



P01/0076

SPECIFICATION - THE SUPERINTENDENTS HOUSE -
Series 591

CONTENTS

PRELIMINARIES

GENERAL REQUIREMENTS

GROUNDWORK

CONCRETE

STRUCTURE

MASONRY

WOODWORK

CLADDING

ROOFING

INSULATION

WINDOWS

DOORS

TILING

STORMWATER

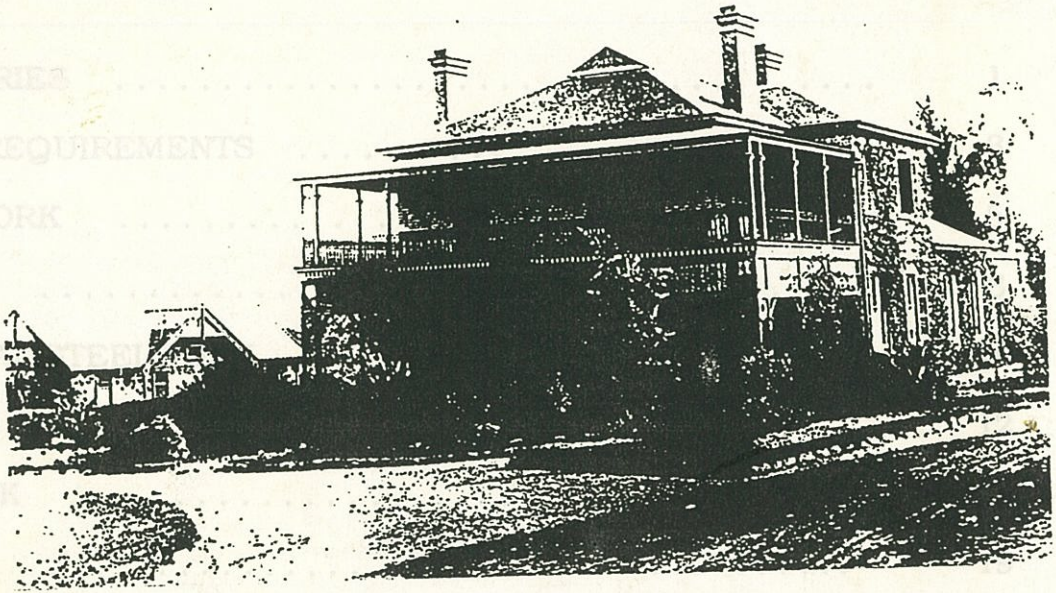
SANITARY SERVICES

WATER

ELECTRICAL INSTALLATION

GENERAL MECHANICAL REQUIREMENTS

APPENDIX 'A'



SPECIFICATION

THE SUPERINTENDENT'S HOUSE
PARRAMATTA CAMPUS

FOR:

**THE UNIVERSITY OF WESTERN SYDNEY
- NEPEAN**

APRIL 1996

1357

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THE ROYAL AUSTRALIAN
INSTITUTE OF ARCHITECTS

CONTENTS

PRELIMINARIES	1
GENERAL REQUIREMENTS	3
GROUNDWORK	5
CONCRETE	8
STRUCTURAL STEELWORK	10
MASONRY	12
WOODWORK	16
CLADDING	19
ROOFING	20
INSULATION	22
WINDOWS	24
DOORS	28
TILING	30
STORMWATER	33
SANITARY SERVICES	36
WATER	38
ELECTRICAL INSTALLATION	40
GENERAL MECHANICAL REQUIREMENTS	41
APPENDIX 'A'	42

. 1 GENERAL

General conditions

The general conditions of contract are as contained in the Building Works Contract - JCC.B by current edition as issued by RAIA and MBCHAA and BOMA.

The works

Any description of the works given in the appendix to the general conditions of contract does not limit the extent of the works.

Definitions

Superintendent: The words "superintendent", "principal", "contractor" and "contract" have the same meaning, respectively, as "architect", "proprietor", "builder" and "agreement", except where the context otherwise requires.

2 THE SITE

Site restrictions

Site limitations: Comply with the following restrictions on the use of the site:

Restrictions: Access on to and around the site, and use of the site for temporary works and constructional plant, including working and storage areas, location of offices, workshops, sheds, roads and parking is restricted to the following areas:

The area south and west of the existing driveway adjacent to the building. No access is permitted within the centre area of the 'roundabout' except for work on services.

Security

Observe requirements of the Proprietor's security service on site regarding access to secured areas and buildings and closure of gates.

Gutter crossings, driveways

Protect existing gutter crossings and driveways during construction to avoid damage by heavy construction vehicles.

Protection of persons and property

Temporary works: Provide and maintain all barricades, guards, fencing, shoring, temporary roadways, footpaths, signs, lighting, watching and traffic flagging necessary for the protection of the works or other property or for the safety and convenience of the public and others. Remove when no longer required.

Damage to services: Do not obstruct or damage roadways and footpaths, drains and watercourses and other existing services in use on or adjacent to the site. Determine the location of such services from the appropriate authority, from the contract or from the site. Rectify immediately any obstruction or damage to such services and provide temporary services whilst repairs are carried out.

Damage to property: Do not interfere with or damage property which is to remain on or adjacent to the site, including existing buildings and trees. Rectify immediately any interference or damage to such property.

Existing services

Maintain or disconnect existing services (such as drains, watercourses, public utility and other services) as required:

Amenities

Provide toilet, washroom, lunchroom and all facilities for workers on site as required by regulations and awards.



3 EXECUTION OF THE WORKS**Requirements of authorities**

Prior applications: The proprietor, prior to entering into the contract, has, in respect of the requirements of Council applicable to the works, given the notices, paid the fees, and obtained the Development Consent and the Building Permit for the works. Seek and obtain all other authorities' approvals and pay the relevant fees.

**Surveys**

Setting out: Obtain a Registered Surveyor's services for the setting out of the works, pay all fees and provide a confirmation diagram on completion of the work.

Site Sign

Make provision for a site identification sign as shown on attached details. Include for erection on completion.

Storage

Store and handle materials and components to avoid damage and deterioration.

Protection

Protect the work as it proceeds, to avoid damage and deterioration.

Progressive cleaning

Keep the work clean and tidy as it proceeds and regularly remove from the site rubbish and surplus material arising from the execution of the work including any work performed during the defects liability period. On completion clean throughout.

Run off

Prevent run off water carrying cement or silt from entering existing and new pipelines and watercourses both on and off site. Provide silt-arresting measures as required.

4 PAYMENT AND ADJUSTMENT OF CONTRACT SUM**Anticipated progress claims**

At the commencement of the works, submit a schedule in writing to the architect for information only of the anticipated progress claims which will be made throughout the contract. Submit to the architect a revised schedule with each progress claim.

Progress claims

Break-down: Submit to the architect a written trade valuation break-down with each progress claim.

Provisional sums

The provisional sums identified on page 45 are for the purposes stated in the relevant sections of the specification.

Prime Cost and Provisional Sums: (see Appendix)

Any P.C. sums appropriate to the contract are to be stated by the Builder in the tender.

Provisional quantities

Adjustment: The contract sum includes the cost of any item of work described as a provisional quantity, and any difference between the provisional quantity and the quantity of work actually required to be carried out is to be valued as provided in the contract, and the contract sum adjusted accordingly.

**5 COMPLETION****Cleaning**

On completion thoroughly clean the works and environs, including removing all temporary labels and glue, cleaning windows and fittings and leave ready for occupation.

1 **GENERAL**

Standards

Current editions: Use Australian or other standards applicable to the works which are the editions, with amendments, current one month prior to the closing date for tenders.



2 **INSPECTION**

Covering up

Where notice of inspection is to be given in respect of any part of the works do not cover that part up without approval.

Minimum notice required so that inspections may be made: 24 hours

3 **SAMPLES**

Quantity

Submit at least one of each item and two copies of any supporting documentation for review. Keep approved samples in good condition on the site for reference, until practical completion.



4 **TESTS**

Testing authority

Carry out any testing required by the Engineer using an authority registered by the National Association of Testing Authorities (NATA) to test in the relevant field, except for tests to installed services.



5 **CONTRACTOR'S SUBMISSIONS**



Work-as-executed drawings

Show the "as installed" locations of building elements services, plant and equipment. Show coordinate dimensions where applicable.

- Format: Use the same format as the contract drawings. The superintendent may supply transparencies of the contract drawings as the basis for work-as-executed drawings, on request.
- Drawings in manuals: Include in each operation and maintenance manual a copy of work-as-executed drawings relevant to that portion of the works, revised to show any changes found necessary for the satisfactory operation and maintenance of plant and equipment.

Warranties

Name the principal as warrantee.

Provision: Provision of warranties does not affect the responsibilities of the contractor under the contract.

Provide evidence of all warranties. Commencement date to be the date achieved for Practical completion.

Authority's approvals

Submit the documents evidencing approval of the authorities whose requirements apply to the work.

6 **MATERIALS AND COMPONENTS**

Proprietary items

Definition: A proprietary item is any item identified by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.

Implication: Identification of a proprietary item does not necessarily imply exclusive preference for the item so identified, but indicates the required properties of the item.

Alternatives: The superintendent may reject any alternative proposed. If alternative items are accepted any cost difference will be treated as a variation.

Manufacturers' or suppliers' recommendations

Select, where no selection is given, and store, handle and use manufactured items in accordance with the current published recommendations of the manufacturer or supplier.

7 **GENERAL**

Cross references

Refer to the following sections:

- GENERAL REQUIREMENTS.
- GROUND WORKS, for clearing, excavation and excavation support.

Standard

To AS 2601.

8 INSPECTION

Notice

Give sufficient notice so that inspection may be made at the following stages:

- installation of temporary supports where necessary.

9 MATERIALS AND COMPONENTS

Hazardous materials

Give notice immediately any hazardous materials or conditions are found.

Demolished materials

Except for materials to be salvaged or re-used, demolished materials are the property of the contractor and must be removed from the site. Do not burn or bury demolished materials on the site.

Salvage: Recover materials to be salvaged or re-used without damage.

Re-use: Re-use only materials recovered from the demolitions in a sound and suitable condition.

Storage: Store in an approved location any materials to be re-used.

Removal: Cover materials in transit to prevent spillage.

10 DEMOLITION

Support

Provide temporary support for sections of existing buildings which are to be altered and which normally rely for support on work to be demolished. Support until permanently supported on new work. Clear away temporary supports on completion.

Weather protection

If walls or roofs are opened for alterations and additions or the surfaces of adjoining buildings are exposed, provide temporary covers to prevent water penetration. Provide covers to protect existing plant and equipment and materials intended for re-use.

Dust protection

Provide dust-proof screens, bulkheads and covers to protect existing finishes and the immediate environment from dust and debris.

Security

If a wall or roof is opened for alterations or additions, provide security against unauthorised entry to the building.

1 GENERAL**Cross references**

Refer to the following sections:

- GENERAL REQUIREMENTS.
- DEMOLITION, for demolition of existing structures and services.
- STORMWATER, SANITARY SERVICES, WATER, GAS and WIRING AND ACCESSORIES, for service trenches.
- PAVING and ROADS, for subgrade preparation.
- LANDSCAPE, for placing topsoil, tree surgery and surplus topsoil.

**2 INSPECTION****Notice**

Give sufficient notice so that inspection may be made at the following stages:

- Enclosures to trees to be retained.
- Excavation completed to contract levels or founding material.
- Services laid in trenches and ready for backfilling.

Immediate notice

If rock or bad ground are encountered, give notice immediately and obtain instructions before carrying out any further work in the area.

3 MEASUREMENT**General**

If there are variations to the contract dimensions of excavations, do not commence backfilling or place any permanent works in the excavation until the excavation and backfilling quantities have been agreed and recorded by the Engineer.

**4 TREES TO BE RETAINED****Protection**

Protect from damage the trees to be retained, including those beyond the contractor's site area. Do not remove topsoil from the area within the dripline of the trees and keep this area free of construction material and debris.

Enclosures

Provide temporary protective enclosures consisting of four strands of fencing wire, or plastic mesh barrier, supported on star pickets spaced at not more than 4 m.

Trees to be enclosed: All retained trees.

**5 EXISTING SERVICES****Marking**

Before commencing ground works, locate and mark existing underground services in the areas which will be affected by the ground works operations including clearing, excavating and trenching.

**6 ENVIRONMENTAL PROTECTION****Erosion control**

Plan and carry out the work to avoid erosion, contamination, and sedimentation of the site, surrounding areas, and drainage systems. Provide silt-arresting measures as required.

**7 SITE CLEARING****Extent**

The site clearing, topsoil stockpiling, and bulk excavation of the site to provide clearances indicated on the drawings..

Clear only the site areas occupied by works such as buildings, paving, excavations, regrading and landscaping and areas identified as areas to be cleared.

Clearing operations

Remove everything on or above the site surface, including rubbish, scrap, grass, vegetable matter and organic debris, scrub, trees, timber, stumps, boulders and rubble. Remove grass to a depth just sufficient to include the root zone.

Spoil

Remove from site and dispose of surplus excavated material or site clearance material. Stockpile topsoil on site for re-use in landscaped areas. Provide adequate silt barriers around such stockpiles.

8 EXCAVATION

Extent

Site surface: Excavate over the site to give correct levels and profiles as the basis for construction and paving. Make allowance for compaction or settlement.

Footings: Excavate for footings, pits, wells and shafts, to the required sizes and depths. Confirm that bearing capacity is adequate.

Supports

Remove temporary supports progressively as backfilling proceeds.

Bearing surfaces

Provide even plane bearing surfaces for loadbearing elements including footings. Step to accommodate level changes. Make the steps to the appropriate courses if supporting masonry.

Reinstatement

Where excavation exceeds the required depth, or deteriorates, reinstate to the correct depth, level and bearing value.

Explosives

Do not use explosives.

9 GRADING

External areas

Grade to give falls away from buildings, minimum 1:100. or as shown on drawings.

10 SURFACE PREPARATION

General

Prepare the ground surface before placing fill, ground slabs or load bearing elements. Remove loose material, debris and organic matter and compact the ground to achieve the required density.



11 FILL

Source

Provide fill free from perishable matter, imported on to the site from an approved source unless the fill type can be provided from spoil recovered from the excavations or designated borrow pits.

**Imported fill**

Prior to placing any imported fill, submit certification or test results which establish its compliance with the contract.

12 PLACING FILL

General

Place fill in layers and compact each layer to achieve the required density.



13 SERVICE TRENCHES

Excavation

Excavate for underground services. Generally make the trenches straight between manholes, inspection points and junctions, with vertical sides and uniform grades.

Trench widths

Keep trench widths to the minimum consistent with the laying and bedding of the relevant service and construction of manholes and pits.

Backfilling

Backfill service trenches as soon as possible after approval of the laid and bedded service. Compact to the required density.

Backfill material: General fill with no stones retained on a 25 mm sieve occurring within 150 mm of the service, or other materials as required for particular services or locations.

- Under roads and paved areas: Coarse sand or fine crushed rock.

Reinstatement

Reinstate existing surfaces removed or disturbed by trench excavations to match existing and adjacent work.

14 TERMITE BARRIER AND DAMPCOURSE

A Termite barrier and damp-proof course are to be installed by specialist installers under separate contract prior to this contract.

Provide termite barrier 'Termimesh' stainless steel mesh system installed by accredited franchisee to new extensions and between new paving and adjoining existing walls.

15 ON COMPLETION

Grade all ground surfaces disturbed by construction work to falls away from building and pavements and finish flush with pavings with min. 150 mm topsoil neatly raked. (unless otherwise required in 'Landscape' section.

1 GENERAL**Cross references**

Refer to the following sections:

- GENERAL REQUIREMENTS.
- ROADS and PAVING for subbase and base to concrete pavements.

Standards

Materials and construction: To AS 3600 and AS 3610.

2 INSPECTION**Notice**

Give sufficient notice so that inspection may be made at the following stages:

- Termite barrier and film underlay installed on the base.
- Completed formwork, and reinforcement, cores and embedments fixed in place.
- Commencement of concrete placing.

3 TESTS**Compressive strength**

Sample, test, and assess: To AS 3600 Section 20. As required by Engineer.

**4 VAPOUR BARRIER****General**

Provide a vapour barrier under internal slabs on ground including integral ground beams and footings.

Material

Polyethylene film: To AS 1326, grade IR 3, 0.2 mm thick, pigmented and branded by the manufacturer.

Base preparation

Blind the surface with sufficient sand to cover any hard projections. Wet the sand just before placing the underlay.

Installation

Lay over the base, lap joints 200 mm and seal the laps with waterproof adhesive tape. Seal penetrations with waterproof tape.

5 FORMWORK**Surface finish class**

Use the applicable class from AS 3610 table 3.3.1.

Visually important surfaces

For concrete of surface classes 1, 2 or 3, set out the formwork to give a regular arrangement of panels, joints, bolt holes, and similar visible elements in the formed surface. Form 45° bevels, 25 mm on the face on corners and angles.

6 REINFORCEMENT**General**

Supply and fix reinforcement, including tie wires, support chairs, spacers and accessories. Identification: Supply reinforcement which is readily identifiable as to grade and origin.

7 CONCRETE**Ready mixed supply**

To AS 1379, by the batch production process. Deliver in agitator trucks.

Admixtures: Do not use admixtures containing significant chlorides.

Concrete placing

Place concrete in layers such that each succeeding layer is blended into the preceding one by the compaction process.

Placing slabs and pavements: Place concrete uniformly over the width of the slab so that the face is generally vertical and normal to the direction of placing.

Compaction

Fully compact the concrete to remove entrapped air, but avoid over-vibration that may cause segregation.

Curing

During the curing period maintain the concrete, with minimum moisture loss, at a reasonably constant temperature, not excessively hot or cold, by a suitable proved method.



8 JOINTS

Construction joints

Joint preparation: Roughen and clean the hardened concrete joint surface, remove loose or soft material, free water, foreign matter and laitance. Dampen the surface just prior to placing the fresh concrete.

Movement joints

Joint filling: Fill movement joints with recommended jointing materials. Finish visible jointing material neatly flush with adjoining surfaces.

9 FINISHES TO UNFORMED SURFACES



Screeding

Finish slab surfaces by approved means to finished levels. Produce surfaces to tolerance Class B.

Finishing methods

Machine floated finish: Finish the screeded surface with approved power driven equipment to a uniform smooth texture. Hand float in locations inaccessible to the machine float.

Steel trowelled finish: Use steel hand trowels to produce the final finish free of trowel marks and uniform in texture and appearance.



10 REINFORCED CONCRETE PAVEMENTS

Concrete placing

Preparation for placing: Moisten the subgrade sufficiently in advance of placing to ensure a firm, uniform moist surface at the time of placing. Remove loose material and debris from the surface. Do not operate construction equipment on the prepared surface.

Temperature limits: The temperature of the concrete when placed in the forms must not be less than 10°C nor more than 32°C. Do not place concrete when the shaded air temperature is less than 4°C.

Joints

- Joint filler: 15 mm thick preformed self expanding cork or zipped polyethylene foam with an approved joint sealant.

Contraction joints: Form weakened plane joints to a width of 3 mm and a depth at least one quarter of the depth of concrete. Withdraw the former during finishing and tool the joint to a 6 mm radius.

- Sawn joints: Where approved, contraction joints may be constructed by sawing the hardened concrete.



1 GENERAL

Cross references

Refer to the following sections:

- GENERAL REQUIREMENTS.
- PAINTING, for on-site painting.
- CONCRETE, for installation of foundation bolts.

Standard

To AS 4100.

2 INSPECTION

Notice

Give sufficient notice so that inspection may be made at the following stages:

- Commencement of shop fabrication.
- Surface preparation prior to shop painting.
- Steelwork and column bases erected on site, prior to grouting, encasing, site painting or cladding.

3 CONTRACTOR'S SUBMISSIONS

Shop drawings

Submit shop drawings showing the following information:

- Relevant details of each assembly, component and connection.
- Information relative to fabrication, surface treatment, transport and erection.
- Temporary works such as lifting lugs, temporary cleats and bracing which are required for transport and erection of the structural steelwork.

Compliance

Provide evidence that the steel used in the work complies with the required material standards.

4 MATERIALS AND COMPONENTS

Standards

Materials generally: To AS 4100 Section 2.

Cold-formed sections: To AS 1538 clause 1.7.



5 CONSTRUCTION GENERALLY

Availability

If steel members are not available in the required section, grade or length, obtain approval before substituting other sections or grades or splicing shorter lengths.

Beam camber

If beam members have a natural camber within the straightness tolerance, fabricate and erect them with the camber up.

Site work

Other than work shown on the shop drawings as site work, do not fabricate or weld structural steel on site without approval.

Identification marks

Provide marks or other means for identifying each member, and for the setting out, location, erection and connection of the steelwork. If the work includes more than one bolting category, mark bolted connections to show the bolting category.

Foundation bolts

Hexagonal commercial bolts: To AS 1111, hot-dip galvanised to AS 1214. Supply each foundation bolt with 2 nuts and 2 oversize washers and provide sufficient thread to permit the levelling nut to be set below the base plate.

Masonry anchors: If masonry anchors are required or proposed for the support or fixing of structural steel, submit evidence of the anchor capacity to carry the load.

Temporary connections

Do not attach cleats without approval. Remove temporary cleats on completion and restore the surface.

Hand flame cutting

Do not hand flame cut bolt holes without approval.



- 6 **GALVANISING**
Structural sections
To AS 1650.

Threaded fasteners
To AS 1214.

Components in contact with concrete

Passivate galvanised surfaces to be cast into or in contact with concrete by dipping in 0.2% sodium dichromate solution.

Friction-type bolted connections

Treat contact surfaces to achieve the required slip factor.

- 7 **PROTECTIVE COATING**

Surface preparation

Methods: To AS 1627.

Steel surfaces generally: (Including surfaces not otherwise treated and contact surfaces with concrete encasement or grout): Remove loose millscale, loose rust, oil, grease, dirt, globules of weld metal, weld slag and other foreign matter.

Site connections: After completing the connection, prepare the surface of the connection, adjacent un-primed surfaces and surfaces damaged during erection.

Protective coating

Shop work: Apply the primer coat or protective system and finish coats to the structural steel before delivery to the site.

Transport and handling: Protect the paintwork from damage during transport and handling.

Site work: After erection, repair any damage to the shop coating and apply the coating, if any, omitted at site connections.

Time delay: Prime the steel surface as soon as possible after surface preparation and prior to any deterioration of the surface. If the surface is contaminated or rust bloomed, repeat the surface preparation before applying the primer.

1 GENERAL

Cross references

Refer to the following sections:

- GENERAL REQUIREMENTS.
- PLASTERING, for render.
- INSULATION, for cavity insulation.
- WOODWORK, for coordination with timber frames and trusses.
- ROOFING, for roof flashings.

Standard

Materials, construction and detailing: To AS 3700.

2 INSPECTION

Notice

Give sufficient notice so that inspection may be made at the following stages:

- Damp-proof courses and termite barriers.
- Bottoms of cavities after cleaning out.
- Bottoms of core holes before grouting.
- Control joints ready for insertion of joint filler.

3 SAMPLES

Masonry unit samples

Submit four face units of each type illustrating the range of variation available.

Facework sample panels

Prepare in a suitable position a sample panel of each type of facework including face or pointing mortar.

Facework type: To blend existing

4 MATERIALS AND COMPONENTS

Masonry units

Face units: Masonry units used in facework, including purpose-made units such as squints and sills, as per schedule, to be confirmed on site.

Selection

Allow the sum in the PC Schedule for the cost of supply and delivery per 1000 face bricks.

Steel components

Galvanising: Galvanise steel components (including fasteners) to AS 1214 or AS 1650 as appropriate, where

- exposed to weather;
- embedded in masonry;



Bricks and blocks schedule

Type of unit	Clay bricks to As 12225, including Appendix A
Selection:	Face bricks as selected and for 2 - colour banding
Proprietary item:	-
Location:	Boundary wall
Manufacturing dimensions:	225 x 110 x 76

Mortar materials

Sand: Fine aggregate with a low clay content and free from efflorescing salts, selected for colour and grading.

Mortar mix table

Mortar proportions (cement:lime:sand)	Location
1:0:5 + water thickener	Concrete masonry
1:0:4 + water thickener	Grouted and reinforced masonry
1:0 to 1.25:3	Underpinning, high strength masonry
1:1:6	All other masonry

5 CONSTRUCTION GENERALLY

Cleaning

Clean masonry progressively as the work proceeds. Clean facework to remove mortar smears, stains and discolouration. If acid cleaning is intended, submit proposal.

Concealed work

Cut the joints flush in concealed masonry.

Sills and thresholds

Solidly bed masonry sills and thresholds and lay them so that the top surfaces drain away from the building.

Joints and cutting

Set out masonry with joints of uniform width and the minimum cutting of masonry units.

Rod

76 mm high units: 7 courses to 600 mm. Set out to avoid cut courses to concrete elements.

90 mm high units: 6 courses to 600 mm.

190 mm high units: 3 courses to 600 mm.

Bond

Use stretcher bond in single leaf construction.

6 FACEWORK

Definition

Masonry in which the form, or form and colour, of the units and joints is visible in the completed works.

Location: Boundary wall.

NOTE: second colour bricks for "banding" to detailed set out.

Commencement

Commence facework not less than one full course, or 175 mm, whichever is the greater, below adjacent finished ground level.

Perpends

Keep perpends in alternate courses vertically aligned.

Joints

Work with a jointing tool to a dense smooth surface.

Joint profile: ironed

Colour: to be selected with brick.

Colour mixing

If the colour of the face units is visible, distribute the colour range of units evenly to prevent colour concentrations and "banding".

7 EXISTING WALLS

Brickwork

Extensions to or patching of existing brickwork is to be bonded and coursed to match adjacent existing work.

Bagging

Apply light mortar slurry mix to provide matching surface and texture to adjoining painted brickwork in preparation for paint finish.

8 DAMP-PROOF COURSES

Material

To AS 2904.

Required material: Embossed black polyethylene 0.5 mm thick 460 g/m²

Location

Provide damp-proof courses in the following locations where applicable:

- Walls adjoining infill floor slabs on membranes: In the course above the underside of the slab in internal walls and inner leaves of cavity walls. Project 40 mm and dress down over the membrane turned up against the wall.
- Cavity walls built off slabs on ground: In the bottom course of the outer leaf, continuous horizontally across the cavity and up the inner face bedded in mortar, turned 30 mm into the inner leaf one course above. Project 10 mm beyond the external slab edge and turn down at 45°.
- Internal walls built off slabs on ground: In the first course above floor level.



9 CAVITY WALLS

Minimum cavity width

Masonry walls: 50 mm.



Cavity flashings

Material: To AS 2904.

Required material: Embossed black polyethylene 0.5 mm thick 460 g/m²

Location: Provide flashings and weathering in the following locations where applicable:

- Floors: Full width of outer leaf immediately above slab or shelf angle, continuous across cavity and up the inner face bedded in mortar, turned 30 mm into the inner leaf two courses above.
- Under sills: 30 mm into the outer leaf bed joint one course below the sill, extending up across the cavity and under the sill.
- Over lintels to openings: Full width of outer leaf immediately above the lintel, continuous across cavity, 30 mm into the inner leaf two courses above; or, in masonry veneer construction, turned up against the inner frame and fastened to it. Extend at least 50 mm beyond the lintels.

Weepholes

Provide weepholes in the form of open perpend to external leaves of cavity walls in the course above damp-proof courses, flashings, and cavity fill, and at the bottoms of unfilled cavities.

Spacing: Not exceeding 1200 mm.

Wall tie installation

Fixing of masonry veneer ties at abutments: To AS 2699 clause 8.5, and as follows:



Material: Galvanised steel

Spacing: Every fourth course, approximately 1m centres

Flexible wall ties

If ties or anchors extend across control joints use ties or anchors which maintain the stability of the masonry without impairing the effectiveness of the joint.

Proprietary item: Flexible masonry ties

10 MOVEMENT JOINTS

Joint material

Use sealant and bond breaking backing material compatible when used together, and non-staining to masonry.

Sealant: Dow Corning 790 Silicone neutral cure.

Backing rod: Polyethylene

Primer: As required by manufacturer

Colour: to match mortar

Installation: Clean the joints thoroughly before sealing.

Sealant depth: Not less than two-thirds the joint width nor more than the joint width.

Joint width

Vertical joints: 10 mm



11 BED JOINT REINFORCEMENT

Width Equal to the width of the leaf or solid wall, less 15 mm cover from each exposed surface of the mortar joint.

Installation

Lap reinforcement 450 mm at splices. Fold and bend at corners so that the longitudinal wires are continuous. Stop 200 mm short of control joints.

In brickwork: Extend 450 mm beyond each side of openings.

Material: Bricktor

Placement

Place in bed joints in the courses below the top and above the bottom of walls, and below and above openings.



12 STEEL LINTELS

Material

Mild steel flat or angle lintels galvanised to AS 1650, class Z600, complying with the Steel lintels table.

Steel lintels table

Maximum span (mm)	Lintel dimensions (mm)	Bearing each end (mm)
1050	75 x 10	150
1200	75 x 75 x 8	150
1350	90 x 90 x 8	150
1500	90 x 90 x 8	150
1650	100 x 75 x 8	150
1800	100 x 75 x 8	150
2100	125 x 75 x 10	230
2400	125 x 75 x 10	230
3000	150 x 90 x 12	230

Installation

Provide one lintel to each wall leaf. Do not cut on site. Keep lintels 6 mm clear of heads and frames. Pack mortar between the angle upstand and supported masonry units.

NOTE: Fire protection is required to steel lintels exceeding 1800 span in accordance with B.C.A.

1 GENERAL**Cross references**

Refer to the following sections:

- GENERAL REQUIREMENTS.
- GROUNDWORKS, for chemical termite barriers.
- MASONRY, for brick veneer coordination.
- ROOFING, for gutter and sump support.
- CLADDING, for timber cladding and eaves bearers.
- INSULATION, for sarking, insulation and vapour barriers.
- WINDOWS, for timber windows.
- DOORS, for timber doorsets.
- LINING, for timber lining.
- FIXED FURNITURE, for factory-made fixed joinery.
- TILING, for wet area coordination.
- WIRING AND ACCESSORIES, for ducted skirtings.
- FENCING, for timber fences.

Standard

To AS 1684.

2 INSPECTION**Notice**

Give sufficient notice so that erected structural woodwork may be inspected before it is covered, for example by sheeting, lining and roofing.

3 CONTRACTOR'S SUBMISSIONS**Prefabricated Items**

Submit outline drawings of fitments sufficient to show form, construction and finishes for approval prior to fabrication.

4 TIMBER

- certification: provide a supplier's certificate (which may be included on an invoice or delivery docket) showing that the timber complies with the specification.

Durability

Use timbers having natural durability appropriate to the conditions of use, or preservative-treated timber of equivalent durability.

- Classification: To AS1270.2

**Finished sizes**

Use milled timbers or nominal sizes with actual dimensions which are not less than the allowable dimensions, stated in Table 1.1 of the National Timber Framing Code AS 1684 allowing for sawing and shrinkage.

Unseasoned timber

Where in moisture are likely, make allowance for shrinkage, swelling and differential movement. Unseasoned timber is not to be used.

**5 FASTENERS AND ADHESIVES****Fasteners**

Use fasteners capable of transmitting the loads imposed, and sufficient to ensure the rigidity of the assembly. Do not split or otherwise damage the timber.

Steel nails: To AS 2334.

Self-drilling screws: To AS 3566.

Hexagon bolts and screws: To AS 1111.

Coach screws: To AS 1393.

Hexagon nuts: To AS 1112.

Metal washers: To AS 1237. Provide washers to the heads and nuts of all bolts and coach screws.

Steel straps: Zinc-coated steel to AS 1397/Z200. 25 x 1 mm or 30 x 0.8 mm.

Galvanising: Galvanise mild steel components (including fasteners) to AS 1214 or AS 1650 as appropriate, where

- exposed to weather;
- embedded in masonry;
- in external timbers such as weatherboards or decking; and
- in contact with chemically treated timber.

Adhesives

Use adhesives capable of transmitting the loads imposed, and sufficient to ensure the rigidity of the assembly. Do not cause discolouration of finished surfaces.

Elastomeric adhesive: To AS 2329.

Polymer emulsion adhesive: To AS 2754.2, not inferior to Type 3.

Structural adhesives: To AS 1328.

Nailing Strips

Where timber joists, rafters or purlins bear on steel members, provide 50mm thick nailing strips bolted at maximum 450mm centres to the flange of the steel member, unless otherwise detailed on structural engineers drawings.

6 FLOORS

Patching To Upper Floor

T and G boards to match existing, fixed to joists or trimming framing to provide flush sound surface, for carpet finish.

7 WALL FRAMING (partition walls where shown)

Timber species - pine or oregon

Grade - F5

Minimum sizes

- Studs - 100 x 50

- Top & Bottom Plates - 100 x 50

Stud spacing - 450mm maximum

Noggings - As required o match stud width x 50mm max. spacing
1350mm centres

8 ROOF FRAMING

Roof framing members to be sized in accordance with the National Timber Framing Code AS1684. Provide supplementary framing and trimmers where existing support is modified by new openings in supporting walls or for manholes, air conditioning registers or services.

9 ROOF TO EXTENSION

To new disableds' toilet area, flat roof deck for membrane later specified is to be constructed as a suspended concrete slab (as per 'Concreting section).

Extend deck through capping to rainwater head.

10 TRIM

General

Provide trim for finish such as 32 beads, mouldings and stops where necessary to make neat junctions between components and finishes. Generally in Araucaria for paint finish.

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Skirtings: 225 x 32 detail moulded.

Composite ducted: 150 extruded aluminium ducted skirting capped with 75 x 25 detail moulded timber skirting.

architraves: 150 x 32 detail moulded.

sills: To match existing

fascias: To match existing profile, including eaves lining board and scotia moulding for repairs to existing where damaged.

11 TOILET PARTITIONS

Description

Provide a proprietary cubicle system complete with doors and hardware.

Cubicle system

Panel type:	Laminate - faced and edged.
- Finish:	MDF board.
- Colour:	To be advised.
Mounting type:	Top mounted anodised aluminium channel. 2 x brass dowel fixed to floor.
Panel dimensions:	
- Divisions:	1840 high 200 clear of floor (2040 total) x 1500 nominal
- Front:	294
- Nib:	TTO
- Door:	1600 h x 600
- Shower seats:	Handrail Industries type 290/2 or equal, to Disableds' Room. Fixed laminate faced MDF to First Floor Shower.
Shelf:	300 x full width shelf to each toilet cubicl in matching 32 mm laminate-faced material, above cistern 1300 above floor.
Clearances:	
- Finished floor to underside:	200
- Finished floor to top:	2040
Hardware:	2 x Bolt through hold-open spring hinges. 1 slotted indicator, 1 bolt and staple, 1 x coat hook bumper.

1 GENERAL

Cross references

Refer to the following sections:

- GENERAL REQUIREMENTS.
- WOODWORK, for material and component requirements for timber generally.
- LINING, for soffits.
- INSULATION, for insulation, vapour barrier and sarking.

2 INSPECTION

Notice

Give sufficient notice so that inspection may be made of framing complete with sarking and flashings ready to receive cladding.

3 MATERIALS AND COMPONENTS

Western Red Cedar Shakes

To rear courtyard spandril panels 450 long, split and re-sawn by Tillings Timber Pty Ltd.

Durability

Use timbers having natural durability appropriate to the conditions of use.

Classification: To AS 1720.2.

Minimum requirements:

- Class 2: Timbers above ground, not in continuous contact with moisture, well ventilated, protected from moisture but exposed to the weather.

Flashings

To AS 2904.

Material: lead 1.8 mm thick.

Fasteners

Stainless steel nails:

4 CONSTRUCTION GENERALLY

Substrates or framing

Remove existing shakes and fibro external cladding panels.

Before fixing cladding check and, if necessary, adjust the alignment of substrates or framing.

Apply 16 mm weatherproof plywood backing over spandrils. Apply shakes in two-layer configuration, all in accordance with Tilling's fixing manual.

Accessories and trim

Provide all accessories and trim necessary to complete the installation.

1 GENERAL

Cross references

Refer to the following sections:

- GENERAL REQUIREMENTS.
- INSULATION, for insulation, vapour barriers, and sarking.
- ROOF TILES

2 MATERIALS AND COMPONENTS

Existing roof tiles to be retained and coated.

3 TILING

Repairs

Check extg. roof for damaged tiles and replace as necessary. Repair pointing where defective.

Coating

'Emerclad' heavy-bodied acrylic, applied by specialist contractor

Colours

Accredited by Emery Chemicals Pty Ltd. To be selected, with ridge capping in tonal variation to body colour.

4 METAL ROOFING

Location

Remove extg. klip-lok roofing from west verandahs and replace with new colourbond material.

Description

Use a proprietary system of preformed sheet and purpose-made accessories.

Design and installation:	To AS 1562.1.
Material:	Zincalume Steel
Proprietary item:	BHP Klip-Lok Hi-Ten
Finish:	Roof: Colorbond
Colour:	To be selected
Thickness:	Zincalume. BMT 0.48
Fixing:	To manufacturers written specification
Accessories:	Use material with the same finish as roofing sheets.

Eaves

Treat ends of sheets as follows:

- Project sheets 50 mm into gutters.
- Close off ribs at bottom of sheets by purpose-made fillers or end caps.



Metal separation

Prevent direct contact between incompatible metals, and between green hardwood or chemically treated timber and aluminium or coated steel, by either

- applying an anti-corrosion, low moisture transmission coating to contact surfaces; or
- inserting a separation layer. 🍎 🍎 🍎 🍎 🍎

MEMBRANE ROOFING

Location

To first floor front verandah and to rear toilet roof to replace existing bituminous felt membranes to new disableds' toilet wing flat roof.

Preparation

Remove existing membranes, check substrate for soundness and suitability to receive new material and prepare as necessary.

Installation

Wolfen Membrane Australia Pty Ltd (Rockdale, Tel (02) 597 7066) wofin IB 1.5 mm standard general purpose membrane in sheet PVC/Polyeser complete with edge profile, accessories and welded -seam installation. Membrane to be turned down over verandah edges and up and sealed to adjoining wall faces and sealed over upstanding edges of flat roofs.

5 ROOF PLUMBING**General**

Provide the fascias, soffit linings, flashings, cappings, gutters, rainwater heads, outlets and downpipes, necessary to complete the roof system.

Materials

Metal rainwater goods: To AS 2179 and AS 2180, including installation.

Flashing material: To AS 2904.

Required flashing material: Zincalume Colorbond finish
 EPDM Flexible rubber 'Dektite'

Jointing sheet metal rainwater goods

Soldered joints: Do not solder aluminium or aluminium/zinc coated steel.

Sealing: Seal fasteners and mechanically fastened joints. Fill the holes of blind rivets with silicone sealant.

Flashings and cappings

Flash roof junctions, upstands, abutments and projections through the roof. Preform to required shapes where possible. Notch, scribe, flute or dress down as necessary to follow the profile of adjacent surfaces. Mitre angles and lap joints 150 mm in running lengths. Provide matching expansion joints at 6 m maximum intervals.

Upstands

Flash projections above or through the roof with two part flashings, consisting of a base flashing and a cover flashing, with not less than 100 mm vertical overlap. Provide for independent movement between the roof and the projection.

Wall abutments: check existing and replace as necessary overflashings where roof abuts walls, stepped to the roof slope in masonry, otherwise raking.

To steel cladding surface mounted pressed to profile flexible strip flashings.

In masonry: 1.8 mm lead.

**Gutters****Eaves Gutters:**

Colourbond zincalume quad gutter to match existing.

Downpipes

Colorbond zincalume connected to outlets, neatly contoured to projections 100 x 50.

Lining: Colorbond zincalume 0.55mm thick.

Rainwater Heads: Fabricate in 0.8mm thick Colorbond zincalume sheet to sizes shown, to detailed profile.

Metal separation

Prevent direct contact between incompatible metals, and between green hardwood or chemically treated timber and aluminium or coated steel, by either

- applying an anti-corrosion, low moisture transmission coating to contact surfaces; or
- inserting a separation layer. ☞ ☞ ☞ ☞ ☞

6 MEMBRANE ROOFING**Location**

To first floor front verandah and to rear toilet roof to replace existing bituminous felt membranes, and to new Disableds' wing flat roof.

Preparation

Remove existing membranes, check substrate for soundness and suitability to receive new material and prepare as necessary.

Installation

Wolfin Membranes Australia Pty Ltd (Rockdale, Telephone (02) 597 7066) Wolfin IB 1.5 mm standard general purpose membrane in sheet PVC/Polyseter complete with edge profile, accessories and welded-seam installation. Membrane to be turned down over verandah edges and up and sealed to adjoining all faces and sealed over upstanding edges of flat roofs.

7 ROOF PLUMBING**General**

The existing colorbond guttering and downpipe system is to remain. Check gradients and joints and repair as necessary. Provide new rainwater heads and pipes to new and existing flat roofs at rear.

Materials

Metal rainwater goods: To AS 2179 and AS 2180, including installation.

Flashing material: To AS 2904.

Required flashing material: Zinalume Colorbond finish
EPDM Flexible rubber 'Dektite'

Jointing sheet metal rainwater goods

Soldered joints: Do not solder aluminium or aluminium/zinc coated steel.

Sealing: Seal fasteners and mechanically fastened joints. Fill the holes of blind rivets with silicone sealant.

Flashings and cappings

Flash roof junctions, upstands, abutments and projections through the roof. Preform to required shapes where possible. Notch, scribe, flute or dress down as necessary to follow the profile of adjacent surfaces. Mitre angles and lap joints 150 mm in running lengths. Provide matching expansion joints at 6 m maximum intervals.

Upstands

Flash projections above or through the roof with two part flashings, consisting of a base flashing and a cover flashing, with not less than 100 mm vertical overlap. Provide for independent movement between the roof and the projection.

Wall abutments: Check existing and replace as necessary overflashings where roof abuts walls, stepped to the roof slope in masonry, otherwise raking.

To steel cladding surface mounted pressed to profile flexible strip flashings.

In masonry: 1.8 mm lead.

Gutters**Eaves Gutters:**

Colourbond zincuine quad gutter to match existing.

Downpipes

Colorbond zinalume connected to outlets, neatly contoured to projections 100 x 50.

Lining: Colorbond zinalume 0.55mm thick.

Rainwater Heads: Fabricate in 0.8mm thick Colorbond zinalume sheet to sizes shown, to detailed profile.

1 GENERAL

Cross references

Refer to the following sections:

- GENERAL REQUIREMENTS.

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2 MATERIALS AND COMPONENTS

Metal Roof to Rear

Insulation 75mm thick Anticon glass fibre blanket laid over battens, foil backed, on wire support, installed to AS 3999.

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Wire support to roof insulation

Use 51 mm mesh x 1 mm diameter wire netting to AS 2423. Welded safety mesh to statutory requirements may also be used to support sarking.

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Tile Roof Area (except front verandah)

R3 fibreglass batts laid between joist on top of ceiling lining or battens.

Stud Walls

Rigid 'Sonobat' fibreglass batts fitted between studs.

1 GENERAL

Cross references

Refer to the following sections:

- GENERAL REQUIREMENTS.
- GLAZING, for glass and glazing.
- HARDWARE, for hardware and keying.

2 SCOPE OF WORK

Work includes the repair, renovation or replacement of existing windows in like manner of existing window construction, and provision of new windows. And window shutters where shown. Insect screens are not required.

3 CONTRACTOR'S SUBMISSIONS

Details of intended manufacturer and sections to be used. Notify architect for inspections during progress of renovation and installation.

4 MATERIALS AND COMPONENTS

Timber

Sills: Tallowood frames and sashes; joinery grade clear oregon.
Shutters: joinery grade clear oregon

Flashings

To AS 2904.

Material: Embossed black polyethylene 0.5mm thick 460 g/m²

Metal finishes

Hardware - polished brass.

5 CONSTRUCTION GENERALLY

Standards

Metal window installations: To AS 2047 and AS 2048.

Timber window installations: To AS 2146 and AS 2147. Replace damaged or missing sections in matching profile.

Joints

Make accurately fitted tight joints so that neither fasteners nor fixing devices such as pins, screws, adhesives and pressure indentations are visible on exposed surfaces.

Jointing materials

Use jointing and pointing materials, including sealants, mastics, primers, gaskets and compressible fillers of types compatible when used together, and non staining to finished surfaces. Do not use bituminous materials on absorbent surfaces.

Silicone sealants: Neutral cure silicone, paintable.

Operation

Ensure moving parts operate freely and smoothly, without binding or sticking, at correct tensions or operating forces and that they are lubricated where appropriate. Replace all sah cords with synthetic fibre cord. Oil pulleys.

Installation

Install the windows so that the frames

- are plumb, level, straight and true within acceptable building tolerances;
- are adequately fixed or anchored to the building structure; and
- will not carry any building loads, including loads caused by structural deflection or shortening.
- are weatherproof and adequately flashed and sealed to prevent water penetrating the building.

Fixing

Packing: Pack behind fixing points with durable full width packing.

Fasteners: Conceal all fasteners.

Internal trim

Provide mouldings, architraves, reveal linings, and other internal trim

using materials and finishes matching the existing window frames. Refer to woodwork section for trim.

6 WINDOW ASSEMBLIES

Timber box - framed windows, double-hung sashes counterbalanced with correctly sized cast iron weights on synthetic sash cord over brass pulley blocks, to match existing or repaired existing units.

Casements

Timber casements to rear passage areas repaired existing units or replaced as appropriate, to match existing, to have sashes fixed closed and sealed, and sash closer-arms removed.

7 GLAZING

Prepare sashes for glazing as specified in glazing section, including replacing most windows glass with 6 mm laminated glass for sound insulation.

Louvre windows

Extruded aluminium channel frames powdercoated finish in selected color with moulded 152m polypropylene blade holders, complete with manual remote open/close operation and top & bottom PVC weatherstrips. As manufactured by Louvre Windows Australia, 11/198-222 Young Street, Waterloo 2017. (02) 318 2466. Fit assemblies to existing and new toilet window frames.

7 GENERAL

Cross references

Refer to the following sections:

- GENERAL REQUIREMENTS.
- WINDOWS, for window glazing.
- DOORS, for door glazing.

Standard

To AS 1288.

8 MATERIALS AND COMPONENTS

Standards

Glazing compounds, sealants and tapes (where used with aluminium): To AAMA 800.

Glass type and thickness

To AS 1288 where no glass type or thickness is given.

To all new and existing windows and external glazed doors except louvre blades: 6 mm laminated clear glass to replace existing, for noise insulation.

To louvre blades: Spotswood obscure glass. To rear area G10, G11, F8 highlight panels: Coloured glass as existing laminated to approximately 10 mm.

Quality

Use glass and glazing materials as follows:

- General: Free from defects which detract from appearance or interfere with performance under normal conditions of use.
- Glazing plastics: Free from surface abrasions, and warranted by the manufacturer for ten years against yellowing or other colour change, loss of strength and impact resistance, and general deterioration.
- Other glazing materials (including putty, glazing compounds, sealants, gaskets, glazing tapes, spacing strips, spacing tapes, spacers, setting blocks and compression wedges): Appropriate for the conditions of application and the required performance.

9 GLAZING

Glass processing

Perform required processes on glass, including cutting, obscuring, silvering and bending. Form necessary holes, including for fixings, equipment, access holes and speaking holes. Process exposed glass edges to a finish not inferior to ground arressed.

Installation

Install the glass so that

- each piece is held firmly in place by permanent means which enable it to withstand the normal loadings and ambient conditions at its location without distortion or damage to glass and glazing materials;
- building movements are not transferred to the glass; and
- external glazing is watertight and airtight.

Temporary marking: Use a method which does not harm the glass, and remove all traces on completion.

Toughened glass: Do not cut, work, or permanently mark after toughening. Use installation methods which prevent the glass making direct contact with metals or other non resilient materials.

On completion: Replace damaged glass and leave the work clean, polished, free from defects, and in good condition.

Pre-glazing

Supply the window assemblies and glazed doors inclusive of glazing, shop pre-glazed unless pre-glazing is impracticable.

Fixing mirrors

Frame fixing: Proprietary aluminium frames anodised to selected colour, all round the mirror, corners mitred. Bed glass edges in a continuous resilient gasket. Attach the frame to the substrate with concealed screw fixings. Seal the frame to the substrate with a paintable sealant which does not react with the mirror coating. Do not allow the sealant to contact the mirror back.

Mirrors Schedule

Location & Size:

- above basins 900 high x600 wide in WC's and to shower room.
- as shown 1000 high x 600 wide in Disableds' WC. (mount in accordance with AS 1428.1)
- above vanity benches 1000 high x width of bench. Type: clear plate 'copperback' coated silver. With 2 coats mirror back and edge sealing paint.

1 GENERAL**Cross references**

Refer to the following sections:

- GENERAL REQUIREMENTS.
- GLAZING, for glass and glazing.
- HARDWARE, for hardware and keying.

2 MATERIALS AND COMPONENTS**Doorsets and doors**

Timber doorsets: To AS 2689.

Flush doors and joinery doors: To AS 2688.

Fire resistant doorsets: To AS 1905.1.

Door and frame installation: To AS1909

Hardware

Prepare doors for hardware as detailed and as described in Hardware section

3 CONSTRUCTION GENERALLY**Joints**

Make accurately fitted tight joints so that neither fasteners nor fixing devices such as pins, screws, adhesives and pressure indentations are visible on exposed surfaces.

Operation

Ensure moving parts operate freely and smoothly, without binding or sticking, at correct tensions or operating forces and that they are lubricated where appropriate.

Installation

Install doors and door frames so that they

- are plumb, level, straight and true within acceptable building tolerances;
- are adequately fixed or anchored to the building structure; and
- will not carry any building loads, including loads caused by structural deflection or shortening.
- ensure weathertight installation, including flashings, weatherbars, drips storm moulds, caulking and pointing.

4 DOOR FRAMES

Joinery grade clear oregon for paint finish, double-rebated frames ex 175 x 50 generally with matching jamb lining housed into frame to provide assembly to full width of finished wall thickness, prepared to receive architraves, to detail.

Fixing

Secure to timber walls plugs and sub-frames as required.

5 TIMBER DOORS**Description**

	Panelled doors and frames and trim to be constructed and installed as detailed.
Internal doors:	framed and panelled joinery doors, for paint finish, weatherproof to 'wet' areas. 2040 x 820 x40 generally. Other sizes indicated on drawings or as dictated by existing openings.
External doors:	framed and panelled joinery doors, for paint finish, weatherproof, glazed to upper panels. 2040 x 820 x 40 generally or to sizes as dictated by existing openings. Pairs of doors to have rebated meeting stiles.
Disableds' door assembly:	To disableds' toilet supply and install 'Jaso" pivoting door and frame unit complete with all hardware, to manufacturers instructions, for paint finish. Unit size: 1020 wide door with 2085 x 1135 brick opening.
Door under stair:	One-hour fire door and frame assembly tagged by manufacturer.

1 GENERAL**Cross references**

Refer to the following sections:

- GENERAL REQUIREMENTS.

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2 MATERIALS AND COMPONENTS**Steel**

Tube: To AS 1163.

Bar sections: To AS 3679.1.

Sheet: To AS 1595.

Steel for powder coating and electroplating

Electric resistance welded tube: To AS 1450 "bright".

Cold rolled bar: To AS 1443 "bright".

Cold rolled sheet: To AS 1595/CA2S-E.

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Galvanising: To AS 1214.

3 CONSTRUCTION GENERALLY

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Fabrication

Fabricate and pre-assemble items in the workshop wherever practicable.

Edges and surfaces: Keep clean, neat and free from burrs and indentations. Remove sharp edges without excessive radiusing.

Joints: Fit accurately to a fine hairline.

Tube bends: Form bends in tube without visibly deforming the cross section.

Colour finished work: Match colours of sheets, extrusions and heads of fasteners.

Thermal movement: Accommodate thermal movement in joints and fastenings.

Welding

Steel welding: To AS 1554.1.

Site welds: Do not weld on site without approval. Wherever possible locate site welds in positions for down hand welding.

METALWORK SCHEDULE

Verandah Balustrades: Cast iron lace pattern modules, handrail and bottom rail assemblies as selected and to detail, pre-finished in powdercoat.

External Stair

Cast iron modular component helical stair assembly including balustrade and upper quarter landing and fixings, pre-finished in powdercoat.

P.C. Allowance

Allow the sums included in the P.C. Schedule for the supply and installation complete of verandah balustrade and external stair assemblies as selected.

Disbleds' Toilet railings

Standard pattern railing to toilet and grab handles to shower to AS 1428.1, in linished finish stainless steel.

1 GENERAL**Cross references**

Refer to the following sections:

- GENERAL REQUIREMENTS.
- CONCRETE, for cementitious toppings.
- SANITARY SERVICES.

**2 SAMPLES****General**

Submit labelled samples of tiles, including fittings, accessories, grout and sealants, illustrating the range of variation in colour and finish.

3 MATERIALS AND COMPONENTS**Ceramic tiles**

To BS 6431 for tolerance limits on dimensions, surface quality, physical and chemical properties relevant to the product type.

Exposed edges

In positions where the edge is exposed use tiles which are purpose-made border tiles with the exposed edge (whether round, square or cushion) glazed to match the tile face. If such tiles are not available, mitre tiles on external corners.

**Spare tiles**

Provide spare matching tiles and accessories of each type for future replacement purposes. Store the spare materials on site where directed.

Quantity: Not less than 2% of the quantity installed.

Adhesives

To AS 2358.

PVA based adhesives: Do not use in wet areas or externally.

Mortar

Sand: To AS CA27, graded to Table 1 of the Appendix to that standard.

Cement: To AS 3972, Type GP.

Bedding mortar

Proportioning: Select proportions from the range 1:3 to 1:4 cement : sand to obtain satisfactory adhesion. Use minimum water.

Mixing: To AS CA27.

Grout

Cement based proprietary grout: Mix with water. Fine sand may be added as a filler in wider joints.

Pigments for coloured grout: Colourfast fillers compatible with the grout material. For cement-based grouts, lime-proof natural or synthetic metallic oxides compatible with cement.

4 WATERPROOFING WET AREAS

Completely seal wall to floor substrates of "wet" rooms using proprietary "Hardies" or "Hydrepoxy" systems of reinforced sealant turned min 100 up walls and sealed around penetrations, to manufacturer's instructions. Seal entire floor of each shower and of disabled' toilet room.

5 TILING**Sequence**

Fix wall tiles before floor tiles.

Cutting and laying

Cut tiles neatly to fit around fixtures and fittings, and at margins where necessary. Drill holes without damaging tile faces. Rub edges smooth without chipping. Return tiles into sills, reveals and openings. Butt up to returns, frames, fittings, and other finishes. Strike and point up beds where exposed. Cut recesses where necessary for fittings such as soap holders.

Bedding

Use bedding methods and materials which are appropriate to the tile, the substrate, the conditions of service, and such as to leave the tile firmly and solidly bedded in the bedding material and adhered to the substrate. Falls must be formed integral with the substrate.

Thin bed: Minimum thickness 1.5 mm, maximum 3 mm. May be used when the substrate deviation does not exceed 3 mm when tested with a 2 m straight edge. Cover the entire tile back with adhesive when the tile is bedded.

**6 JOINTS AND ACCESSORIES****Grouting**

Commence grouting as soon as practicable after bedding has set. Clean out joints as necessary before grouting.

Face grouting: Fill the joints solid and tool flush. Clean off surplus grout. Wash down when the grout has set. When grout is dry, polish the surface with a clean cloth.

Edges of tiles: Grout exposed edge joints.

Grouting mosaics: If paper faced mosaics are to be bedded in cement mortar, pre-grout the sheeted mosaics from the back prior to fixing. After fixing, rub grout into the surface of the joints to fill any voids left from pre-grouting. Clean off surplus grout. When grout has set, wash down. Use a proprietary cement remover if necessary.

Caulked joints

Provide caulked joints filled with sealant and finished flush with the tile surface as follows:

- Where tiling is to be cut around sanitary fixtures.
- Around fixtures interrupting the tile surface, for example pipes, brackets, bolts and nibs.
- At junctions with elements such as window and door frames and built-in cupboards.
- At internal corners.

Width: 5 mm.

Depth: Equal to the tile thickness.

**7 SCOPE OF TILING****Wall Tiles (refer to detailed layouts)**

300 x 200 and 150 x 150 glazed ceramic tiles.

450 high splashbacks to kitchen benches.

Full height floor to ceiling in toilets and shower room.

Floor Tiles

50 x 50 approx. mosaic tiles:

to Toilets & Shower room.

Moravian Tesselated patterned tiles:

To both upper and lower verandahs, in geometric panels and borders.

P.C. Allowances

Allow the rates per sq. metre for supply only of tiles as shown in the P.C. Schedule.

1 GENERAL**Cross references**

Refer to the following sections:

- GENERAL REQUIREMENTS.
- STRUCTURAL STEEL, for shop painting structural steel.

**2 MATERIALS AND COMPONENTS****Combinations**

Do not combine paints from different manufacturers in a paint system.

Clear timber finish systems: Use only the combinations of putty, stain and sealer recommended by the manufacturer of the top coats.

Delivery

Deliver paints to the site in the manufacturer's labelled containers. Ensure containers of materials identified by a GPC specification code are labelled accordingly.

Tinting

Use only products which are colour tinted by the manufacturer or supplier.

Putty

Oil-based or polymeric based.

Putty for timber finishes: Lacquer or water based, or 2K inert putty. Do not use oil based or glazing putty.

**3 PAINTING****Standard**

To AS 2311 Sections 3, 6 and 7, or to AS 2312 Sections 5, 8 and 10, as applicable.

Order of work

Complete clear timber finishes before commencing opaque paint finishes in the same area.

Protection

Remove door furniture, switch plates, light fittings and other fixtures before starting to paint, and refix in position undamaged on completion of the installation.

Restoration

Clean off marks, paint spots and stains progressively and restore damaged surfaces to their original condition. Touch up damaged decorative paintwork or misses only with the paint batch used in the original application.

Substrate preparation

Use filler tinted to match the substrate if the finish is transparent.

Paint application

Apply the first coat immediately after substrate preparation and before contamination of the substrate can occur. Ensure each coat of paint or clear finish is uniform in colour, gloss, thickness and texture, and free of runs, sags, blisters, or other discontinuities.

Spraying

Clear finishes: Do not use airless spray for clear finishes.

Priming before fixing

Apply one coat of wood primer (two coats to end grain), bottoms of external doors, associated trims and glazing beads before fixing in position.

Repair of galvanising

Where galvanised surfaces have been subsequently welded, prime the affected area with zinc rich organic binder.

Paint system description

If a paint or clear finish system is referred to only by its final coat (for example by the manufacturer's brand name, or the generic name) use in addition to the final coat, the appropriate stains, primers, sealers and undercoats, suitable for the substrate and compatible with the finish coat and each other.

No system description given: If a surface is to be painted but no system is nominated select the system from AS 2311 Section 5, using System 1 where a choice is offered.

Number of coats

Unless specified as one coat or two coat systems, each paint system consists of not less than three coats. Provide additional coats if necessary to

- prepare porous or reactive substrates with prime or seal coats consistent with the manufacturer's recommendations;
- achieve the total film thickness or texture; or
- achieve a satisfactory opacity.

Colour selection

Schedule of standard colours will be provided before commencement of trade.

Tint each coat of an opaque coating system so that each has a noticeably different tint from the preceding coat, except for top coats in systems with more than one top coat.

4 PAINTING SCHEDULE:**External Timberwork**

1. Prepare to clean sound surface
2. Acrylic primer
3. 2 coats gloss acrylic

External Brickwork

1. Prepare to clean sound surface
2. 'bag' new work to simulate surface of existing
3. Acrylic sealer
4. 2 coats acrylic satin

External New Metalwork Pre-painted

1. Prepare and prime any damaged surface for re-coating
2. Patch with matching enamel min 2 coats

External Metalwork

1. Metal Primer
2. Metal undercoat
3. 2 coats finish gloss acrylic

External Concrete (not paving)

1. Fill and patch surface where not cement rendered.
2. 1 coat sealer-primer
3. 2 coats acrylic satin

Roofing accessories

repair damaged and bare edges with approved touch up spray

Internal Cement Render, Plaster setting

1. Patch, rub down
2. 1 coat sealer-primer
3. 2 coats satin acrylic

Internal Plasterboard or fibrous cement

Ceilings: Flat acrylic emulsion min sealer and 2 coats

Walls: Satin acrylic emulsion min sealer and 2 coats

Internal Metalwork

1. Metal primer
2. Metal undercoat
3. 2 coats finish gloss enamel

Internal Timberwork "paint finish"

1. Universal wood primer
2. Universal undercoat
3. 2 coats finish gloss enamel.

Internal Timberwork "stain finish"

1. Stain only to colour-match where necessary
2. 2 coats finish satin polyurethane.

1 GENERAL**Cross references**

Refer to the following sections:

- GENERAL REQUIREMENTS.
- GROUNDWORKS, for trench excavation and backfilling.
- ROOFING, for roof plumbing and downpipes.
- SANITARY SERVICES, for sanitary plumbing and sanitary drains.

Standard

To AS 3500.3.

2 INSPECTION**Notice**

Give sufficient notice so that inspection may be made of work ready for testing.

**3 CONTRACTOR'S SUBMISSIONS****Work-as-executed drawings**

Submit drawings showing the "as installed" locations of pipes, fittings, pits, inspection openings and equipment. Show the depth of underground pipework size and location by dimension of all pits and pipework.

**4 STORMWATER DRAINS****General**

Install the stormwater drains necessary to connect downpipes, surface drains, subsoil drains and stormwater and inlet pits to the existing system.

Pipe laying

Lay pipelines to required levels and gradients with the spigot ends in the direction of flow. Keep the number of joints to a minimum.

- Gradient: 0.5%.

Inspection openings

Where lengths of stormwater drain are not accessible from pits, provide inspection openings with covers at bends and junctions and changes of grade.

**Downpipe connections**

Turn up the drain branch pipeline with a suitable bend to meet the downpipe, to finish 50 mm above finished ground or pavement level.

5 SUBSOIL DRAINS**General**

Provide subsoil drains where necessary to intercept groundwater seepage and prevent water build up behind walls and under floors. Connect subsoil drains to the stormwater drainage system.

Subsoil drains

Perforated plastic pipe: To AS 2439.1.

6 STORMWATER AND INLET PITS**Prefabricated pits**

Precast concrete: Proprietary precast concrete units or spun precast wall sections, minimum 20 MPa concrete, 60 mm thick. Provide cored holes as required.

PVC: Proprietary PVC Units for small installations.

Metal access covers and grates

To AS 3996.

Cover levels

Top level of cover or grating, including frames:

- In paved areas, flush with the paving surface.
- In garden areas, 25 mm above finished surface.
- Gratings taking surface water run-off, set to receive the run-off without ponding.

7 SCOPE OF STORMWATER DRAINAGE

The building contract includes:

- Roof water and site surface water requiring collection within approx 5m of building to be discharged to existing system.
- Seepage water collected around building to be conveyed to existing system at such level as to prevent backflow stormwater.

1 GENERAL

Cross references

Refer to the following sections:

- GENERAL REQUIREMENTS.
- GROUNDWORKS, for trench excavation and backfilling.
- STORMWATER, for stormwater and subsoil drains.

Standard

To AS 3500.2 and SAA MP52.

To requirements of the drainage authority and Council.

2 INSPECTION

Notice

Give sufficient notice so that inspection may be made of work ready for testing.

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3 CONTRACTOR'S SUBMISSIONS

Work-as-executed drawings

Submit drawings showing the "as installed" locations of pipes, fittings, pits, inspection openings, fixtures and equipment. Show the depth of underground pipework.

4 CONNECTION

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5 PIPEWORK MATERIALS

Sewer Pipes:

Tested vitrified clay with rubber ring joints or UPVC sewer grade pipes with solvent joints .

Sanitary Plumbing:

UPVC pipework, or alternatively copper or cast iron for stack work.

Finishes

Finish internal exposed pipework, including fittings and supports in paint finish in selected colour.

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6 SANITARY PLUMBING

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Building penetrations

Limitations: Unless special provision has been made do not penetrate

- existing structural members including external walls, fire walls, floor slabs and beams; or
- membrane elements including damp-proof courses, or waterproofing membranes.

Membranes: Where approval is given to penetrate membranes, provide a waterproof seal between the membrane and the pipe.

Sleeves: Where pipes pass through building elements provide purpose-made metal or plastic sleeves formed from pipe sections. Prime paint ferrous surfaces. If the building element is acoustic rated, maintain the rating by packing the annular space with suitable insulation.

Fire-rated elements: Seal the penetration using a system conforming to AS 4072.1. to automatically protect opening.

Concrete building elements: Obtain approval for the location of sleeves or core holes.

Vent pipes

Where pipes or fixings for stays must penetrate the roof covering, seal the penetrations and make watertight with "Dektite" type flashings.

Terminations: Provide bird proof vent cowls made of the same material and colour as the vent pipe.

Sealing

During construction provide temporary seals to open ends of pipes and fittings and keep the pipe systems free of debris.

7

SANITARY FIXTURES**Waterproofing**

Install and seal fixtures in wet areas using material and methods which ensure the long term integrity of the fixture and prevent water penetration into adjoining areas.

Sanitaryware Selection

Supply and fix the following, in white finish with CP brass or stainless steel fittings:

Toilet suites:	Fowlerer Regent MK2 close-coupled suite, with internal overflow, Regent seat.
Basins:	Fowler Regent MK2 Vitreous China vanity basin, 3-hole.
Kitchen Sink:	900 sink and drainer, end bowl, stainless steel Clarke.
Disableds' Toilet:	Pacific Delux Disableds' Suite
Disableds' Basin:	Regent 500 wall basin
Make provision for grab rails adjacent to toilet as required to AS1428-1. (see metalwork)	
Urinals	Stainless steel Clarke Waterfall approx 750 wide.
Urinal Cistern:	Fowler Commer VC above ceiling with 'Electroflush' automatic sensor operated flush system (240V) Size CP flush and sparge pipes to suit manufacturer's recommendations.
Disableds' Trough:	Southern Cross stainless steel stall 750 high x 340 wide fitted to wall with tundish recessed in floor and connected to pelazzi gully, to detail. Fit integral flushing hosecock in stall.

1 GENERAL**Cross references**

Refer to the following sections:

- GENERAL REQUIREMENTS.
- GROUNDWORKS, for trench excavation and backfilling.

Standards

To AS 3500.1, AS 3500.4 and SAA MP52.

To requirements of water supply authority and Council.

**2 CONTRACTOR'S SUBMISSIONS****Work-as-executed drawings**

Submit drawings showing the "as installed" locations of pipes, fittings, control valves and accessories. Show the depth of underground pipework.

3 CONNECTION**Connection**

Connect the cold water supply to the existing site water system in 25 mm pipe with 25 mm stopcock in recessed box with flush cast iron lid adjacent to building.

4 PIPEWORK MATERIALS**Copper pipe**

To AS 1432, Type B.

Jointing methods: Use capillary fittings, compression fittings, silver brazed slip joints or screwed joints.

**Finishes**

Finish exposed pipework, including fittings and supports as follows:

- Copper and copper alloy pipework in internal locations such as ablution, toilet and kitchen areas: Chrome plate to AS 1192 service condition 2, bright.

Valves

CP internally, Brass externally.

5 PIPEWORK INSTALLATION**General**

Install pipework in straight lines and uniform grades. Arrange and support the pipework so that it remains free from vibration, whilst permitting thermal movement. Keep the number of joints to a minimum. Prevent direct contact between incompatible metals.

Concealment

Where practicable conceal pipework and fittings requiring maintenance or servicing so that they are accessible within non-habitable enclosed spaces such as roof spaces, subfloor spaces and ducts.

Building penetrations

Membranes: Where approval is given to penetrate membranes, provide a waterproof seal between the membrane and the pipe.

Sleeves: Where pipes pass through building elements provide purpose-made metal or plastic sleeves formed from pipe sections. Prime paint ferrous surfaces. If the building element is acoustic rated, maintain the rating by packing the annular space with suitable insulation.

Cleaning

On completion flush the pipeline with water and leave it clean.

Insulation

Pipelines to be insulated: hot water pipes

Insulation material: integral foam with pipe such as Polylag.

6 ACCESSORIES

General

Provide the accessories and fittings necessary for the proper functioning of the hot water and cold water systems, including taps, valves, outlets, pressure and temperature control devices, strainers, gauges and pumps.

Tap Selection

Fowler Sterling half turn chrome plated, in basin, sink and shower sets, white and chrome.
 Caroma "Economixer" to Disabled's basin and Parents Room Sink with lever, code 90930.
 Economixer to Disabled shower code 90881C
 Thermostatic Mixing Valve - Serving shower & basin. Monaterm MA 700119 mounted at high level with tamper proof control to serve Disabled basin.



7 COLD WATER SYSTEM

Reticulation

Extend the supply from the existing system in 19mm pipe with 219mm branches to each room and to hot water unit with isolating stopcocks, to each area. Storey and Disableds' Room branches to fittings: 15 mm

Hosecocks

19 mm brass externally, 5 adjacent to building and 1 at Garage.

8 HOT WATER SYSTEM

Reticulation

Extend hot water piping from heater units to each sink, cleaner's sink, basin and shower.
 Branches to fittings: 15mm

Tap positions

Locate hot tap to the left of, or above, the cold water tap.



9 HOT WATER UNIT

Provide and install units by Rheem or equivalent complete with pressure relief pipe discharging clear of paving:
 240 litre 1 x 3600 W Element external unit.

10 FIRE PROTECTION SYSTEM

Fire Hose Reel

To be 19mm diameter x 30 metres long 3 ply neoprene hose rolled onto reel painted red with galvanised steel mounting plate, reel, roller guides 25mm diameter nozzle, 25mm diameter approved valves, fitted to swinging arm equal to Wormald, located in courtyard. Builder to supply and install hose reel, connection from hydrant in separate system to 'house' water supply, and on completion provide certification and approval of Fire Brigade.



- 1 **GENERAL**
 - Cross reference**

Refer to the GENERAL REQUIREMENTS section.
Design, supply & install a complete electrical installation to comply with the requirements set out in this section and all relevant standards.
 - Standard**

To AS 3000.
To requirements of the supply authority and Council.

- 2 **TESTS**
 - Test certificates**

Provide copies of test certificates for all tests.

- 3 **CONTRACTOR'S SUBMISSIONS**
 - Work-as-executed drawings**

Prior to practical completion submit work-as-executed drawings showing the "as installed" location of electrical cables, services and equipment including the depth of underground cables, in relation to permanent site features and other underground services.

 - Operating and maintenance manuals**

Provide 2 copies of all related manuals for equipment installed under this section to allow for the proper service and maintenance of that equipment.

- 4 **CONSTRUCTION GENERALLY**
 - Mains**

Provide main power supply underground from existing mains connection box across northern driveway.
 - Distribution Boards**

Proprietary units in steel cabinet with circuit breakers and earth - leakage protectors as required.
 - Wiring**

Concealed wiring: Pre-plan wiring configuration to be concealed in conduits within floors and chased into walls and patched flush.

 - Building penetrations**

Membranes: Where approval is given to penetrate membranes, provide a waterproof seal between the element and the penetrating pipe, conduit or cable.
If the building element is acoustic rated, maintain the rating by packing the penetration with a suitable insulation.
Concrete building elements: Obtain approval for the location of sleeves or core holes.

 - Fittings**

Power outlets-white Clipsal

 - Light Fittings**

Supplied under PC Sum for installation by contractor, including
Emergency lighting and Exit signs.
 - Smoke Detectors**

Installed to UWS-N requirements and connected to security system.
 - Security System**

Installed to UWS-N requirements and connected to central site system.
 - Telephone System**

Pre-wired by contractor for equipment supplied and installed by UWS-N to locations shown.
 - Labelling**

General: Provide labels to operable control devices and indicators, switches and power circuits.
Wiring: Identify the origin of wiring by means of legible indelible marking.

- 5 **COMMISSIONING**
 - Operating and maintenance instructions**

Prior to handing over, instruct the staff in the recommended methods for operating and maintaining the system.

1 GENERAL

Cross references

Refer to the following sections:

- GENERAL REQUIREMENTS.
- PAINTING, for painting of services.
- ELECTRICAL

Standard

To AS 3666.

Noise and vibration

Use equipment which operates within the required noise and vibration limits. Prevent the transmission of vibration from rotating or reciprocating equipment to other building elements using static and dynamic balancing, and anti-vibration mounting supports and hangers.

2 INSPECTION

Notice

Give sufficient notice so that the superintendent may attend tests and so that inspection may be made of concealed services prior to covering.

3 CONTRACTOR'S SUBMISSIONS

Product data

Submit manufacturer's published product data for the plant and equipment including

- certified drawings;
- performance and rating tables; and
- recommendations for installation.

Shop drawings

Submit drawings and other documents illustrating the fabrication, installation, operation, maintenance and adjustment of mechanical services and equipment.

4 INSTALLATION

Building penetrations

Limitations: Unless prior approval has been given do not penetrate

- structural members including external walls, fire walls, floor slabs and beams; or
- membrane elements including damp-proof courses or waterproofing membranes.

Concrete building elements: Obtain approval for the location of sleeves or core holes.

5 MECHANICAL VENTILATION

General

Use fans which have quiet operation and maximum static efficiency and which deliver the required air quantity against the resistance of the system as installed.

Window/wall mounted fans

Provide weatherproof plastic construction, complete with automatic back-draught shutters and discharge grille, suitable for mounting in wall selected pattern low speed vent Axia type.

Location: to each Toilet and shower room.

Allow for connection and controls installation.

Electrical

Connect to electrical services as follows:

- Small fans: Hard-wire units with adjacent isolating switch.

6. AIR CONDITIONING

Provide submains to external plant area control box with isolating switch.

A.C. subcontractor to provide connections to plant and all control wiring. Co-ordinate installation to ensure concealment of wiring and refrigerant pipework.

APPENDIX A: SCHEDULES

P.C. AND PROVISIONAL SUMS:

Provisional sums:

The provisional sums identified below are for the purposes stated in the relevant sections of the specification.

Prime Cost and Provisional Sums:

Any P.C. sums appropriate to the contract are to be stated by the Builder in the tender.

PC SCHEDULE

Ceramic Tiles supply only per sq. metre:
(refer to section for locations)

50 x 50 mosaic floor tiles	\$	supply only per sq. metre
Wall tiles		supply only per sq. metre
Tesselated floor tiles		supply only per sq. metre
Carpet		supplied and laid per sq. metre
Hardware		supply only
Balustrades-, cast iron		supplied and installed
Helical Stair, cast iron		supplied and installed