pedersen read
consulting electrical engineers

GOLDFIELDS PRIMARY SCHOOL

TENDER SPECIFICATION
For
ELECTRICAL SERVICES

PROJECT MANAGER:	**School Support Dunedin**
ARCHITECTURAL DESIGNER:	**Katipo Design**
ELECTRICAL ENGINEER:	**Pedersen Read Dunedin**
MECHANICAL ENGINEER:	**Wintech**

GOLDFIELDS SCHOOL NEW BLOCK

E1. GOLDFIELDS SCHOOL – NEW CLASSROOM BLOCK

Pedersen Read provide a Scope of Works which outlines the items that will form part of the electrical services of the contract for the establishment of the new classroom block at Goldfields School.

This document is to be used as a scope of works for design build electrical contractors to base their tender submission on. We provide the scope of works for electrical services on a heading by heading basis as follows.

E2. DRAWINGS

Documents that relate to this contract shall include the following:

- E1.1 - Electrical Site Plan
- E2.1 - Electrical Services Plan

E3. DESIGN BUILD SUBMISSION

Tenderers shall allow to provide a tender submission to design, supply, install and commission an electrical installation that complies with the criteria set out within this document as follows.

E4. INCOMING SERVICES TO BLOCK

Incoming services are to be provided to the new block as set out below. Tenderers are to allow to provide a site plan with intended cable routes outlined within the tender submission.

- Incoming power supply to be derived from the main switchboard within the Administration block from MSB where indicated on the attached drawing. The submain cable shall be rated for 50Amps three phase. The cable size has been specified on the drawings. Allow to connect to the MSB via new 50A MCB. Cabling to be concealed within conduit along exterior of building under walkway. Installation to match the existing conduit installed for the data cabling.
- Structured cabling backbone cabling shall originate from the existing Patch Panel located within the Administration building indicated on the attached drawing as Patch Panel AG1, this backbone cabling shall be in compliance with the “Ministry of Education Information Technology Infrastructure Cabling – Switching Policy and Guidelines for Schools” this backbone cabling shall be installed from the main site data patch panel within the Administration Block to the new patch panel CG1 within the new classroom block. Backbone cabling shall incorporate fibre cabling and 2No Cat 6 tie cables for telephone cabling interfaced to the telephone systems at the site to allow patching of phone outlets to any data outlet.
- New Fire alarm cabling shall be to be extended from the new fire alarm panel within the MSB room to the new classroom block. The new classroom block building fire alarm system shall form a new zone on the new fire alarm panel which shall cover the new classroom block. Note an interface is to be provided to allow full site evacuation when activation of any fire alarms system occurs. Class change activations on the existing type 1 alarm system should not initiate a fire alarm call.
- Class change cabling to be extended from the adjacent existing clapper bell on the existing block B, this shall be extended to a new white clapper bell installed on the exterior of the new classroom block.
- MOE approved security services shall be provided in the new classroom block. Security LAN cabling to be installed from the Administration building MSB room to the new classroom block to allow for future site wide connection of the security system.

E5. SWITCHBOARD FOR NEW CLASSROOM BLOCK

The new classroom block will be provided with a new switchboard which shall be of metal clad construction and in full compliance with all applicable standards. This switchboard shall incorporate all circuit breakers for services within the block and spare capacity to allow supply to additional subcircuits in the future. 36 ways shall be provided. Switchboard shall have evacuation lighting controls and exterior lighting controls etc.

E6. LIGHTING

- Evacuation lighting to be provided in compliance with F6 of the building code, this will incorporate illuminated exit signs to all exit doors and emergency lighting testing facilities at the distribution board.
- Exterior lighting will be controlled by an auto/off manual switch on the switchboard and be installed as indicated on the architectural drawings. In auto mode day light switch and time clock control will apply. 4 core cabling to be installed to all exterior lights.

E7. PLUG SOCKET OUTLETS AND DATA OUTLETS

- At each data outlet position allow to provide 2 double plug socket outlets (one with 10mA RCD protection).
- Allow to provide power supply to 1No. hot water cylinder.
- Allow to provide surge protected power supply to data patch panel.
- All socket outlets and light switches shall be from the PDL600 series

E8. STRUCTURED CABLING

- Allow to provide data outlets as indicated on the drawings including high level outlets for future wireless modules.
- Allow to provide a data cabinet in the form of a suitably sized wall mount enclosure (Min. 12RU) in compliance with MOE guidelines. All structured cabling systems shall be in accordance with MOE guidelines. All installers of data services shall be registered on the MOE website.
- Allow for Cat 6 patch panel, Cat 3 voice panel, fibre tray and terminations.
- Allow for 6 core OM3 fibre cabling from the AG1 data cabinet to the new CG1 data cabinet. Allow to terminate in the existing fibre tray at AG1, allow for matching connectors and labelling.
- Allow to install new fibre and tie cables in the existing conduit from AG1 to BG1. (There is currently a draw wire installed) and extend in new conduit to the new classroom block from block B.

E9. SECURITY SYSTEM

- Provide MOE approved (concept 4000) security system within the new classroom block, provide new PIR detectors, external sounder and 1No code pad and commission.
- Install a security system LAN cable from the new classroom block to the main switchboard room for a future security system to cover the remainder of the school.

E10. FIRE ALARM SYSTEM

- Provide a new addressable fire alarm panel within the main switchboard room. This new fire alarm panel shall provide fire alarm services to the new classroom block and also provide a smoke detector within the MSB room of the administration block. This panel will become the main fire alarm panel for the school as the fire alarm in the remaining blocks are upgraded.
- The new addressable fire alarm panel shall interface with the existing Type 1 clapper bell and the existing conventional F1 panel installed in the Hall.

- Provide new addressable type 4 fire alarm system (Smokes within the new classroom block and thermals in the exterior veranda, the fire alarm system shall be fully compliant with NZS4512:2010.
- An interface is to be provided to allow full site evacuation when activation of any fire alarms system occurs. Class change activations on the existing type 1 alarm system should not initiate a fire alarm call.
- Provide site indicator mimic panel.
- The sounders within the new classroom block shall match the existing clapper bell sound until the whole site is converted to verbal messaging.

E11. CLASS CHANGE SYSTEMS

- The existing class change system at the school is via clapper bells.
- Allow to provide an additional clapper bell on the new classroom block and extend cabling from the existing clapper bell on the adjacent block B.
- The new clapper bell shall be painted white.

E12. GENERAL

- All works to comply with AS/NZS:3000:2007.
- All works to comply with MOE guidelines.
- As built documentation to be provided for all electrical services.
- Staff training to be given on all equipment.
- A maintenance period of 12 months will apply from final completion.
- MOE Warranties for electrical services shall apply to this contract
- Allow to carry out a full site evaluation prior to submission of a tender.

E13. WARRANTIES AND DEFECTS LIABILITY PERIOD REQUIREMENTS

All items of equipment shall be subject to a Defects Liability period of twelve months from the date of Practical Completion.

The Warranty period for various items which shall commence at the completion of the Defects Liability period shall be as follows

- Workmanship 12 months after completion of Defects Liability Period
- Structured Cabling Systems 15 years after completion of Defects Liability Period (Vendors Warranty)
- Security Systems 12 months after completion of Defects Liability Period
- Light Fittings 12 months after completion of Defects Liability Period
- Fluorescent tubes and lamps 12 months after practical completion or the rated life of lamp provided by the manufacturer based on normal operating hours of facility. Whichever is less.
- Exterior Paint finishes on any component of the electrical installation including lights. 4 years after completion of Defects Liability Period
- Switchboards and distribution boards 12 months after completion of Defects Liability Period
- Switchgear including light switches and plug socket outlets 12 months after completion of Defects Liability Period.
- Control Systems 12 months after completion of Defects Liability Period.
- Where products are provided with a longer warranty period as normal practice the longer period shall apply.

E14. Ministry of Education Warranties

Within schools, all new or upgraded electrical installations shall have the following warranties

- A minimum two (2) year installation warranty
- A minimum two (2) year systems and components warranty
- A minimum five (5) year electrical appliance warranty, where the appliance is supplied by the electrical contractor.

E15. DOCUMENTS TO BE COMPLIED WITH

The following documents are to be referenced and complied with in the design build submission.

- Ministry of Education document titled “Ministry of Education Information Technology Infrastructure Cabling – Switching Policy and Guidelines for Schools” which is available on the MOE website at www.minedu.govt.nz.
- AS / NZS 3000:2007 standard
- NZS 4512:2010 standard
- New Zealand Building Code
- All applicable New Zealand Standards
- Particular reference to be given to F6 and F8 of building code
- Ministry of Education document titled “The supply and installation of intruder systems for the Ministry of Education”.
- Ministry of Education document titled “Ministry of Education Standard Specification Security Alarm System” which is available on the MOE website at www.minedu.govt.nz.
- Ministry of Education document titled “Fire safety and Design Requirements for Schools” which is available on the MOE website at www.minedu.govt.nz.
- Ministry of Education document titled “Ministry of Education Information Technology Infrastructure Cabling – Switching Policy and Guidelines for Schools” which is available on the MOE website at www.minedu.govt.nz.

E16. PROVISION OF DOCUMENTATION

The following documents are to be provided at times outlined.

- At the time of tender a plan showing planned routes for cabling around the site should be submitted.
- At the time of tender a plan showing outlet positions should be submitted for sign off by the project manager.
- For building consent purposes the electrical contractor shall allow to provide a Producer statement PS1: Design outlining compliance of design with the building code.
- At the completion of the project. Allow to provide an electrical certificate of compliance for the completed electrical installation.
- At the completion of the project. Allow to provide a Vendors warranty statement for the structured cabling systems. This shall be in compliance with the MOE guidelines.
- At the completion of the project. Allow to provide an FPIS certificate of Compliance for the fire alarms system.
- At the completion of works the electrical contractor shall allow to provide a Producer statement PS3: Construction outlining compliance of design with the building code.
- During the course of the project the electrical contractor shall allow to fill in MOE project management forms as requested by the project manager.