

SPECIFICATION

**LARDNER HALL TOILETS
CAFÉ TOILETS**

**THE GHYLL
PEVENSEY ROAD
SOUTHWATER
HORSHAM
RH13 9XZ**



**MSA Chartered Building Surveyors
Beeson House
Lintot Square
Southwater
Horsham
RH13 9LA
Tel: 01403 588008**

Prepared by: Philip Starling BSc MRICS CMApS

This is the SPECIFICATION referred to in the
CONTRACT

DATED

BETWEEN

Signed

AND

Signed

Date: August 2021

Job No: 5947

CONTENTS

A10	PROJECT PARTICULARS.....	1
A11	TENDER AND CONTRACT DOCUMENTS	1
A12	THE SITE/ EXISTING BUILDINGS	2
A13	DESCRIPTION OF THE WORKS	2
A20	JCT INTERMEDIATE BUILDING CONTRACT (IC)	3
A30	TENDERING/ SUBLETTING/ SUPPLY.....	7
A31	PROVISION, CONTENT AND USE OF DOCUMENTS	8
A32	MANAGEMENT OF THE WORKS.....	8
A33	QUALITY STANDARDS/ CONTROL	10
A34	SECURITY/ SAFETY/ PROTECTION	10
A36	FACILITIES/ TEMPORARY WORKS/ SERVICES	11
F10	BRICK/ BLOCK WALLING	12
K10	PLASTERBOARD CEILINGS	14
K32	PANEL CUBICLES, VANITY UNITS AND DUCT PANELLING.....	16
L20	DOORS	16
M10	CEMENT BASED LEVELLING/ WEARING SCREEDS	17
M40	CERAMIC TILING	19
M50	PLASTICS SHEETING	21
M60	PAINTING/CLEAR FINISHING INTERNALLY AND EXTERNALLY	23
M60-A	DETAILED SCHEDULE OF PAINTING/CLEAR FINISHING	26
N13	SANITARY APPLIANCES AND FITTINGS.....	26
P21	DOOR/ WINDOW IRONMONGERY	29
R11	ABOVE GROUND FOUL DRAINAGE SYSTEMS	30
S90	HOT AND COLD WATER SUPPLY SYSTEMS.....	32
T90	HEATING SYSTEMS.....	35
V90	ELECTRICAL SYSTEMS.....	38
Z20	FIXINGS/ ADHESIVES	41
Z22	SEALANTS	42
	SCHEDULE OF WORKS.....	43

A10 PROJECT PARTICULARS**110 THE PROJECT**

- Name: Lardner Hall and Café Toilets
- Location: The Ghyll, Pevensey Road, Southwater, Horsham RH13 9XZ
- Length of contract: 10 weeks.

120 EMPLOYER (CLIENT)

- The Ghyll CIO
- The Ghyll, Pevensey Road, Southwater, Horsham RH13 9XZ

127 PRINCIPAL CONTRACTOR: The Contractor**130 PROJECT MANAGER: The Contract Administrator****140 PERSON EMPOWERED BY THE CONTRACT TO ACT ON BEHALF OF THE EMPLOYER**

- Title: Contract Administrator (hereinafter referred to as "CA").
- MSA Chartered Building Surveyors.
Beeson House, Lintot Square, Southwater, Horsham RH13 9XZ
- Telephone: 01403 588008
- Contact: Philip Starling
- E-mail: philip.starling@msa.uk.com

150 CDM COORDINATOR: The Contract Administrator**160 QUANTITY SURVEYOR: The Contract Administrator.****A11 TENDER AND CONTRACT DOCUMENTS****110 TENDER DRAWINGS**

- The tender drawings are:
 - 5947/01 Location Plan & Block Plan
 - 5947/02 Ground Floor Plan
 - 5947/03 Café Toilets – Plans & Elevations
 - 5947/04 Lardner Hall Toilets – Plans & Elevations
 - 5947/05 Mechanical Services
 - 5947/06 Electrical Services

120 CONTRACT DRAWINGS

- The contract drawings: Same as the tender drawings.

160 PRECONSTRUCTION INFORMATION

- Format: Preconstruction information is included with the tender documents.

A12 THE SITE/ EXISTING BUILDINGS

110 THE SITE

- Description: Leisure Centre of c1980s construction with ancillary accommodation.

210 PARKING

- Restrictions on parking of the Contractor's and employees' vehicles: The Employer will provide four parking spaces on site.

220 USE OF THE SITE

- General: Do not use the site for any purpose other than carrying out the Works.

230 SURROUNDING LAND/ BUILDING USES

- General: Adjacent or nearby uses or activities are as follows:
 - The site is situated within a residential area. There is a public right of way that passes across the site, connecting the residential area with the village centre at Lintot Square.

240 HEALTH AND SAFETY HAZARDS

- General: The nature and condition of the site/ building cannot be fully and certainly ascertained before it is opened up.
- Information: The accuracy and sufficiency of this information is not guaranteed by the Employer or the Employer's representative. Ascertain if any additional information is required to ensure the safety of all persons and the Works.
- Site staff: Draw to the attention of all personnel working on the site the nature of any possible contamination and the need to take appropriate precautionary measures.

290A SITE VISIT: By prior arrangement with Michael Neale (tel: 07779 134741).

- **Under no circumstances will tenderers visit the site without prior arrangement with the above.**

A13 DESCRIPTION OF THE WORKS

120 THE WORKS

- Description:
 - Carry out internal alterations to provide unisex WC facilities.
 - Carry out internal alterations to provide designated male and female WCs.
 - Carry out internal alterations to provide accessible WC facility.
 - Associated M&E repairs and renewals.

A20 JCT INTERMEDIATE BUILDING CONTRACT (IC)

330A JCT INTERMEDIATE BUILDING CONTRACT (IC)

- The Contract: JCT Intermediate Building Contract 2016.
- Requirement: Allow for the obligations, liabilities and services described therein against the headings following:

THE RECITALS

First

THE WORKS

- Comprise: Alterations to Lardner Hall & Café WCs.
- Location: The Ghyll, Pevensey Road, Southwater. Horsham RH13 9XZ

Second

CONTRACT DRAWINGS

- The contract drawings: As listed in clause A11/110.

Third

OTHER DOCUMENTS SUPPLIED BY THE EMPLOYER

- Comprise: The specification.
- Named person: The whole of the text referring to a named person as a subcontractor will be deleted.

Fourth A

PRICING BY THE CONTRACTOR

- Option A will apply: Option B will be deleted.
- Priced document: Within Option A the following words will be deleted:
 - Work Schedules; Bills of Quantities.
- Priced Activity Schedule: The words 'and has provided the Employer with a priced schedule of activities annexed to this contract (the Activity Schedule)' will be deleted.

Sixth

INFORMATION RELEASE SCHEDULE

- The Sixth Recital will be deleted.

Eighth

DIVISION OF THE WORKS INTO SECTIONS

- Section 1: Café Toilets
- Section 2: Lardner Hall Toilets

Ninth

FRAMEWORK AGREEMENT

- The Ninth Recital will be deleted.

THE ARTICLES

3
ARCHITECT/ CONTRACT ADMINISTRATOR
- Architect/ Contract Administrator: See clause A10/140.

4
QUANTITY SURVEYOR
- Quantity Surveyor: See clause A10/160.

5
PRINCIPAL DESIGNER
- Principal Designer: See clause A10/150.

6
PRINCIPAL CONTRACTOR
- Principal Contractor: The Contractor.

8
ARBITRATION
- Article 9 does not apply.

CONTRACT PARTICULARS

PART 1: GENERAL

Fifth Recital and clause 4.4
CONSTRUCTION INDUSTRY SCHEME (CIS)
- Employer at the Base Date is not a contractor for the purposes of the CIS.

Seventh Recital
CDM REGULATIONS
- The project is not notifiable.

Tenth Recital and Schedule 5
SUPPLEMENTAL PROVISIONS
- Collaborative working: Paragraph 1 does not apply.
- Health and safety: Paragraph 2 does not apply.
- Cost savings and value improvements: Paragraph 3 does not apply.
- Sustainable development and environmental considerations: Paragraph 4 does not apply.
- Performance indicators and monitoring: Paragraph 5 does not apply.
- Notification and negotiation of disputes: Paragraph 6 does not apply.

Article 8
ARBITRATION
- Article 8 and clauses 9.3 to 9.8 (arbitration) apply.

Clause 1.1

BASE DATE

- Base Date: 3 January 2022.

Clause 1.1

BIM PROTOCOL

- BIM Protocol: not applicable

Clause 1.1

DATES FOR COMPLETION OF SECTIONS

- Dates for completion of sections:
- Section 1: Café Toilets: Date: Within 5 weeks of Commencement.
- Section 2: Lardner Hall Toilets: Date: Within 5 weeks of Commencement.

Clause 1.7

ADDRESSES FOR SERVICE OF NOTICES

- Employer: See clause A10/120.
- Contractor:
- Address: To be completed by contractor.

Clause 2.4

DATE OF POSSESSION OF THE SITE

- Dates of Possession of sections
- Section 1: Café Toilets: Date: Within 3 weeks of an official order.
- Section 2: Lardner Hall Toilets: Date: Upon completion of Section 1.

Clause 2.5

DEFERMENT OF POSSESSION OF THE SITE

- Clause 2.5 applies.
- Where clause 2.5 applies, maximum period of deferment (if less than six weeks) is four weeks.

Clause 2.23.2

LIQUIDATED DAMAGES

- Damages:
- Section 1: At the rate of £400.00 per week or pro-rata thereto.
- Section 2: At the rate of £400.00 per week or pro-rata thereto.

Clause 2.30

RECTIFICATION PERIOD

- Period:
- Section 1: Six months from the date of practical completion of the Works.
- Section 2: Six months from the date of practical completion of the Works.

Clause 4.6.1

DATES OF ISSUE OF INTERIM CERTIFICATES

- The first date is: within 4 weeks of the date of commencement.

Clause 4.9.1

PERCENTAGE OF THE TOTAL VALUE OF THE WORK, ETC.

- Percentage: 95%.

Clause 4.9.1

PERCENTAGE OF THE TOTAL VALUE OF THE WORKS OR SECTION

- Percentage: 97.5%.

Clause 4.10.4

LISTED ITEMS - UNIQUELY IDENTIFIED

- Listed items: Clause 4.10.4 will be deleted.

Clause 4.10.5

LISTED ITEMS - NOT UNIQUELY IDENTIFIED

- Listed items: Clause 4.10.5 will be deleted.

Clause 6.4.1

CONTRACTOR'S INSURANCE - INJURY TO PERSONS OR PROPERTY

- Insurance cover (for any one occurrence or series of occurrences arising out of one event): £10,000,000.00 (ten million pounds).

Clause 6.5.1

INSURANCE - LIABILITY OF EMPLOYER

- Insurance is not required.

Clause 6.7 and Schedule 1

INSURANCE OF THE WORKS - INSURANCE OPTIONS

- Schedule 1: Insurance option C applies.
- Percentage to cover professional fees: 15 per cent.

Clause 6.10 and Schedule 1

TERRORISM COVER

- Details of the required cover:
- Not applicable.

Clause 6.15

JOINT FIRE CODE

- The Joint Fire Code: Does not apply.

Clause 7.2.1

PERFORMANCE BOND

- - Not applicable.

Clause 7.2.2

GUARANTEE

- - Not applicable.

Clause 7.3

COLLATERAL WARRANTY

- - Not applicable.

Clauses 8.9.2 to 8.11.1.5

PERIOD OF SUSPENSION (TERMINATION BY EITHER PARTY)

- Period of suspension: Two months.

Clause 9.2.1

ADJUDICATION

- The Adjudicator is: To be appointed by the Nominating Body.
- Nominating body: President or Vice-President of the Royal Institution of Chartered Surveyors.

THE CONDITIONS

EXECUTION

- The Contract will be executed under hand.

CONTRACT GUARANTEE BOND

- Contract guarantee bond: Not required.

A30 TENDERING/ SUBLETTING/ SUPPLY

MAIN CONTRACT TENDERING

110 SCOPE

- General: These conditions are supplementary to those stated in the Invitation to Tender and on the form of tender.

145 TENDERING PROCEDURE

- General: In accordance with the principles of JCT Practice Note 6 (Series 2) "Main Contract Tendering".
- Arithmetical errors: Alternative 2 is dominant.

170 ACCEPTANCE OF TENDER

- The Employer and Employer's representatives:
 - Offer no guarantee that any tender will be recommended for acceptance or be accepted.
 - Will not be responsible for any cost incurred in the preparation of any tender.

190 PERIOD OF VALIDITY

- Period: After submission or lodgement, keep tender open for consideration (unless previously withdrawn) for not less than 13 weeks.
- Date for possession/ commencement: See section A20.

PRICING/ SUBMISSION OF DOCUMENTS

310 TENDER

- General: Tenders must include for all work shown or described in the tender documents as a whole or clearly apparent as being necessary for the complete and proper execution of the Works.

A31 PROVISION, CONTENT AND USE OF DOCUMENTS

DEFINITIONS AND INTERPRETATIONS

200 SUBSTITUTION OF PRODUCTS

- Products: If an alternative product to that specified is proposed, obtain approval before ordering the product.
- Reasons: Submit reasons for the proposed substitution.
- Documentation: Submit relevant information.
- Alterations to adjacent work: If needed, advise scope, nature and cost.
- Manufacturers' guarantees: If substitution is accepted, submit before ordering products.

220 REFERENCED DOCUMENTS

- Conflicts: Specification prevails over referenced documents.

230 EQUIVALENT PRODUCTS

- Inadvertent omission: Wherever products are specified by proprietary name the phrase 'or equivalent' is to be deemed included.

A32 MANAGEMENT OF THE WORKS

GENERALLY

110 SUPERVISION

- General: Accept responsibility for coordination, supervision and administration of the Works, including subcontracts.
- Coordination: Arrange and monitor a programme with each subcontractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for coordination of the work.

112A 24 HOUR CONTRACT AND CALL OUT: Before starting work on site, submit to the CA details of 24 hour contract and call out services for emergency works for the duration of the contract and to the end of the Rectification Period.

120 INSURANCE

- Documentary evidence: Submit details before starting work on site and/ or policies and receipts for the insurances required by the Conditions of Contract.

PROGRAMME/ PROGRESS

210 PROGRAMME

- Master programme: When requested and before starting work on site, submit in an approved form a master programme for the Works.

260 SITE MEETINGS

- General: Site meetings will be held to review progress and other matters arising from administration of the Contract.
- Frequency: Monthly.
- Location: On site, room to be advised.
- Accommodation: Ensure availability at the time of such meetings.
- Attendees: Attend meetings and inform subcontractors and suppliers when their presence is required.
- Chairperson (who will also take and distribute minutes): The Contract Administrator.

265 CONTRACTOR'S PROGRESS REPORT

- General: Submit a progress report before the site meeting.
- Content: Notwithstanding the Contractor's obligations under the Contract the report must include:
 - A progress statement by reference to the master programme for the Works.
 - Details of any matters materially affecting the regular progress of the Works.
 - Subcontractors' and suppliers' progress reports.
 - Any requirements for further drawings or details or instructions.

CONTROL OF COST

415A SCHEDULE OF CONDITION: Before commencing work in existing premises prepare a schedule of condition, together with supporting photographs if required. Schedule to be agreed with CA and carry out all work necessary to restore standards recorded by the schedule before completion.

435A VERBAL INSTRUCTIONS:

- There is no provision in the Conditions of Contract for Contract Instructions to be given otherwise than in writing and there is, therefore, no procedure for the automatic confirmation of verbal instructions by default.
- Regularly submit details of items considered to be variations in writing to the CA for consideration as a basis for Contract Instructions. Daywork sheets under no circumstances will be accepted for this purpose and no signature of the CA or an Employer's representative on a daywork sheet will be regarded as an authorisation for that additional expenditure.

460 INTERIM VALUATIONS

- Applications: Include details of amounts due under the Contract together with all necessary supporting information.
- Submission: At least seven days before established dates.

A33 QUALITY STANDARDS/ CONTROL

STANDARDS OF PRODUCTS AND EXECUTIONS

120 WORKMANSHIP SKILLS

- Operatives: Appropriately skilled and experienced for the type and quality of work.
- Registration: With Construction Skills Certification Scheme.
- Evidence: Operatives must produce evidence of skills/ qualifications when requested.

SUPERVISION/ INSPECTION/ DEFECTIVE WORK

- 515 PERSON-IN-CHARGE:** The Contractor will provide a competent full-time-chargehand or site agent to remain unchanged for the duration of the contract, who will be responsible for on-site management of the project. He will be responsible for site setting out, programme control for all trades, security and conduct of all personnel employed on the site. He shall remain on site at all times whilst works (including sub-contractors works) are in progress.

WORK AT OR AFTER COMPLETION

730 MAKING GOOD DEFECTS

- Remedial work: Arrange access with the individual named in clause A12/290A.
- Rectification: Give reasonable notice for access to the various parts of the Works.
- Completion: Notify when remedial works have been completed.

A34 SECURITY/ SAFETY/ PROTECTION

SECURITY, HEALTH AND SAFETY

110A PRECONSTRUCTION INFORMATION

- Location: A separate document is included with the tender package.

140A CONSTRUCTION PHASE HEALTH AND SAFETY PLAN

- Submission: Present to the Principal Designer no later than one week before commencement.
- Content: Develop the plan from and draw on the Preconstruction information.

- 151A SECURITY:** The safe and secure storage of materials delivered to site together with the Contractor's plant and equipment shall be the Contractor's responsibility alone. Provide lockable storage bins, sheds or other accommodation and agree position with CA if required.

160 STABILITY

- Responsibility: Maintain the stability and structural integrity of the Works during the Contract.
- Design loads: Obtain details, support as necessary and prevent overloading.

170 OCCUPIED PREMISES

- Extent: The property will remain fully operational.
- Works: Carry out without undue inconvenience and nuisance and without danger to occupants and users.
- Overtime: If compliance with this clause requires certain operations to be carried out during overtime, and such overtime is not required for any other reason, the extra cost will be paid to the Contractor, provided that such overtime is authorized in advance.

190 OCCUPIER'S RULES AND REGULATIONS

- Compliance: Conform to the occupier's rules and regulations affecting the site.

PROTECT AGAINST THE FOLLOWING

360 NUISANCE

- Duty: Prevent nuisance from smoke, dust, rubbish, vermin and other causes.
- Surface water: Prevent hazardous build-up on site, in excavations and to surrounding areas and roads.

370 ASBESTOS CONTAINING MATERIALS

- Duty: Report immediately any suspected materials discovered during execution of the Works.
 - Do not disturb.
 - Agree methods for safe removal or encapsulation.

390 SMOKING ON SITE

- Smoking on site: Not permitted.

A36 FACILITIES/ TEMPORARY WORKS/ SERVICES

SERVICES AND FACILITIES

420A LIGHTING AND POWER

- Supply: Electricity from the Employer's mains may be used for the Works.
- Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

430A WATER

- Supply: The Employer's mains may be used for the Works.
- Continuity: The Employer will not be responsible for the consequences of failure or restriction in supply.

F10 BRICK/ BLOCK WALLING

To be read with Preliminaries/ General conditions.

TYPES OF WALLING**255 CONCRETE FACING BLOCKWORK GENERALLY**

- Blocks: To BS EN 771-3.
 - Manufacturer: Contractor's choice.
 - Compressive strength:
Characteristic value: 7N/mm²
- Category:
 - Freeze/ Thaw resistance: n/a
 - Recycled content: _____.
 - Work sizes (length x width x height): 215 x 440mm, width to match existing.
- Mortar:
 - Standard:
 - Mix: 1 : 4-5 masonry cement : sand
 - Additional requirements: None.
- Bond: Half-lap, to match existing.
- Joints: To match existing

WORKMANSHIP GENERALLY**500 LAYING GENERALLY**

- Mortar joints: Fill 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.
- Bond where not specified: Half lap stretcher.
- Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.

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

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

610 SUPPORT OF EXISTING WORK

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

620 BLOCK BONDING NEW WALLS TO EXISTING

- Pocket requirements: Formed as follows:
 - Width: Full thickness of new wall.
 - Depth (minimum): 100 mm.
 - Vertical spacing:
 - Brick to brick: 4 courses high at 8 course centres.
 - Block to block: Every other course.
- Pocket joints: Fully filled with mortar.

635 JOINTING

- Profile: Consistent in appearance.

ADDITIONAL REQUIREMENTS FOR FACEWORK**710 THE TERM FACEWORK**

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

760 APPEARANCE

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

800 TOOTHED BOND

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

830 CLEANLINESS

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

K10 PLASTERBOARD CEILINGS

To be read with Preliminaries/ General conditions.

TYPES OF DRY LINING**245 CEILING LINING ON TIMBER JOISTS**

- Background: 38x25mm timber battens to existing ceilings.
- Linings: 12.5mm tapered edged plasterboard.
 - Fixings: 90mm Drywall Screws, as clause 610. Ensure screws pass through battens and into ceiling joists.
- Finishing: Taped and jointed.
 - Primer/ Sealer: Dulux Trade Drywall primer/sealer as Section M60.
 - Accessories: Edge beads and corner tapes.
- Other requirements: Additional noggins, supports as clause 335.

INSTALLATION**335 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 service outlets. Mark framing positions clearly and accurately on linings.
 - Board edges and lining perimeters, as recommended by board manufacturer to suit type and performance of lining.

435 DRY LININGS GENERALLY

- General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
- Cutting plasterboards: Neatly and accurately without damaging core or tearing paper facing.
 - Cut edges: Minimize and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners.
- Fixings boards: Securely and firmly to suitably prepared and accurately levelled backgrounds.
- Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

445 CEILINGS

- Sequence: Fix boards to ceilings before installing dry lined walls and partitions.
- Orientation of boards: Fix with bound edges at right angles to supports and with ends staggered in adjacent rows.
- Two layer boarding: n/a.
- Services penetrations: Allow for associated fire stopping.

560 JOINTS BETWEEN BOARDS

- Tapered edged plasterboards:
 - Bound edges: Lightly butted.
 - Cut/ unbound edges: 3 mm gap.
- Square edged plasterboards: 3 mm gap.
- Square edged fibre reinforced gypsum boards: 5 mm gap.

565 VERTICAL JOINTS

- Joints: Centre on studs.
 - Partitions: Stagger joints on opposite sides of studs.
 - Two layer boarding: Stagger joints between layers.

570 HORIZONTAL JOINTS

- Surfaces exposed to view: Horizontal joints not permitted. Seek instructions where height of partition/ lining exceeds maximum available length of board.
- Two layer boarding: Stagger joints between layers by at least 600 mm.
- Edges of boards: Support using additional framing.

610 FIXING PLASTERBOARD TO TIMBER

- Fixing to timber: Securely at the following centres (maximum):
 - Nails: 150 mm.
 - Screws to partitions/ wall linings: 300 mm. Reduce to 200 mm at external angles.
 - Screws to ceilings: 230 mm.
- Position of nails/ screws from edges of boards (minimum):
 - Bound edges: 10 mm.
 - Cut/ unbound edges: 13 mm.
- Position of nails/ screws from edges of timber supports (minimum): 6 mm.

FINISHING

650 LEVEL OF DRY LINING ACROSS JOINTS

- Sudden irregularities: Not permitted.
- Joint deviations: Measure from faces of adjacent boards using methods and straightedges (450 mm long with feet/ pads) to BS 8212, clause 3.3.5.
 - Tapered edge joints:
Permissible deviation (maximum) across joints when measured with feet resting on boards: 3 mm.
 - External angles:
Permissible deviation (maximum) for both faces: 4 mm.
 - Internal angles:
Permissible deviation (maximum) for both faces: 5 mm.

670 SEAMLESS JOINTING TO PLASTERBOARDS

- Cut edges of boards: Lightly sand to remove paper burrs.
- Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
- Protection of edges/ corners: Reinforce external angles, stop ends, etc. with specified edge/ angle bead.
- Finishing: Apply jointing compound. Feather out each application beyond previous application to give a flush, smooth, seamless surface.
- Nail/ screw depressions: Fill with jointing compound to give a flush surface.
- Minor imperfections: Remove by light sanding.

680 SKIM COAT PLASTER FINISH

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

K32 PANEL CUBICLES, VANITY UNITS AND DUCT PANELLING

To be read with Preliminaries/General conditions.

112 FULLY FRAMED PANEL CUBICLES, VANITY UNITS AND DUCT PANELLING

- Manufacturer: Commercial Washrooms, Unit 12 Cabot Business Village, Holyrood Close, Poole, Dorset BH17 7BA (tel: 01202 650900).
- Product reference: Stature SGL Full Height Toilet Cubicles.
- Panels/ Doors:
- Core material: 13mm thick solid grade laminate.
- Colour: From Commercial Washrooms standard colour range.
- Edge treatment: All visible edges radiused and polished.
- Ironmongery/ Accessories: Rounded high strength aluminium indicator bolt with emergency release facility and keep. Universal aluminium safety hinge. Aluminium coat hook with integral buffer.
- Other requirements: Toilet tissue holders/dispensers to be provided by the Employer but installed by contractor.

250 INSTALLATION

- Programming: Do not install cubicles 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 using methods and fasteners recommended by the cubicle manufacturer. Prevent pulling away, bowing or other distortions to frames, panels and doors.
- Moisture and thermal movement: Make adequate allowance for future movement.

L20 DOORS

To be read with Preliminaries/ General conditions.

PRODUCTS**230 WOOD FLUSH DOORS TO WCs**

- Manufacturer: Contractor's choice.
- Facings: Plywood.
- Lippings: Hardwood, all round.
- Preservative treatment: Not required.
- Finish as delivered: Primed for painting.
- Glazing details: None.
- Other requirements: None.

330 WOOD DOOR FRAMES/LININGS GENERALLY

- Materials: Generally to BS EN 942.
 - Species: Hardwood as table NA2.
 - Appearance class: J40.
- Assembly:
 - Adhesive: WBP.
 - Joinery workmanship: As section Z10.
- Preservative treatment: Not required.
- Moisture content on delivery: 13-19%.
- Finish as delivered: Primed for painting.
- Fixing: 10mm stainless steel expanding bolts.

INSTALLATION**710 PROTECTION OF COMPONENTS**

- General: Do not deliver to site components that cannot be installed immediately or placed in clean, dry, floored and covered storage.
- Stored components: Stacked on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.

EXECUTION**830 FIXING IRONMONGERY GENERALLY**

- Fasteners: Supplied by ironmongery manufacturer.
 - Finish/ Corrosion resistance: To match ironmongery.
- Holes for components: No larger than required for satisfactory fit/ operation.
- Adjacent surfaces: Undamaged.
- Moving parts: Adjusted, lubricated and functioning correctly at completion.

M10 CEMENT BASED LEVELLING/ WEARING SCREEDS

To be read with Preliminaries/ General conditions.

TYPES OF SCREED**130 PROPRIETARY QUICK DRYING LEVELLING SCREEDS**

- Substrate: Existing concrete slab.
- Screed manufacturer: Ardex UK Ltd.
 - Product reference: Ardex A29
- Thickness
 - Nominal: 50mm
 - Minimum: 25mm
- Mix:
 - Proportions: Manufacturer's standard.
- Finish: Smooth
 - To receive: Sheet vinyl floor coverings as M50/151.
- Other requirements: None.

GENERALLY/ PREPARATION**210 SUITABILITY OF SUBSTRATES**

- General:
 - Suitable for specified levels and flatness/ regularity of finished surfaces. Consider permissible minimum and maximum thicknesses of screeds.
 - Sound and free from significant cracks and gaps.
- Concrete strength: In accordance with BS 8204-1, Table 2.
- Cleanliness: Remove plaster, debris and dirt.
- Moisture content: To suit screed type. New concrete slabs to receive fully or partially bonded construction must be dried out by exposure to the air for minimum six weeks.

220 PROPRIETARY LEVELLING/ WEARING SCREEDS

- General: Materials, mix proportions, mixing methods, minimum/ maximum thicknesses and workmanship must be in accordance with recommendations of screed manufacturer.
- Standard: To BS 8204-3.

BATCHING/ MIXING**305 AGGREGATES**

- Sand: To BS EN 13139.
 - Grading limits: In accordance with BS 8204-1, Table B1.
- Coarse aggregates for fine concrete levelling screeds:
 - Standard: To BS EN 12620.
 - Designation 4/10.
- Lightweight aggregates: In accordance with BS 8204-1, Annex A.

306 PROPRIETARY POLYMER MODIFIED SCREEDS

- Cement types: In accordance with BS 8204-3.
- Sand: To BS EN 13139:
 - Aggregates: In accordance with BS 8204-3.

330 MIXING

- Water content: Minimum necessary to achieve full compaction, low enough to prevent excessive water being brought to surface during compaction.
- Mixing: Mix materials thoroughly to uniform consistency. Mixes other than no-fines must be mixed in a suitable forced action mechanical mixer. Do not use a free fall drum type mixer.
- Consistency: Use while sufficiently plastic for full compaction.
- Ready-mixed retarded screed mortar: Use within working time and site temperatures recommended by manufacturer. Do not retemper.

LAYING**355 FLATNESS/ SURFACE REGULARITY OF FLOOR SCREEDS**

- Standard: In accordance with BS 8204-1, Table 5.
- Test: In accordance with BS 8204-1, Annex C.
- Sudden irregularities: Not permitted.

375 COMPACTION OF SCREEDS

- General: Compact thoroughly over entire area.
- Screeds over 50 mm thick: Lay in two layers of approximately equal thickness. Roughen surface of compacted lower layer then immediately lay upper layer.

405 JOINTS IN LEVELLING SCREEDS GENERALLY

- Laying screeds: Lay continuously using 'wet screeds' between strips or bays. Minimize defined joints.
- Daywork joints: Form with vertical edge.

FINISHING/ CURING**530 SMOOTH FLOATED FINISH**

- Finish: Even texture with no ridges or steps.

650 CURING

- General: Prevent premature drying. Immediately after laying, protect surface from wind, draughts and strong sunlight. As soon as screed has set sufficiently, closely cover with polyethylene sheeting.
- Drying after curing: Allow screeds to dry gradually. Do not subject screeds to artificial drying conditions that will cause cracking or other shrinkage related problems.

M40 CERAMIC TILING

To be read with Preliminaries/ General conditions.

TYPES OF TILING/ MOSAIC**111 TILING TO WALLS GENERALLY:**

- Tiles: Ceramic.
- Manufacturer/supplier: Contractor's choice
- Colour: To be agreed (solid colour).
- Finish: Satin.
- Size: 600 x 300mm.
- Background base: Existing and new blockwork.
 - Preparation: Remove existing tiling.
- Bedding: Thin bed adhesive as Clause 650.
- Adhesive: As recommended by manufacturer.
- Joint width: 6mm
- Grout: As recommended by manufacturer.
- Movement joints: At corners and 3-4.5m centres between
- Accessories: Edge trim to external corners.

GENERALLY**210 SUITABILITY OF BACKGROUNDS/ BASES**

- Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thickness of bedding.
- New background drying times (minimum):
 - Concrete walls: 6 weeks.
 - Brick/ block walls: 6 weeks.
 - Rendering: 2 weeks.
 - Gypsum plaster: 4 weeks.
- New base drying times (minimum):
 - Concrete slabs: 6 weeks.
 - Cement:sand screeds: 3 weeks.

PREPARATION**310 EXISTING BACKGROUNDS/ BASES GENERALLY**

- Efflorescence, laitance, dirt and other loose material: Remove.
- Deposits of oil, grease and other materials incompatible with the bedding: Remove.
- Tile, paint and other nonporous surfaces: Clean.
- Wet backgrounds: Dry before tiling.

FIXING**510 FIXING GENERALLY**

- Colour/ shade: Unintended variations within tiles for use in each area/ room are not permitted.
 - Variegated tiles: Mix thoroughly.
- Adhesive: Compatible with background/ base. Prime if recommended by adhesive manufacturer.
- 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 when viewed under final lighting conditions.
- Surplus bedding material: Clean from joints and face of tiles without disturbing tiles.

530 SETTING OUT

- Joints: True to line, continuous and without steps.
 - Joints on walls: Horizontal, vertical and aligned round corners.
 - Joints in floors: Parallel to the main axis of the space or specified features.
- Cut tiles: Minimize number, maximize size and locate unobtrusively.
- Joints in adjoining floors and walls: Align.
- Joints in adjoining floors and skirtings: Align.
- Movement joints: Where locations are not indicated, submit proposals.

550 FLATNESS/ REGULARITY OF TILING

- Sudden irregularities: Not permitted.
- Deviation of surface: Measure from underside of a 2 m straightedge placed anywhere on surface. The straightedge should not be obstructed by the tiles and no gap should be greater than 3 mm.

MOVEMENT JOINTS/GROUTING/COMPLETION**815 SEALANT MOVEMENT JOINTS**

- Joints: Extend through tiles and bedding to base/background. Centre over joints in base/background.
 - Width: 6mm.
- Sealant: Silicone.
 - Colour: To match existing.
 - Preparation and application: As section Z22.

875 GROUTING

- Sequence: Grout when bed/ adhesive has set sufficiently 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.
 - Profile: Flush.
- Polishing: When grout is hard, polish tiling with a dry cloth.

M50 PLASTICS SHEETING

To be read with Preliminaries/ General conditions.

TYPES OF COVERING**151 SHEETING TO WCs**

- Location: WCs and affected corridors.
- Base: New & existing concrete slab/screed.
 - Preparation: Strip up existing floor finishes.
 - Manufacturer: Altro Limited, Works Road, Letchworth Garden City SG6 1NW (tel: 01462 480480).
Product reference: Altro Suprema.
 - Width: 2,000mm.
 - Thickness: 2mm.
 - Colour/ pattern: To be advised.
 - Adhesive (and primer if recommended by manufacturer): Altrofix 19.
- Seam welding: Hot welding with matching Altro welding rod as clause 680A.
- Accessories: Edges/cover strips as clause 740. Edging to ceramic tiles as clause 741A. Coved skirtings as clauses 771A.
- Maintenance and finishing: As recommended by manufacturer.
- Other requirements: None.

GENERAL REQUIREMENTS**210 WORKMANSHIP GENERALLY**

- Base condition after preparation: Rigid, dry, sound, smooth and free from grease, dirt and other contaminants.
- Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks and stains.

251 LAYOUT

- Setting out sheet coverings so that seams and cross seams are kept to a minimum.

340 CONDITIONING

- Prior to laying: Condition materials by unpacking and separating in spaces where they are to be laid. Maintain resilient flooring rolls in an upright position. Unroll carpet and keep flat on a supporting surface.
- Conditioning time and temperature (minimum): As recommended by manufacturer with time extended by a factor of two for materials stored or transported at a temperature of less than 10°C immediately prior to laying.

PREPARING BASES**420 EXISTING BASES**

- Notification: Before commencing work, confirm that existing bases will, after preparation, be suitable to receive coverings.
- Suitability of bases and conditions within any area: Commencement of laying of coverings will be taken as acceptance of suitability.

460 SMOOTHING/ LEVELLING UNDERLAYMENT COMPOUND

- Type: Latex cement.
- Selection: As recommended by covering manufacturer.

470 EXISTING FLOOR COVERINGS REMOVED

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

LAYING COVERINGS**640 ADHESIVE FIXING GENERALLY**

- Adhesive: Type to be as specified, recommended by covering/ underlay manufacturer or as approved.
- Primer: Use and type as recommended by adhesive manufacturer.
- Application: As necessary to achieve good bond.
- Finished surface irregularities: Trowel ridges and high spots caused by particles on the substrate not acceptable.

680A SEAM WELDING

- Do not commence welding of coverings until a minimum of 24 hours after laying or until adhesive has completely set.
- Cut groove 3mm wide x 2/3 the depth of the material evenly along each joint using:
 - Altro hand grooving tool or
 - Automatic grooving machine fitted with diamond blade.
- Hot-weld using hot air welding gun (fitted with high speed welding nozzle) and Altro welding rod. Select colour of rod to match floor covering. Cut off surplus weld rod with spatula. Do not chemical weld.
- Form a neat, smooth, strongly bonded joint flush with finished surface.

720 DOORWAYS

- Joint location: On centre line of door leaf.

731A SEALANT

- Manufacturer and reference: Altro Mastic 100 by Altro Floors, colour to match floor covering.

- Location: To all exposed edges and any protrusions through the floor.

741A EDGINGS/ COVER STRIPS

- Manufacturer and reference: Howe Green Limited (ref. Visedge VR Edge Strip).
- Size: 9mm deep x 30mm wide.
- Fixing: Cut recess in base, bed edge strip level in epoxy mortar and securely screw to base with neatly mitred joints. Make good base by filling with smoothing compound to give a smooth, even surface. Cut, groove and hot-weld PVC insert to Altro safety flooring.

771A SELF COVED SKIRTINGS

- Turn flooring material up wall and securely bond to cove former and background with top edge straight. Accurately mitre at corners. Top edge Altro tile capping.
- Manufacturer: Altro.
 - Product reference: 38R.
- Fixing: Altrofix 25NF. Securely bond to base of background.
- Hot weld joints and mitred corners with matching Altro welding rod. Do not chemical weld.

780 TRAFFICKING AFTER LAYING

- Covering types: All floor finishes.
- Traffic free period: Until adhesive is set.

COMPLETION**870A PROTECTION**

- Cover flooring with clean dust sheets or other non-staining suitable material to prevent damage from dirt and traffic prior to Practical Completion. Ensure any material with printed information on one face is laid with printed face uppermost.

M60 PAINTING/CLEAR FINISHING INTERNALLY AND EXTERNALLY

To be read with Preliminaries/General conditions.

TYPES OF COATING

- See M60-A for number and type of coatings in tabular form.

GENERALLY**211A COATING MATERIALS:**

- Wherever possible to be from one manufacturing batch. Where more than one batch is to be used, keep separate, allocate to distinct parts or areas of the work, and inform the CA accordingly.
- To be delivered in sealed containers, clearly labelled with the following information:
 - Type of Material
 - Brand Name
 - Intended Use
 - Manufacturers Batch Numbers
- Accept responsibility for storage against theft in a clean, dry area protected from extreme temperatures and in accordance with the manufacturer's recommendations. Use in order of delivery.

220 COMPATIBILITY:

- Check that all materials to be used are recommended by their manufacturers for the particular surface and conditions of exposure, and that they are compatible with each other.
- Where surfaces have been treated with preservatives or fire retardants, check with treatment manufacturer that coating materials are compatible with the treatment and do not inhibit its performance.
- Inform CA of any discrepancy in specification of coatings and obtain instructions before proceeding with application.

230 ANCILLARY SURFACES: The descriptions of areas to be coated given in schedules, etc, are of necessity simplified. All ancillary exposed surfaces and features are to be coated to match similar or adjacent materials or areas except where a fair faced natural finish is required or items are completely prefinished. In cases of doubt obtain instructions before proceeding.

240 SURFACES NOT TO BE COATED:

- Radiator valves and stop valves
- Electrical fittings and switch plates (conduits etc. are to be coated)
- Areas of acoustic ceiling tiles, unless specified in Section M60-A, to be spray painted.
- Anodised aluminium and UPVC surfaces, except where UPVC surfaces are drainage goods, specifically required to be coated in Section M60-A.

QUALITY CONTROL

295 INSPECTION OF WORK: Inspection of the whole of the work at completion of washing down and bringing forward bare parts, or where stripping is specified following removal of coatings, may be required at the discretion of the CA. Agree with the CA a programme which will facilitate such inspections and notify him when each part and stage of the work is ready for inspection. Do not proceed with subsequent stages of the work until authorised.

PREPARATION**400 PREPARATION GENERALLY:**

- Comply with BS 8000:Part 12, Section 2 and additional requirements in this specification.
- When removing or partially removing coatings, use methods which will not damage the substrate or adjacent surfaces or adversely affect subsequent coatings.
- Materials used in preparation to be types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Apply oil based stoppers/fillers after priming. Apply water based stoppers/fillers before priming unless recommended otherwise by manufacturer. Patch prime water based stoppers/fillers when applied after priming.
- Ensure that doors and opening windows, etc., are 'eased' as necessary before coating. Prime any resulting bare areas.

401 SELF-ADHESIVE TAPE, LABELS, DRAWING PINS, ETC: Before undertaking any preparation work, the contractor is to ensure that all self-adhesive tape, drawing pins and labels, are removed by scraping and the use of an appropriate solvent to remove the adhesive backing.

402 FILLERS:

- Internal work: Polyfilla or any other equal approved filling material.
- External work: The contractor must use Akzo Coatings Componex HR.

- 410 SUITABILITY OF SURFACES AND CONDITIONS: Application of coatings will be taken as joint acceptance by the Main Contractor and Subcontractor of the suitability of surfaces and conditions within any given area to receive the specified coatings.
- 420 FIXTURES: Before commencing work, remove fixtures and fittings. Set aside and replace on completion.
- 530 EXISTING PAINTED WINDOWS:
- Remove existing paint to the extent specified or instructed.
 - Thoroughly clean junctions between previously painted surfaces and glass.
 - Remove old paint splashes and old paint encroaching beyond the sight line.
 - Remove loose and defective putty.
 - When dry, patch prime, re-putty and paint as soon as sufficiently hard.

APPLICATION

- 600 PAINTING GENERALLY: Comply with BS 8000:Part 12, Section 3.2 and additional requirements in this specification.
- 750 COMPLETION: Ensure that opening lights and other moving parts move freely. Remove all masking tape and temporary coverings.

M60-A DETAILED SCHEDULE OF PAINTING/CLEAR FINISHING

<i>SURFACE/ PREPARATION</i>	<i>PRIMER/SEALER IF REQUIRED</i>	<i>MAIN COATS</i>	<i>NO OF MAIN COATS</i>
INTERNAL AREAS GENERALLY			
Suspended ceilings	Do not decorate		
Plastered ceilings/ soffits	Dulux Trade Drywall primer/sealer	Emulsion paint	1 Mist Coat 2 F/C
Walls previously painted (including fair-faced blockwork)	Diamond Matt	Dulux Trade Diamond Eggshell	1 Mist Coat 2 F/C
Clear finished woodwork		Matt polyurethane varnish	2 F/C
Woodwork	Dulux Trade Aluminium wood primer	Dulux Trade Diamond Satinwood	1 U/C 2 F/C
Metalwork	Dulux Trade all purpose primer	Gloss paint	1 U/C 2 F/C

N13 SANITARY APPLIANCES AND FITTINGS

To be read with Preliminaries/ General conditions.

300 WCS AND CISTERNS

- Type: Back-to-Wall
- Pan:
 - Manufacturer: Armitage Shanks
 - Product reference: Profile 21
 - Material: Vitreous china
- Seat and cover:
 - Product reference: Profile 21
 - Finish/ Colour: White
- Pan connector:
 - Standard: To BS 5627.
- Cistern:
 - Type: Dual flush
 - Manufacturer: Armitage Shanks
 - Product reference: Conceala 2
 - Flush volume: 4.0 litre
- Accessories: Dual flush push plates; flush pipe and overflows

311 UNISEX ACCESSIBLE CORNER WC EQUIPMENT PACKAGES (DOCUMENT M)

- Manufacturer: Armitage Shanks
 - Product reference: S0689-C
- Finish/ Colour:
 - WC: White
 - Basin: White
 - Handrails and grab bars: Blue
- Water supply fittings (basin): CP Monobloc mixer tap
 - Water supply temperature (maximum): 41°C
- Accessories: Flush pipe and overflow

321 WATERLESS URINALS

- Urinal:
 - Manufacturer: Urimat
 - Product reference: UR12.201
 - Material: Ceramic
- Wastes and traps:
 - Manufacturer: Contractor's choice
- Accessories: None.

335 WASH BASINS

- Manufacturer: Armitage Shanks
 - Product reference: Sandringham 21
- Size: 50cm
- Material: Vitreous china
- Tap/ Chainstay/ Overflow holes: Single tap hole; no chainstay; single overflow
- Water supply fittings: Contractor's choice
 - Water supply temperature (maximum): 41°C
- Traps:
 - Standards: To BS EN 274-1, -2 and -3.
 - Manufacturer: Contractor's choice
 - Size: 32mm
 - Material: Polypropylene
 - Depth of seal (minimum): 75 mm.
- Accessories: None.

438 MIRRORS

- Manufacturer: Contractor's choice.
 - Product reference: 5mm acrylic mirror sheet; polished edges.
- Material: Acrylic.
- Finish/ Colour: Silver.
- Mounting: 15mm WBP plywood, painted at edges. Fix with plugs & mirror screws.

EXECUTION**610 INSTALLATION GENERALLY**

- Assembly and fixing: Surfaces designed to falls to drain as intended.
- Fasteners: Nonferrous or stainless steel.
- Supply and discharge pipework: Fix before appliances.
- Fixing: Fix appliances securely to structure. Do not support on pipework.
- Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes being jointed or bedded.
- Appliances: Do not use. Do not stand on appliances.
- On completion: Components and accessories working correctly with no leaks.
- Labels and stickers: Removed.

620 NOGGINGS AND BEARERS

- Noggings, bearers, etc. to support sanitary appliances and fittings: Position accurately. Fix securely.

670 INSTALLING CISTERNS

- Cistern operating components: Obtain from cistern manufacturer.
- Float operated valve: Matched to pressure of water supply.
- Overflow pipe: Fixed to falls and located to give visible warning of discharge.
- Location: Agreed, where not shown on drawings.

710 INSTALLING TAPS

- Fixing: Secure against twisting.
- Seal with appliance: Watertight.
- Positioning: Hot tap to left of cold tap as viewed by user of appliance.

720 INSTALLING WASTES AND OVERFLOWS

- Bedding: Waterproof jointing compound.
- Fixing: With resilient washer between appliance and backnut.

750 SEALANT POINTING

- Sealant:
 - Manufacturer: Adshead Ratcliffe.
 - Product reference: Arbokol 1025.
- Colour: White.
- Application: As section Z22.

755 SEALANT BEDDING AND POINTING

- Bedding: Bed and point basins to underside of vanity units.
- Pointing: Joints between appliances and splashbacks.

P21 DOOR/ WINDOW IRONMONGERY**DOOR OPERATING DEVICES****410 OVERHEAD DOOR CLOSERS GENERALLY**

- Standard: To BS EN 1154.
 - Door closing devices to WC doors: CE marked.
- Manufacturer: Ingersoll-Rand, Bescot Crescent, Walsall WS1 4DX (tel: 01922 707400).
 - Product reference: Briton 2003 series.
- Type: Face fixed.
- Power size: EN3.
- Other functions: None.
- Casing finish: Satin stainless steel.
- Operational adjustment:
 - Variable power: Matched to size, weight and location of doors.
 - Latched doors: Override latches and/ or door seals when fitted.
 - Unlatched doors: Hold shut under normal working conditions.
 - Closing against smoke seals of fire doors: Positive. No gaps.

DOOR FURNITURE**641 PULL HANDLES GENERALLY**

- Manufacturer: ASSA.
 - Product reference: ScanFlex.
- Standard: To BS 8424.
- Shape: Straight.
- Diameter: 25mm.
- Distance between centres: 300mm.
- Material/ finish: Satin stainless steel.
- Mounting: Bolt through fixings.

670 PUSH PLATES GENERALLY

- Manufacturer: ASSA.
 - Product reference: To suit pull handles.
- Size: To suit pull handles.
- Material/ finish: Satin stainless steel.
- Mounting: Screw fixed.
- Additional requirements: Rounded edges and radiused corners.

R11 ABOVE GROUND FOUL DRAINAGE SYSTEMS**PRODUCTS****365 PVC-U PIPEWORK**

- Standard: To BS EN 1329-1, Kitemark certified.
- Weather resistance, connectors to WC pans, opening dimensions of access fittings, design of swept fittings, stand off dimensions of pipe and fitting brackets and requirements for adaptors and plugs: To BS 4514.
- Manufacturer: Contractor's choice.
- Nominal size: DN40, DN50, DN110.
- Colour: Contractor's choice.
- Brackets: Plastic pipe clips at 450mm centres.

INSTALLATION**520 INSTALLATION GENERALLY**

- Standard:
- BS EN 12056-1, clauses 3 - 6.
- BS EN 12056-2, clauses 3 - 6, National Annexes NA - NG, System III.
- BS EN 12056-5, clauses 4 - 6, 8, 9 and 11.
- Drainage from appliances: Quick, quiet and complete, self-cleansing in normal use, without blockage, crossflow, backfall, leakage, odours, noise nuisance or risk to health.
- Pressure fluctuations in pipework (maximum): ± 38 mm water gauge.
- Water seal retained in traps (minimum): 25 mm.
- Components: From the same manufacturer for each type of pipework.
- Access: Provide access fittings in convenient locations to permit cleaning and testing of pipework.
- Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.
- Plastics and galvanized steel pipes: Do not bend.
- Concealed or inaccessible surfaces: Decorate before starting work specified in this section.

EXECUTION**605 PIPE ROUTES**

- General: The shortest practical, with as few bends as possible.
- Bends in wet portion of soil stacks: Not permitted.
- Routes not shown on drawings: Submit proposals before commencing work.

610 FIXING PIPEWORK

- Pipework: Fix securely plumb and/ or true to line. Fix discharge stack pipes at or close below socket collar or coupling.
- Branches and low gradient sections: Fix with uniform and adequate falls to drain efficiently.
- Externally socketed pipes and fittings: Fix with sockets facing upstream.
- Additional supports: Provide as necessary to support junctions and changes in direction.
- Vertical pipes: Provide a load bearing support not less than every storey level. Tighten fixings as work proceeds so that every storey is self-supporting.
- Wall and floor penetrations: Isolate pipework from structure, e.g. with pipe sleeves.
- Masking plates: Fix at penetrations if visible in the finished work.
- Expansion joint sockets: Fix rigidly to the building.
- Fixings: Allow the pipe to slide.

620 FIXING LOW GRADIENT PIPEWORK

- Bracket fixings: Plugged and screwed into masonry.
- Distance between bracket fixing centres (maximum):

32-40mm pipes	500mm centres
50mm pipes	600mm centres
65-110mm pipes	900mm centres
160mm pipes	1200mm centres

630 JOINTING PIPEWORK – GENERALLY

- General: Joint with materials, fittings and techniques that will make effective and durable connections.
- Jointing differing pipework systems: With adaptors intended for the purpose.
- Cut ends of pipes: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.
- Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.
- Junctions: Form with fittings intended for the purpose.
- Jointing material: Do not allow it to project into bore of pipes and fittings.
- Surplus flux, solvent jointing materials and cement: Remove from joints.

700 INSTALLING AIR ADMITTANCE VALVES

- Position: Vertical, above flood level of highest appliance served and clear of insulation materials (other than the manufacturer's insulating cover).
- Connection to discharge stack: Allow removal for rodding, e.g. ring seal.
- Roof spaces and other unheated locations: Fit manufacturer's insulating cover.

COMPLETION**905 PIPEWORK AIRTIGHTNESS TEST**

- Preparation:
- Open ends of pipework: Temporarily seal using plugs.
- Test apparatus: Connect a 'U' tube water gauge and air pump to pipework via a plug or through trap of an appliance.
- Testing: Pump air into pipework until gauge registers 38 mm.
- Required performance: Pressure of 38 mm is to be maintained without loss for at least three minutes.

915 PREHANDOVER CHECKS

- Temporary caps: Remove.
- Permanent blanking caps, access covers, rodding eyes, floor gratings and the like: Secure complete with fixings.

S90 HOT AND COLD WATER SUPPLY SYSTEMS

To be read with Preliminaries/ General conditions.

SYSTEM PERFORMANCE**250 PIPELINE SIZES**

- Sizing: Calculate sizes to meet simultaneous demand for the building in accordance with BS 6700 Appendix D or BS EN 806-3. Submit proposals.
- Performance:
- Water velocity (maximum): 1.3 m/s for hot water and 2.0 m/s for cold water.

PRODUCTS**510 COPPER PIPELINES FOR GENERAL USE**

- Standard: To BS EN 1057, Kitemark certified.
- 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.
- Jointing generally: Integral lead free solder ring capillary fittings to BS EN 1254-1, Kitemark certified.
- 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: Plastic spacers, single screw fixing.

570 INSULATION TO PIPELINES

- Material: Preformed flexible closed cell or mineral fibre split tube.
- Thermal conductivity (maximum): 0.04 W/m²K.
- Thickness:
- Hot water pipelines: Equal to the outside diameter of the pipe up to a maximum of 40 mm.
- Internal cold water pipelines: 25 mm.
- Roof space cold water pipelines: 32 mm.
- External cold water pipelines: 38 mm.
- Fire performance: Class 1 spread of flame when tested to BS 476-7.

EXECUTION**715 INSTALLATION GENERALLY**

- Installation: To BS 6700.
- 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.

720 INSTALLING CISTERNS

- Outlet positions: Connect lowest outlets at least 30 mm above bottom of cistern.
- Access: Fix cistern with a minimum clear space of 350 mm above, or 225 mm if the cistern does not exceed 450 mm in any dimension.

725 INSTALLING WARNING/ OVERFLOW PIPES TO CISTERNS

- Difference (minimum) between normal water level and overflow level:
- Cold water storage cisterns: The greater of 32 mm or the bore of warning pipe.
- Feed and expansion cisterns: Sufficient to allow 20% increase in the volume of water in the tank, plus 25 mm.
- Vertical distance (minimum) of water supply inlet above overflow level: Bore of warning pipe.
- Fall (minimum): 1 in 10.
- Installation: Support to prevent sagging. Terminate pipes separately in prominent positions with turned down ends. Turn down within the cistern. Terminate 50 mm below normal water level.
- Insulation: Insulate within the building where the pipe is in an uninsulated space and subject to freezing.

790 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.
- 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.

800 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.

810 SUPPORTS FOR COPPER AND STAINLESS STEEL PIPELINES

- Spacing: 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.
- Additional supports: Locate within 150 mm of connections, junctions and changes of direction.

840 JOINTS IN COPPER AND STAINLESS STEEL 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.

860 INSTALLATION OF INSULATION TO PIPELINES

- 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.
- 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.

870 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**930 TESTING**

- Standard: To BS 6700.
- 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.

940 COMMISSIONING

- Standard: To BS 6700.
- Equipment: Check and adjust operation of equipment, controls and safety devices.
- Outlets: Check operation of outlets for satisfactory rate of flow and temperature.

960 DOCUMENTATION

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

T90 HEATING SYSTEMS

To be read with Preliminaries/ General conditions.

EXECUTION

610 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.

630 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.

640 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.

650 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**810 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.
- 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.

820 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.

840 DOCUMENTATION

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

850 LABELS

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

U90 GENERAL VENTILATION

To be read with Preliminaries/ General conditions.

GENERAL

130 LOCAL EXTRACT FAN VENTILATION

- Fan units: Contractor's choice.
- Air ductwork: As clause 425.
- External exhaust air terminals: As clause 525.
- Controls: Connected to light switch with run-on.

425 RIGID DUCTWORK AND FITTINGS

- Type: Round.
- Manufacturer: Contractor's choice.
- Sizes: 100mm dia.
- Fixing: Pipe clips to roof trusses.
- Jointing: Welded.
- Accessories: Condensation trap.

525 ROOF SLOPE EXHAUST TERMINALS

- Manufacturer: Klover
- Product reference: Universal Tile Vent
- Accessories: 100mm Vent Adaptor and Flexipipe.

EXECUTION**650 INSTALLING VENTILATION FANS**

- Mounting: Ceiling, as manufacturer's recommendations.

660 FLEXIBLE DUCTWORK

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

670 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.

V90 ELECTRICAL SYSTEMS

To be read with Preliminaries/ General conditions.

SYSTEM PERFORMANCE**265 DESIGN AND LIGHTING CALCULATIONS**

- Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
- Lighting calculations:
 - Type: Computer generated point calculations.
- Submit the following:
 - Luminaire layout drawings.
 - Luminaire photometric data including flux fraction ratios and polar intensity curves.
 - Lamp technical information.
 - Maintenance factor calculations, including proposals for luminaire maintenance and lamp replacement.
 - Isolux contour plots for the working plane.
 - Schedule of design and calculated maintained average illuminance values.
 - Schedule of design and calculated uniformity values.

PRODUCTS**310 PRODUCTS GENERALLY**

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

340 CONDUIT

- Standard: To BS EN 61386-1.
- Type: Suitable for location and use.

341 CABLE TRUNKING AND DUCTING GENERALLY

- Type: Suitable for location and use.

342 STEEL CONDUIT AND FITTINGS

- Standards: To BS 4568-1 or BS EN 61386-1 and BS EN 61386-21.
- Manufacturer: Contractor's choice.
- Jointing: Threaded.
- Finish: Galvanised.

410 CABLES

- Standard: To BS 7671.
- Approval: British Approvals Service for Cables (BASEC) certified.
- Mineral insulated copper sheathed cables: To BS EN 60702-1.
 - Mineral insulated copper sheathed cable terminations: To BS EN 60702-2.
- Cable sizes not stated: Submit proposals and calculations.

420 PROTECTIVE CONDUCTORS

- Type: Cable conductors with yellow/ green sheath.

430 ELECTRICAL ACCESSORIES GENERALLY

- Standard: To BS 5733.
- Switches: To BS EN 60669-1.
- Manufacturer: Contractor's choice.
- Finish: To match existing.
- Mounting: Plugged & screwed to background.

510 LUMINAIRES

- Standards: To BS EN 60598-1 and BS EN 55015.
- Manufacturer: Contractor's choice.
- Ingress protection to BS EN 60529: IP65
- Mounting: Ceiling mounted.
- Type: Slimline LED batten fittings generally, bulkhead fittings to Unisex cubicles.

525 CONTROLS

- Standards: To BS EN 60669-2-1 and BS EN 55015.
- Manufacturer: Contractor's choice.
- Ingress protection to BS EN 60529: IP65
- Control: PIR with run-on.

530 SELF CONTAINED EMERGENCY LUMINAIRES

- Standards: To BS EN 60598-2-22, BS EN 1838, ICEL 1001, ICEL 1004 and HSE Signs Directive.
- Manufacturer: Contractor's choice.
- Finish: White.
- Legend: Not required.

EXECUTION**610 ELECTRICAL INSTALLATION GENERALLY**

- Standard: To BS 7671.

655 INSTALLING STEEL CONDUIT AND FITTINGS

- Fixing: Fix securely. Fix boxes independently of conduit.
- Conduit drainage: Provide drainage outlets at lowest points.
- Location: Position vertically and horizontally in line with equipment served, and parallel with building lines. Locate where accessible.
- Jointing:
 - Number of joints: Minimize.
 - Lengths of conduit: Maximize.
 - Cut ends: Remove burrs, and plug.
 - Movement joints in structure: Manufactured expansion coupling.
 - Threaded steel conduits: Tightly screw to ensure electrical continuity, with no thread showing.
- Conduit connections to boxes and items of equipment, other than those with threaded entries: Earthing coupling/ male brass bush and protective conductor.
- Connections to boxes, trunking, equipment and accessories: Screwed couplings, adaptors, connectors and glands: Attach rubber bushes at open ends.

680 CABLE ROUTES

- Cables generally: Conceal wherever possible.
 - Concealed cable runs to wall switches and outlets: Align vertically 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.

685 INSTALLING CABLES

- General: Install cables neatly and securely. Protect against accidental damage, adverse environmental conditions, mechanical stress and deleterious substances.
- Timing: Do not start internal cabling until building enclosure provides permanently dry conditions.
- Jointing: At equipment and terminal fittings only.
- Cables passing through walls: Sleeve with conduit bushed at both ends.
- Cables surrounded or covered by insulation: Derate.

700 INSTALLING CABLES IN ACCESSIBLE ROOF SPACES

- Cables running across ceiling joists: Fix to timber battens which are nailed to joists.

720 INSTALLING ELECTRICAL ACCESSORIES/ EQUIPMENT

- Arrangement: Coordinate with other wall or ceiling mounted equipment.
- Positioning: Accurately and square to vertical and horizontal axes.
- Alignment: Align adjacent accessories on the same vertical or horizontal axis.
- Mounting heights (finished floor level to underside of equipment/ accessory): 1.0m

735 INSTALLING LUMINAIRES

- Location: All areas.
- Orientation: Parallel with ceiling.
- Supports: Adequate for weight of luminaire.

740 INSTALLING EMERGENCY LUMINAIRES

- Permanent electrical supplies: Derive from adjacent local lighting circuit.
- Charge indicator: Position in a conspicuous location.

COMPLETION**810 FINAL FIX**

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

820 CLEANING

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

830 INSPECTION AND TESTING GENERALLY

- Standard: To BS 7671.
- Notice before commencing tests (minimum): 24 hours.
- Labels and signs: Fix securely before system is tested.
- Inspection and completion certificates: Submit.
- Number of copies: Two

860 INSPECTION AND TESTING OF EMERGENCY LIGHTING SYSTEMS

- Standards: To BS EN 50171, BS EN 50172 and in accordance with BS 5266-1.
- Certificate of testing: Submit.
 - Standard: To BS 5266-1, Annex B.
 - Number of copies: Two.
- System log book: To BS 5266-1.

880 DOCUMENTATION

- Timing: Submit at practical completion.
- Contents:
 - Full technical description of each system installed.
 - Manufacturers' operating and maintenance instructions for fittings and apparatus.
 - Manufacturers' guarantees and warranties.
 - As-installed drawings showing circuits and their ratings and locations of fittings and apparatus.
 - List of normal consumable items.

Z20 FIXINGS/ ADHESIVES

To be read with Preliminaries/ General conditions.

110 FIXINGS GENERALLY

- Integrity of supported components: Types, sizes and quantities of fasteners/ packings and spacings of fixings selected to retain supported components without distortion or loss of support.
- Components/ substrates/ fasteners of dissimilar metals: Fixed with isolating washers/ sleeves to avoid bimetallic corrosion.
- General usage: To recommendations of fastener manufacturers and/ or manufacturers of components, products or materials fixed and fixed to.
- Appearance: As approved samples.

130 FASTENER DURABILITY

- Fasteners in external construction:
- Fasteners not directly exposed to weather: Of corrosion resistant material or with a corrosion resistant finish.
- Fasteners directly exposed to weather: Of corrosion resistant material.

140 FIXINGS THROUGH FINISHES

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

150 PACKINGS

- Function: To take up tolerances and prevent distortion of materials/ components.
- Materials: Noncompressible, noncorrodible, rot proof.
- Locations: Not within zones to be filled with sealant.

510 ADHESIVES

- Storage/ Usage: In accordance with manufacturer's and statutory requirements.
- Surfaces: Clean. Regularity and texture adjusted to suit bonding and gap filling characteristics of adhesive.
- Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Z22 SEALANTS

To be read with Preliminaries/ General conditions.

PRODUCTS

310 JOINTS GENERALLY

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

EXECUTION

630 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.

SCHEDULE OF WORKS

To be read in conjunction with the Preliminaries and Workmanship sections preceding.

Preliminaries

- | | | |
|----|--|---|
| 1. | Main contractor's preliminaries brought forward from Sections A10 – A36 inclusive. | £ |
| 2. | Main contractor's overheads and profit. | £ |

Contingency

- | | | | |
|----|---|---|----------|
| 3. | Allow the contingency sum of £5,000.00 to be expended only as directed by the CA. | £ | 5,000.00 |
|----|---|---|----------|

Section 1 - Café Toilets

- | | | |
|-----|--|---|
| 4. | Carefully remove toilet roll holders, soap dispensers, paper towel dispensers, etc. and set aside for re-use. | £ |
| 5. | Isolate and cap off all existing heating pipework, hot & cold water supplies and wastes and strip out pipework. | £ |
| 6. | Remove existing sanitaryware, vanity units, etc. and hack off ceramic wall tiling. Strip up floor coverings, complete with skirtings, threshold strips, etc. and clear from site. | £ |
| 7. | Remove doors, linings and architraves and clear away. Take down blockwork partitions where shown on the drawings. Hack up screed. Clear from site. | £ |
| 8. | Raise new blockwork partitions as Section F10 and generally to match existing. Block in openings where shown, tooth in to existing work and form new door openings where indicated on the drawing, complete with lintels over. | £ |
| 9. | Lay proprietary quick drying screed as clause M10/130. | £ |
| 10. | Remove fittings and overboard existing ceiling on 38 x 25mm battens, as Section K10. Min. 90mm drywall screws to pass through battens into original ceiling joists. Tape, joint and leave ready for decoration. | £ |
| 11. | To new door openings, supply and fit 44mm thick rebated hardwood linings and architraves to match existing profiles. All new work to be primed all round before fitting. | £ |

To Collection

£

12.	Supply and hang new door D1 on 1½ pairs 100mm ss butt hinges, all as clause L20 /230. Supply and fit the following ironmongery: 1No RADAR lock 1No horizontal grab rail 1No Accessible WC sign 1No 5 lever mortice sashlock and 1pr satin aluminium escutcheons	£	
13.	Supply and hang new door D2 on 1½ pairs 100mm ss butt hinges, all as clause L20/230. Supply and fit the following ironmongery: 1No satin stainless steel fingerplate as P21/670. 1No satin stainless steel pull handle as P21/641. 1No overhead door closer as P21/410. 1No Unisex WC sign 1No 5 lever mortice sashlock and 1pr satin stainless steel escutcheons	£	
14.	Tile all internal walls as clause M40/111.	£	
	Allow the Provisional Sum of £3,000 for supply only.	£	3,000.00
15.	Supply and install all new cubicles, ductwork, vanity units, etc., as clause K32/112 and indicated on the drawings.	£	
16.	Supply and install the following sanitaryware, as indicated on the drawings and in accordance with Section N10. 4No. WCs as clause N13/300 3No. washbasins as clause N13/335 1No. Doc M pack as clause N13/311	£	
17.	Supply and lay sheet vinyl floorcoverings with coved skirtings, as clause M50/151.	£	
18.	Supply and fit 2No. acrylic mirrors, as clause N13/438. 1No. 2.3 x 1.37m 1No. 0.5 x 1.5m	£	
19.	Carry out complete internal redecorations as Section M60. Include for outside surfaces of all new work, doors, architraves, etc.	£	
20.	Fit only toilet roll holders, soap dispensers, paper towel dispensers, etc. previously set aside, or supplied new by the Employer.	£	
	<i>M&E Services</i>		
21.	Supply and install new hot & cold water supply pipework, generally as Section S90. Fit thermostatic mixing valves to all basins, set at 41°C.	£	
	<i>To Collection</i>	£	

- | | | |
|---|--|---|
| 22. | Supply and install 3No. new radiators, where indicated on the drawing. Carry out alterations to pipework. All as Section T90. | £ |
| 23. | Supply and install 5No. ceiling mounted extract fans as clause U90/130, complete with 100mm plastic ductwork in roof void, secured to top of ceiling joists. Install 1No Klover Universal Tile Vent and adaptor. All as Section U90. | £ |
| 24. | Complete lighting design as clause V90/265 and generally as indicated on the drawings. | £ |
| 25. | Supply and install new lighting and controls, generally as Section V90. | £ |
| Investigation | | |
| 26. | Form 3No 250 x 250mm openings in Lardner Hall WC ceilings. Location to be agreed with CA. Reinstall and make good upon completion. | £ |
| Section 2 - Lardner Hall Toilets | | |
| 27. | Carefully remove toilet roll holders, soap dispensers, paper towel dispensers, etc. and set aside for re-use. | £ |
| 28. | Isolate and cap off all existing heating pipework, hot & cold water supplies and wastes and strip out pipework. | £ |
| 29. | Remove existing sanitaryware, vanity units, etc. and hack off ceramic wall tiling. Strip up floor coverings, complete with skirtings, threshold strips, etc. and clear from site. | £ |
| 30. | With CA in attendance, lift 2No inspection covers and trace below ground drains. Clean, re-grease and refit covers on completion. | £ |
| 31. | Remove doors, linings and architraves and clear away. Take down blockwork partitions where shown on the drawings. Hack up screed to Accessible WC. Clear from site. | £ |
| 32. | Raise new blockwork partitions as Section F10 and generally to match existing. Block in openings where shown, tooth in to existing work and form new door openings where indicated on the drawing, complete with lintels over. | £ |
| 33. | Supply and install nominal 152 x 152 x23 UC beam to Accessible WC ceiling. | £ |
| 34. | Lay proprietary quick drying screed to Accessible WC as clause M10/130. | £ |
| 35. | Remove fittings and overboard existing ceiling on 38 x 25mm battens, as Section K10. Min. 90mm drywall screws to pass through battens into original ceiling joists. Tape, joint and leave ready for decoration. | £ |

To Collection

£

36.	Box in Accessible WC beam with two layers 9mm plasterboard, tape, joint and bring forward for decoration.	£	
37.	To door openings, supply and fit 44mm thick rebated hardwood linings as clause L20/330 and architraves to match existing profile. All new work to be primed all round before fitting.	£	
38.	Supply and hang new door D4 on 1½ pairs 100mm ss butt hinges, all as clause L20/230. Supply and fit the following ironmongery: 1No RADAR lock 1No horizontal grab rail 1No Accessible WC sign 5 lever mortice sashlock and 1pr satin stainless steel escutcheons	£	
39.	Supply and hang new doors D3 & D5, each on 1½ pairs 100mm ss butt hinges, all as clause L20/230. Supply and fit the following ironmongery: 2No satin stainless steel fingerplates as P21/670 2No satin stainless steel pull handles as P21/641. 2No overhead door closers as P21/410. Male & Female WC signs 2No 5 lever mortice sashlocks and 2pr satin stainless steel escutcheons	£	
40.	Tile all internal walls as clause M40/111. Allow the PC Sum of £45.00/m ² for supply only.	£	
	Allow the Provisional Sum of £3,000 for supply only.	£	3,000.00
41.	Supply and install all new cubicles, ductwork, vanity units, etc., as clause K32/112 and indicated on the drawings.	£	
42.	Supply and install the following sanitaryware, as indicated on the drawings and in accordance with Section N10. 4No. WCs as clause N13/300 5No. washbasins as clause N13/335 2No. urinals as clause N13/321 1No. Doc M pack as clause N13/311	£	
43.	Supply and lay sheet vinyl floorcoverings with sit-on coved skirtings, as clause M50/151.	£	
44.	Supply and fit 3No. acrylic mirrors, as clause N13/438. 1No. 2.63 x 1.4m 2No. 0.5 x 1.5m	£	
45.	Carry out complete internal redecorations as Section M60. Include for outside surfaces of all new work, doors, architraves, etc.	£	
	<i>To Collection</i>	£	

46.	Fit only toilet roll holders, soap dispensers, paper towel dispensers, etc. previously set aside, or supplied new by the Employer.	£
	<i>M&E Services</i>	
47.	Supply and install new hot & cold water supply pipework, generally as Section S90. Fit thermostatic mixing valves to all basins, set at 41°C.	£
48.	Supply and install 3No. new radiators, where indicated on the drawing. Carry out alterations to pipework. All as Section T90.	
49.	Supply and install 3No. ceiling mounted extract fans as clause U90/130, complete with 100mm plastic ductwork in roof void, secured to top of ceiling joists. Install 1No Klobber Universal Tile Vent and adaptor. All as Section U90.	£
50.	Complete lighting design as clause V90/265 and generally as indicated on the drawings.	£
51.	Supply and install new lighting and controls, generally as Section V90.	£
	<i>To Collection</i>	£

COLLECTION PAGE

Page 46	£
Page 47	£
Page 48	£
Page 49	£
Page 50	£
Total	£