442cm Camden Mews specification

30 November 2017

This document includes:

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C20	Demolition	170514jb	10 May 2017
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E20	Formwork for in situ concrete	170510jb	10 May 2017
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E41	Worked finishes to in situ concrete	170510jb	10 May 2017
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M10	Cement based levelling/wearing screeds	170512jb	12 May 2017
M20	Plastered/ Rendered/ Roughcast coatings	170511jb	11 May 2017
M40	Stone/ concrete/ quarry/ ceramic tiling/ mosaic	170511jb	11 May 2017
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M60	Painting/ clear finishing	170512jb	12 May 2017
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F
Masonry

F10 Brick/ block walling

To be read with Preliminaries/ General conditions.

TYPES OF WALLING

110 CLAY FACING BRICKWORK For alterations to existing, tall garden wall to Camden Mews and new, low, rear garden wall; and all new brickwork generally

- Bricks: To BS EN 771-1.
  - Manufacturer: The existing garden wall facing Camden Mews was built with lime mortar, so it is expected that any bricks that are removed will be able to be re-used for the following purposes:
- By Lambs of Faversham for creating new brick lintels for the new openings in the existing garden wall facing the road (see F30/735 A&B).
- For the new garden wall between the site and the garden of 3 Camden Square.
  Priority use is for facing of the new lintels, and forming the widened vehicular entrance. It is expected that some new bricks will be needed for the new garden wall between the site and the garden of 3 Camden Square. Assume a 215mm thick wall, with a dpm, and any new bricks to be a good quality London Stock, precise specification to be agreed. .
  - Product reference: -.
  - Recycled content: Re-use existing bricks from the garden wall to Camden Mews. The mortar should be lime mortar which should be reasonably removable. Aim for 100% re-use of good matching bricks.
  - Special shapes: Cut existing bricks to form sloped sill bricks to new window opening in garden wall to Camden Mews, and to form rounded corners of new vehicular entrance way .
- Mortar: As section Z21.
  - Standard: Visual match of existing mortar and establish mix to match, with agreement of the architect. Mortar to be supplied by: Lime Technology Limited Unit 126 Milton Park Abingdon Oxforshire OX14 4SA, unless alternative lime mortar pointing is agreed for facing brickwork of precast lintels .
  - Mix: LimeTechnology's standard lime mortar mix.
  - Additional requirements: -.
- Bond: To match existing.
- Joints: Thickness of joints to tie in with existing, joints to be finished flush with a trowel, and after several hours drying, or overnight, (normally within 8 to 15 hours depending on weather conditions) carefully wire-brush the mortar joints to expose Limetec's sharp sand aggregate. Finish to be achieved can be viewed at 63-69 Exmouth Market, Clerkenwell, London. .
- Features: None.

355A CONCRETE COMMON BLOCKWORK Infill walls in concrete frame to ground and first floor. See structural engineer's specification for higher density of structural blockwork walls to second floor

- Manufacturer: H+H
  Celcon House, Ightham, Sevenoaks, Kent, TN15 9HZ
  Sales T: 01732 886444
  Sales E: info@hhcelcon.co.uk
  Technical T: 01732 880580
  Technical E: technical.services@hhcelcon.co.uk.
  - Product: Celcon Block Solar Grade.
- Compressive strength: 2.9 N/mm^2
- Thermal Conductivity: 0.11 W/mK
- Density: 460 kg/m^3
- Standards: To BS EN 771-3.
- Other requirements: NOT TO BE USED IN A LOAD BEARING ROLE. SEE STRUCTURAL ENGINEER'S SPECIFICATION FOR LOADBEARING BLOCKWORK REQUIREMENTS.

WORKMANSHIP GENERALLY

430 CONDITIONING OF CLAY AND CALCIUM SILICATE BRICKS AND CLAY BLOCKS

- Bricks and blocks delivered warm from manufacturing process: Do not use until cold.
- Absorbent bricks in warm weather: Wet to reduce suction. Do not soak.

440 CONDITIONING OF CONCRETE BRICKS/ BLOCKS

- Autoclaved concrete bricks/ blocks delivered warm from manufacturing process: Do not use.
- Age of nonautoclaved concrete bricks/ blocks: Do not use until at least four weeks old.
- Avoidance of suction in concrete bricks/ blocks: Do not wet.
  - Use of water retaining mortar admixture: Submit details.

~~500A LAYING GENERALLY~~

(Deleted - F10 revision 171027aw - 26th Oct 2017)

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

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

545 LEVELLING OF SEPARATE LEAVES USING CEMENT GAUGED OR HYDRAULIC LIME MORTAR

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

560 COURSING BRICKWORK

- Gauge: Four brick courses including bed joints to 300 mm.

561 COURSING BRICKWORK WITH EXISTING

- Gauge: Line up with existing brick courses.

580 LAYING FROGGED BRICKS

- Single frogged bricks: Frog uppermost.
- Double frogged bricks: Larger frog uppermost.
- Frog cavity: Fill with mortar.

610 SUPPORT OF EXISTING WORK

- Joint above inserted lintel or masonry: Fully consolidated with semidry mortar to support existing structure.

635 JOINTING

- Profile: Consistent in appearance.

645 ACCESSIBLE JOINTS NOT EXPOSED TO VIEW

- Jointing: Struck flush as work proceeds.

690 ADVERSE WEATHER

- General: Do not use frozen materials or lay on frozen surfaces.
- Air temperature requirements: Do not lay bricks/ blocks:
  - In cement gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
  - In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising.
  - In thin joint mortar glue when outside the limits set by the mortar manufacturer.
- Temperature of walling during curing: Above freezing until hardened.
- Newly erected walling: Protect at all times from:
  - Rain and snow.
  - Drying out too rapidly in hot conditions and in drying winds.

ADDITIONAL REQUIREMENTS FOR FACEWORK

710 THE TERM FACEWORK

- Definition: Applicable in this specification to all brick/ block walling finished fair.
  - Painted facework: The only requirement to be waived is that relating to colour.

745 MASONRY SAMPLE PANELS

- Sampling frequency: A panel for each type and delivery of masonry unit.
- Selection of masonry units: Reasonably representative of the average quality of the whole order to be delivered .
- Panel types: As clause 740.

750 COLOUR CONSISTENCY OF MASONRY UNITS

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

760 APPEARANCE

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

780 GROUND LEVEL

- Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.

790 PUTLOG SCAFFOLDING

- Use: Not permitted in facework.

800 TOOTHED BOND

- New and existing facework in same plane: Bond together at every course to achieve continuity.

830 CLEANLINESS

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

F30
Accessories/ sundry items for brick/ block/ stone walling
Revision 171027aw

Section Revision History

No.	Purpose	
170108jb	tender	8th Jan 2017
170327aw	Stage 4, pre-tender, initial draft specification	27th Mar 2017
170510jb	tender	10th May 2017
170514jb	tender	14th May 2017
170606aw	Tender	6th Jun 2017
170606aw_b	tender	6th Jun 2017
171027aw	Construction initial issue	26th Oct 2017

Clauses amended in Revision 171027aw

No.	Clause	
720A	SILLS	Revised

F30 Accessories/ sundry items for brick/ block/ stone walling

To be read with Preliminaries/ General conditions

120 CLEANLINESS
- Cavity base and faces, ties, insulation and exposed dpcs: Free from mortar and debris.

130 PERPEND JOINT WEEP HOLES
- Form: Open perpend joint.
- Locations: Through outer leaf immediately above base of cavity, at cavity trays, stepped dpcs and external openings. 75 mm above top of cavity fill at base of cavity.
- Provision: At not greater than 1000 mm centres and not less than two over each opening.

132 PERPEND JOINT PLASTICS WEEP HOLES
- Manufacturer: Submit proposals .
  - Product reference: - .
- Locations: Through outer leaf immediately above base of cavity, at cavity trays, stepped dpcs and external openings.75 mm above top of cavity fill at base of cavity.
- Provision: At not greater than 1000 mm centres and not less than two over each opening.

REINFORCING/ FIXING ACCESSORIES

FLEXIBLE DAMP PROOF COURSES/ CAVITY TRAYS

320 DAMP PROOF COURSE - POLYETHYLENE
- Standard: To BS 6515.
- Manufacturer: Contractor's choice .
  - Product reference: Contractor's choice .

INSTALLATION OF DPCS/ CAVITY TRAYS

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

425 GROUND LEVEL DPCS
- Joint with damp proof membrane: Continuous and effectively sealed.

465 SEALING DPCS garden wall
- Overlaps and junctions: Seal with Adhesive recommended by dpc manufacturer .

JOINTS

610A MOVEMENT JOINTS WITH SEALANT TO EXTERNAL FACING BRICKWORK

- Joint preparation and sealant application: As section Z22.
- Filler: Polyurethane foam .
  - Thickness: To match design width of joint.
  - Manufacturer: Submit proposals .
    Product reference: Submit proposals for foam and volume-control applicator .
  - Placement: Build in as work proceeds with no projections into cavities and to correct depth to receive sealant system.
- Sealant:
  - Manufacturer: Adshead Ratcliffe .
  - Product reference: manufacturer's recommendation .
  - Colour: To match adjoining brickwork .

650 POINTING IN FLASHINGS

- Joint preparation: Free of debris and lightly wetted.
- Pointing mortar: As for adjacent walling.
- Placement: Fill joint and finish flush.

660 PINNING UP TO SOFFITS

- Top joint of loadbearing walls: Fill and consolidate with mortar.

PROPRIETARY SILLS/ LINTELS/ COPINGS/ DRESSINGS

720A SILLS ALL WINDOW SILLS, EXCEPT NEW BRICK SILLS IN GARDEN WALL ON FRONT ELEVATION; TO BE MANUFACTURED BY GUTMANN, AND TO BE ORDERED AND SUPPLIED BY WINDOW MANUFACTURER

- Standard: To BS 5642-1.
- Material: Aluminium .
- Manufacturer: Gutmann .
  - Product reference: GS40 sills. sized to suit each window .
- Dimensions: As shown on drawings.
- Finish: RAL 8019 .
  Additional requirements:
  - To be fitted with Guttman endcaps.
  - To be fixed on either Guttman standard of 'brickwork' brackets (refered to as 'holders' by Guttman), depending on installation. See detail A.G25.D36. Sills in timber framing, where space under sills is limited, are to use 'brickwork holders' fixed down into the web of the I-joist below (as shown on this detail). Install to manufacturer's recommendations.
  - To be tucked into weathering slot in base of window section, with compressible foam sealant strip, and screwed to window frame with stainless steel screws .
- Joints: Flush.

(Revised - F30 revision 171027aw - 26th Oct 2017)

735A SPECIAL PRECAST CONCRETE LINTEL - BRICK FACED - OVER GATED ENTRANCE

- Standard: To BS EN 845-2.
- Manufacturer: Lambs of Faversham, or alternative supplier only if approved by architect .
  - Product reference: Pre-cast concrete beam faced one side with 4-course flat guaged arch, and faced underside, using reclaimed bricks from existing garden wall. Overall size of lintel approx 450mm deep x approx 3600mm long (precise dimensions tba with architect on site) .
- Types: Single .
- Sizes: as above .
- Additional requirements: see structural engineer's specification .
- Placement: Bed on mortar used for adjacent work.
  - Bearing length (minimum): 150 mm .

735B SPECIAL PRECAST CONCRETE LINTEL - BRICK FACED - OVER GROUND FLOOR BATHROOM WINDOW FACING ROAD

- Standard: To BS EN 845-2.
- Manufacturer: Lambs of Faversham or alternative supplier only if approved by architect .
  - Product reference: Pre-cast concrete beam faced one side with 4-course flat guaged arch, and faced underside, using reclaimed bricks from existing garden wall. Overall size of lintel approx 450mm deep x approx 800mm long (precise dimensions tba with architect on site) .
- Types: Single .
- Sizes: as above .
- Additional requirements: see structural engineer's specification .
- Placement: Bed on mortar used for adjacent work.
  - Bearing length (minimum): 150 mm .

MISCELLANEOUS ITEMS

840A OPENINGS FOR FRAMES

- Formation: Rigid hardboard or MDF template to be produced prior to fabrication to ensure accurate fitting.
  Opening dimensions: 10mm space/tolerance required on all sides of windows - check opening sizes against window openings for each window - do not rely on any structural opening dimensions that may be provided on drawings.
  Tolerances: Ensure openings are perfectly, sized, square and level. Windows must be fitted perfectly. There is no tolerance for out of square openings.

850 WALL PLATES

- Placement: On full bed of mortar to correct horizontal level.

H
Cladding/Covering

H21 Timber weatherboarding

To be read with Preliminaries/ General conditions.

111 HORIZONTAL TIMBER WEATHERBOARDING PROFILED LARCH CLADDING TO EXTERIOR FACADES - ALSO SEE G20/331A, STEICO *wall* I-joist and STEICO *universal black* sheathing panel to form supporting structure for cladding

- Substrate: On vertical timber battens, over (black-finished) Steico Universal Black, vapour-open, tounged and grooved wood sheathing board, over timber I-joists.
- Breather membrane: Not required.
- Battens:
  - Size: 25 mm thick x 68 mm wide, vertical, slow-grown Austrian mountain larch.
  - Centres: 450 mm.
  - Fixing: 50 mm x 10 gauge stainless-steel c/s screws at max 450 mm centres.
- Boarding:
  - Standard: To BS EN 14915.
  - Quality of timber (exposed surfaces): To BS 1186-3, Class 1.
  - Species: Austrian slow-grown, fine grain mountain, knot-free larch. Supplier Profi Holz or alternative, subject to architect's written approval.
  - Profile: Quadrilateral, parallelogram, rainscreen solid profiled boards, with top and bottom edges sloping downwards to the exterior to act as a rainscreen. 10mm gaps, set perfectly horizontal, between cladding, with deviation of +/- 0mm. (Position weatherboarding with wood spacers and initially pin with nail gun. Fix with star-headed countersunk stainless steel screws only once checked for correct setting out, without cutting profiles, around window and door penetrations. See G25 series detail drawings.
  - Finished face dimension (overall width): 55 mm VISIBLE FINISHED FACE. See detail drawings.
  - Finished thickness : 20 mm.
  - Moisture content at time of fixing: 13-19 %.
  - Treatment: None.
    Standard: To NBS section Z12 and Wood Protection Association Commodity Specification -.

    Type: -.
  - Method of fixing to each support: use one stainless steel star-headed countersunk screw to each batten, finished precisely flush with surface of cladding, without splitting the surface of the wood.
- Other requirements:
  - Do not cut boards or joints directly above or below windows or other openings
  - Tops and bottoms of any cut boards (eg: up behind metal cappings) to be cut to slope to match uncut boards
  - Top and bottom of ventilated cavity to be closed with appropriately sized WEMICO perforated metal ventilation profiles
    - Material: Silver anodised aluminium.
    - Manufacturer: Wemico.
    - Product options: 'Ventilation Profile' 9300, 9043, 9046, or 9303. Choose appropriate size to completely close off the cavity.
    - Suggested supplier: Natural Building Technologies.
  - Timber cladding to stop 50mm above grade and horizontal or slopes surfaces below. Wall below timber cladding to be clad in:
    - Above grade: grey, reinforced, exterior cladding grade, cement board. Suggested manufacturer: Marley Eternit. Contractor to submit proposals.
    - Above waterproof membrane: membrane to continue up behind cladding.
    - Metal clad roof/sill: roofing metal and/or matching metal flashing to lap up behing cladding.
- Supplier: Recommended supplier (alternative supplier only by written approval) : Profi Holz
  - Lustenauer Str. 5, 6971 Hard, Austria
  - T +43 5574 65164
  - E: office(at)profiholz.com

- W: www.profiholz.com.

(Revised - H21 revision 171130aw - 30th Nov 2017)

115 VERTICAL TIMBER WEATHERBOARDING LARCH RAINSCREEN CLADDING FORMING EXTERNAL DADO (1) AT BASE OF GROUND FLOOR WALLS AND (2) FORMING ROUNDED WINDOW AND DOOR REVEALS ON GROUND FLOOR AND REAR CORNER ON GROUND FLOOR

- Substrate:
  - (1) On walls as dado: Rectangular, rainscreen solid profiled boards, with 90 degree square edges. 10mm gaps, set perfectly vertical, between cladding, with deviation of +/- 0mm. (Position weatherboarding with wood spacers and initially pin with nail gun. Fix with star-headed countersunk stainless steel screws only once checked for correct setting out, without cutting profiles, either side of door penetrations. See G25 series detail drawings. Fixed to straight horizontal timber battens with sloped top edge for drainage, over STEICO *universal black* breathable timber sheathing board, over timber I-joists
  - (2) At window and door reveals: As above, but slot the back of the STEICO *universal black* breathable timber sheathing board, in order to bend it to fix around min. 25mm thick horizontal plywood fins. Shape of plywood fins will form shape of window reveals. Form horizontal timber battens by slotting the back of a straight batten, and fix to curved STEICOuniversal black breathable timber sheathing board .
- Breather membrane: Not required.
- Counterbattens: Instead use 5mm packers.
  - Size: 5mm thick packers.
  - Centres: 300 mm.
  - Fixing: use screws from main battens.
- Battens:
  - Size: For horizontal battens use 20mm thick x 50mm wide parallelogram cladding profile as 111 above, which will provide a sloped top edge, to run water away from facade .
  - Centres: 450 mm.
  - Fixing to each counterbatten: 50mm x 10 gauge stainless steel c/s screws.
- Boarding:
  - Standard: To BS EN 14915.
  - Quality of timber (exposed surfaces): To BS 1186-3, Class 1.
  - Species: as clause 111.
  - Profile: Square edged boards. See detail drawings.
  - Finished face dimension (overall width): 55 mm FINISHED FACE. See G25 series detail drawings.
  - Finished thickness: 20 mm.
  - Moisture content at time of fixing: 13-19 %.
  - Method of fixing to each support: 50mm stainless steel starhead screws, flush fitted, without splitting the surface of the wood.
- Other requirements:
  - Top and bottom of ventilated cavity to be closed with appropriately sized Wemico ventilation profiles
    - Material: Silver anodised aluminium.
    - Manufacturer: Wemico.
    - Product options: 'Ventilation Profile' 9300, 9043, 9046, or 9303. Choose appropriate size to completely close off the cavity.
    - Suggested supplier: Natural Building Technologies.
  - Straight and corner timber cladding to stop 150mm above grade. Wall below timber cladding to be clad in dark grey cement board, reinforced, exterior grade. Contractor to submit proposals

  Supplier: Suggested supplier (alternative supplier only by written approval): Profi Holz
    - Lustenauer Str. 5, 6971 Hard, Austria
    - T +43 5574 65164
    - E: office(at)profiholz.com
    - W: www.profiholz.comt.

(Revised - H21 revision 171130aw - 30th Nov 2017)

115A VERTICAL TIMBER WEATHERBOARDING, FRONT ELEVATION VERTICAL LARCH CLADDING FINS AND BACKING PANELS, VARIOUS DIMENSIONS (SEE ARCHITECT'S DETAILED DRAWINGS G25.D27 & D28) 100x25, 50x25, 104x20 AT FIRST FLOOR LEVEL, FACING ROAD, AND IN FRONT OF GROUND FLOOR BATHROOM WINDOW

- Substrate: See architect's details .
- Breather membrane: See architect's details.
- Counterbattens: See architect's details.
  - Size: See architect's details.
  - Centres: See architect's details.
  - Fixing: See architect's details.
- Battens:
  - Size: See architect's details .
  - Centres: See architect's details.
  - Fixing to each counterbatten: See architect's details.
- Boarding:
  - Standard: To BS EN 14915.
  - Quality of timber (exposed surfaces): To BS 1186-3, Class 1.
  - Species: as clause 111.
  - Profile: Square edged boards. See detail drawings.
  - Finished face dimension (overall width): See architect's details.
  - Finished thickness: See architect's details.
  - Moisture content at time of fixing: 13-19 %.
  - Method of fixing to each support: stainless steel starhead screws, flush fitted, without splitting the surface of the wood, See architect's details.
- Other requirements:
  - The wood needs to be slow-grown, fine grained, mountain larch for durability and stability. Unfortunately this precludes the use of UK larch which is not dense enough.
  - See architect's details

  Supplier: Suggested supplier (alternative supplier only by written approval): Profi Holz
  - Lustenauer Str. 5, 6971 Hard, Austria
  - T +43 5574 65164
  - E: office(at)profiholz.com
  - W: www.profiholz.com.

(Revised - H21 revision 171130aw - 30th Nov 2017)

125 TIMBER 3-PLY LARCH STRUCTURAL PANELS TO SOFFIT OF PASSAGEWAY

Substrate: WP plywood and breather membrane over XPS and vacuum insluation. Fix to concrete soffit through XPS battens. DO NOT PUNCTURE VACUUM INSULATION AS THIS WILL RENDER IT USELESS. See drawing G25.D16.
Breather membrane: As clause 130.
Counterbattens: No.
- Size: -.
- Centres: -.
- Fixing: -.

Battens:
- Size: 25 mm thick x 50 mm wide.
- Centres: 450 mm.
- Fixing to each counterbatten: 50 mm x 10 gauge stainless steel c/s screws.

Boarding:
- Standard:
- Quality of timber (exposed surfaces): n/a.
- Species: European Larch.
- Manufacturer:

OPTION (1) TILLY Holzindustrie Gesellschaft
Krappfelder Straße 27, 9330 Althofen/Austria
T: +43 4262 2143
E (HQ): office.platten@tilly.at
W: www.tilly.at/en.

OPTION (2) Mayr Melnhof Holz
Turmgasse 67 - 8700 Leoben - Austria
T +43 3842 300 0
F +43 3842 300 1210
holding@mm-holz.com

- Product: 3-layer soft wood panel or K1 Multiplan from Mayr Melnhof.
- Profile: Supplied as 5000 x 1250mm panels or 5000 x 2000mm panels. Square edged.
- Finished face dimension (overall width): n/a See G25 series detail drawings.
- Finished thickness: 20 mm.
- Moisture content at time of fixing: 13 - 19 %.
- Method of fixing to each support: Single screwed with 50 mm stainless steel countersunk starhead screws, flush fitted.

Other requirements:
- Exterior soffits installations: Edge of clad area open to ventilated cavity behind to be closed with appropriately sized Wemico ventilation profiles. Wemico profile also sized to match nearby/adjacent vertical cladding installation ventilated cavities wherever possible.
- Exterior vertical installations: Top and bottom of ventilated cavity to be ventilated behind to be closed with appropriately sized Wemico ventilation profiles
  - Material: Silver anodised aluminium.
  - Manufacturer: Wemico.
  - Product options: 'Ventilation Profile' 9300, 9043, 9046, or 9303. Choose appropriate size to completely close off the cavity.
  - Suggested supplier: Natural Building Technologies
  - Timber panels to stop nominally 10mm above any horizontal surfaces below (eg: windows sills). Wall below timber cladding to clad/flashes appropriately. See drawings or ask architect if in doubt.
- In order to optimally withstand the climate conditions in outdoor areas (e.g. facades).
- Use only in protected outdoor areas.

- Climatise the panels to the ambient climate in a protected outdoor area.
- In general only vertical mounting of the panels with vertical grain direction for optimal water runoff.
- Continuous rear ventilation level as moisture equalisation layer.
- Use stainless-steel fasteners.
- Maintain joint distances of at least 10 mm (on horizontal, vertical joints, corner and component.
- connections), do not create any capillary joints.
- Strict avoidance of unprotected end-grain wood, all panel edges must be protected.
- Creation of drip edges: on the horizontal edges cut back at least 15 deg and round off the edge; attach stainless drip plates or cover profiles to take the water away.
- Round off all edges to ensure proper paint coating, radius at least 2.5 mm.
- The application of a suitable surface coating on all sides is strongly recommended. .

140 FIXING BATTENS/ COUNTERBATTENS TO MASONRY

- Setting out: In straight, vertical lines.
- Batten/ Counterbatten length (minimum): 1200 mm.
- Installation: Fastener heads to finish flush with or slightly below batten face.

141 FIXING BATTENS/ COUNTERBATTENS TO FRAMING/ SHEATHING

- Setting out: In straight, vertical lines at centres coincident with vertical framing members.
- Batten/ Counterbatten length (minimum): 1200 mm.
- Installation: Where sheathing is provided, fix through sheathing into framing. Fastener heads to finish flush with or slightly below batten face.

142 FIXING BATTENS TO COUNTERBATTENS

- Setting out: In straight, horizontal lines. Align on adjacent areas.
- Batten/ Counterbatten length (minimum): 1200 mm.
- Joints: Square cut, butted centrally on counterbattens and not occurring more than once in any group of four battens on any one counterbatten.
- Installation: Fix each batten to each counterbatten. Use splay fixings at joints. Fastener heads to finish flush with or slightly below batten face.

160 FIXING BOARDING

- General: Fix boards securely to give flat, true surfaces free from undulations, lipping, splits, hammer marks and protruding fasteners.
- Movement: Allow for movement of boards and fixings to prevent cupping, springing, excessive opening of joints or other defects.
- Heading joints: Position centrally over supports and at least two board widths apart on any one support.
- Nail heads: Punch below surfaces that will be seen in the completed work.

L
Windows/Doors/Stairs

L10 Windows/ rooflights/ screens/ louvres

To be read with Preliminaries/ General conditions.

PRELIMINARY INFORMATION/ REQUIREMENTS

120A SITE DIMENSIONS

- Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication with 10mm structural tolerance fit around all edges of windows and doors.
- Designated items: All windows, doors and rooflights .

COMPONENTS

210C EXTERIOR WOOD WINDOWS & DOORS THROUGHOUT

- Manufacturer: Bayer
  Address: Friedhofstrasse 5, 79215 Elzach, Germany
  T: +49 7682 8087-0
  E: info@bayer-schreinerei.de
  W: www.bayer-schreinerei.de.
  - Product reference: Passive House tilt-and-turn windows, triple glazed, insulated frames.
- Material / species: Oak.
- Finish as delivered:
  - Exterior: 3 coat RAL 8019 micro-porous paint
  - Interior: Clear laquer.
- Size: Varies. See window schedule and ensure that structural openings provide 10mm fitting tolerance on all edges of window.
- Operation: Varies. Some fixed, some manually operable, some electrically operable. See window schedule.
- U-value:
  - Frame (Uf): 0.71
  - Spacer (Psi-spacer): 0.039
  - Overall (Uw): 0.8
- Glazing:
  - Triple glazed, with low-e coatings
  - Glass U-value (Ug): 0.6
  - g-value (g) at least: 62% transmission
  - Clear
  - Toughened outer and inner panes. Heat soaked in accordance with clause L40 165.
- Accessories:
  - Irongmongery:
  - Exterior, to operable windows and doors: Lockable stainless-steel bar handles supplied and fitted by manufacturer.
  - Interior, to operable windows and doors: Stainless-steel pull handles supplied and fitted by manufacturer.
  - Blinds: None.
  - Fixing: all joints to be taped to maintain air-tightness
  - 1no. Power supply for electrial operation, ON OPERABLE FIRST FLOOR WINDOWS ON STAIRCASE ONLY
  - 1no. Remote control for electrial operation, FOR OPERABLE FIRST FLOOR WINDOWS ON STAIRCASE ONLY
- Fixing: [
  - Windows and doors to be mounted onto timber I-joists.
  - Door thresholds to be constructed of Compac Foam battens (see P10/120H & G).
  - Use fixings and fixing method as described below (clause 770). All joints to be taped. refer to clause 815 and P10 330].
- General note: Do not assume that the quotation or supplier's drawings that have been provided are correct. Carefully check that the drawings accompanying the quotation are correct, particularly with respect to the viewing side (internal or external) noted on the supplier's drawings. All windows will be supplied inward opening, with oak finish inside, and painted outside. European window schedule drawing convention may be viewed differently to UK window scheduling convention, so ensure that you know which side you are viewing the manufacturer's schedule from. Also check the ug-values, g-values, finishes etc comply with the other tender documents, and that the dimensions fit the structural and other site dimensions.

(Revised - L10 revision 171027aw - 26th Oct 2017)

460D ROOFLIGHTS OVER KITCHEN

- Manufacturer: Fakro.
  - Product reference: FTT/U U8
- Size: 550 mm wide x 980 mm tall
- Operation: Electrical operation. Movement limited to max 100 mm clear opening by manufacturer adjustment of electrical operator device
- Overall U-value (Uw) 0.58
- Finish:
  - Exterior: RAL 8019
  - Internal: Wood / spruce
- Glazing:
  - Quadruple glazed, with low-e coatings
  - Glass U-value (Ug): 0.3
  - g-value (g) at least 50% transmission
  - Clear
  - Toughened outer and inner panes. Heat soaked in accordance with clause L40 165.
- Accessories:
  - Blinds: No blinds to be installed. Separate electrical supply to be run to inside and outside of each skylight to allow for future electrically operated exterior shutters or interior blinds
  - 1no. Rain sensor ZRD
  - 1no. Weather module
  - 2no. B5/1 ESV-AT 08 flashings
  - includes frame extensions and controls for electrical operation
  - Fixing: all joints to be taped to maintain air-tightness
  - 1no. Power supply for electrial operation
  - 1no. Remote control for electrial operation
- Fixing: [All joints to be taped. refer to clause 815 and P10 330].
- **General note:** Do not assume that the quotation or supplier's drawings that have been provided are correct. Carefully check that the drawings accompanying the quotation are correct, particularly with respect to the viewing side (internal or external) noted on the supplier's drawings. Also check the ug-values, g-values, finishes etc comply with the other tender documents, and that the dimensions fit the structural and other site dimensions.

INSTALLATION

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.

770 WINDOW INSTALLATION GENERALLY

- Installation: Into prepared openings.
- Gap between frame edge and surrounding construction:
  - Minimum: 10mm.
- Preparation:
  - Equipment support: All necessary hard-standings for delivery, cranage, and site transport equipment are to be ready before windows arive on site. The contractor is responsible for the design and provision of hard-standings sifficient to support all necessary equipment.
  - Equipment: All equipment necessary, including lifting equipment, is to be ready before windows arrive on site.
  - Working space: Clear path from delivery point to stageing area and installation to be clear, ready, and safe before windows arrive on site.
  - Openings: Areas / openings to receive windows to be correctly sized and level, structurally sound, appropriately lined and membraned, dry, and otherwise fully ready before windows arrive on site.
  - Setting down space: Any necessary setting down space / stage areas are to be ready before windows arrive one site.
- Installation sequence:
  - Pre-fitting: Pre-fit airtightness tapes and expanding foam tapes as required to outer dges of frames, where not accesisble once set within rough openings.
  - Set and support windows: Set window in place with 'Winbags' (pump-up air tool) to maintain 10mm gap all round, and adjust Winbags to position window frame precisely level WITHOUT DISTORTING FRAME. To avoid distorting window and door frames, Winbags should be positioned close to the corner of frames, and should not be over-inflated. Never position Winbags mid-frame and particularly never under the middle-bottom rail of door or window frames as this is likely to bend the frame, which will compromise the operation of finely toleranced high-performance windows and this may be costly for the contractor to correct later.
  - Frame levels: Frames must be completely level. No misalignment is permitted.
  - Window to be fixed with screws through inner timber layer of frame (not through intermediate insulation layers), through ply if present, and min. 20mm into structural timber blocking or timber I-joist web (depending on instillation condition) . Screws may be parallel to the frame or angled, but much achieve 20mm good embedment in structure.
  - Pre-drill: Pre-drill window frame only (not rough opening) with 6mm drill.
  - Fix: Screw through frame into structural stud with Fischer stainless-steel, headless screws, sometimes supplied by window manufacturer. Seek advice from architect, on correct specification of screw, if not supplied by window manufacturer. NOTE: Specialist German headless window-fitting screws will not exert pull on frame if they are fitted as specified. **No alternative screw fixings are permitted.**
  - Frame distortion: Check frame is free of any distortion, twisting, or diagonal racking following installation. No distortion permitted.
  - Adjustment: While window manufacturer / supplier is still on site, check operation and adjustment of all operable windows, as per Clause 775.
  - Air tightness: Install airtightness membranes and tapes in the correct procedure that will have been learnt by contractor's mandatory attendance on an approved Passivhaus Contractor's training course.
  - Sealant: Apply joint insulation and sealant.
- Notice to architect prior to window deliveries and installations: 5 working days.

(Revised - L10 revision 171027aw - 26th Oct 2017)

775 COMMISSIONING AND ADJUSTMENT

- Initial adjustment:
  - Exterior doors and windows must be commissioned / adjusted to operate smoothly and to be airtight.
  - The doors and windows are adjusted in the factory, and if carefully fitted, true and square, without distortion of the frames, they should not need further adjustment. In the event that adjustment is required, please consult manufacturer beforehand. Hinges can only be adjusted with extreme care, to avoid damage, by a person trained to understand the methods correctly. Otherwise damage can be caused.
  - Do not assume that quotation includes for a site visit by window manufacturer.
  - Adjust operable window ironmongery as required.
  - Ensure bottom seals of doors seal correctly and do not scrape the floor. Bottom seals are to be removed until the end of dirty works, to protect them. They should be put in a safe place as they must be re-installed for airtests.
- Further adjustment:
  - Fitting of doors and windows should be checked, and seals wiped clean with a damp cloth prior to air tests and prior to handover.
  - Once re-installed prior to handover bottom seal adjustment should be checked.
- Requirements:
  - Adjustments to be made by window manufacturer and/or approved specialist installer.
  - All windows are to operate smoothly and correctly and form airtight seals when closed.
  - Boards, cables, or other objects or obstructions must not be run through or under the doors or windows when closed, as the doors have a fine tolerance and this can damage the thresholds and permanently warp the doors and windows so that they no longer perform correctly.
  - Misalignment and/or imperfect operation will be considered a defect and require rectification at the expense of the contractor.

780 FIXING OF WOOD FRAMES

- Standard: As section Z20.
- Fasteners: Stainless steel headless wood screws, specialist design, designed to avoid distortion of window frames if fixed correctly with Winbags, as specified above, clause 770 .
  - 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.

810B SEALANT JOINTS EXPANDING FOAM TAPE TO FITTING GAP AROUND WINDOWS

- Sealant Tapes:
  - Manufacturer: Ilbruck,
    Address: Tremco illbruck Limited, Coupland Road, Hindley Green, Wigan, WN2 4HT, UK
    T: +44 (0) 1942 251400
    F: +44 (0) 1942 251410
    E: uk.info@tremco-illbruck.com.
  - Product reference: Compriband 600 Impregnated foam tape.
  - Application:
    - As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.
    - Seal tape to rough opening maintain a continuous seal around corners and tightly butting joints.
    - Fit windows and allow foam tape to expand.
    - On exterior, seal face of tape with Illbruck silicone sealant, backed by Illbruck expanding foam tape or foam backing rod.
    - On interior, seal between frame and surrounding airtightness barrier using airtightness tape as per section P10.
    - Tape around windows should not be visible once the airbarrier and surrounding finishes are complete.

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.

L20 Doors/ shutters/ hatches

To be read with Preliminaries/ General conditions.

PRELIMINARY INFORMATION/ REQUIREMENTS

110 EVIDENCE OF PERFORMANCE

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

110A EXTERNAL DOORS INCLUDED IN WINDOWS PACKAGE SEE L10/215

115 FIRE RESISTING DOORS/ DOORSETS/ ASSEMBLIES

- 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 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.

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 interior doors .

COMPONENTS

280A INTERIOR DOOR THROUGHOUT

- Door leaf:
  - Manufacturer: Moralt.
  - Product reference: Moralt LAMINESSE FireSmoke FD30 44mm MDF door blank, to be faced by joinery workshop.
  - Suggested supplier: Lathams.
  - Finish: Oak veneer over concealed solid oak lippings, sealed with clear matt laquer .
    Glazing details: -.
- Ironmongery: See internal door schedule and ironmongery schedule.
- Other requirements: All doors opening on the staircase are to be FD30 fire doors. See plans and interior door schedule.

330A WOOD DOOR FRAMES THROUGHOUT, SEE G27.D02

- Suggested supplier / fabricator: JP Stone
  Milstead Manor Farm, Manor Road, Milstead, Sittingbourne, Kent, ME9 0SE
  T: 01795 830400
  E: sales@jpstoneuk.com
  W: www.jpstoneuk.com
- Materials: Generally to BS EN 942.
  - Species: European oak.
  - Appearance class: J10.
- Assembly:
  - Adhesive: WBP. Contractor's choice.
  - Joinery workmanship: As section Z12.
- Preservative treatment: None.
- Moisture content on delivery: 9-13%.
- Finish as delivered: Clear lacquer.
- Perimeter seals: See door schedules. All interior doors opening onto the stairs are to be fitted with fire and smoke seals.
  - Smoke and fire seals:
    - Manufacturer: Sealmaster
      - Product: N30

    Pampisford, Cambridge, CB22 3HG
    T: 01223 832851
    W: www.sealmaster.co.uk.
- Fixing: Plugged and screwed as section Z20.

(Revised - L20 revision 170523aw - 23rd May 2017)

INSTALLATION

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.

760 BUILDING IN

- General: Not permitted unless indicated on drawings.

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.

809 FIRE RESISTING AND/ OR SMOKE CONTROL DOORS/ DOORSETS

- 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.

810 FIRE RESISTING AND/ OR SMOKE CONTROL DOORS/ DOORSETS

- Gaps between frames and supporting construction: Filled as necessary in accordance with requirements for certification and/ or door/ doorset manufacturer's instructions.

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 FD 60 doors: 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 on centre line of door leaf .
- Hinges for fire resisting doors: Positioned in accordance with door leaf manufacturer's recommendations.

P
Building fabric sundries

P21 Door/ window ironmongery

To be read with Preliminaries/ General conditions.

GENERALLY

180 CATEGORY OF DUTY FOR DOOR IRONMONGERY
Standard: To DD 171.
- Category of duty of doors: Medium duty .

- General: Durability of ironmongery components to be compatible with stated category of duty of each door leaf.
  - Exclusions: Ironmongery with specific duty or 'category of use' defined elsewhere.
- Documentation: Before placing orders with suppliers submit documentation showing product compliance with stated category of duty.

DOOR HANGING DEVICES

300 ALL WINDOW AND DOOR HANGING DEVICES
Standard: To BS EN 1935/ BS EN 1527 as relevant
Manufacturer:
Exterior: SUPPLIED BY EXTERIOR WINDOW AND DOOR SUPPLIER
Interior: Allgood, 297 Euston Road, London, NW1 3AQ. SEE DOOR SCHEDULE

- Product reference: [REFER TO DOOR SCHEDULE] .
- Type: [REFER TO DOOR SCHEDULE] .
- Size: [REFER TO DOOR SCHEDULE] .
- Material/ finish: [REFER TO DOOR SCHEDULE] .
- Other requirements: [REFER TO DOOR SCHEDULE] .

(Revised - P21 revision 170514jb - 14th May 2017)

DOOR SECURING DEVICES

500 ALL WINDOW & DOOR SECURING DEVICES
Standard: To BS 3621 and Kitemarked or BS EN 12209/ BS EN 12320/ BS EN 12051 as relevant
Manufacturer:
Exterior: SUPPLIED BY EXTERIOR WINDOW AND DOOR SUPPLIER
Interior: Allgood, 297 Euston Road, London, NW1 3AQ. SEE DOOR SCHEDULE .
- Product reference: [REFER TO DOOR SCHEDULE] .
  Type: [REFER TO DOOR SCHEDULE] .
  Backset: [REFER TO DOOR SCHEDULE] .
  Material/ finish: [REFER TO DOOR SCHEDULE] .
  Keying: [REFER TO DOOR SCHEDULE] .

(Revised - P21 revision 170514jb - 14th May 2017)

DOOR FURNITURE

600 ALL DOOR FURNITURE REFER TO DOOR SCHEDULE

- Standard: To BS EN 1906.
- Manufacturer:
  Exterior: SUPPLIED BY EXTERIOR WINDOW AND DOOR SUPPLIER
  Interior: Allgood, 297 Euston Road, London, NW1 3AQ AND .
  - Product reference: REFER TO DOOR SCHEDULE .
- Style: REFER TO DOOR SCHEDULE .
- Size: REFER TO DOOR SCHEDULE .
- Material/ finish: REFER TO DOOR SCHEDULE .
- Mounting: REFER TO DOOR SCHEDULE .
- Additional requirements: REFER TO DOOR SCHEDULE .

(Revised - P21 revision 170514jb - 14th May 2017)

610 LEVER HANDLES REFER TO DOOR SCHEDULE

- Standard: To BS EN 1906.
- Manufacturer:
  Allgood, 297 Euston Road, London, NW1 3AQ AND
  Bayer Windows, import agent Doublegood windows, tel. 0844 800 3016 .
  - Product reference: REFER TO DOOR SCHEDULE .
- Style: REFER TO DOOR SCHEDULE .
- Size: REFER TO DOOR SCHEDULE .
- Material/ finish: REFER TO DOOR SCHEDULE .
- Mounting: REFER TO DOOR SCHEDULE .
- Additional requirements: REFER TO DOOR SCHEDULE .

620 DOOR KNOBS REFER TO DOOR SCHEDULE

- Standard: To BS EN 1906.
- Manufacturer: A&H Brass, 201-203 Edgware Road, London UK, W2 1ES, Tel: +44 (0)20 7402 1854, FAX: +44 (0)20 7402 0110 .
  - Product reference: REFER TO DOOR SCHEDULE .
- Style: REFER TO DOOR SCHEDULE .
- Size: REFER TO DOOR SCHEDULE .
- Material/ finish: REFER TO DOOR SCHEDULE .
- Mounting: REFER TO DOOR SCHEDULE .
- Additional requirements: REFER TO DOOR SCHEDULE .

720A DOOR STOPS & DOOR MOUNTED COAT HOOKS

- Manufacturer: REFER TO DOOR SCHEDULE .
  - Product reference: REFER TO DOOR SCHEDULE .
- Type: REFER TO DOOR SCHEDULE .
- Usage: REFER TO DOOR SCHEDULE .

(Revised - P21 revision 170514jb - 14th May 2017)

731 LETTER BOX GATE-MOUNTED TO TO FRONT GATE

- Standard: To BS EN 13724.
- Manufacturer: By gate manufacturer, Littlehampton Welding .
  - Product reference: Custom: Gate mounted, combined front-in-rear-out letterbox and lockable parcel box .
- Operation: key openable .
- Size: Custom size. Size TBC .
- Material/ finish: Painted. Colour to match gate .
- Features: tbc .

(Revised - P21 revision 170514jb - 14th May 2017)

Z
Building fabric reference specification

Z11 Purpose made metalwork

To be read with Preliminaries/ General conditions.

110 MATERIALS GENERALLY

- Grades of metals, section dimensions and properties: To the appropriate British Standard and suitable 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 Standard and, unless specified otherwise, of same metal as component, with matching coating or finish.

120 FABRICATION GENERALLY

- Contact between dissimilar metals in components that are to be fixed where moisture may be present or occur: Avoid.
- Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.
  - Moving parts: Free moving without binding.
- Corner junctions of identical sections: Mitred unless specified otherwise.

130 COLD FORMED WORK

- Profiles: Accurate, with straight arrises.

170 WELDING/BRAZING GENERALLY

- Surfaces to be joined: Thoroughly cleaned.
- Tack welds: Use only for temporary attachment.
- Joints: Made with parent and filler metal fully bonded throughout with no inclusions, holes, porosity or cracks.
- Surfaces of materials that will be self-finished and visible in completed work: Protect from weld spatter.
- Traces of flux residue, slag and weld spatter: Removed.

180 WELDING OF STEEL

- Preferred method: Metal arc welding to BS EN 1011-1 and -2.
  - Alternative methods: Submit proposals.

250 FINISHING WELDED/BRAZED JOINTS

- Butt joints: Smooth, and flush with adjacent surfaces.
- Fillet joints: Neatly executed and ground smooth where specified.

310 PREPARATION FOR APPLICATION OF COATINGS

- General: Fabrication complete, and fixing holes drilled before applying coatings.
- Paint, grease, flux, rust, burrs and sharp arrises: Removed.

360 GALVANIZING

- Standard: To BS EN ISO 1461.
- Vent and drain holes: Provide in approved locations and seal to approval after galvanizing.

380 ANODIZING

- Standards:
  - Internal applications: To BS EN 12373-1.
  - External applications: To BS 3987 or BS EN 12373-1.
- Certificate of compliance: Submit.

Z15 Sustainable timber

10 Timber and products containing wood supplied under the Contract

- The Contractor shall ensure that no timber or wood contained in any product it procures shall have derived from any species of tree that is protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) unless the supplier can prove, by producing official documentation, that he has complied with the CITES requirements that permit trading in the particular species of tree so listed under that Convention.

- All timber and wood, other than recycled timber and wood, supplied to the Contractor shall derive from trees or other plants that have been harvested and exported in strict accordance with the applicable law or laws of the country in which the trees or other plants grew. The Contractor shall require the supplier to obtain documentary evidence to prove such legality and to prove that the evidence does in fact match the products supplied by establishing a chain of custody from the source of the timber and wood through to delivery of the final product.

- The Contractor shall ensure that only timber and wood that derive from trees or plants that were grown in forests or plantations that were managed to (a) sustain their biodiversity, productivity and vitality and (b) to prevent harm to other ecosystems and any indigenous forest-dependent people is used. The Contractor shall obtain documentary evidence to demonstrate that this requirement has been met.

- It is the Contractor's responsibility to produce documentary evidence, in respect of these requirements, that will enable the Authority to verify the authenticity and credibility of the claims being made. The Contractor shall, if requested by the Authority, obtain independent verification of the claims being made and shall meet the full costs involved in so doing. In this context independent means a body or organisation that is accepted by the Authority as having the competence and capacity to provide an objective assessment of the evidence presented and as having no interests that would conflict with their duty to provide impartial advice. One way in which the Authority will accept that the Contractor has met his obligations in proving the source of his timber and wood products is if those products are certified, by properly accredited organisations, as meeting the standards set by the Forest Stewardship Council or such other standards set by such other bodies as are listed in the Contract Specification.

- In addition to the above the contractor shall supply the Forests Stewardship Council's joint Forest Management (FM) Certificates and Chain-of-Custody (COC) Certificates for all timber and wood products for approval by the Architect/Contract Administrator.

11 TIMBER AND PRODUCTS CONTAINING WOOD SUPPLIED UNDER THE CONTRACT

As explained above, one way in which the Architect will accept that the Contractor has met his obligations in proving the source of his timber and wood products is if those products are certified, by properly accredited organisations, as meeting the standards set by the Forest Stewardship Council or such other standards such as PEFC for European softwoods. PLEASE NOTE: it is very unlikely that any Asian wood or panel products will achieve a satisfactory standard of certification. The contractor should avoid these products unless they have prior approval in writing that they are acceptable to the Architect.

15 TIMBER AND PRODUCTS CONTAINING WOOD SUPPLIED UNDER THE CONTRACT

Please note that birch plywood will be the only plywood allowed, tropical plywood from any source will not be allowed.

20 TIMBER AND PRODUCTS CONTAINING WOOD SUPPLIED UNDER THE CONTRACT

The following levels of certification will be required timber and timber products:
- Solid wood products: Forests Stewardship Council's (FSC) 100%
- Wood board products, laminate products, and other formed products: Minimum: Forests Stewardship Council's (FSC) Mixed sources. Where possible: Forests Stewardship Council's (FSC) 100%.
- All other products containing wood elements and/or isolated small wood components: Forests Stewardship Council's (FSC) Mixed sources.

(Revised - Z15 revision 170514jb - 14th May 2017)

30 **PRESERVATIVE TREATED WOOD** NOT PERMITTED

THE PRESERVATIVE TREATMENT OF WOOD SHOULD NOT BE NECESSARY IN THE VAST MAJORITY OF USES, GIVEN APPROPRIATE DETAILING AND CAREFUL CONSTRUCTION.
NO PRESERVATIVE TREATED WOOD IS TO BE USED UNLESS EXPLICITLY SPECIFIED BY THE ARCHITECT.

Should the architect specify any treated wood, the following requirements apply:
- Treatments should be environmentally friendly (eg: borax)
- Cutting and machining: Completed as far as possible before treatment.
- Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
- Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

(Revised - Z15 revision 170514jb - 14th May 2017)

Z21 Mortars

To be read with Preliminaries/ General conditions.

CEMENT GAUGED MORTARS

110 CEMENT GAUGED MORTAR MIXES

- Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

120 SAND FOR SITE MADE CEMENT GAUGED MASONRY MORTARS

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

131 READY-MIXED LIME/ SAND FOR CEMENT GAUGED MASONRY MORTARS

- Standard: To BS 4721 or BS EN 998-2.
- Lime: Nonhydraulic to BS EN 459-1.
  - Type: CL 90S.
- Pigments for coloured mortars: To BS EN 12878.

131A READY-MIXED LIME MORTAR FOR ALTERATIONS AND REPAIRS TO EXISTING GARDEN WALL

By Lime Technology - colour to be confirmed

- Standard: To BS 4721 or BS EN 998-2.
- Lime: Nonhydraulic to BS EN 459-1.
  - Type: CL 90S.
- Pigments for coloured mortars: To BS EN 12878.

(Revised - Z21 revision 170514jb - 14th May 2017)

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

180 ADMIXTURES FOR SITE MADE CEMENT GAUGED MORTARS

- Air entraining (plasticizing) admixtures: To BS 4887-1 and compatible with other mortar constituents.
- Other admixtures: Submit proposals.
- Prohibited admixtures: Calcium chloride and any admixture containing calcium chloride.

190 RETARDED READY TO USE CEMENT GAUGED MASONRY MORTARS

- Standard: To BS 4721 or BS EN 998-2.
- Lime for cement:lime:sand mortars: Nonhydraulic to BS EN 459-1.
  - Type: CL 90S.
- Pigments for coloured mortars: To BS EN 12878.
- Time and temperature limitations: Use within limits prescribed by mortar manufacturer.
  - Retempering: Restore workability with water only within prescribed time limits.

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

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 EN 459-1, 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): Seek instructions.

345 ADMIXTURES FOR HYDRAULIC LIME/ SAND MORTARS

- Air entraining (plasticizing) admixtures: To BS 4887-1 and compatible with other mortar constituents.
- Prohibited admixtures: Calcium chloride and any admixture containing calcium chloride.

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): Seek instructions.

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.