

ENGINEERING
SERVICES

Master Plan Report

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BRT

St Joseph's Christian College Yuroke



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DOCUMENT REVISION

Stage	Revision	Revision Description	Author	Checked by	Issue Date
SD	00	For Issue	AG	AG	16.06.2023

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Project Information

Job Number	11830
Job Name	St Joseph's Christian College Master Plan Report
Address	1585 Mickleham Road Yuroke VIC 3063



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2.0 REPORT SCOPE AND INFORMATION

The scope of this report is to provide commentary on the services infrastructure requirements for the development of a new school site at 1585 Mickleham Road, Yuroke.

The report covers the following:

- Electrical Services;
- Communications Services;
- Hydraulic Services;
- Fire Services.

The school development will include the staged development of the site to enable the school to develop with the growth of student numbers and demand. The services infrastructure master plan design will consider the staged and final construction phase for the site.

The following report is based on site information and relevant Authority services documentation available at this point in time.

1 AUTHORITY SERVICES

1.1 Electrical Services

2.1.1 Power Supply

The site is currently served by Jemena assets that are reticulated overhead supply along the east side road reserve on Mickleham Road. The infrastructure currently carrying high voltage and low voltage reticulation.

For the complete development of the school, a high voltage supply and on site substation is anticipated to be required for the site load. For the staged development, the initial application will more than likely be for the stage 1 load, which may be able to be supplied from the current Authority LV reticulation, however it is recommended that the school shall negotiate with the Authority to achieve the most cost effective design solution for the final site load requirements through the proposed development.

The final design solution will need to accommodate a site Main Switchboard that is located along the title boundary on Mickleham with a substation and easement located adjacent. The substation easement is required to be in the order of 7.2m x 7.2m.

The estimated site load to be in the order of ~400-600ATP, and will be dependant on building and systems designs.

2.1.2 Communications

The site is currently served by an inground Telstra service which is providing a single pair cable domestic service.

There is also a Telstra fibre optic mains service reticulating through the west side road reserve on Mickleham Road.

There are no fixed NBNCo assets within the current development zone, with NBNCo currently offering fixed wireless technology to the site. However, as the area and zone is developed, it is expected that fixed NBNCo assets may become available to the site.

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1.2 Hydraulic Services

2.1.3 Sewer & Water Services

The site is currently not served by any Authority mains sewer or water. There are currently no Authority plans for reticulated sewer or water to be provided to the zone on the west side of Mickleham Road.

A preliminary service advice application has been submitted to Yarra Valley Water to ascertain the potential for future development and extension of their infrastructure, a response is yet to be received.

There are no Authority easements located on the subject titles.

1.3 Authority Services Infrastructure Development

The site currently sits between the Craigieburn & Mickleham Road intersection to the south and the Mt Ridley & Mickleham Road to the north. The proposed development between these two intersections and to the east side of Mickleham Road is currently in planning, however no development plans are in process for any development of infrastructure to the west side of Mickleham Road. This area is currently outside the current Urban Growth Boundary (UGB) for the region.

The majority of Authority services are currently proposed to reticulate to Craigieburn & Mickleham Road intersection from the south and similarly to the Mt Ridley & Mickleham Road intersection from the north. The joining of this infrastructure along Mickleham Road will reticulate past the proposed school site. This is the infrastructure link that is currently not proposed.

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2 SITE SERVICES

2.1 Power Infrastructure

As noted above, the school is proposed to be supplied from an on site substation and main switchboard (MSB) that is located on the title boundary at the front of the site.

Power is proposed to be reticulated through in ground conduits and pits to main distribution boards (MDB's) that will be typically located for the development of each for the site. The MBD's will be located within the building envelope.

2.2 External Lighting

External lighting is proposed for the site development to provide a safe environment for pedestrians and vehicles across the site. It is proposed that the main entry/exit roadways will be illuminated, along with some carpark areas on the site. The extent of carpark lighting will need to be determined through the design phase of the project, based upon the school's requirements through the development.

2.3 Communications Infrastructure

The site is proposed to be developed with a structured cabling system and network to enable the full site to be a single network. The cabling infrastructure will be reticulated through in ground conduits and pits, with fibre optic cabling to interlink all buildings to the central communications hub, proposed to be located in the centrally located in the Primary building, constructed in Stage 2 of the development.

A temporary central hub will be provided in the Stage 1 development.

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Satellite communications rack are proposed to be cabled in a star configuration from the central communications hub.

As noted above, the proposed NBNCo infrastructure is proposed to be fixed wireless, however it is proposed to provide pits and conduits to the Mickleham Road boundary for any future connection to wired service providers that may reticulate past the site.

2.4 Sewer Infrastructure

With no Authority sewer proposed to serve the site, the site is proposed to be developed with on-site collection, treatment and disbursement of waste water. The onsite treatment system shall be designed in accordance with the land capability assessment (LCA) which is still to be completed.

The system design will also factor in the proposed stage development of the site and expansion of student numbers over the 8 stage development.

The site reticulation is proposed to be designed to enable future connection to any reticulated Authority sewer service, utilising the fall of the site to locate the treatment system in the southeast corner. The invert level of the site reticulation is proposed to be kept as high as possible to maximise the opportunity for the future Authority connection.

The sewer reticulation is proposed to fall on grade to the treatment system.

The waste water disbursement will be a pumped pressurised system, with nominated soft landscaped areas to be utilised.

2.5 Water Infrastructure

The is reliant on the collection and treatment of rainwater for potable consumption on the site. The rainwater collection system is proposed to be expandable to accommodate the staged construction and expansion of the proposed occupancy on the site.

The potable drinking water is proposed to be collected from roof areas in each stage of the school development. A central water storage and treatment system is proposed for the site, that will distribute water through all buildings and to all fixtures. The rainwater storage tanks are proposed to be inground or integrated with the terraced development of levels across the site.

The pipework infrastructure is proposed to be provided to a future cold water meter located along the Mickleham Road frontage, which will enable the water reticulation to be switched to mains water at the point in time when mains water maybe provided to the site.

During stage 1 of the development, temporary rainwater storage tanks will be required to provide potable water in this stage. The roof area and subsequent rainwater collection area will need to be assessed, with provision of potable water to be delivered to the site a potential requirement.

The collection of stormwater from hardstand areas on the site shall be considered for collection and used for irrigation as required.

2.6 Fire Services Infrastructure

The site is proposed to be provided with fires services to accommodate fire compartment sizes to a maximum of 5000m². For this, fire service water storage of 288,000 litres is required to be provided on the site, with a fire booster pumpset and booster assembly are required to be provided adjacent the entry to the site. 2 No. fire storage tanks, each ~150kl will be provided to the site.



Fire services are proposed to be reticulated through the site to numerous external and/or internal hydrants to provide compliant hydrant coverage. Where required, the fire services will provide internal hose reels.

It shall be noted that the fire services will only be required to be provided on site once the largest fire compartment exceeds 500m². It may be dependant on the configuration of stage 1, that fire services may only be required to be operational at the completion of stage 2.

2.1.4 Gas Services

It is not proposed that gas services will be required for the school development

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3 APPENDIX A – AUTHORITY SERVICES INFORMATION

3.1 Telstra Communications Infrastructure



Figure 1 – Telstra Copper Infrastructure

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3.2 Jemena Power Infrastructure

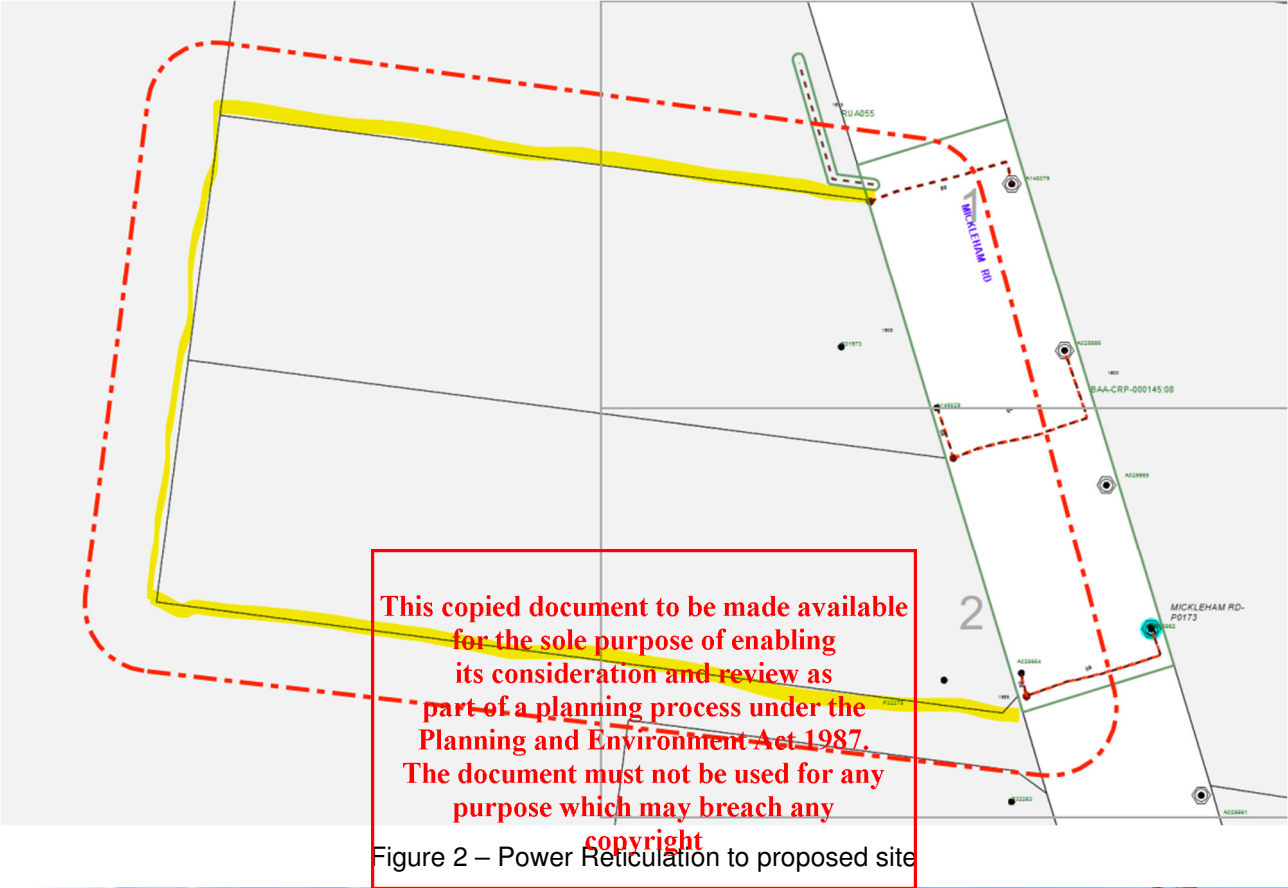


Figure 3 – Photo of overhead Power infrastructure on Mickleham Road

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