

Schools Infrastructure NSW

Melrose Park High School

Electrical and ICT Services Report

Reference: EL-MPHS-RPT-002

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1. Introduction

This Electrical and ICT Services Assessment Report has been prepared by Arup on behalf of the Department of Education (DoE) to assess the potential environmental impacts that could arise from the construction and use of the new Melrose Park High School project (the Activity) at 37 Hope Street, Melrose Park. This report supports the assessment of the proposed Activity under Part 5 of the Environmental Planning and Assessment Act 1979. The Activity is proposed by the DoE to meet the growth in educational demand in the Melrose Park precinct.

2. This report has been prepared to outline the services assessment. Summary of Activity

The proposed activity involves the construction and use of a new high school in two stages for approximately 1,000 students.

Stage 1 of the proposed activity includes the following:

- Site preparation works.
- Construction of Block A – a six-storey (with additional roof/plant level) school building in the south-western portion of the site containing staff rooms and General Learning Spaces (GLS).
- Construction of Block B – a one storey (double height) hall, gymnasium, canteen and covered outdoor learning area (COLA) building in the south-eastern portion of the site.
- Construction of Block C – a single storey plant and storage building at the north-eastern portion of the site.
- Associated landscaping.
- Construction of vehicular access and on-site car parking.
- Provision and augmentation of services infrastructure.
- Associated off-site infrastructure works to support the school, including (but not limited to):
 - Provision of kiss and drop facilities along the future north/south road 4 and along Wharf Road.
 - Pedestrian crossings.

Stage 2 of the proposed activity includes the following:

- Construction of Building D – a five-storey (with additional roof/plant level) school building in the north-western portion of the site containing staff rooms and GLS:
- Additional open play spaces within the terrace areas of Building D.
- Minor layout amendments to Building A.

The Review of Environmental Factors prepared by Ethos Urban provides a full description of the proposed works.

Table 1 Electrical and ICT Services Extract from REF Checklist

Requirement	Y	N	N/A	Comments
Utilities				

Requirement	Y	N	N/A	Comments
Does the REF broadly set out how the proposal will be serviced by necessary services and utilities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EL-MPHS-RPT-002 Melrose Park HS Services Report (REF), Section 5.1 and 5.2
Does the REF assess any works required to provide necessary services and utilities and conclude that these would not have significant environmental effects?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EL-MPHS-RPT-002 Melrose Park HS Services Report (REF), Section 5.3
If temporary arrangements are required (i.e. generator), does the REF assess any potential temporary environmental effects as a result of the arrangements and conclude that significant effects would not be likely?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

3. Site description

The site is located at 37 Hope Street, Melrose Park within the Parramatta LGA. The school covers an approximate area of 9,500m² and is generally rectangular in shape. The site is currently cleared and vacant. The site is located approximately 8km east of the Parramatta CBD.

4. Existing Services

4.1.1 Existing Electrical Services

A desktop Before You Dig Australia (BYDA) study was conducted for the proposed Melrose Park High School site and the surrounding area. The following outlines the existing services and infrastructure around the site, providing context for the proposed development's servicing strategy.

HV Connection: The nearest HV connection is at the corner of Hope Street and Wharf Road. Endeavour Energy will extend conduits to the proposed substation location along Hope Street.

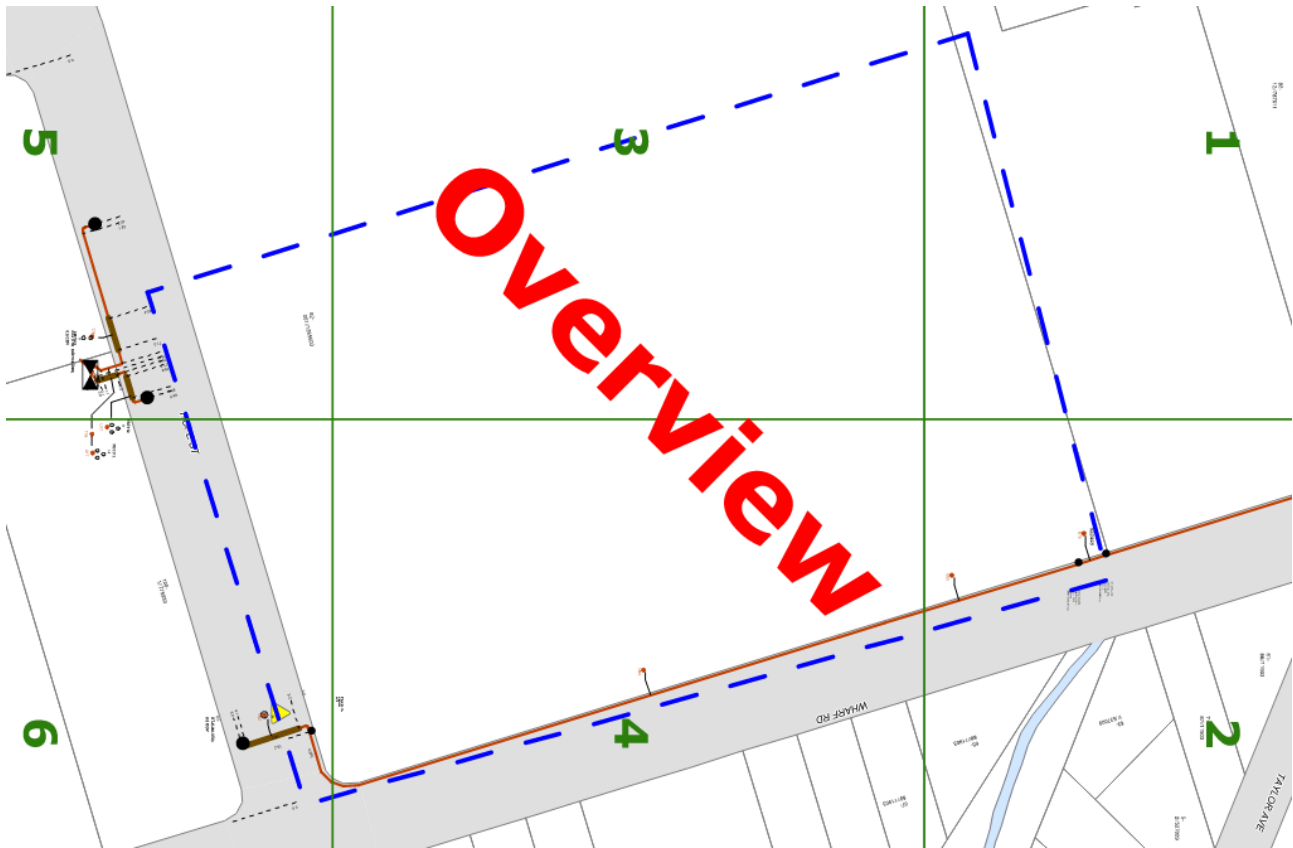


Figure 1 Existing HV along Hope Street

LV Distribution: Underground LV cabling will connect the substation to the main switchboard and distribution boards..

4.1.2 Existing ICT Services

For ICT services, a new Telstra connection to the site is required. The BYDA search indicates that existing NBN, Optus, and Telstra services are present on Hope Street, with Telstra also available on Wharf Street. The site does not require any diversions of existing Telstra/NBN assets. The wider development team has already provisioned for these ICT utilities at the site perimeter, with plans to install a pit and pipe system from the site perimeter to the main communications room within the school. Figure 2 Proposed ICT Lead-ins shows a mark-up of the NBN drawings produced by the wider development team. The Melrose Park High Schools team has requested NBN and Telstra conduits to be extended to the site perimeter pit by the precinct team.

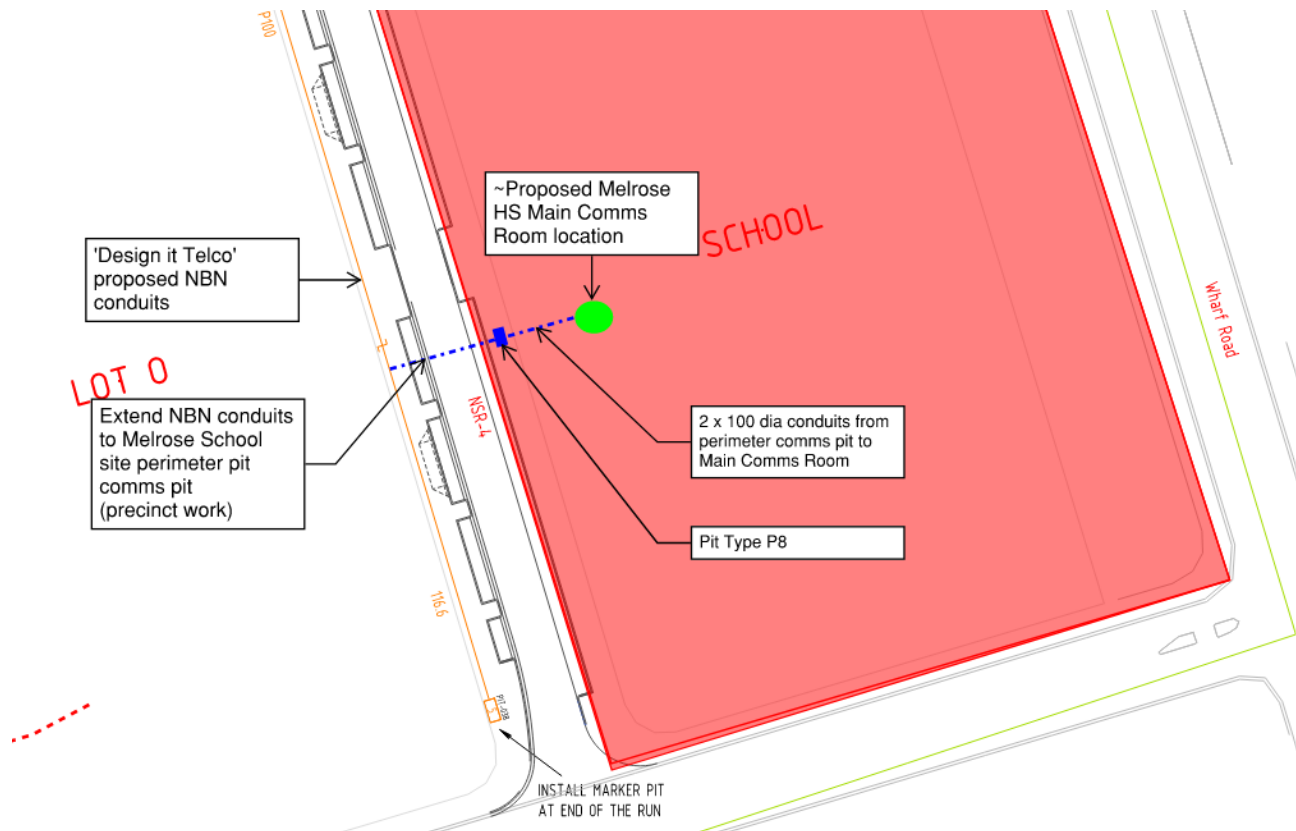


Figure 2 Proposed ICT Lead-ins

All utility connections, including electrical and ICT, will need to be coordinated with the wider precinct developer to ensure alignment with the overall district development strategy.

5. Description of Proposed Services

5.1 Proposed Electrical Infrastructure

- **Substation:** A 1000kVA kiosk substation on the south side of the site, supporting both Stage 1 and future Stage 2 demands.
- **Main Switchboard:** Located adjacent to the substation, supplying power to distribution boards.
- **LV Distribution:** Vertical risers within Block A for efficient cable reticulation.
- **Solar PV System:** Initial 70kW installation on Block A, expandable to 100kW in Stage 2.

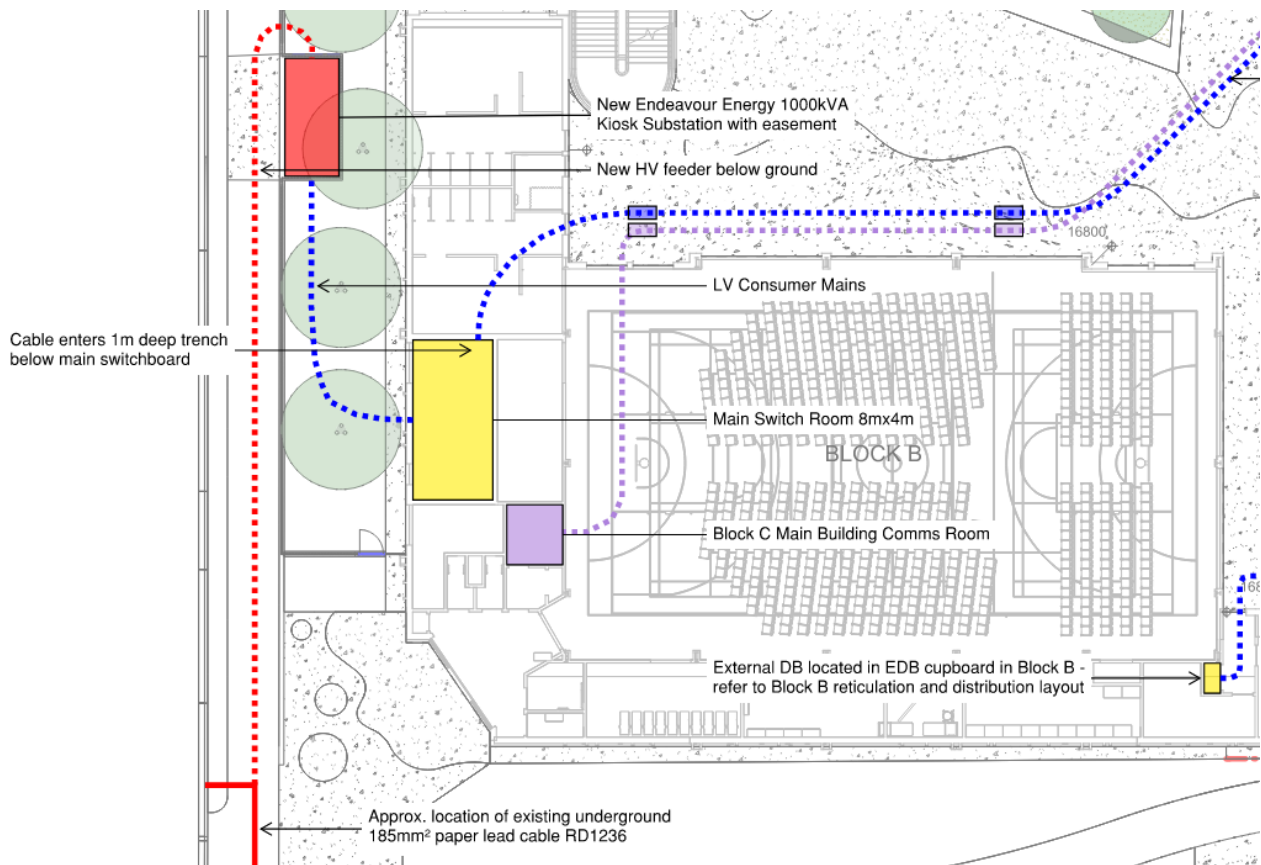


Figure 3 Proposed HV, Substation and Main Switchroom

5.2 Proposed ICT Infrastructure

- **Main Communications Room (MCR):** Located in Block A, acting as the campus distributor.
- **Building Communications Rooms (BCRs):** Strategically placed to ensure compliance with a 75m cable radius.
- **NBN and Telstra Integration:** NBN and Telstra conduits will be extended to the site.
- **Wireless Access Points (WAPs):** Distributed throughout indoor and covered outdoor areas for seamless connectivity.

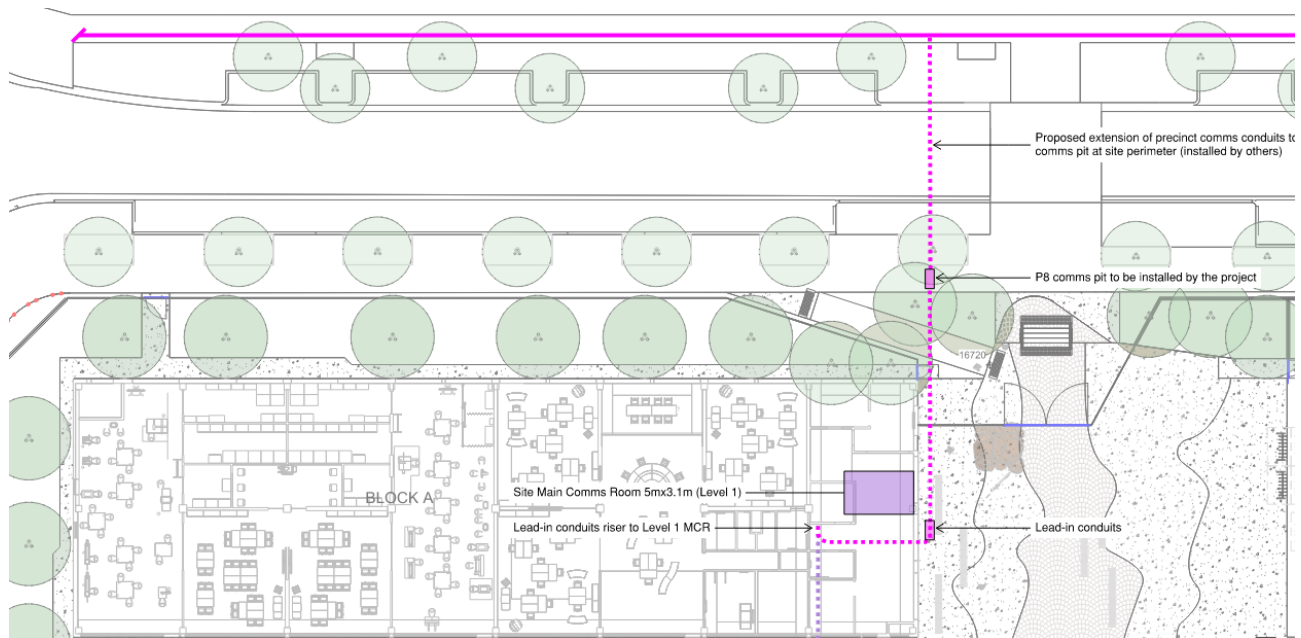


Figure 4 Proposed incoming ICT and Main Comms room

5.3 Environmental Considerations

- **Environmental Impact:**
 - Trenching for underground cabling could disturb soil and vegetation.
 - Noise from construction activities may temporarily affect surrounding areas.
 - Visual impact from above-ground installations like the substation.

5.4 Electrical Infrastructure Impacts

- **Impact:** Ground disturbance during trenching and substation installation.
- **Mitigation:** Erosion control and noise management plans.

5.5 ICT Infrastructure Impacts

- **Impact:** Minimal as ICT works are primarily underground or within buildings.
- **Mitigation:** Ensure all trenching avoids sensitive areas and complies with environmental management plans.

5.6 Compliance with Standards and Regulations

- The design aligns with:
- **NCC 2022** and relevant Australian Standards, including AS3000:2018, AS1768 (Lightning Protection), and AS2293.1 (Emergency Lighting).
- NSW Department of Education's EFSG 2.0 and Structured Cabling Systems Specifications.
- Australian standards
- Utility standards

5.7 Stakeholder Consultation

- DBYD for Telstra, NBN and Endeavour Energy complete

- Coordination with Endeavour Energy for electrical connections and approvals will commence at the next stage of design.
- Engagement with NBN for ICT infrastructure integration will commence at the next stage of design.

5.8 Recommendations

- Early engagement with utility providers to confirm connection points and design approvals.
- Implementation of detailed erosion, sediment control, and noise management plans during construction.
- Close coordination with the design team to integrate sustainability measures, including the PV system and ICT infrastructure, while minimising environmental impacts.

5.9 Mitigation Measures Table

Table 2 Mitigation Measures Table

Project Stage	Mitigation Measures	Relevant Section of Report
D / C	Trenching for underground cabling will include erosion control measures to minimise soil disturbance and protect vegetation.	Section 5.3
C	Noise management plans will be implemented during construction activities to reduce temporary noise impacts on surrounding areas.	Section 5.3
O	Above-ground installations, such as the substation, will be designed to minimise visual impacts and blend with the surrounding environment.	Section 5.3
D / C	Ground disturbance during trenching and substation installation will be mitigated by adhering to erosion control measures.	Section 5.4
D / C	ICT trenching works will avoid sensitive areas and comply with environmental management plans to ensure minimal impact.	Section 5.5
D	The design aligns with NCC 2022 and relevant Australian Standards, including AS3000:2018, AS1768 (Lightning Protection), and AS2293.1 (Emergency Lighting).	Section 5.6
D	Compliance with the NSW Department of Education's EFSG 2.0 and Structured Cabling Systems Specifications will be ensured.	Section 5.6
D / C	DBYD investigations for Telstra, NBN, and Endeavour Energy have been completed. Coordination with Endeavour Energy for electrical connections and NBN for ICT infrastructure integration will commence at the next stage of design.	Section 5.7
D / C	Early engagement with utility providers will confirm connection points and design approvals to avoid delays.	Section 5.8
C	Implementation of detailed erosion, sediment control, and noise management plans during construction will mitigate environmental impacts.	Section 5.8
D / C	Close coordination with the design team will integrate sustainability measures, including the PV system and ICT infrastructure, while minimising environmental impacts.	Section 5.8

5.10 Conclusion

This assessment has evaluated the potential environmental impacts associated with the proposed electrical and ICT services for the Melrose Park High School project. The impacts identified include ground disturbance during trenching and substation installation, temporary noise during construction, and potential visual effects from above-ground installations such as the substation.

Mitigation measures, including erosion and sediment control plans, noise management strategies, and careful design of above-ground installations to blend with the surrounding environment, have been identified and are incorporated into the project. These measures ensure that all potential impacts can be effectively managed and mitigated.

Furthermore, the proposed electrical and ICT services have been designed in compliance with all relevant standards, including NCC 2022, AS3000:2018, AS1768, and AS2293.1, as well as the NSW Department of Education's EFSG 2.0. This ensures alignment with best practices and regulatory requirements.

Subject to the implementation of the recommendations and mitigation measures detailed in this report, it is concluded that the proposed electrical and ICT services will not result in any likely significant environmental effects.