forster Steel Profile Systems, Arbon, Switzerland, www.forster-profile.ch
contact 07468520672 Zoe Farrow zoe.farrow@afg.ch

- Approved Manufacturer: Please contact above for approved fabricator/installers.
- Product: Forster Fuego Light EI60 galvanized steel profiles with insulation, single doorset for secondary glazing. Frame to be profile 736.800T with door profile to be 736.803T or 736.805T depending on door handing/opening direction and 736.855 for door bottom rail.
- Fire Requirement: EI60, integrity & insulation for 60 minutes.
- Glazing details: Glass to be 23mm Pilkinton Pirostop achieve 60 minute integrity & insulation (EI60) retained using steel glazing beads 901.227/8 or 901.246 depending on glass thickness.
- Gaskets: Wet glazed with suitable fire glazing tape and intumescent silicone sealant. Intumescent strip to sit on promatec in glazing areas to be 948.002 & 948.000 intumescent strips to doorframe and door leaf edges.
- Ironmongery/accessories: Hinges to be 2 off Forster 907.662 Weld on hinges with 1 off Locking pin 957.010 per leaf. Lock to be a 2-point latch deadlock, ref 907.2xx depending on handling & function. Contractor to confirm with building control the emission of door closers and lever handle as door to be used as access to secondary for cleaning purposes only.
- Accuracy:
- Permissible deviations:
Height and width: 2.7mm x 1500mm maximum door leaf size.
Difference in length of diagonals: 4 mm.
- Finish as delivered: Polyester Powder Coated to BS/RAL TBC
- Fixing: screwed to existign reveals

Other requierments:

Provide independently certified evidence that all specified variants of components comply with specified performance requirements.

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/ doorset/ assembly supplied will comply with the specified requirements for fire resistance if tested to BS476-22, 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

(Added - L10 revision C3 - 7th May 2015)

325 STEEL WINDOWS & DOORS

- Generally all the foregoing.
- Manufacturing undertaken in the Crittall factory (or similar approved) by directly employed personnel.
- Design, manufacture and installation carried out under Quality Management Systems certified to BS EN ISO 9001

326 IRONMONGERY/ACCESSORIES (see proposed ironmongery schedule on drawing SOAS-A-SHL-GEN-XX-914)

- Horizontal pivot windows fitted with friction pivots and a single Roto Toned spring catch at the head. Hook at base and bracket to tie the cord
- Outward opening 'French Casement' side hung windows/ external doors fitted with a single 'Deco' profile locking lever handles in IBUL (Imitation Bronze Unlacquered) finish,
- Concealed bolts to the first closig leaf and both leaves fitted with 'Cotswold' sliding stay restricted to 100mm initial opening.
- Inward opening side hung secondary glazing side hung windows fitted with a single 'Deco' profile locking lever handles in IBUL (Imitation Bronze Unlacquered) finish.
- Fire escape ironmongery: panic bars with 3-point locking mechanism

328 FINISH COATING

- Type/reference: Epoxy free Duralife polyester powder coating using Interpon D36 powder to BS EN ISO 13438
- Preparation: Following galvanising, windows are chemically cleaned and pre-treated to provide surface to which powder coating will adhere.
- Covering: Minimum 60 microns on all significant surfaces.
- Colours: to match existing.
- Process: Coating must be undertaken in the same manufacturing plant as the frame fabrication.

580 SECONDARY GLAZING SYSTEM 30 minute FIRE RATED TO WINDOW types W7

- Manufacturer: Crittall Windows Ltd or similar approved, .
 - Product reference: Corporate W20 range with 'Genuine' steel glazing bars, 30 minutes fire rated .
- Type: Hinged casement .
- Framing material: Steel .
 - Finished as delivered: Polyester powder coated, colour: TBC .
- Glazing details: As clause L10/316-3 - See also L40/515A .
- Ironmongery/ Accessories: Hinges, handle, lock etc. as clause 326 .
- Grounds/ Subframe: as required .
- Fixing: Screwed to wood subframe .
(Revised - L10 revision C3 - 7th May 2015)

590 SECONDARY GLAZING SYSTEM NON FIRE RATED

- Manufacturer: Crittall Windows Ltd or similar approved, .
 - Product reference: Corporate W20 range with 'Genuine' steel glazing bars .
- Type: Hinged casement .
- Framing material: Steel .
 - Finished as delivered: Polyester powder coated, colour: TBC .
- Glazing details: 6mm toughened glass with low-e coating .
- Ironmongery/ Accessories: Hinges, handle, lock etc. as clause 326 .
- Grounds/ Subframe: as required .
- Fixing: Screwed to existign reveal .
(Added - L10 revision C3 - 7th May 2015)

650A METAL LOUVRES TO WINDOWS WHERE VENTILATION DUCTS ARE CONNECTED (see drawing SOAS-A-XXX-GEN-XX-505 and MECHANICAL GRILLES DIFFUSERS AND LOUVRES EQUIPMENT SCHEDULE: 28731-SOAS-M-SHL-VNT-XX-003)

- Manufacturer: Brooke Air/JC Vents or similar approved.
JC House, Hurricane Way,
Wickford Business Park, Wickford,
Essex. SS11 8YB,
England.Tel: +44 (0) 1268 561122
Fax: +44 (0) 1268 560606
web: www.jcvents.co.uk.
 - Product reference: Standard weather louvre OL/R.
- Material: Aluminium.
 - Finish as delivered: Powder coated.
- Fire resistance rating: Not applicable.
- Number of louvre banks: One.
- Louvre blade pitch and angle: Pitch: 38 mm.
- Blanking panels: Required to suit duct connections.
- Accessories/ Other requirements: Stainless steel insect screen.
- Fixing: Recessed frame fixed in accordance with louvre manufacturers instructions and co-ordinated and agreed with Crittall Windows.

650B METAL LOUVRES TO INTERNAL WALLS AS INDICATED ON DAWINGS (Read in conjunction with MECHANICAL GRILLES DIFFUSERS AND LOUVRES EQUIPMENT SCHEDULE: 28731-SOAS-M-SHL-VNT-XX-003)

- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Material: Epoxy Powder Coated aluminium.
 - Finish as delivered: Sample to be approved by planning authority. Grille assembly to incorporate 2.0 mm thick perforated aluminium sheet type C8U12 from Nova Metals, cut from maximum sheet sizes of 1500mm x 3000mm. Flanges to be in appropriate extruded aluminium section delivered fully assembled by metal louvre manufacturer.
- Finish: white to match existing
- Fire resistance rating: Not applicable.
- Number of louvre banks: Not applicable.
- Louvre blade pitch and angle: not applicable.
- Blanking panels: Required to suit duct connections.
- Accessories/ Other requirements: Plenum and acoustic baffles to meet separation requirement as indicated in acoustic consultants report.
- Fixing: Submit proposals.

650C METAL LOUVRES TO TRAVERTINE RADIATOR COVER PANELS

- Manufacturer: Submit proposals.
 - Product reference: Submit proposals.
- Material: Bronze.
 - Finish as delivered: Bronze patinated.
- Accessories/ Other requirements: Steel subframe to support travertine and metal mesh basket, painted matt black, fixed to underside of existing window cill beneath routed air slots .
- Fixing: No visible fixings.
- Free area: 60%
- Sample of grille and mock-up of installation to be signed off by Camden Planning Authority prior to manufacture.

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: Aluminium alloy components in contact with preservative treated timber, Iron and steel unless galvanized and Concrete, mortar or plasters, especially when embedded..
- Protective coating: Two coats of bitumen solution to BS 6949 or an approved mastic impregnated tape.
 - 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.

765 WINDOW INSTALLATION GENERALLY

- Installation: Into prepared openings.
- Gap between frame edge and surrounding construction:
 - Minimum: 1mm.
 - Maximum: 3mm.
- Distortion: Install windows without twist or diagonal racking.

766 LOCATION OF OPENABLE WINDOWS IN NATURALLY VENTILATED BUILDINGS

- Location: Over 10 m from sources of external pollution.

770 DAMP PROOF COURSES IN PREPARED OPENINGS

- Location: Ensure correct positioning in relation to window frames. Do not displace during fixing operations.

781 FIXING OF STEEL FRAMES

- Standard: As section Z20.
- Fasteners: To be to Crittall Windows Ltd recommendations for their window system.
 - Spacing: When not predrilled or specified otherwise, position fasteners not less than 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 intumescent mastic or tape.

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

- Sealant:
 - Manufacturer: Contractor's choice.
Product reference: Submit proposals.
 - Colour: To be confirmed.
 - Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.

820 IRONMONGERY

- Fixing: 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.

BREEAM**840 REQUIREMENTS FOR INDOOR AIR QUALITY - VOCs**

- All materials listed below shall comply with the relevant standards for volatile organic compound (VOC) content.
 - Wood panels to be tested to and compliant with BS EN 13986:2004 for formaldehyde (emission level E1 as tested by BS EN 717-1:2004), and to include:
 - Particleboard,
 - Fibreboard including MDF,
 - OSB,
 - Cement-bonded particleboard
 - Plywood
 - Solid wood panel and acoustic board
 - Timber Structures, including glued laminated timber to be tested to and compliant with BS EN 14080:2005 for formaldehyde (emission level E1 as tested by BS EN 717-1:2004)
- Wood flooring, including parquet flooring and other solid wood floors to be tested to and compliant with BS EN 14342:2005 for formaldehyde E1(emission level E1 as tested by BS EN 717-1:2004)
- Resilient, textile and laminated floor coverings to be tested to and compliant with BS EN 14041:2004 for formaldehyde (emission level E1 as tested by BS EN 717-1:2004):
 - Vinyl/linoleum
 - Cork and rubber
 - Carpet
 - Laminated wood flooring
- Suspended ceiling tiles to be tested to and compliant with BS EN 13964:2004 for formaldehyde (emission level E1 as tested by BS EN 717-1:2004) and be free from asbestos
- Flooring adhesives to be tested to and compliant with BS EN 13999-1:2007
- Wall-coverings to be tested to and compliant with BS EN 233:1999, BS EN 234:1989, BS EN 259:2001, or BS EN 266:1992 for formaldehyde and vinyl chloride monomer (VCM) (as tested by BS EN 12149:1997), and to include:
 - Finished wallpapers
 - Wall vinyl's and plastic wallcoverings
 - Wallpapers for subsequent decoration.
 - Heavy duty wall-coverings
 - Textile wall-coverings
 - Adhesive for hanging flexible wallcoverings to be tested to and compliant with BS 3046:1981 to demonstrate no harmful substances are used and preservatives used should be of minimum toxicity.
 - Decorative paints and varnishes to be tested to and compliant with BS EN 13300:2001, with VOC content tested in compliance with BS EN ISO 11890-2:2006, and be fungal and algal resistant
- Documentation:

Documentary evidence confirming VOCs for relevant materials and finishes, from on-site test results, or manufacturers' information, as applicable.

850 RESPONSIBLE SOURCING OF TIMBER

- 100% of timber and timber products (including timber within composite materials or forming a component of a modular system such as a framed walling panels) will be procured in accordance with the UK Government's Timber Procurement Policy, and will be certified by one of the following:
 - FSC (preferred standard)
 - MTCC
 - SFI
 - PEFC
- Additionally, all timber will fully comply with the requirements of CITES.
- Documentation:
 - Documentary evidence demonstrating timber quantities, sources and CoC certification to be provided to the BREEAM Assessor.