



Westmead Catholic Education  
Campus SSD

for

Winim Developments



## Infrastructure & Services Report



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erbas™ project references No: SYD19378

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# 1.introduction

## 1.1 introduction

This report supports a State Significant Development Application for the Westmead Catholic Community (WCC) at 2 Darcy Road, Westmead.

The WCC project seeks to meet the needs of the growing population within the region by providing upgraded school facilities for Mother Teresa and Sacred Heart Primary Schools, as well as a new Parish church. WCC is a collaboration between Catholic Education Diocese of Parramatta (CEDP), the Diocese of Parramatta (DoP), the Sisters of Mercy and the Marist Brothers Province of Australia.

As the proposal is for the purposes of alterations and additions to an existing school and has a capital investment value in excess of \$20 million, it is State Significant Development (SSD) for the purposes of the Environmental Planning and Assessment Act 1979 (the Act). The Parish church is also SSD under clause 8(2)(a) of State Environmental Planning Policy (State and Regional Development) 2011 as it forms part of the proposal which comprises a single, integrated development with significant functional links between the education and church uses.

## 1.1 Description of proposed development

- A primary school with capacity for approximately 1,680 students, to provide expanded facilities for the existing Mother Teresa Primary School on the site and to replace the existing Sacred Heart Primary School at Ralph Street;
- A new Parish church;
- A Catholic early learning centre (fit-out within an existing building);
- New landscaping.

This report provides commentary to the extent of the statutory infrastructure available to Westmead Catholic Community (the Project). The infrastructure and design strategies herein may change or be developed with further scope as the design progresses.

The information used in the compilation of this report is current at the time of issue but may be subject to change as more information becomes available about the Project.

The information within this report has assumed optimal use of available site information whilst also considering the Building Code of Australia, relevant Australian Standards and Codes, client driven design guidance and best practice industry guidelines.

While a prolific number of as-installed documents are available their accuracy and currency has been considered and caution has been taken. The supplied documents could not be verified within the remit of the site visits. However, where duties and capacities could not be determined from the site visits, this information has been utilised in the absence of any other as no intrusive testing or measurements have been carried out to date.

The services strategy herein includes for conceptual infrastructure planning and expectations sufficient for Department assessments, or SEARS review.

The information contained within this report has been prepared by erbas™ Engineers to detail the services and infrastructure strategy for the proposed works.

The intent of this report is to provide a detailed overview of the existing services, and to create an infrastructure methodology framework to enable a SEAR's review to take place.

This Infrastructure Management Report will outline:

- authority services requirements;
- essential services (hydrant, hose reel, sprinkler & dry fire) review;
- intended services strategies
- existing service connections

## 2. overview of proposed development

This SSD Application seeks approval for the following components of the development:

- Site preparation works, including temporary services and facilities to support demolition and clearance of the existing areas as required by the works;
- Services termination sufficient to facilitate safe reconfiguration the proposed layouts;
- Services reintegration to the new building form by staged construction of new services and extension of existing services where deemed appropriate to service the new layouts and building uses;
- Advice for any required infrastructure augmentation and integration of services required for the Public domain improvements surrounding the site;
- Installation of services to meet the equivalent quality of the current Standard requirements;

The new works consist of the following proposed buildings:

- New 5 level building serving kindergarten to year 6 students
- New Parish building
- Reconfiguration of the existing ground floor to create Early Learning Centre
- Food Preparation
- Academic (including Faculty space)
- Retention and re-use of the existing structure;
- Extension and augmentation of physical infrastructure/utilities as required.

## 3.the project site

### 3.1 general

Catholic Community College is located in Westmead and is accessed via. Darcy Road.

The Campus has multiple existing buildings on the site and is located near Westmead Hospital and is within walking distance to Westmead Train station.

Figure 1- Google Maps image of the site.



## 4. services executive summary

The impact assessment of the Project had the following focus areas;

- Existing infrastructure capacity and redundancy;
- Existing infrastructure proximity to the extended footprint;
- Services augmentation or diversions that may be required;

### **Summary Statement:**

The Water, Sewer and Electrical infrastructure have been reviewed and the result of the investigations and enquiries outlined herein is that there appears to be sufficient capacity in the surrounding infrastructure to support the Project without the need for augmentation or diversion of the surrounding supplies available to the campus.

Temporary strategies for protection of utility infrastructure will need to be employed during construction. These will be further defined by the Authorities responsible for each of the utility mains. Consideration of these strategies may affect planning and are not available to be considered at this time.

## 5. Limitations

The approach for each of the services disciplines is based upon preliminary concept planning solutions and layouts in tandem with a high-level analysis of the existing services condition and layouts.

This report does not incorporate any requirements of the project that may be imposed as part of any required development conditions, however typical developments have been considered in the preparation of this report to provide a basis to any assumptions made by this report.

The following methodology was used to develop the strategies herein;

- A review of as-built documentation.
- A walk-through inspection of the existing site including plant and exposed services arrangements.
- General commentary on the adequacy of plant and systems to meet a minimum Property Council of Australia (PCA) Grade compliance.
- Draft Performance Solution Report prepared by GHD

# 6. electrical services

## 6.1 existing electrical systems overview

There are two existing 1000kVA Endeavour Energy substations supplying the campus. The site plan below provides clarification of site supply locations and unique identifiers. No information has been able to be obtained at this time verifying the reticulation pathways within the boundaries of the site. Further investigation or supply of as built documentation will need to be considered if this becomes relevant for the application.

The switchboards surveyed are considered to be in good working order and functioning. However, the operation life of some is considered to be limited and will require upgrade and/ or replacement. Further, some electrical componentry has reached its service life and will also require replacement. This will be addressed as part of the future design and construction scope for the Project. New metering arrangements for the new buildings will also be organized.

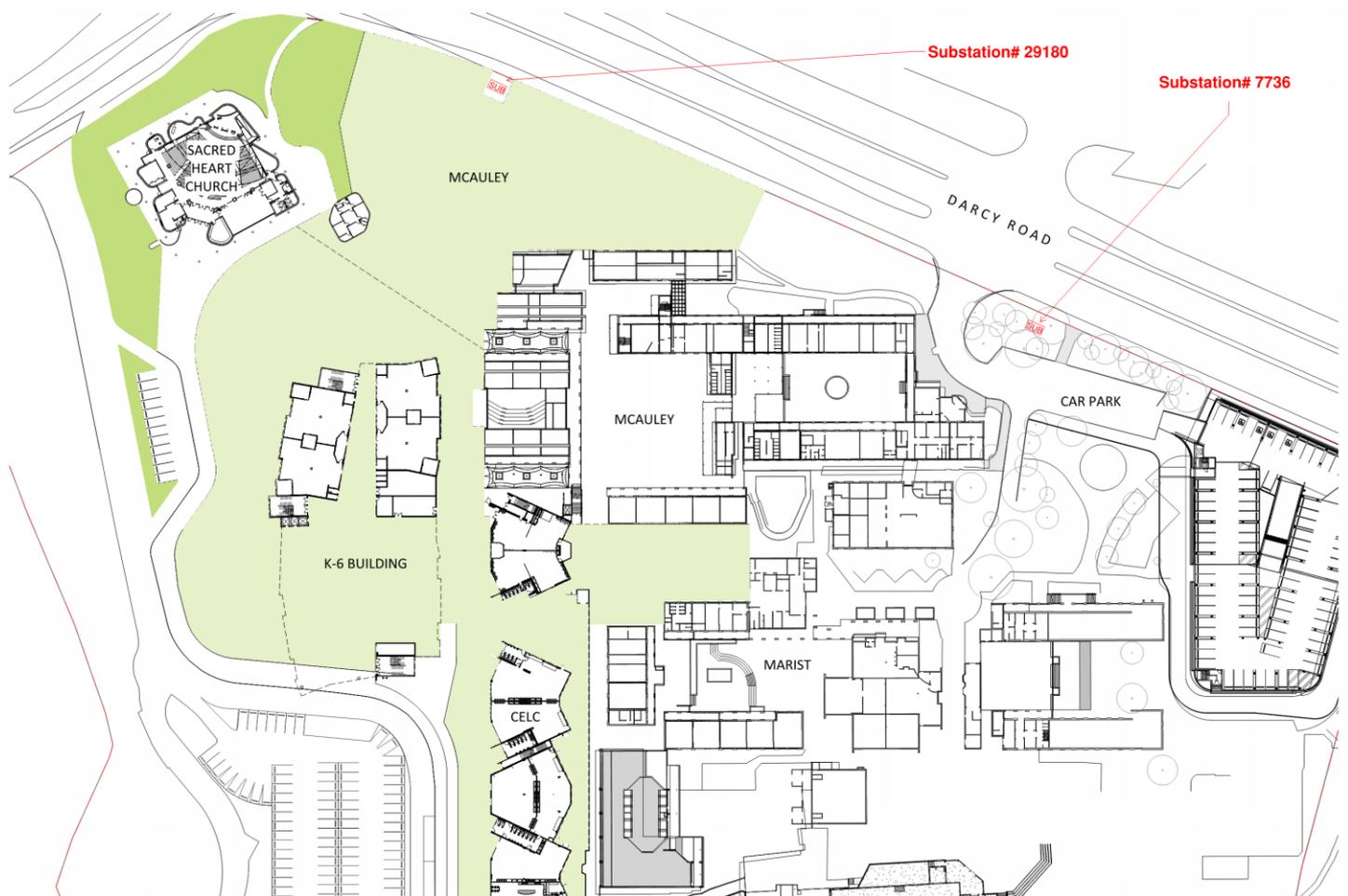


Figure 1- Site Plan

## 6.1 electrical infrastructure

Erbas™ has conducted a maximum demand calculation based on Sqm rates and application for connection had been lodged to Endeavour Energy (and appended to this report) to establish whether the existing substations have enough capacity to serve the new requested load of 1600Amps.

Endeavour Energy has assessed the requested load and came back with the appended response/offer:

## SUPPLY OFFER

(Based on a desktop assessment)

### **Development Details & Applicant's Assessed Load:**

This application requires 1600A or 1108kVA for new education facility, a parish and a new carpark.

### **Endeavour Energy Assessed Load:**

The load of 121.24A or 84kVA for the new carpark can be supplied from SUB 7763. MDI readings is 285.32/1000kVA. Supply for the new carpark should be obtained from this substation

For new education facility & parish, the load will be 1476A or 1022.6kVA. The closest substation is SUB 29180 and the MDI readings is 525/1000kVA dated 24/05/18.

### **HV/LV Connection Point & Connection Asset Requirements:**

To supply 1476A, the closest substation 1000kVA Padmount Substation no. 29180 does not have capacity to supply the customer's proposed load.

Please engage a Level 3 Accredited Service Provider (ASP) to investigate and provide a Method of Supply to supply your development.

Due to underutilise of the existing substations, L3 ASP is to coordinate with the engineers/ electricians to utilise the existing substations to supply the proposed load.

Subject to Level 3 ASP's proposal and Endeavour Energy Planner's specification, the requirements will be confirmed in the design brief letter.

### **Network Constraints & Limitations**

The scope of works is to be undertaken in accordance with the Terms and Conditions of the Model Standing Offer for a Standard Connection Service and must comply with all relevant regulations, Endeavour Energy policies and network standards.

It could be reasonably assumed the offer and its subsequent Level 3 Design will result in the installation of a new pad mount substation to serve the K6 Building and the Parish. This will need to be further developed through the design process by an accredited designer after the regulatory approval process enables this to be done.

# 7. hydraulic services

## 7.1 existing hydraulic systems overview

From the information gathered and received we can ascertain the main hydraulic infrastructure appears to be original base-build in various existing areas of the campus with exception to the CELC building and the Fire Hydrant Service which was completed in 2013.

All pressure service connections originate from Darcy Road and reticulate through the site to serve each building.

A 300mm diameter Authority Sewer Main traverses the site from the southern boundary through to the Northern Boundary. The existing buildings, including the CELC building, appear to connect to this sewer main.

## 7.2 water supply

The Project has frontage to the 250mm diameter water reticulation infrastructure located on Darcy Road along the northern boundary of the site.

There are currently two existing water meters serving the facility. A 50mm diameter meter is located on the north/eastern corner of the site and an additional 50mm service located approximately 80m to the west of the north/eastern boundary - this meter is servicing the existing CELC building and has provision for the future K6 building via a capped connection.

The existing Fire Hydrant service is connected to the water 250mm diameter water main located on Darcy Road. A 100mm connection from the water main connects to the Fire Hydrant Booster assembly and existing pump which then reticulates via a 150mm diameter ring main around the site.

**Water supply pressure and flow characteristics have been confirmed and the modelling by Sydney Water shows the main being capable of supporting the required flows for the project.**

Due to the proposed height of Building K6, the existing Fire Hydrant pump requires replacement to meet the pressure requirements of the Standards.

A Section 73 Application is required upon receipt of the application Conditions to confirm the existing Authority Water Main located in Darcy Road has the capacity to suit the proposed building additions. Based on the size of the existing main, it is assumed the main has sufficient capacity, and no upgrades are required.

Building K6 will connect to the existing 65mm diameter water service reticulating on site. Refer to sketch indicated below

As the proposed Chapel is located on a separate lot, a new connection to the Authority Water Main is required. We are proposing a 32mm diameter connection located at the boundary to serve the Chapel only.

Potable water supply requirements will be reduced due to rainwater reuse systems for the Project. This recycled water system will be used to supply irrigation, toilet flushing, and process make-up water where required.

### 7.3 sewer drainage

The existing Sewer Main currently traversing the site is impacted by the location of the proposed K6 building. A Survey "peg-out" of the existing sewer main is currently being undertaken and will be provided upon completion. This will clearly identify the location of the traversing main on the Project site.

Based on the location of sewer main in relation to the proposed K6 building, a sewer diversion will be required. A Water Services Coordinator (WSC) is currently being engaged to design and document the sewer main diversion in accordance with Sydney Water Requirements.

A Section 73 Application is required upon receipt of the application Conditions to confirm the existing Authority Sewer Main has the capacity to suit the proposed additions. Based on the size of the existing main, it is considered the main has sufficient capacity, and no upgrades will not be required.

Building K6 will connect to the existing Authority Sewer main subject to Section 73 Approval. Refer to the appended sketch below.

The proposed Chapel is located on a separate lot, therefore an easement is required for the sewer main connection to be constructed. This will require the development of a positive covenant and will be addressed by the WSC at a time appropriate to the application process.

## 8. Fire sprinkler services

### 8.1 Existing fire sprinkler services overview

From the information gathered and received we can ascertain there is no fire sprinkler services to the original base-build in various existing areas of the campus.

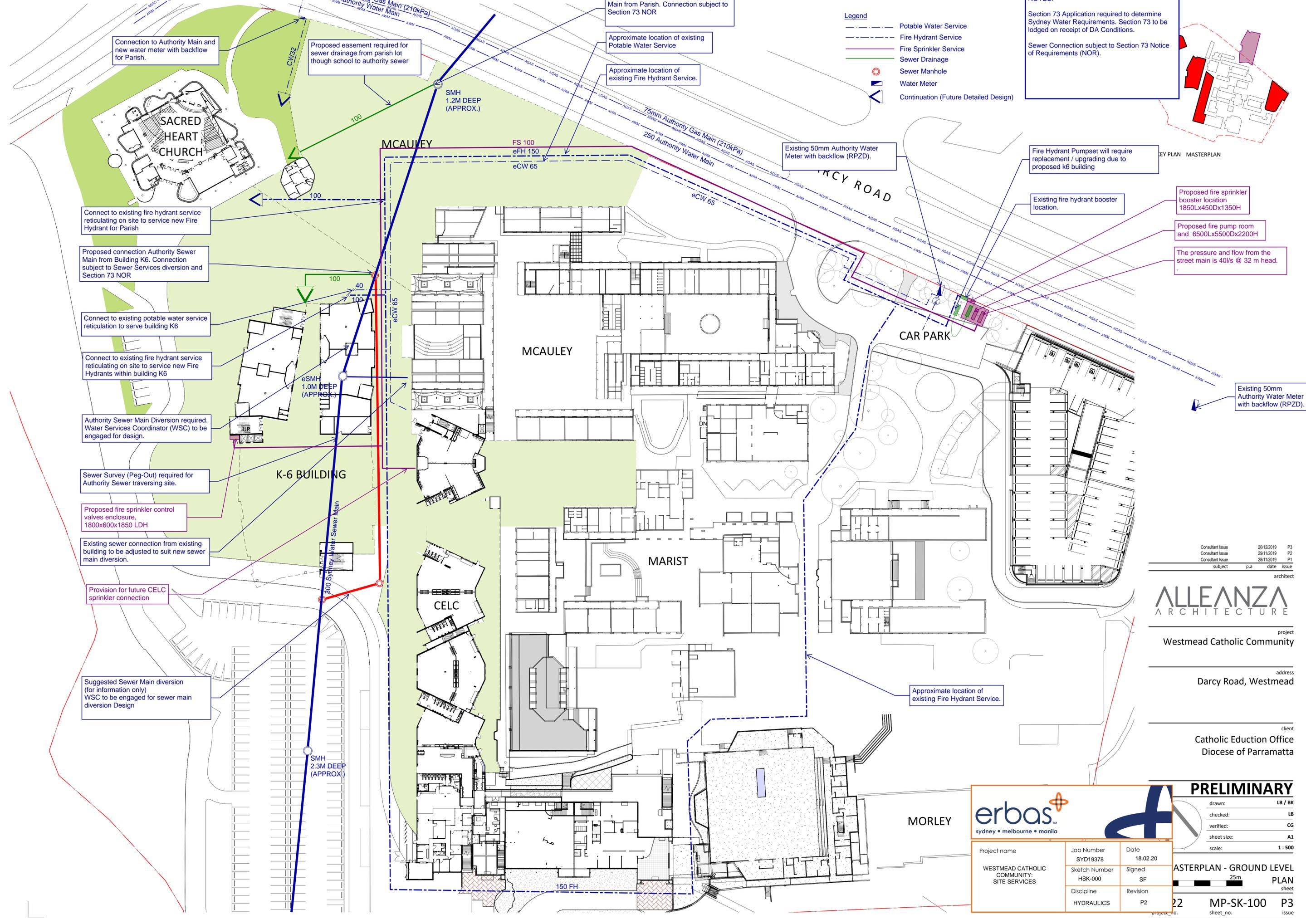
### 8.2 Fire sprinkler services infrastructure

A new 150mm diameter water main will be connected from the 250mm street main located on Darcy Road.

The new 150mm water connection will connect to the Fire sprinkler Booster assembly and to the sprinkler pump room which accommodate two sets of fire sprinkler pumps.

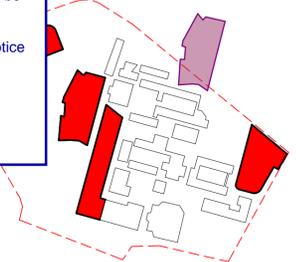
The 100mm diameter fire sprinkler main will be run along with the fire hydrant main in the same trench through the site to serve the required buildings including the Building K6, CELC building and carpark.

**Water supply pressure and flow characteristics have been confirmed and the modelling by Sydney Water shows the main being capable of supporting the required flows for the project up to Ordinary Hazard 2 Occupancy.**



- Legend**
- Potable Water Service
  - Fire Hydrant Service
  - Fire Sprinkler Service
  - Sewer Drainage
  - Sewer Manhole
  - Water Meter
  - Continuation (Future Detailed Design)

**NOTES:**  
 Section 73 Application required to determine Sydney Water Requirements. Section 73 to be lodged on receipt of DA Conditions.  
 Sewer Connection subject to Section 73 Notice of Requirements (NOR).



Connection to Authority Main and new water meter with backflow for Parish.

Proposed easement required for sewer drainage from parish lot through school to authority sewer

Proposed connection Authority Sewer Main from Parish. Connection subject to Section 73 NOR

Approximate location of existing Potable Water Service

Approximate location of existing Fire Hydrant Service.

Existing 50mm Authority Water Meter with backflow (RPZD).

Fire Hydrant Pumpset will require replacement / upgrading due to proposed k6 building

Existing fire hydrant booster location.

Proposed fire sprinkler booster location 1850Lx450Dx1350H

Proposed fire pump room and 6500Lx5500Dx2200H

The pressure and flow from the street main is 40l/s @ 32 m head.

Existing 50mm Authority Water Meter with backflow (RPZD).

Connect to existing fire hydrant service reticulating on site to service new Fire Hydrant for Parish

Proposed connection Authority Sewer Main from Building K6. Connection subject to Sewer Services diversion and Section 73 NOR

Connect to existing potable water service reticulation to serve building K6

Connect to existing fire hydrant service reticulating on site to service new Fire Hydrants within building K6

Authority Sewer Main Diversion required. Water Services Coordinator (WSC) to be engaged for design.

Sewer Survey (Peg-Out) required for Authority Sewer traversing site.

Proposed fire sprinkler control valves enclosure, 1800x600x1850 LDH

Existing sewer connection from existing building to be adjusted to suit new sewer main diversion.

Provision for future CELC sprinkler connection

Suggested Sewer Main diversion (for information only) WSC to be engaged for sewer main diversion Design

Consultant Issue	20/12/2019	P3
Consultant Issue	29/11/2019	P2
Consultant Issue	28/11/2019	P1
subject	p.a	date issue

**ALLEANZA**  
ARCHITECTURE

project  
Westmead Catholic Community

address  
Darcy Road, Westmead

client  
Catholic Education Office  
Diocese of Parramatta

**erbas**  
sydney • melbourne • manila

Project name	Job Number	Date
WESTMEAD CATHOLIC COMMUNITY: SITE SERVICES	SYD19378	18.02.20
	Sketch Number	Signed
	HSK-000	SF
	Discipline	Revision
	HYDRAULICS	P2

**PRELIMINARY**

drawn:	LB / BK
checked:	LB
verified:	CG
sheet size:	A1
scale:	1 : 500

MASTERPLAN - GROUND LEVEL  
 PLAN sheet  
 22 MP-SK-100 P3  
 sheet\_no. issue