Site Conditions

The project site area is in the order of 42,000 m², of which 75% is estimated “perVIOUS” for modelling the pre-developed stormwater runoff characteristics. The total fraction impervious for the developed site will be approximately 25%.

Sub catchment 1 comprises plan area of 14,800 m² (approximately) with an average surface slope of 1.8%. This catchment mainly consists of grassed areas and trees and will be separated from the other catchments by a rock-lined and partially vegetated swale running roughly parallel to the western boundary of the site.

Sub catchment 2 comprises a plan area of 9,900 m² (approximately) with an average slope of 1% down to the east. This catchment mainly consists of new learning neighbourhood buildings and new sheltered bus bay. New roof and paved areas are about 2,300 m² and 2,400 m², respectively.

Sub catchment 3 comprises a plan area of approximately 17,600 m² (approximately) with an average slope of 1.2% down to the south-east. This catchment mainly consists of existing blocks A, B, C, D existing outdoor learning areas and new sports hall building. Roof and paved areas are about 1,900 m² and 4,300 m², respectively.
Electrical Design Strategy

Electrical

The new configuration of the school has a maximum demand of just under 400A/phase. Therefore the existing Kiosk Transformer and MSB will be retained, with the SPD wound up to 400A/phase to supply the new works. Existing underground power conduits will be utilised where possible.

A new sub-main supply will be installed to supply the homebase blocks directly from the existing MSB. This will be a 250A/phase supply to Block E (DB-E), which will then supply Blocks G (DB-G 63A/phase) and F (DB-F 125A/phase).

The new Block H (DB-H) will be supplied from the existing MDB with 125A/phase supply.

Existing Blocks B and C will utilise existing distribution boards for their new configurations.

Communications

The existing campus distributor located in existing Block B will be reattained and utilised for the new works. Each new homebase block and the new sports court/hall will have a new 42RU floor mounted rack served via a multi-core optic fibre back to campus distributor.

Spare existing underground comms conduits and pits will be utilised as possible for the reticulation of the communications.

EFSG Coordination

Electrical Projects Australia are required to provide for, coordinate with existing services and note electrical departures to comply with Department of Education Facilities & Standard Guidelines (EFSG). This will be identified in the EFSG checklist for each space within the proposed scope of works at LCPS.

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Compliance Level</th>
<th>Description / Sub-Item</th>
<th>Document Ref.</th>
<th>Project Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mandatory</td>
<td>Road Noise - 60 dB(A)/max.</td>
<td>Nominated Architect/2012 Regulations = Acoustic Performance Guidelines</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non-comforming or N/A</td>
<td>Nominated Architect/2012 Regulations = Acoustic Performance Guidelines</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aircraft Noise</td>
<td>Nominated Architect/2012 Regulations = Acoustic Performance Guidelines</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Industrial Noise</td>
<td>Nominated Architect/2012 Regulations = Acoustic Performance Guidelines</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wall Noise</td>
<td>Nominated Architect/2012 Regulations = Acoustic Performance Guidelines</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Operable wall min. Rw45</td>
<td>Nominated Architect/2012 Regulations = Acoustic Performance Guidelines</td>
<td></td>
</tr>
</tbody>
</table>

EFSG Home Base Checklist

A new sub-main supply will be installed to supply the homebase blocks directly from the existing MSB. This will be a 250A/phase supply to Block E (DB-E), which will then supply Blocks G (DB-G 63A/phase) and F (DB-F 125A/phase).

The new Block H (DB-H) will be supplied from the existing MDB with 125A/phase supply.

Existing Blocks B and C will utilise existing distribution boards for their new configurations.
EXISTING POWER & TELSTRA CABLES WITHIN TO BE REESTABLISHED TO SUIT NEW CIVIL LEVELS

NETWORK CARRIER INPUT

EXISTING SUBSTATION

REESTABLISHED POWER & TELSTRA CABLES TO BE UTILISED FOR CABLE PATHWAYS TO EXISTING MSB

NEW MAIN SWITCHBOARD & DISTRIBUTION BOARD

EXISTING MAIN SCHOOL COMMUNICATIONS TO REMAIN

NEW DISTRIBUTION BOARD

POWER CONTROL PANEL

UTILISE EXISTING UNDERGROUND POWER CONDUITS FOR NEW CABLE PATHWAYS

NEW DISTRIBUTION BOARD & MAIN SWITCHBOARD 1 PER LEARNING NEIGHBOURHOOD

NEW COMMS RACK 1 PER LEARNING NEIGHBOURHOOD

UTILISE EXISTING UNDERGROUND COMMUNICATIONS CONDUITS FOR NEW CABLE PATHWAYS
Hydraulic Design Strategy

Introduction

Based on DBYG information & data collected from the detailed site survey, HYDRAULIC services located water, sewer mains and gas services on site servicing the existing school.

Where required as per DA conditions with regard to emergency access, specific site service are to relocated at new locations however the primary aim is to utilise existing services and undergound pipework.

Potable Cold Water Reticulation

- The existing potable cold water property services and boundary main meter assembly is to remain in its current location in the northern corner of the site.
- The existing potable cold water pipelines nominated to be disconnected are to become redundant, be capped at their source of supply permanently and be removed from site.
- All necessary potable water connections have been designed to connect all fixtures, plant, equipment and fire hose reels.

Reclaimed Water Reticulation

- The existing reclaimed water property service and meter assembly is to remain in its current location in the northern corner of the site.
- The existing reclaimed water pipeline, which will conflict with the proposed new buildings is to be made redundant and a new reclaimed water service diversion has been indicated outside of the proposed building footprint.
- All necessary reclaimed water supply connections will have been designed to supply all toilets and hose taps.

Gas System

- The intent is for the existing 4,000l lp gas storage tank to remain in service and in its present location.
- Initially there was a concept that the lp gas storage tank could be reduced in size. However, due to the inclusion of gas heating in the proposed new hall, the existing gas system has been deemed to be sufficient and is to remain as existing.

Sanitary Drainage

- The existing sewer pump station is to remain in its present location.
- All disused sanitary drainage pipelines will be capped at their source permanently and be removed from site.
- All necessary sanitary water connections have been designed to connect all fixtures, plant, equipment and fire hose reels.

Fire Service

- The existing property service and double check assembly will remain in its current location in the northern corner of the site.
- The relocation of the schools main entry has resulted in the existing fire hydrant pump and h-pattern booster assembly no longer being compliant with AS2419. As AS2419.1-2005 states that the booster assembly must be adjacent to the principle vehicle access to the site. Therefore, we propose to relocate the existing fire hydrant pump and h-pattern booster assembly to the new main entrance of the school in the south-east corner of the site adjacent to the collector road roundabout.

Sanitary Drainage

- The existing sewer pump station is to remain in its current location in the northern corner of the site.
- The existing sewer pump station is to remain in its current location in the northern corner of the site.
- New sanitary drainage pipelines are nominated to be installed to connect all fixtures, plant, equipment and fire hose reels.

EFSG Coordination

McCallum Plumbing & Fire Consultants Australia are required to provide for, coordinate with existing services and note hydraulic departures to comply with Department of Education Facilities & Standard Guidelines (EFSG). This will be identified in the EFSG checklist for each space within the proposed scope of works at LCPS.

- New sanitary drainage pipelines are nominated to be installed to connect all proposed sanitary fixtures in accordance with AS3500.2-2015.
- McCallum Plumbing & Fire Consultants Australia are required to provide for, coordinate with existing services and note hydraulic departures to comply with Department of Education Facilities & Standard Guidelines (EFSG). This will be identified in the EFSG checklist for each space within the proposed scope of works at LCPS.

- Fire Service
- The existing property service and double check assembly will remain in its current location in the northern corner of the site.
- The relocation of the schools main entry has resulted in the existing fire hydrant pump and h-pattern booster assembly no longer being compliant with AS2419. As AS2419.1-2005 states that the booster assembly must be adjacent to the principle vehicle access to the site. Therefore, we propose to relocate the existing fire hydrant pump and h-pattern booster assembly to the new main entrance of the school in the south-east corner of the site adjacent to the collector road roundabout.

- New sanitary drainage pipelines are nominated to be installed to connect all fixtures, plant, equipment and fire hose reels.

- EFSG Coordination
- McCallum Plumbing & Fire Consultants Australia are required to provide for, coordinate with existing services and note hydraulic departures to comply with Department of Education Facilities & Standard Guidelines (EFSG). This will be identified in the EFSG checklist for each space within the proposed scope of works at LCPS.
EXISTING WATER ASSEMBLY & METER TO REMAIN IN SERVICE.

EXISTING 100mm FIRE SERVICE TO BE DISCONNECTED, CAPPED & REMOVED FROM SITE. NEW FIRE HYDRANT TO LOCATION AT NEW ENTRY.

DOUBLE PILLAR FIRE HYDRANT TO AS2419 LOCATED MIN 10m FROM ALL PARTS OF BUILDINGS.

EXISTING FIRE HYDRANT, PUMP & H-PATTERN BOOSTER ASSEMBLY TO BE DISCONNECTED & RELOCATED TO LOCATION AT NEW ENTRY.

PIPWORK SERVICES CAPPED AT SOURCE, DISCONNECTED & REMOVED FROM SITE.

DISSUSED SANITARY DRAINAGE FROM DEMOUNTABLES CAPPED AND REMOVED FROM SITE.

FIRE HOSE REEL TO AS1221

EXISTING RAINWATER PIPE REMOVED

NEW IN-GROUND FIRE HYDRANT INSTALLED WITH MIN. 600mm GROUND COVER.

NEW LOCATION FOR RELOCATED FIRE HYDRANT PUMP & FIRE HYDRANT PUMP ENCLOSURE TO AS2419.

EXISTING SEWER PUMP STATION TO REMAIN.

RELOCATED H-PATTERN BOOSTER ASSEMBLY TO AS2419.