INTEGRATED WATER MANAGEMENT PLAN

HYDRAULIC SERVICES

Upgrade to Cammeray Public School

Prepared for: NSW Department of Education (DoE)

Document no: CPS-HY-IWMP-001

Issue no: Rev C

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Revisions

Revision	Description	Date	Prepared by	Approved by	Signature
A	DRAFT	17/12/2024	RE	Rhys Edwards	
B	Final	19/02/2025	RE	Rhys Edwards	
C	Final	05/03/2025	RE	Rhys Edwards	

Review Panel

Division/ Office	Name
Building Services / St Leonards	Rhys Edwards

Unless otherwise advised, the parties who have undertaken the Review and Endorsement confirm that the information contained in this document adequately describes the conditions of the site located at Cammeray Public School, NSW.

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Appendices

1 Introduction

This Integrated Water Management Plan has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the upgrade of the Cammeray Public School (CPS) (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP and in consideration of the stakeholder and community participation plan.

The proposed activity is for upgrades to the existing CPS at 68 Palmer Street, Cammeray NSW 2062 (the site).

The purpose of this report is to outline how the potable (drinking) water and wastewater is to be collected and disposed of for the upgrade of the Cammeray Public School.

2 Site Description

CPS is located at 68 Palmer Street, Cammeray on the northern side of Palmer Road, bound by Palmer Street to the south, Bellevue Street to the east and Miller Street to the west. The site has an area of 1.36 ha and comprises 11 allotments, legally described as:

- Lot 11 DP 837836
- Lot 1 DP 316130
- Lot 1 DP 316706
- Lot 1 DP 123406
- Lot 2 DP 174370
- Lot 1 DP 174370
- Lot 4 Sec 35 DP 758790
- Lot 5 Sec 35 DP 758790
- Lot 66 DP 1049613
- Lot 3 DP 571310
- Lot 4 DP 571310

The site currently comprises an existing co-education primary (K-6) public school with 6 permanent buildings, 3 demountable structures, covered walkways linked at multiple levels, play areas, on-grade parking, sports court, covered outdoor learning area (COLA) and vegetation/green spaces with mature trees.

The existing school buildings are clustered towards the southern portion of the site and comprise both single and 2 storey buildings. The northern portion of the site contains the sports court, vegetable garden and play equipment. The north-western portion of the site is heavily vegetated with trees of high landscape significance that are protected with fencing.

The site is identified as a locally listed heritage item (I0019) under Schedule 5 Environmental Heritage pursuant to the North Sydney Local Environmental Plan 2013 (NSLEP). The school is also identified in the Plateau Heritage Conservation Area (HCA) (Part 2 Schedule 5 of the NSLEP). The school is listed on the Department of Education (DoE) Section 170 Heritage Conservation Register as 'Cammeray Public School'. The site is approximately 115m from a State heritage item (I0004) being the electricity substation at 143 Bellevue Street and in close proximity to locally heritage listed items.

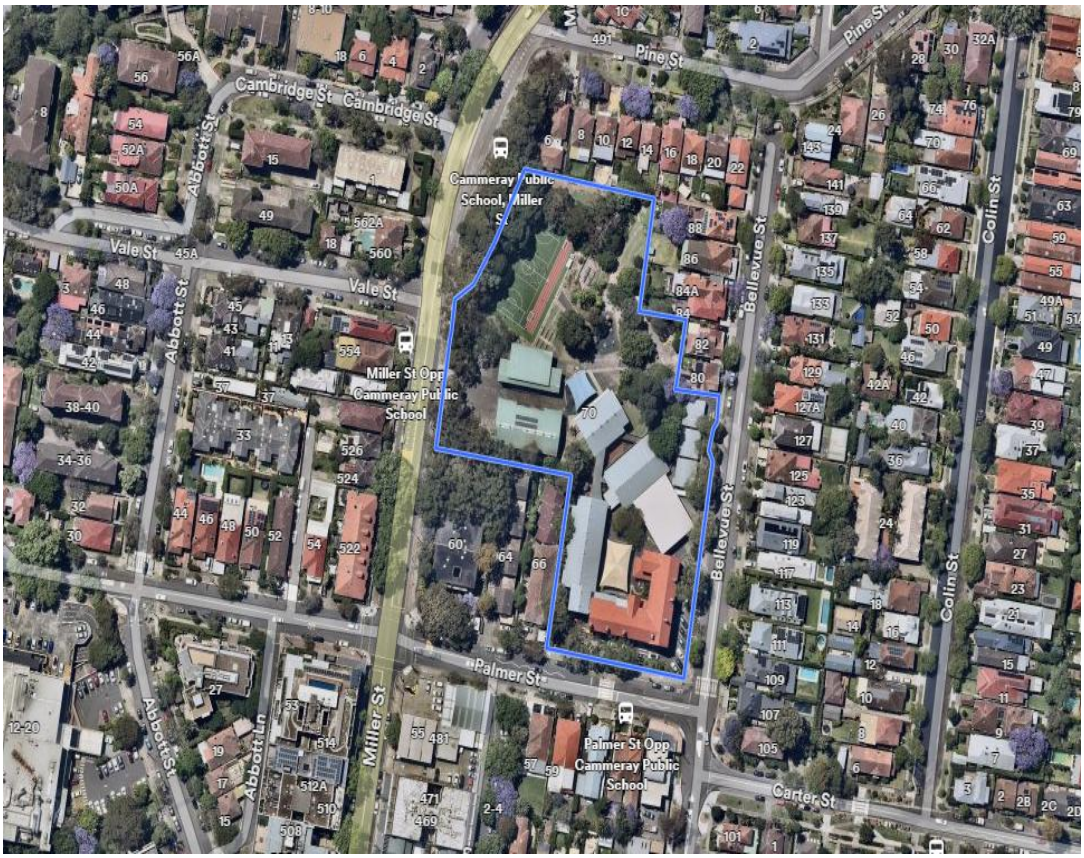


Figure 1 Aerial image of the site, outlined in blue (Source: NearMap, taken 30 October 2024)

3 Proposed Activity Description

The proposed activity involves upgrades to the existing CPS, including the following:

- Construction of 4 new permanent teaching spaces in a two-storey building incorporating 2 general learning spaces and 2 practical activity areas
- New egress lift and stairs for access to all building levels
- External covered walkways connecting the new building to the existing school network
- Landscaping and external works including compensatory planting
- Upgrades to site infrastructure and services to support the new buildings
- Removal of 3 temporary (demountable) classrooms from the eastern side of the school
- 50 bicycle parking spaces

The intent of the activity is to provide 4 permanent teaching spaces (PTS) plus 2 practical activity areas (PAA) across a two-storey addition, adjoining Building E. This will result in CPS retaining the capacity of a 'large' school (553-1,000 students) under EFSG (SINSW Education Facilities Standards and Guidelines).

Figure 2 below shows the scope of works for the proposed activity.

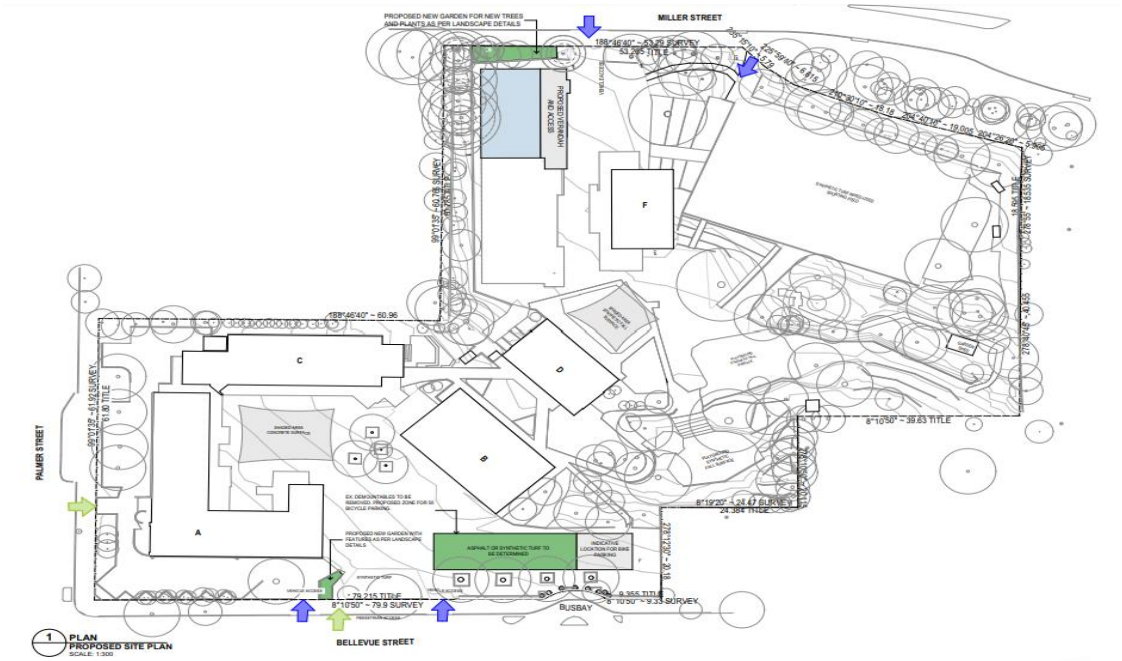


Figure 2 Proposed Scope of Works (Source: Fulton Trotter Architects, Proposed Site Plan (

4 Consultation

In preparing this report, the following stakeholder consultations were undertaken:

Agency/Stakeholder	Date	Form of consultation	Key matters raised	Project Response
Sydney Water	30/08/2024	Application	Water supply adequacy	Results received from Sydney Water. As appended to this report

5 Mitigation Measures

The Mitigation Measures for Upgrades to Cammeray Public School that are applicable for Hydraulic Services are summarised in Table 1.

Table 1 – Mitigation Measures

Project Stage	Mitigation Measures	Reason for Mitigation Measure	Relevant Section of Report
D / C	Site infrastructure upgrades to be cognisant of existing tree root exclusion zone(s)	To avoid any new site infrastructure passing through the tree exclusion zones and affecting life span of existing trees	Section 9 Clause 9.1 Clause 9.2
D / C / O	Service provider assets requiring handover	Appropriately inform the service provider of any assets that they are required to operate and maintain following completion of the Activity	Section 10

*Note: Project stages include: (D) Design (C) Construction (O) Operation

6 Utility Services Assessment

For the upgrade of the Cammeray Public School, the site infrastructure strategy will be designed to be a site wide network with main connections being established wholly within the site boundary.

Authority (utility) services adequacy is summarized within Table 2.

Table 2 – Utility Services Adequacy summary

Sewer	Potable/Drinking Water
Authority mains are adequate - Augmentation is not required There are several sewer connection points on the sites Proposed building will be connected west of the proposed building	Existing supply mains in the surrounding streets have suitable flow and pressure The site is fed from a Sydney Water main located in Bellevue Street Augmentation is not required

Note: more detailed analysis is provided in the sections below.

7 Standards and Design Guides

7.1 Australian Standards and Codes

The following lists the primary standards and codes our design approaches are reliant upon:

- National Construction Code (NCC) – 2022
- Plumbing Code of Australia (PCA) – 2022
- Building Code 2016
- AS 3500 Plumbing and Drainage Suite of standards – 2021
- AS 1670.4 Emergency Warning and Intercom Systems – 2018 amendment 1
- AS 1668.1-2015 The use of ventilation and air-conditioning in buildings – Fire and smoke control in multi-compartment buildings
- AS 2865-2009 Confined spaces.

8 Scope of Services

Scope of services covered within this plan include:

- Sewage and sanitary waste discharge
- Roof water plumbing and drainage systems connecting to civil trunk stormwater
- Potable/drinking water supply systems
- Fire hydrant systems.

Hydraulic services can be summarised as follows:

- Consultation with relevant utility supply agencies was conducted to verify the condition, capacity, compliance, reliability and efficiency of the existing sewer and water mains.
- Sewer and sanitary waste discharge from the proposed building is to discharge to existing site infrastructure (internal 'house drainage' system) in accordance with AS.3500 Part 2 and local authority requirements
  - Refer to Appendix 'A' of this report for indicative layout of site infrastructure.
- Water supply provided will be in accordance with Australian Drinking Water Guidelines (2011, updated 2016, version 3.4) and AS3500 Part 1 and Part 4
  - Refer to Appendix 'A' of this report for indicative layout of site infrastructure.
- Water pressure/flow results was obtained from Sydney Water
  - Refer to Appendix 'B' of this report dated August 2024.
- Natural gas supply will not be provided – this is a fully electrified development.
- Rainwater from roof areas is not to be collected, stored and re-used.
- Rainwater will drain/discharge through a series of rainwater outlets and eaves gutters systems designed in accordance with AS3500 Part 3.
- Ecological Sustainable Development (ESD) principles will be incorporated into the designs and the construction of the development as per the agreed sustainability pathway and targets.

9 Site Servicing

9.1 Wastewater

All wastewater from the new building will be extended to the existing site sewer infrastructure via gravity. (No pumping is required).

The proposed building demand has been based on:

- 20L/day sewer discharge per student
- 25L/day sewer discharge per staff.

This criterion does not increase the load on the existing site infrastructure nor the Utility Services Provider's Asset.

Refer to Appendix 'A' of this report for indicative layout of site infrastructure.

9.2 Potable Water

The proposed site has frontage to a Sydney Water water supply asset:

- 100 mm diameter Authority drinking water supply in Second Avenue.

The proposed building is provided with a potable water supply connection, which is adequately sized for the proposed building extending from the existing site infrastructure. No new connections are required to the utility services provider asset.

The proposed building demand has been based on:

- 25L/day sewer discharge per student
- 30L/day sewer discharge per staff.

This criterion does not increase the load on the existing site infrastructure nor the Utility Services Provider's Asset.

Refer to Appendix 'A' of this report for indicative layout of site infrastructure.

The performance of the authority water supply for drinking purposes is adequate for the proposed development. No authority water supply augmentation is required.

9.3 Natural Gas Supply

Natural gas supply is not being provided.

9.4 Roof Water Plumbing and Drainage

Roof water plumbing from proposed building roof areas will be designed to convey the roof water down to the lowest level where it will be discharged into the main civil stormwater trunk main system. It is envisaged that there will be multiple connections. The roof drainage system will be based on an Annual Recurrence Interval (ARI) of 1 in 20 years with a 5-minute duration. All roofed areas will have an independent overflow system which has 100 % capacity of the primary downpipe system. This rainfall ARI is compatible for buildings with eaves gutters.

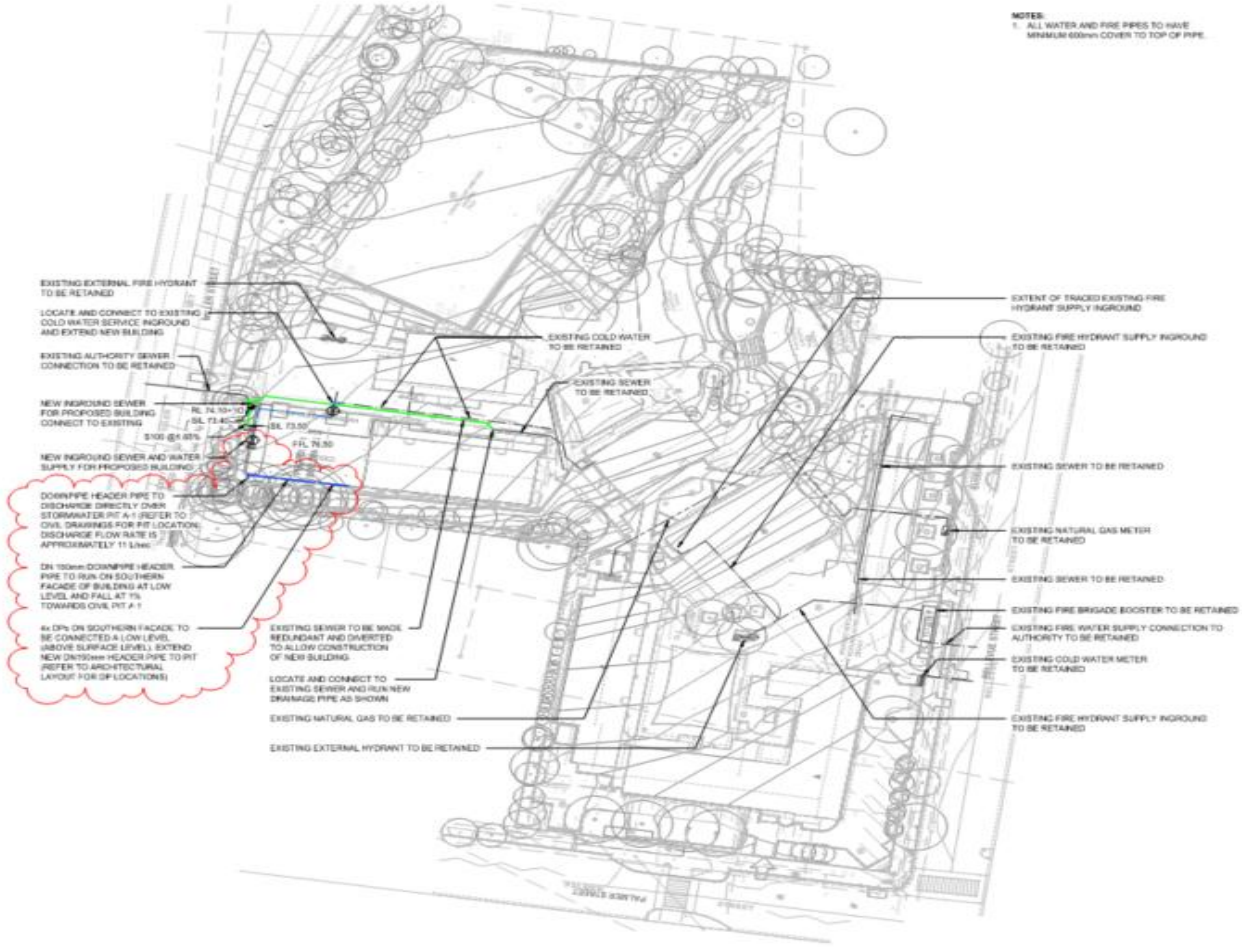
Stormwater is directed to site infrastructure and then to local council/authority drainage pipes which are carrying large volumes of upstream stormwater (refer to the Project's Civil Engineers Report).

10 Utility Service Provider - Handover

Whist undertaking the assessment of the existing site infrastructure and the adequacy of the existing utility services provider assets for the Activity, it is determined that all services are contained wholly within the site and will be maintained and operated by The Minister for Education and Early Learning.

Furthermore, the appropriate mitigation measures have been implemented to ensure that there are no significant impacts on the locality, community and/or the environment.

Appendix A - Hydraulic Services Site Infrastructure



Appendix B - Drinking Water – Pressure & Flow Information

Statement of Available Pressure and Flow

Sydney WATER

Katie Adamson
33 Herbert Street
St Leonards, 2065

Attention: Katie Adamson Date: 30/08/2024

Pressure & Flow Application Number: 1960611
Your Pressure Inquiry Dated: 2024-08-23
Property Address: Palmer Street, Cammeray 2062

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Bellevue Street	Side of Street: West
Distance & Direction from Nearest Cross Street	45 metres North from Palmer Street
Approximate Ground Level (AHD):	87 metres
Nominal Size of Water Main (DN):	200 mm (As per diagram provided)

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	43 metre head
Minimum Pressure	31 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	31
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	10 15 20 25 30 40 50 60	34 34 34 34 33 33 33 32
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	10 15 20 25 30 40 50 60	30 30 30 30 30 29 29 28
Maximum Permissible Flow	118	24

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

hydraulicassessment@sydneywater.com.au

Sydney Water Corporation ABN 49 776 225 038
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Delivering essential and sustainable water services for the benefit of the community