

610201 Oxford City Council - 6 Whitehouse Road - Section Two

Materials and Workmanship Specification

To be read in conjunction with Section Three, Schedule of Works

Materials and Workmanship Specification prepared by:



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Schedule of Works Revision History

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C

Demolition/ Alteration/ Renovation

C20
Demolition

C20 Demolition

- 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.
- 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: Artext to all ceilings and to thermoplastic floor tiles and associated bitumen adhesive - this is all viewable in the asbestos report provided.
 - Removal: By contractor licensed by the Health and Safety Executive, and prior to other works starting in these locations - NB: The employer should have these ACMs removed prior to work on site, any items found to be remaining on site, follow steps provided in the contractors schedule of works.
- 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.

E

In situ concrete/Large precast concrete

E10

Mixing/ Casting/ Curing in situ concrete

E10 Mixing/ Casting/ Curing 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.

20A DESIGNATED CONCRETE FOR MAIN ENTRANCE RAMP

- Designation: GEN3.
- Fibres: Not required.
- Aggregates:
 - Size (maximum): 20 mm.
 - Coarse recycled aggregates: Not permitted.
 - Additional aggregate requirements: None.
- Chloride class: Normal.
- Admixtures: An accelerator or retarder may be used.

35 SUBSTITUTION OF STANDARDIZED PRESCRIBED FOR DESIGNATED CONCRETE

- General: Conform to BS 8500-2, clause 9.
- Substitution: In accordance with BS 8500-1, Table A.14.
 - Proposals: Submit for each substitution, stating reasons.
- Site mixing: Conform to BS 8000-2.1, subsections 2, 3 and 4.
 - Restrictions: Maximum pour size of 1 m³.

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

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

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.

H
Cladding/Covering

H61

Fibre cement slating

H61 Fibre cement slating

3A ROOF SLATING TO FRONT EXTENSION

- Pitch: To match existing.
- Underlay:
 - As specified in contractors schedule of works
- Battens:
 - As specified in contractors schedule of works.
- Slates: To BS EN 492, type NT (nonasbestos).
 - To match existing

20A REMOVING EXISTING SLATING TO FRONT MONOPITCHED ROOM WHERE EXTENDED

- General: Carefully remove slates, battens, underlay, etc. with minimum disturbance of adjacent retained slating.
- Undamaged slates: Set aside for reuse.

25 UNDERLAY

- Laying: Maintain consistent tautness.
- Vertical laps (minimum): 100 mm wide, coinciding with supports.
- Fixing: Galvanized steel, copper or aluminium 20 x 3 mm extra large clout head nails.
- Eaves: Where exposed, use an external grade (UV resistant) underlay or a proprietary eaves support product.
- Penetrations: Use proprietary underlay seals or cut underlay neatly.

30 BATTENS/ COUNTERBATTENS

- Timber: Sawn softwood.
 - Standard: In accordance with BS 5534, Annex D.
 - Moisture content at time of fixing and covering (maximum): 22%.
- Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C8.
 - Type: Contractor's choice.

32 BATTEN FIXING

- Batten length (minimum): Sufficient to span over three supports.
- Joints in length: Butt centrally on supports. Joints must not occur more than once in any group of four battens on one support.
- Additional battens: Provide where unsupported laps in underlay occur between battens.

35 SLATE FIXING

- General: Fix slating and accessories to make the whole sound and weathertight at earliest opportunity.
- Exposed fittings and accessories: To match slate colour and finish.
- Setting out: To true lines and regular appearance. Lay slates to a half lap bond with not more than 5 mm gaps. Align tails.
- Cut slates: Cut only where necessary, to give straight, clean edges.
- Ends of courses: Use extra wide slates to maintain bond and to ensure that cut slates are as large as possible.
- Top courses: Cut top two slate courses to maintain gauge. Head-nail top course.
- Fixings: Nails/ rivets as recommended by slate manufacturer.

40 MORTAR BEDDING/ POINTING

- Mortar: As section Z21.
 - Mix: In accordance with BS 5534, 1:3 cement:sand, with plasticizing admixtures permitted.
- Weather: Do not use in wet or frosty conditions or when imminent.
- Slates and accessories to be bedded or pointed: Coat relevant surfaces with a suitable bonding agent.
- Appearance: Finish neatly and remove residue.

47 EAVES

- Ventilation components:
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Underlay support: 12 mm plywood, as section G20.
 - Continuous to prevent water retaining troughs.
- Gutter: Dress underlay or underlay support tray to form drip into gutter.
- Undercourse and first course slates: Fix with tails projecting 50 mm over gutter or to centre of gutter.

52 BEDDED VERGES WITH BEDDED UNDERCLOAK

- Underlay: Carry 50 mm onto outer leaf of gable wall and bed on mortar.
- Undercloak: Fibre cement sheet, sloping towards verge and projecting 38-50 mm beyond face of wall.
 - Bedding: On mortar identical to that used in gable walling.
- Slating battens: Carry onto undercloak and finish 100 mm from verge edge.
- Verge closer battens: Fix between ends of slating battens.
- Verge slates: Bed flush with undercloak on 75 mm wide bed of mortar. Point with a struck weathered profile, 5 mm back from verge slates.

H71

Lead sheet coverings/ flashings

H71 Lead sheet coverings/ flashings

30 APRON FLASHINGS AT FRONT AND REAR EXTENSION TOP ABUTMENT

- Lead:
 - Thickness: 1.75 or 1.80 mm (Code 4).
- Dimensions:
 - Lengths: Not more than 1500 mm.
 - End to end joints: Laps not less than 100 mm.
 - Upstand not less than 75 mm.
 - Cover to abutment: Not less than 150 mm.
- Fixing:
 - Top edge: Lead wedges into bed joint.
 - Bottom edge: Clips.

Material: Lead.

Spacing: .

35A COVER FLASHINGS AT FRONT AND REAR EXTENSION TOP ABUTMENT

- Lead:
 - Thickness: 1.75 or 1.80 mm (Code 4).
- Dimensions:
 - Lengths: Not more than 1500 mm.
 - End to end joints: Laps of not less than 100 mm.
 - Cover: Overlap to upstand not less than 75 mm.
- Fixing:
 - Top edge: Lead wedges into bed joint.
 - Bottom edge: Clips.

Material: Lead.

60 MATERIALS AND WORKMANSHIP GENERALLY

- Lead production method:
 - Rolled, to BS EN 12588.
 - Machine cast: BBA certified.
- Identification: Colour marked for thickness/ code, weight and type.
- Workmanship standard: To BS 6915 and latest editions of 'Rolled lead sheet. The complete manual' published by the Lead Sheet Association.
- Fabrication and fixing: To provide a secure, free draining and weathertight installation.
- Marking out: Do not use scribes or other sharp instruments to mark out lead without approval.
- Solder: Use only where specified.
- Finished leadwork: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
- Patination oil: Apply smear coating to all visible lead, evenly in one direction and in dry conditions.

62 LEADWELDING

- In situ leadwelding: Not permitted.

75 TIMBER FOR USE WITH LEADWORK

- Quality: Planed, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).
- Moisture content: Not more than 22% at time of fixing and covering. Give notice if greater than 16%.
- Preservative treatment: Organic solvent as section Z12 and Wood Protection Association Commodity Specification C8.

76 UNDERLAY

- Handling: Prevent tears and punctures.
- Laying: Butt or overlap jointed onto a dry substrate.
 - Fixing edges: With copper or stainless steel staples or clout nails.
 - Do not lay over roof edges.
 - Turn up at abutments.
- Wood core rolls: Fixed over underlay.
- Protection: Keep dry and cover with lead at the earliest opportunity.

78 FIXING LEAD SHEET

- Top edge: Secured with two rows of fixings, 25 and 50 mm from edge.
- Fixings:
 - Nails to timber substrates: Copper clout nails to BS1202-2 , or stainless steel (austenitic) clout nails to BS 1202-1.
Shank type: Annular ringed, helical threaded or serrated.
Length: Not less than 20 mm or equal to substrate thickness.
 - Screws to concrete or masonry substrates: Brass or stainless steel to BS 1210.
Diameter: Not less than 3.35 mm.
Length: Not less than 19 mm.
Washers and plastics plugs: Compatible with screws.

80 CLIPS

- Material:
 - Lead clips: Cut from sheets of the same thickness/ code as sheet being secured.
 - Copper clips: Cut from 0.70 mm thick sheet to BS EN 1172, temper R220 (soft) or R240 (half hard) depending on position, dipped in solder if exposed to view.
 - Stainless steel: Cut from 0.38 mm sheet to BS EN 10088, grade 1.4301(304),terne coated if exposed to view.
- Dimensions:
 - Width: 50 mm where not continuous.
 - Length: To suit detail.
- Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm.
- Fixing lead sheet: Welt clips around edges and turn over 25 mm.

98 WELTED JOINTS

- Joint allowance: 50 mm overlap, 25 mm underlap.
- Copper or stainless steel clips: Fix to substrate at 450 mm centres.
- Overlap: Welt around underlap and clips and lightly dress down.

J

Waterproofing

J21

Mastic asphalt roofing/ insulation/ finishes

J21 Mastic asphalt roofing/ insulation/ finishes

- 10 WARM DECK ROOF COATING TO REAR EXTENSION
- Substrate: As contractor's schedule of works.
 - Preparation: As contractor's schedule of works.
 - Vapour control layer: Capital valley plastics.
 - Insulation: As contractor's schedule of works.
 - Overlay: As contractor's schedule of works.
 - Separating layer (loose laid): Reinforced bitumen sheathing felt.
 - Laps (minimum): 50 mm.
 - Coating: Mastic asphalt.
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Application: 20 mm nominal thickness in two coats..
 - Surface protection: Not required.
 - Accessories: None required.
- 40 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: Not required.
 - Fixing: Sherardized steel screws at maximum 600 mm centres.
- 45 KEYING TO BRICKWORK/ DENSE BLOCKWORK
- Masonry: Clean and sound. Joints flush pointed.
 - Surface preparation: Apply proprietary high bond primer.
- 55 JOINTS IN RIGID BOARD SUBSTRATES
- Cover strip: 150 mm wide Reinforced bitumen roofing felt.
 - Laying: Centrally over joints and adhere to substrate with bonding compound along edges only.
- 60 LAYING VAPOUR CONTROL LAYER
- Attachment: Secure.
 - Bond: Continuous with no air pockets.
 - Appearance on completion: Smooth.
 - Side and head laps: Seal using materials and method recommended by membrane manufacturer.
 - Upstands, kerbs and other penetrations: Enclose edges of insulation. Fully seal at abutment by bonding or taping.
- 65 LAYING WARM DECK ROOF INSULATION
- Setting out:
 - Long edges: Fully support and run at right angles to structure.
 - Joints: Butt together.
 - End joints: Stagger.
 - Margin to walls, upstands, pipes and other projections (minimum): 25 mm.
 - Bedding: Full bed of bonding compound.
 - Mechanical fixing: as per contractor's schedule of works.
 - Margin infill: Mastic asphalt when laying roofing.
 - Completion: Boards must be in good condition, well fitting and stable.

70 LAYING OVERLAY TO WARM DECK ROOF INSULATION

- Setting out:
 - Joints: Butt together.
 - End joints: Stagger to break joint with insulation.
 - Margin to walls, upstands, pipes and other projections (minimum): 25 mm.
- Bedding: Full bed of bonding compound.
- Mechanical fixing: As contracto's schedule of works.
- Margin infill: Mastic asphalt when laying roofing.

75 LAYING MASTIC ASPHALT

- Standard: To BS 8218.
- Suitability of substrate: Secure, even textured, clean, dry and frost free.
- Application:
 - In bays to even thickness.
 - Re-heated asphalt: Do not use.
- External angles, junctions and tuck-ins: Maintain full thickness of asphalt.
- Fillets at internal angles: Solid, fully fused to asphalt coating.
- Top edge: Tuck into 25 x 25 mm continuous splayed chase or groove.
- Previously laid coats: Protect whilst exposed.
- Successive coats:
 - Timing: Apply without delay.
 - Coats: Apply at right angles to preceding.
 - Stagger joints between bays in consecutive coats (minimum): 75 mm.
- Condition of contact edges of previously laid bays: Warm and clean.
- Blowing: Pierce and make good affected areas while mastic asphalt is still at working temperature.
- Unfinished areas of roof: Keep dry.
- Completion: During final floating operation, whilst asphalt is still warm, apply sand to horizontal surfaces and rub in well using wooden float. Remove surplus material.
- Completed coating: Smooth and free from imperfections. Firmly adhered, weatherproof and free draining.

J41

Reinforced bitumen membrane roof coverings

J41 Reinforced bitumen membrane roof coverings

10A TORCH APPLIED WARM ROOF SYSTEM

- Manufacturer: Langley Waterproofing Systems Ltd.
 - Web: www.langley.co.uk.
 - Email: enquiries@langley.co.uk.
 - Product reference: TA-20 Flat Roofing System

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: As recommended by bitumen membrane manufacturer.
- 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.

45 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.
- Mechanical fixing: as per schedule of work.
- 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.

75 WELTED DRIPS

- Material: Agrément certified SBS modified bitumen membrane, polyester reinforced, mineral surfaced.
 - 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.

K

Linings/Sheathing/Dry partitioning

K10

Gypsum board dry linings/ partitions/ ceilings

K10 Gypsum board dry linings/ partitions/ ceilings

- 15 LINING ON TIMBER STUD PARTITIONS
- Substrate: Studs at 400 mm centres.
 - Linings: 12.5 mm plasterboard.
 - Recycled content: Submit proposals.
 - Fixing: Nails at 150 mm centres.
 - Finishing: Skim coat plaster.
 - Primer/ Sealer: As recommended by board manufacturer for a paint finish.
 - Accessories: none.
- 65 DRY LINING GENERALLY
- General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
 - Standard:
 - Gypsum plasterboard to BS EN 520.
 - Gypsum fibre board to BS EN 15283-2.
 - Evidence of compliance: All sheets to be CE marked. Submit Declaration of Performance (DoP).
 - Cutting gypsum boards: 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.
- 67A THISTLE BOARD FINISH
- Manufacturer: British Gypsum.
 - Web: www.british-gypsum.com.
 - Email: bgtechnical.enquiries@bpb.com.
 - Product reference: Thistle Board Finish
- 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.
- 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 gypsum board: 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**

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

10 WOOD-BASED SHEETS GENERALLY

- Standard: To BS EN 13986.
 - Evidence of compliance: All sheets to be CE marked. Submit Declaration of Performance (DoP).

35A ORIENTED STRAND BOARD FLOORING FOR ROOF DECKING

- Substrate: 50mm joists at 400 centres.
 - Additional supports: as clause 67.
- Flooring: Oriented strand board to BS EN 300, Type OSB/3.
 - Thickness: 18 mm.
 - Edges: Tongued and grooved all edges.
 - Setting out: Long edges running across joists. End joints central over joists and staggered.
 - Fixing to joists:
 - Fasteners: 50 x 3.35 mm annular ringed shank nails.
 - Fixing centres (maximum): 300 mm around floor perimeter, along short edges of each board, and along intermediate supports.
- Joint adhesive: PVA to BS EN 204, class D3.
- Expansion provision: 10 mm clear expansion gap around perimeter of floor area and any upstands.

55A INSULATION BOARD

- Manufacturer: Celotex.
 - Web: www.celotex.co.uk.
 - Email: info@celotex.co.uk.
 - Product reference: Celotex XR4000.
- Type : XR4150.

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.

K20

Timber board flooring/ sarking/ linings/ casings

K20 Timber board flooring/ sarking/ linings/ casings

WORKMANSHIP

- 41 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 FIXING BOARDS
- Protection during and after installation: Keep boards dry, clean and undamaged.
 - Boards to be used internally: Do not install until building is weathertight.
 - Moisture content of timber supports at time of fixing boards: Not more than 18%.
 - Fixing: Fix boards securely to each support to give flat, true surface free from undulations, lipping, splits and protruding fasteners.
 - Timber movement: Position boards and fixings to prevent cupping, springing, excessive opening of joints and other defects.
 - Heading joints: Tightly butted, central over supports and at least two boards widths apart on any one support.
 - Edges: Plane off proud edges.

K21

Wood strip/ board fine flooring/ linings

K21 Wood strip/ board fine flooring/ linings

50 EXISTING WOOD FLOORING

- Condition: Boards securely fixed and acceptably level. Protruding fasteners punched in or countersunk.

60 FIXTURES

- Fixtures around which flooring is to be fitted: Installed before starting work specified in this section.

L

Windows/Doors/Stairs

L10

Windows/ Rooflights/ Screens/ Louvres

L10 Windows/ Rooflights/ Screens/ Louvres

30 PVC-U WINDOWS

- Manufacturer: Contractor's choice.
 - Product reference: To match existing units.
 - Colour/ Texture: White.
- Thermal performance (U-value maximum): 1.4 W/m²K whole window U-value.
- Glazing details: TBC.
 - Beading: TBC.
- Ironmongery/ Accessories:
 - Handle;
 - Locking handle;
 - Restrictor; and
 - Trickle ventilator.
- Fixing: Lug fixing.
 - Fastener spacing: When not predrilled or specified otherwise, position fasteners 150-250 mm from ends of each jamb, adjacent to each hanging point of opening lights, but no closer than 150 mm to a transom or mullion centre line, and at maximum 600 mm centres.

75 SEALANT JOINTS

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

90 REPLACEMENT WINDOW INSTALLATION

- Standard: To BS 8213-4.

L20

Doors/ shutters/ hatches

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.
- Certification scheme: Forest Stewardship Council (FSA).
- Other evidence: .

60 DOORS INTERNAL

- Manufacturer: Contractor's choice.
 - Product reference: To match existing door style.
- Performance: N/A.

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.

L40

General glazing

L40 General glazing

10 WORKMANSHIP AND POSITIONING GENERALLY

- Glazing:
 - Generally: In accordance with BS 6262 series.
 - 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.

30 PREPARATION

- Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing; ensure compliance with any certified installation requirements.

M

Surface finishes

M20

Plastered/ Rendered/ Roughcast coatings

M20 Plastered/ Rendered/ Roughcast coatings

- 50 GYPSUM PLASTER SKIM COAT ON PLASTERBOARD
- Plasterboard manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Plaster: Board finish plaster to BS EN 13279-1, class B.
 - Manufacturer: Contractor's choice.
Product reference: Contractor's choice.
 - Thickness: Follow manufactureres recommendation, usually 2-5mm.
 - Finish: Smooth.
- 60 CEMENTS FOR MORTARS
- Cement: To BS EN 197-1.
 - 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 EN 197-1.
 - 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.
- 74 EXISTING DAMP AFFECTED PLASTER/ RENDER
- Plaster affected by rising damp: Remove to a height of 300 mm above highest point reached by damp or 1 m above dpc, whichever is higher.
 - Perished and salt contaminated masonry:
 - Mortar joints: Rake out.
 - Masonry units: Submit proposals.
 - Drying out substrates: Establish drying conditions.

- 76 REMOVING DEFECTIVE EXISTING PLASTER
- Plaster for removal: Loose, hollow, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
 - Removing plaster: Cut back to a square, sound edge.
- 78 REMOVING DEFECTIVE EXISTING RENDER
- Render for removal: Detached, hollow, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
 - Removing defective render: Cut out to regular rectangular areas with straight, square cut or slightly undercut edges.
 - Render with imitation joints: Cut back to joint lines.
 - Cracks (other than hairline cracks): Cut out to a width of 75 mm (minimum).
- 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.
- 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): As recommended by manufacturer.
 - Drying: Allow each coat to dry thoroughly, with shrinkage substantially complete before applying next coat.

M40

Stone/ Concrete/ Quarry/ Ceramic tiling/ Mosaic

M40 Stone/ Concrete/ Quarry/ Ceramic tiling/ Mosaic

5A TILING TO GROUND FLOOR LEVEL ACCESS BATHROOM AND KITCHEN

- Tiles: White Cermaic Wall Tiles.
 - Manufacturer/ Supplier: Contractor's choice.
 - Product reference: Contractor's choice.
 - Colour: White.
 - Size: 150mm x 150mm.
 - Recycled content: Not applicable.
 - Other requirements: None.
- Background/ Base: Previously painted plaster/plasterboard.
 - Preparation: Ensure surface is fit for recieving adhesive as per manufacturers instructions.
- Intermediate substrate: Not required.
- Bedding: Adhesive bed notched trowel method, as clause 50.
 - Adhesive: Mapei Waterproof Fix and Grout or similar equivalent.
- Joint width: As spacer lugs.
- Grout: Mapei Waterproof Fix and Grout or similar equivalent.
- Accessories: Quarter round finishing strips.

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: Measure from underside of a 2 m straightedge with 3 mm thick feet placed anywhere on surface. The straightedge should not be obstructed by the tiles/ mosaics and no gap should be greater than 6 mm, i.e. a tolerance of ± 3 mm.
- Surplus bedding material: Clean from joints and face of tiles/ mosaics.

32 MORTAR BEDDING

- Bedding mix:
 - Cement: Portland to BS EN 197-1, type CEM I/42.5.
 - Sand for walls: Fine aggregate to BS EN 13139.
Grading designation: 0/2 (CP or MP) category 2 fines.
 - Sand for floors: Fine aggregate to BS EN 13139.
- Grading designation: 0/4 (MP) category 1 fines and between 20-66% passing a 0.5 sieve.
- Batching: Select from:
 - Batch by weight.
 - Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Use accurate gauge boxes. Allow for bulking of damp sand.
- Mixing: Mix materials thoroughly to uniform consistence. Use a suitable forced action mechanical mixer. Do not use a free fall type mixer.
- Application: At normal temperatures use within two hours. Do not use after initial set. Do not retemper.

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 ADHESIVE BED - NOTCHED TROWEL METHOD TO WALLS

- Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
- 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.

M52

Decorative papers/fabrics

M52 Decorative papers/fabrics

21 PREPARATION OF SUBSTRATES GENERALLY

- Substrates: Sufficiently dry in depth to suit covering to be hung.
- Efflorescence salts, dirt, grease and oil: Remove.
- Organic growths and infected coatings/ decorations: Remove and dispose of. Apply treatment biocide to assist removal and residual effect biocide to inhibit regrowth.
- Substrate irregularities: Fill cracks, joints, holes and other depressions with stoppers/ fillers. Abrade to a smooth finish.
- Dust, particles and residues from abrasion: Remove.

31 COATED SUBSTRATES

- Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
- Water soluble coatings: Completely remove.
- Significant rot, corrosion or other degradation of substrates: If revealed, give notice.
- Retained coatings:
 - Thoroughly clean to remove dirt, grease and contaminants.
 - Lead based coatings: If discovered, give notice.
 - Abrade gloss coated substrates to provide a key.

41 PAPER/ FABRIC COVERED SUBSTRATES

- Existing coverings: Remove by wet or dry stripping.
- Old adhesive and size: Remove by washing.
- Significant loose or damaged plaster or other degradation of substrates: If revealed, give notice.

60 HANGING GENERALLY

- Completed coverings: Securely adhered, smooth and free of air bubbles, wrinkles, gaps, tears, adhesive marks and stains. Joints truly vertical/horizontal and straight.

70 LININGS

- Type and weight: To suit coverings and substrates.
- Hang lengths: With neat butt joints; do not overlap.
- Drying period: Leave for 24 hours before hanging coverings.

80 COVERINGS

- Colour consistency: Check before hanging each length and after hanging first three lengths.
- Hanging lengths:
 - Wall coverings: Vertical.
 - Ceiling coverings: Parallel to main window wall.
- Butt joints: Hang lengths with neat butt joints generally.
- Overlap joints: Permitted only where recommended by covering manufacturer. Cut through joints when stable to a true straight edge.
- Cross joints: Permitted only where single lengths are impractical.

M60

Painting/ clear finishing

M60 Painting/ clear finishing

10A EMULSION PAINT

- Manufacturer: Dulux Trade, brand of AkzoNobel.
 - Web: www.duluxtrade.co.uk.
 - Email: project.support@akzonobel.com.
 - Product reference: Vinyl Matt
- System code: D673 - New plaster/ plasterboard.
- Colour: As contractors schedule of works.

10B UNDERCOAT

- Manufacturer: Dulux Trade, brand of AkzoNobel.
 - Web: www.duluxtrade.co.uk.
 - Email: project.support@akzonobel.com.
 - Product reference: Quick Dry Undercoat
- System code: D7513 – General (internal).
- Colour: As contractors schedule of works.

12A GLOSS PAINT

- Manufacturer: Dulux Trade, brand of AkzoNobel.
 - Web: www.duluxtrade.co.uk.
 - Email: project.support@akzonobel.com.
 - Product reference: High Gloss
- System code: as contractors schedule of works.
- Colour: as contractors schedule of works.

30 PREPARATION GENERALLY

- Standard: In accordance with BS 6150.
- Refer to any pre-existing CDM Health and Safety File and CDM Construction Phase Plan where applicable.
- 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.

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.

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-borne acrylic.
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Preparation and application: As section Z22.

55 EXISTING GUTTERS

- Dirt and debris: Remove from inside of gutters.
- Defective joints: Clean and seal with suitable jointing material.
- Suspected hazardous materials: submit method statement.

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.

N

Furniture/Equipment

N11

Domestic kitchen fittings, furnishings and equipment

N11 Domestic kitchen fittings, furnishings and equipment

10A FITTED BASE UNITS AND WALL UNITS

- Manufacturer: Premier Kitchens & Bedrooms.
- Dimensions: To BS EN 1116.
- Surface finishes: To BS 6222-3.
- Doors and drawer fronts:
 - Material: Wood veneer.
 - Finish and colour: Brilliant white.
 - Edges: Wood veneer.
- Side panels, plinths and shelves:
 - Material: Wood veneer.
 - Finish and colour: Brilliant white.
 - Edges: Veneer.

20 WORKTOPS

- Manufacturer: Premier Kitchens & Bedrooms.
 - Product reference: Contractor's choice.
- Material: Laminate covered particle board.
- Dimensions: As per drawings.
- Exposed edges: Laminate moulded.
- Support: Supported on base units.

30A SINKS, TAPS, TRAPS AND WASTES

- Sinks, taps, traps and wastes:
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.

50 SEALANT

- Standard: Not applicable.
- Type: Silicone sealant.
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Colour: Clear.

N13

Sanitary appliances and fittings

N13 Sanitary appliances and fittings

10A WC PANS AND FLUSHING ARRANGEMENTS

- Manufacturer: AKW Medi-Care Limited
 - Web: www.akw-ltd.co.uk
 - E-mail: sales@akw-ltd.co.uk
 - Tel: 01905 823 298
- Cistern with Screw Down Lid and Flush Handle for Close coupled Toilet Pans
 - Product Code: 23163
- Raised Height Close Coupled Toilet Pan (650mm projection)
 - Product Code: 23162
- White Ergonomic Toilet Seat with lid
 - 23122

30A WASH BASINS

- Manufacturer: AKW Medi-Care Limited
 - Web: www.akw-ltd.co.uk
 - E-mail: sales@akw-ltd.co.uk
 - Tel: 01905 823 298
- 2 Tap Hole Washbasin (500mm wide) Full Pedestal
 - Product Code: 23121-FP
- Lever Handle Basin Taps (Pair)
 - Product Code: 23196CH

40A SHOWER UNITS

- Manufacturer: AKW Medi-Care Limited
 - Web: www.akw-ltd.co.uk
 - E-mail: sales@akw-ltd.co.uk
 - Tel: 01905 823 298
- Tuff Form 1400x900 former with GW90 Low Depth Waste and adaptor
 - Product Code: 21094
- Advanced Wall Mounted Extra Wide fold up Moulded Seat with Support Legs Grey Padded Seat Back and Arms
 - Product Code: 04240P
- L Shaped Curtain Rail 1500mmx1200mm
 - Product Code: 24126
- Shower Curtain 1800x2000 drop
 - Product Code: 24078
- AKW SmartCare Plus White 9.5kw with silver/white kit
 - Product Code: 29011WH

HAND RAILS

- Manufacturer: AKW Medi-Care Limited
 - Web: www.akw-ltd.co.uk
 - E-mail: sales@akw-ltd.co.uk
 - Tel: 01905 823 298
- 600x32 large plastic fluted white grab rail
 - Product Code: 01420WH
- Hinged foldup double hairpin rail-adjustable leg (32mm)White
 - 01830WH

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.
- Inlet and flushing valves: Match to pressure of water supply.
- Internal overflows: Into pan, to give visible warning of discharge.
- External overflows: Fix pipes to falls, and locate to give visible warning of discharge. Agree position.

P

Building fabric sundries

P10

Sundry insulation/ proofing work

P10 Sundry insulation/ proofing work

15A INSULATION ROLLS

- Manufacturer: ROCKWOOL Ltd.
 - Web: www.rockwool.co.uk.
 - Email: info@rockwool.com.
 - Product reference: ROCKWOOL Roll.
- Slab size: 400 x 3650 x 150 mm.

15B INSULATION BOARD

- Manufacturer: Celotex.
 - Web: www.celotex.co.uk.
 - Email: info@celotex.co.uk.
 - Product reference: Celotex XR4000.
- Type : XR4150.

40A ACOUSTIC INSULATION

- Manufacturer: ROCKWOOL Ltd.
 - Web: www.rockwool.co.uk.
 - Email: info@rockwool.com.
 - Product reference: Acoustic Slab
- Thickness: 67 mm.

60A MOISTURE VAPOUR BARRIER

- Manufacturer: Capital Valley Plastics Ltd.
 - Web: www.capitalvalleyplastics.com.
 - Email: technical@capitalvalleyplastics.com.
 - Product reference: Moisture Vapour Barrier
- Thickness: 250 µm.
- Roll width: 2.5 m.
- Colour: Green tint.
- Accessories: Mastic Tape.

P20

Unframed isolated trims/ skirtings/ sundry items

P20 Unframed isolated trims/ skirtings/ sundry items

10 SOFTWOOD Skirting boards

- Quality of wood and fixing: To BS 1186-3.
 - Species: Contractor's choice.
 - Class: 2.
- Moisture content at time of fixing: 9 -13%.
- Preservative treatment: Not required.
- Fire rating: To BS 476-7, Class 1.
- Profile: To match existing.
 - Finished size: 19 x 95 mm.
- Finish as delivered: Sanded.
- Fixing: Nailed at 450 centres.

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

P21 Door/ window ironmongery

2 QUANTITIES AND LOCATIONS

- Quantities and locations of ironmongery are in the contractors schedule of works .
- Fixing: As sections L10 and L20.

8 DOOR HINGES TO INTERNAL DOORS

- Manufacturer: Contractor's choice .
 - Product reference: Contractor's choice .
- Type: Washered butt hinge .
- Size: As required .
- Material/ finish: Bright zinc-plated steel .
- Other requirements: none .

12 OVERHEAD DOOR CLOSERS TO MAIN ENTRANCE DOOR

- Standard: To BS EN 1154.
 - Devices to fire/ smoke control doors: CE marked.
- Manufacturer: As per contractor's schedule of works .
 - Product reference: Contractor's choice .
- Power size: As schedule .
- Other functions: As schedule .
- Casing finish: As schedule .
- 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.

Holes, chases, covers and supports for services

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 mm².
- 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:
 - Position: Locate at top. Form by sawing down to a drilled hole.
 - Depth (maximum): 0.15 x joist depth.
 - Distance from supports: Between 0.1 and 0.2 x span.
- Holes in joists:
 - Position: 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.

Q

Paving/Planting/Fencing/Site furniture

Q10

Kerbs/ edgings/ channels/ paving accessories

Q10 Kerbs/ edgings/ channels/ paving accessories

10A PRECAST CONCRETE

- Manufacturer: Marshalls plc.
 - Web: www.marshalls.co.uk.
 - Email: info@marshalls.co.uk.
 - Product reference: EF Flat Top Edgings.
- Size: 50 x 200 mm.

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

Q20 Granular sub-bases to roads/ pavings

10 THICKNESSES OF SUB-BASES

- Thicknesses: As specified in the relevant paving section.

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: give notice.
- 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.

Q28

Topsoil and soil ameliorants

Q28 Topsoil and soil 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.
- 30 SPREADING TOPSOIL
- Standard: In accordance with BS 3882.
 - 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.
 - Depth after firming and settlement: 100 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.

R

Disposal systems

R10

Rainwater drainage systems

R10 Rainwater drainage systems

16B GUTTER

- Manufacturer: OSMA.
 - Web: www.wavin.co.uk.
 - Email: info@wavin.co.uk.
 - Product reference: Osma DeepLine Gutters And Ancillaries
- Type: Gutter 4 m 9T974.
- Colour: White.
- Accessories: as necessary.

35A DOWNPIPES

- Manufacturer: OSMA.
 - Web: www.wavin.co.uk.
 - Email: info@wavin.co.uk.
 - Product reference: Osma RoundLine Downpipes And Accessories
- Type: Pipe 2.75 m 0T086.
- Colour: White.
- Accessories: as necessary.

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.

R11

Above ground foul drainage systems

R11 Above ground foul drainage systems

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.

T

Mechanical heating/Cooling/Refrigeration systems

T90

Heating systems - domestic

T90 Heating systems - domestic

SYSTEM PERFORMANCE

- 20 DESIGN
- Design: Complete the design of the heating system.
 - Proposals: Submit drawings (showing equipment positions and pipeline routes), technical information, calculations and manufacturer's literature.
- 21 BASIC DESIGN TEMPERATURES
- Room temperatures: Design the system to provide the following temperatures for the specified air change rates and an external air temperature of -4°C:
 - Living rooms: 21°C, for 1.5 air changes per hour.
 - Dining rooms: 21°C, for 1.5 air changes per hour.
 - Bedsitting rooms: 21°C, for 1.5 air changes per hour.
 - Bedrooms: 18°C, for 1 air changes per hour.
 - Halls and landings: 18°C, for 1.5 air changes per hour.
 - Kitchens: 18°C, for 2 air changes per hour.
 - Bathrooms: 22°C, for 2 air changes per hour.
 - Toilets: 18°C, for 2 air changes per hour.
 - Submittals: Submit heat loss calculations for each room using BS EN 12831-1.

PRODUCTS

- 31A BOILERS, GAS-FIRED COMBINATION IN MAIN HOUSE
- Standards: BS EN 15502-2-1 and BS EN 15502-2-2.
 - Type: Wall mounted.
 - Manufacturer: Vaillant.
 - Product reference: 825.
- 61 RADIATORS IN MAIN HOUSE AND FOR EXTENSION
- Standard: To BS EN 442-1 and -2.
 - Type: to match existing.
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Output: Contractor's choice.
 - Sizes: Submit proposals.
 - Connections: 15 mm BOE.
 - Material: Manufacturer's standard.
 - Finish: White stove enamelled.
- 65 THERMOSTATS
- Standards: To BS EN 60730-1, -2-7, -2-8, -2-9, -2-14 and BS EN 61058-1, -2-5. BEAB approved.
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.

EXECUTION

73 INSTALLATION GENERALLY

- Standard: To BS EN 14336.
- Performance: Free from leaks and the audible effects of expansion, vibration and water hammer.
- Fixing of equipment, components and accessories: Fix securely, parallel or perpendicular to the structure of the building.
- Preparation: Immediately before installing tanks and cisterns on a floor or platform, clear the surface completely of debris and projections.
- Corrosion resistance: In locations where moisture is present or may occur, use corrosion resistant fittings/ fixings and avoid contact between dissimilar metals by use of suitable washers, gaskets, etc.

75 PIPELINE INSTALLATION

- Appearance: Install pipes straight, and parallel or perpendicular to walls, floors, ceilings, and other building elements.
- Pipelines finish: Smooth, consistent bore, clean, free from defects, e.g. external scratching, toolmarks, distortion, wrinkling, and cracks.
- Concealment: Generally conceal pipelines within floor, ceiling and/ or roof voids.
- Access: Locate runs to facilitate installation of equipment, accessories and insulation and allow access for maintenance.
- Arrangement of hot and cold pipelines: Run hot pipelines above cold where routed together horizontally. Do not run cold water pipelines near to heating pipelines or through heated spaces.
- Electrical equipment: Install pipelines clear of electrical equipment. Do not run pipelines through electrical enclosures or above switch gear distribution boards or the like.
- Insulation allowance: Provide space around pipelines to fit insulation without compression.

76 PIPELINE FIXING

- Fixing: Secure and neat.
- Joints, bends and offsets: Minimize.
- Pipeline support: Prevent strain, e.g. from the operation of taps or valves.
- Drains and vents: Fix pipelines to falls. Fit draining taps at low points and vents at high points.
- Thermal expansion and contraction: Allow for thermal movement of pipelines. Isolate from structure. Prevent noise or abrasion of pipelines caused by movement. Sleeve pipelines passing through walls, floors or other building elements.
- Dirt, insects or rodents: Prevent ingress.

77 JOINTS IN COPPER PIPELINES

- Preparation: Cut pipes square. Remove burrs.
- Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
- Bends: Do not use formed bends on exposed pipework, except for small offsets. Form changes of direction with radius fittings.
- Adaptors for connecting dissimilar materials: Purpose designed.
- Substrate and plastics pipes and fittings: Do not damage, e.g. by heat when forming soldered joints.
- Flux residue: Clean off.

82 INSTALLATION OF FLUES AND CHIMNEYS GENERALLY

- Standards: To BS EN 15287-1 or BS EN 15287-2.
- Joints and bends: Minimize number.
- Slope (maximum): 30° from the vertical.
- Joints: Install with sockets uppermost, fully supported and fixed securely with brackets supplied for the purpose. Do not locate joints within the depth of floors.
- Sealing of joints: To provide a gas-tight installation.
- Expansion and contraction: Accommodate thermal movement.
- Fire safety: Locate a safe distance from combustible materials.
- Roof junction: Weatherproof. Fit terminal and flashings, collars, and the like.

COMPLETION

90 TESTING

- Standard: To BS EN 14336.
- Notice (minimum): 3 days.
- Preparation: Secure and clean pipework and equipment. Fit cistern/ tank covers.
- Leak testing: Start boiler and run the system until parts are at normal operating temperatures and then allow to cool to cold condition for a period of 3 h.
- Gas pipelines: Test and purge to BS 6891.
- Pressure testing: At both hot and cold conditions joints, fittings and components must be free from leaks and signs of physical distress when tested for at least 1 h as follows:
 - Systems fed directly from the mains and systems downstream of a booster pump: Apply a test pressure equal to 1.5 times the maximum pressure to which the installation or relevant part is designed to be subjected in operation.
 - Systems fed from storage: Apply a test pressure equal to the pressure produced when the storage cistern is filled to its normal maximum operating level.
 - Inaccessible or buried pipelines: Carry out hydraulic pressure test to twice the working pressure.

91 SETTING TO WORK AND COMMISSIONING

- Equipment: Check and adjust operation of equipment, controls and safety devices.
- Outlets: Check operation of outlets for satisfactory rate of flow and temperature.

92 DOCUMENTATION

- Manufacturers' operating and maintenance instructions: Submit for equipment and controls.
- System operating and maintenance instructions: Submit for the system as a whole giving optimum settings for controls.
- Record drawings: Submit drawings showing the location of circuits and operating controls.

93 LABELS

- Valve labels: Provide labels on isolating and regulating valves on primary circuits, stating their function.

U

Ventilation/Air conditioning systems

U90

General ventilation - domestic

U90 General ventilation - domestic

GENERAL

PRODUCTS

30A PRODUCTS

- All ventilation products are to be selected from the contractors and client's preferred supplier with the contract administrator consulted for final approval.
- All products shall meet the requirements as outlined in the contractor's schedule of works.
- Colour, finish and accessories of the products will be as per room requirements as set out in the contractor's schedule of works

EXECUTION

80 PASSIVE STACK VENTILATION SYSTEMS

- Installation: Install ductwork in runs that are as short and straight as possible, with smooth curvature to offsets.
- Arrangement: Do not install ducts at more than 45° from vertical.
- Air leakage: Prevent leakage where ducts enter rooms and around inlet grilles.
 - Sealing material: Use a nonsetting mastic or filler. Sealing may not be necessary, depending on the design of the grilles.

81 INSTALLING VENTILATORS FOR HEAT APPLIANCES

- Free area: Do not fit with insect mesh, or any means of adjusting or restricting the opening.

85 FLEXIBLE DUCTWORK

- Installation: Fully extend without overstretching.
- Support: Form smooth flowing curves without kinking, sagging or slumping.

86 RIGID DUCTWORK GENERALLY

- Joints: Seal. Provide a robust airtight installation.
- Support: Do not distort ductwork or reduce cross-sectional area. Do not strain joints.
- Falls: Fall away from fans, dampers and other in-line accessories.
- Sleeves: Locate where ducts pass through building fabric. Bed solidly to the surrounding construction. Leave a gap of 10-20 mm between sleeve and duct and fill completely.

88 SITE APPLIED INSULATION

- Location: Fit insulation to ductwork in unheated spaces.
- Installation: Fix securely. Leave no gaps. Make continuous.

COMPLETION

90 COMMISSIONING

- Ventilation system: Balance airflow using methods recommended by the system manufacturer.
 - Performance: Provide slight positive pressure generally throughout the building, with airflow from 'dry' to 'wet' spaces.
- Operation: Examine ductwork for leakage. Test the operation of fans, equipment, controls and sensors. Verify correct operation. Submit report.

91 OPERATION AND MAINTENANCE

- Operating and maintenance instructions: Submit copies of manufacturers' operating and maintenance instructions for equipment and controls.
- Tools: Supply tools for operation, maintenance and cleaning purposes, including keys for valves and vents.

Z

Building fabric reference specification

Z10

Purpose made joinery

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, thickened, 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.

Z20

Fixings and adhesives

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 PELLETTED 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

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 II/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 EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
To BS EN 197-1 fly ash cement, CEM II/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.
- 50 ADMIXTURES FOR SITE MADE MORTARS
- Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
 - Other admixtures: Submit proposals.
 - 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.

Z22
Sealants

Z22 Sealants

- 31 JOINTS As per structural engineers drawings
- 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.