TENDER DOCUMENT VOLUME 2
SPECIFICATION

FOR THE

SPA UPGADE WORKS
FOR THE RTA BUILDING
GREY AND FERGUSON STREETS GLENN INNES

FOR

PREPARED BY ARTAS ARCHITECTS + PLANNERS

RTA Grey St Glenn Innes

STATE PROPERTY AUTHORITY I UGL SERVICES I ARTAS ARCHITECTS + PLANNERS

A U T H O R

Artas Architects + Planners
Suite 402,410 Elizabeth Street,
Surry Hills NSW 2010
Ph. **02 92119669**
Fax. **02 92119665**
Email. **info@artas.com.au**

Consultants

Building Services	**Building Services Integration**
Structural	**Jordan Mealey**
Certifiers	**Steve Watson Partners**

C O N T E N T S

1 OVERVIEW

1.1 INTRODUCTION

This specification has been prepared by Artas Architects + Planners for the proposed State Property Authority (SPA) upgrade works for the RTA Building, Corner of Grey and Ferguson Streets, Glenn Innes.

This specification is to be read in conjunction with the architectural drawings included in Appendix C.

Several photographs of the immediate surrounds and existing buildings have been included for information and reference.

1.2 BACKGROUND

State Property Authority (SPA) has engaged Artas Architects to carry out investigations and prepare the specification for the buildings which require improvements to comply with the Building Code of Australia (BCA) and regulatory requirements.

This site was subsequently identified for an upgrade due to the condition of the current facilities. The proposed area of works is part of the existing RTA building and the external vehicle parking areas.

Artas Architects + Planners have been engaged by UGL Services to prepare the documentation for the remediation works for the subject site.

The proposal will facilitate upgrade the existing building to comply with the BCA and relevant regulatory requirements.

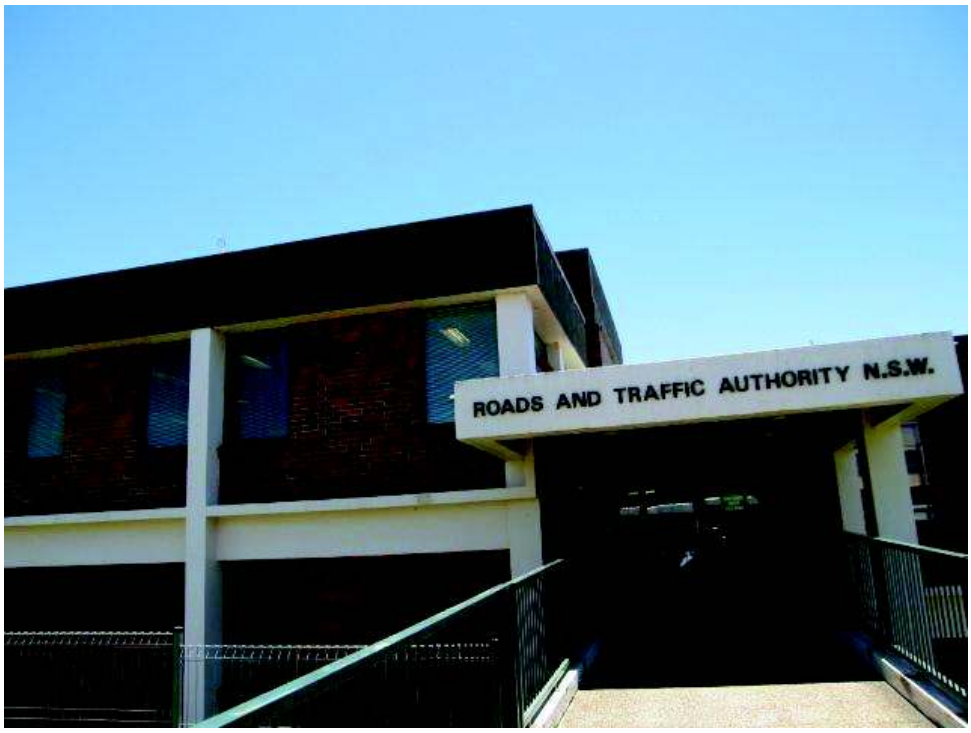


Figure 1 - Subject Site – RTA Corner of Grey and Ferguson Streets, Glenn Innes.

2 SITE AND CONTEXT

2.1 SUBJECT LAND

The site is located at Corner of Grey and Ferguson Streets, Glenn Innes. The site is currently an operational Road and Transport Authority (RTA) registry and administration office.

Adjacent sites accommodate retail buildings.

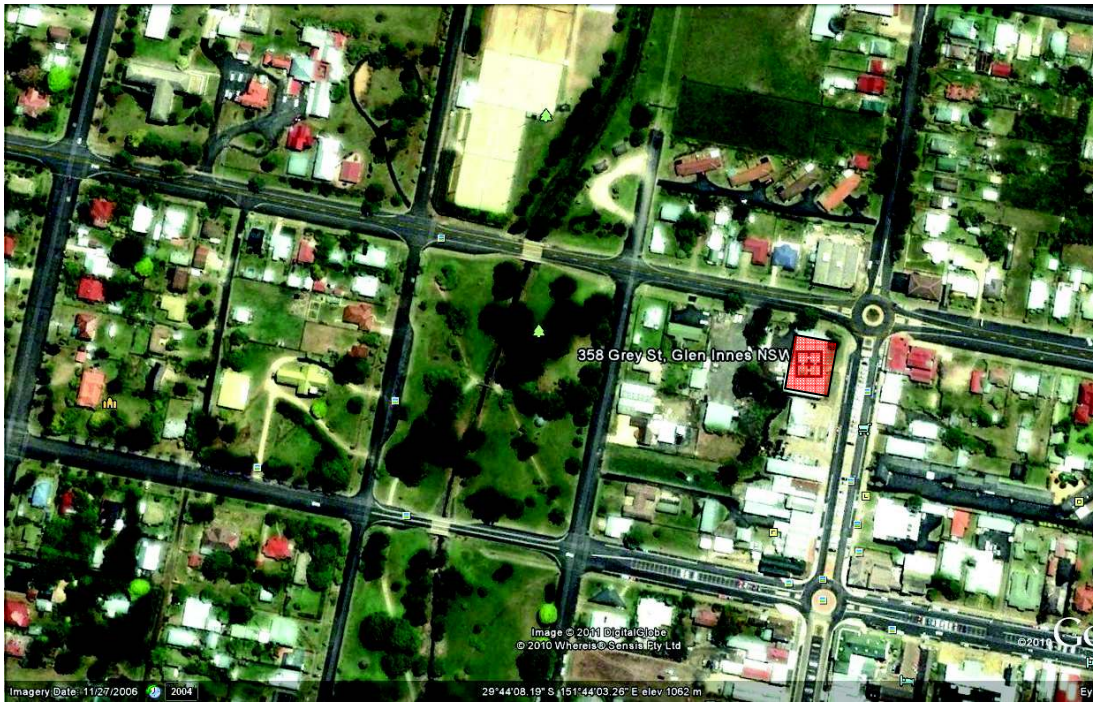


Figure 2 Arial photograph with location of subject site – source Google Earth

The photographs contained on the following pages are of the subject site and surrounds.

2.2 SUBJECT LAND PHOTOGRAPHS & SURROUNDS

The photographs below provide a view of the buildings and surrounds.

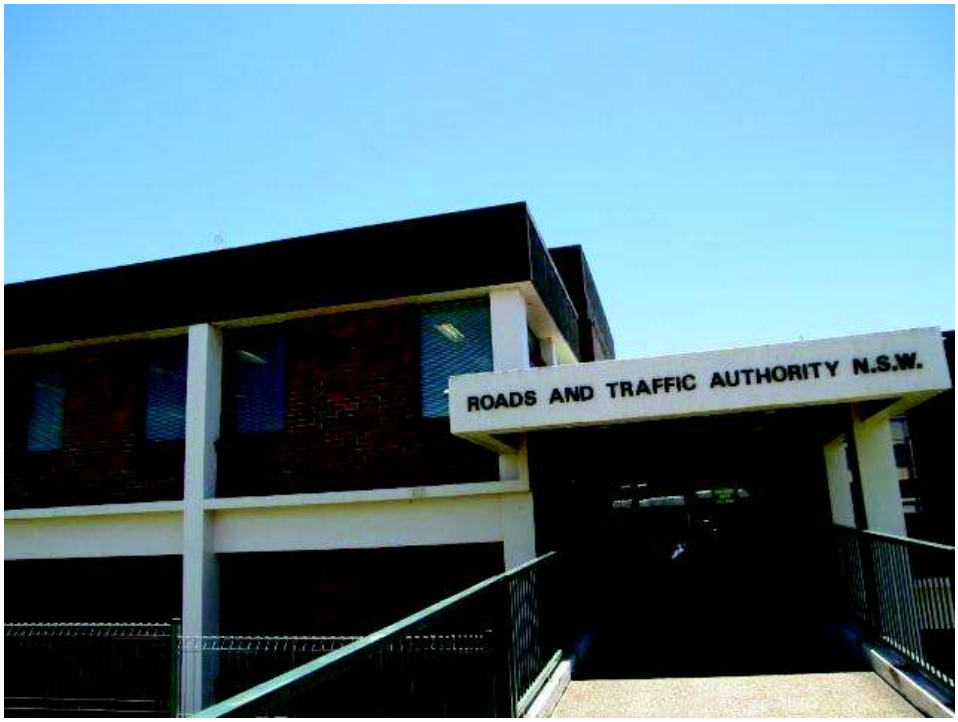


Figure 3 Photograph of the entry to the office building off Grey Street to Level 3.

Figure 4 Photograph of the side entry of the office building to the Level 1 office area.

Figure 5 Photograph of the rear of the building with garages located in the Ground Floor.

Figure 6 Photograph of the entry to Level 2 of the office area at the rear of the building.

3 BRIEF AND IDENTIFIED ISSUES

3.1 BACKGROUND TO UPGRADE WORKS TO CORNER GREY & FERGUSON STREET GLENN INNES

State Property Authority (SPA) has engaged Artas Architects to carry out investigations and prepare the specification for the buildings which require improvements to comply with the Building Code of Australia (BCA) and regulatory requirements.

This site was subsequently identified for an upgrade due to the condition of the current facilities. The proposed area of works is part of the existing RTA building and the external vehicle parking areas.

State Property Authority requires an upgrade to the existing building due to the requirement for a 'fit for purpose' use by the tenant and is in compliance with the BCA and relevant regulatory requirements.

The RTA hours of operation is normal business hours, 5 days a week.

The architectural floor plans provided, illustrate the general internal layout of proposed and existing areas within the current building and the external vehicle parking areas.

3.2 AIMS AND OBJECTIVES OF THE UPGRADE WORKS

The aim of the proposed design is to :-

- Provide a modern facility, with the provision of suitable space to meet the current and future needs of the tenant.
- Provide a cost effective solution to meet the operational needs and service requirements of tenant.
- Provide a new facility commensurate with the local environmental conditions and environmental legislation.
- Provide a safe working environment for all members of staff working in the building.

In order to achieve these aims, the objective of the design is to upgrade the internal working environment and address the external vehicle parking areas. Refer to Section 5 for the specific scope of works.

3.3 SPA AND UGL BRIEF REQUIREMENTS FOR THE UPGRADE WORKS

SPA and UGL have identified the following items for rectification in the briefing documents.

Item 1- Lift
Install new lift to access all floors. (Provide at least 2 options. (Internal and External))

Item 2 – Disabled Access
Investigate and provide solution/scope to comply with Disability Discrimination Act (DDA) requirement. (If any alteration or additions is required then provide at least two options.)
Main registry counter needs to be modified to comply with design for access and mobility.
Provide tactile indicators at entry from basement carpark and Level 2 entry.

Item 3- Car Parking
There are no clear council requirements for number of car spaces, however typically the requirements are based on at least 1 space every 50 sqm GFA. (On this basis the building would require approx. 34 spaces). Additionally, there are no Disabled Access car spaces. Provide appropriate car parking at rear and access into building in conjunction with Item A3 - Disabled Access.

Item 4 - Rectification of cracks and Painting
Minor cracking on exterior column and slab edges to be rectified and painted.

Item 5 - Ceiling Tiles and water leakage
Ceiling tiles has been damaged due to water leakage in various areas.
Investigate and provide solution/scope to rectify water leakage and replace ceiling tiles.

Item 6 – Toilets and Bathroom
Current number easily meets BCA. However an Access toilet is required, to be accessible to the Public.
Investigate and provide solution/scope to comply with Disability Discrimination Act (DDA) requirement.

Item 7 – Fire Detection
Review existing fire detection system and provide solution/scope for replacement if required in accordance with current legislation.

Item 8 – Mechanical plant and mechanical power supply
Review existing fire mechanical plant and MSB (mechanical power supply) and scope necessary maintenance and upgrade works required.

Item 9 – Sewerage and Waste Lines and Plumbing
Pans are old single flush units, consider upgrade to low flow dual flush units.
Dampness and odours to undercroft spaces requires further investigation and rectification works. Investigate and provide solution/scope rectify.

3.4 EXISTING IDENTIFIED ISSUES

The existing building was assessed on site with the following items identified. The room numbers have been identified on the existing plan for reference. Refer to Section 4 for photographs of these items.

The issues raised and discussed on site were:-

1. 1.001,1.002,1.003, 1.004 and 1.011 – Ceiling grid and tiles require replacement due to their condition and the water marks.

2. 2.001, 2.005 and 2.008 – Ceiling grid and tiles require replacement due to their condition and the water marks.

3. 3.001, 3.002, 3.003, 3.004, 3.005. 3.008, 3.009, 3.010, 3.011, 3.012, 3.013, 3.014, 3.015 and 3.016 - Ceiling grid and tiles require replacement due to their condition and the water marks

4. 3.013 – The RTA registry counter does not have an accessible section for a person with disabilities.

5. 4.002, 4.003, 4.005 and 4.006 - Ceiling grid and tiles require replacement due to their condition and the water marks.

6. Interior of office building – Lift access is not provided to Levels 1, 2, 3 and 4. Fire services are required to be upgraded to BCA. Existing mechanical switchboard needs to be upgraded. Toilets do not have dual flush cisterns and the floor and wall tiles require replacing. 3.001 Entry Foyer – A new accessible new toilet is required in the foyer for the public.

7. Exterior of office building – Cracking less than 1mm was evident on external walls, beams, columns and edges of concrete slabs. External signage needs to be installed to identify the main switchboard in case of emergency.

8. Parking area – No line marking is in the existing car park to designate car parking spaces. A disabled car parking space in the existing car park has not been designated.

Refer to the architectural floor plans provided, for the general internal layout of the existing areas within the building, room names and number references.

4 EXISTING PHOTOGRAPHS

4.1 PHOTOGRAPHS OF EXISTING IDENTIFIED ISSUES

Figure 7 Photograph 1.001, (same condition as 1.002, 1.003, 1.004 and 1.011) Ceiling grid and tiles require replacement due to their condition and the water marks.

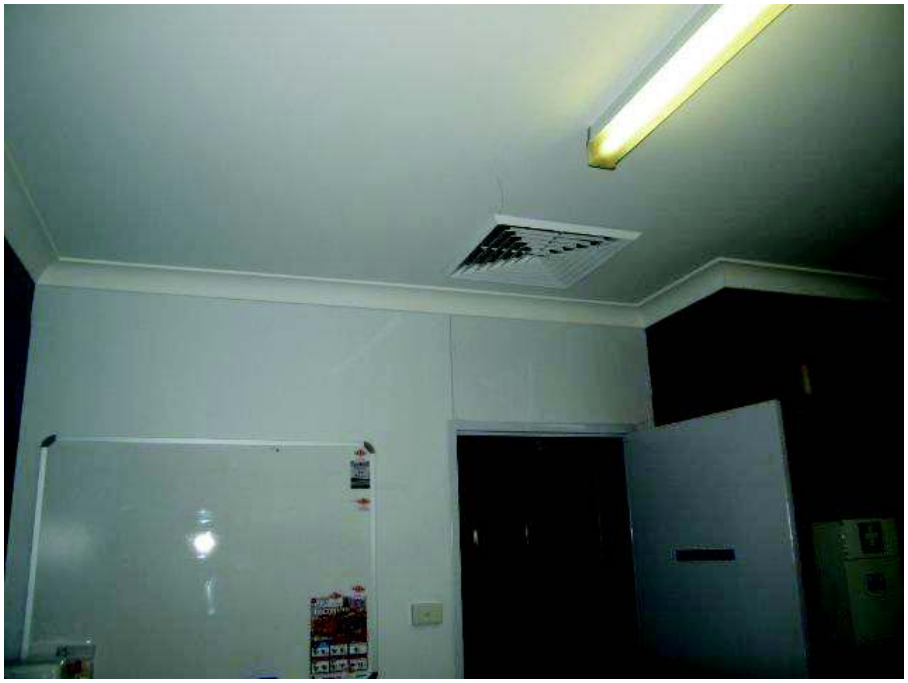


Figure 8 Photograph of 2.001 (same condition as 2.005 and 2.008) – Ceiling grid and tiles require replacement due to their condition and the water marks.

Figure 9 Photograph of 3.003, (same condition as 3.001, 3.002, 3.004, 3.005. 3.008, 3.009, 3.010, 3.011, 3.012, 3.013, 3.014, 3.015 and 3.016) Ceiling grid and tiles require replacement due to their condition and the water marks.

Figure 10 Photograph of 4.002, (same condition as 4.003, 4.005 and 4.006) - Ceiling grid and tiles require replacement due to their condition and the water marks.

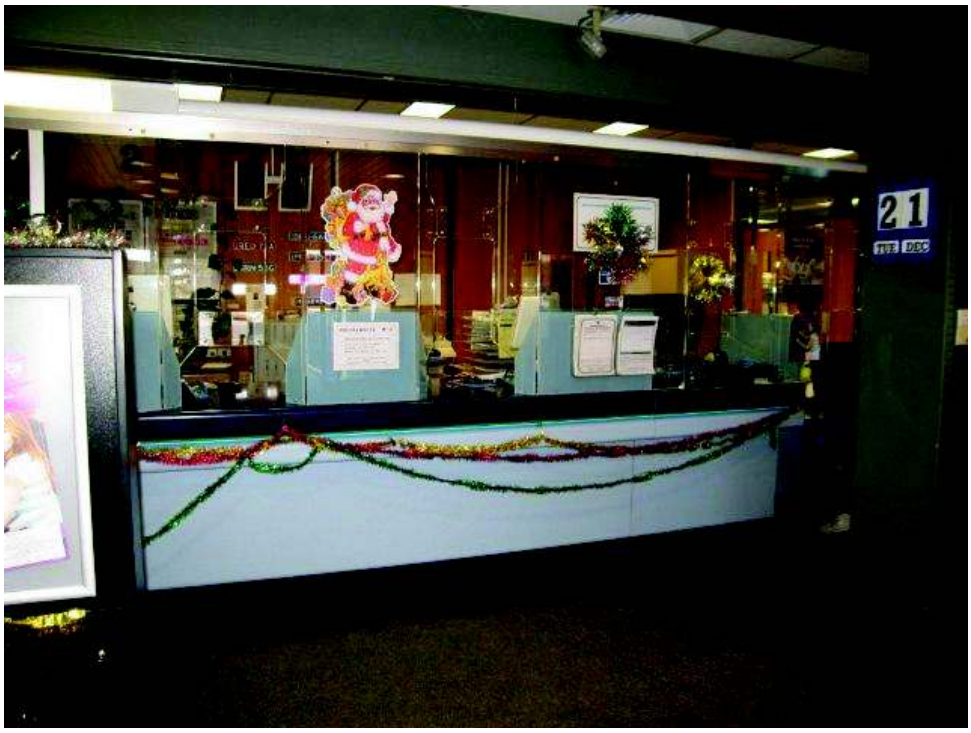


Figure 11 3.013 – The RTA registry counter does not have an accessible section for a person with disabilities. The seated section is for persons undergoing testing. An accessible new toilet may be required in the foyer for the public (SPA to confirm).

Figure 12 Photograph of interior of office building – Toilets do not have dual flush cisterns and the floor and wall tiles require replacing.

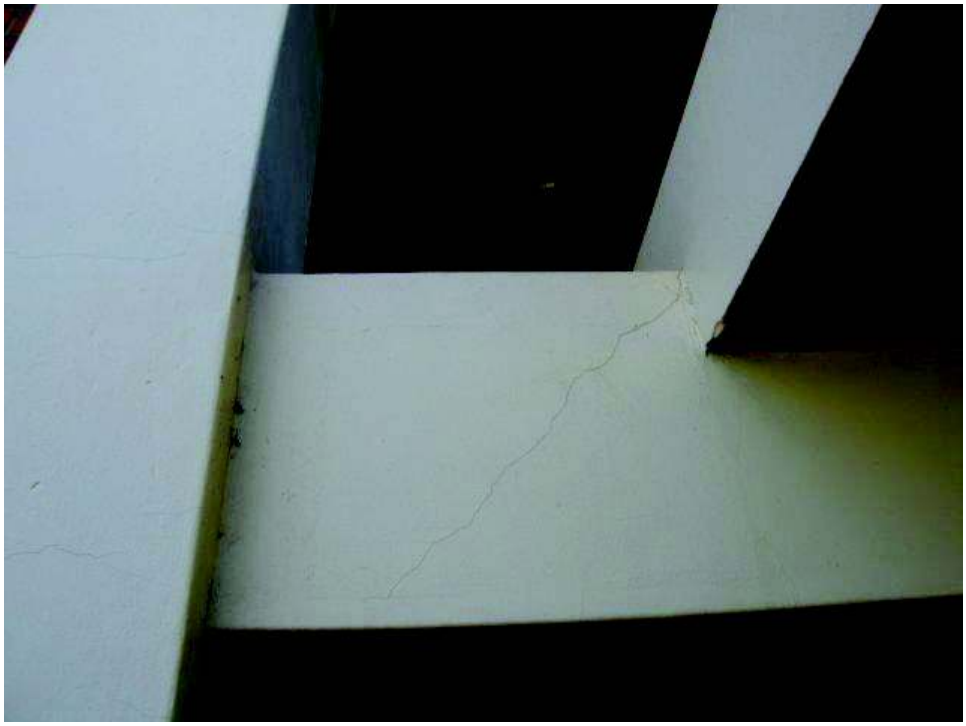


Figure 13 Exterior of office building – Cracking less than 1mm was evident on external walls, beams, columns and edges of concrete slabs.

Figure 14 Photograph of parking area – No line marking is in the existing car park to designate car parking spaces. A disabled car parking space in the existing car park has not been designated.

5 SCOPE OF WORKS

The scope of the works is noted in the following items. These item numbers provide the description of the scope of works for pricing in the Tender Schedule 2, Schedule of Prices Lump Sum.

1. 1.001,1.002,1.003, 1.004 and 1.011 – Existing ceiling grid and tiles to be removed and a new ceiling grid and suspension system with acoustic mineral fibre tiles to be installed. Existing lighting, mechanical and fire services are to be reinstated in the new ceiling grid. Weekend or out of hours works only for this item.

2. 2.001, 2.005 and 2.008 – Existing ceiling grid and tiles to be removed and a new ceiling grid and suspension system with acoustic mineral fibre tiles to be installed. Existing lighting, mechanical and fire services are to be reinstated in the new ceiling grid. Weekend or out of hours works only for this item.

3. 3.001, 3.002, 3.003, 3.004, 3.005. 3.008, 3.009, 3.010, 3.011, 3.012, 3.013, 3.014, 3.015 and 3.016 - Existing ceiling grid and tiles to be removed and a new ceiling grid and suspension system with acoustic mineral fibre tiles to be installed. Existing lighting, mechanical and fire services are to be reinstated in the new ceiling grid. Weekend or out of hours works only for this item.

4. 4.002, 4.003, 4.005 and 4.006 - Existing ceiling grid and tiles to be removed and a new ceiling grid and suspension system with acoustic mineral fibre tiles to be installed. Existing lighting, mechanical and fire services are to be reinstated in the new ceiling grid. Weekend or out of hours works only for this item.

5. 3.001 Foyer Install a new accessible toilet to comply with AS 1428.1

6. Interior of office building – Toilets – Removal of all existing toilets, urinals and basins. Supply and installation of new dual flush cisterns, toilet pans, vanities, urinals, fittings and fixtures.

7. Interior of office building - Removal of existing wall and floor tiling. Supply and installation of new floor and wall tiles. Painting of walls, doors and partition doors. Removal of existing wall and floor tiling. Supply and installation of new floor and wall tiles. Painting of walls, doors and partition doors.

8. 1.003 Staff Amenities, 3.012 Kitchenette and 3.015 Motor Registry Store – Existing vinyl are asbestos. Remove tiles and install new sheet vinyl with coved skirtings. Refer to the Hazardous Materials Survey Report in Appendix A for details of the existing tiles.

9. Exterior of office building – Repair cracking on external walls, columns and edges of existing concrete slabs.

10. Exterior of office building – Supply and installation of a new structure to include a lift, lift shaft, fire stair, automatic sliding glass doors and lift lobbies. The new structure is to be built at the front of the building adjacent to the existing entry to the building to comply with the BCA. All fixtures, fittings and finishes are to be provided as part of the works. Signage to indicate the main switchboard is to be installed in case of emergencies at the front entry.

11. Building Services - Existing mechanical switchboard is to be upgraded. Refer to the building services technical specification for details.

12. Building Services - Fire services are to be upgraded to BCA. Refer to the technical specification for details.

13. Building Services – New lighting, power, mechanical, hydraulic and fire services are to be provided for the new building works. Refer to the building services technical specification for details.

14. Parking area – New line marking to car park to designate car parking spaces. Designate a disabled car parking space in the existing car park adjacent to the Level 2 entry and one near the Ferguson Street driveway entry to allow for a disabled person to use the external footpaths to access Levels 1 and 3.

15. Lift – Supply and installation of a new lift and lift shaft, lift lobby and access ramp and stairs to the exterior of the building. The lift is to service Levels 2, 3 and 4. Refer to the technical specification for details.

16. G.010 Store – Existing external door is water damaged at the bottom of the door. The door will be replaced.

6 WORKS NOT INCLUDED IN SCOPE OF WORKS

The following works were identified as part of the site inspection but are not included in the scope of works.

1. 1.001 Office – Existing carpet is worn and in poor repair. This will not be replaced.
2. 2.001 and 3.011 Office areas – Compactus have been installed on suspended slabs without consultation with an structural engineer (as advised by staff on site). These areas will not be assessed by a structural engineer.
3. 3.013 – New RTA registry counter to have and accessible section for persons with disabilities. This is a tenant upgrade item.
4. Roof – Rusted sheets of roof sheeting exist around the plant area. These will not be replaced.

7 TECHNICAL SPECIFICATION

7.1 DEMOLITION

SCOPE

Demolition includes, but is not limited to:

- Isolation of services prior to demolition.
- Demolition of materials as necessary to prepare the site for the proposed building works.
- Demolition, sealing and decommissioning of redundant services.
- Temporary caps to exposed or open drainage pipes to prevent debris from entering the drainage system.
- Execution of underfloor drainage and core holing.
- Removal from the site of all rubbish, debris, rubble, stockpiled materials, hazardous substances and other items not salvaged or preserved.

INSPECTION

NOTICE

Inspection: Give notice so that inspection may be made of the following:

- Adjacent structures before commencement of demolition.
- Services before disconnection or diversion.
- Excavations remaining after removal of underground work.
- Site after removal of demolished materials.
- Services after reconnection or diversion.

SUPPORT

TEMPORARY SUPPORT

General: If temporary support is required, certification for its design and installation is required from a professional engineer engaged by the contractor.
Existing buildings: Until permanent support is provided, provide temporary support for sections of existing buildings which are to be altered and which normally rely for support on work to be demolished.
Ground support: Support excavations for demolition of underground structures.
Adjacent structures: Provide supports to adjacent structures where necessary, sufficient to prevent damage resulting from the works.
Lateral supports: Provide lateral support equal to that given by the structure to be demolished.
Vertical supports: Provide vertical support equal to that given by the structure to be demolished.

PERMANENT SUPPORTS

General: If permanent supports for adjacent structures are necessary and are not described, give notice and obtain instructions.

PROTECTION

Encroachment

General: Prevent the encroachment of demolished materials onto adjoining property, including public places.

Weather protection

General: 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

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

Security

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

Temporary screens
General: Fill the whole of designated temporary openings or other spaces using dust and weatherproof temporary screens, fixed securely to the existing structure, and install to ensure appropriate shedding of water to avoid damage to retained existing elements or adjacent structures and contents.
Type: Timber framed screens sheeted with 12 mm plywood and painted. Seal the junctions between the screens and the openings.

Temporary access
General: Provide a substantial temporary doorset fitted with a rim deadlock, and remove on completion of demolition.
Exposed surfaces
General: Where necessary protect and weatherproof the surfaces of adjacent structures exposed by demolition.

HAZARDOUS MATERIALS
General: Give notice immediately hazardous materials or conditions are found, including the following:

- Asbestos or material containing asbestos.
- Flammable or explosive liquids or gases.
- Toxic, infective or contaminated materials.
- Radiation or radioactive materials.
- Noxious or explosive chemicals.
- Tanks or other containers which have been used for storage of explosive, toxic, infective or contaminated substances.

CONCRETE SLABS
General: Using a diamond saw, neatly cut back or trim to new alignment with a clean true face existing concrete slabs to be partially demolished or penetrated.
Recycling: If concrete crushing is proposed on site, submit details of plant and environmental controls.

WALLS
Demolish all existing walls as shown on the architectural plans. All existing walls retained are to be completely made good and finished as specified. If a new wall lining abutts an existing wall, the new wall lining is to be extended in front of the full extent of the existing wall, to form an homogenous finish.

WINDOW AND DOORS OPENINGS
Provide lintel or suitable support above new window or door openings.

EXTRANEOUS FIXTURES AND FITTINGS
Remove, as indicated on the Drawings, or as will suitably complete the Works and generally make good. This includes all architectural, electrical, mechanical and hydraulic services extraneous fixtures and fittings.

TILING
Demolish existing wall and floor tiling as shown on the architectural plans. Remove any existing tile adhesive and prepare the substrate to receive the new linings. Where masonry walls are encountered, assume that a skim coat of render will be required to ‘make good’ the wall surface. Floor time removal is to include the removal of the bedding to the floor slab and removal of any waterproof membrane in preparation for laying of the new bedding, waterproof membrane and tiling.

CEILINGS

Demolish all existing ceilings as shown on the architectural plans including ceiling grid, tiles and hangers. Retain all of the existing services such as light fittings and air-conditioning diffuser etc for reuse in the new ceiling grid.

REMOVAL OF DEMOLISHED ITEMS

Skips to be located in the designated site area only with prior approval from Principal's Authorised Representative.

COMPLETION

On completion complete the following:

- Making good: Make good any damage arising out of demolition work. Wherever 'make good' is shown on the drawings, it means to completely restore, reinstate and build to match new works.
- Removal of temporary support at completion of the demolition from the site.
- Removal of all rubbish, debris, rubble, stockpiled materials and other items not salvaged or preserved from the site.
- Removal of temporary plant and equipment, hoardings and site signage at the completion of the works

7.2 BLOCK CONSTRUCTION

STANDARD

GENERAL
Materials and construction: To AS 3700.

INSPECTION

NOTICE
Inspection: Give sufficient notice so that inspection may be made of the following:

- Unit type, colour and texture.
- Bottoms of cavities, after cleaning out.
- Bottoms of core holes, before grouting.
- Reinforcement type and diameter.
- Positioning of reinforcing before grouting.
- Control joints, ready for insertion of joint filler.
- Damp-proof courses, in position.
- Flashings, in position.
- Lintels, in position.
- Structural steelwork, including bolts and shelf angles, in position.

TOLERANCES

MASONRY CONSTRUCTION
Conformance: Conform to AS 3700 Table 11.1.

PRODUCTS

MATERIALS

BRICKS AND BLOCKS
Standard: To AS/NZS 4455.
Minimum age of clay bricks: 7 days.

MORTAR MATERIALS
Admixtures:
Admixtures: To AS 3700 clause 10.4.2.4.

- Lime: To AS 1672.1.

Portland cement: To AS 3972.

- Type: GP.

Masonry cement: To AS 1316.
Proportions: Conform to the **Mortar mix table**.
Sand: To be fine aggregate with low clay content and free from efflorescing salts, selected for colour and grading.
Water: To be clean and free from any deleterious matter.
White cement: To have iron salts content ≤ 1%.
Pigment: To BS EN 12878, and as follows:

- Quantity: Less than 10% of the mass of cement in the mix.

For light colours: Use off-white cement in the mix.

MORTAR MIX TABLE

Mortar class to AS 3700	Cement, lime, sand ratios (by volume)			Water thickener
	Clay	Concrete	Calcium silicate	
Masonry cement				
M3	1:0:4	1:0:4	n/a	No
M4	1:0:3	n/a	n/a	No
Portland cement				
M2	1:2:9	n/a	n/a	No

Mortar class to AS 3700	Cement, lime, sand ratios (by volume)			Water thickener
	Clay	Concrete	Calcium silicate	
M3	1:1:6	1:1:6	n/a	Optional
	1:0:5	1:0:5	1:0:5	Yes
M4	1:0.5:4.5	1:0.5:4.5	n/a	Optional
	1:0:4	1:0:4	1:0:4	Yes

COMPONENTS

STEEL LINTELS
Angles and flats: To AS/NZS 3679.1.
Cold formed proprietary lintels: Designed to AS/NZS 4600.
Corrosion protection: To AS/NZS 2699.3.
Galvanizing: Do not cut after galvanizing.
WALL TIES
Standard: To AS/NZS 2699.1.
Corrosive resistance and durability: In conformance with the **Corrosion resistance and durability table**.
Strength classification:
- Masonry veneer: Light duty.
- Normal cavity construction and at abutments: Medium duty.
- Cavities > 60 and < 200 mm wide: Heavy duty.

CORROSION RESISTANCE AND DURABILITY
Compliance: Conform to the **Corrosion resistance and durability table(s)**, or provide proprietary products with metallic and/or organic coatings of equivalent corrosion resistance and as follows:
- Built-in products: Below damp proof course to be stainless steel 316 or engineered polymer.
- Bricks and blocks: Below damp-proof course, and in external leaves in the High corrosivity category, use 'Exposure' category to AS/NZS 4456.10: 1997 Appendix A (Salt attack resistance categories).
- Mortar: Below damp-proof course use mortar grade M4 to the **Mortar mix table**.

CORROSION RESISTANCE AND DURABILITY TABLE – LOW CORROSIVITY CATEGORY

Situation	Steel lintels	Wall ties, connectors and other structural steel accessories above damp proof course	Minimum cement content (mortar grade) above damp proof course
Internal	Galvanize after fabrication 300 g/m^2	- Galvanize after fabrication 300 g/m^2 - Metallic-coated sheet Z275/AZ150 - Galvanized wire 300 g/m^2 - In line galvanized sections with after fabrication coating repair ILG/150	M2
External	Galvanize after fabrication 300 g/m^2	- Galvanize after fabrication 300 g/m^2 - Metallic-coated sheet Z600 - Galvanized wire 470 g/m^2	M2

CORROSION RESISTANCE AND DURABILITY TABLE – MEDIUM CORROSIVITY CATEGORY

Situation	Steel lintels	Wall ties, connectors and other structural steel accessories above damp proof course	Minimum cement content (mortar grade) above damp proof course
Internal	Galvanize after fabrication 300 g/m^2	- Galvanize after fabrication 300 g/m^2 - Galvanized wire 300 g/m^2 - Metallic-coated sheet Z275/AZ150	M2
External	Galvanize after fabrication 600 g/m^2	- Galvanize after fabrication 600 g/m^2 - Galvanized wire 470 g/m^2	M3

CORROSION RESISTANCE AND DURABILITY TABLE – HIGH CORROSIVITY CATEGORY

Situation	Steel lintels	Wall ties, connectors and other structural steel accessories above damp proof course	Minimum cement content (mortar grade) above damp proof course
Internal	Galvanize after fabrication 470 g/m^2	- Galvanize after fabrication 470 g/m^2	M2
External	Stainless 316 Galvanize after fabrication 600 g/m^2 plus organic coating	- Stainless 316 - Engineered polymer	M4

CONNECTORS AND ACCESSORIES
Standard: To AS/NZS 2699.2.
Flexible masonry ties: If accommodation of movement is required at control joints and where masonry abuts structural elements such as column faces and slab soffits, provide details.

FLASHINGS AND DAMP-PROOF COURSES
Standard: To AS/NZS 2904.

EXECUTION

GENERAL

MORTAR MIXING
General: Measure volumes accurately to achieve the specified proportions. Machine mix for at least six minutes.

PROTECTION FROM CONTAMINATION
General: Protect masonry materials and components from ground moisture and contamination.

BOND
Type: Stretcher bond.

BUILDING IN
Embedded items: Build in wall ties and accessories as the construction proceeds. If it is not practicable to obtain the required embedment wholly in the mortar joint in hollow unit brickwork or blockwork, fill appropriate cores with grout or mortar.
Steel door frames: Fill the backs of jambs and heads solid with mortar as the work proceeds.

CLEARANCE FOR TIMBER FRAME SHRINKAGE
General: In timber frame brick veneer construction, leave clearances between window frames and brick sill and between roof frames and the brick veneer as follows:
Additional clearance: Accommodate additional shrinkage of unseasoned floor timbers.

Single storey frames and ground floor windows (not for slab on ground): 10 mm.

Two storey frames and upper floor windows: 20 mm.

CONSTRUCTION AT DIFFERENT RATES OR TIMES
Monolithic structural action: If two or more adjoining sections of masonry, including intersecting walls, are constructed at different rates or times, rake back or tie the intersections between those sections so that monolithic structural action is obtained in the completed work.

JOINING TO EXISTING
General: If jointing to existing work is required, provide a straight joint. Do not tooth new masonry into existing work.

JOINTS
Solid and cored units: Lay on a full bed of mortar. Fill perpends solid. Cut mortar flush.
Face-shell bed hollow units: Fill perpends solid. Cut mortar flush.
Finish:
Externally: Tool to give a dense water-shedding finish.

Internally: If wall is to be plastered, do not rake more than 10 mm to give a key.

Thickness: 10 mm.

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

MONOLITHIC STRUCTURAL ACTION
General: Provide brick or block header units, except in stretcher bond facework, to AS 3700 clause 4.11.2.
Spacing: 600 mm maximum.
Location:
- At engaged piers.
- At engagement of diaphragms with the leaves in diaphragm walls.
- At intersections of flanges with shear walls.
- At intersections with supporting walls and buttresses.
- Between leaves in solid masonry construction.
-

RATE OF CONSTRUCTION
Regulate the rate of construction to eliminate joint deformation, slumping or instability.

RODS
Set out: Construct masonry to the following rods:
- 75 mm high units: 7 courses to 600 mm.
- 90 mm high units: 6 courses to 600 mm.
- 190 mm high units: 3 courses to 600 mm.

WEATHER PROTECTION
General: Keep the top surface of blockwork covered to prevent the entry of rainwater.
TEMPORARY SUPPORT
General: If the final stability of the blockwork is dependent on (structural) elements to be constructed after the blockwork, provide proposals for temporary support or bracing.

FACEWORK

CLEANING
General: Clean progressively as the work proceeds to remove mortar smears, stains and discolouration. Do not use an acid solution. Do not erode joints if using pressure spraying.

COLOUR MIXING
Distribution: In facework, distribute the colour range of units evenly to prevent colour concentrations and 'banding'.

COMMENCEMENT
General: Commence at least 1 full course for blockwork, or 2 full courses for brickwork, below adjacent finished level.

DOUBLE FACE WALLS
Selection: Select face units for uniform width and double-face qualities in single-leaf masonry with facework both sides.
Preferred face: Before starting, obtain a ruling as to which is the preferred wall face, and favour that face should a compromise be unavoidable.

PERPENDS
General: If it is proposed to use other than vertically aligned perpends in alternate courses, provide details.

SILLS AND THRESHOLDS
General: Solidly bed sills and thresholds and lay them so that the top surfaces drain away from the building.
Set out: Set out so that no unit is cut smaller than three quarters full width.

SUBFLOOR WORK

ACCESS OPENINGS
General: In internal walls, leave door width openings beneath doorways to give access to underfloor areas.

AIR VENT LOCATIONS
General: Provide air vents to give adequate cross ventilation to the space under ground floors.
Cavity walls: Provide matching vents in the internal leaves located as near as practicable to the vents in the external leaves.
Location: Below damp-proof course to internal and external walls.

AIR VENT TYPES
Blockwork:
Concrete framed: Bronze wire mesh in concrete frame 390 x 190 mm.

Vent blocks: Purpose-made vent blocks.

Brickwork:
- Concrete framed: Bronze wire mesh in concrete frames, 470 x 160 mm.
- Cut brick: 2 cut bricks laid vertically and evenly spaced in a 230 mm wide x 2 course high opening, backed with bronze wire mesh built in.

UNDERPINNING
Requirement: Install underpinning while maintaining the building undamaged.
Grouting: Pack dry mix M4 mortar between underpinning and existing structure at the completion of each panel of underpinning.

CAVITY WORK

CAVITY CLEARANCE
General: Keep cavities clear at all times.

CAVITY FILL
General: Fill the cavity to 1 course above adjacent finished (ground) level with mortar. Fall the top surface towards the outer leaf.

CAVITY WIDTH
General: Provide minimum cavity widths in conformance with the following:
- Masonry walls: 50 mm.
- Masonry veneer walls: 40 mm between the masonry leaf and the load bearing frame and 25 mm minimum between the masonry leaf and sheet bracing.

OPENINGS
Care: Do not close the cavity at the jambs of external openings.

WALL TIES CONNECTORS AND ACCESSORIES
Protection: Install to prevent water passing across the cavity.

DAMP-PROOF COURSES

LOCATION
General: Provide damp-proof courses as follows:
- At timber floors: In the first course below the level of the underside of ground floor timbers in internal walls and inner leaves of cavity walls.
- 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 1 course above.
- Masonry veneer construction: In the bottom course of the outer leaf, continuous horizontally across the cavity. Fasten to the inner frame 75 mm above floor level.
- 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.

Height: Not less than:
- 150 mm above the adjacent finished ground level.
- 75 mm above the finished paved or concrete area.
- 50 mm above the finished paved or concreted area and protected from the direct effect of the weather.

INSTALLATION
General: Lay in long lengths. Lap full width at angles and intersections and at least 150 mm at joints. Step as necessary, but not exceeding 2 courses per step for brickwork and 1 course per step for blockwork. Sandwich damp-proof courses between mortar.
- Junctions: Preserve continuity of damp-proofing at junctions of damp-proof courses and waterproof membranes.

FLASHINGS

LOCATION

General: Provide flashings and weatherings as follows:

- 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 2 courses above for brick and 1 course above for block. Where the slab supports the outer skin and is not rebated, bed the flashing in a suitable sealant.
- Under sills: 30 mm into the outer leaf bed joint 1 course below the sill, extending up across the cavity and under the sill in the inner leaf or the frame. Extend at least 150 mm beyond the reveals or each side of the opening..
- Over lintels to openings: Full width of outer leaf immediately above the lintel, continuous across cavity, turned 30 mm into the inner leaf 2 courses above above for brick and 1 course above for block or turned up against the inner frame and fasten to it. Extend at least 150 mm beyond the lintels. Extend at least 50 mm beyond the lintels.
- At abutments with structural frames or supports: Vertical flash in the cavity using 150 mm wide material, wedged and grouted into a groove in the frame opposite the cavity.
- At jambs: Full height flash extending 75 mm beyond the closure into the cavity, interleaved with the sill and head flashing at each end. Fix to jambs.
- At roof abutments with cavity walls: Cavity flash immediately above the roof and over-flash the roof apron flashing.

INSTALLATION

General: Sandwich flashings between mortar except on lintels or shelf angles. Bed flashings, sills and copings in one operation to maximise adhesion.
Pointing: Point up joints around flashings, filling voids.

WEEPHOLES

Location: Provide weepholes to external leaves of cavity walls in the course immediately above flashings, and cavity fill, and at the bottoms of unfilled cavities.
Form: Open perpends.
Maximum spacing: 1200 mm.

WALL TIES

CLASSIFICATION

Conformance; Provide ties in conformance with the **Wall ties category table**.

WALL TIES CATEGORY TABLE

Classification to AS/NZS 2699.1	**Service conditions**
Medium duty	Normal cavity construction
Medium duty	Tie bonding at abutments
Heavy duty	Cavities > 60 mm wide

Corrosion protection: To BCA Table 3.3.3.1.

LOCATION

Provide wall ties spacing in conformance with AS 3700 clause 4.10 *Wall ties* or BCA Figure 3.3.3.1 as follows:

- Not more than 600 mm in each direction.
- Adjacent to vertical lateral supports.
- Adjacent to control joints.
- Around openings.

INSTALLATION
Embedment: At least 50 mm into mortar ensuring that mortar cover is 15 mm minimum to the outside face of the mortar.

CONTROL OF MOVEMENT

JOINTS
General: Provide joints as follows:
Contraction joints for concrete and calcium silicate masonry:

- Maximum length of continuous wall: 6 m.
- Minimum width of control joint: 10 mm.

Expansion joints for clay brickwork:

- Maximum length of continuous wall: 6 m.
- Maximum vertical spacing: 8 m.
- Width of vertical joint: ≥ 10 mm ≤ 20 mm.
- Width of horizontal joint: ≥15 mm ≤ 20 mm.

MASONRY DUCT RISERS

LOCATION
General: Build a one-piece corrosion resistant metal tray to the masonry duct risers at roof level.

INSTALLATION
General: Cut an opening for the riser. Turn tray edges up 25 mm around the opening 13 mm clear of the walls. Externally turn the tray up 100 mm under the stepped flashing and down 100 mm over the apron flashing. Lap and solder joints.

WEEPHOLES
General: Provide 2 weepholes through the masonry duct riser walls on opposite sides immediately above the tray.

REINFORCED AND GROUTED BLOCKWORK

CLEANING CORE HOLES
General: Provide purpose-made cleanout blocks or machine cut a cleaning hole at the base of each grouted core.
Location: Locate on the side of the wall which is to be rendered or otherwise concealed.
Cleaning: Rod cores to dislodge mortar fins protruding from the blocks and mortar droppings from reinforcement. Remove through the clean-out blocks.

GROUTING
Commencement: Do not commence until grout spaces have been cleaned out and the mortar joints have attained sufficient strength to resist blow-outs.
Height of lift: Limit the height of individual lifts in any pour to ensure that the grout can be thoroughly compacted to fill all voids and ensure bond between grout and masonry.
Compaction: Compact by vibration or by rodding.
Topping up: On the completion of the last lift, top up the grout after 10 min to 30 min, and vibrate or rod to mix with the previous pour.

LINTELS

LOCATION
General: Provide a lintel to each opening in the wall leaf.

INSTALLATION
General: Do not cut on site. Keep lintels 10 mm clear of heads of frames.
Steel lintels: Pack mortar between any vertical component and supported masonry units. For angles install the long leg vertical.
Minimum bearing each end:
- Span ≤ 1000 mm: 100 mm.
- Span > 1000 mm ≤ 3000 mm: 150 mm.
- Span > 3000 mm: 200 mm.

Propping: To prevent deflection or excessive rotation, temporarily prop lintels until the masonry reaches its required strength.

PROTECTION
Steel lintels: Steel lintels shall be hot dip galvanized (after fabrication).

BAGGING

PREPARATION
General: Cut joints flush before bagging.

DRY BAGGING
Application: Apply laying mortar to the surface using a hessian bag or similar. Flush up irregularities, but leave a minimum amount of mortar on the surface.
Preparation: Cut joints flush before bagging.

TEXTURED BAGGING
Application: Apply laying mortar to the surface using a sponge float. Flush up irregularities, but leave approximately 2 mm of mortar on the surface. When initial set is reached, texture using a hand bristle brush.

DETAILED INSTRUCTIONS

SELECTIONS

Block selection: Equal to Boral Masonry One smooth faced block 20.01.

EXTERNAL CLADDING TO LIFT SHAFT

The concrete block walls of the lift shaft and adjoining areas are to be clad in pre-finished metal cladding equal to Alucabond. The alucabond is to be fixed to the blockwork with furring channels to the manufacturer's installation instructions. The joints are to be expressed 10mm nominal thickness, sealed with a gasket to prevent water ingress. Provide all fixings, trims, corner joints and flashings required to compete the installation of the cladding and to ensure a watertight lift shaft and block walls. Refer to the architectural drawings for details and express joint configuration.

7.3 SUSPENDED CEILINGS

STANDARDS

GENERAL
Suspended ceilings: To AS/NZS 2785.
Luminaire and air diffuser interface: To AS 2946.

INSPECTION

NOTICE
Inspection: Give notice so that inspection may be made of:
- The suspension system before the installation of ceiling tiles or panels.
- The ceiling assembly before the installation of fittings and site painting, if applicable.
- The completed ceiling.

SUBMISSIONS

SAMPLES
General: Submit samples as follows:

- Suspension system: Sections proposed for the suspension system, including wall angles and trim.
- Ceiling material: Sheet, panel, tile and strip, with insulation, showing the extremes and mean of variation in colour, pattern, or texture of the proposed finish.
- Methods: Methods of jointing, fixing, height adjustment, retaining and removing panels.

PRODUCTS

SUSPENSION SYSTEM

PROPRIETARY SYSTEM
General: Provide in conformance with the manufacturer's instructions.

CEILING TILES

TILES
General: Provide in conformance with the manufacturer's instructions.

LININGS

PLASTERBOARD
Standard: To AS/NZS 2588.

FIBRE CEMENT
Standard: To AS/NZS 2908.2.
Wall and ceiling linings: Type B category 2.
Minimum thickness: 4.5 mm.

SEALANTS
Fire rated sealant: Non-hardening sealant compatible with the materials to be sealed and having a fire rating equal to that of the partition it seals.
Acoustic sealant: Non-hardening sealant compatible with the materials to be sealed and rated to R_w 65.

EXECUTION

SUSPENSION SYSTEM

ALTERATIONS
General: Dismantle and re-use ceiling suspension system members and supplement them with compatible members as required.

CEILING GRID
General: Set out the ceiling grid so that tile or panel joints and centrelines of visible suspension members coincide with grid lines shown on the drawings. If not otherwise shown, set out so that opposite margins are equal.

SUSPENSION SYSTEM
Failure: Provide a ceiling system such that failure of any one suspension point does not cause a progressive failure of the ceiling.
Height adjustment: Provide height adjustment by means of a length adjustment device at each suspension point, permitting length variation of at least 50 mm.
Grid members: If required, notch grid members at the junction with the perimeter trim to ensure the panels lie flat on the perimeter trim.
Restriction: Do not attach the suspension system to the lip of purlins.

SERVICES
Support: Space the support members as required by the loads on the system and the type of ceiling, and allow for the installation of services and accessories, including ductwork, light fittings and diffusers. Provide additional back support or suspension members for the fixing of such items to ensure that distortion, overloading or excessive vertical deflection is prevented. Do not fix suspension members to services (e.g. ductwork) unless the service has been designed to accept the ceiling load. In locations where services obstruct the ceiling supports, provide bridging and suspension on each side of the services. Do not support services terminals on ceiling tiles or panels.

PARTITIONS
General: If partitions are attached to the underside of the ceiling systems include the partition mass in the seismic mass of the ceiling.

PROTECTION
General: Protect existing work from damage during the installation.

STABILITY
General: Install the ceilings level; and fix so that under normal conditions there is no looseness or rattling of ceiling components.

STRUCTURE-BORNE SOUND
General: Provide a ceiling system which does not amplify structure-borne sound. Provide suitable proprietary products or systems for reducing contact vibrations between structure and ceiling.

BRACING
General: Provide bracing to prevent lateral movement and to resist the imposed horizontal seismic force.

BULKHEADS
General: Construct bulkheads and other similar ceiling formations as an integral part of the ceiling structure. Brace bulkheads to prevent lateral movement. If the ceiling is terminated at a bulkhead, provide for seismic requirements.

FASTENERS
General: Install fasteners so that they are not visible in the finished ceiling. Do not use screw fasteners in materials supporting hangers less than 3 mm thick.

MOVEMENT JOINTS
Abutments: Install the ceiling to allow for differential movement at abutting surfaces.
Alignment: Install the ceiling with control joints to correspond in location and direction to those in the structural frame. Do not bridge any control joint in the structural frame.

PREFINISHES
General: Repair damaged pre-finishes by recoating.

TILES

ALTERATIONS
General: Re-use existing tiles and supplement them with new ceiling tiles to suit the suspension system as required.

GENERAL
Fitting: Fit tiles accurately and neatly, free from air leakage and staining.
Lock clips: If tiles are exposed to wind loads or if required for security, insert lock clips at the junction of carrier rails and tiles.
Pattern and texture: Set out patterned or heavily textured materials to give consistency in direction of pattern or texture.

SERVICE PENETRATIONS
General: Provide openings for, and fit the ceiling up to, all services elements such as light fittings, ventilation outlets, detectors, sprinklers and loudspeakers.

CUT TILE EDGES
General: Conceal, or finish to match pre-finished edges.

PLASTERBOARD LINING

INSTALLATION
Gypsum plasterboard and fibre reinforced gypsum plaster: To AS/NZS 2589.
Suspended flush ceilings: Fix using screw or screw and adhesive to ceiling members or support frame.

MULTIPLE SHEET LAYERS
Application: Fire rated and acoustic rated walls.
Joints: Fill and flush up all joints and fixings in each layer and caulk up perimeters and penetrations before commencing succeeding layers. Stagger all sheet joints by minimum 200 mm.

JOINTS
Flush joints: Provide recessed edge sheets and finish flush using perforated paper reinforcing tape.
Butt joints: Make joints over framing members or otherwise provide back blocking.
External corner joints: Make joints over metallic-coated steel corner beads.
Control joints: Install purpose-made metallic-coated control joint beads at not more than 12 m centres in walls and ceilings and to coincide with structural movement joints.
Wet areas: Install additional supports, flashings, trim and sealants as required.

FIBRE CEMENT LINING

INSTALLATION
General: Run sheets across the framing members. In flush jointed applications, stagger end joints in a brick pattern and locate them on framing members, away from the corners of large openings. Provide supports at edges and joints.
Suspended flush ceilings: Fix using screw or screw and adhesive to ceiling members or support frame.
Wet areas: To AS 3740.

MULTIPLE SHEET LAYERS
Application: Fire rated and acoustic rated walls.
Joints: Fill and flush up all joints and fixings in each layer and caulk up perimeters and penetrations before commencing succeeding layers. Stagger all sheet joints by minimum 200 mm.

JOINTS
Flush joints: Provide recessed edge sheets and finish flush using perforated paper reinforcing tape.
Movement joints in ceilings and soffits: Provide movement joints to divide ceilings into bays not larger than 10.8 x 7.2 m and soffit linings into bays not larger than 4.2 x 4.2 m or 5.4 x 3.6 m. Provide framing parallel to the joint on each side. Do not fix the lining to abutting building surfaces.
External corner joints: Make joints over metallic-coated steel corner beads.
Dry joints: Provide square edged sheet and finish with a UPVC joining section.
Control joints: Provide purpose-made metallic-coated control joint beads at ≤ 7.2 m centres in walls and ceilings and to coincide with structural movement joints.
Wet areas: Provide additional supports, flashings, trim and sealants as required.

ACCESS PANELS

FINISH
General: Match the access panels to the ceiling in appearance and performance.

IDENTIFICATION
General: Provide each access panel with an identification mark.

NON-DEMOUNTABLE CEILINGS
General: Provide access panels supported and anchored to permit ready removal and refixing.

REINFORCEMENT
General: Reinforce the back of the access panel to prevent warping and facilitate handling.

TRIM

GENERAL
General: Provide trim such as beads, mouldings and stops to make neat junctions between lining components, finishes and adjacent surfaces.

CONTROL JOINTS
Location: Provide for control joints in sheet finishes where required by the *Lining* worksection. Where possible, position joints to intersect lighting fixtures, vents or air diffusers.
Type: Form movement joints with purpose-made control joint beads.

PLASTERBOARD CORNICES
Fixing: Adhesive fix with the supplier's cornice cement. Pin in place at cornice edges until adhesive sets, remove pins and fill holes.

COMPLETION

MAINTENANCE MANUAL
General: On completion, submit a manual of recommendations for the care and maintenance of the ceiling, and operating instructions for demounting if applicable.

SPARES
General: Supply spare matching lining units and accessories of each type for future replacement purposes. Store the spare materials on site where directed.
Supporting system: One spare supporting member (hanger or framework member) for every 100 members (or part thereof) of the same type installed in the ceiling.
Lining units: One spare unit for every 50 units (or part thereof) installed in the ceiling.

DETAILED INSTRUCTIONS

CEILING INSTALLATION LEVELLING

Ceilings shall be installed level (using a laser level), square and straight by a professional ceiling installation sub-contractor.

NEW CEILING GRID AND TILES

Suspended ceiling grid : shadowline	Armstong Peakform Suprafine XL^2 15mm exposed tee with perimeter trim, two way exposed suspended ceiling system.
Colour finish:	White.
Ceiling tiles:	Armstrong acoustic ceiling panel.
Pattern:	Ultima 1915M.
Size:	Nominal 1200mm x 600mm.
Thickness:	19mm.
Edge type:	Beveled Tegular.
Texture:	Smooth

NEW PLASTERBOARD AND OTHER CEILING FINISHES

Refer to Reflected Ceiling plans for extent.

Set plasterboard suspended ceilings shall be equal to Rondo Key-Lock concealed suspended ceiling system, lined with 13mm thick moisture resistant plasterboard sheet equal to CSR Gyprock Aquachek, fixed in accordance with manufacturer's instructions. Set plasterboard ceilings are shall be finished at the wall face with a shadowline stopping bead equal to Rondo P50.

FULL HEIGHT WALLS

Where walls are full height to the underside of slab or roof sheeting, the ceiling grid is to be suspended locally along that wall. Allow for ceiling grid and tiles locally around the affected areas.

SPARE CEILING TILES

Contractor to allow to for spare ceiling tiles for 5% of the total tiled ceiling area. Spare tiles to be boxed or wrapped to prevent damage.

TRIM SELECTIONS

Ceiling – White metal or plastic trim around power poles at ceiling penetrations.

7.4 CERAMIC TILING

RESPONSIBILITIES

General: Provide tiling systems to walls, floors and other substrates as follows and/or to the **Selections**:

- Consistent in colour and finish.
- Firmly bonded to substrates for the expected life of the installation.
- Set out with joints accurately aligned in both directions and wall tiling joints level and plumb.
- To direct all water flowing from supply points to drainage outlets without leakage to the substrate or adjacent areas.

STANDARDS
Tiling
General: Comply with the recommendations of those parts of AS 3958.1 and AS 3958.2 which are referenced in this worksection.

INSPECTION
Notice
Inspection: Give notice so that inspection may be made of the following:
- Substrate immediately before tiling.
- Trial set-outs before execution.
- Control joints before sealing and grouting.
- Grout and caulking colours before application.

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

TESTS
General
Tests: Submit tests as follows:
Type test slip resistance of tiles to AS/NZS 4586.
Site test completed surfaces to AS/NZS 4663.

TOLERANCES
Completed tiling
Standard: To AS 3958.1 clause 5.4.6 Tile finish and joints.

PRODUCTS
MARKING
Identification
General: Deliver materials to the site in the manufacturer's original sealed containers legibly marked to show the following:
- Manufacturer's identification.
- Product brand name.
- Product type.
- Dimensions and quantity.
- Product reference code and batch number.
- Date of manufacture.
- Material composition and characteristics such as volatility, flash point, light fastness, colour and pattern.
- Handling and installation instructions.

TILES AND ACCESSORIES

Tiles

Standard: To AS 4662.
Tactile ground surface indicators: To AS/NZS 1428.4.
Coves, nosings and skirtings: To be matching stop-end and internal and external angle tiles moulded for that purpose.
Exposed edges: To be 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.

Accessories

General: Provide tile accessories to the **Accessories schedule** which match the composition, colour and finish of the surrounding tiles.

Coves, nosings and skirtings

General: Provide matching stop ends and internal and external angle tiles moulded for that purpose.

ADHESIVES

General

Standard: To AS 2358 and AS 4992.1.

Type

General: Provide adhesives compatible with the materials and surfaces to be adhered.
Prohibited uses: Do not provide the following combinations:

- Cement-based adhesives on wood, metal, painted or glazed surfaces, gypsum-based plaster.
- Organic solvent-based adhesives on painted surfaces.
- Organic PVC-based adhesives and organic natural rubber latex adhesives in damp or wet conditions.
- PVA (polyvinyl acetate) based adhesives in wet areas or externally.

MORTAR

Materials

Cement type to AS 3972: GP.

- White cement: Iron salts content ≤ 1%.
- Off-white cement: Iron salts content ≤ 2.5%.

Lime: To AS 1672.1.
Sand: Fine aggregate with a low clay content selected for grading, sharp and free from efflorescing salts.
Measurement of volume: Measure binders and sand by volume using buckets or boxes. Do not allow sand to bulk by absorption of water.

Bedding mortar

Proportioning: Select proportions from the range 1:3 – 1:4 cement:sand (by volume) to obtain satisfactory adhesion. Provide minimum water.
Terra cotta tiles: Use proprietary polymer modified mortar.
Mixing: To AS 3958.1.

Water

General: To be clean and free from any deleterious matter.

GROUT

Type

Cement based proprietary grout: Mix with water. Fine sand may be added as a filler in wider joints.
Portland cement based grout: Mix with fine sand. Provide minimum water consistent with workability.
For joints < 3 mm: 1 cement:2 sand (by volume).
For joints ≥ 3 mm: 1 cement:3 sand (by volume).

Pigments

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

MOVEMENT JOINTS
Movement joint materials
Movement joint strip: A proprietary expansion joint consisting of a neoprene filler sandwiched between plates with lugs or ribs for mechanical keying. Set flush with the finished surface.
Proprietary slide plate divider strip: An arrangement of interlocking metal plates grouted into pockets formed in the concrete joint edges.
Sealant: One-part self-levelling non-hardening mould resistant, silicone or polyurethane sealant applied over a backing rod. Finish flush with the terrazzo surface.
- Floors: Trafficable, shore hardness > 35.

Backing rod: Compressible closed cell polyethylene foam with a bond-breaking surface.

EXECUTION
Substrates
Drying and shrinkage
General: Before tiling, allow at least the following times to elapse (for initial drying out and shrinkage) for these substrates:
- Toppings on slabs and rendering on brick or blockwork: A further 21 days.

PREPARATION
Standard
Preparation: To AS 3958.1 section 4.
Ambient temperature
General: If the ambient temperature is < 5 or > 35°C, do not lay tiles.
Substrates without wet area membranes
General: Ensure substrates are as follows:
- Clean and free of any deposit or finish which may impair adhesion or location of tiles.
- If framed or discontinuous, support members are in full lengths without splicing.
- If solid or continuous:
  - Excessive projections are removed.
  - Voids and hollows > 10 mm with abrupt edges are filled with a cement:sand mix not stronger than the substrate nor weaker than the bedding.
  - Depressions < 10 mm are filled with a latex modified cementitious product with feathering eliminated by scabbling the edges.

Absorbent substrates: If suction is excessive, control it by dampening but avoid over-wetting and do not apply mortar bedding to substrates showing surface moisture.
Dense concrete: If not sufficiently rough to provide a mechanical key, roughen by scabbling or the like to remove 3 mm of the surface and expose the aggregate; then apply a bonding treatment.

Substrates with wet area membranes
General: Ensure substrates are as follows:
- Clean and free of any deposit or finish which may impair adhesion or location of tiles.
- Compatible with all components of the floor system.

TILING GENERALLY
Sequence
General: Fix wall tiles before floor tiles.
Cutting and laying
Cutting: Cut tiles neatly to fit around fixtures and fittings, and at margins where necessary. Drill holes without damaging tile faces. Cut recesses for fittings such as soapholders. Rub edges smooth without chipping.
Laying: Return tiles into sills, reveals and openings. Butt up to returns, frames, fittings, and other finishes. Strike and point up beds where exposed. Remove tile spacers before grouting.
Variations
General: Distribute variations in hue, colour, or pattern uniformly, by mixing tiles or tile batches before laying.
Protection
Floor tiles: Keep traffic off floor tiles until the bedding has set and attained its working strength.
Cleaning: Keep the work clean as it proceeds and protect finished work from damage.

Floor finish dividers
General: Finish tiled floors at junctions with differing floor finishes with a corrosion-resistant metal dividing strip fixed to the substrate. If changes of floor finish occur at doorways, make the junction directly below the closed door.
Sealed joints
General: Fill joints with silicone sealant and finish flush with the tile surface where tiling joins sanitary fixtures and at corners of walls in showers.

SETTING OUT
Tile joints
Joint widths: Set out tiles to give uniform joint widths within the following limits:
Floors:
- Dry pressed tiles: 3 mm.
- Extruded tiles: 6 mm.
- Vitrified: 3 to 5 mm.
- Quarry tiles: 6 to 12 mm.
- Large and/or irregular floor tiles: 6 to 12 mm.

Mounted mosaics: To match mounting pattern.
Walls:
- Dry pressed tile: 1.5 mm.
- Extruded tile: 6 mm.

Joint alignment: Set out tiling with joints accurately aligned in both directions and wall tiling joints level and plumb.
Joint position: Set out tiles from the centre of the floor or wall to be tiled and, if possible, ensure cut tiles are a half tile or larger.
Margins
General: Provide whole or purpose-made tiles at margins where practicable, otherwise set out to give equal margins of cut tiles. If margins less than half tile width are unavoidable, locate the cut tiles where they are least conspicuous.
Fixtures
General: If possible position tiles so that holes for fixtures and other penetrations occur at the intersection of horizontal and vertical joints or on the centre lines of tiles. Continue tiling fully behind fixtures which are not built in to the tiling surface. Before tiling ensure that fixtures interrupting the tile surfaces are accurately positioned in their designed or optimum locations relative to the tile layout.

FALLS AND LEVELS
Grading
General: Grade floor tiling to even and correct falls to floor wastes and elsewhere as required. Make level junctions with walls. Where falls are not required lay level.
Fall, general: 1:100 minimum.
Fall, in shower areas: 1:60 minimum.
Change of finish: Maintain finished floor level across changes of floor finish including carpet.

BEDDING
Standard
Cement mortar: To AS 3958.1 clause 5.5.
Adhesive: To AS 3958.1 clause 5.6.
Preparation of tiles
Adhesive bedding: Fix tiles dry; do not soak.
Mortar bedding: Soak porous tiles in water for half an hour and then drain until the surface water has disappeared.
Bedding
General: Use bedding methods and materials which are appropriate to the tile, the substrate, the conditions of service, and which leave the tile firmly and solidly bedded in the bedding material and adhered to the substrate. Form falls integral with the substrate.
Thin adhesive beds
General: Provide only if the substrate deviation is less than 3 mm when tested with a 3 m straight edge. Cover the entire tile back with adhesive when the tile is bedded.
Thickness: 1.5 – 3 mm.

Thick adhesive beds
General: Provide on substrates with deviations up to 6 mm when tested with a 3 m straight edge, and with tiles having deep keys or frogs.
Nominal thickness: 6 mm.
Adhesive bedding application
General: Apply adhesive by notched trowel to walls and floors and direct to tiles if required, to provide evenly distributed coverage after laying as follows:

- Domestic internal walls: > 65%.
- Domestic internal floors: > 80%.
- Other wall and floors: > 90%.
- Wet areas and bench tops: 100%.

Pattern of distribution of adhesive: As described in AS 3958.1 clause 5.6.4.3. Verify by examining one tile in ten as work proceeds.
Wall tile spacers: Do not use spacer types that inhibit the distribution of adhesive.
Curing: Allow the adhesive to cure for the period nominated by the manufacturer prior to grouting or allowing foot traffic.
Mortar beds
For floor tiles: Either lightly dust the screeded bed surface with dry cement and trowel level until the cement is damp, or spread a thin slurry of neat cement, or cement-based thin bed adhesive, on to the tile back. Do not provide mortar after initial set has occurred.
Nominal thickness: 20 to 40 mm.
Thick reinforced beds: Place mortar bed in two layers, and incorporate the mesh reinforcement in the first layer.

MOVEMENT JOINTS
General
General: Provide movement joints carried through the tile and the bedding and as follows:
Floor location:

- Over structural (isolation, contraction, expansion) joints.
- To divide complex room plans into rectangles.
- Around the perimeter of the floor.
- At junctions between different substrates.
- To divide large tiled areas into bays.
- At abutments with the building structural frame and over supporting walls or beams where flexing of the substrate is anticipated.

Wall location:

- Over structural joints.
- At junctions with different background materials when the filing is continuous.
- At vertical corners in shower compartments to AS 3740.

Depth of joint: Right through to the substrate.
Sealant width: 6 – 25 mm.
Depth of elastomeric sealant: One half the joint width, or 6 mm, whichever is the greater.

GROUTED AND CAULKED JOINTS
Grouted joints
General: 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.
Epoxy grouted joints: Ensure that tile edge surfaces are free of extraneous matter such as cement films or wax, before grouting.
Mosaic tiles
Grouting mosaics: If paper faced mosaics are to be bedded in cement mortar, pre-grout the sheeted mosaics from the back before 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. If necessary use a proprietary cement remover.

Caulked joints
General: Provide caulked joints filled with sealant and finished flush with the tile surface as follows:
- Where tiling is 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.

Material: Anti-fungal modified silicone.
Width: 5 mm.
Depth: Equal to the tile thickness.

JOINT ACCESSORIES
Floor finish dividers
General: Finish tiled floors at junctions with differing floor finishes with a corrosion resistant metal dividing strip suitably fixed to the substrate, with top edge flush with the finished floor. Where changes of floor finish occur at doorways make the junction directly below the closed door.
Stepping: Less than 5 mm.
Adjustments
If the floor finish divider was installed by the wet area waterproof membrane applicator check that the height is sufficient for the topping and tile thickness. Adjust as required with a matching flat bar adhesive fixed to the divider angle.
Weather bars
General: Provide a corrosion resistant metal weather bar under hinged external doors. Locate under the centres of closed doors.
Completion

SPARE TILES
General: Supply spare matching tiles and accessories of each type for future replacement purposes. Store the spare materials on site.
Quantity: At least 1% of the quantity installed.
Cleaning
General: Clean tiled surfaces using an appropriate tile cleaning agent, and polish.
Operation and maintenance manuals
General: Submit a manual describing care and maintenance of the tiling, including procedures for maintaining the slip-resistance grading stating the expected life of the slip-resistance grade.

DETAILED INSTRUCTIONS
TILING
The Contractor shall allow to fix, lay, cut all ceramic wall and floor tiles shown on the Drawings and in the specification in the Tender Sum, including all accessories including adhesive, grout, spacers, wastage etc.

TILING SELECTIONS

Floor Tiles – Internal foyer areas and ramp
Supply and install new floor tiles to foyer areas as shown on the architectural plans. Floor tiles shall be laid on a graded mortar bed.

Floor tiles shall be Glennon tiles, Slip resistance: R11. code: C3358NS
Size: 300 x 300mm or equal. Cut tiles for skirting to 100mm high x 300mm long. Floor tiles and skirting tiles joints are to be aligned. Glennon Tiles Ph: (02) 9698 2799.

Grout shall be a METZ 19 water washable epoxy grout. Colour: Black. Grout shall be applied in accordance with the manufacturer's instructions. The Contractor shall note that epoxy grout must be applies 2 m^2 at a time and then cleaned up immediately.

Floor Tiles – Internal toilet areas
Supply and install new floor tiles to bathrooms as shown on the architectural plans. Floor tiles shall be laid on a graded mortar bed falling towards the floor waste.

Floor tiles to the accessible toilet are shall have the finished grade between 1 in 70 and 1 in 80.

Floor tiles shall be METZ Colour: Antracite Finish: Secura, Slip resistance: R13, Size: 150 x 150 x 9mm. Coving tile skirting at wall and floor junctions to be METZ Colour: Antracite Finish: Secura, Size: 150 x 100 x 9mm. Contact: METZ 9671 1311. Floor tiles and coved tiles joints to be aligned.

Grout shall be a METZ 19 water washable epoxy grout. Colour: Black. Grout shall be applied in accordance with the manufacturer's instructions. The Contractor shall note that epoxy grout must be applies 2 m^2 at a time and then cleaned up immediately.

Wall Tiles
Supply and install new wall tiles to bathrooms as shown on the architectural plans.

Wall tiles shall be METZ Anti-microbial , Colour: White gloss 600 x 300 x 7mm. Contact: METZ 9671 1311.

Feature wall tiles (mosaics) shall be METZ Marble Mosaic, Polish. Colour: Multi grey. Size:25 x 25mm. Grout: Antimicrobial type. Grout colour: white. Contact: METZ 9671 1311.

Wall tiles shall be fixed with METZ HAS high strength flexible adhesive in accordance with manufacturer's instructions. Grout shall be a proprietary pre-bagged cement based grout for ceramic wall tiles with an antimicrobial component equal to Sanitized (R) or Microban (R). Colour: White. Grout shall be applied in accordance with the manufacturer's instructions.

FLOOR SUBSTRATE FINISH
The Contractor shall ensure that the floor substrate finish is prepared to correctly hold tiling and that all falls across the floor are maintained. All floor grading and the mortar bed is to fall towards the floor waste/s. Install a new waterproofing membrane to the floor to AS 3740 prior to the installation of tiling.

WATERPROOFING
The Contractor shall ensure that the waterproofing of the floor and wall substrate is has dried/cured prior to installation of wall and floor tiles.

7.5 PAINTING

AIMS

RESPONSIBILITIES

General: Provide coating systems to substrates as follows:

- Consistent in colour, gloss level, texture and dry film thickness.
- Free of runs, sags, blisters, or other discontinuities.
- Paint systems fully opaque.
- Clear finishes at the level of transparency consistent with the product.
- Fully adhered.
- Resistant to environmental degradation within the manufacturer's stated life span.

STANDARDS

PAINTING

General: Comply with the recommendations of those parts of AS/NZS 2311 which are referenced in this worksection.

PRODUCTS

PAINTS

PAINT BRAND

Quality: If the product is offered in a number of levels of quality, provide premium quality lines.

COMBINATIONS

General: Do not combine paints and stopping/filling compounds from different manufacturers in a paint system.

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

DELIVERY

General: Deliver paints to the site in the manufacturer's labelled and unopened containers.

TINTING

General: Provide only products which are colour tinted by the manufacturer or supplier.

PUTTY AND FILLERS

Material: To the recommendation of the paint system manufacturer, as suitable for the substrate and
compatible with the primer.

TOXIC INGREDIENTS

General: Comply with the requirements of Appendix I Uniform Paint Standard to the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

EXECUTION

PREPARATION

STANDARDS

General: To AS/NZS 2311 Section 3.

ORDER OF WORK

Other trades: Before painting, complete the work of other trades as far as practicable within the area to be painted, except for installation of fittings, floor sanding and laying flooring materials.

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

PROTECTION
Fixtures: Remove door furniture, switch plates, light fittings and other fixtures before starting to paint, and refix in position undamaged on completion of painting.
Adjacent surfaces: Protect adjacent finished surfaces liable to damage from painting operations.

'WET PAINT' WARNING
General: Place notices conspicuously and do not remove them until paint is dry.

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

SUBSTRATE PREPARATION
General: Prepare substrates to receive the painting systems.
Cleaning: Clean down the substrate surface. Do not cause undue damage to the substrate or damage to, or contamination of, the surroundings.
Filling: Fill cracks and holes with fillers, sealants, putties or grouting cements as appropriate for the finishing system and substrate, and sand smooth.
Clear finish: Provide filler tinted to match the substrate.
Clear timber finish systems: Prepare the surface so that its attributes will show through the clear finish without blemishes, by methods which may involve the following:
- Removal of bruises.
- Removal of discolourations, including staining by oil, grease and nailheads.
- Bleaching where necessary to match the timber colour sample.
- Puttying.
- Fine sanding (last abrasive no coarser than 220 grit) to show no scratches across the grain.

PAINTING

STANDARD
General: To AS/NZS 2311 Section 6.

LIGHT LEVELS
General: ≥400 lux.

DRYING
General: Use a moisture meter to demonstrate that the moisture content of the substrate is at or below the recommended maximum level for the type of paint and the substrate material.

PAINT APPLICATION
General: Apply the first coat immediately after substrate preparation and before contamination of the substrate can occur. Apply subsequent coats after the manufacturer's recommended drying period has elapsed.

PAINTING CONDITIONS
General: Do not paint in dusty conditions, or otherwise unsuitable weather as follows unless the paint
is suitable and recommended for such conditions:
- Relative humidity: ≥ 85%.
- Surface temperature ≤ 10^{o}C or ≥ 35^{o}C.

PRIMING BEFORE FIXING
General: Apply one coat of wood primer (2 coats to end grain) to the back of the following before fixing in position:
- External fascia boards.
- Timber door and window frames.
- Bottoms of external doors.
- Associated trims and glazing beads.
- Timber board cladding.

SPRAYING
General: If the paint application is by spraying, use conventional or airless equipment which does the following:
- Satisfactorily atomises the paint being applied.
- Does not require the paint to be thinned beyond the maximum amount recommended by the manufacturer.
- Does not introduce oil, water or other contaminants into the applied paint.

Paint with known health hazards: Provide masking, ventilating and screening facilities generally to the standards set out for spray painting booths, AS/NZS 4114.1 and AS/NZS 4114.2.

SANDING
Clear finishes: Sand the sealer using the finest possible abrasive (no coarser than 320 grit) and avoid cutting through the colour. Take special care with round surfaces and edges.

REPAIR OF GALVANIZING
General: For galvanized surfaces which have been subsequently welded, prime the affected area.
Primer: Organic zinc rich coating for the protection of steel to AS/NZS 3750.9 Type 2.

TINTING
General: 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.

SERVICES
General: If not embedded, paint new services and equipment including in plant rooms, except chromium, anodised aluminium, GRP, UPVC, stainless steel, non-metallic flexible materials and normally lubricated machined surfaces. Repaint proprietary items only if damaged.

WINDOWS
Operation: Ensure that opening windows function correctly after painting.

DOOR LEAFS
Drying: Leave doors fixed open to allow drying. Do not allow door hardware, accessories or the like to
damage the door finish during the drying process.

DETAILED INSTRUCTION

PAINT

All paint used on site shall be either Dulux Paint as specified below, or equivalent Premium quality Wattyl Paint (e.g. Wattyl Ceramacoat) or Premium quality Taubmans Paint (e.g. Taubmans Ultra Premium) shall be used for all painting. The Contractor shall provide evidence to the Architect, that all the paint ordered for the Project, conforms in brand, type, finish & colour to the paint specified. All paint shall be factory mixed and delivered to site in unopened tins. Tinting on site will not be accepted.

PAINTING

All colours to future selection.
Allow to paint all existing areas as shown on the architectural drawings and all areas of new works.

Exterior:-

Metal Work:	1 coat Dulux Durabuild S/E or equivalent. 2 coats Dulux Weathermax HBR or equivalent.
Timber:	1 coat Dulux Acrylic Primer or equivalent. 3 coats Dulux Weathershield Gloss acrylic or equivalent.
Painted Brick/Block work	1 coat Dulux Acratex Acraprime 501/1 or equivalent. 2 coats Acratex 955 Acrashield Matt or equivalent.
Fibre cement sheet	Dulux Acratex Acrapatch Course 500/2 to joints 1 coat Dulux Acratex Fast Coat 500/13 Skim Coat or equivalent. 2 coats Acratex 955 Acrashield Matt or equivalent.
Masonry	Dulux Acratex 500/5 Render Wall (Hawk and Trowel) or equivalent. 2 coats Dulux Acratex 951 Conventry Course or equivalent. 1 coat Dulux Acratex 955 Acrashield (Applied in strict accordance with manufacturers recommendations) or equivalent.
6mm soffits: -	2 coats Gloss Solarguard or equivalent.

Interior:-

Ceilings:	1 coat Dulux Enviroz Acrylic Sealer Undercoat or equivalent. 2 coats Dulux Enviroz Flat Acylic or equivalent.
Plasterboard & FC Sheet:- Walls:	1 coat Dulux Wash and Wear Acrylic Sealer Undercoat or equivalent. 2 coats Dulux Wash and Wear Low Sheen Acrylic or equivalent.
FC Sheer & Wet Areas:- Plasterboard	1 coat Dulux Wash and Wear Acrylic Sealer Undercoat or equivalent. 2 coats Aquanamel Semi-Gloss or equivalent.
Masonary	1 Coat Berger Block Filler Gold or equivalent. 2 coats Aquanamel Semi-Gloss or equivalent.
Doors, Door Frames, Architraves & Skirtings	1 coat Dulux Enviroz Acrylic Sealer Undercoat or equivalent. 2 coats Aquanamel Semi-Gloss or equivalent.

GENERAL PAINTING INFORMATION

Before commencing any preparatory work on surfaces to be painted, all fitting and surface fastenings etc which would otherwise require to be cut in shall be removed and stored. These items shall be cleaned and re-installed on completion of the works.

The Contractor shall protect all completed works, furniture, equipment, fittings, non-painted surfaces and any cars and shall provide all necessary protection during the works.

Workmanship shall be of the highest standard and quality. No painting shall be carried out in wet, foggy or other unsuitable weather conditions or on any surface not thoroughly dried or prepared. Take all care and precautions to keep down dust before commencing or proceeding with painting. Rub down each coat with fine sand paper before applying the next coat.

All finishes shall be correctly applied to properly prepared surfaces under suitable conditions to ensure that bleeding, blistering, blooming, chalking, cracking, efflorescence, flaking, lifting, loss of gloss, mould growth, defective drying, fading or any other defects not subsequently develop in the finished surfaces.

The surfaces when painted shall present a clean smooth appearance and be free from brush marks, sags, wrinkles and any other imperfections.

DOORS

Where doors are scheduled to be painted, all edges including the top and bottom prior to hanging the doors.

SELECTIONS

Ceilings	Ceiling White
Walls	Dulux White on White Code: PCWF8
Doors	Dulux Maximus Code: PG1B9

7.6 AUTOMATIC SLIDING GLAZED DOORS

DESCRIPTION:
Automatic sliding double leaf bi parting frameless glass door.
Frameless Doors (with electric lock) Standard: To AS 4085/1992 and NZS 4239/1993
Note : Modify for automatic sliding double leaf frameless glass door.

PROPRIETY ITEM:
LogicSlide Heavy Duty automatic sliding door operator as manufactured by Auto Ingress Pty Ltd or equivalent product.

PERFORMANCE SPECIFICATION
The automatic bi-slide door operators are to be electrically approved 240v fully electric operators, fully housed in an extruded aluminium housing of height 215 mm and width 170 mm. The said operators are to be manufactured in Australia to comply with the relevant Australian standards for sliding door assemblies (AS 4085/1992) and B.C.A. requirements. The equipment shall incorporate the following:

Motor

Continuously rated D.C. motor with no overload protection to provide an operational rating of 60 minutes per hour 24 hours a day for door weights of up to 360kg. Motor to be directly coupled to gearbox without any intermediate coupling such as belts or pulleys. Minimum output torque of 100N. The motor is to incorporate an integral hall effect counter unaffected by dust and light for door position sensing, eliminating the need for mechanical limit switches. Infrared counters and plastic discs susceptible to misreading through dust and ambient light is not acceptable.

Gearbox

Maintenance-free, self-lubricating gears are to be supported at each end by fully sealed steel roller bearings. The gears are to be fully enclosed in a die cast aluminium housing to prevent exposure to dust and dirt and to prevent leakage or dissolution of lubricant.

Drive

Steel roller chain of 12.5 mm pitch directly connected to the hanger trolley assembly incorporating fibreglass reinforced nylon concave track wheels of 56 mm diameter, fitted with permanently lubricated sealed roller bearings and running on a heavy duty self aligning and cleaning convex stainless steel track guaranteed for the lifetime of the operator.

Control

Fully programmable microcomputer controller with non volatile ram and solid state commutation to provide:

a) Door Speed - Independently adjustable variable speed control for both open and close speeds as well as slow final speeds. Speed settings capable of being set to show compliance with the kinetic energy limitation as per the current Australian standards.
b) Stroke Variable door travel on both normal or climate control facility.
c) Auto Reverse To automatically reverse the door in both open and close cycles. Fully variable sensitivity.
d) Auto Stop - To automatically stop on opening and operate on reduced opening and slow speed until obstruction is cleared.
e) Auto Retry - To automatically retry at slow speed until obstruction is cleared and then revert to normal operation. Complete shut down requiring technical assistance to reset is not acceptable.
f) fMaintain Closed - Continuous monitoring of doors in closed position to prevent opening by windloads by generation of back EMF.
g) Push 'n' Go - On automatic operation if doors are pushed apart by 75mm the microcomputer senses someone trying to get in and opens the door automatically. (Function disabled when locked via electric lock.

Safety
Dual set of photoelectric cells to keep door open if threshold is obstructed as per the current Australian Standards.

Emergency Exit button with appropriate signage.

Climate Control

Automatically adjustable energy wise function where the opening is automatically adjusted to suit increased traffic flow.

Security Interface

Fully compatible with card reader, time clock control and key entry switch etc.

Door Control Switch

Four position switch to provide the following functions: AUTO EXIT HOLD OPEN LOCK

Actuation Sensors

The operator is to actuate with fully digital computerised infrared sensors with adjustable sensitivity, range and selectable zone detection pattern. The sensors are to be capable of providing one metre sideways detection from the line of the installed unit. These detectors must provide selectable failsafe or failsecure operation.

Locking

Electric locking capability is required.

The doors are to lock via the operator. The operator is to be fitted with a fail safe motor lock device directly locking the rotor shaft thus preventing failures due to door misalignment. This device is to be fully battery backed in power failure. The controller is to provide logical control (ie unlock, open and close then relock with a valid request to exit such as card reader or after hours exit P.B switch)

On power failure or emergency the door is to maintain security and be able to provide emergency egress and then be capable of being locked if mains power is not restored. The emergency exit switch fitted adjacent to the door must be accessible, illuminated, clearly engraved in red and must operate in both power failure and normal conditions.

Battery Status Indicator and Charger

The operator is to continuously monitor the battery status and indicate failure through an illuminated light emitting diode. The controller shall provide a regulated and current limited self charging circuit to keep the battery at its optimum level of charge and to increase the useful life of the battery.

Self Diagnostic

The operator is to incorporate self diagnosing software to correct loads created by wind loading, gradual wear or misalignment of wheel track etc.

Self Intelligence

The micro controller is to be capable of self programming without the need for specialist programming equipment or service calls. On site adjustment for speed setting, safety reversing and dwell time has to be provided without the need for any additional programmers so that suitably trained trade personnel are not restricted from servicing the equipment.

Fire Alarm Interface

The operator is to be capable of full interface with the fire alarm system to provide both unlock and open facility or open only during normal operation (if not locked) on fire alarm.

Warranty

The automatic door operator is to be covered by a two year warranty from the date of commissioning. The motor and gearbox is to be covered by a five year warranty.

Keying

Keying for the key override facility shall be under the master key system.

Vision Decal

Vision decals to be applied to all glazing: 75mm wide band vinyl film safety decal, rectangular pattern, colour silver. Decal to be mounted 1000mm above floor level, to the top of the band.

Operator Housing

Operator to door concealed in housing, finish clear anodised aluminium to match adjacent glazing framing.

Housing to extend full width of glazed opening, including sidelights to adjacent wall or mullion.

NOTE - Access controls to be co-ordinated with the tenants security requirements.

7.7 LIFT SERVICE

GENERAL

SCOPE
Supply, install, test and commission one passenger lift with hydraulic/electric drive specified in this section and to the relevant provisions of AS1735 Part 16 (2001), Part 1, and Part 12 (1999). The installation shall also comply with the Building Code of Australia and the Occupational Health & Safety Regulations 2001.

DESIGN AND INSTALLATION CERTIFICATION
Ensure that the design of the proposed equipment has been registered with NSW WorkCover and verified code compliance by a competent person. Provide supporting document.

Before Practical Completion the contractor shall appoint a competent person to carry out tests on the equipment and safety devices.

The Authorised Person may attend the tests.

Provide test results and a certificate to confirm that the installation has been tested, complies with the Lift Code and is "safe to operate."

Provide a copy of the fire test certificate for the landing doors.

SHOP DRAWINGS
Supply shop drawings showing the following details:

Loadings in lift well and pit.
Car interior finishes;
Control panels, indicators and signage.
dock front and assembly

Note - all shop drawings must be approved by the Client prior to any fabrication commencing.

WORK PROGRAM
Provide a construction program for the lift installation; including the associated building work.

INSPECTIONS
NOTICE: Give at least five working days notice so that the Authorised Person may attend the following:
Safety Tests by the contractor's competent person.
Supervisory inspection before the end of defect liability period.
Insufficient notice:
If the Authorised Person is unable to attend a test due to insufficient notice, the test may be repeated at the Contractor's cost.

PERFORMANCE
PRODUCTION ITEMS: Manufactured items of equipment shall be new, of proven design, quiet in operation, in current production, manufactured by approved suppliers and type tests in accordance with AS 1735 Part 10.

CAPACITY: The drive motor shall be capable of carrying the rated load at the rated speed and at the specified starts per hour without overheating or malfunction.

QUALITY OF RIDE: The quality of ride shall be compatible with the passenger's comfort during acceleration and deceleration. The horizontal and vertical vibration shall be within the specified limits.

LEVELLING: The levelling of car shall be within the specified limit.

NOISE: The car shall be made of solid material construction and free of vibration. Isolation pads shall be provided for lift car platform to eliminate vibration in the car.

MATERIALS AND WORKMANSHIP
STAINLESS STEEL: Sheet and plate stainless steel 304 to AS1449/303 brushed satin finish.
FURNITURE STEEL SHEET: TO AS1595. Surface finish: Matt for painting
PAINTING: All metal surfaces other than stainless steel shall have a protective coat of paint or grease. All damage to the prime coat shall be made good. Paint metal surfaces in lift well and pit.
The painting shall include guide rail brackets and pit support structure.

LIFT PIT: Do not cut holes for fixing or other purposes in lift pit walls or floor without prior approval.

LIFT WELL AND PIT

WELL PROTECTION AND SCAFFOLDING
Provide protection to the lift well openings to prevent people from falling in the lift well.
Install well protection fencing complete with a door and lock at each level as soon as it is required.
Provide scaffolding for lift installation work and overhead protection for persons working in the lift well.

GUIDE RAILS
Guide rails shall be T -section or other shapes approved by the statutory authorities. The rail shall have a groove and tongue at each end to permit smooth joint. Sections not specifically designed for lift installations are not acceptable.
Provide bond blocks or inserts for guide rail brackets. Use bolts on sections of well which has been constructed without bond blocks or inserts.

PIT ACCESS AND CLEARANCE
N/A

DRIVE AND CONTROL SYSTEMS

DRIVE UNIT
N/A Contained in cabinet adjacent to or in shaft.

CONTROL SYSTEM
ELECTROMAGNETIC INTERFERENCE: The controller and other lift equipment shall not cause interference with radio, electronic, computer, medical or the like equipment. If necessary provide filters or interference suppressors.

LEVELLING
ACCURACY LIMITS: The specified limit is the distance above or below the landing level within which the car is required to stop under any load condition from 0% up to 100% of rated load.

ASCENDING CAR OVERS PEED PROTECTION
Provide the ascending car over speed protection as required by the Lift Code.

INDEPENDENT OPERATION
Provide on the car control panel a key switch to allow the operation of the lift from the car control panel only.

FIRE SERVICE
Connect to the existing building fire services.

OUT-OF-SERVICE KEY SWITCH
Provide a key switch at the main landing to disable all landing and car calls and put the lift out of service

TRIP METER
Provide a trip meter on the controller to register the number of motor starts of each lift .The trip meter shall have a minimum of six digits and cannot be reset.

ELECTRICAL AND TELEPHONE

CIRCUIT BREAKERS AND PROTECTION
REQUIREMENT: Provide all circuit breakers required for the lift system. Connect the sub mains to the lift circuit breaker.
Provide the following electronic protection for the drive unit, including:
overload current.
phase loss.
phase reversal.
stalled drive.
Over-travel timer.
Lift circuit breaker shall be lockable in the OFF position. The locking device shall be installed on the lift switchboard. portable locks are not acceptable.
RCD: Provide residual current devices for all lighting and power circuits.

TELEPHONE
Provide a hand-free, self-dialing phone in the lift car. The phone shall be operated by a phone/Alarm button on the car control panel and shall automatically acknowledge the lift number and building location when activated.
The company's remote monitoring system may be provided in lieu of the hand-free self dialing phone. At the end of Operational Maintenance Period the contractor shall remove the remote monitoring system and replace it with the self-dialing phone detailed above.

WIRING DIAGRAMS
One complete set of up-to-date schematic wiring diagrams shall be provided in the control panel. The diagrams shall be new and unmarked at the time of Practical Completion and shall be sealed in clear plastic sheets.

LANDING AND CAR DOORS

GENERAL
The doors shall be horizontal sliding and power operated.

Provide landing door access device on all landing doors.

FIRE TESTING: Landing doors shall have one hour fire rating. Provide a certificate confirming that the doors and frames have been satisfactorily tested to AS 1735 Part 2 and Part 11. Affix a metal tag with the door manufacturer and the rating on each door. Provide the Authorised Person with a copy of the test certificate.

SIGHT GUARDS: provide sight guards on the leading edges of landing doors to conceal the wiring and clearance space between car and landing doors.

DOOR PROTECTION
INFRARED UNIT: Provide an infrared protection unit at the door entrance. The protection shall be consists of series of beams to detect any motion between 50 mm and 1,600 mm from the sill level. When the beams are interrupted, the unit shall cause the doors to remain in the open position or reverse to the fully open position. The doors shall commence to close after the expiry of a preset period.

DELAY CLOSING: Where the closing of the doors is delayed for longer than the preset period, the doors shall be closed with a kinetic energy not exceeds 3.4 J and an audible alarm sounded in the car. The time for the delay shall be adjustable.

CONTROL BUTTONS AND INFORMATION SYSTEM

FACEPLATES, BOXES AND FIXING
FACEPLATES: Faceplates shall be not less than 2.5 mm thick reinforced where necessary against distortion.
BOXES: House buttons, indicators and key switches in pressed-steel boxes recessed in the car and landing so that the faceplates are flushed with the surfaces. Boxes containing lamps shall form light tight compartments.
FIXING: Raised countersunk crosshead screws finished to match the faceplate. Clip-on type fixings are not acceptable.
ENGRAVING: Floor designations, labels, and sign on the faceplates, buttons shall be machine-engraved

CAR AND LANDING CONTROLS
REQUIREMENT: Provide the landing and car buttons, indicators and key switches required for lift operation.

CAR CONTROL PANELS
REQUIREMENT: Provide two control panels, main and secondary control panels. Both panels shall contain
the following items:
Floor buttons;
Alarm/phone button;
Door open and door close buttons;
Telephone operation instruction.

KEY SWITCHES: Provide key switches for the following functions:
Car light;
Ventilation fan;
Fire service;
Independent Service.

The key switches shall be located on the main control panel. The car light and ventilation fan may be automatically controlled and switched off when the lift is not in use after a certain period. The period shall be set between 0 to 30 minutes.

Provide a load notice with the owner's name, building address and the emergency phone number.

CAR INDICATORS
Provide indicators in the car showing the car position and direction of travel.

LANDING CONTROL PANELS AND INDICATORS
Provide at each landing, self-illuminating call buttons, key switches, a car position and direction of travel indicator.

ALARM BELL
REQUIREMENT: Mount a bell above or below the car.
Power source: The bell shall be no less than 100mm in diameter and be supplied from the emergency
power source.

EMERGENCY LIGHTING
REQUIREMENT: Provide in the lift car fluorescent lighting capable of operating as an emergency light. The emergency unit shall operate when the power supply fails or when car light switch is turned to the test position. The emergency light shall be positioned over the main car control panel. The emergency supply shall have a minimum capacity of four hours continuous operation.

KEY IDENTIFICATION
Provide three keys for each key switch. To each key attach a metal ring and label engraved the building name, lift number and the purpose of the key.

LIFT CAR

CAR CONSTRUCTION
The car shall be made of steel frame and enclosure with steel or other approved materials.
Provide isolation pads for the car platform to minimise vibration in the lift car. The time for the delay shall be adjustable.

CAR FINISHES
REQUIREMENT: Materials for car floor, floor coverings, and wall and ceiling linings shall comply with critical radiant flux and other fire hazard properties specified in C1.10 of SCA.

CAR EQUIPMENT
POWER OUTLET: Provide a power outlet (GPO) in the lift car. The GPO shall be protected by a residual current device.

Provide a ceiling mounted fan with a minimum flow of 60 liters, approximate 1,000 rpm. The fan shall be controlled by a key switch on the car panel.

FACILITIES FOR DISABILITIES

GENERAL
The design, construction and all equipment and components shall comply with SCA and the Lift Code AS1735 Part 12 (1999) Facilities for Persons with Disabilities.

INDICATORS IN CAR
In the lift car provide visual and audio indication on the car position and direction of travel.
The size of the visual floor designation shall be at least 50 mm high and installed at 1800 mm above the floor.

Audio Indication: For lifts serving up to 3 floors a tone shall sound when the lift passes arrives at a floor.

All visual control indicators also are to be supplied with a clear glass cover.

INDICATORS AT LANDINGS
Provide visual and audio indication on the car position and direction of travel at all landings.
The size of the visual floor designation shall be at least 50 mm high and installed at 1800 mm above the floor.

Audio indication: One tone shall sound to indicate the lift is travelling in the up direction and two tones indicate the lift is travelling in the down direction.

The sound volume shall be adjustable.

HANDRAIL
A brushed stainless steel handrail is to be installed to all sides of the lift car.

TESTING

GENERAL
TESTS: Carry out tests to confirm that the installation complies with all the requirements in the Lift Code AS1735 and the lift is safe to operate.

EQUIPMENT: Provide all equipment, tools, test weights and materials necessary for the carrying out of the required tests.

SAFETY TESTS
ACCEPTANCE TESTS: Test the effectiveness and safe operation of safety devices, including but not limited to the following:
Door Locks and Safety Circuits
Rupture Valve
PROTECTION AND TIMING DEVICES: Test the correct operation settings of protection and timing devices.

CLEARANCES: Check the top and bottoms clearances of the car and counterweight.

INSULATION RESISTANCE: Carry out tests on insulation resistance of the circuits and verify their compliance with AS3000 Wiring Rules.

LOAD TESTS
REQUIREMENT: Carry out the following load tests

PROCEDURE: Run the lift continuously for at least 30 minutes at the rated speed, and at full load.

Doors: Car doors and all landing doors shall operate correctly and at the required speed;

STOPPING: Operate the doors to open and close normally at each stop.

MALFUNCTION: Stop the test as soon as a malfunction is detected, rectify it, and restart the test. Do not count "down" time as part of the test period.

SPEED AND LEVELLING TESTS
REQUIREMENT: Demonstrate that the lift, when run before and after the load tests, meets the following requirements:
Car Balance: Car balancing shall fall within the design limits.
Rated Speed: The lift with rated load shall achieve the specified rated speed in both directions
Floor-to-floor: The time taken by the car to travel between landings, measured in either direction from the start of movement to stop, shall be within +/- 5% of the specified time.
Levelling: Levelling at each landing with full load and no load shall fall within the limit specified.
Quality of car ride: Starting and stopping of the lift shall be smooth and complies with the specified limit.

CAR CONTROL SYSTEM TESTS
REQUIREMENT: Demonstrate by a comprehensive series of tests that the car control system complies with the specification. The tests shall include test on all car and landing buttons, key switches, alarm, indicators, and timing devices.

MAINTENANCE

OPERATIONAL MAINTENANCE

OPERATIONAL MAINTENANCE PERIOD: The Operational Maintenance Periods shall be one year.

REQUIREMENT: During the operational maintenance period provide qualified and experienced personnel to perform the maintenance required for safe and reliable operation, including the following:
Regular maintenance: Make service visits at least one per quarter. Service shall be carried out more frequently if necessary.
Breakdowns: Attend stoppages or unsatisfactory operation of equipment at any time of the day or night.
Defects: Make good faults or damage caused by defects in the installation, and replace defective part or parts showing signs of wear.
Materials: Supply all materials including parts, lubricants and cleaning materials.
Cleaning: Leave clean and tidy after each visit the areas and equipment in and on which maintenance work was performed.

RECORD: Provide a record of each visit including the date and time, work carried out, name of the service operator and any relevant information.

MAINTENANCE MANUAL

REQUIREMENT: Prior to Practical Completion provide two copies of a maintenance manual containing the necessary operation and maintenance information for the equipment, including circuit diagrams, fault rectification procedures.

OHS CERTIFICATION

Before the end of the each Operational Maintenance Period, carry out a safety inspection to test the safety and protective devices.

The contractor shall rectify any defective parts or components and provide a statement confirming that the lift is safe to operate.

LIFT SCHEDULES (TO BE READ IN CONJUNCTION WITH THE SPECIFICATION) PERFORMANCE

LIFT TYPE:	Kone, Schindler, OTIS or equivalent commercial quality lift. Submit the selected lift type with the tender schedules.
NO OF LIFT:	One
TYPE OF DRIVE:	Direct Acting Hydraulic
LOCATION OF DRIVE UNIT:	In lift well or adjacent to shaft
DUTY:	no less than 20 starts up and 20 down an hour
CONTRACT SPEED:	.3 mls
CONTRACT LOAD:	8 Passengers (544Kg)
TRAVEL:	3600mm, exact dimension to be confirmed on site
WELL SIZE:	to lift manufacturer's requirements
OVERHEAD:	to lift manufacturer's requirements
PIT:	to lift manufacturer's requirements
CLEAR CAR SIZE:	1100 mm wide x 1400 mm deep x 2200 mm high
NO OF LANDINGS:	3 - Levels 2, 3 and 4
NO OF CAR ENTRANCES:	Two
POSITION OF LANDINGS:	On opposite sides
MAIN LANDING:	Level 3
FLOOR LEVELLING ACCURACY:	< 6 mm
RIDE QUALITY (peak to peak):	< 20 milli(g) (0.2 m/s2*)* in X, Y & Z

CONTROL PANEL
NO OF CAR CONTROL PANELS: Two

CONTROL ON CAR PANEL:
Independent operation;
Car light key switch;
Fan key switch; and
Light key switch.

CONTROL AT LANDING: Fire Service at main landing Out of Service at main landing.

CAR & LANDING BUTTONS: Stainless steel vandal resistance type.

BUTTON & INDICATOR FACEPLATES: Stainless steel satin finish with impact resistant backing material (vandal resistant); all fixings to be recessed security fixings.

DOORS

DOOR TYPE:	2 piece central opening power operated
DOOR OPENING:	900 mm wide minimum x 2000 mm high minimum clear
DOOR PROTECT UNIT	Infra-red type

DOORS FINISHES

LANDING DOOR:	Stainless steel satin finish
LANDING DOOR FRAME:	Stainless steel satin finish
CAR DOOR:	Stainless steel satin finish
SIGHT GUARDS:	Stainless steel satin finish

CAR INTERIORS

FRONT AND REAR WALLS:	Stainless steel satin finish with impact resistant backing
SIDE AND REAR WALLS:	Stainless steel satin finish with impact resistant backing
HANDRAIL:	Stainless steel satin finish to all sides of the lift car
MIRROR:	To side walls of the lift car
CEILING:	Stainless steel satin finish
FLOOR:	Black Slip resistant vinyl flooring
SKIRTING:	Black caved vinyl skirting 150mm high
LIGHTING ON CAR PANELS:	> 200 lux
PROTECTION :	Provide lift protection blankets and fixings for each side

OPERATIONAL MAINTENANCE SCHEDULE
Maintenance during Operational Maintenance Period:
MINIMUM SERVICE FREQUENCY: One per quarter
MAXIMUM CALLOUT RESPONSE TIME:
- breakdowns with passengers trapped 30 minutes
- Other breakdowns One hour

ADDITIONAL LIFT REQUIREMENTS
Security card access control for lift access and lift operation to be integrated with the existing access control system.
Complete proposed lift design to be signed off by client prior manufacture and installation of Lift.

SCHEDULE OF EQUIPMENT AND FITTINGS

EQUIPMENT & FITTINGS SCHEDULE

Revision: T1

Fixture	Location	Abbrev	Description	Finish	Colour	Proprietary Suppliers	Image
Electric Hand Dryer	All Toilets	HD	Dyson Airblade A01 Hand Dryer Allow for additional noggins to stud framed walls for fixing and support. Supply and install electrical hard wired connection with remote isolator switch.	Die-cast aluminium casing with anti-microbial vandal resistant lacquer coating on exterior surfaces.	Silver	Web: http://www.dysonairblade.com.au/contact/	
Surface-mounted vertical soap dispenser	All Toilets	SD	JD MacDonald Surface mounted vertical soap dispenser Model Number: 0345 Allow for additional noggins to stud framed walls for fixing and support.	Grade 304 Stainless Steel	Satin Finish	Web: http://www.jdmacdonald.com.au/contact-us	
Double Toilet Paper Holder	All Toilets	TPH	JD MacDonald Double Toilet Roll Holder with controlled delivery Model Number: 0264-1 Allow for additional noggins to stud framed walls for fixing and support.	Heavy duty cast aluminum	Satin matte silver-grey finish	Web: http://www.jdmacdonald.com.au/contact-us	
Surface mounted shelf flat top series (Accessible Shelf)	All Toilets	ASH	JD MacDonald Surface mounted shelf flat top series (Accessible Shelf) Model Number: 0692 Allow for additional noggins to stud framed walls for fixing and support.	Grade 304 Stainless Steel	Satin Finish	Web: http://www.jdmacdonald.com.au/contact-us	

Disclaimer: The nominated supplier details which have been included in this document have been provided as a guide to product origin only. Contractors/readers are encouraged to refer to the NSW Public Works approved suppliers for competitive pricing. Selected items may be available from one or more suppliers, and this information should not be misconstrued as a purchase order instruction.
Important note: Images applied in this schedule may not represent the actual item and may have been inserted for illustrative purposes only. This schedule must be read in conjunction with the relevant Design Documentation and associated Technical Specifications for the project and is subject to the relevant Standards and or Codes. Where conflicts may exist the reader must contact the Author for clarification.

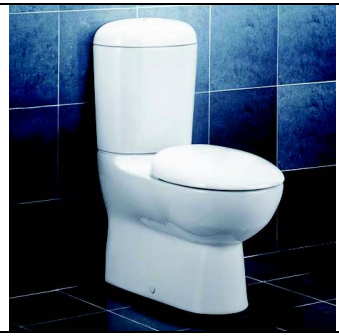
EQUIPMENT & FITTINGS SCHEDULE

Revision: T1

Fixture	Location	Abbrev	Description	Finish	Colour	Proprietary Suppliers	Image
Surface mounted paper towel dispenser & waste bin	All Toilets	PTD	JD MacDonald Surface mounted paper towel dispenser & 8.4 litre waste bin Model Number: 64623-9	Grade 304 Stainless Steel Satin Finish	N/A	Web: http://www.jdmacdonald.com.au/contact-us	
Accessible Toilet Grab Rail	Accessible Toilet	GR1	Con-Serv Premium Toilet Assist Grab Rail Hygienic seal grab rail manufactured from 32mm round stainless steel. Grab rail supplied with screw on flange covers that help prevent the accumulation of unhealthy grime Model Number: HS 116 SS handed to match layout on the architectural drawings. Allow for additional noggins to stud framed walls for fixing and support.	Grade 304 Stainless Steel Satin Finish	N/A	Web: http://www.con-serv.com.au	
Mirror	Male and Female toilets	MR1	Frameless glass mirror with polished edges and no visible fixings. Refer to architectural internal elevations.	Mirror Finish	N/A	By Contractor	

EQUIPMENT & FITTINGS SCHEDULE

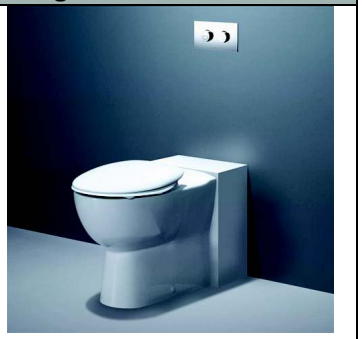
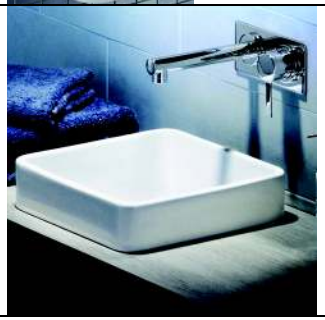
Revision: T1

Fixture	Location	Abbrev	Description	Finish	Colour	Proprietary Suppliers	Image
Mirror	All Toilet	MR2	Bradley Australia Tilt Mirror Model 740 - 1838 Fixed Tilt Welded Corners Shall Be Polished To A Uniform Satin Finish Mirror - full stainless steel surround AS1428 size is 450W x 950H Mirror glass conforms to AS 1288/2006 Australian safety glass standards.	Stainless Steel	Satin Finish	Bradley Australia	
Toilet suite	Female WC / Male WC, General Toilets	WC1	Caroma Leda WF CC Toilet Suite. Code: 989100W Pedigree II seat Code: 320020W	Ceramic	White	Web: www.caroma.com.au	

Disclaimer: The nominated supplier details which have been included in this document have been provided as a guide to product origin only. Contractors/readers are encouraged to refer to the NSW Public Works approved suppliers for competitive pricing. Selected items may be available from one or more suppliers, and this information should not be misconstrued as a purchase order instruction.
Important note: Images applied in this schedule may not represent the actual item and may have been inserted for illustrative purposes only. This schedule must be read in conjunction with the relevant Design Documentation and associated Technical Specifications for the project and is subject to the relevant Standards and or Codes. Where conflicts may exist the reader must contact the Author for clarification.

EQUIPMENT & FITTINGS SCHEDULE

Revision: T1

Fixture	Location	Abbrev	Description	Finish	Colour	Proprietary Suppliers	Image
Toilet suite and call button	Accessible toilet	WC2	Caroma Leda Wall Faced box rim pan and Invisi II 4.5/3 litre dual flush in duct cistern. Code: 719100W. Invisi Series II Care Dual Flush Plate & Raised Care Buttons. Satin Care Dual Flush Plate with raised buttons. Code: 237011S. Pedigree II seat Code: 320020W Electrician to supply and install an emergency call button connected to 1 x red flashing / beeping light of nominal 50mm height, installed outside the accessible toilet over the door. Install 1 x indicator panel in the main reception area to monitor and identify calls from the accessible toilet.	Ceramic	White	Web: www.caroma.com.au	
Urinals	Male WC	UR	Caroma H2Zero Cube Wateress Urinal 333 deep x 260 wide, waterless cartridge type. Code: 678610W	Ceramic	White	Web: www.caroma.com.au	
Hand Basin	Female WC / Male WC, General Toilets	HB1	Caroma Cube inset basin size 320 x 320. Code: 683300 Joinery: Refer to architectural drawings for details.	Ceramic	White	Web: www.caroma.com.au	

Disclaimer: The nominated supplier details which have been included in this document have been provided as a guide to product origin only. Contractors/readers are encouraged to refer to the NSW Public Works approved suppliers for competitive pricing. Selected items may be available from one or more suppliers, and this information should not be misconstrued as a purchase order instruction.
Important note: Images applied in this schedule may not represent the actual item and may have been inserted for illustrative purposes only. This schedule must be read in conjunction with the relevant Design Documentation and associated Technical Specifications for the project and is subject to the relevant Standards and or Codes. Where conflicts may exist the reader must contact the Author for clarification.

EQUIPMENT & FITTINGS SCHEDULE Revision: T1

Fixture	Location	Abbrev	Description	Finish	Colour	Proprietary Suppliers	Image
Accessible Hand Basin	Accessible WC	HB2	Caroma Caroma Care Flora Wall Basin with no tap hole. Code 641200W. Shroud to match. Code: 651300W.	Ceramic	White	Web: www.caroma.com.au	
Single floor waste (waste floor sump)	General toilets, General showers, Access WC, Cleaners Room	FW	Floor Waste FW-4 Stainless Steel	Grade 304 Stainless Steel	Natural	SMC Stainless Metal Craft Contact: Sales SMC 6 Bromley Road Emu Plains NSW 2750 Ph:(02) 4735 5666 Fx:(02) 4735 7950 Mob:0418 966 785	
Basin Tapware	Male and Female toilets		ZIP AquaSense wall mounted tap mixer tap mains part 72223 (200mm spout). Supply and install electrical connection for sensor.	Chrome	Silver	ZIP	
Basin Tapware	Accessible toilet		ZIP AquaSense wall mounted tap mixer tap mains part 72224 (250mm spout). Supply and install electrical connection for sensor.	Chrome	Silver	ZIP Industries	

Disclaimer: The nominated supplier details which have been included in this document have been provided as a guide to product origin only. Contractors/readers are encouraged to refer to the NSW Public Works approved suppliers for competitive pricing. Selected items may be available from one or more suppliers, and this information should not be misconstrued as a purchase order instruction.
Important note: Images applied in this schedule may not represent the actual item and may have been inserted for illustrative purposes only. This schedule must be read in conjunction with the relevant Design Documentation and associated Technical Specifications for the project and is subject to the relevant Standards and or Codes. Where conflicts may exist the reader must contact the Author for clarification.

EQUIPMENT & FITTINGS SCHEDULE

Revision: T1

Fixture	Location	Abbrev	Description	Finish	Colour	Proprietary Suppliers	Image
Cubical Toilet Partitioning and doors	General Showers &Toilets		Existing	Paint			
Coat Hook with bumper	Female WC / Male WC, General Toilets	CHB	Bradley Australia Concealed mounted heavy duty coat hook mounted to back of partition doors @ 1800 mm AFL Code: 9119 Concealed mounting				
Tactile Indicator Studs	Generally throughout		LTSS Tactile Indicator Stud Stainless Steel 35mm Diameter X 10mm stem PVC Type may Also be used on carpet and vinyl where approved	Machined	Natural	Latham 14 Tennyson Road, Gladesville NSW Ph: (02) 9879 7888 Fx: (02) 9879 7666 Mob: 0412 040 846 www.latham-australia.com	

Appendix A
Hazardous Materials Report
State Property Authority
Corner Ferguson and Grey Streets Glenn Innes NSW 2370
Author: Australian Industry Group
Date: December 2008

Appendix B
Building Services Specification prepared by Building Services Integration

Appendix C
Architectural Drawings prepared by Artas Architects + Planners and Structural Drawing prepared by Jordan Mealy