

Alterations and Refurbishment to Existing Sports Pavilion at 353 Reading Road, Henley-on-Thames

For Henley Town Council

Specification Document

Tender Issue

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F10 BRICK/ BLOCK WALLING

To be read with Preliminaries/ General conditions.

05 FACING BRICKWORK TO EXTERNAL LEAF TO OPENINGS TO BE INFILLED IN EXTERNAL CAVITY WALLS

- Bricks: To BS EN 771-1.
 - Product reference: To match existing bricks to external leaf of cavity walls, including where required, use of matching blue bricks below DPC level.
- Special shapes: None.
- Mortar: As section Z21.
 - Standard: Not applicable.
 - Mix: 1:1:6 cement:lime:sand. Colour and texture to match existing brickwork.
- Bond: Half lap stretcher keyed in to adjacent facework, and including matching soldier course.
- Joints: To match existing brickwork.

37 AUTOCLAVED AERATED CONCRETE (AAC) COMMON BLOCKWORK TO NEW PARTITIONS, INTERNAL LEAF TO OPENINGS TO BE INFILLED IN EXTERNAL CAVITY WALLS

- Blocks: To BS EN 771-4.
 - Manufacturer: Forterra Building Products Ltd.
 - Product reference: Thermalite Aircrete Shield.
 - Configuration: Group 1.
 - Mean compressive strength (minimum): 3.6 N/mm².
 - Work sizes (length x width x height): 215 x 100 x 440.
 - Tolerance category: GPLM.
 - Special shapes: None.
 - Additional requirements: None.
- Mortar: As section Z21.
 - Standard: Not applicable.
 - Mix: 1:1:6 cement:lime:sand.
- Bond: Half lap stretcher.

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.
- AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
- Clay block joints:
 - Thin layer mortar: Lay blocks on a full bed.
 - Interlocking perpend: Butted.
- 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 layer mortar: 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.

F30 ACCESSORIES/ SUNDRY ITEMS FOR BRICK/ BLOCK STONE WALLING**05 CAVITIES**

- Concrete fill to base of cavity:
- Concrete generally: To BS EN 206 and BS 8500-2.
- Concrete type: Designated GEN1 or Standardized prescribed ST2 mix 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.

07 PERPEND JOINT WEEP HOLES

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

12 PARTIAL FILL CAVITY INSULATION

- Insulation: Rigid thermoset phenolic board.
 - Product certification: BBA Certificate 16/5299.
- Manufacturer: Kingspan Insulation Ltd.
 - Product reference: Kooltherm K106 Cavity Board.
- Face size: 1200 x 450 mm.
- Thickness (nominal): 90 mm.
- Placement: Secure against face of inner leaf.
- Residual cavity: 10 mm, clear and unobstructed.
- Joints between boards, at closures and penetrations: No gaps and free from mortar and debris.

18 CAVITY CLOSERS TO NEW EXTERNAL DOOR OPENINGS

- Manufacturer: Kingspan Insulation Ltd, or equal.
- Product reference: Kingspan Kooltherm Cavity Closer.

25 CAVITY WALL TIES USED WITH PARTIAL FILL INSULATION TO INFILL CAVITY WALLS TO OPENINGS

- Standard: To BS EN 845-1.
 - Type: Type 2 tie.
- Manufacturer: Ancon, or equal.
 - Product reference: Ancon Staifix RT2.
- Material/ Finish: Austenitic stainless steel.
- Sizes: 250 mm.
- End types: Double triangle.
- Embedment length (minimum): 62.5 mm.
- Tie mounted insulation retaining clips: As recommended by tie manufacturer.

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

- Embedment in mortar beds (minimum): 62.5 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: 900 mm.
 - Vertical centres: 450 mm.

- Provision of additional ties: Within 225 mm of reveals of unbonded openings and at the vertical reveals of unsupported masonry at 225 mm centres
- 39 WALL STARTERS/ CONNECTORS
- Manufacturer: Ancon, or equal.
 - Product reference: Staifix Universal Wall Starter System.
 - Material/ Finish: Stainless steel.
- 46 DAMP PROOF COURSE – PLASTICS
- Manufacturer: IKO, or equal.
 - Product reference: Hyload Original DPC.
 - Material: Polymeric.
- 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.
- 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.

G20 CARPENTRY/ TIMBER FRAMING/ FIRST FIXING

02 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.

10 UNGRADED SOFTWOOD FOR NON-STRUCTURAL USE GENERALLY (STUDWORK ENCLOSURE TO CLEANER'S STORES)

- Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
- Surface finish: Sawn.
- Treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8, Service life: 40 years.

15 PLYWOOD FOR REPAIRS TO EXISTING SOFFIT BOARDS

- Standard: To an approved national standard.
- Service class to BS EN 1995-1-1: 3.
- Use class to BS EN 335: 3.
- Nominal thickness: To match existing.
- Appearance class to BS EN 635: II.
- Bond quality to BS EN 314-2: Class 3.
- Finish: Sanded
- Treatment: Organic solvent treatment impregnation to Specification section Z12 and Wood Protection Association Commodity Specification C8, Service life 30 years.

16 PLYWOOD FOR SHELVES TO CLEANER'S STORES

- Standard: To an approved national standard.
- Service class to BS EN 1995-1-1: 3.
- Use class to BS EN 335: 3.
- Nominal thickness: 20mm.
- Appearance class to BS EN 635: II.
- Bond quality to BS EN 314-2: Class 3.
- Finish: Sanded
- Treatment: Organic solvent treatment impregnation to Specification section Z12 and Wood Protection Association Commodity Specification C8, Service life 30 years.
- Ensure adequate support to shelving on SW structure.
- Shelf depth – allow for 500mm
- Shelf spacing – allow for 600mm between shelves
- Overall height of shelving within cupboard – 2.4m to top shelf

30 SELECTION AND USE OF TIMBER

- Timber members damaged, crushed or split beyond the limits permitted by their grading: Do not use.

32 NOTCHES, HOLES AND JOINTS IN TIMBER

- 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 without approval.

35 PROCESSING TREATED TIMBER

- Cutting and machining: Carry out as much as possible before treatment.
- Extensively processed timber: Retreat timber sawn lengthways, thickened, 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%.

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.

K10 GYPSUM BOARD DRY LININGS/ PARTITIONS/ CEILINGS

- 15 LINING ON TIMBER TO PARTITIONS ABOVE NEW DOORS TO CLEANER'S CUPBOARDS
- Substrate: Timber studs at 400 mm centres.
 - Linings: 12.5 mm gypsum moisture resistant plasterboard.
 - Fixing: Screws at 300 mm centres.
 - Finishing: Seamless jointing.
 - Primer/ Sealer: Drywall primer.
 - Accessories: Beads/stops as recommended by board manufacturer.
- 25 LINING TO REPLACE AREAS OF DEFECTIVE PLASTERBOARD AND AREAS SUBJECT TO ALTERATIONS ON TIMBER FRAMED CEILINGS
- Substrate: Existing timber ceiling joists/bottom chords of trussed rafters.
 - Linings: 12.5 mm gypsum moisture resistant plasterboard.
 - Fixing: Screws at 230 mm centres.
 - Finishing: Seamless jointing.
 - Primer/ Sealer: Artex Sealer.
 - Textured finish:
 - Manufacturer: Okarno Ltd.
 - Finish: Artex Repair Texture or Ready Mixed Textured Finish, finish to match existing.
- 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.
- 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.
- 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.

K32 PANEL CUBICLES/ DUCT AND WALL LININGS/ SCREENS**10 PANEL CUBICLES TO NEW SHOWERS/WC'S AND EXISTING SHOWERS AND LOBBIES TO 3G CHANGING ROOMS**

- Manufacturer: Bushboard Washrooms or equal.
 - Product reference: Baseline SGL Toilet Cubicle.
- Height (overall): Standard height, 100-150 mm floor clearance. Top of doors and panels fitted to top of thresholds to existing showers to be same height above main floor level as other cubicles.
- Panels: Solid grade laminate.
 - Edge treatment: Polished black radiused edges.
- Pilasters: Solid grade laminate.
 - Edge treatment: Polished black radiused edges.
- Doors: Solid grade laminate.
 - Edge treatment: Polished black radiused edges.
- Supports: Satin anodised aluminium foot with ABS shroud.
- Ironmongery/ Accessories: Manufacturer's standard cubicle ironmongery.

12 PRIVACY SCREENS TO EXISTING COMMUNAL SHOWERS

- Manufacturer: As cubicles, clause 10.
 - Product reference: As cubicles, clause 10.
- Frame/ Supports:
 - Type: As cubicles, clause 10.
 - Finish: As cubicles, clause 10.
- Panels: As cubicles, clause 10.
 - Edge treatment: Polished black radiused edges.
 - Wall support: Panel fixing clips.

20 INSTALLATION

- Programming: Do not install cubicles or duct panels before building is weathertight, wet trades have finished their work, wall and floor finishes are complete, and the building is well dried out.
- Accuracy: Set out to ensure frames and/ or panels and doors are plumb, level and accurately aligned.
- Modifications: Do not cut, plane or sand prefinished components except where shown on drawings.
- Fixing: Secure components using methods and fasteners recommended by the cubicle manufacturer.

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).

20 WOOD FLUSH DOORS TO NEW CLEANER'S CUPBOARDS AND REPLACEMENT DOOR TO NEW FEMALE WC

- Manufacturer: Jeld-Wen or similar.
- Product reference: Paint Grade Internal Door with cellular core.
- Facings: Wood veneer.
- Lippings: Hardwood.
- Preservative treatment: Manufacturer's standard.
- Finish as delivered: Unprimed, for painting on-site as Section M60.
- Glazing/ Infill details: None.

52 WOOD DOOR FRAMES, INTERNAL

- Materials: Generally to BS EN 942.
 - Species: Softwood as table NA1.
 - Appearance class: J40.
- Assembly:
 - Adhesive: PVAC to BS EN 204, class D4.
 - Joinery workmanship: As section Z12.
- Preservative treatment: Not required.
- Moisture content on delivery: 9-13%.
- Finish as delivered: Prepared and primed as section M60
- Perimeter seals: Not required.
- Thermal performance: Unrated.
- Fixing: Stainless steel frame fixings.
 - 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.

80 SEALANT JOINTS

- Sealant:
 - Manufacturer: To Contractor's choice.
 - Colour: White.
 - Application: As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile.

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**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.

50 BEAD FIXED SINGLE GLAZING TO REPLACEMENT GLAZING

- Pane material: Clear Georgian wired glass, thickness to match existing.
- Surround/ bead: Existing timber frame and beads.
 - Bead location: As existing.
 - Bead fixing: As existing.
 - Glazing compound: Non-setting, To Contractor's choice.
- Glazing installation:
 - Glass: Located centrally in surround using setting and location blocks and distance pieces.
 - Finished thickness of back bedding after inserting glazing (minimum): 3 mm.
 - Front bedding: Applied to fill voids.
 - Beads: Bedded in glazing compound and fixed securely.
 - Visible edge of glazing compound: Finish internally and externally with a smooth chamfer.

M10 CEMENT BASED LEVELLING/ WEARING SCREEDS

07 PROPRIETARY QUICK DRYING LEVELLING SCREEDS FOR MAKING GOOD EXISTING FOLLOWING ALTERATIONS

- Substrate: In situ concrete slab.
- Screed manufacturer: To Contractor's choice.
- Screed construction: Partially bonded.
- Thickness:
 - Nominal: 65 mm.
- Mix:
 - Proportions (cement:sand): Manufacturer's standard.
- Finish: Trowelled, as clause 75.
 - To receive: Ceramic tile finish.

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: Manufacturer's standard

45 AGGREGATES AND CEMENTS

- Sand: To BS EN 13139.
 - Grading limits: In accordance with 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.

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.

M20 PLASTERED/ RENDERED/ ROUGHCAST COATING**05 CEMENT:SAND (AIR ENTRAINED) INTERNAL RENDER**

- Substrate: Autoclaved aerated concrete common blockwork.
- Mortar: To Contractor's choice.
- Sand: To BS EN 13139.
 - Grading: 0/2 or 0/4 (CP or MP); category 2 fines.
 - Undercoats:
 - Mix: 1:4-5 masonry cement:sand.
 - Thickness (excluding keys and dubbing out): 8-12 mm.
 - Final coat:
 - Mix: 1:5 masonry cement:sand.
 - Thickness: 5-8 mm.
- Finish: Plain.

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.
- 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.

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).

82 BEADS/ STOPS

- Location: External angles and stop ends.
- Materials:
 - Internal plaster/ render: White plastics/PVC.
- 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): 4 days.
- 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.

M40 STONE/ CONCRETE/ QUARRY/ CERAMIC TILING/ MOSAIC

- 04 CLEANING TO EXSTING FLOORS - At the end of the works, all existing floor finishes are to be steam cleaned to remove all dirt deposits.
- Any areas of limescale staining are to be treated locally with an acid treatment which is suitable for the floor tiles.
- 05 FLOOR TILING TO MAKING GOOD TO AREAS SUBJECT TO ALTERATIONS AND TO REPAIRS TO EXISTING TILING
- Tiles: Non-slip tiles to match existing as closely as possible.
 - Manufacturer/ Supplier: To Contractor's choice
 - Colour: To match existing.
 - Size: To match existing.
 - Other requirements: Slip resistant.
 - Background/ Base: Existing screed/existing screed made good. Existing/new cement sand render to walls for tiled skirtings.
 - Intermediate substrate: Not required.
 - Bedding: Adhesive bed, bedding method as adhesive manufacturer's recommendations.
 - Adhesive: A type recommended by BAL, Ardex or equal.
 - Joint width: To match existing.
 - Grout: Waterproof grout to match existing.
 - Movement joints: As clause 75.
 - Location: Where required to extend existing movement joints.
 - Accessories: Coved skirting tiles to match existing.
- 06 WALL TILING TO NEW WALL AREAS, MAKING GOOD TO AREAS SUBJECT TO ALTERATIONS AND TO REPAIRS TO EXISTING TILING
- Tiles: Wall tiles to match existing as closely as possible.
 - Manufacturer/ Supplier: To Contractor's choice
 - Colour: To match existing.
 - Size: To match existing.
 - Background/ Base: Existing cement sand render. New cement sand render as M20/05.
 - Preparation: Remove existing loose and unbonded wall tiles and adhesive.
 - Intermediate substrate: Not required.
 - Bedding: Adhesive bed, bedding method as adhesive manufacturer's recommendations.
 - Adhesive: A type recommended by BAL, Ardex or equal.
 - Joint width: To match existing.
 - Grout: Waterproof mould resistant grout to match existing.
 - Movement joints: As clause 75.
 - Location: At perimeter of rooms.
 - Accessories: Plastics corner beads to junctions with render finish at external corners, to match existing.
- 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.

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: To BS EN 13139.
 - Grading designation: 0/2 (CP or MP) category 2 fines.
 - Sand for floors: 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.

40 TILE SKIRTINGS

- Bedding: Solid to wall on cement based adhesive.

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.

- 55 ADHESIVE BED - NOTCHED TROWEL AND BUTTERING METHOD TO WALLS
- Application: By floated coat of adhesive to dry background. Comb surface.
 - Tiling: Apply thin even coat of adhesive to backs of dry tiles. Fill any profiles. Press tiles firmly onto float coat.
 - Finished adhesive thickness: 3 mm or within the range allowed by the adhesive manufacturer.

- 57 ADHESIVE BED - BUTTERING METHOD
- Tiling: Apply even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles.
 - Finished adhesive thickness:
 - Walls: 3 mm or within the range allowed by the adhesive manufacturer.
 - Floors: Within the range allowed by the adhesive manufacturer.

- 60 ADHESIVE BED - NOTCHED TROWEL AND BUTTERING METHOD TO FLOORS
- Application: Floated coat of adhesive to dry base and comb surface.
 - Tiling: Apply coat of adhesive to backs of dry tiles. Fill any profiles. Press tiles firmly onto float coat.
 - Finished adhesive thickness: Within range allowed by manufacturer.

- 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.

- 75 SEALANT MOVEMENT JOINTS TO FLOORS
- Joints: Extend through tiles and bedding to base/ background. Centre over joints in base/ background.
 - Width: To match existing.
 - Sealant: Two part polysulfide.
 - Colour: To match existing.
 - Preparation and application: As section Z22.

M60 PAINTING/ CLEAR FINISHING

- 10 EMULSION PAINT TO EXISTING CEILINGS WITH ARTEX TEXTURED FINISH
- Manufacturer: Dulux or equal approved.
 - Product reference: Dulux Trade Diamond Matt.
 - Surfaces: Existing internal ceilings with Artex textured finish.
 - Initial coats: Dulux Trade Stain Block Primer.
 - Number of coats: One.
 - Finishing coats: Dulux Trade Diamond Matt.
 - Number of coats: Two
- 11 EMULSION PAINT TO EXISTING/NEW CEILING AREAS WITH NEW ARTEX TEXTURED FINISH
- Manufacturer: Dulux or equal approved.
 - Product reference: Dulux Trade Diamond Matt.
 - Surfaces: New internal ceiling areas with new Artex textured finish.
 - Initial coats: Dulux Trade Stain Block Primer.
 - Number of coats: One.
 - Finishing coats: Dulux Trade Diamond Matt
 - Number of coats: Two.
- 12 GLOSS PAINT TO EXISTING INTERNAL JOINERY
- Manufacturer: Dulux or equal approved.
 - Product reference: Dulux Trade Quick Dry Gloss.
 - Surfaces: Existing previously painted internal softwood.
 - Undercoats: Dulux Trade Quick Dry Undercoat.
 - Number of coats: One.
 - Finishing coats: Dulux Trade Quick Dry Gloss
 - Number of coats: Two.
- 13 GLOSS PAINT TO NEW INTERNAL JOINERY
- Manufacturer: Dulux or equal approved.
 - Product reference: Dulux Trade Quick Dry Gloss.
 - Surfaces: New internal softwood.
 - Initial coats: Dulux Trade Quick Dry Wood Primer Undercoat.
 - Number of coats: One.
 - Undercoats: Dulux Trade Quick Dry Wood Primer Undercoat.
 - Number of coats: One
 - Finishing coats: Dulux Trade Quick Dry Gloss.
 - Number of coats: Two.
- 14 GLOSS PAINT TO EXISTING EXTERNAL JOINERY
- Manufacturer: Dulux or equal approved.
 - Product reference: Dulux Trade High Gloss.
 - Surfaces: Existing previously painted external softwood.
 - Undercoats: Dulux Trade Undercoat.
 - Number of coats: One.
 - Finishing coats: Dulux Trade High Gloss.
 - Number of coats: Two.
- 15 GLOSS PAINT TO NEW EXTERNAL JOINERY
- Manufacturer: Dulux or equal approved.
 - Product reference: Dulux Trade High Gloss.
 - Surfaces: New external softwood and hardwood.

- Initial coats: Dulux Trade Wood Primer.
 - Number of coats: One.
 - Undercoats: Dulux Trade Undercoat.
 - Number of coats: One.
 - Finishing coats: Dulux Trade High Gloss.
 - Number of coats: Two.
- 16 EGGSHELL TO EXISTING PAINTED INTERNAL WALLS
- Manufacturer: Dulux or equal approved.
 - Product reference: Dulux Trade Diamond Eggshell.
 - Surfaces: Existing previously painted internal render.
 - Initial coats: Mist coat of Dulux Trade Diamond Matt.
 - Number of coats: One
 - Finishing coats: Dulux Trade Diamond Eggshell.
 - Number of coats: Two.
- 17 EGGSHELL TO NEW RENDER FINISH TO INTERNAL WALLS AND WALLS TO CLEANER'S CUPBOARDS.
- Manufacturer: Dulux or equal approved.
 - Product reference: Dulux Trade Diamond Eggshell.
 - Surfaces: New internal render.
 - Initial coats: Dulux Trade Primer Sealer.
 - Number of coats: One.
 - Finishing coats: Dulux Trade Diamond Eggshell.
 - Number of coats: Two.
- 18 DECORATIVE WOODSTAIN TO EXISTING EXTERNAL EAVES, FASCIA AND SOFFIT
- Manufacturer: Dulux or equal approved.
 - Product reference: Dulux Trade Classic Select Woodstain.
 - Surfaces: Existing previously stained softwood and plywood.
 - Finishing coats: Dulux Trade Classic Select Woodstain.
 - Number of coats: Two.
- 19 RADIATOR PAINT TO EXISTING INTERNAL HEATING PIPES AND ALL EXISTING PAINTED SERVICES PIPEWORK AND NEW SERVICES PIPEWORK
- Manufacturer: Dulux or equal approved.
 - Product reference: Hammerite Radiator Paint.
 - Surfaces: Existing previously painted internal heating pipes/radiators.
 - Finishing coats: Hammerite Radiator Paint Satin.
 - Number of coats: Two.
- 20 COATING MATERIALS
- Manufacturers: Obtain materials from any of the following: Akzo Nobel Dulux, or equal approved.
 - Selected manufacturers: Submit names before commencement of coating work.
- 25 SURFACES NOT TO BE COATED
- Radiator/heating valves, stop valves, chrome-finished shower pipework.
- 26 SURFACES TO BE CLEANED BUT NOT COATED
- Existing gutters and down pipes.
 - Suspected hazardous materials: submit method statement.
- 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.

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 remove: Ironmongery, cover plates, grilles 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.
- 45 PREVIOUSLY PAINTED WINDOW FRAMES
 - Paint encroaching beyond glass sight line: Remove.
 - Loose and defective putty: Remove.
 - Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.
 - Finishing:
 - Patch prime, reputty, as necessary and allow to harden.
 - Seal and coat as soon as sufficiently hard.
- 50 EXTERNAL POINTING TO EXISTING FRAMES
 - Defective sealant pointing: Remove.
 - Joint depth: Approximately half joint width; adjust with backing strip if necessary.
 - Sealant:
 - Manufacturer: To Contractor's choice.
 - Preparation and application: As section Z22.
- 52 SEALING OF INTERNAL MOVEMENT JOINTS
 - General: To junctions of walls and ceilings with architraves, skirtings and other trims.
 - Sealant: Water-borne acrylic.
 - Manufacturer: To 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: 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.

65 CONCEALED JOINERY SURFACES

- General: After priming, apply additional coatings to surfaces that will be concealed when component is fixed in place.
- Components: Door and window frames.
- Additional coatings: One undercoat.

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.

80 LINSEED OIL PUTTY GLAZING

- Setting: Allow putty to set for seven days.
- Sealing:
 - Within a further 14 days, seal with a solvent-borne primer.
 - Fully protect putty with coating system as soon as it is sufficiently hard.
 - Extend finishing coats on to glass up to sight line.

N FURNITURE/ EQUIPMENT

N10 GENERAL FIXTURES/ FURNISHINGS/ EQUIPMENT

35 SOAP DISPENSER

- Item: Soap dispenser:
- Manufacturer: To match existing.
- Material: Plastics.
- Finish/colour: White generally
- Fixing: Screwed to wall.
- Number – one per new WHB

36 TOILET ROLL HOLDERS

- Manufacturer: To match existing.
- Material: Plastics.
- Finish/colour: White.
- Fixing: Screwed to wall.
- Number – one per new WC

37 HAND-DRYERS TO MALE & FEMALE WCS AND OFFICIAL'S ROOMS 1 AND 2

- Manufacturer: Dryflow, or equal.
 - Model: Dryflow Slimforce
- Material: Stainless Steel.
- Finish/colour: Brushed.
- Operation: Automatic activation.
- Fixing: Screwed to wall.
- There are two existing dryers to these two existing areas; one to be retained insitu, one to be re-used in new location, and two new dryers to supplement the existing.

40 FITTINGS FOR AMBULANT DISABLED WCS

- Item: Grab rails to ambulant disabled WC's to Male WC and Female WC.
- Manufacturer: To Contractor's choice.
 - Type: Tubular, with fixing roses.
 - Material: Coated steel.
 - Size: 32 mm diameter, 600 mm long and 400 mm long.
 - Colour: White.
- Fixing: Plugged and screwed to wall.
- Positioning: Two 600 mm grab rails either side of WC pan, one 400 mm long grab rail to back of cubicle door. Two 600 mm grab rails either side of wash basin.

41 DISABLED WC FITTINGS

- Item: Doc M compliant grab rail set for disabled WC's
- Manufacturer: To Contractor's choice.
 - Type: Tubular, with fixing roses.
 - Material: Coated steel.
 - Colour: White.
- Fixing: Plugged and screwed to wall.

75 MIRRORS ABOVE WASH BASINS TO MALE WC AND FEMALE WCS AND OFFICIALS ROOMS 1 AND 2

- Overall dimensions: 450 mm wide x 700 mm high.
- Mirror: To BS 1036-1.
 - Material: Acrylic, with scratch resistant coating.
- Quality: Free from tarnishing, discolouration, scratches and other defects visible in the designed viewing conditions. Reflection undistorted.
- Fixing: Chrome dome head screws.

N Furniture/ equipment (continued)

N13 SANITARY APPLIANCES AND FITTINGS

- 10 CLEANING TO EXSTING SANITARYWARE- At the end of the works, all existing sanitaryware is to be steam cleaned to remove all dirt deposits.
- Any areas of limescale staining are to be treated locally with an acid treatment which is suitable for the sanitaryware.
 - Existing shower heads are to be treated with a suitable acid cleaner to remove all built-up limescale and to ensure nozzles are free-flowing.
- 11 NEW SANITARYWARE TO OFFICIAL1, MALE WC AND FEMALE WC -
New sanitaryware is to be to the Contractor's choice, basic sanitaryware matching existing sanitaryware as closely as possible.
- 12 WC PANS AND FLUSHING ARRANGEMENTS
- Standard: To Defra WC suite performance specification or equivalent approved by the relevant water company.
 - Type: Exposed low level cistern.
 - Pan: Floor mounted.
 - Standards: To BS EN 33 and BS EN997, Class 2.
 - Manufacturer: To Contractor's choice, to match existing as closely as possible.
 - Material: Vitreous china, white.
 - Seat: To BS 5627, white.
 - Pan connector: To BS 5627, white.
 - Cistern:
 - Manufacturer: To Contractor's choice, to match existing as closely as possible.
 - Material: Vitreous china, white.
 - Flushing arrangement: Siphon, WRAS approved.
 - Operating control: Lever handle, chrome plated.
 - Flush volume: 6 litre.
 - Other requirements: WC pans/seats to ambulant disabled WC's to Male WC and Female WC to be able to accept a variable height toilet seat riser.
- 30 WASH BASINS
- Type: Wall mounted, vitreous china to BS 14688, with integral splashback
 - Manufacturer: To Contractor's choice, to match existing as closely as possible.
 - Taps: To Contractor's choice, to match existing as closely as possible.
 - Wastes: To match existing wash basins.
 - Traps: Bottle trap, white plastics.
- 35 TAPS TO CLEANERS "SINK" (no sink)
- Type: Wall mounted, basic cross-head pillar taps, to contractor's choice.
 - mounted on cubicle wall of shower closest to cleaner's cupboard in 3G changing rooms 1 and 2.
 - Height – taps mounted at 500mm above shower floor level to enable cleaner to fill buckets of water.
 - H&C water feed will be surface-mounted, bought down within cupboard to connect to taps through cubicle wall.
- 68 SEALANT FOR POINTING
- Standard: To BS EN ISO 11600.
 - Class: To F20 HM.
 - Type: Silicone
 - Manufacturer: To Contractor's choice.
 - Colour: White.
- 70 INSTALLATION GENERALLY

N Furniture/ equipment (continued)

- 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.

81 SEALANT BEDDING AND POINTING

- Pointing: Joints between appliances and walls.

P20 UNFRAMED ISOLATED TRIMS/ SKIRTINGS/ SUNDRY ITEMS

- 10 **SOFTWOOD ARCHITRAVE TO NEW CLEANER'S CUPBOARD DOORS**
- Quality of wood and fixing: To BS 1186-3.
 - Species: European redwood.
 - Class: 3.
 - Moisture content at time of fixing: 6-10%.
 - Preservative treatment: Not required.
 - Fire rating: Not required.
 - Profile: Chamfer and rounded architrave.
 - Finished size: 14.5 x 70 mm.
 - Finish as delivered: Prepared and primed as M60/13.
 - Fixing: Pinned and filled.
- 20 **HARDWOOD WEATHER BOARDS TO REPLACE EXISTING ON EXTERNAL DOORS**
- Quality of wood and fixing: To BS 1186-3.
 - Species: To Contractor's choice.
 - Class: 3.
 - Moisture content at time of fixing: 12-19%.
 - Preservative treatment: Not required.
 - Fire rating: Not required.
 - Profile: To match existing.
 - Finished size: To match existing
 - Finish as delivered: Prepared and primed as M60/15.
 - Fixing: Glued, screwed and filled.
- 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: Mitred.
 - Position and level: To be agreed where not detailed.

P21 DOOR/ WINDOW IRONMONGERY**02 QUANTITIES AND LOCATIONS**

- Quantities and locations of ironmongery are given in Schedule of Works.
- Fixing: As sections L10 and L20.

06 SINGLE AXIS DOOR HINGES TO NEW DOORS TO CLEANER'S CUPBOARDS

- Standard: To BS EN 1935.
- Manufacturer: To Contractor's choice.
- Type: Washered butt hinge.
- Size: 100 x 75 mm.
- Material/ finish: Satin stainless steel.
- Hinge grade: Minimum 12.

24 DOOR LOCKS TO NEW DOORS TO CLEANER'S CUPBOARDS

- Standard: To BS EN 12209.
- Manufacturer: To Contractor's choice.
- Type: Mortice deadlock with single oval cylinder.
- Backset: 44 mm.
- Material/ finish: Satin chrome.

26 SPECIAL FUNCTION DOOR LOCKS

- Manufacturer: To match existing code locks.
- Type: Mechanical push button code lock with mortice latch and lever handles for external and internal operation.
- Backset: To match existing.
- Material/ Finish: To match existing.
- Keying: Mechanical push button code lock.

42 PULL HANDLES TO NEW DOORS TO CLEANER'S CUPBOARDS.

- Standard: To BS 8424.
- Manufacturer: To Contractor's choice
- Shape: D shape.
- Diameter: 19 mm.
- Distance between centres: 225 mm.
- Material/ finish: Satin stainless steel.
- Mounting: Screwed backplate.

48 ESCUTCHEONS TO EXTERNAL DOORS

- Manufacturer: To Contractor's choice.
- Type: Rectangular plate escutcheon.
- Material/ finish: Satin chrome.
- Keyhole type: Standard lever lock key.
- Other requirements: Escutcheons to be large enough to cover existing enlarged keyholes to doors.

49 ESCUTCHEONS TO NEW DOORS TO CLEANER'S CUPBOARDS

- Manufacturer: To Contractor's choice.
- Material/ finish: Satin chrome.
- Keyhole type: Oval cylinder.

50 NEW WALL HOOKS TO SHOWER AREAS

- Manufacturer: To Contractor's choice.
- Material/ finish: Black, plastic-coated to match existing wall hooks,
- Number - 4No each to all communal showers and 1No. each to individual cubicles.

- Fixing – screw fixed directly through tiling where this is the wall finish. Hooks to communal showers to be located at entrance to shower areas, as far away from shower spray as possible, can be close together. Where fixings are into cubicle partitions, suitable screw fixings approved by manufacturer are to be used.

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 mm sq.
- 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 0.7 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.

40 SEALING AROUND SERVICES

- Service: Hot and cold water pipes.
- Location: Walls and ceilings.
- Sealing material: To Contractor's choice.
- Method: Seal neatly around pipework.
- Requirements: Moisture vapour and airtight.

Q40 FENCING**20 CLOSE BOARDED FENCING**

- Standard: To BS 1722-5.
- Height: To match existing gate, re-used in new position
- Boards/ rails: Softwood feather edged boards on arris rails.
- Posts: Preservative treated timber.
- Setting: Concrete.

45 GATES/ GATE POSTS

- Gate: Existing timber gate and fittings to existing access to be reused in new position.
- Post setting: Set in 450 x 450 x 600 mm deep concrete.

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.

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.

R11 ABOVE GROUND FOUL DRAINAGE SYSTEMS

05 FLOOR DRAINS

- Manufacturer: To Contractor's choice.
- Type: Square trapped gulley, with flush metal grating, all to match existing.
- Outlet: Type and direction to suit pipework.
- Accessories: To match existing.

11 PLASTICS BRANCH PIPEWORK

- Materials and standards: Plastics to BS 5255, BS EN 1451-1, BS EN 1455-1 or BS 1566-1, Kitemark certified.
- Manufacturer: To Contractor's choice.
- Colour: White
- Jointing: To Contractor's choice.
- Fixing: Plastics clips at maximum 500 mm centres.
- Accessories: Access fittings.

21 PVC-U SOIL/ VENT PIPEWORK AND WC BRANCHES

- Standard:
 - To BS EN 1329-1, Kitemark certified; or
 - To BS 4514, Kitemark certified.
- Manufacturer: To Contractor's choice.
- Colour: Grey.
- Jointing: To Contractor's choice.
- Fixing: Plastics clips at maximum 1800 mm centres.

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**04 IN SITU CONCRETE FOR USE IN DRAINAGE BELOW GROUND**

- Standard: To BS 8500-2.
- Concrete: _____ .

14 PLASTICS PIPELINES TO NEW SHOWER GULLEY

- Pipes, bends and junctions: PVC-U to BS EN 1401-1.
 - Manufacturer: To Contractor's choice.
- Sizes: As shower gulley outlet.

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.

37 CLASS Y CONCRETE SURROUND FOR SHALLOW PIPES UNDER BUILDINGS

- Locations: Where crown of pipe is less than 300 mm below underside of slab.
- Timing: Excavate trench after hardcore has been laid and compacted.
- Concrete blinding: 25 mm thick, over full width of trench.
- Temporary pipe support: Folding wedges of compressible board, pipe inverts 100 mm (minimum) above blinding.
- Concrete pipe surround: Same mix as slab and cast integrally with slab. Extend length to within 150 mm of nearest flexible joint.

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.

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.

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 backfill are placed.
- 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 Approved Document H1
- Method: Water test.

97 CLEANING

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

S90 HOT AND COLD WATER SUPPLY SYSTEMS – DOMESTIC

GENERAL

- 10 MAINS COLD WATER SUPPLY TO NEW SANITARYWARE
- Position of incoming mains water supply: In existing Boiler Room. New sanitaryware to be supplied from pipework serving existing adjoining fittings.
 - Pipelines: Copper, as clause 50.
 - Accessories: Masking plates as clause 56.
 - Insulation: As clause 55.
 - Sanitary appliances: See Section N13.
 - Completion: See clauses 90 to 97.
- 14 INDIRECT HOT WATER STORAGE SUPPLY GENERALLY
- Capacity: New additional 300 litre capacity indirect cylinder to be installed in existing boiler room to supplement existing cylinder. New sanitaryware to be supplied from pipework serving existing adjoining fittings.
 - Primary heat source: Existing gas boilers
 - Indirect hot water storage unit: Existing 300 litre indirect cylinder to be supplemented with new litre indirect cylinder to match existing.
 - Pipelines: Copper, as clause 50.
 - Accessories: Masking plates as clause 56.
 - Insulation: As clause 55.
 - Sanitary appliances: See Section N13.
 - Completion: See clauses 90 to 97.

SYSTEM PERFORMANCE

- 20 DESIGN OF ALTERATIONS TO THE HOT WATER SYSTEM
- Design: Complete the design of the alterations to the existing hot supply system.
 - Standard: To BS EN 806-2, BS 8558 and in accordance with HSE publication 'The control of legionella bacteria in water systems. Approved code of practice and guidance'.
 - Proposals: Submit drawings (showing equipment positions and pipeline routes), technical information, calculations and manufacturer's literature.
- 24 PIPELINE SIZES
- Sizing: Calculate sizes to meet simultaneous demand for the building in accordance with BS 8558. Submit proposals.
 - Performance:
 - Water velocity (maximum): 1.3 m/s for hot water and 2.0 m/s for cold water.

PRODUCTS

- 30 DEZINCIFICATION
- Fittings, pipelines, equipment located below ground or in concealed or inaccessible locations: Resistant to dezincification, e.g. gunmetal.
- 50 COPPER PIPELINES FOR GENERAL USE
- Standard: To BS EN 1057, Kitemark certified.
 - Temper: Half hard R250.

S Piped supply systems (continued)

- Finish: Shower supply pipework chromium plated where exposed within showers. Other exposed pipework to be painted.
- Wall thickness (nominal):
 - OD 6, 8, 10 and 12 mm: 0.6 mm.
 - OD 15 mm: 0.7 mm.
 - OD 22 and 28 mm: 0.9 mm.
 - OD 35 and 42 mm: 1.2 mm.
- Jointing:
 - Chromium plated: Type A compression fittings to BS EN 1254-2, chromium plated.
 - Plain: Integral lead free solder ring capillary fittings to BS EN 1254-1, Kitemark certified.
 - Plastics coated: Type A compression fittings to BS EN 1254-2.
- Connections to appliances and equipment: Select from:
 - Compression fittings: To BS EN 1254-2, Kitemark certified.
 - Fittings with threaded ends: To BS EN 1254-4.
- Supports: Plastics spacers.

55 INSULATION TO PIPELINES GENERALLY

- Material: To Contractor's choice.
- Thickness (minimum): To BS 5422 Tables 19 and 20 and in accordance with 'TIMSA guidance for achieving compliance with Part L of the Building Regulations', Table 6.1.1.

56 MASKING PLATES

- Locations: All visible penetrations of new pipework through walls.
- Type: Split
- Material: Plastic
- Finish: White
- Fixing: Snapfit.

EXECUTION

70 INSTALLATION GENERALLY

- Installation: To BS EN 806-4.
- 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, provide corrosion resistant fittings/ fixings and avoid contact between dissimilar metals by use of suitable washers, gaskets, etc.

79 PIPELINES 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.

S Piped supply systems (continued)

- 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.

80 PIPELINES 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.

82 SUPPORTS FOR PIPELINES

- Spacing for copper pipelines: Fix securely and true to line at the following maximum centres:
 - 15 and 22 mm pipe OD: 1200 mm horizontal, 1800 mm vertical.
 - 28 and 35 mm pipe OD: 1800 mm horizontal, 2400 mm vertical.
 - 42 and 54 mm pipe OD: 2400 mm horizontal, 3000 mm vertical.
- Spacing for thermoplastics pipelines: Fix securely and true to line at the following maximum centres:
 - Up to 16 mm pipe OD: 300 mm horizontal, 500 mm vertical.
 - 17–25 mm pipe OD: 500 mm horizontal, 800 mm vertical.
 - 26–32 mm pipe OD: 800 mm horizontal, 1000 mm vertical.
- Additional supports: Locate within 150 mm of connections, junctions and changes of direction.

83 PIPELINE SPACING

- Clearance (minimum) to face of wall-fixed pipes or pipe insulation:
 - From floor: 150 mm.
 - From ceiling: 50 mm.
 - From wall: 15 mm.
 - Between pipes: 25 mm.
 - From electrical conduit, cables, etc: 150 mm.

84 JOINTS IN PIPELINES

- 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.
- Capillary joints in plastics coated pipelines.

S Piped supply systems (continued)

- Plastics coating: Do not damage, e.g. by direct or indirect heat. Wrap completed joint (when cool) with PVC tape of matching colour, half lapped.
- Thermoplastics pipelines:
 - Standard: Fusion jointing in accordance with WIS 4-32-08.
 - Fittings and accessories for joints: Purpose designed.
 - Preparation: Cut pipes square. Remove burrs.
 - Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
 - Compression fittings: Do not overtighten.

86 INSTALLING INSULATION TO PIPELINES

- Standard: In accordance with BS 5970.
- Cold water pipelines: Insulate in unheated spaces. Insulate potable cold water pipelines.
- Hot water pipelines: Insulate, except for short lengths in prominent positions next to appliances.
- External supply pipelines exposed to air or less than 750 mm below finished ground level: Insulate.
- Appearance: Fix securely and neatly. Make continuous over fittings and at supports. Leave no gaps. Locate split on 'blind' side of pipeline.
- Timing: Fit insulation after testing.

88 INSTALLING VALVES

- Isolation and regulation valves: Provide on equipment and subcircuits.
- Access: Locate where valves can be readily operated and maintained and next to equipment which is to be isolated.
- Connection to pipework: Fit with joints to suit the pipe material.

COMPLETION

90 FLUSHING AND FILLING

- Standard: To BS EN 806-4.

91 SYSTEM DISINFECTION

- Disinfection: To BS EN 806-4.

92 TESTING

- Standard: To BS EN 806-4.
 - Notice (minimum): 3 days.
- Preparation: Secure and clean pipework and equipment. Fit cistern and tank covers.
- Leak testing: Start boiler and run the system until all parts are at normal operating temperatures and then allow to cool to cold condition for a period of 3 h.
- 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.

S Piped supply systems (continued)

93 COMMISSIONING

- Standard: To BS EN 806-4.
- Equipment: Check and adjust operation of equipment, controls and safety devices.
- Outlets: Check operation of outlets for satisfactory rate of flow and temperature.

94 TESTING SERVICE PIPELINES

- Test method: Disconnect from the mains, fill with potable water, exclude air, and apply at least twice the working pressure for 1 h.
- Test criterion: No leakage.

95 DOCUMENTATION

- Manufacturer's 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.

96 OPERATING TOOLS

- Tools: Supply tools for operation, maintenance and cleaning purposes.
- Valve keys: Supply keys for valves and vents.

97 LABELS

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

T90 HEATING SYSTEMS - DOMESTIC

10 HEATING SYSTEM

- System: Existing system to be altered to serve new radiators in the Officials rooms, Male WC and Female WC.
- Heat sources: 2 no. existing gas boilers serving heating and hot water systems. One boiler is faulty and requires repair or replacement.
- Flues: Existing retained.
- Pipelines: Copper as clause 48.
- Insulation: As clause 58.
- Heat emitters: Existing heat emitters retained. New radiators to Male and Female WCs and Officials Rooms 1&2 as clause 61. (All other radiators will remain as existing)
- Completion: As clauses 90 to 93.

SYSTEM PERFORMANCE

20 DESIGN OF ALTERATIONS TO THE HEATING SYSTEM

- Design: Complete the design of the heating system.
- Proposals: Submit drawings (showing equipment positions and pipeline routes), technical information, calculations and manufacturer's literature.

PRODUCTS

32 BOILER, GAS-FIRED CONDENSING

- Generally: Two existing boilers are installed. One boiler is faulty and requires repair or replacement. The fully operative boiler is to be retained.
- Standard: BS 15502.
- Type: Floor mounted.
- Casing finish: White.
- two new boilers were installed two years ago – original specification is: “ *Supply and install on their existing bases 2 no Worcester Greenstar FS30 CDI gas fired, fulling condensing boilers, each boiler has a rated output of 30 KWs, are electrically operated, thermostatically controlled and fitted within a white stove enamel casing, each boiler would be complete with a ¾” polythene condense drain terminating in a suitable position Installation of manufacturer’s concentric balanced flue assembly and associated works. Supply and install 2 x Grundfos Magna circulating pumps to provide shunt facility, each pump would be fitted to enable them to be serviced without draining down the system. Central heating filter - Supply and install 1 x Worcester filter and chemical pack to each boiler* ”
- Both boilers were plumbed so that either could provide the heating for all changing rooms, as required.
- One of these boilers is working properly and currently serves five of the changing rooms.
- The other boiler does not work currently. The original installer has retired.
- Following the dis-use of 5 of the changing rooms (or used for non-changing uses) and following the breakdown of one of the boilers, services pipes, which all run through the roof of the pavilion, have been physical disconnected and capped off

so that the remaining boiler is only connected to the heating systems of five changing rooms.

- Contractor to price to repair the existing broken boiler, and as an extra-over, provide the cost of a full replacement with a new replacement boiler.
- Contractor to price for the reconnection of all services pipework to enable heating supply to all of the changing rooms.

48 COPPER PIPELINES FOR GENERAL USE FOR HEATING SYSTEMS

- Standard: To BS EN 1057.
- Third party certification: Kitemark.
- Temper: Half hard R250.
- Wall thickness (nominal):
 - OD 6, 8, 10 and 12 mm: 0.6 mm.
 - OD 15 mm: 0.7 mm.
 - OD 22 and 28 mm: 0.9 mm.
 - OD 35 and 42 mm: 1.2 mm.
- Microbore temper: Soft coil R220.
- Microbore wall thickness (nominal):
 - OD 6 and 8 mm: 0.6 mm.
 - OD 10 mm: 0.7 mm.
- Jointing: Integral lead-free solder ring capillary fittings.
 - Standard: To BS EN 1254-1.
 - Compression fittings: To BS EN 1254-2, Kitemark certified.
 - Fittings with threaded ends: To BS EN 1254-4.
- Supports: Plastics spacers.

53 VALVES GENERALLY

- Types: Approved for the purpose by local water supply undertaker and of appropriate pressure and temperature ratings.
- Control of valves: Fit with handwheels for isolation and lockshields for isolation and regulation of circuits or equipment.

54 MANUAL RADIATOR VALVES

- Standard: To BS 2767.
- Manufacturer: To Contractor's choice.
- Material: Copper alloy.

56 THERMOSTATIC RADIATOR VALVES

- Standard: To BS EN 215 and capable of providing isolation.
- Manufacturer: To Contractor's choice.
- Lockshield valves: To BS 2767 with matching finish fitted to return side of radiator.

58 INSULATION TO PIPELINES TO CONTROL HEAT LOSS .

- Material: To Contractor's choice.
- Thickness (minimum): To BS 5422, Tables 19 and 20 and in accordance with 'TIMSA guidance for achieving compliance with Part L of the Building Regulations', Table 6.1.1.

61 RADIATORS TO OFFICIALS ROOMS, MALE WC AND FEMALE WC

- Standard: To BS EN 442-1 and -2.
- Type: Steel panel radiators
- Manufacturer: To Contractor's choice
- Output: As Contractors design

- Sizes: To provide design temperatures.
- Connections: To Contractor's choice.
- Material: Steel.
- 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: To 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.

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

- Manufacturer's 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.

U90 GENERAL VENTILATION

SYSTEM PERFORMANCE

20 DESIGN

- Design: Existing showers and WC's are served by an existing ventilation system. Existing system to be extended to serve the Officials Rooms, Male WC and Female WC.
The existing system is inoperative in some areas. The Contractor is to test the ventilation system and submit proposals for the repair of faulty areas of the ventilation system.
- Proposals: Submit drawings (showing equipment positions and ductwork routes), technical information, calculations and manufacturers' literature.

PRODUCTS

35 ALL EXISTING ROOM EXTRACT GRILLES

- To be taken down, thoroughly cleaned of all accumulated debris and reinstalled.

38 ROOM EXTRACT GRILLES TO OFFICIALS ROOMS, MALE WC AND FEMALE WC

- Type: To match existing.
- Manufacturer: To Contractor's choice.

EXECUTION

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.
- 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.

V90 ELECTRICAL SYSTEMS – DOMESTIC

GENERAL

05 ELECTRICAL INSTALLATION

- The existing electrical installation is to be retained.
- Scope of work: The work to the electrical system consists of replacement of some of the light fittings and subsequent testing.

PRODUCTS

30 PRODUCTS GENERALLY

- Standard: To BS 7671.
- CE marking: Required.

39 CABLES

- Approval: British Approvals Service for Cables (BASEC) certified.
- Cable sizes not stated: Submit proposals and calculations.

45 SURFACE MOUNTED CEILING LED LUMINAIRES TO REPLACE EXISTING LUMINAIRES TO SHOWER AREAS/WC'S AND TO NEW WC'S/SHOWERS

- Standard: To BS EN 60598-1.
 - Approval: CE or Kite marked.
- Manufacturer: To contractor's choice.
- Fittings: Rectangular or circular LED luminaires.
- Material: Polycarbonate, with white polycarbonate or similar diffuser.
- Colour: White.
- Mounting: Ceiling, surface mounted.
- IP rating: Minimum IP65.
- Lamp: LED, cool white (4000K), lumen output to be not less than existing fittings.

46 SURFACE MOUNTED CEILING LED BATTEN LUMINAIRES TO REPLACE EXISTING BATTEN LUMINAIRES TO CHANGING ROOM AREAS AND TO NEW AREAS

- Standard: To BS EN 60598-1.
 - Approval: CE or Kite marked.
- Manufacturer: To contractor's choice.
- Fittings: LED batten luminaires.
- Material: Polycarbonate, with white polycarbonate or similar diffuser.
- Colour: White.
- Mounting: Ceiling, surface mounted.
- IP rating: Minimum IP20.
- Lamp: LED, cool white (4000K), lumen output to be not less than existing fittings.

47 SURFACE MOUNTED CEILING LED EMERGENCY LUMINAIRES TO REPLACE EXISTING EMERGENCY LUMINAIRES AND NEW EMERGENCY LUMINAIRES TO NEW AREAS

- Standard: To BS EN 60598-1.
 - Approval: CE or Kite marked.
- Manufacturer: To contractor's choice.
- Fittings: LED rectangular ceiling mounted bulkhead emergency luminaires.
- Material: Polycarbonate, with white polycarbonate or similar diffuser.
- Colour: White.

- Mounting: Ceiling, surface mounted.
- IP rating: Minimum IP65.
- Lamp: LED, cool white (4000K), lumen output to be not less than existing fittings.
- Other requirements: Minimum 3 hours emergency duration.

48 LAMPS GENERALLY

- Standards:
 - Light emitting diodes (LEDs): To BS EN 62031.

EXECUTION**60 GENERAL EXECUTION**

- Standard: In accordance with BS 7671.

66 CABLE ROUTES

- Cables generally: Conceal wherever possible.
 - Concealed cable runs to wall switches and outlets: Align vertically or horizontally with the accessory.
- Exposed cable runs: Submit proposals.
 - Orientation: Straight, vertical and/ or horizontal and parallel to walls.
- Distance from other services running parallel: 150 mm minimum.
 - Heating pipes: Position cables below.

70 INSTALLING FINAL CONNECTIONS

- Size: Determine.
- Cable: Heat resisting white flex.
- Length: Allow for equipment removal and maintenance.

72 INSTALLING LUMINAIRES

- Supports: Adequate for weight of luminaire.
- Locations: Submit proposals.

74 EQUIPMENT LABELLING

- Electrical equipment: Install labels indicating purpose.
- Voltage warning notices:
 - Location: Apply to equipment in a position where it can be seen prior to gaining access to live parts when the voltage exceeds 230 V.
 - Format: To BS EN ISO 7010, functional reference number W012, include warnings of the voltage present.

78 FINAL FIX

- Accessory faceplates, luminaires and other equipment: Fit after completion of building painting.

79 CLEANING

- Electrical equipment: Clean immediately before handover.
- Equipment not supplied but installed under the electrical works: Clean immediately before handover.

COMPLETION**85 INSPECTION AND TESTING GENERALLY**

- Standard: In accordance with BS 7671.

V Electrical supply/ power/ lighting systems (continued)

V

- Notice before commencing tests (minimum): 24 hours.
- Labels and signs: Fix securely before system is tested.
- Certificates: Submit.
 - Number of copies: Three.

89 MAINTENANCE

- Servicing and maintenance: Undertake.

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.

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.

35 WATER-BASED ORGANIC PRESERVATIVE TREATMENT

- Solution:
 - Manufacturer: To Contractor's choice.
 - Application: High pressure impregnation.
- Moisture content of wood:
 - At time of treatment: Not more than 28%.
 - After treatment: Timber to be surface dry before use.

40 ORGANIC SOLVENT PRESERVATIVE TREATMENT

- Solution:
 - Manufacturer: To Contractor's choice.
 - Application: Double vacuum + low pressure impregnation, or immersion.
- Moisture content of wood:
 - At time of treatment: As specified for the timber/ component at time of fixing.
 - After treatment: Timber to be surface dry before use.

45 WATER BASED MICROEMULSION PRESERVATIVE TREATMENT

- Solution:
 - Manufacturer: To Contractor's choice.
 - Application: Double vacuum + low pressure impregnation.
- Moisture content of wood:
 - At time of treatment: As specified for the timber/ component at time of fixing.
 - After treatment: Timber to be surface dry before use.

47 BORON COMPOUND PRESERVATIVE TREATMENT

- Solution:
 - Manufacturer: To Contractor's choice.
 - 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.

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 PELLEDED 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 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.
 - 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.

Z Building fabric reference specification (continued)

- 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

PRODUCTS

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.