

Specification

Table of Contents – Specification

1	INTRODUCTION	2
2	PRELIMINARIES	2
3	CONTRACT	42
4	DEMOLITION	8
5	EXCAVATOR, DRAINER AND CONCRETER	9
6	BRICKWORK	11
7	CARPENTER AND JOINER	12
8	ROOFER	13
9	PLUMBER	15
10	PLASTER, EXTERNAL RENDER AND TILING	15
11	ELECTRICAL	16
12	PAINTER	20
13	LANDSCAPING	22
14	MISCELLANEOUS	23
15	COMPLETION	23
16	CITIPOWER REFERENCE DOCUMENTS	24

Specification

1. Introduction

The Port Phillip City Council (“the Council”) seeks an experienced contractor to carry out the construction of a substation enclosure for a new substation at the South Melbourne Market.

The proposed enclosure will comprise of a concrete slab on ground, concrete core filled block walls and a suspended concrete roof all as described in the plans and specifications.

1.1 Project Background

The South Melbourne Market currently has an existing substation located on Cecil Street which has been identified as requiring upgrading to meet the market’s current and future electrical demands.

Council proposes to construct a new substation within the York Street carpark and decommission the existing substation located on Cecil Street. Refer to the aerial photograph below for the site environs.



CitiPower is the electrical supply authority for the area. Council has already negotiated with CitiPower regarding the proposed location of the new substation within the York Street carpark and the electrical demands for the market. Based on this information, CitiPower have prepared a proposal to provide a 2 KVA substation with high voltage supply coming from Coventry Street.

As there are a number of interlinked activities involved in the project, contractors will be required to coordinate works with South Melbourne Market operations, CitiPower, the substation enclosure building works, and the new electrical works.

1.2 Key Project Activities

The overall project will consist of the following:

- i. the construction of a new substation enclosure within the York Street carpark, to be carried out by the appointed building contractor;
- ii. the installation of new high voltage and low voltage cabling from existing CitiPower assets on Coventry Street to the new substation enclosure, to be carried out by CitiPower;
- iii. the installation of a new 2 KVA transformer within the substation enclosure, to be carried out by CitiPower;
- iv. electrical works within the York Street carpark from the existing market building to the new substation enclosure, to be carried out by the appointed electrical contractor; and
- v. electrical works within the existing market building and new substation enclosure, to be carried out by the appointed electrical contractor.

Note: This contract will only be for the works outlined in Part (i) above.

1.3 Proposed Project Commencement

The Council's preference is for the project to commence as soon as possible. Contractors are required to submit their proposed start and finish dates.

1.4 Particular Requirements for Substation Enclosure Contractor

Note: This contract will only be for the works outlined in part (i) under the Key Project Activities above.

Refer to the plans and specifications for all technical and other construction requirements regarding the works to be delivered for this project.

2 PRELIMINARIES

2.1 Generally

The whole of the Works are to be carried out in accordance with the Building Code of Australia 1996, the *Building Act* 1993, the *Building Regulations* 2006. The Port Phillip Council's ("the Council's) local laws and the regulations of all relevant and responsible authorities. The Builder must be registered with the Building Control Commission and shall supply the Superintendent with their registration number.

2.2 Regulations, Notices And Fees

The Principal shall provide the necessary planning and building approval documentation and pay the associated fees.

The Builder shall comply with the requirements of all authorities having jurisdiction over the Works and shall give and receive all notices and pay all other fees, including but not limited to demolition permits, protection notices, hoarding permits, scaffolding permits, crossing permits, protection notices etc.

The Principal shall pay for Service connection fees for power, telephone, sewerage and water.

The Builder shall liaise with the Building Surveyor and organise all inspections required, and provide all certificates etc., necessary under the Building Code of Australia to obtain a Certificate of Occupancy for all Works under the Contract. The Builder will pay for fees charged by the Building Surveyor for additional inspections as a result of incomplete items at compulsory inspections.

2.3 SITE

The site is located at the South Melbourne Market, Coventry Street, South Melbourne.

The Site shall mean the area within the boundaries shown on the Site Plan. Tenderers shall visit the site before tendering and satisfy themselves in all respects as to the existing conditions. No extra costs shall be allowed for necessary work unforeseen by the Builder due to a failure to verify all site conditions.

Access to the site is to be via the driveway on the western side of the property. All materials for the construction are to be stored onsite in a designated area. It is the Builder's responsibility to make good any damage caused to any sections of the garden and grass areas that are being retained and are damaged by the building process.

The existing services on the site shall remain connected for the use of the Builder. The cost of these services shall be paid by the Principal with the exception of telephone calls. The cost of all telephone calls made by the Builder during this time are to be borne by the Builder.

2.4 BUILDER'S RESPONSIBILITY

The Builder shall be responsible for ensuring that all operations and methods of construction, materials and workmanship are safe, sufficient, and in accordance with the Contract documents. No inspection by the Superintendent, and no instruction given or

Certificate issued by the Superintendent shall be deemed to imply that the Superintendent has assumed or taken over any part of the Builder's responsibility as defined above.

The Builder shall be solely responsible for the execution and completion of the Contract including all sub-contracted and nominated suppliers/sub-contractors works, which shall be coordinated so that the Works proceed without delay. The Builder shall ensure that, in addition to items of the Works specifically mentioned in the relevant sections, each trade shall assist, leave holes for, cut away for, do chasing and drilling for, make good after, and arrange each work sequence with every other, in such a manner as to promote the best interests of the Works as a whole.

2.5 SPECIFICATIONS AND DRAWINGS

Do not scale the Drawings, and refer only to figured dimensions. Any discrepancies shall be referred to the Superintendent prior to the commencement of any such relevant portion of the Work.

Should there be any discrepancy between the Drawings and the Specification, the Contract shall be deemed to cover the alternative that involves the greater cost.

The words "supply", "provide" and the like shall be deemed to mean "supply and fix" unless expressly stated to the contrary.

Details not shown on the Drawings or covered by the Specification are to be built in the normal trade practice, or referred to the Superintendent for clarification. Details may be issued during the course of execution of the Works for the purpose of clarifying those details, or at the request of the Builder. Such details will not necessarily constitute Variations.

2.6 SHOP DRAWINGS

Where required by the documentation - shop drawings shall be provided by the Builder which show the details of fabrication, assembly, installation, fixing and waterproofing methods of specific items or components. Acceptance of shop drawings shall imply only that the Builder's interpretation of the relevant requirements of the Contract are generally correct, but shall not relieve the Builder of their obligation under the Contract.

2.7 MATERIALS

Unless otherwise specified, materials used throughout these Works shall be new, of good quality and be in general conformity with the most recent Specifications and Codes of Practice laid down by the Standards Association of Australia, where such exists or any amendments thereto. Defective materials shall be immediately removed from the site or otherwise treated as directed by the Superintendent.

The stacking and disposal of materials and plant shall be orderly and done so as not to impose undue loadings on parts of the structure not designed for or temporarily supported to withstand them.

2.8 SITE SECURITY AND SAFETY

The Builder shall from the commencement of and throughout the period of the Contract, take all proper and adequate precautions to prevent access by unauthorised persons to the site and the Works, and prevent all thefts and vandalism. The Builder shall immediately replace and make good any loss and/or damage from the theft, trespass and/or vandalism occurring to the Works prior to the issue of the Notice of Practical Completion.

The Builder shall provide all measures required by the Responsible Authority for the protection of the public and surrounding property including but not limited to adjacent buildings, trees and roads.

2.9 SCAFFOLDING

For the safe and proper execution of the work, the Builder shall:

- a) provide and erect all necessary staging and free-standing scaffolding in compliance with all relevant Acts and Regulations and the requirements of WorkSafe Victoria;
- b) obtain all necessary permits; and
- c) protect adjoining works and adjoining property. Any damage shall be made good at the Builder's expense.

2.10 EXISTING AND TEMPORARY SERVICES

Provide, maintain and remove at completion or when no longer required all temporary services necessary for the Works, including those of nominated Sub-Contractors. Make separate connections to the appropriate service mains and install all required meters, valves, piping, wiring, switchboards and similar items. Pay all charges in connection with these installations and their use until Practical Completion.

Existing services (such as drains, watercourses, public utility and other services) if encountered, obstructed, or damaged in the course of performing the work under the Contract, shall be dealt with as follows;
IF THE SERVICE IS TO BE CONTINUED: repair, divert, relocate as required.

IF THE SERVICE IS TO BE ABANDONED: cut and seal or disconnect.

2.11 SITE MEETINGS

During the whole of the course of the Works, the Builder shall hold site meetings every two weeks or at other such frequency as required by the Superintendent. All major sub-contractors working on the site at the time of such meetings shall be required to attend, either personally or through a senior representative. Any sub-contractor shall be required to attend specified site meetings should the Superintendent request such attendance.

2.12 INSPECTION OF WORK / INFORMATION FROM THE SUPERINTENDENT

Where inspections with notice are required the Builder shall notify the Superintendent at least 48 hours in advance.

Where items within the Contract require the Superintendent to make a final selection as to type, colour etc., the Superintendent shall be given 72 hours notice prior to the time in which a final decision is required.

2.13 MAKING GOOD

Make good damage done to the Works, or defects that appear during its progress whatever the cause, including the replacement of items that are not and cannot be made good in accordance with the Specification.

2.14 RECTIFICATION OF DEFECTS

The Defects Liability Period for this project is to be 52 weeks. The Defects Liability Period is taken from the time when the Works are deemed by the Superintendent to have reached Practical Completion. Defects reported during the Defects Liability Period shall be rectified progressively and not allowed to accumulate. Defects which affect safety or health or which seriously interfere with the essential functions of the building shall be rectified immediately once they are reported, other defects within a reasonable period thereafter.

The Defects Liability Period is not intended to cover any damages caused by users in their occupation other than those spelt out in the Contract Conditions.

3. CONTRACT

The contract is to be the AS4000 – 1997 Australian Standard General Conditions of Contract.

The Contract shall be fixed price.

4. DEMOLITION

4.1 GENERALLY

The Builder is responsible for obtaining all permits including hoarding permits and serving all related notices, including protection notices, as necessary for the demolition works.

Perform all demolition necessary to carry out the Works under the Contract.

Protect property that is to remain on or adjacent to the Works from interference or damage. Use appropriate structural supports to protect the Works during demolition prior to building in new structural members detailed on documents. Refer to the Structural Engineer's computations for any special details regarding demolition and temporary support.

Reinstate or make good any damage, to match existing.

Remove all demolition materials from site (unless otherwise specified to be re-used by the Superintendent) as they are removed from the building, by use of bins or similar. The Builder shall arrange permits and pay all associated costs with the use of skips / bins on site.

Refer to Section c) of this Specification for services encountered.

4.2 DILAPIDATION REPORT

The Builder shall undertake a full internal and external dilapidation survey to all properties adjacent to the site including a photographic record of all existing internal and external cracking. Provide a copy of the photographs to each respective owner, Building Surveyor and the Proprietor.

The survey shall be undertaken prior to the commencement of any works on site including the introduction of heavy machinery.

A second survey including photographic record shall be undertaken at the completion of the project. Provide a copy of the photographs to each respective owner, Building Surveyor and the Proprietor.

The Builder shall be responsible for obtaining access to all relevant properties.

4.3 ASBESTOS AND CONTAMINATED SOIL REMOVAL

It is anticipated that no asbestos will be encountered on site, therefore the removal of asbestos is not included in this Contract. However, should asbestos be encountered on site either during the tender or construction period, the Builder shall establish the extent of asbestos without disturbing the material and immediately refer to the Superintendent for instructions prior to proceeding further.

The Builder is to refer to the attached soil contamination report for advice on the category of soil and disposal off site if required.

5. EXCAVATOR, DRAINER AND CONCRETER

5.1 EXCAVATE

Excavate for footings, slabs, paving, drainage or pipes, to the various widths and depths shown on the drawings or required. Where top soil is to be removed, stockpile on site away from the Works for reuse at a later date.

All roots, stumps etc exposed during excavation are to be removed.

5.2 FOUNDATIONS

All loads are to be carried on foundations as shown in the geotechnical report and on the Structural Engineers' computations, or as detailed.

5.3 CONCRETE

Refer to the Structural Engineer's documentation.

Unless otherwise noted all concrete shall be 25 MPa. All concrete shall be supplied ready-mixed from an approved plant in accordance with AS 1379, 1974 'READY MIXED CONCRETE'.

No water to be added to concrete on site.

Concrete floors to be smooth trowel finished with no protrusions or trip hazards.

5.4 SUSPENDED CONCRETE SLAB

The underside of the first floor slabs are to remain exposed to view. Use Class 3 formwork, plywood or approved similar. Provide sufficient support to the formwork to carry concrete without deflections. Refer to Structural Engineer's documentation.

Installation, including formwork, is to be in accordance with AS 3600. Ensure that the formwork is smooth and clean immediately before placing the concrete. Strip formwork in accordance with AS 3610.

5.5 REINFORCEMENT

In accordance with the Structural Engineer's documentation. All Works are to be in accordance with AS 2870 and AS 3600.

5.6 VAPOUR BARRIER

A vapour barrier of 0.2 mm minimum thickness under the entire slab. The vapour barrier is to be lapped 200 mm at joints and shall be taped around pipes that penetrate the slab.

5.7 CURING

The surface of the slab shall be cured by the use of an impermeable membrane, continuous wetting of the concrete surface or other approved methods. Special care needs to be taken to prevent crazing of the surface where the slab is to remain exposed and/or polished.

5.8 TANKING

Provide tanking to all walls where the adjacent floor level is below the finished ground level. The tanking is to be a bituminous damp proof agent - rubber membrane by Shelterbit or approved similar - applied to the brickwork in accordance with the manufacturer's specifications and protected with a layer of Fortecon impervious membrane and 6 mm thick compressed cement sheeting.

Provide a minimum 300 mm wide strip of coarse screenings with a 100 mm diameter slotted agricultural drain with a filter sock at the base adjacent to the cement sheeting to ensure drainage. Provide inspection openings at corners and end of runs in pipework.

Seal all slab to panel or panel to panel junctions with 1.2 mm Combi-flex membrane by Silka Australia bonded by epoxy along all edges.

5.9 STORM WATER DRAINS

Unless otherwise noted, provide and lay with even falls 100 mm diameter sewer quality PVC stormwater pipework to connect all downpipes into the existing storm water drains. Stormwater drains are

to be laid on a bed of B grade crushed rock with a minimum 1 in 100 minimum fall and 150 mm cover where shown.

Provide inspection openings (IOs) at changes of direction.

Provide 100 mm diameter slotted Agricultural drains where shown on the Architectural Drawings. Connect to the existing stormwater drain via a silt pit.

All stormwater pipework is to be to the satisfaction of the Superintendent.

Stormwater pits and pipe bedding to detail.

6. BRICKWORK

6.1 BRICKWORK/BLOCKWORK

i Generally

All walls are to be constructed with Boral Series 200 Fireblock190mm thick core filled concrete blockwork and shall comply with AS 3700, and shall have a characteristic compressive strength of 15 MPa, refer to the Structural Engineering documentation for details.

In all areas where blockwork is to remain exposed, allow to clean all new face blockwork that is to remain exposed - acid washing or similar - in accordance with the brick manufacturer's specifications.

Mortar to be 6 parts bricklayer's sand: 1 lime: 1 cement. Mortar strength to be 6.2 MPa.

Bond to be stretcher. Joints to match existing.

ii Brickwork/blockwork in FRL/Rw rated systems

Refer to the drawings for concrete blockwork requirements for all FRL/Rw rated wall systems.

Continue all fire rated walls to the underside of the floor slab above. Fill all gaps with an approved caulking or compressed mineral wool.

6.2 BUILDING IN

All door and window framing are to be built into the masonry as the masonry is carried up. All cavity flashings to sills, jambs and heads are to be fixed to frames before the masonry has commenced.

6.3 DAMP PROOF COURSE

Use felt based bituminous asphalt not less than 2.54 mm thick and no more than 3.05 mm thick for the full width of walls as to the perimeter of the building. Also use Non Porite Clear admixture in mortar up to subfloor.

6.4 CUTTING

Where required to be cut for exposed positions bricks and concrete blocks shall be neatly and accurately cut with a masonry saw.

6.5 COURSES

Courses shall be kept horizontal with joints of even thickness, perpend plumb and true. Mortar joints are to be struck flush.

6.6 POINTING AND CLEANING

Point up pipes, flashings, put up holes and other areas neatly as required. Mortar smears shall be allowed to dry for a short period then removed by trowel, stiff broom or both, but spirits or salts shall not be used for cleaning. Paint and stains shall be removed from the finished masonry by the use of solution recommended by the brick manufacturer. Other clean-up required shall be in accordance with the manufacturer's specifications.

6.7 CONTROL JOINTS

Provide 10 mm wide control joints to the full height of the blockwork where indicated on the Architectural or Structural Engineer's drawings and/or in accordance with AS 2733 and/or AS 3700. Set into the control joint a backing of closed cell expanded polyethylene strip set back sufficiently to provide adequate depth for the sealing compound finished flush with the mortar. Seal the control joint with a polysulphide based sealing compound - colour to match face brickwork/render/bagged brickwork colour.

6.8 RENDER

Refer Section 10 of this Specification.

7. CARPENTER AND JOINER

7.1 Quality

All timbers shall be free from sapwood, shakes, large loose knots, borers and other defects.

All timbers on delivery to site shall be stacked to prevent twisting and warping. Timber shall be stacked clear of the ground at all times prior to building in. All timbers shall be stress-graded in accordance with SAA Codes.

All exposed timber shall be dressed unless otherwise noted and pre-finished with paint or stain or oil as specified to all faces and end grains prior to installation. This includes but is not limited to pergola rafters and battens, external decking, fascias, timber wall cladding etc. All timbers cut or worked after priming shall have the raw ends or faces coated with primer or sealer before fixing or covering up.

7.2 HINGES

Refer to Citipower's documents for details.

7.3 DOOR AND WINDOW FURNITURE AND HARDWARE

Refer to Citipower's documents for details.

7.4 WINDOW AND DOOR FRAMES

External timber jambs to be solid rebated minimum 40 mm thick unless otherwise noted. Internal timber jambs may have stops planted on. Larger stops required to the door head where the door swing is within 1200 mm of pan - refer Section 0 of this Specification. Refer window/door schedule for special conditions.

Frames shall be secured, complete with all grounds, spacers and packing to timber framed walls by securely nailing through drilled holes to studs and trimming.

All nail heads shall be well punched into the timber surfaces and filled with an approved caulking filler coloured to match the frame finish. Fixed glazing shall be bedded into rebates not less than 12 mm deep. Provide loose beads and wind moulds.

7.5 FIRE RATED DOORS

All doors are to be tight fitting, solid core doors - minimum 35 mm thick, with fire rated Pyropanel F194 pressed metal frames set into blockwork. Installation to be in accordance with Citipower requirements and AS 1905.1.

8. ROOFER

8.1 ROOFER GENERALLY

Roof covering materials shall be manufactured and fixed in accordance with the latest Standards Association of Australia Code of Recommended Practice and the Building Code of Australia. Where there is no relevant Standards Association of Australia Code, roofing shall be fixed in accordance with the manufacturer's specifications.

The roofer shall be responsible for the correct alignment of falls to ensure that ponding do not occur.

8.2 ROOFING MEMBRANE

The concrete roof is to be screeded with a suitable fall to prevent ponding. The concrete slab is to be to be clean, smooth, dry and free from dirt, grit or sharp objects. Concrete should be primed with 50/50 WA98 and purpose solvent. The Butynol roofer shall co-operate with the other trades forming the slab to ensure that the final surface is in a first class condition for laying of the Butynol rubber roofing.

On concrete roof, arrange to prime the slab after the initial curing to immediately cover with temporary waterproof covers. The Butynol roofer shall check the slab before laying any Butynol to ensure that the surface is completely sound and that there is no drumminess.

Lay the ArdexButynol roofing membrane in accordance with the manufacturer's specifications.

Upon completion of each area the roofer shall get the main contractor to inspect the area and the main contractor will sign off that the area was free from any defects or damage. It is the responsibility of the main contractor to ensure the Butynol roofing is in no way damaged by other trades.

8.3 SAFETY HARNESS ANCHOR POINTS

Provide heavy duty stainless steel safety harness anchor points to all roofs containing service equipment including hot water services. Design and installation of the system shall be in accordance with the "Code of Practice for safe work on roofs" as issued by the Department of Labour and Australian Standards.

Anchorage points must be designed for a fall arrest, tested and rated to at least 22 kN.

Provide a flexible roof flashing where the anchors etc. penetrate the roof, sized to suit the anchorage.

8.4 GUTTERING

Eaves gutters

'Quad' eaves gutters, zinalume finish.

Joins in the guttering are to be lapped, siliconed and fastened with matching coloured rivets. Make joints in the direction of flow.

8.5 FLASHINGS

Provide where necessary and form and fix all the various flashings in continuous lengths to the sizes and shapes required to render the building watertight.

Unless otherwise specified or noted, flashings are to be a minimum 0.6 mm thickness.

Finish of all flashings and cappings to be zinalume, unless otherwise noted.

Where nominated as stiff zinalume, flashing is to be thick enough to prevent rippling along its length.

Flash over all external doors and all other locations as necessary.

Flash all roof junctions, upstands, abutments, and projections through the roof. Mechanically preform or prefabricate flashings to the required shape, wherever possible.

Lap flashings 100 mm at joints ensuring that the lapped faces lie firmly against each other. Clip together any laps not complying with this requirement.

Rake brick joints and secure flashings into same with matching metal wedges and point and/or caulk as specified in Section 0 of this Specification.

8.6 COMPATIBILITY

Ensure that electrolytic or similar corrosive actions are eliminated by physical separation and by avoiding the puncturing of metals or breaking down of the surface finishes.

8.7 DOWN PIPES

Provide downpipes where shown on drawings or as necessary to completely drain all roof and external deck areas. Unless otherwise noted all downpipes are to be 100 mm diameter, zinalume finish.

Downpipes are to be run in single lengths, vertically and plumb, and fixed to walls or posts with off set type brackets similar to "Abbey"

bolted clip system. Seams of exposed pipes are to be located to face the wall to which they are attached.

Down pipes generally are to discharge into stormwater drains where indicated. PVC drain component is to stop at the finished ground level, so as not to be visible.

8.8 COMPLETION

i. Cleaning Down

At all times the roof and gutters shall be kept free of all metal particles, welding spatter and all other debris. Thoroughly clean and wash down the roof and guttering where there is soldering. On completion, clean out roof gutters and leave the whole of the roof area clean and in perfect condition.

ii. Checking of Gutters and Downpipes

Test gutters and downpipes with water and immediately rectify any leaks and other defects.

iii. Warranty

Provide a plumbing certificate at the completion of the works including the roof warranty. Roofer to guarantee roof against water penetration where new or where an existing roof is repaired and around new openings and penetrations through an existing roof for a period of ten (10) years.

9 PLUMBER

9.1 Generally

Plumbing works shall be carried out by plumbers who are licensed and/or registered in the classification appropriate to the work being carried out, and must comply with the *Building Act 1993*, the *Plumbing Regulations 2008*, the rules and regulations of the Responsible Authority, the Building Code of Australia and the requirements of the Plumbing Industry Commission.

Works include, but are not limited to, supplying and fixing of, disconnection relocation or making good as necessary all existing disused sewer, water and stormwater pipe work.

Refer to the Hydraulic Engineer's documentation for the following;

- Pipes, wastes and vents.

Refer to the Services Engineer's documentation for plumbing requirements to all services. Provide a plumbing certificate at the completion of the works.

10 PLASTER, EXTERNAL RENDER AND TILING

10.1 EXTERNAL RENDER

ii. Concrete/masonry walls

External rendering shall be in two (2) coats of Colortex Dry Acrylic Render with Colortex - top coat to enhance the surface finish texture and colour to be advised. Render is to be

trowelled on, not rolled on, and shall be an ultra fine finish to match traditional fine sand finish render.

iii. Movement control joints

Locate movement control joints to coincide with junctions of differing wall structure materials or where designated on the drawings, or at maximum 4.5 metre centres. Form joints continuously to extend neatly and cleanly up to adjacent abutting surfaces and form with approved mastic sealant and an approved fully compressible joint filler or similar.

Finish square all internal (re-entrant) vertical corners of all walls and columns.

Finish external vertical corners slightly rounded to approximately 4 mm radius.

Extend all rendering into all recesses, jambs, returns etc.

Form covers over chases in walls and columns for pipes, conduit, cables, etc., with galvanised expanded metal lathing lapped 150 mm over recess, fixed with galvanised nails or power driven fasteners and washers, all spaced at maximum 300 mm centres. Fix lathing before first coat of render.

The base sections of the render are to have a water proof clear admixture, to prevent water staining at the base, and to ensure that the damp proof coursing is not bridged.

At a location and time to be selected by the Superintendent, construct up to 3 complete prototypical installations approximately 1 metre square. This prototype shall include all elements provided under this Section and be finished in every respect. On approval by the Superintendent, the prototype shall become the standard for the remaining Works, and shall remain as part of the Works.

11 ELECTRICAL

11.1 GENERALLY

Works include, but are not limited to, the supply of all labour and materials necessary for the installation of the following;

- a) applications for power supply, liaison with the supply authority, forwarding of relevant notices, arranging inspections as necessary, including payment of all associated costs;
- b) power supply and mains connections;
- c) meters and switchboards;
- d) provide GPOs and lighting, emergency and exit lighting etc. as shown on the drawings and associated schedule;
- e) occupant building warning system; and
- f) operation and maintenance manuals with 'as built' drawings - 3 No. required.

Provide earth leakage breakers to all power circuits.

Provide surge protection to the power circuits.

Infrastructure upgrade costs to the Responsible Authority for power connection are to be paid by the Builder from the PC sum nominated in the Contract. All trenching, wiring, conduits, backfill etc to be allowed for.

Refer to the Electrical Engineer's documentation for further details. Provide a Certificate of Electrical Safety at the completion of the Works

Refer to the Services drawings for the extent of work.

Power, telephone and cable television wiring is to be run underground from the Supply Authority pole or pit, to the meter box or to the connection point(s) for the telephone/cable television.

Allow to upgrade the existing switchboard with new plastic enclosed earth leakage and circuit breaker board if the existing switchboard cannot handle the new load.

Replace all braided wire circuits, or others noted as requiring attention on the drawings.

11.2 INSTALLATION

The whole of the base electrical installation shall be carried out by the Builder through a qualified electrical sub-contractor, in a manner and using materials in compliance with the regulations of the Fire Underwriters' Association of Victoria and in accordance with the current wiring regulations of the Supply Authority.

The electrical sub-contractor shall give notices required in connection for the whole installation as required by the Supply Authority. The Builder shall advise the Proprietor when the consumer's application for supply may be forwarded to the Supply Authority.

11.3 SYSTEM OF WIRING

Except where otherwise required by the current wiring regulations of the Supply Authority, the system of wiring to be installed generally shall be thermoplastic insulated and sheathed cables (T.P.S.) or other approved material. All wiring to be concealed in walls and ceilings.

All wiring shall be clipped to timber battens or run in cable trays. Cable clips or PVC loops shall be of an approved type, and spaced in accordance with the SAA regulations.

11.4 Pre-Wiring

Check with Superintendent prior to commencement of work to ensure minor variations have not been made to the layout. (Door swings, appliances, switching points etc.)

11.5 EARTHING

Earthing of the complete electrical installation shall be in accordance with the requirements of the SAA wiring regulations, and the Supply Authority's requirements.

11.6 LIGHT FITTINGS

Refer to lighting schedule on the Architectural drawings. Allow to supply and fit off all light fittings to all new points and those being altered.

11.7 EMERGENCY AND EXIT LIGHTING

Refer to Citipower and Irwin Consul's documentation.

11.8 FIRE DETECTION AND ALARM SYSTEMS

Refer to Citipower and Irwin Consul's documentation.

11.9 SMOKE DETECTORS

Smoke detectors shall be hard wired with battery back up - BRK Electronics or approved similar - in accordance with AS 3786. Smoke detectors are to be straight white, or painted to match the ceiling colour.

11.10 SWITCHES & POWER POINTS

Refer to Citipower and Irwin Consul's documentation.

11.11 TELEPHONE POINTS

Refer to Citipower and Irwin Consul's documentation.

11.12 METER

Refer to Citipower and Irwin Consul's documentation.
The Builder shall read all of the meters at the completion of the project and again a month after completion and confirm in writing that the meters are recording correctly, together with the instrument reading obtained.

11.13 SWITCH BOARD

Refer to Citipower and Irwin Consul's documentation.

11.14 COMPLETION

Provide a Certificate of Electrical Safety to the Superintendent for all works.

12 PAINTER

12.1 MATERIALS

SEALING PREPARATIONS, PRIMERS, OIL PAINTS, WASHABLE COLD WATER PAINTS, ENAMELS, STAINS AND VARNISHES SHALL BE READY PREPARED, CONFORMING TO THE RELEVANT SPECIFICATIONS LAID DOWN BY THE STANDARDS ASSOCIATION OF AUSTRALIA AND SHALL BE BROUGHT ONTO THE JOB IN THEIR ORIGINAL SEALED CONTAINERS.

Paint is to be stirred thoroughly with a broad flat stirrer to ensure the even distribution of colour.

All the surfaces coatings listed above to be manufactured by Dulux, Taubmans, Berger, Haymes, Murobond, Intergrain, Cabots, Sikkens, British Paints or similar approved.

12.2 SAMPLES, COLOURS AND FINISHES

The Builder shall supply up to six 1m² samples of selected colours in nominated positions prior to commencement of work for approval by the Superintendent.

12.3 PREPARATION AND WORKMANSHIP

It is the painter's responsibility to point out any areas that they believe are the Builder's responsibility to rectify prior to the commencement of any area of painting.

If the painter fails to notify the Builder or Superintendent of areas they believe to be unreasonable then they assume responsibility for bringing such areas up to the general overall standard of the job.

Remove all hardware before painting is commenced and replace on completion.

Painting shall be done by skilled tradespeople, as rapidly as the satisfactory completion of any single section of the Works will permit and under conditions that will not jeopardise the appearance or quality of the job in any way.

Where surfaces show any evidence of stain, they shall be sealed with a sealing preparation before being coloured.

Work to be painted or stained shall be prepared by scraping or rubbing down, priming, stopping up and brought to a smooth even surface before the paint or stain is applied. Stopping shall be done after priming coat. For exterior work, allow a minimum of 24 hours between coats to ensure that each coat is thoroughly dry before the succeeding coat is applied.

Apply each coat evenly, free from air bubbles, runs, brush marks, sags, blotches and other defects. Each coat shall have a uniform finish and colour.

Internal coatings on flat ceilings and wall surfaces, and external coating to masonry and concrete walls, may be applied by roller. Otherwise apply all coatings by brush unless approval is first obtained from the Superintendent for alternative methods.

12.4 EXTENT OF WORK

Internal Surfaces: Select WHITE Paint finish as specified to all internal walls & ceiling.

External Surfaces: Paint finish as specified to all external surfaces.
Finish (Colours To Future Schedule)

Externally:

Timbers noted as a paint finish including windows, doors, pergolas, posts etc.	1 coat oil-based weatherproof primer. 1 coat exterior undercoat. 2 finishing coats high gloss acrylic
Metalwork noted as a paint finish	1 coat metal primer. 1 coat undercoat. 1 finishing coat high gloss acrylic
PVC	2 finishing coats exterior high gloss acrylic
Blockwork	2 finishing coats exterior flat acrylic
Cement paint finish to external bagging or render	Two coats of Murobond or Porter's Boncote or approved similar cement paint in accordance with the manufacturer's specifications
Doors, windows nominated as a paint, finish	1 coat undercoat. 2 finishing coats high gloss enamel

12.5 AIR CONDITIONING

Refer to Citipower and Irwin Consult's documentation.

13. LANDSCAPING/REINSTATEMENT

13.1 Scope Of Work

As detailed on the drawings, including driveway, paths, patios, garden beds and taps.

13.2 TREES AND GRASSED AREAS

Any trees and vegetation not noted as being removed are to be protected and watered (if necessary) during the construction. Additional planting, including trees, native grasses and lawn indicated on the Architectural drawings shall be by others in the future.

13.3 GARDEN BEDS

Where shown, garden beds are to have concrete kerb and channel to the satisfaction of the responsible authority to the perimeter of the bed.

13.4 TOP SOIL

Provide a minimum 100 mm top soil re-used from the site excavation to all areas indicated of the Architectural Drawings, including where the top soil is built up and graded away from the perimeter of the building. A small amount of topsoil is to be stock piled for later re-use by the Proprietor - discuss on site.

13.5 CONCRETE PATHS & DRIVEWAY

Provide asphalt paths and driveways as indicated on the site plan.
Concrete landing pad and driveway to Structural Engineer's details with a broom finish to ensure paths don't become too slippery. Top of concrete paths and adjacent pine mulch / grassed areas to finish flush.

14. MISCELLANEOUS

Fire Extinguishers

Provide a 2A20B(E) dry chemical fire extinguisher to each switchboard.

15. COMPLETION

15.1 General Instructions Notification

When the Builder is of the opinion that the Works are practically complete in terms of the Contract, they shall give notice in writing to the Superintendent who within seven (7) days shall inspect the Works with the Builder in person.

15.2 PREPARATION FOR INSPECTION

Prior to the Practical Completion inspection, the Builder shall have completed the Works in every respect, including;

- a) clean up the site and Works, dig out and remove all patches of set lime, cement, concrete, mortar, etc. Remove all plant, remove debris and leave site clean and tidy;
- b) clear all labels off fittings, clean windows, floors and fittings;
- c) adjust all doors, windows sashes, etc.;
- d) fit all locks with their correct keys properly labelled and adjust and lubricate all door and window furniture to operate correctly; and
- e) replace any damaged materials, fittings or equipment.

15.3 Inspection

On inspection for Practical Completion, the Superintendent may notify the Builder of items of work still required to be done and thereon, the Builder and the tradespeople concerned shall remain on the job until all work, installations and services are completed.

15.4 DEFECTS LIABILITY

During the Defects Liability Period, the Builder shall, as set out in the Conditions of Contract, render prompt and efficient service through the foreman and all sub-trades to all items requiring remedial work or rectification or adjustment within seven (7) days of notification by the Superintendent, or within twenty-four (24) hours in matters requiring

urgent attention. Items not requiring urgent attention shall be rectified at the end of the maintenance period.

At the completion of the Defects Liability Period the Works will be inspected and where necessary a list of outstanding defects and incomplete works will be issued to the Builder. Unless otherwise notified, the Builder will then have a further two weeks to complete these remaining items. Defects or works that remain incomplete after this time will be made good by others, and the associated costs will be deducted from the Final Contract Sum.

15.5 FINAL CERTIFICATE

On completion of remedial work as set out in the preceding Clause and handing over of all warranties, guarantees and certificates including the plumbing certificate, termite certificate, certificate of Electrical Safety, glazing certificate and insulation certificate, and the fulfilling of all other obligations under the Contract, the Superintendent shall issue to the Builder a Final Certificate.

16. CITIPOWER REFERENCE DOCUMENTS (Refer to Section 4 - Drawings attached separately as a Winzip

file)

- Citipower/Powercor Australia: Substation Enclosure Handover Inspections Report.
- Citipower/Powercor Australia: Project Information Pack for Developers & Builders.
- CitipowerVesi/VCSA: Interface Arrangements, 2007.
- CitiPower/Powercor Australia: Indoor Substation – Specification for Customer (VI040)