Bluelime

Materials & Workmanship Specification

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C20 Demolition

5A SURVEY

- Scope: Before starting deconstruction/ demolition work, examine available information, and carry out a survey of:
  - the structure or structures to be deconstructed/ demolished,
  - the site on which the structure or structures stand, and
  - the surrounding area.
- Report and Method Statements: Submit, describing:
  - Form, condition and details of the structure or structures, the site and the surrounding area.
    Extent: As drawings and Schedule of Works .
  - Type, location and condition of features of historical, archaeological, geological or ecological importance.
  - Type, location and condition of adjoining or surrounding premises that might be adversely affected by removal of the structure or structures or by noise, vibration and/ or dust generated during deconstruction/ demolition.
  - Identity and location of services above and below ground, including those required for the Contractor's use, and arrangements for their disconnection and removal.
  - Form and location of flammable, toxic or hazardous materials, including lead-based paint, and proposed methods for their removal and disposal.
  - Form and location of materials identified for reuse or recycling, and proposed methods for removal and temporary storage.
  - Proposed programme of work, including sequence and methods of deconstruction/ demolition.
  - Details of specific pre-weakening required.
  - Arrangements for protection of personnel and the general public, including exclusion of unauthorized persons.
  - Arrangements for control of site transport and traffic.
  - Special requirements: Services to be located by CAT survey and plotted before work commences. .

10 EXTENT OF DECONSTRUCTION/ DEMOLITION

- General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to foundation level.

15 BENCH MARKS

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

25 LOCATION OF SERVICES

- Services affected by the Works: Locate and mark positions.
- Mains services marking: Arrange with the appropriate authorities for services to be located and marked.

30 SERVICES DISCONNECTION ARRANGED BY CONTRACTOR

- Responsibility: Before starting deconstruction/ demolition arrange with the appropriate authorities for disconnection of services owned by those authorities and removal of associated fittings and equipment.

32 DISCONNECTION OF DRAINS

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

35 LIVE FOUL AND SURFACE WATER DRAINS

- General: Protect drains and fittings still in use. Keep free of debris and ensure normal flow during deconstruction/ demolition work.
- Damage: Make good damage arising from deconstruction/ demolition work. Leave clean and in working order at completion of deconstruction/ demolition work.

40 SERVICE BYPASS CONNECTIONS

- General: Provide as necessary to maintain continuity of services to occupied areas of the site on which the deconstruction/ demolition is taking place and to adjoining sites/ properties.
- Notice: Give adequate notice to adjoining owners and all affected occupiers if shutdown is necessary.

45 SERVICES TO BE RETAINED

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

50 WORKMANSHIP

- Standard: Demolish structures in accordance with BS 6187.
- Operatives: Appropriately skilled and experienced for the type of work. Holding, or in training to obtain, relevant CITB Certificates of Competence.
- Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of deconstruction/ demolition to be used.

55 SITE HAZARDS

- Precautions: Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.
- Dust: Reduce by periodically spraying with an appropriate wetting agent, or contain.
  - Lead dust: Submit method statement for control, containment and clean-up regimes.
- Site operatives and general public: Protect from vibration, dangerous fumes and dust arising during the course of the Works.

60 ADJOINING PROPERTY

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

65 STRUCTURES TO BE RETAINED

- Extent: As drawings and Schedule of Works.
- Parts which are to be kept in place: Protect.
- Interface between retained structures and deconstruction/ demolition: Cut away and strip out with care to minimize making good.

70 PARTLY DECONSTRUCTED/ DEMOLISHED STRUCTURES

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

71 DANGEROUS OPENINGS

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

75 ASBESTOS-CONTAINING MATERIALS – KNOWN OCCURENCES

- General: Materials containing asbestos are known to be present in the structure(s) to be demolished in the following locations: See Asbestos Report by Astra UK.
- Removal: By contractor licensed by the Health and Safety Executive, and prior to other works starting in these locations.

76 ASBESTOS-CONTAINING MATERIALS – UNKNOWN OCCURENCES

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

78 UNFORESEEN HAZARDS

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

85 SITE CONDITION AT COMPLETION

- Debris: Clear away and leave the site tidy on completion.
- Special requirements: None.

86 SITE LEVELS AT COMPLETION

- Levels: Grade the site to follow the levels of adjacent areas.

90 CONTRACTOR'S PROPERTY

- Components and materials arising from the deconstruction/ demolition work: Property of the Contractor except where otherwise provided.
- Action: Remove from site as work proceeds where not to be reused or recycled for site use.

95 RECYCLED MATERIALS

- Materials arising from deconstruction/ demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.

D
Groundwork

D20 Excavating and filling

10A PREPARATORY WORK

- Trees, shrubs and hedges to be removed: Cut down, grub up main roots and fill voids.
- Larger trees: As Arboriculturalist's report.
- Trees to be retained: Protect area around the trunk and do not use for building purposes or material storage.
  - Size of area: As Arboriculturalist's report.
- Clear site of rubbish and vegetation. Grub up large roots.
- Arisings: Remove from site; burning or shredding on site not permitted.

20 STRIPPING TOPSOIL

- General: Excavate from areas where there will be re-grading or construction work.
  - Depth of removal: 250 mm.

23 EXCAVATIONS AND BACKFILLING

- Prior to commencing excavation: Excavate trial pits adjacent to existing foundations to determine extent and formation levels.
  - Allow for inspection of trial pits.
  - Allow time for amendment of details if required.
    Time period: 10 working days.
- Requirement: Where excavations are close; complete all work including backfilling to the lower excavation before the higher excavation is made.
- Backfill material:
  - Up to higher excavations formation level: Lean mix concrete.
  - Above higher excavations formation level: Hardcore filling as clause 65.

25 INSPECTING FORMATIONS

- Notice: Make advance arrangements for inspection of formations for foundations and filling and service trenches .

30 OBSTRUCTIONS

- Recorded foundations, beds, drains, etc: Break out and seal off drain ends. Remove contaminated earth.
- Unrecorded foundations, beds, basements, filling, tanks, service pipes, drains, etc: Give notice.

35 EXCESS EXCAVATIONS

- Excavation taken wider than required: Backfill as clause 60 .
- Excavation taken deeper than required: Backfill with well graded granular material .

40 SURPLUS EXCAVATED MATERIAL

- Topsoil: Spread and level on site where buildings and pavings are to be removed and the area no subsequently developed .
- Remaining material: Remove from site.

50 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS

- Generally: Do not import or use fill materials which would, either in themselves or in combination with other material or ground water, give rise to a health hazard, damage to building structures or instability in the filling.

53 WATER

General: Keep excavations free from water until foundations and below ground constructions are completed.

55 PLACING FILL GENERALLY

- Excavations and areas to be filled: Free from loose soil, rubbish and standing water.
- Freezing conditions: Do not use frozen materials or materials containing ice. Do not place fill on frozen surfaces.
- Fill against structures, membranes or buried services: Place and compact in a sequence and manner which will ensure stability and avoid damage.

58 GEOSYNTHETIC SHEET

- Type: Geotextile.
- Recycled content: None permitted.
- Jointing: 300 mm overlap.
- Preparation of subgrade: Before laying sheet, remove humps and sharp projections. Fill hollows.
- Protect from:
  - Exposure to light.
  - Contaminants.
  - Materials listed as potentially deleterious by geotextile manufacturer.
  - Wind uplift.

60 BACKFILLING AROUND FOUNDATIONS

- Under oversite concrete and pavings: Hardcore.
- Under grassed or landscaped areas: Material excavated from the trench, laid and compacted in 300 mm layers.

62 FROST SUSCEPTIBILITY

- General: Except as allowed below, fill must be non frost-susceptible as defined in Highways Agency 'Specification for Highway Works', clause 801.17.
- Frost-susceptible fill: Use only within the external walls of buildings below spaces that will be heated. Protect from frost during construction.

65 HARDCORE

- Fill: Granular material, free from harmful matter and excessive dust or clay, well graded, all pieces less than 75 mm in any direction, and in any one layer only one of the following:
  - Crushed hard rock or quarry waste.
  - Crushed concrete, brick or tile, free from plaster.
  - Gravel or hoggin.
- Filling: Spread and level both backfilling and general filling in layers not exceeding 150 mm. Thoroughly compact each layer.

67 VENTING HARDCORE LAYER

- Fill: Clean granular material, well graded, passing a 75 mm BS sieve but retained on a 20 mm BS sieve and in any one layer only one of the following:
  - Crushed hard rock.
  - Crushed concrete, crushed brick or tile, free from plaster.
  - Gravel.
- Filling: Spread and level in 150 mm maximum layers. Thoroughly compact each layer, whilst maintaining enough voids to allow efficient venting.

75 BLINDING TO HARDCORE

- Surfaces to receive sheet overlays or concrete: Blind with:
  - Concrete where shown on drawings; or
  - Sand, fine gravel, or other approved fine material applied to provide a closed smooth surface.
- Permissible deviation on surface level: +0 -25 mm.

E
In situ concrete/Large precast concrete

E10 In situ concrete

15 SPECIFICATION

- Concrete generally: To BS 8500-2.
- Exchange of information: Provide concrete producer with information required by BS 8500-1, clauses 4 and 5.

20 DESIGNATED CONCRETE FOR MASS CONCRETE FOUNDATIONS

- Designation: BS8500 - GEN3.
- Fibres: Not required.
- Aggregates:
  - Size (maximum): 20 mm.
  - Coarse recycled aggregates: Not permitted.
  - Additional aggregate requirements: None.
- Special requirements for cement/ combinations: IVB-V cements and combinations not permitted.
- Consistence class: S3.
- Chloride class: Normal.
- Admixtures: None.
- Additional mix requirements: None.

25 BASIC DESIGNATED CONCRETE FOR BASES AND HARDSTANDINGS

- Designation: BS8500 - PAV2.
- Coarse recycled aggregates: Not permitted.
- Consistence class: S3.
- Additional requirements: Submit proposals.

45 PROPERTIES OF FRESH CONCRETE

- Adjustments to suit construction process: Determine with concrete producer. Maintain conformity to the specification.

50 PREMATURE WATER LOSS

- Requirement: Prevent water loss from concrete laid on absorbent substrates.
  - Underlay: Polyethylene sheet 250 micrometres thick.
  - Installation: Lap edges 150 mm.

60 PLACING AND COMPACTING

- Surfaces to receive concrete: Clean, with no debris, tying wire clippings, fastenings or free water.
- Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction.
- Temperature limitations for concrete: 30°C (maximum) and 5°C (minimum). Do not place against frozen or frost covered surfaces.
- Compaction: Fully compact to full depth to remove entrapped air especially around reinforcement, cast-in accessories, into corners of formwork and at joints. Continue until air bubbles cease to appear on the top surface.
  - Methods of compaction: To suit consistence class and use of concrete.

70 CURING AND PROTECTING

- Evaporation from surfaces of concrete: Prevent throughout curing period.
  - Surfaces covered by formwork: Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.
  - Top surfaces: Cover immediately after placing and compacting. Replace cover immediately after any finishing operations.
- Curing periods:
  - Surfaces which in the finished building will be exposed to the elements, and wearing surfaces of floors and pavements: 10 days (minimum).
  - Other structural concrete surfaces: 5 days (minimum).
- Protection: Protect concrete from shock, indentation and physical damage.

E20 Formwork for in situ concrete

60 BOARD SUBSTRUCTURE FORMWORK

- General: Lay tightly butted and fully supported on firm, even substrate. Restrain against movement during concrete placement. Seal joints to prevent penetration of concrete.
- Collapsible boards with cellular cardboard cores: Keep dry. Seal joints in polyethylene underlay/ overlay sheets and reseal cut polyethylene bags.

70 FORMWORK

- General: Accurately and robustly constructed to produce finished concrete to the required dimensions.
- Formed surfaces: Free from twist and bow with intersections, lines and angles square, plumb and true.
- Joints between forms and completed work: Prevent loss of grout and formation of steps.
- Holes and chases: Form with inserts or box out as required.

E41 Worked finishes to in situ concrete

10 FINISHING

- Timing: Carry out at optimum times in relation to setting and hardening of concrete.
- Prohibited treatments to surfaces:
  - Wetting to assist surface working.
  - Sprinkling cement.

20 SMOOTH FLOATED FINISH

- Surface on completion: Even, with no ridges or steps.

30 TROWELLED FINISH

- Surface on completion: Uniform, smooth but not polished, free from trowel marks and blemishes, and suitable to receive specified flooring material.

40 TROWELLED FINISH FOR WEARING SURFACES

- Surface on completion: Uniform and smooth, free from trowel marks and blemishes.

E60 Precast concrete floors/ roof decks

10B PRECAST BEAM AND BLOCK TO NEW HALL AND LINK

- Beams: Pre-stressed concrete.
  - Manufacturer: Milbank Ltd.
    Product reference: Milbank D225 Beam and Block Floor.
  - Type: Prestressed concrete 'T', depth 225 mm.
- Infill blocks:
  - Manufacturer: Milbank Ltd.
    Product reference: Standard precast concrete with a minimum crushing strength of 7.3 kN/m² .
  - Type: Proprietary moulded concrete blocks to full depth of beam.
  - Work size: 440 x 215 x 100 mm.
  - Density: 1450N/m³.
  - Transverse load capacity (minimum): 3.5 kN/m² measured on a 420 mm span.
- Infilling at beam bearings:
  - Type: Beam manufacturer's proprietary infill slip blocks.
  - Installation: Infill gaps in walling below built in standard flooring blocks.
- Concrete infill: Designated concrete to BS 8500-2.
  - Designation: RC25/30.
  - Aggregate size (maximum): 20 mm.
- Grouting:
  - Mix: 1::4 cement sand.
  - Execution: Brush floor clean, wet thoroughly and brush in grout to fill all joints and surface irregularities.
- In situ concrete topping: Not required.
- Other requirements: None.

50 DETAILING

- Installation details: Submit location and assembly drawings showing incorporated components and features, trimming for voids, holes for services, and related work by others.
  - Purpose: To allow checking of compatibility with surrounding structure and coordination of services.
- Method statement and risk assessment for installation: Submit.
- Programme: Submit in advance of construction.

70 CONCRETE INFILL

- Preparation: Thoroughly clean and wet surfaces of precast units.
- Placing to troughs, slots and other holes: Avoid segregation and compact thoroughly to eliminate voids.

80A LATERAL RESTRAINT STRAPS

- Preparation: Floors/ roof decks must tightly abut walls.
- Type: Galvanized steel.
  - Length: To extend minimum 800 mm from inside face of wall or across 3 beams, whichever is greater.
  - Form: Both ends cranked 100 mm.
- Position: 2000 mm maximum centres to abutting external cavity walls.
- Build in:
  - External cavity walls: One cranked end in tight contact with cavity face of wall inner leaf, the other cranked end grouted into floor/ roof deck joint.

F
Masonry

F10 Brick/ block walling

5A FACING BRICKWORK BELOW DPC

- Bricks: To BS EN 771-1.
  - Manufacturer: Contractor's choice.
    Product reference: N/a - samples of facing bricks closely matching those existing are to be presented to the CA for approval.
  - Durability rating: Not less than F2.
  - Recycled content: None permitted.
  - Special shapes: None.
- Location: Between ground level and DPC on all new external walls, including those rendered above DPC level.
- Compatibility: Ensure compatibility with adjacent/existing masonry units in terms of compreesive strength and thermal expansion co-efficients.
- Mortar: As section Z21.
  - Standard: To BS EN 998-2.
  - Mix: 1:1/2:4 1/2 cement:lime:sand.
- Bond: Half lap stretcher.
- Joints: Bucket handle.

5B FACING BRICKWORK ABOVE DPC

- Bricks: To BS EN 771-1.
  - Manufacturer: Contractor's choice.
    Product reference: N/a - samples of facing bricks closely matching those existing are to be presented to the CA for approval.
  - Durability rating: Not less than F1.
  - Recycled content: None permitted.
  - Special shapes: Cant bricks to soldier course cills to match those existing - samples to be presented to the CA for approval.
- Location: New cavity walls (excepting those to be rendered); infilling of redundant openings where completed infill will be visible externally.
- Compatibility: Ensure compatibility with adjacent/existing masonry units in terms of compressive strength and thermal expansion co-efficients.
- Mortar: As section Z21.
  - Standard: To BS EN 998-2.
  - Mix: 1:1:6 cement:lime:sand.
- Bond: Half lap stretcher.
- Joints: Bucket handle.

33A CLAY COMMON BRICKWORK FOR INFILLING REDUNDANT OPENINGS INTERNALLY

- Bricks: To BS EN 771-1.
  - Type: HD.
  - Size: 215 x 102 x 65 mm.
  - Mean compressive strength (minimum): 3.6 N/mm².
  - Category: 3.6 N/mm².
  - Durability designation: F1.
  - Density: Not applicable.
  - Water absorption: Less than 20%.
  - Configuration: Frogged.
  - Recycled content: None permitted.
  - Additional requirements: None.
- Mortar: As section Z21.
  - Standard: To BS EN 998-2.
  - Mix: 1:1:6 cement:lime:sand.
- Bond: Half lap stretcher.
- Joints: Recessed where receiving plaster/render finishes to aid bonding; flush elsewhere.

36A CONCRETE BLOCKWORK FOR RENDERED CAVITY WALL OUTER LEAFS/ALL INNER LEAFS/ALL INTERNAL PARTITIONS

- Manufacturer: Hanson Building Products.
  - Web: www.hanson.com/uk.
  - Email: info.buildingproducts@hanson.com.
  - Product reference: Evalast background.
- Location: rendered external cavity walls; inner leaf of cavity walls with exterior facing brick; internal partitions.
- Configuration: Solid.
- Compressive strength: 7.3 N/mm².
- Face size: 440 x 215 mm.
- Width: 100 mm.
- Special shapes: Coursing units 215 x 65 mm.
- Mortar: As section Z21.
  - Standard: [To BS EN 998-2].
  - Mix: [1:1:6 cement:lime:sand 4 N/mm² (mortar class 4)].
- Bond: [Half lap stretcher].
- Joints: Recessed where receiving plaster/render finishes to aid bonding; flush elsewhere.

51 BASIC WORKMANSHIP

- Bond where not specified: Half lap stretcher.
- Mortar joints: Fill all vertical joints. Lay bricks, solid and cellular blocks on a full bed.
- Thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
- Quoins and advance work: Rack back.
- Locations for equal levelling of cavity wall leaves:
  - 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.
- Lift height (maximum) for walling using cement gauged or hydraulic lime mortar: 1.2 m above any other part of work at any time.
- Daily lift height (maximum) for walling using cement gauged or hydraulic lime mortar: 1.5 m for any one leaf.
- Lift height (maximum) for walling using thin joint mortar glue: 1.3 m above any other part of work at any time.

55 FACEWORK

- Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.
- 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.
- Coursing brickwork and concrete blockwork: Evenly spaced using gauge rods. To produce satisfactory junctions and joints with built-in elements and components.

60 ALTERATIONS/ EXTENSIONS

- Coursing: Line up with existing work.
- Block bonding new walls to existing: Unless agreed otherwise cut pocket requirements as follows:
  - Width: Full thickness of new wall.
  - Depth (minimum): 100 mm.
  - Vertical spacing: As follows:
  - Brick to brick: 4 courses high at 8 course centres.
  - Block to block: Every other course.
  - Pocket joints: Fully filled with mortar.
- New and existing facework in the same plane: Bonded together at every course to achieve continuity of bond and coursing.
- Support of existing work: Fully consolidate joint above inserted lintel or masonry with semidry mortar to support existing structure.

66 FIRE STOPPING

- Avoidance of fire and smoke penetration: Fit tightly between cavity barriers and masonry. Leave no gaps.

95 REPOINTING

- Preparation: Cut out joints to form a rectangular recess of 15-20 mm depth. Clean and dampen joints sufficiently to control suction.
- Joint profile: Bucket handle .
- Mortar: As section Z21.
  - Standard: To BS EN 998-2.
  - Mix: 1:1:6 cement:lime:sand.

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

5 CAVITIES

- Concrete fill to base of cavity:
- Concrete generally: To BS EN 206-1 and BS 8500-2.
  - Designated concrete: GEN1 or Standard mix ST2 with high workability.
  - Extent: Maintain 75 mm between top of fill and external ground level and a minimum of 225 mm between top of fill and ground level dpc.
- Cleanliness: Keep cavity faces, ties and dpcs free from mortar and debris.

8A PERPEND JOINT PLASTICS WEEP HOLES

- Manufacturer: Hambleside Danelaw Ltd.
  - Web: www.hambleside-danelaw.co.uk.
  - Email: marketing@hambleside-danelaw.co.uk.
  - Product reference: HD9100 Perp weep
- Colour: Terracotta/Buff to suit facing brickwork/painted render walls.

12A PARTIAL FILL CAVITY INSULATION

- Insulation: Polyisocyanurate (PIR) foam boards
- Manufacturer: Celotex Limited.
  - Product reference: CG4075.
- Recycled content: Not applicable
- Thickness (nominal): 75 mm.
- Placement: Secure against face of inner leaf.
- Residual cavity: Clear and unobstructed.
- Joints between boards, at closures and penetrations: No gaps and free from mortar and debris.
- Eaves: Extend cavity insulation vertically and tightly butt to Celotex insulation at rafter level (see Section P10) with no gaps.

15A AIRBRICK AND SUB-FLOOR VENTILATOR

- Manufacturer: Cavity Trays Ltd.
  - Web: www.cavitytrays.com.
  - Email: enquiries@cavitytrays.co.uk.
  - Product reference: Type TAV telescopic adjustable ventilator with Cavibrick to external face; to include vertical extension sleeve as required.
- Spacing: 2000mm centres.
- Nominal face size of airbrick assembly (height x width): 75 mm x 225 mm.
- Colour: TAV - black; extension sleeve - black; Cavibrick - Terracotta.

21A CAVITY WALL TIES USED WITH PARTIAL INSULATION

- Manufacturer: Ancon Building Products.
  - Web: www.ancon.co.uk.
  - Email: info@ancon.co.uk.
  - Product reference: ST1.
- Length: 250 mm.
- Material: Stainless steel grade 1.4301 (304).

33 FIXING TIES IN MASONRY CAVITY WALLS WITH PARTIAL FILL CAVITY INSULATION

- Embedment in mortar beds (minimum): 50 mm.
- Placement: Sloping downwards towards outer leaf without bending. Drip centred in the cavity and pointing downwards.
- Spacing: Evenly spaced in non staggered horizontal and vertical rows:
  - Horizontal centres: 750 mm .
  - Vertical centres: 450 mm .
- Spacing centres of top (eaves) row of ties: Not more than 450 mm .
- Provision of additional ties: Within 225 mm of reveals of unbonded openings At not more than 300 mm centres vertically .

39A WALL STARTERS/ CONNECTORS

- Manufacturer: Ancon Building Products.
  - Web: www.ancon.co.uk.
  - Email: info@ancon.co.uk.
  - Product reference: Staifix Universal Wall Starter System
- Material: Stainless steel grade 1.4301 (304).

42A MASONRY JOINT REINFORCEMENT

- Manufacturer: BRC Special Products.
  - Web: www.brc-special-products.co.uk.
  - Email: enquiries@brcsp.co.uk.
  - Product reference: Brickforce SBF35W60 Masonry Reinforcement
- Shape: As required.
- Locations: as indicated on Structural Engineer's drawings.

48A DAMP PROOF COURSE

- Manufacturer: Hyload Structural Waterproofing, member of the IKO Group.
  - Web: www.hyload.co.uk.
  - Email: technical@ruberoid.co.uk.
  - Product reference: Hyload Permabit
- Width: To suit wall construction.
- Accessories: Preformed units - standard.

66 INSTALLATION OF 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 masonry leaf. 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.
- Ground level dpcs joint with damp proof membrane: Continuous and effectively sealed.
- Low level dpcs in external walls: Install not less than 150 mm above adjoining finished ground level.
- Sill dpcs form and placement: In one piece and turned up at the back when the sill is in contact with inner leaf.
- Dpcs crossing cavity: Provide support to prevent sagging.

68 SEALING DPCS GENERALLY

- Overlaps and junctions: Seal with Adhesive recommended by dpc manufacturer .

74 INSTALLATION OF VERTICAL DPCS

- Form: In one piece wherever possible.
  - Joints: Upper part overlapping lower not less than 100 mm.
- Dpcs to jambs of openings: Fully lap behind cavity tray/ lintel at head and over horizontal dpc at sill. Project not less than 25 mm into cavity and maintain full contact with frames.
- Fixing of jamb dpcs to back of built in timber frames: Secure using galvanized clout nails or staples.

76A MOVEMENT JOINTS WITH SEALANT

- Joint preparation and sealant application: As section Z22.
- Filler: Closed cell polyethylene foam .
  - Placement: Build in as work proceeds ensuring no projections into cavities and to correct depth to receive sealant system.

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83A PRECAST CONCRETE LINTELS TO INTERNAL DOOR OPENINGS WITHIN BLOCKWORK PARTITIONS

- Standard: To BS EN 845-2.
- Manufacturer: Supreme Concrete Limited .
  - Product reference: To suit application .
- Types: Single .
- Sizes: To suit application, subject to partition thickness and opening span .
- Placement: Bed on mortar used for adjacent work.
  - Bearing length (minimum): 150 mm .

85A PREFABRICATED STEEL LINTELS TO OPENINGS IN CAVITY WALLS OTHER THAN FULL HEIGHT DOORS/WINDOWS

- Standard: To BS EN 845-2.
- Manufacturer: Catnic .
  - Product reference: CG110/100 to suit 125mm cavity .
- Types: Insulated open back lintel with integral DPC .
- Material/ finish: Manufacturer's 'Duplex' finish - polyester powder coating over hot dip galvanising .
- Sizes: As openings indicated on drawings plus 300mm for bearings .
- Placement: Bed on mortar used for adjacent work.
  - Bearing length (minimum): 150 mm both sides .
- Accessories: Catnic C90 stopends, built in to nearest perp joint to lintel ends; Catnic type WV cavity weep vents, min. 2 per lintel, max. 450 crs, terracotta/buff colour to suit facing brick/painted render finish.

F31 Precast concrete sills/ lintels/ copings/ features

10 CONCEALED PRECAST LINTELS

- Concrete: Designated to BS 8500-2: Minimum RC30
  - Aggregate nominal maximum size: 20 mm.
- Reinforcement provision for spans up to 1800 mm:

Clear span	Section	Bearing	Reinforcement
Up to 900 mm	140 mm deep x width of wall	150 mm at both ends each 105 mm of wall thickness.	1 no. 12 mm mild steel bar for
900 to 1800 mm	215 mm deep x width of wall	225 mm at both ends each 105 mm of wall thickness.	1 no. 16 mm mild steel bar for

- Cover to reinforcement (nominal): 20 mm minimum.

32 CUTTING

- Cutting of precast concrete components: Not permitted.

40 LAYING

- Mortar for bedding and jointing: As section Z21.
  - Type: Site batched and mixed.
  - Mix: 1:1:6 cement:lime:sand.
- Bedding components: On full bed of mortar.
- Bedding one piece sills/ thresholds: Leave clear of mortar except at end bearings and beneath masonry mullions.
  - On completion: Point with mortar to match adjacent work.

45 SUPPORT OF EXISTING WORK OVER NEW LINTELS

- Joint above lintels: Fully fill and compact with semidry mortar.

G
Structural/Carcassing metal/timber

G10 Structural steel framing

10A DESIGN

- Design: As Holt and Wotton Structural Engineer's drawings F072/1 and F072/2 .
- Completion of design: Detail steelwork and select and detail joints to BCSA publication 212 standard details.
  - Loading requirements: As specified or otherwise calculable.
- Fixings to foundations/ walls: to BCSA publication 212 standard details.

15 SPECIFICATION STANDARD

- Standard: Comply with latest edition of National Structural Steelwork Specification (NSSS).
- References to Engineer in NSSS: For the purpose of this contract, interpret such references as being to the person named as administering the contract on behalf of the Employer.

17A GENERAL STEEL SECTIONS

- Standard: To BS EN 10025-2.
- Grade: S275JR.
- Source: Obtain steel from a source accredited to a national or internationally accepted quality standard.
- Welding: 6mm fillet welds to BS EN 1011.

30 COLD-FORMED GALVANIZED STEEL

- Manufacturer: Contractor's choice.
  - Product reference: TBA.

40 BOLT ASSEMBLIES

- Designation: Bolts to BS 4933, grade 8.8.
  - Threading: Full length.
- Nuts and washers: To suit grade of bolt, as NSSS, clause 2.3.
- Coating applied by manufacturer: Galvanized.

50 COLUMN BASES

- Levels: Adjust using steel shims or folding wedges no larger than necessary, positioned symmetrically around perimeter of base plate. Do not use a single central pack.
- Accuracy of erection: Check, and correct errors before filling and bedding beneath bases and carrying out other adjacent work.

55 MORTAR FILLING/ BEDDING OF COLUMN BASES

- Bolt pockets: Completely filled with neat cement slurry.
- Spaces beneath base plates: Completely filled with 1:1 cement:sand mortar, just fluid enough to pour, tamped well as filling proceeds. Provide temporary shuttering as necessary.
- Cement: Portland cement BS EN 197-1 - CEM I 42.5 or 52.5.
- Sand: To BS EN 12620, grade 0/4 or 0/2 (MP).

60 GALVANIZING

- Use/ location: All fabricated stanchions and lintels .
- Preparation: Chemical cleaning.
- Galvanizing: To BS EN ISO 1461.
  - Minimum mean coating thickness: 85 micrometres.

65A SHOP PRIMING

- Use/ location: All fabricated stanchions and lintels .
- Shop preparation: Blast cleaning to BS EN ISO 8501-1, preparation grade Sa 2½.
- Primer: Zinc Phosphate modified alkyd .
  - Manufacturer: Contractor's choice .
    Product reference: TBA .
  - Dry film thickness: 75 microns .
- Special requirements: None .

G12 Isolated structural metal members

30A PROPRIETARY

- Windposts built into cavity walls, as shown on the Structural Engineer's drawings.
- Manufacturer: Ancon Building Products
  - Web: www.ancon.co.uk
  - Email: info@ancon.co.uk
  - Tel: +44 (0)114 275 5224
  - Fax: +44 (0)114 276 8543
  - Address: President Way, President Park, Sheffield, South Yorkshire S4 7UR.
- Product reference: WP2 Windpost.
- Size: 155 x 70 x 4 mm.
- Length: 2.5 m/ 3.0 m/ 3.5 m/ 4.0 m/ 4.5 m/ 5.0 m/ 5.5 m/ 6.0 m.
- Accessories: SDN ties/ SNS ties/ SNS ties with debonding sleeve/ SPN ties. .
- Material: Grade 304 stainless steel.
- Fixing: Ancon - FBN12/15 A4-115 expansion bolts .

40A INSTALLATION

- Accuracy: Members positioned true to line and level using, if necessary, steel packs of sufficient area to allow full transfer of loads to bearing surfaces.
- Fixing: To structural Engineer's details and manufacturer's current written instructions.

2 TIMBER PROCUREMENT

- Timber (including timber for wood based products): Obtained from well managed forests/ plantations in accordance with:
  - The laws governing forest management in the producer country or countries.
  - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
- Documentation: Provide either:
  - Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied, or
  - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.

5 STRUCTURAL SOFTWOOD FOR JOISTS/PURLINS/RAFTERS

- Grading standard: To BS 4978, BS EN 14081-1, or other national equivalent and so marked.
  - Timber of a target thickness less than 100 mm and not specified for wet exposure: Graded at an average moisture content not exceeding 20% with no reading being in excess of 24% and clearly marked as 'DRY' or 'KD' (kiln dried).
  - Timber graded undried (green) and specified for installation at higher moisture contents: Clearly marked as 'WET' or 'GRN'.
- Strength class to BS EN 338: C24.
- Treatment: Tanalith 'E' in accordance with BSEN 8417, Table 9, to achieve suitability for use in hazard classes 1-3 inclusive.

30 SELECTION AND USE OF TIMBER

- Timber members damaged, crushed or split beyond the limits permitted by their grading: Do not use.
- Notches and holes: Position in relation to knots or other defects such that the strength of members will not be reduced.
- Scarf joints, finger joints and splice plates: Do not use.

35 PROCESSING TREATED TIMBER

- Cutting and machining: Carry out as much as possible before treatment.
- Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
- Surfaces exposed by minor cutting/ drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

40 MOISTURE CONTENT

- Moisture content of wood and wood based products at time of installation: Not more than:
  - Covered in generally unheated spaces: 24%.
  - Covered in generally heated spaces: 20%.
  - Internal in continuously heated spaces: 20%.

41 BOLT/ SCREW ASSEMBLIES .

- Designation: Black bolts to BS 4190, grade 8.8.
- Size: M12.
  Coating applied by manufacturer: Galvanized.
- Nuts and washers: Material grade and finish to suit bolts
- Washer dimensions: Diameter/ side length of washers in contact with timber faces to be minimum 3 times bolt diameter, with a thickness not less than 0.25 times bolt diameter.

43 BOLTED JOINTS

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

45 FRAMING ANCHORS

- Manufacturer: Contractor's choice.
  - Product reference: TBA.
- Material/ finish: Galvanized low carbon steel.
- Fasteners: Galvanized or sherardized square twist nails.
  - Size: Not less than size recommended by anchor manufacturer.
- Fixing: Secure using not less than the number of nails recommended by anchor manufacturer.

50 ADDITIONAL SUPPORTS

- Provision: Position and fix additional studs, noggings and/ or battens to support edges of sheet materials, and wall/ floor/ ceiling mounted appliances, fixtures, etc. shown on drawings.
- Material properties: Timber to be of adequate size and have the same treatment as adjacent timber supports.

55 JOISTS GENERALLY

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

60 JOISTS ON HANGERS

- Hangers: Bedded directly on and hard against supporting construction. Do not use packs or bed on mortar.
- Joists: Cut to leave not more than 6 mm gap at each end. Rebated to lie flush with underside of hangers.
- Fixing to hangers: A nail in every hole.

65 JOIST HANGERS GENERALLY.

- Manufacturer: Expamet Ltd.
  - Product reference: Speedy range, ref. to suit application.
- Material/ finish: Hot dip galvanized steel plate.
- Size: To suit joist, design load and crushing strength of supporting construction.

70 TRIMMING OPENINGS

- Trimmers and trimming joists: Not less than 25 mm wider than general joists.

77 TRUSS CLIPS

- Manufacturer: Expamet Ltd.
  - Product reference: BAT TC 38/TC50 (to suit timber section).
- Material/ finish: Hot dip galvanised.
- Fasteners: 32 x 3.5 mm galvanized square twisted nails in every hole.

85A VERTICAL RESTRAINT STRAPS

- Type: Bent.
- Manufacturer: Expamet Ltd.
  - Product reference: ST Restraint Strap.
- Material/ finish: Galvanized steel.
- Size:
  - Cross section: Not less than 30 x 2.5 mm.
  - Length: Overall length 1000 mm; bent at 100 mm.
- Centres: Not more than 1.2 m.
- Fixing:
  - To timber members with not less than four.
  - To masonry with not less than four screws evenly spaced.
  - At least one screw to be located within 150 mm of the bottom end of each strap.

90A LATERAL RESTRAINT STRAPS

- Manufacturer: Expamet Ltd..
  - Product reference: HD Restraint Strap.
- Material/ finish: Galvanized steel.
- Size: Not less than 30 x 5 mm cross section, 150 mm cranked end and length to extend across min. 3 trusses.
- Fixing: To top of joists/ rafters/ ties at not more than 2.0 m centres and as shown on drawings.
  - Ensure that cranked end is in tight contact with cavity face of wall inner leaf and is not pointing upwards.
- Straps spanning joists/ rafter/ ties running parallel to wall: Fix noggings and packs tightly beneath straps.
  - Size of noggings and packs: Not less than three quarters of joist/ rafters/ tie depth and not less than 38 mm thick.
  - Notching: Notch joists so that straps fit flush with surface. Do not notch rafters/ ties.
- Fasteners: Not less than four 50 mm x 8 gauge sherardized countersunk screws per strap, evenly spread.

H
Cladding/Covering

H20 Rigid sheet cladding

10A SOFFIT/FASCIA/BARGEBOARD CLADDING

- Manufacturer: Marley Eternit Ltd.
  - Web: www.marleyeternit.co.uk.
  - Email: roofinginfo@marleyeternit.co.uk.
  - Product reference: Eterboard.
- Thickness: 9 mm.
- Colour: Natural self-colour, to be painted on site.
- Panel size: 2500 x 1220 mm.
- Fixing: 38 x 4.8 mm c/s stainless steel screws; max 400 mm crs; 5.0 mm pre-drilled c/s pilot holes; screw heads flush filled.
- Joints: Chamfer edges; leave a 3 mm gap; point with Adshead Ratcliffe Arbomeric MP10 low modulus sealant.
- Support system: Direct fix to underside of trussed rafter cantilevers/projecting ceiling joists/projecting flat roof joists.
- Accessories: Not required.

50 FIXING SHEETS

- General: Secure to supports without producing distortion.
- Fasteners: Evenly spaced in straight lines, in pairs across joints and sufficient distance from edge of sheet to prevent damage.

60 COVER STRIPS

- General: Form straight runs in single lengths wherever possible.
- Location and method of forming joints: Submit proposals where not detailed.

H21 Timber weatherboarding

15A HORIZONTAL TIMBER WEATHERBOARDING

- Battens:
  - Size: 25 x 38 mm.
  - Centres: 400 mm.
  - Treatment: Preservative impregnation; Tanalith E by Arch Timber Preservation; in accordance with BSEN 8417, Table 9, to achieve suitability for use in hazard classes 1-3 inclusive
  - Fixing: 50 x 4.5 mm stainless steel screws and proprietary plugs at 400 mm centres; to concrete blockwork substrate.
- Boarding:
  - Quality of timber (exposed surfaces): To BS 1186-3, Class: 2.
  - Species: Douglas fir.
  - Profile: Shiplap.
  - Finished face dimension (overall width): 119 mm.
  - Finished thickness: 22 mm.
  - Moisture content at time of fixing: 13-19 %.
  - Treatment: Preservative impregnation;colourless Vacsol Azure by Arch Timber Preservation; in accordance with BSEN 8417, Table 9, to achieve suitability for use in hazard classes 1-3 inclusive .
  - Method of fixing to each support: Secret nailed.
- Framing: Frame shiplap cladding to head and sides with 50 x 38 mm matching softwood trim section; concealed s/s screw fixing through edge batten prior to fixing of shiplap cladding.
- Decoration: Sikkens woodstain as Section M60; colour to be advised.
- Other requirements: Splay cut all heading joints; undercut lowest board to form drip.

30 BATTENS/ COUNTERBATTENS

- Timber: Regularized softwood free from decay, insect attack (except ambrosia beetle damage) and with no knots wider than half the section width.
- Preservative treatment:
  - Standard: To NBS section Z12 and BWPDA Commodity Specification C8.
  - Type: Organic solvent.
- Moisture content: Not exceeding 20% at time of fixing.

31 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.

32 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.

33 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.

40 TREATED TIMBER

- Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

50 SURFACE TREATMENT

- Finishing system: Before fixing boards, apply first coat of specified system to all surfaces. Apply liberally to end grain.

60 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.

H72 Aluminium strip/ sheet coverings/ flashings

2A ALUMINIUM ROOF COVERING

- Roofing system: Rigidal Ziplok 400 - BBA Certificate no. 99/3605.
- Manufacturer: Rigidal Systems Ltd, Unit 62 Blackpole Trading Estate, West, Worcester WR3 8ZJ Tel: 01905 750500
- Installation: By a Rigidal trained/approved installer; installation to be in accordance with BS5427:Part 1.
  Underlay: Needle punched nonwoven polyester geotextile.
- Aluminium:
  - Finish: Rigidal 'ARS' modified polyurethane paint finish; o/a thickness 28 microns; colour from manufacturer's standard range.
  - Thickness: 0.9 mm.
- Longitudinal joints: Standing seams.
  - Spacing: 400 mm.
- Cross joints: Not required; not permitted.
  - Spacing: N/A.
- Fixings and Fasteners:
- Accessories: Aluminium ridge cap sheet; aluminium ridge support; aluminium ridge closure zed; ridge retainer; ridge profile filler; drip angles to eaves; box gutter; rainwater pipes; all cappings, closures, trims, fillers, spacers, sealants, isolating tapes and the like as shall be necessary to complete the installation; to the arrangements and details indicated on the drawings; in accordance with manufacturers instructions/recommendations. .

4A ALUMINIUM GUTTERS AND RAINWATER GOODS

- Gutter System: Rigidal 2 mm guage Box Gutter.
- Rainwater Pipes: Rigidal 2 mm guage 100 x 100 mm rainwater pipes.
- Rainwater Pipes: Rigidas drawings and Schedule of WorksAluminium:
  - Finish: Rigidal 'ARS' modified polyurethane paint finish; o/a thickness 28 microns; colour from manufacturer's standard range.
  - Thickness: 2.0 mm.
- Joints and expansion joints: to manufacturer's recommendations.
- Fixings and Fasteners: 50 x 50 mm aluminium concealed suspension brackets @ 2000 mm centres.
- Outlets: Integral spigot outlet to square section rainwater pipe; positions as indicated on drawings; 2 nr. fixing brackets per length.

40 MATERIALS AND WORKMANSHIP GENERALLY

- Standards:
  - Material: To BS EN 485, BS EN 507, BS EN 515 and BS EN 573.
  - Workmanship: Generally to CP 143-15.
- Fabrication and fixing: To provide a free draining and weathertight installation.
- Measuring, marking, cutting and forming: Prior to assembly wherever possible. Do not use scribers or other sharp instruments without approval.
- Folding: With presses to give straight, regular and tight bends, leaving panels free from ripples, kinks, buckling and cracks.
- Surface protection: Fully coat surfaces to be embedded in concrete or mortar with high build bitumen based paint.
- Sharp metal edges: Remove as work proceeds.
- Joints: Do not use sealants to attain waterproofing.
- Finished aluminium work: Fully supported, adequately fixed to resist wind uplift and able to accommodate thermal movement without distortion or stress.
  - Protection: Prevent staining, discolouration and damage by subsequent works.

50 TIMBER FOR USE WITH ALUMINIUM WORK

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

51A NEEDLE PUNCHED NONWOVEN POLYESTER GEOTEXTILE UNDERLAY

- Manufacturer: Rigidal Systems Limited.
  - Product reference: Calshield Breather Membrane; instal between aluminium roofing sheets and plywood deck.
- Recycled content: None permitted.

52 LAYING UNDERLAY

- Handling: Prevent tears and punctures.
- Laying: Butt jointed onto a dry substrate. Fix edges with aluminium or galvanized steel staples or 20 x 3 mm extra large head clout nails. Do not lay over eaves and drip/ step aluminium underlaps.
- Ventilation paths: So not obstruct.
- Keep dry and cover with aluminium at the earliest opportunity.

62 CLIPS

- Aluminium or stainless steel (austenitic) clips: Supplied preformed by the strip/ sheet manufacturer/ supplier, or cut and formed in situ as recommended by the strip/ sheet manufacturer/ supplier.
- Dimensions, number of fixings and provision for movement: As recommended by the strip/ sheet manufacturer/ supplier.

J
Waterproofing

J41 Reinforced bitumen membrane roof coverings

10A BUILT-UP REINFORCED BITUMEN WARM DECK ROOF COVERING

- Generally: The details below relate to the appended specification by Garland Company UK Limited.
- Substrate: 25mm WBP plywood deck laid to falls via firrings on joists.
  - Preparation: Garland quick drying Primer.
- Vapour control layer: Garland Torch Flex Vapour Sheet.
- Insulation: Garlatherm, laid in break-bond pattern, bonded in place with Garland Insul-lock HR Urethane Adhesive.
- Recycled content: None permitted.
  - Edges: Square.
  - Thickness: 130 mm.
- Waterproof covering:
  - System manufacturer: Garland Company UK Ltd.
  - First layer: Garland Ultravent underlay.
    Attachment: Torch-on bonding.
  - Intermediate layer: Not required.
    Attachment: N/A.
  - Top layer/ Capsheet: Garland Stressply Flex Plus Mineral Cap Sheet.
    Colour: Brown.
    Attachment: Torch-on bonding.
- Surface protection: Not required.
- Accessories: Pipe collars, edge trims.

15 ROOFING GENERALLY

- Substrates: Secure, clean, dry, smooth, and free from frost, contaminants, voids and protrusions.
- Adverse weather: Do not lay coverings in high winds, wet or damp conditions or in extremes of temperature unless effective temporary cover is provided over working area.
- Unfinished areas of roof: Keep dry. Protect edges of laid membrane from wind action.
- Completed coverings: Firmly attached, fully sealed, smooth, weatherproof and free draining.

30 TIMBER TRIMS, ETC

- Quality: Planed, free from wane, pitch pockets, decay and insect attack (except ambrosia beetle damage).
- Moisture content at time of covering (maximum): 22%.
- Preservative treatment: To WPA Commodity Specification C8.
- Fixing: Sherardized steel screws at maximum 600 mm centres.

35 JOINTS IN RIGID BOARD SUBSTRATES

- Cover strips: Bitumen membrane to BS 8747, class S2P3, 150 mm wide. Lay centrally over substrate joints and adhere with bonding compound along edges only.

40 LAYING VAPOUR CONTROL LAYER

- Attachment Securely bond or nail to substrate.
- Laps: 75 mm minimum, fully bitumen sealed.
- Penetrations: Fully seal using bonding or taping methods recommended by manufacturer.
- Exposed edges: Enclose with vapour control layer to provide an adequate seal when overlapped by roof covering. Form a complete envelope around insulation.

45A LAYING WARM DECK ROOF INSULATION

- Setting out:
  - Long edges: Fully support and run at right angles to structure.
  - End edges: Adequately support.
  - Joints: Butt together.
  - End joints: Stagger.
- Bedding: Full bed of bonding compound.
- Fixing: To manufacturers' recommendation
- Completion: Boards must be in good condition, well fitting and stable.

50 LAYING REINFORCED BITUMEN MEMBRANES GENERALLY

- Bonding: Continuous.
  - Pour and roll bonding: Use hot compound. Remove excess compound at laps of top layer/ capsheet.
  - Torch-on bonding: Leave a continuous bead of compound at laps of top layer/ capsheet.
- Laps:
  - Direction: Install membranes so that water drains over and not into laps.
  - Side and end laps: Minimum 75 mm and fully sealed.
  - Head and side laps: Offset.
- Successive layers: Apply without delay. Do not trap moisture.
- Details: Weathertight. Form with adequate overlapping, staggering of laps and full bonding.

55 NAILING FIRST LAYER OF REINFORCED BITUMEN MEMBRANE

- Fix to timber substrates with galvanized extra large head clout nails to BS 1202-1, 20 mm long.
- Fixing centres:
  - General area: Maximum 150 mm grid centres.
  - Perimeter of roof and all side and head laps: 50 mm.

60 PARTIAL BONDING OF REINFORCED BITUMEN MEMBRANES

- Venting first layer: Loose lay. Do not carry up angle fillets and vertical surfaces or through details.
  - Long edges: Overlap minimum 50 mm.
  - Ends: Butt together.

70 SKIRTINGS AND UPSTANDS

- Angle fillets: Type supplied by insulation manufacturer, minimum 50 x 50 mm, bitumen bonded.
- Venting first layer of membrane: Stop at angle fillet. Fully bond in bitumen for 300 mm strip around perimeters. Overlap onto upstand with strips of BS 8747, class S1P1 reinforced bitumen membrane fully bonded with 75 mm lap onto first layer, except where subsequent two layers are of high performance polyester based membrane.
- Other layers of membrane: Carry in staggered formation up upstand, with each layer fully bonded. Where practicable carry capsheet over top of upstand.
- Upstands:
  - At ends of rolls: Carry bitumen membrane up without using separate strip.
  - Elsewhere: Use matching strips of bitumen membrane, maintaining laps.

75 WELTED DRIPS

- Material: Agrément certified SBS modified bitumen membrane, polyester reinforced.
  - Length: Form using maximum length strips.
  - Height at external gutter (minimum): 75 mm.
- Welt tail: Nail to face of drip batten. Fold neatly.
- Welt: Bond together. Carry minimum 100 mm onto roof and overlap with top bitumen membrane.

85 PREFORMED SLEEVES, ETC

- Type: Preformed flanged sleeve.
- Manufacturer: Contractor's choice.
  - Product reference: TBA.
- Colour: Black.
- Size: As required.

K
Linings/Sheathing/Dry partitioning

K10 Plasterboard dry linings/ partitions/ ceilings

45A WALL LINING SYSTEM

- Manufacturer: British Gypsum.
  - Web: www.british-gypsum.com.
  - Email: bgtechnical.enquiries@bpb.com.
  - Product reference: DriLyner RF
- Parge coat: Not required.
- Adhesive method: Gyproc sealant spots
  - Priming: Gyproc Sealant.
- Linings: 1 x 50 mm Gyproc ThermaLine SUPER.
- Finishing: 2-3 mm thick skim coat of Thistle Board Finish plaster.
  - Primer/ Sealer: 1 coat of Gyproc Drywall Primer.
  - Accessories: Gyproc skirting plates; rigid beads/ stops.

65 DRY LINING GENERALLY

- General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
- Plasterboards: To BS 1230-1 with exposed surface and edge profiles suitable to receive the specified finish.
- Cutting plasterboards: Neatly and accurately without damaging core or tearing paper facing. Minimize cut edges.
- Two layer boarding: Stagger joints between layers.
- Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

67 SKIM COAT PLASTER FINISH

- Plaster type: As recommended by board manufacturer.
  - Thickness: 2-3 mm.
- Joints: Fill and tape except where coincident with metal beads.
- Finish: Tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.

69 INSTALLING BEADS/ STOPS

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

70 ADDITIONAL SUPPORTS

- Framing: Accurately position and securely fix to give full support to:
  - Partition heads running parallel with, but offset from main structural supports.
  - Fixtures, fittings and services.
  - Board edges and lining perimeters.

75 NEW WET LAID BASES

- Dpcs: Install under full width of partitions/ freestanding wall linings.

85 MINERAL WOOL INSULATION

- Fitting insulation: Closely butted joints and no gaps. Prevent slumping.
- Electrical cables overlaid by insulation: Size accordingly.

87 SEALING GAPS AND AIR PATHS

- Sealing: Apply sealant to perimeter abutments and around openings as a continuous bead with no gaps.
  - Gaps between floor and underside of plasterboard: After sealing, fill with joint compound.

90 SEAMLESS JOINTING

- Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of tape, fully bedded.
- Finishing: Feather out jointing compound to give a flush, smooth, seamless surface.
- Nail/ screw depressions and minor indents: Fill to give a flush surface.

K11 Rigid sheet flooring/ sheathing/ decking/ sarking/ linings/ casings

41 PLYWOOD FLAT ROOF DECKING

- Substrate: 170 x 47 C24 joists with firrings to create falls.
  - Additional supports: None.
- Plywood: Manufactured to the relevant standards and quality control procedures specified in BS 5268-2, and so marked.
  - Type: WISA Finnish Spruce.
  - Structural Grade: CE2+.
  - Face Veneer Grade: III
  - Nominal thickness/ number of plies: 24 mm/8 ply.
  - Edges: Square.
- Setting out: Long edges running across supports. End joints central over supports and staggered.
- Fixing to supports:
  - Fasteners: 75 x 3.35 mm galvanized annular ringed shank nails.
  - Fixing centres (maximum): 150 mm along all supported edges; 150 mm along intermediate supports.

42 PLYWOOD PITCHED ROOF SHEATHING

- Substrate: 150 x 50 mm C16 rafters.
  - Additional supports: As required.
- Plywood: Manufactured to the relevant standards and quality control procedures specified in BS 5268-2, and so marked.
  - Type: WISA Finnish Spruce.
  - Structural Grade: CE2+.
  - Surface Veneer Grade: III
  - Nominal thickness/ number of plies: 18 mm / 6 ply externally to support aluminium roof covering; 12 mm / 4 ply internally to support insulation.
  - Edges: Square.
  - Bonding type: WBP
  - Preservative Treatment: Tanalith 'E' in accordance with BSEN 8417, Table 9, to achieve suitability for use in hazard classes 1-3 inclusive.
- Setting out: Long edges running across supports. End joints central over supports and staggered.
- Fixing to supports:
  - Fasteners: 65 x 3.35 mm galvanized annular ringed shank nails.
  - Fixing centres (maximum): 150 mm along all supported edges; 150 mm along intermediate supports.

67 ADDITIONAL SUPPORTS

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

72 BOARD MOISTURE CONTENT AND CONDITIONING

- Moisture content of boards at time of fixing: Appropriate to end use.
- Conditioning regime: Submit proposals.

85 FIXING GENERALLY

- Timing: Building to be weathertight before fixing boards internally.
- Moisture content of timber supports (maximum): 18%.
- Fasteners: Evenly spaced in straight lines and in pairs across joints.
  - Distance from edge of board: Sufficient to prevent damage.

90 OPEN JOINTS

- Perimeter joints and joints between boards: Free from plaster, mortar droppings and other debris.
- Temporary wedges/ packings: Remove on completion of board fixing.

K40 Demountable suspended ceilings

10A SUSPENDED CEILINGS

- Manufacturer: Rockfon, Div of Rockwool Group.
  - Web: www.rockfon.co.uk.
  - Email: info@rockfon.co.uk.
  - Product reference: Koral
- Module size: 600 x 600 x 15mm.
- Tile finish: Micro textured white.
- Tile edge detail: E24.
- Grid type: RockLink 24.
- Suspension system: Grid and hanger fixings and spacings as recommended by the suspended ceiling/membrane manufacturer; to include all hangers, fixings, main runners, cross members, primary channels, perimeter trims, splines, noggings, clips, bracing, bridging, etc., which are necessary to complete the installation.

40 WORKMANSHIP GENERALLY

- Fixing: Secure. In accordance with manufacturers' recommendations and BS 8290-3. Provide additional bracing and stiffening to give a stable ceiling system.
- Setting out: Accurate. Provide level soffits free from undulations and lipping.
- Lines and joints: Straight and parallel to walls, unless specified otherwise.
- Edge infill units size (minimum): Half standard width or length.
- Corner infill units size (minimum): Half standard width and length.
- Grid: Position to suit infill unit sizes. Allow for permitted deviations from nominal sizes of infill units.

50 WIRE HANGERS

- General: Straighten before use.
- Installation: Install vertical without bends or kinks. Do not allow hangers to press against fittings.
- Fixing: Tie securely at top and bottom with tight bends to loops to prevent vertical movement.

L
Windows/Doors/Stairs

L10 Windows/ Rooflights/ Screens/ Louvres

25A ALUMINIUM WINDOWS AND DOORS

- Manufacturer: Sapa Building Systems Ltd.
  - Web: www.sapabuildingsystems.co.uk.
  - Email: info@sapabuildingsystems.co.uk.
  - Product reference: Monarch Dualframe 75mm with top hung casement windows, fixed lights and doors; to configurations shown on the drawings.
- Size: As drawings.
- Finish as delivered: Polyester powder coated – colour to be advised.
- Glazing details: 28 mm insulating glass units.
  - Glazing beads: Internal.
- Ironmongery: As Section P21
- Accessories: Trickle ventilators to statutory requirements.

75A SEALANT

- Manufacturer: Adshead Ratcliffe & Co Ltd.
  - Web: www.arbo.co.uk.
  - Email: arbo@arbo.co.uk.
  - Product reference: Arbosil 1096 Sealant
- Colour: TBA - to closely match PPC finish to aluminium windows.
- Accessories: Joint backing: Closed cell foam polyethylene rod.

80 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.

90A WINDOW DESIGN AND INSTALLATION

- Standard: To BS 8213.

L20 Doors/ shutters/ hatches

10 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.

21 WOOD FLUSH DOORS INTERNAL FD30S FIRE RESISTING AND SMOKE CONTROL DOORS WITH VISION PANEL

- Manufacturer: Contractor's choice.
  - Product reference: TBA.
- Facings: Interior grade plywood.
- Lippings: hardwood exposed lippings to long edges.
- Core: Solid, fire resisting to min. 30 minute standard.
- Preservative treatment: Required.
- Finish as delivered: Prepared and primed, as section M60.
- Glazing details: Clear impact and fire resisting glazing.
  - Beading: Internal.
- Ironmongery: Satin stainless steel; as appended schedule by Gatcliff Enterprises Ltd.
- Other requirements: None.

22 WOOD FLUSH DOORS INTERNAL NON-FIRE RESISTING DOORS

- Manufacturer: Contractor's choice.
  - Product reference: TBA.
- Facings: Interior grade plywood.
- Lippings: hardwood exposed lippings to long edges.
- Preservative treatment: Required.
- Finish as delivered: Prepared and primed, as section M60.
- Glazing details: Not applicable.
  - Beading: N/A.
- Ironmongery: Satin stainless steel; as appended schedule by Gatcliff Enterprises Ltd.
- Door grille: Incorporate door grille where indicated on drawings; as detailed in the appended Mechanical Specification.
- Other requirements: None.

23 WOOD FLUSH DOORS INTERNAL NON-FIRE RESISTING BI-FOLD DOORS

- Manufacturer: Contractor's choice.
  - Product reference: TBA.
- Facings: Interior grade plywood.
- Lippings: hardwood exposed lippings to long edges.
- Preservative treatment: Required.
- Finish as delivered: Prepared and primed, as section M60.
- Glazing details: Not applicable.
  - Beading: Internal.
- Ironmongery: Satin stainless steel; as appended schedule by Gatcliff Enterprises Ltd.
- Door grille: Incorporate door grille where indicated on drawings; as detailed in the appended Mechanical Specification.
- Other requirements: Door to fold as indicated on drawings; allow for tracks, rollers, intermediate hinges and the like as required to make the door fully operational..

45A EXTERNAL DOORS ALUMINIUM

- Manufacturer: Sapa Building Systems Ltd.
  - Web: www.sapabuildingsystems.co.uk.
  - Email: info@sapabuildingsystems.co.uk.
  - Product reference: [Monarch Dualframe.
    Size: [As drawings].
    Finish as delivered: [Polyester powder coated – colour to be advised].
    Glazing details: [
  - 28 mm insulating glass units;
  - 6 mm toughened outer pane with anti-sun tint, etched to indicate BS 6206 compliance;
  - 6.4 mm laminated inner pane; etched to indicate BS 6206 compliance].
  - Glazing beads - [internal].
    Threshold: To provide DDA compliant level access.
    Ironmongery/ Accessories: [All in solid satin stainless steel:
  - overhead hydraulic closers with backcheck and dleayed closing;
  - continuous hinges;
  - multi-point locking;
  - DDA compliant 'D' handles
  - push plates;
  - kick plates;
  - cylinder operated mortice latch; suited key control externally, thumbturn internally (except fire escape doors);
  - Panic bar release for the full door leaf width; suited key control externally (fire escape doors only);
  - cylinder operated mortice deadlock for out-of-hours use only; suited key control both sides (all doors);
  - weatherstripping throughout.

50 WOOD DOOR FRAMES AND ARCHITRAVES

- Manufacturer: Contractor's choice .
  - Product reference: TBA .
- Species: Douglas fir .
- Preservative treatment: Required .
- Finish as delivered: Prepared and primed, as section M60 .
- Perimeter seals: Fire and smoke seal .
- Fixing: Plugged and screwed .
  - Spacing of fixings (frames not predrilled): Maximum 150 mm from ends of each jamb, adjacent to each hanging point and at 600 mm maximum centres.

70 FIRE RESISTANCE

- Requirement: Specified performance to be the minimum period attained when tested for integrity in accordance with BS 476-22, BS EN 1634-1 or BS EN 1634-3.

75 FIRE RESISTING/ SMOKE CONTROL DOORS/ DOORSETS

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

80A SEALANT TO INTERNAL FIRE DOORS:

- Manufacturer: Adshead Ratcliffe & Co Ltd.
  - Web: www.arbo.co.uk.
  - Email: arbo@arbo.co.uk.
  - Product reference: Arbo XL 1075 Fire Retardant Sealant.
- Accessories: Joint backing - closed cell foam polyethylene rod.

80B SEALANT

Manufacturer: Adshead Ratcliffe & Co Ltd.

- Web: www.arbo.co.uk.
- Email: arbo@arbo.co.uk.
- Product reference: Arbosil 1096 Sealant
  Colour: [TBA - to closely match PPC finish to aluminium doors].
  Accessories: [Joint backing - closed cell foam polyethylene rod].

85 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.

L30 Stairs/ ladders/ walkways/ handrails/ balustrades

41A LOFT LADDERS

- Manufacturer: Premier Loft Ladders Ltd.
  - Web: www.premierloftladders.co.uk.
  - Email: sales@premierloftladders.co.uk.
  - Product reference: Supreme stairway with integral hatch and frame assembly.
- Fire resistant casing: Not required.
- Operation: Manual.
- Accessories: Protective feet; telescopic handrail; 3 side upper level guardrail.
- Other requirements: Hatch and frame assembly to be fully integrated into suspended ceiling installation; include all necessary works to support loads from trussed rafters.

70 PROPRIETARY HANDRAILS

- Manufacturer: Kee Safety Limited.
  - Product reference: Kee Klamp System.
- Component material and finish as delivered:
  - Handrails: Low carbon steel - galvanized .
  - Brackets: Low carbon steel - galvanized .
- Other requirements: None.
- Fixing: Anchor fixed to concrete base/masonry walls.

80 INSTALLATION GENERALLY

- Fasteners and methods of fixing: To Section Z20.
- Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
- Temporary support: Do not use stairs, walkways or balustrades as temporary support or strutting for other work.
- Applied features (finishes, inserts, nosings, etc): Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as applied feature manufacturer's recommendations before application.

L40 General glazing

10 WORKMANSHIP GENERALLY

- Glazing:
  - Generally: To BS 6262.
  - Integrity: Wind and watertight under all conditions. Make full allowance for deflections and other movements.
- Glass:
  - Standards: Generally to BS 952 and to the relevant parts of:
    BS EN 572 for basic soda lime silicate glass.
    BS EN 1096 for coated glass.
    BS EN 12150 for thermally toughened soda lime silicate glass.
    BS EN ISO 12543 for laminated glass.
  - Quality: Free from scratches, bubbles and other defects.
  - Dimensional tolerances: Panes/ sheets to be accurately sized.
- Material compatibility: Glass/ plastics, surround materials, sealers primers and paints/ clear finishes to be compatible. Comply with glazing/ sealant manufacturers' recommendations.

20 REMOVAL OF GLASS/ PLASTICS FOR REUSE

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

30 PREPARATION

- Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing.

M
Surface finishes

M10 Cement based levelling/ wearing screeds

12 PROPRIETARY POLYMER MODIFIED LEVELLING SCREEDS
Substrate: Precast concrete beam and block floor as Section E10.
Screed manufacturer: Ronacrete Limited.
- Product reference: Ronafix Pre-packed Floating Screed 35+ (Mix F).
  Screed construction: Floating.
  Thickness:
- Nominal: 75 mm.
- Minimum: 72 mm.
- Maximum: 78 mm.
  Mix:
- Proportions (cement:sand): As supplied.
  Finish: Trowelled, as Clause M10/75.
- To receive: Floor coverings over smoothing underlayment as required, as Section M50.
  Application: In accordance with manufacturers instructions.

30 FULLY BONDED CONSTRUCTION
Removing mortar matrix: Shortly before laying screed, expose coarse aggregate over entire area of hardened base.
Texture of surface: Suitable to accept screed and achieve a full bond over complete area.
Bonding coat: N/A.

35 PARTIALLY BONDED CONSTRUCTION
Substrate surface: Brushed finish with no surface laitance.
- Texture of surface: Suitable to accept screed and achieve a bond over complete area.
  Bonding coat: N/A.

40 FLOATING CONSTRUCTION
Insulation:
- Type: 85mm Celotex FF4000 insulation
- Installation: Lay with tight butt joints. Continue up at perimeter abutments for full depth of screed.
  Separating layer:
- Type: Polyethylene sheet.
- Installation: Lay over insulation and turn up at perimeter abutments. Lap 100 mm at joints.

45 AGGREGATES AND CEMENTS
Sand: To BS EN 13139.
- Grading limits: To BS 8204-1, Table B.1.
  Coarse aggregates:
- Standard: To BS EN 12620.
  Cement:
- Cement types: In accordance with BS 8204-1, clause 5.1.3.

47 ADMIXTURES
Standards; In accordance with BS 8204-1, Table 1.
Calcium chloride: Do not use in admixtures.

50 MIXING
Water content: Minimum necessary to achieve full compaction.
Mixing: Mix materials thoroughly to uniform consistency in a suitable forced action mechanical mixer.

52 COMPACTION
General: Compact thoroughly over entire area.
Screeds over 50 mm thick: Lay in two layers of equal thickness; roughen surface of compacted lower layer then immediately lay upper layer.

55 JOINTS IN LEVELLING SCREEDS
Laying screeds: Lay continuously using 'wet screeds' between strips or bays; minimize defined joints.

60 JOINTS IN POLYMER MODIFIED WEARING SCREEDS
Bay sizes (maximum): 4.5 m.
Location of bay joints: Over construction/movement joints in base slab.

70 SMOOTH FLOATED FINISH
Finish: Even texture with no ridges or steps.

75 TROWELLED FINISH TO LEVELLING SCREEDS
Floating: To an even texture with no ridges or steps.
Trowelling: To a uniform smooth surface, free from trowel marks and other blemishes, and suitable to receive specified flooring material.

80 TROWELLED FINISH TO WEARING SCREEDS
Floating: To an even texture with no ridges or steps.
Trowelling: Successively trowel at intervals, applying sufficient pressure to close surface and give a uniform, smooth finish free from trowel marks and other blemishes.

90 CURING
Curing period (minimum): As soon as screed has set sufficiently, closely cover with polyethylene sheeting for minimum 7 days or as recommended by proprietary screed manufacturer.
Drying after curing: Allow screeds to dry gradually.

M20 Plastered/ Rendered/ Roughcast coatings

5A CEMENT:SAND RENDER TO EXTERNAL BLOCKWORK

- Substrate: Dense concrete blockwork.
  - Preparation: Apply bonding coat.
- Mortar: Ready-to-use.
- Sand: To BS EN 13139.
  - Grading: 0/2 or 0/4 (CP or MP); category 2 fines.
- Admixture: Ronacrete Ltd Ronafix SBR admixture; 1 part admixture to 3 parts mixing water; to improve bonding to substrate and enhance durability.
- Undercoats:
  - Mix: 1:5 masonry cement:sand.
  - Thickness (excluding keys and dubbing out): 12 mm.
- Final coat:
  - Mix: 1:5 masonry cement:sand .
  - Thickness: 8 mm.
- Finish: Plain.

30 LIGHTWEIGHT GYPSUM PLASTER TO INTERNAL WALLS AND PARTITIONS

- Substrate: Dense concrete blockwork.
  - Preparation: Apply bonding coat; Ronacrete Ltd Ronafix; to manufacturer's recommendations.
- Manufacturer: British Gypsum..
- Undercoats: To BS EN 13279-1.
  - Product reference: Thistle Hardwall.
  - Thickness (excluding dubbing out): 11mm.
- Final coat: Finish plaster to BS EN 13279-1, class B.
  - Product reference: Thistle Multi-finishl.
  - Thickness: 2-3 mm.
  - Finish: Smooth.

50 GYPSUM PLASTER SKIM COAT ON PLASTERBOARD

- Plasterboard manufacturer: British Gypsum.
  - Product reference: 12.5 mm thick Gyproc Wallboard Duplex T/E with integral vapour barrier.
- Plaster: Board finish plaster to BS EN 13279-1, class B.
  - Manufacturer: British Gypsum.
    Product reference: Thistle Board Finish.
  - Thickness: 2-5 mm.
  - Finish: Smooth.

60 CEMENTS FOR MORTARS

- Cement: To BS EN 197-1 and CE marked.
  - Types: Portland cement, CEM I.
    Portland slag cement, CEM II.
    Portland fly ash cement, CEM II.
  - Strength class: 32.5, 42.5 or 52.5.
- Sulfate resisting cement: To BS 4027 and Kitemarked.
  - Strength class: 42.5.
- Masonry cement: To BS EN 998-1 and Kitemarked
  - Class: MC 12.5 (with air entraining agent).

62 ADMIXTURES FOR CEMENT GAUGED MORTARS

- Air entraining (plasticizing) admixtures: To BS EN 934-2 and compatible with other mortar constituents.
- Other admixtures: Submit proposals.
- Prohibited admixtures: Calcium chloride and admixtures containing calcium chloride.

65 MIXING

- Render mortars (site-made):
  - Batching: By volume using gauge boxes or buckets.
  - Mix proportions: Based on damp sand. Adjust for dry sand.
- Mixes: Of uniform consistence and free from lumps.

67 COLD WEATHER

- Internal work: Take precautions to prevent damage to internal coatings when air temperature is below 3°C.
- External work: Avoid when air temperature is at or below 5°C and falling or below 3°C and rising.

71 SUITABILITY OF SUBSTRATES

- General: Suitable to receive coatings. Sound, free from contamination and loose areas.

80 PLASTERBOARD BACKINGS

- Additional framing supports:
  - Fixtures, fittings and service outlets: Accurately position to suit fasteners.
  - Board edges and perimeters: To suit type and performance of board.
- Joints:
  - Joint widths (maximum): 3 mm.
  - End joints: Stagger between rows.
  - Two layer boarding: Stagger joints between layers.
- Joint reinforcement tape: Apply to joints and angles except where coincident with metal beads.

82A BEADS/ STOPS

- Location: External angles and stop ends.
- Materials:
  - External render: Expamet stainless steel; ref. 508 as bell stop bead at DPC level; ref. 546 end stop to horizontal and vertical terminations and where render abuts windows, doors, other finishes etc. and for providing sealant pointed movement joints in render where necessary; use in movement joints; ref. 545 to external corners including those to window reveals; install as manufacturer's current written instructions
  - Internal plaster/ render: British Gypsum galvanized steel beads to suit application.
- Fixing: Secure and true to line and level.
  - Beads/ stops to external render: Fix mechanically.

87 APPLICATION OF COATINGS

- General: Apply coatings firmly and achieve good adhesion.
- Appearance of finished surfaces: Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
  - Accuracy: Finish to a true plane with walls and reveals plumb and square.
- Drying out: Prevent excessively rapid or localized drying out.
- Keying undercoats: Cross scratch (plaster coatings) and comb (render coatings). Do not penetrate undercoat.

93 CURING AND DRYING OF RENDER COATINGS

- Curing: Keep each coat damp by covering with polyethylene sheet and/ or spraying with water
  - Curing period (minimum): 48 hours.
- Drying: Allow each coat to dry thoroughly, with shrinkage substantially complete before applying next coat.

99 RENDER FINAL COAT - PLAIN FLOATED FINISH

- Finish: Even, open texture free from laitance.

5A TILING TO WALLS AND SPLASHBACKS

- Tiles: Moulded ceramic.
  - Manufacturer/ Supplier: Johnson Tiles Ltd.
    Product reference: Prismatics Satin.
  - Colour: To be selected from standard satin range in Price Group 2.
  - Size: 150 x 150 x 6.5 mm.
  - Recycled content: Not applicable.
  - Other requirements: Light reflectance value (LRV) to have high contrast to adjacent surfaces, to DDA requirements.
- Background/ Base: Plastered concrete blockwork.
  - Preparation: Bonding coat.
- Intermediate substrate: Not required.
- Bedding: Ribbed adhesive as Clause 50.
  - Adhesive: Johnson 'One Part Flexible' ref: ADOFWH.
- Joint width: As spacer lugs.
- Grout: Johnson 'No Mould Flexible Grout' ref: GTNMWH.
  - Type/ classification: CG2.
- Movement joints: as clause M40/75A.
  - Location: as drawings/schedule of Works.
- Accessories: Corner, end stop beads etc. to manufacturer recommendations.

15 NEW BACKGROUNDS/BASES

- Background drying times (minimum):
  - Brick/block walls: 6 weeks.
  - Rendering: 2 weeks.
  - Gypsum plaster: 4 weeks.
- Base drying times (minimum):
  - Concrete slabs: 6 weeks.
  - Cement:sand screeds: 3 weeks.

20 EXISTING BACKGROUNDS/BASES GENERALLY

- Efflorescence, laitance, dirt, loose and defective material: Remove and make good defective areas with materials compatible with background/base and bedding.
- Deposits of oil, grease and other materials incompatible with the bedding: Remove.
- Tile, paint and other nonporous surfaces: Clean.
- Wet backgrounds: Dry before tiling.
- Paint with unsatisfactory adhesion: Remove so as not to impair bedding adhesion.

25 NEW PLASTER

- Plaster primer: Apply if recommended by adhesive manufacturer.

30 FIXING GENERALLY

- Colour/shade: Avoid unintended variations within tiles for use in each area/room.
  - Variegated tiles: Mix thoroughly.
- Adhesive: Compatible with background/base.
- Cut tiles: Neat and accurate.
- Fixing: Provide adhesion over entire background/base and tile backs.
- Final appearance: Before bedding material sets, make adjustments necessary to give true, regular appearance to tiles and joints.
- Deviation of surface: Variations in gap under a 2 m straightedge (with feet) placed anywhere on the surface to be not more than 3 mm.
- Surplus bedding material: Clean from joints and face of tiles.

35 SETTING OUT

- Joints: True to line, continuous and without steps.
  - Joints on walls: Horizontal, vertical and aligned round corners.
  - Joints in floors: Parallel to main axis of space or specified features.
- Cut tiles: Minimise number, maximise size and locate unobtrusively.
- Joints in adjoining floors and walls: Align.
- Joints in adjoining floors and skirtings: Align.

50 RIBBED ADHESIVE BEDDING TO WALLS

- Application: Apply 3 mm floated coat of adhesive to dry background. Trowel to ribbed profile.
- Tiling: Press tiles firmly onto float coat.

70 GROUTING

- Sequence: Grout when bed/adhesive has set sufficient to prevent disturbance of tiles.
- Joints: 6 mm deep (or depth of tile if less). Free from dust and debris.
- Grouting: Fill joints completely, tool to profile, clean off surface. Leave free from blemishes.
- Polishing: When grout is hard, polish tiling with dry cloth.

75A SEALANT MOVEMENT JOINTS IN TILING TO WALLS

- Joints: Grouting to be discontiuous at internal corners; leave a 6mm vertical joint and point with sanitary grade silicone sealant.
- Sealant: Arbosil 1081 High Modulus Silicone Sealant incorporating fungicide; to manufacturer's recommendations; colour to match grouting .
  - Preparation and application: As section Z22.

M50 Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting

15A CARPET TILING

- Base: Trowelled screed as M10.
  - Preparation: Latex levelling screed to manufacturer's recommendations.
- Fabricated underlay: Not required.
- Carpet tiles: 80% polypropylene, 20% polyamide.
  - Manufacturer: Heckmondwike FB.
    Product reference: Broadrib.
  - Recycled content: None permitted.
  - Size: 500 x 500 mm.
  - Colour/ pattern: TBA; from manufacturer's standard range, following consultation.
- Method of laying: Fully adhere all tiles with release adhesive recommended by tile manufacturer; F Ball Tackifier F41..

20A SHEET FLOORING NON-SLIP VINYL

- Base: Trowelled screed.
  - Preparation: Latex levelling screed to manufacturer's recommendations.
- Fabricated underlay: None.
- Flooring roll: PVC Safety Flooring.
  - Manufacturer: Altro Limited.
    Product reference: Walkway 20.
  - Recycled content: None permitted.
  - Width: 2000 mm.
  - Thickness: 2 mm.
  - Colour/ pattern: From manufacturer's standard range; to be advised following consultation.
- Adhesive (and primer if recommended by manufacturer): Altrofix 19 two part polyurethane adhesive by Altro Limited, to manufacturer's recommendations .
- Seam welding: Hot welding with complimentary Altro coloured rod.

20B SHEET FLOORING RUBBER

- Base: Trowelled screed.
  - Preparation: Latex levelling screed to manufacturer's recommendations.
- Fabricated underlay: None.
- Flooring roll: Rubber sports flooring.
  - Manufacturer: Altro Limited; www.altro.com; enquiries@altro.com; T - +44 (0)1462 707600; F - +44 (0)1462 707515 .
    Product reference: Mondoflex.
  - Recycled content: None permitted.
  - Width: 1900 mm.
  - Thickness: 4.0 mm.
  - Colour/ pattern: From manufacturer's standard range; to be advised following consultation.
- Adhesive (and primer if recommended by manufacturer): Altrofix 19 two part polyurethane adhesive by Altro Limited, to manufacturer's recommendations .
- Installation: To BS8203:2001 and manufacturer's current written recommendations .

25A CARPETING ENTRANCE/CORRIDOR

- Base: Trowelled screed.
  - Preparation: Latex levelling screed to manufacturer's recommendations.
- Fabricated underlay: None.
- Carpet underlay: Not required .
- Carpet: Polyproplylene fibre.
  - Manufacturer: Heckmondwike FB.
    Product reference: Battleship.
  - Recycled content: None permitted.
  - Width: 2000 mm.
  - Colour/ pattern: TBA; to match Battleship barrier matting @ M50/30A; from manufacturer's standard range, following consultation.
- Carpet adhesive (and primer if recommended by manufacturer): F Ball Styccobond F3 adhesive as recommended by the carpet manufacturer.

30A BARRIER MATTING

- Base: Trowelled screed.
  - Preparation: Latex levelling screed to manufacturer's recommendations.
- Fabricated underlay: None.
- Carpet underlay: None.
- Carpet: Polypropylene fibre with integral ramped rubber edging.
  - Manufacturer: Heckmondwike FB.
    Product reference: Hippo Loose Lay Mat.
  - Recycled content: None permitted.
  - Size: 1220 x 1830 mm.
  - Colour/ pattern: TBA; to match Hippo entrance/corridor matting @ M50/25A; from manufacturer's standard range, following consultation.
- Carpet adhesive (and primer if recommended by manufacturer): N/A

40 LAYING COVERINGS ON NEW WET LAID BASES

- Base drying aids: Not used for at least four days prior to moisture content test.
- Base moisture content test: Carry out in accordance with BS 5325, Annexe A or BS 8203, Annexe A.
- Commencement of laying coverings: Not until all readings show 75% relative humidity or less.

45 EXISTING FLOOR COVERING REMOVED

- Substrate: Clear of covering and as much adhesive as possible. Skim with smoothing compound to give smooth, even surface.

57 SMOOTHING UNDERLAYMENT

- Manufacturer: Ball, F and Co Ltd.
  - Web: www.f-ball.co.uk.
  - Email: mail@f-ball.co.uk.
  - Type: CT-C16-F7 to BS EN13813:2002
  - Product reference: Blue Bag/Stopgap Liquid 128
  - Thickness: Min. 3mm
  - Primer: Stopgap P131, diluted to manufacturer's recommnedations.
  - Curing: Walkable in 3 hours; ready to receive floor coverings in 24 hours.
  - Background: New cement based screed as Section M10

60 SETTING OUT TILES

- Method: Set out from centre of area/ room so that wherever possible:
  - Tiles along opposite edges are of equal size.
  - Edge tiles are more than 50% of full tile width.

65 LAYING COVERINGS

- Base/ substrate condition: Rigid, dry, smooth, free from grease, dirt and other contaminants.
- Use a primer where recommended by adhesive manufacturer. Allow to dry thoroughly.
- Adhesive: As specified, as recommended by covering manufacturer or, as approved.
- Conditioning of materials prior to laying: As recommended by manufacturer.
- Environment: Before, during and after laying, provide adequate ventilation and maintain temperature and humidity approximately at levels which will prevail after building is occupied.
- Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks, stains, trowel ridges and high spots.

70A EDGINGS AND COVER STRIPS

- Manufacturer: Gradus.
- Product reference:
  - PPS trim System; two part base and self-levelling screw-in cover.
- Material/ finish: Anodised aluminium.
- Fixing: Secure (using matching fasteners where exposed to view) with edge of covering gripped; to manufacturer's recommendations; corner junctions to be neatly mitred.
- Locations: Internal door thresholds; transitions between different floor covering types; over movement joints in floors; around drainage inspection chambers and other large service penetrations.

80A SKIRTINGS SAFETY FLOORING TO WET AREAS ONLY

- Types: Floor covering turned up at wall abutments; dressed over coved former to create coved skirting; terminated in skirting trim .
- Manufacturer: Altro Limited .
  - Product reference: Altro cover formers and coved skirting termination trims .
- Fixing: Securely bond with mitred corners.

85 WASTE

- Spare covering material: Retain suitable material for patching. On completion submit pieces for selection. Hand over selected pieces to Employer.

M60 Painting/ clear finishing

10A EMULSION PAINT TO INTERNAL PLASTERED SURFACES

- Manufacturer: ICI AkzoNobel.
  - Product reference: Dulux Trade Diamond Matt.
- Prepare and apply as appended manufacturer's specification.

12A GLOSS PAINT TO INTERNAL EXPOSED JOINERY

- Manufacturer: ICI AkzoNobel.
  - Product reference: DuluxTrade High Gloss over Dulux Trade Undercoat.
- Prepare and apply as appended manufacturer's specification.

14A MASONRY PAINT TO EXTERNAL RENDER AND FIBRE CEMENT BOARD SURFACES

- Manufacturer: ICI AkzoNobel.
  - Product reference: Dulux Trade Weathershield Smooth Masonry Paint.
- Prepare and apply as appended manufacturer's specification. .

16A DECORATIVE WOODSTAIN TO EXTERNAL SHIPLAP CLADDING

- Manufacturer: ICI Akzo Nobel.
  - Product reference: Sikkens Cetol Novatech.
- Prepare and apply as appended manufacturer's specification.

30 PREPARATION GENERALLY

- Standard: In accordance with BS 6150.
- Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Substrates: Sufficiently dry in depth to suit coating.
- Efflorescence salts, dirt, grease and oil: Remove.
- Surface irregularities: Provide smooth finish.
- Organic growths and infected coatings:
  - Remove with assistance of biocidal solution.
  - Apply residual effect biocidal solution to inhibit regrowth.
- Joints, cracks, holes and other depressions: Fill with stoppers/ fillers. Provide smooth finish.
- Dust, particles and residues from preparation: Remove and dispose of safely.
- Doors, opening windows and other moving parts:
  - Ease, if necessary, before coating.
  - Prime resulting bare areas.

32 PREVIOUSLY COATED SURFACES GENERALLY

- Preparation: In accordance with BS 6150, clause 11.5.
- Contaminated or hazardous surfaces: Give notice of:
  - Coatings suspected of containing lead.
  - Substrates suspected of containing asbestos or other hazardous materials.
  - Significant rot, corrosion or other degradation of substrates.
- Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
- Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
- Alkali affected coatings: Completely remove.
- Retained coatings:
  - Thoroughly clean.
  - Gloss coated surfaces: Provide key.
- Partly removed coatings: Apply additional preparatory coats.
- Completely stripped surfaces: Prepare as for uncoated surfaces.

35 FIXTURES AND FITTINGS

- Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Removal: Before commencing work: Ironmongery, coverplates, grilles, wall clocks, and other surface mounted fixtures.
- Replacement: Refurbish as necessary, refit when coating is dry.

37 WOOD PREPARATION

- General: Provide smooth, even finish with lightly rounded arrises.
- Degraded or weathered surface wood: Take back surface to provide suitable substrate.
- Degraded substrate wood: Repair with sound material of same species.
- Heads of fasteners: Countersink sufficient to hold stoppers/ fillers.
- Resinous areas and knots: Apply two coats of knotting.
- Defective primer: Take back to bare wood and reprime.

39 STEEL PREPARATION

- Corrosion and loose scale: Take back to bare metal.
- Residual rust: Treat with a proprietary removal solution.
- Bare metal: Apply primer as soon as possible.

41 MASONRY AND RENDERING PREPARATION

- Loose and flaking material: Remove.

43 PLASTER PREPARATION

- Nibs, trowel marks and plaster splashes: Scrape off.
- Overtrowelled 'polished' areas: Provide suitable key.

52 SEALING OF INTERNAL MOVEMENT JOINTS

- General: To junctions of walls and ceilings with architraves, skirtings and other trims.
- Sealant: Water based acrylic.
  - Manufacturer: Adshead Ratcliffe ltd.
    Product reference: Arbocaulk.
  - Preparation and application: As section Z22.

61 COATING GENERALLY

- Application standard: In accordance with BS 6150, clause 9.
- Conditions: Maintain suitable temperature, humidity and air quality.
- Surfaces: Clean and dry at time of application.
- Thinning and intermixing: Not permitted unless recommended by manufacturer.
- Priming coats: Apply as soon as possible on same day as preparation is completed.
- Finish:
  - Even, smooth and of uniform colour.
  - Free from brush marks, sags, runs and other defects.
  - Cut in neatly.
- Doors, opening windows and other moving parts: Ease before coating and between coats.

68 STAINING WOOD

- Primer: Apply if recommended by stain manufacturer.
- Application: Apply in flowing coats and brush out excess stain to produce uniform appearance.

70 EXTERNAL DOORS

- Bottom edges: Prime and coat before hanging.

75 BEAD GLAZING TO COATED WOOD

- Before glazing: Apply first two coats to rebates and beads.

N
Furniture/Equipment

N11 Domestic kitchen fittings, furnishings and equipment

10 FITTED BASE UNITS AND WALL UNITS

- Manufacturer: Howdens Joinery Co.
  - Product reference: Contract Range 'Saponetta'.
- Dimensions: To BS EN 1116.
- Surface finishes: To BS 6222-3.
- Doors and drawer fronts:
  - Material: Plastics laminate.
  - Finish and colour: Beech.
  - Edges: As supplied.
- Side panels, plinths and shelves:
  - Material: Plastics laminate.
  - Finish and colour: to match/complement the door finish.
  - Edges: As supplied.
- Accessories: As required to complete the installation.

20 WORKTOPS

- Manufacturer: Howdens Joinery Co.
  - Product reference: Contract Range 'Matt 38/616'.
- Material: Laminate covered particle board type.
- Dimensions: 616 x 38 mm.
- Exposed edges: Laminate moulded.
- Support: Base unit caracasses/chrome support legs where necessary.

30 SINKS, TAPS, TRAPS AND WASTES

- Sinks:
  - Manufacturer: Leisure .
    Product reference: Linear LR950.
  - Configuration: Single bowl reversible (drainer to be installed to RH side).
  - Material: Stainless steel .
    Colour and finish: Satin.
- Tap/ chainstay/ overflow holes: As supplied.
- Taps: Mixer.
  - Manufacturer: Leisure.
    Product reference: Aquadisc 2.
  - Operation: As supplied.
- Wastes: Plug and chain.
  - Manufacturer: Leisure.
    Product reference: WKIT05.
  - Size: To fit sink .
- Traps: Tubular plastic, P type.
  - Manufacturer: Marley.
    Product reference: WPT4W.
  - Size: To fit waste.
  - Depth of seal (minimum): 75 mm.
- Accessories: Fixing brackets.

50 SEALANT

- Standard: To BS EN ISO 11600, class F20 HM.
- Type: One part silicone.
  - Manufacturer: Adshead Ratcliffe.
  - Product reference: Arbosil 1081 High modulus silicone sealant incorporating fungicide; Arbo Primer 2650; Arbo Cleaner No.16.
- Colour: To match worktop.

N13 Sanitary appliances and fittings

11A WC PANS AND FLUSHING ARRANGEMENTS

- Manufacturer: Armitage Shanks
  Pan: S3047 Contour 21 schools, close coupled or back to wall pan WC pan, horizontal outlet, 355mm high
  Cistern: S3064 Contour 21 cistern and secure cover, 6 litre single flush push button, bottom supply and internal overflow, close coupling fitment.
  Seat: S4059 Contour 21 standard toilet seat no cover, bottom fixing hinges
  Pan connector: To BS 5627; colour to match pan.
  Accessories: S9101 Domex screws (pair .

12A DOC M PACK FOR ACCESS WC

- Manufacturer: Armitage Shanks.
- Product Reference: S6955LI Doc M CC Pack (blue grab rails) comprising the following components:
  - S3054 Contour 21 close coupled raised height WC pan, 75cm projection with floor fixing kit;
  - S3654 Contour 21 close coupled cistern for 75cm projection pan, 4.5 litre syphon, delay fill, bottom supply and internal overflow,
    secure cover fastener;
  - S4420 Spatula type reversible side lever assembly;
  - S4066 Contour 21 seat no cover, top fixing hinges and retaining buffers;
  - S2122 Contour 21 handrinse washbasin, 37cm x 30cm, one centre taphole, no overflow, no chainstay hole, bottom outlet;
  - S9110 concealed steel hangers;
  - A4131 Contour 21 (TP6) lever action thermostatic sequential basin mixer tap, flexible tails;
  - S8810 1 1/4in dished pattern plastic strainer waste, 80mm unslotted tail;
  - S8910 (TR1/P) 1 1/4in plastic bottle trap with 75mm seal;
  - S6454 Contour 21 grab rail, straight 60cm long x 35mm diameter;
  - S6452 Contour 21 grab rail, straight 45cm long x 35mm diameter;
  - S6467 Contour 21 hinged support rail, 80cm x 35mm O.D.;
  - S6468 Toilet roll holder for Contour 21 hinged arm rail.
- Installation; to manufacturer's recommendations; layout as shown on drawings.
- Accessories: Panekta connectors; manufacturer's fixing hardware

30A WASH BASINS HAND RINSE

- Manufacturer: Armitage Shanks.
- Basin: S2122 Contour 21 handrinse washbasin, 37cm x 30cm, one centre taphole, no overflow, no chainstay hole, bottom outlet.
- Tap(s): A4131 Contour 21 (TP6) lever action thermostatic sequential basin mixer tap, flexible tails.
  Waste: S8810 1 1/4in dished pattern plastic strainer waste, 80mm unslotted tail.
- Trap: S8910 (TR1/P) 1 1/4in plastic bottle trap with 75mm seal.
  Accessories: S9110 concealed steel hangers; S9000 Isovalve servicing valve, inlet and outlet each with compression nut and ring for 15mm copper tube.

40A SHOWER UNITS

- Manufacturer: Armitage Shanks.
  - Web: www.thebluebook.co.uk.
  - Email: info@thebluebook.co.uk.
  - Product reference: E7084 Space corner shower tray with integral upstands, 1½" chrome plated strainer waste, 800 mm x 800 mm
- Accessories: E3351 Trevi Modern bi-fold shower door, 700 mm, clear glass; L6850 Top access shower waste and resealing trap.
- Shower unit: Electronically controlled self-contained unit as detailed in the appended Electrical and Mechanical Specifications.

68A SEALANT

- Manufacturer: Adshead Ratcliffe & Co Ltd.
  - Web: www.arbo.co.uk.
  - Email: arbo@arbo.co.uk.
  - Product reference: Arbosil 1081
- Code: SL8130CWH.
- Accessories: Arbo Primer 2650 and Arbo Cleaner No.16.

70 INSTALLATION GENERALLY

- Assembly and fixing: Fix appliances securely to structure, without taking support from pipelines, level and plumb and so that surfaces designed to fall drain as intended.
- Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes, to form watertight joints between appliances and backgrounds (except cisterns) and between appliances and discharge pipes.

75 CISTERNS

- Cistern operating components: Obtain from cistern manufacturer.
  - Float operated valve: Matched to pressure of water supply.
- Overflow pipe: Fixed to falls, and located to give visible warning of discharge. Agree position.

81 SEALANT BEDDING AND POINTING

- Bedding: Bed sinks to top of worktops..
- Pointing: Joints between appliances and walls/floors..

P
Building fabric sundries

P10 Sundry insulation/ proofing work

15A INSULATION FITTED BETWEEN RAFTERS

- Material: PIR Board.
- Manufacturer: Celotex Limited.
  - Product reference: Celotex XR4150.
- Recycled content: Not applicable.
- Thickness: 150 mm.
- Installation requirements:
  - In accordance with Celotex Limited written instructions.
  - Boards to be cut to fit tightly between rafters.
  - Joints: Butted, no gaps.
  - Fasteners: Not required, boards will be held in place by internal plywood sheathing.
  - Air space above insulation: Not required.
  - Eaves ventilation: Not required.
- Vapour barrier: Visqueen 1200 gauge polythene; lapped and taped at joints; to warm side of insulation; continued into wall cavity at eaves.

45A INSULATION TO PRECAST CONCRETE BEAM AND BLOCK FLOOR

- Manufacturer: Celotex Limited.
  - Product reference: FF4000 PIR board insulation faced both sides with aluminium foil.
- Recycled content: Not applicable.
- Thickness: 85 mm.
- Installation requirements:
  - Installation to be in accordance with manufacturer's current written instructions.
  - Joints: Butted, no gaps.
  - Service openings: Sealed.
  - Electric cables overlaid by insulation: Sized accordingly.

60 VAPOUR CONTROL LAYER FIXED TO STUDS/ JOISTS/ FRAMING

- Material: 1000 guage virgin polyethylene.
- Manufacturer: Visqueen Building Products.
  - Product reference: Vapaour Barrier.
- Moisture content of timber at time of fixing (maximum): 20%.
- Installation requirements:
  - Setting out: Joints minimized.
  - Fixing: Staples at 250 mm centres maximum along all supports. Membrane not sagging.
  - Joints: At supports only, lapped 150 mm minimum.
  - Openings: Membrane fixed to reveals.
  - Joints and edges: Sealed with double sided tape.
  - Penetrations: Sealed.

P20 Unframed isolated trims/ skirtings/ sundry items

10 SOFTWOOD SKIRTINGS, ARCHITRAVES AND THE LIKE

- Quality of wood and fixing: To BS 1186-3.
  - Species: European redwood.
  - Class: 2.
- Moisture content at time of fixing: 9 -13%.
- Preservative treatment: Tanalith 'E' in accordance with BSEN 8417, Table 9, to achieve suitability for use in hazard classes 1-3 inclusive.
- Fire rating: Not applicable.
- Profile: Splayed and rounded.
  - Finished size: skirtings 19 x 120 mm; architraves 19 x 70 mm; other trims 19 x 70 mm or to suit application.
- Finish as delivered: Prepared and primed as section M60.
- Fixing: Evo-stik Gripfill gun grade synthetic resin adhesive, by Bostik Limited.

80 INSTALLATION GENERALLY

- Joinery workmanship: As section Z10.
- Metal workmanship: As section Z11.
- Methods of fixing and fasteners: As section Z20.
- Straight runs: To be in one piece, or in long lengths with as few joints as possible.
- Running joints: Location and method of forming to be agreed where not detailed.
- Joints at angles: Mitre, unless shown otherwise.
- Position and level: To be agreed where not detailed.

P21 Door/ window ironmongery

4 QUANTITIES AND LOCATIONS

- Quantities and locations of ironmongery to internal doors are in the appended ironmongery schedule; ironmongery to windows and external doors by supplier, to the requirements set out below .
- Fixing: As sections L10 and L20.

6 SINGLE AXIS DOOR HINGES

- Standard: To BS EN 1935.
  - Hinges to doors on escape routes and fire/ smoke control doors: CE marked.
- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Type: As supplied with specified doors and windows .
- Size: As supplied with specified doors and windows .
- Material/ finish: Aluminium and stainless steel .
- Hinge grade: As supplied with specified doors and windows .
- Other requirements: None .

12 OVERHEAD DOOR CLOSERS

- Standard: To BS EN 1154.
  - Devices to fire/ smoke control doors: CE marked.
- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Power size: As supplied with specified doors and windows .
- Other functions: Back check and delayed closing .
- Casing finish: Satin stainless steel .
- Operational adjustment:
  - Variable power: Matched to size, weight and location of doors. Fully closing latched doors and holding unlatched doors closed.
  - Closing against smoke seals of fire doors: Positive. No gaps.

22 THIEF RESISTANT DOOR LOCKS

- Standard: To BS 3621 and Kitemarked.
- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Type: As supplied with specified doors and windows .
- Backset: As supplied with specified doors and windows .
- Material/ finish: Stainless steel faceplate .
- Keying: In master keyed suite .

28 DOOR LATCHES

- Standard: To BS EN 12209.
- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Type: As supplied with specified doors and windows .
- Backset: As supplied with specified doors and windows .
  Material/ finish: Stainless steel faceplate .
- Latch spring strength: Select to prevent unsprung lever handles drooping.

30 EMERGENCY EXIT DEVICES

- Standard: To BS EN 179.
  - Devices for locked doors on escape routes: CE marked.
- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Type: Push pad .
- Material/ finish: Satin stainless steel .
- Additional requirements: External locking attachment to be suited with other locks .

34 DOOR BOLTS

- Standard: To BS EN 12051.
- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Type: Lever action flush .
- Size: To suit application .
- Material/ finish: Satin stainless steel, grade 1.4301 (304) .

42 PULL HANDLES

- Standard: To BS 8424.
- Manufacturer: SAPA.
  - Product reference: As supplied with specified doors/windows.
- Shape: D handle.
- Diameter: 19 mm.
- Distance between centres: 425 mm.
- Material/ finish: Satin stainless steel, grade 1.4301 (304).
- Mounting: Bolt through.

44 PUSH PLATES

- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Size: To suit door leaf/handles/locks .
- Material/ finish: Satin stainless steel, grade 1.4301 (304) .
- Mounting: Face fix .

46 KICK PLATES

- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Size: To suit door leaf .
- Material/ finish: Satin stainless steel, grade 1.4301 (304) .
- Mounting: Face fix .

48 ESCUTCHEONS

- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Material/ finish: Satin stainless steel, grade 1.4301 (304) .
- Keyhole type: Euro profile cylinder .

50 DOOR STOPS

- Manufacturer: Contractor's choice .
  - Product reference: TBA .
- Type: Floor mounted rubber buffer on stainless steel shoe for concrete fixing .

52 LETTER PLATES

- Standard: To BS EN 13724.
- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Operation: Inward opening sprung flap .
- Size: 305 x 76 mm .
- Material/ finish: Satin stainless steel, grade 1.4401 (316) .
- Features: None .

72 WINDOW HINGES

- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Type: TBA .
- Size: TBA .
- Material/ finish: Satin stainless steel, grade 1.4301 (304) .

84A CASEMENT OPERATION

- Manufacturer: SAPA .
  - Product reference: As supplied with specified doors and windows .
- Type: Over-centre locking bar/restrictor to lower casements; teleflex type remote operation to upper casements. .
- Material/ finish: Satin stainless steel, grade 1.4301 (304) .
- Features: Style to match other new ironmongery .

P30 Trenches, pipeways and pits for buried engineering services

10 ROUTES OF SERVICES BELOW GROUND

- Locations of new service runs: Submit proposals.
- Temporary marking: Indicate service runs with marker posts.

20 TRENCHES

- Width: As small as practicable.
- Trench sides: Vertical.
- Trench bottoms: Remove mud, rock projections, boulders and hard spots. Trim level.
- Give notice: To inspect trench for each section of the work.

30 PIPEDUCTS

- Types, colour and sizes: As recommended by the service undertaker.
- General: Lay pipes straight to line, true to gradient or level on an even, continuous bed.
- Bedding thickness: 150 mm minimum.
- Clearance between pipe ducts where they cross (minimum): 50 mm.
- Drawlines: During laying, thread through pipeducts.
  - Material, strength and length: As specified by service undertaker.
- Protection: Protect from ingress of debris. During construction, temporarily seal all exposed ends.
- Inspection: Before backfilling, allow service undertakers to inspect installation.
- Surround material: Lay and compact to 150 mm (minimum) above pipeduct crown.
- Markers: Lay marker, 200 mm above pipeduct.
  - Type: Tiles.

40 BEDDING/ SURROUND FOR PIPEDUCTS

- Bedding: Size 4/ 10 to BS EN 12620. Compact uniformly in 100 mm maximum layers.
- Surround: As bedding .

50 BACKFILLING

- Backfill from top of pipeduct surround: Material excavated from the trench.
- Backfilling: Lay and compact in 300 mm maximum layers. Do not use heavy compactors before backfill is 600 mm deep.

P31 Holes, chases, covers and supports for services

10 HOLES, RECESSES AND CHASES IN MASONRY

- Locations: To maintain integrity of strength, stability and sound resistance of construction.
- Sizes: Minimum needed to accommodate services.
  - Holes (maximum): 300 x 300 mm.
- Walls of hollow or cellular blocks: Do not chase.
- Walls of other materials:
  - Vertical chases: No deeper than one third of single leaf thickness, excluding finishes.
  - Horizontal or raking chases: No longer than 1 m. No deeper than one sixth of the single leaf thickness, excluding finishes.
- Chases and recesses: Do not set back to back. Offset by a clear distance at least equal to the wall thickness.
- Cutting: Do not cut until mortar is fully set. Cut carefully and neatly. Avoid spalling, cracking and other damage to surrounding structure.

20 NOTCHES AND HOLES IN STRUCTURAL TIMBER

- General: Avoid if possible.
- Sizes: Minimum needed to accommodate services.
- Position: Do not locate near knots or other defects.
- Notches and holes in same joist: Minimum 100 mm apart horizontally.
- Notches in joists: Locate at top. Form by sawing down to a drilled hole.
  - Depth (maximum): 0.125 x joist depth.
  - Distance from supports: Between 0.07 and 0.25 x span.
- Holes in joists: Locate on neutral axis.
  - Diameter (maximum): 0.25 x joist depth.
  - Centres (minimum): 3 x diameter of largest hole.
  - Distance from supports: Between 0.25 and 0.4 of span.
- Notches in roof rafters, struts and truss members: Not permitted.
- Holes in struts and columns: Locate on neutral axis.
  - Diameter (maximum): 0.25 x minimum width of member.
  - Centres (minimum): 3 x diameter of largest hole.
  - Distance from ends: Between 0.25 and 0.4 of span.

30 PIPE SLEEVES

- Material: Match pipeline.
- Sleeves: Extend through full thickness of wall or floor. Position accurately.
  - Clearance around service (maximum): 20 mm or diameter of service, whichever is the lesser.
  - Installation: Bed solid.

40A SEALING AROUND SERVICES

- Service: As drawings.
- Location: Walls and ceilings.
- Sealing material: Adshead Ratcliffe Arbo XL 1075 One Part Fire Retardant Water Based Acrylic Sealant.
- Method: Completely fill gaps with sealant and finish neatly.
- Requirements: Moisture vapour and airtight.

Q
Paving/Planting/Fencing/Site furniture

Q10 Kerbs/ edgings/ channels/ paving accessories

10 PRECAST CONCRETE EDGINGS

- To BS EN 1340.
- Manufacturer: Contractor's choice.
  - Product reference: TBA.
- Recycled content: None permitted.
- Designations: EBN Edging, bullnosed.
- Size (width x height x length): 50 x 200 x 915 mm.
- Special shapes: None.
- Finish: As cast.
- Colour: Natural.
- Joints: Tooled mortar.
- Accessories: None

40 LAYING KERBS, EDGINGS AND CHANNELS

- Cutting: Neat and accurate and without spalling. Form neat junctions.
- Bedding and backing of units: Either of the following: Bedded on mortar laid on hardened concrete base. Bedding mortar allowed to set and units secured with a continuous haunching of concrete.
  - Bedded on fresh concrete races to BS 7533-6, secured with backing concrete cast monolithically with concrete race.
- Concrete for foundations and haunching:
  - Standard: To BS 8500-2.
  - Designated mix: Not less than GEN0 or Standard mix ST1 or better, low workability.
- Mortar bedding: 1:3 cement:sand as section Z21.
  - Bed thickness: 12-40 mm.

45 ACCURACY

- Deviations (maximum):
  - Level: ± 6 mm.
  - Horizontal and vertical alignment: 3 mm in 3 m.

50 TOOLED MORTAR JOINTS

- Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled and tooled to a neat flush profile.
  - Joint width: 6 mm.

80 REGULARITY OF PAVED SURFACES

- Maximum undulation of (non-tactile) paving surface: 3 mm.
  - Method of measurement: Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
- Difference in level between adjacent units (maximum):
  - Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
  - Recessed, filled joints: 2 mm.
    Recess depth (maximum): 5 mm.
  - Unfilled joints: 2 mm.
- Sudden irregularities: Not permitted.

Q20 Granular sub-bases to roads/ pavings

10 THICKNESSES OF SUB-BASES

- Thicknesses: As specified in the relevant paving section.

20 HERBICIDES

- Type: To approval.
- Application: To subgrade of footpath.

30 EXCAVATION AND COMPACTION OF SUBGRADES

- Final excavation to formation level: Carry out immediately before compaction of subgrade.
- Soft spots and voids: Give notice.
- Old drainage and service trenches: Excavate and clear away loose material; compact and backfill to suit surface treatment.
- Wet conditions: Do not excavate or compact when the subgrade may be damaged or destabilized.
- Compaction: Thoroughly, by roller or other suitable means, adequate to resist subsidence or deformation of the subgrade during construction and of the completed roads/ pavings when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

40 SUB-BASES

- Granular material: Of a known suitability for use in sub-bases, free from ice, harmful matter and excessive dust or clay, well graded, all pieces less than 75 mm in any direction, and selected from one of the following:
  - Crushed rock (other than argillaceous rock) or quarry waste.
  - Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
  - Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
  - Natural sand or gravel.

45 LAYING AND COMPACTING SUB-BASES

- Subgrade: Not frozen and free from loose soil, rubbish and standing water.
- Structures, membranes and buried services: Ensure stability and avoid damage.
- General: Spread and level in layers.
- Compaction:
  - Timing: As soon as possible after laying.
  - Method: By roller or other suitable means, adequate to resist subsidence or deformation of the sub-base during construction and of the completed paving when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

50 ACCURACY

- Permissible deviation from required levels, falls and cambers (maximum):
  - Subgrade: ± 20 mm.
  - Sub-base: ± 12 mm.

60 SURFACES TO RECEIVE SAND BEDDING FOR PAVING

- Blind surface: As necessary before compaction to ensure that surface is tight and dense enough to prevent laying course sand being lost into it during construction or use.
- Material: Sand or PFA.

70 PROTECTION

- Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.
- Subgrades and sub-bases: Prevent degradation by construction traffic, construction operations and inclement weather.

Q25 Slab/ brick/ sett/ cobble pavings

11 LAYING PAVINGS

- Cutting: Cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.
- Lines and levels of finished surface: Smooth and even with falls to prevent ponding.
- Bedding of units: Firm so that rocking or subsidence does not occur or develop.
- Appearance: Even and regular with even joint widths and free of mortar and sand stains.

16 LEVELS OF PAVING

- Permissible deviation from specified levels (generally):
  ± 6 mm.
- Regularity of paved surfaces
  - Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
  - Joints between paving units or utility access covers:
    Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
    Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
    Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
- Sudden irregularities: Not permitted.

21 PROTECTION FROM TRAFFIC

- Mortar bedded pavings: Keep free from pedestrian traffic for 4 days and vehicular traffic for 10 days after laying.
- Access: Restrict access to paved areas to prevent damage from site traffic and plant.

31 CONCRETE FLAG PAVING TO FOOTPATHS

- Granular sub-base: Granular material, as section Q20.
  - Thickness: 150 mm.
- Laying and jointing: Bound construction - on mortar, site category IV, to BS 7533-4.
- Laying course: Full mortar bed, nominal thickness after compaction: 15-25 mm.
  - Mortar: As section Z21, mix 1:3 cement:sand.
- Slabs: To BS EN 1339.
  - Manufacturer: Contractor's choice
    Product reference: Contractor's choice.
  - Recycled content: Not permitted.
  - Colour/ Finish: Natural/ textured.
  - Sizes: 450 x 450 x 50 mm.
- Jointing: Mortar filled.
  - Width: 5-10 mm.
  - Mortar: As section Z21, mix: 1:4 cement:sand.

Q28 Topsoil, growing media and ameliorants

10 PREPARATION OF UNDISTURBED TOPSOIL

- General: Prepare as necessary for subsequent cultivation operations.
- Hard ground: Break up thoroughly.
- Ground covered with turf or a thick sward: Plough or dig over to full depth of topsoil.

20 IMPORTED TOPSOIL

- Quantity: Provide as necessary to make up any deficiency existing on site and to complete the work.
- Classification: Multipurpose to BS 3882.

25 SANITIZED AND STABILIZED COMPOST

- Standard: In accordance with PAS 100.
- Type: Sanitized and stabilized compost.
- Horticultural parameters:
  - pH (1:5 water extract): 7.0-8.7.
  - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
  - Moisture content (m/m of fresh weight): 35-55%.
  - Organic matter (minimum): 25%.
  - Grading (air dried samples): 99% passing 25 mm screen, and 90% a 10 mm screen mesh aperture.
  - Carbon:Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.
- Quality Compost Protocol certification: Required.
- Timing: Apply prior to cultivation.

30 SPREADING TOPSOIL

- Temporary roads or surfacing: Remove before spreading topsoil.
- Spreading: Spread when reasonably dry, maintaining crumb structure. Do not compact.
- Layers:
  - Depth (maximum): 150 mm.
  - Gently firm each layer before spreading the next.
- Depths after firming and settlement (minimum): 300 mm.

40 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

- Above adjoining paving or kerbs: 30 mm.
- Within the root spread of existing trees: Unchanged.
- Below dpc of adjoining buildings: Not less than 150 mm.
- Shrub areas: Higher than adjoining grass areas by 30 mm.
- Within root spread of existing trees. Unchanged.
- Adjoining soil areas. Marry in.

45 DOCUMENTATION

- Timing: Submit at handover.
- Contents:
  - Record of source for all soil components.
  - Record drawings showing the location and depth of all soils.
  - Supplier's declaration of compliance with BS 3882.

Q31 External planting

15 TREE REMOVAL

- Requirement: Removal and clearing away of designated tree(s) where diseased/damaged/impeding development; as necessary to facilitate construction works; to include grubbing up of all roots, filling of voids etc.; leave tree site firm and stable and ready to receive new construction.
- Standard: In accordance with BS3998.
- Type/Number/Location/Species: As indicated in the schedules and drawings within the appended Arboriculturalist's Report.

25 TREE PROTECTION

- Requirement: As necessary to prevent damage to existing mature trees resulting from the construction works and/or access of tall/wide/heavy vehicles for the duration of the works.
- Standard: In accordance with the general requirements of BS5837.
- Type and Location: Temorary protective fencing, root barriers, warning signage and other precautions; as indicated in the schedules and drawings within the appended Arboriculturalist's Report.

35 TREE PRUNING

- Requirement: As necessary to facilitate construction works and allow vehicle access for the duration of the works without causing tree damage.
- Standard: In accordance with BS3998.
- Type/Number/Location/Species: As indicated in the schedules and drawings within the appended Arboriculturalist's Report.

45 TREE PLANTING

- Requirement: To replace tree(s) removed under clause Q31/15; to comply with conditions of Planning Approval.
- Type/Number/Location/Species: As indicated in the schedules and drawings within the appended Arboriculturalist's Report.
- Tree pits:
  - To be 500 mm wider than rootball.
  - Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
  - Pit bottoms: With slightly raised centre. Break up to a depth of 150 mm.
  - Treatment: Soil ameliorant.
  - Pit sides: Scarify.
  - Backfilling material: Selected excavated topsoil.
- Staking:
  - Drive stakes vertically at least 300 mm into bottom of pit on either side of tree position before planting.
  - Backfilling: Consolidate material around stakes.
  - Height of stakes: Cut to approximately 600 mm above ground level.
  - Cross bar: Not required - brace stakes with flexible protective webbing.
  - Firmly fix on windward side of tree and as close as possible to stem.
  - Ties: Flexible; tie tree firmly but not rigidly to cross bar.
- Backfilling material:
  - Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required.
  - Ameliorant/ Conditioner: [Sharp sand and fine gravel.
  - Application rate: 2m3/10m3 of soil.
  - Fertilizer: propritary slow release type.
  - Application rate: As manufacturer's recommendations.
- Mulching:
  - Material: Well rotted leaf mould; shredded tree bark.
  - Purity: Free of pests, disease, fungus and weeds.
  - Preparation: Clear all weeds. Water soil thoroughly.

Q40 Fencing

FENCING

20A CLOSE BOARDED FENCING

- Standard: To BS 1722-5.
- Height: 1650 mm.
- Boards/ rails: Preservative treated softwood feather edged boards on arris rails; 125 x 25 mm.
- Posts: Preservative treated softwood; 125 x 125 mm section.
  - Setting: Concrete.
    Preservative: Arch Timber Preservation Tanalith E
- Accessories: Concrete gravel board; chamfered post caps.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-5.

60 INSTALLATION GENERALLY

- Expertise: By an experienced fencing contractor.
- Alignment: Straight lines or smoothly flowing curves.
- Tops of posts: Following profile of the ground.
- Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
- Fixings: All components securely fixed.

70 SETTING POSTS IN CONCRETE

- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
- Alternative mix for small quantities: 50 kg Portland cement to 150 kg fine aggregate to 250 kg 20 mm nominal maximum size coarse aggregate, medium workability.
- Admixtures: Do not use.
- Holes: Excavate neatly and with vertical sides.
- Filling: Unless specified otherwise position post/ strut and fill hole with concrete to not less than half the depth, well rammed as filling proceeds and consolidated.
- Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

72 SETTING POSTS IN EARTH

- Holes: Excavated neatly, with vertical sides and as small as practicable to allow refilling.
- Filling: Position posts/ struts and replace excavated material, well rammed as filling proceeds.

75 DRIVEN POSTS

- Damage to heads: Minimize.
  - Repair: Neatly finish post tops after installation.

80 WOOD RAILS

- Length (minimum): Two bays, with joints in adjacent rails staggered.
- Fixing: Nail each length of rail to each post with two 100 mm galvanized nails.
- Rails with split ends: Replace.

85 SITE CUTTING OF WOOD

- General: Kept to a minimum.
- Below or near ground level: Cutting prohibited.
- Treatment of surfaces exposed by minor cutting and drilling: Two flood coats of solution recommended for the purpose by main treatment solution manufacturer.

90 MAKING GOOD GALVANIZED SURFACES

- Treatment of minor damage (including on fasteners and fittings): Low melting point zinc alloy repair rods or powders made for this purpose, or at least two coats of zinc-rich paint to BS 4652.
- Thickness: Apply sufficient material to provide a zinc coating at least equal in thickness to the original layer.

Q50 Site/street furniture/equipment

25 TIMBER DECK

- Supplier: Contractor's choice.
  - Product reference: Submit proposals.
- Base preparation: Remove projections and debris and lay 1000 gauge polyethylene sheet with slits for drainage, covered with 10 mm single size gravel, 75 mm thick; treat with suitable residual herbicide.
- Timbers other than decking boards: European redwood.
- Decking boards: European redwood.
- Fasteners: M8 stainless steel bolts to BS EN ISO 3506, with washers to suit.
- Guarding: Not required.
  - Lower handrail: Not required.
- Edge protection: Not required.
- Accessories:
  - Applied slip resistant rebated inserts;
  - Galvanized 6 mm steel mesh to voids below deck; and
  - Pelleting to deck board fixing holes.

70 PRESERVATIVE TREATED TIMBER

- Surfaces exposed by minor cutting and drilling: Treated by immersion or with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.
- Heavily worked sections: Re-treat.

80 CONCRETE FOUNDATIONS

- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN 1 or standard prescribed concrete not less than ST2.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.
- Components: Accurately positioned and securely supported.
- Concrete fill: Fully compacted as filling proceeds.
- Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
- Temporary component support: Maintain undisturbed for minimum 48 hours.

90 BUILDING IN TO MASONRY WALLS

- Components being built in: Accurately positioned and securely supported. Set in mortar and point neatly to match adjacent walling.
- Temporary support: Maintain for 48 hours (minimum) and prevent disturbance.

R
Disposal systems

R10 Rainwater drainage systems

11A ALUMINIUM GUTTERS

- System: Rigidal Systems Limited, as Specification section H72.

16A PVC-U GUTTERS

- Manufacturer: Marley Plumbing & Drainage.
  - Web: www.marley.co.uk.
  - Email: marketing@marleyext.com.
  - Product reference: Flowline rectilinear PVC-U gutter, RGF4
- System colour:: Black.
- Fittings:
  - Union brackets: Ref RUF1.
  - Angles: 90°, RAF1.
  - Outlets: Running - ROF1; stopend - ROF 11.
  - Stop ends: External, REC1
  - Brackets and rafter arms: Fascia bracket, RKF2.
- Accessories: Leaf guard, RV225.

30A ALUMINIUM PIPEWORK

- System: Rigidal Systems Limited, as Specification section H72.

35A PVC-U PIPEWORK

- Manufacturer: Marley Plumbing & Drainage.
  - Web: www.marley.co.uk.
  - Email: marketing@marleyext.com.
  - Product reference: 65 mm Square Downpipe
- System colour: Black.
- Pipes: Length 3000 mm, RPE3.
- Fittings:
  - Pipe sockets: With fixing lugs, RLE1.
  - Bends and offsets: None.
  - Branches: None.
  - Access pipes: Ref RFB91.
  - Shoes: None.
  - Hoppers: None.
  - Pipe clips: One piece, ref RCE1.
- Accessories: Adaptor, rainwater pipe to 110 mm drain, RA42.

50 INSTALLATION GENERALLY

- Discharge of rainwater: Complete, and without leakage or noise nuisance.
- Components: Obtain from same manufacturer for each type of pipework and guttering.
- Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
- Fixings and fasteners: As section Z20.

60 GUTTERS LAID TO FALL

- Setting out: To true line and even gradient to prevent ponding or backfall. Position high points of gutters as close as practical to the roof and low points not more than 50 mm below the roof.
- Joints: Watertight.
- Roofing underlay: Dressed into gutter.

65 GUTTERS LAID LEVEL

- Setting out: Level and as close as practical to roof.
- Joints: Watertight.
- Roofing underlay: Dressed into gutter.

70 PIPEWORK

- Fixing: Securely, plumb and/ or true to line with additional supports as necessary to support pipe collars, particularly at changes in direction.
- Cut ends of pipes and gutters: Clean and square with burrs and swarf removed.

80 INTERNAL PIPEWORK TEST - ENGLAND, WALES, IRELAND AND NORTHERN IRELAND

- Preparation: Temporarily seal open ends of pipework with plugs.
- Testing: Connect a 'U' tube water gauge and pump air into pipework until gauge registers 38 mm.
- Required performance:
  - Allow a period for temperature stabilization, after which the pressure of 38 mm is to be maintained without loss for not less than 3 minutes.

R11 Above ground foul drainage systems

11A PLASTICS BRANCH PIPEWORK

- Manufacturer: Marley Plumbing & Drainage.
  - Web: www.marley.co.uk.
  - Email: marketing@marleyext.com.
  - Product reference: MUPVC Solvent Weld Waste System
- Nominal sizes: 32/40/50 mm.
- Colour: White.
- Brackets: PVC-U.
  - Size: As required for the installation.
  - Fixings: Plug and screw fixed to plastered masonry substrate.

21A PVC-U SOIL/ VENT PIPEWORK AND WC BRANCHES

- Manufacturer: Marley Plumbing & Drainage.
  - Web: www.marley.co.uk.
  - Email: marketing@marleyext.com.
  - Product reference: PVC-U Soil and Vent System
- Joint type: Solvent weld.
- Nominal size: 110 mm.
- Colour: Grey.
- Brackets: Marley Pipe Support System.
- Fixings: Plug and screw fixed to plastered masonry substrate.
- Accessories:
  - Durgo Air Admittance Valves;
  - WC Connectors; and
  - Weathering Slates.

45 AIR ADMITTANCE VALVES

- Standard: To BS EN 12380 or Agrément certified.
- Manufacturer: Durgo Verkstads.
  - Product reference: BA 9074 for 110mm pipework.
- Position: Vertical.
- Unheated locations: Fit manufacturer's insulating cover.

50 INSTALLATION GENERALLY

- Standards: To BS EN 12056-1, BS EN 12056-2 (including National Annexes NA-NG) and BS EN 12056-5.
- Drainage from appliances: Quick, quiet and complete, without blockage, crossflow, backfall, leakage, odours, noise nuisance or risk to health.
- Components: From same manufacturer for each type of pipework.
- Access: Provide access fittings in convenient locations to permit cleaning and testing of pipework.
- Thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
- Fixings: Allow the pipe to slide.
  - Finish: Plated, sherardized, galvanized or other nonferrous.
  - Compatibility: Suitable for the purpose, material being fixed and substrate.

60 PIPEWORK

- Fixing: Securely plumb and/ or true to line. Fix lengths of discharge stack pipes at or just below socket collar or coupling.
  - Additional supports: Provide as necessary at junctions and changes in direction.
- Cut ends of pipes: Clean and square with burrs and swarf removed.

70 PIPEWORK TEST

- Preparation: Temporarily seal open ends of pipework using plugs.
- Testing: Connect a 'U' tube water gauge and pump air into pipework until gauge registers 38 mm.
- Required performance: Allow a period for temperature stabilisation, after which the pressure of 38 mm is to be maintained without loss for at least 3 minutes.

R12 Below ground drainage systems

2 EXISTING DRAINS

- Setting out: Before starting work, check levels and positions of existing drains, inspection chambers and manholes against drawings. Report discrepancies.

4 IN SITU CONCRETE FOR USE IN DRAINAGE BELOW GROUND

- Standard: To BS 8500-2.
- Concrete: Designated, GEN1 .

14A PLASTICS PIPELINES

- Manufacturer: Marley Plumbing & Drainage.
  - Web: www.marley.co.uk.
  - Email: marketing@marleyext.com.
  - Product reference: Solid Wall
- Size: 110 mm.

19 EXCAVATING PIPE TRENCHES

- Trench from bottom up to 300 mm above crown of pipe: With vertical sides.
  - Width: As small as practicable but not less than external diameter of pipe plus 300 mm.
- Type of subsoil: Where the type of subsoil at the level of the crown of the pipe differs from that stated for the type of pipeline, give notice.
- Timing: Excavate to formation immediately before laying beds or pipes.
- Mud, rock projections, boulders and hard spots: Remove. Replace with bedding material, well consolidated.
- Local soft spots: Harden by tamping in bedding material.

21 BEDDING AND JOINTING

- Laying pipes: To true line and regular gradient on even bed for full length of barrel with sockets (if any) facing up the gradient.
- Jointing: Lubricate. Leave gaps at ends of spigots to allow for movement.

27 CLASS P FULL DEPTH GRANULAR SUPPORT

- Granular material: To BS EN 12620, size 4/10.
- Bedding: Granular material, compacted to a thickness of 100 mm (minimum). Scoop out locally at couplings and sockets and lay pipes digging slightly into bed and resting uniformly on their barrels. Adjust to line and gradient.
- Granular support: After initial testing, lay and compact by hand more granular material uniformly to 100 mm above crown of pipe.

41 TRENCHES LESS THAN 1 M FROM FOUNDATIONS

- Class Z concrete surround: Provide in locations where bottom of trench is lower than bottom of foundation.
  - Top of concrete: Higher than bottom of foundation.

44 BENDS AT BASE OF SOIL STACKS

- Bends: 90° nominal rest bend with a minimum radius of 200 mm to centreline of the pipe.
- Height of invert of horizontal drain at base of stack below centreline of lowest branch pipe (minimum): 450 mm.
- Stabilizing bends: Bed in concrete without impairing flexibility of couplings.

50A GULLIES

- Manufacturer: Marley Plumbing & Drainage.
  - Web: www.marley.co.uk.
  - Email: marketing@marleyext.com.
  - Product reference: UG50SA bottle gully.
- Raising pieces: UG52 bottle gully raising pieces where required to suit finished ground levels.

58 INSTALLATION OF FITTINGS

- Appearance: Square with and tightly jointed to adjacent construction as appropriate.
- Bedding and surround of fittings, traps, etc: Concrete, 150 mm thick.
- Permissible deviation in level of gullies: +0 to -10mm.

64A PLASTICS INSPECTION CHAMBER

- Manufacturer: Marley Plumbing & Drainage.
  - Web: www.marley.co.uk.
  - Email: marketing@marleyext.com.
  - Product reference: Inspection chamber
- Chamber base: UCC3.
- Raising pieces: UCR2 riser with set UCC10 riser clips as required to suit finished ground level.
- Cover and frame: UCL15 cast iron round cover and frame.

69 CONVENTIONAL CHANNELS, BRANCHES AND BENCHING

- Main channel: Bedded solid in 1:3 cement:sand mortar, branches connected to main channel at half channel level, so that discharge flows smoothly in direction of main flow.
- Benching: Concrete rising vertically from main channel to a height not lower than soffit of outlet pipe, then sloping upwards at 10% to walls, and with dense smooth uniform finish.

79 CAST IRON ACCESS COVERS AND SEATING

- Covers: Grey iron or ductile iron to BS EN 124.
- Manufacturer: Contractor's choice .
- Types: A15 pedestrian grade to BS EB 124 .
- Seating:
  - Brickwork: As section F10 .
- Bedding and haunching to frame: Solid, in 1:3 cement:sand mortar, square with joints in surrounding finishes. Cut back top of haunching to 30 mm below top of cover.

84 TESTING AND INSPECTION GENERALLY

- Obstructions and debris: Remove. Check that the installation is clear before testing.

85 INITIAL TESTING OF PIPELINES

- Before testing:
  - Cement mortar jointing: Leave 24 h.
  - Solvent welded pipelines: Leave 1 h.
- Timing: Before surround and backfilling .
- Method: Block open ends of pipelines to be tested and pressurise. Air test short lengths to BS EN 1610

88 FINAL TESTING OF DRAINS

- Before testing:
  - Cement mortar jointing: Leave 24 h.
  - Solvent welded pipelines: Leave 1 h.
- Standard: In accordance with Building Regulations Technical Guidance Document H .
- Method: Air .

89 WATER TESTING OF MANHOLES AND INSPECTION CHAMBERS

- Timing: Before backfilling.
- Standard:
  - Exfiltration: To BS EN 1610, water testing (method W).
  - Infiltration: No identifiable flow of water penetrating the chamber.

91 BACKFILLING TO PIPELINES GENERALLY

- Backfill from top of surround or protective cushion: Material excavated from trench, compacted in 300 mm layers. Do not use heavy compactors before there is 600 mm of material over pipes.

94 BACKFILLING UNDER ROADS AND PAVINGS

- Backfill from top of specified surround or protective cushion up to formation level: Well graded gravel or hardcore passing a 75 mm sieve, well compacted in 150 mm layers.

97 CLEANING

- General: Flush out the whole installation and remove silt and debris immediately before handing over.

Z
Building fabric reference specification

Z10 Purpose made joinery

10 FABRICATION

- Standard: To BS 1186-2.
- Sections: Accurate in profile and length, and free from twist and bowing. Formed out of solid unless shown otherwise.
  - Machined surfaces: Smooth and free from tearing, wooliness, chip bruising and other machining defects.
- Joints: Tight and close fitting.
- Assembled components: Rigid. Free from distortion.
- Screws: Provide pilot holes. Heads of countersunk screws sunk at least 2 mm below surfaces visible in completed work.
- Adhesives: Compatible with wood preservatives applied and end uses of timber.

20 CROSS SECTION DIMENSIONS OF TIMBER

- General: Dimensions on drawings are finished sizes.
- Maximum permitted deviations from finished sizes:
  - Softwood sections: To BS EN 1313-1.
  - Hardwood sections: To BS EN 1313-2.

30 PRESERVATIVE TREATED WOOD

- Cutting and machining: Completed as far as possible before treatment.
- Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
- Surfaces exposed by minor cutting and/ or drilling: Treat as recommended by main treatment solution manufacturer.

40 MOISTURE CONTENT

- Wood and wood based products: Maintained within range specified for the component during manufacture and storage.

50 FINISHING

- Surfaces: Smooth, even and suitable to receive finishes.
  - Arrises: Eased unless shown otherwise on drawings.
- End grain in external components: Sealed with primer or sealer as section M60 and allowed to dry before assembly.

Z11 Purpose made metalwork

31 METAL PRODUCTS

- Grades of metals, section dimensions and properties: To the appropriate British Standards and suitable for the purpose.
- Fasteners: Generally, same metal as component, with matching coating and finish.

50 PREPARATION FOR APPLICATION OF COATINGS

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

51 FABRICATION GENERALLY

- Contact between dissimilar metals in components: Avoid.
- Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.
  - Moving parts: Free moving without binding.
- Corner junctions of identical sections: Mitre.
- Prefinished metals: Do not damage or alter appearance of finish.

52 COLD FORMED WORK

- Profiles: Accurate, with straight arrises.

53 WELDING AND BRAZING GENERALLY

- Surfaces to be joined: Clean thoroughly.
- Tack welds: Use only for temporary attachment.
- Joints: Fully bond parent and filler metal 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.
- Flux residue, slag and weld spatter: Remove.

54 WELDING OF STEEL

- Method: Metal arc welding to BS EN 1011-1 and -2.

56 FINISHING WELDED AND BRAZED JOINTS VISIBLE IN COMPLETE WORK

- Butt joints: Smooth, and flush with adjacent surfaces.
- Fillet joints: Neat.
- Grinding: Grind smooth where indicated on drawings.

58 GALVANIZING

- Standard: To BS EN ISO 1461.
- Vent and drain holes:
  - Location: Submit proposals..
  - Sealing after galvanizing: Required. Submit proposals.

Z12 Preservative/ fire retardant treatment

10 TREATMENT APPLICATION

- Timing: After cutting and machining timber, and before assembling components.
- Processor: Licensed by manufacturer of specified treatment solution.
- Certification: For each batch of timber provide a certificate of assurance that treatment has been carried out as specified.

20 COMMODITY SPECIFICATIONS

- Standard: Current edition of the Wood Protection Association (WPA) publication 'Industrial wood preservation specification and practice'.

25 PRESERVATIVE TREATMENT SOLUTION STRENGTHS/ TREATMENT CYCLES

- General: Select to achieve specified service life and to suit treatability of specified wood species.

30 COPPER-ORGANIC PRESERVATIVE TREATMENT

- Solution:
  - Manufacturer: Arch Timber Preservation.
    Product reference: Tanalith 'E' in accordance with BSEN 8417, Table 9, to achieve suitability for use in hazard classes 1-4 inclusive.
  - Colour: Green.
  - Application: High pressure impregnation.
- Moisture content of wood:
  - At time of treatment: Not more than 28%.
  - After treatment: Timber to be surface dry before using.

70 MAKING GOOD TO PROTECTION TREATMENT ON SITE

- Fire retardant/ preservative solution: Compatible with off-site treatment.
- Application: In accordance with preservative manufacturer's recommendations.

80 RECYCLED TIMBER CONTAINING CREOSOTE OR CHROMIUM/ ARSENIC BASED PRESERVATIVE

- Usage: Not permitted.

Z20 Fixings and adhesives

10 FIXINGS AND FASTENERS GENERALLY

- Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
- Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers or sleeves to avoid bimetallic corrosion.
- General usage: To recommendations of fastener manufacturers and/ or manufacturers of components, products or materials fixed and fixed to.
- Fixings: To be in straight lines, at regular centres.

25 FASTENER DURABILITY

- Materials: To have:
  - Bimetallic corrosion resistance appropriate to items being fixed.
  - Atmospheric corrosion resistance appropriate to fixing location.
- Appearance: Submit samples on request.

30 FIXINGS THROUGH FINISHES

- Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

35 PACKINGS

- Materials: Noncompressible, corrosion proof.
- Area of packings: Sufficient to transfer loads.

40 CRAMP FIXINGS

- Fasteners: Fix cramps to frames with screws of same material as cramps.
- Fixings in masonry work: Fully bed in mortar.

50 PELLETED COUNTERSUNK SCREW FIXINGS

- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
- Pellets: Cut from matching timber, grain matched, glued in to full depth of hole.
- Finished level of pellets: Flush with surface.

55 PLUGGED COUNTERSUNK SCREW FIXING

- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
- Plugs: Glue in to full depth of hole.
- Finished level of plugs: Projecting above surface.

60 APPLYING ADHESIVES

- Surfaces: Clean. Regularity and texture to suit bonding and gap filling characteristics of adhesive.
- Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
- Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Z21 Mortars

10 MORTAR MIXES

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

20 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 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.

25 SAND FOR LIME:SAND MASONRY MORTARS

- Type: Sharp, well graded.
  - Quality, sampling and testing: To BS EN 13139.
  - Grading/ Source: As specified elsewhere.

30 READY-MIXED LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS

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

40 CEMENTS FOR MORTARS

- Cement: To BS EN 197-1 and CE marked.
  - Types: Portland cement, CEM I.
    Portland limestone cement, CEM ll/A-LL.
    Portland slag cement, CEM II/B-S.
    Portland fly ash cement, CEM II/B-V.
  - Strength class: 32.5, 42.5 or 52.5.
- White cement: To BS EN 197-1 and CE marked.
  - Type: Portland cement, CEM I.
  - Strength class: 52.5.
- Sulfate resisting Portland cement:
  - Types: To BS 4027 and kitemarked.
    To BS EN 197-1 flay ash cement, CEM ll/B-V and CE marked.
  - Strength class: 32.5, 42.5 or 52.5.
- Masonry cement: To BS EN 413-1 and CE marked.
  - Class: MC 12.5.

50A ADMIXTURES FOR SITE MADE MORTARS

- Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
- Other admixtures: As specified elsewhere; submit proposals for any additional admixtures proposed.
- Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

60 MAKING MORTARS GENERALLY

- 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.
- Contamination: Prevent intermixing with other materials.

70 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.

31 JOINTS

- Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

EXECUTION

61 SUITABILITY OF JOINTS

- Presealing checks:
  - Joint dimensions: Within limits specified for the sealant.
  - Substrate quality: Surfaces regular, undamaged and stable.
- Joints not fit to receive sealant: Submit proposals for rectification.

62 PREPARING JOINTS

- Surfaces to which sealant must adhere:
  - Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
  - Clean using materials and methods recommended by sealant manufacturer.
- Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
- Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
- Protection: Keep joints clean and protect from damage until sealant is applied.

63 APPLYING SEALANTS

- Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
- Environmental conditions: Do not dry or raise temperature of joints by heating.
- Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
- Sealant profiles:
  - Butt and lap joints: Slightly concave.
  - Fillet joints: Flat or slightly convex.
- Protection: Protect finished joints from contamination or damage until sealant has cured.