



27th Sep 2017

Stormwater Management & Water Sensitive Urban Design Report

Ryde Public School

3B Smalls Rd, Ryde NSW

Architect:

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Ultimo NSW 2007

Stormwater Services Consultant:

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Introduction

Background

Conrad Gargett Ancher Mortlock Woolley Architects have commissioned MYD Consulting Engineers Pty Ltd to prepare a stormwater management report and stormwater concept plan for the proposed Development Application at Ryde public School.

Aims

The aim of this report is to provide an outline of the proposed stormwater services issues associated with the Development Application, specifically including the following;

- Site Stormwater Drainage Concept
- On Site detention

Location

The site is located at 3B Smalls Rd, Ryde.

The existing site consists of buildings, driveway/carpark, paths and landscape areas. The topography falls to the north.

Location Map



Proposed Development

The proposed development is broken up into two sections:

- South section incorporates the existing cerebral palsy buildings and associated driveway/carpark areas. These will generally remain unchanged.
- Northern section all existing buildings, driveways and paths will be demolished and replaced with a new multi-level school building. The existing carpark adjacent Smalls Road will be reconfigured to suit. The sporting fields to the north will generally remain unchanged.

Briefing Documents

The engineering elements considered in this report have based or taken into consideration the following documents:

- Ryde Council Development Control Plan.
- Ryde Council stormwater management technical manual.
- Development Application architectural drawings prepared by Conrad Gargett Ancher Mortlock Woolley Architects.
- Survey prepared by RPS Australia East Pty Ltd.
- Various Authority services diagrams.

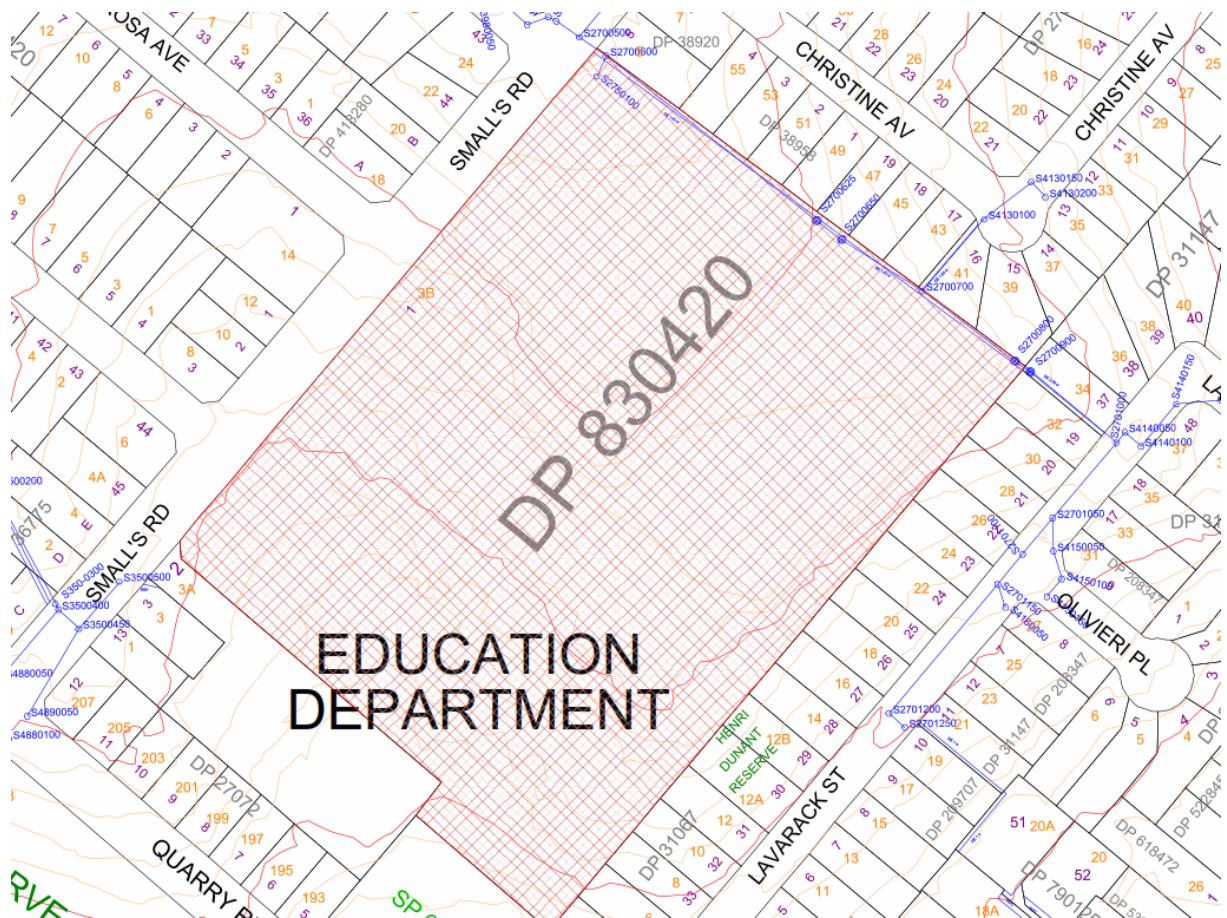
Stormwater Drainage Infrastructure

Local Authorities

Ryde Council is the local Authority responsible for the provision of stormwater drainage infrastructure within the development area.

Existing Council Stormwater Drainage Infrastructure

A piped stormwater system is located along the northern boundary of the site. Marked in blue on the map below.



Site Stormwater Drainage Proposal

Existing Site Stormwater Drainage

The existing stormwater drainage system picks up surface water from the existing buildings, carparks and driveway areas. The main piped system runs parallel to Smalls Rd and connects into the council system in the northern corner of the site.

Overland Flow

All portions of the site falls to the north. With the introduction of the new building the overland flow will generally remain the same with the flow directed toward the existing council stormwater system along the northern boundary of the site.

New Site Drainage Connection

All surface water from the proposed building will be picked up via downpipes and pits, rainwater & OSD tank will be located downstream of the new building with the outlet connecting back into to the existing stormwater pipe/pit located adjacent Smalls Rd frontage. Stormwater from the existing portions of the site shall remain unchanged as much as possible and bypass the proposed OSD tank.

Stormwater Detention

Stormwater detention is based on the impervious area of the new buildings and associated hard surface area.

Site located in Zone 1 for OSD catchment.

Total proposed impervious area:		5470m ²
Calculated PSD:	5470m ² x 0.0265L	145 L/sec
Calculated SSR:	5470m ² x 0.0275 m ³	150.4 m ³

The on-site stormwater detention facility will be located downstream of the proposed building. Refer stormwater concept plans for additional details.

Rainwater storage

A 65 m³ rainwater tank is located adjacent the OSD tank with an internal overflow weir, all overflow water shall be directed to the OSD tank.

The hydraulic engineer has advised the ESD report is asking for 10L storage volume per square meter of GFA. Considering 6460 sqm total GFA, we will require a 65 m³ rainwater storage to satisfy the ESD requirement.

18B.2 Rainwater Reuse

One (1) point is awarded when a rainwater tank is installed to collect and reuse rainwater, within the project's site boundary, and the rainwater tank size meets the following criteria:

Gross Floor Area (GFA in m²)/ Rainwater Tank Volume (kL)

2,500m²/ 25kL

5,000m²/ 50kL

10,000m²/ 100kL

20,000m²/ 200kL

Water sensitive urban design

The proposed impervious area is majority roof catchment draining to the rainwater tank, this will generally be used before overflowing to the OSD tank. Any water overflowing shall already be treated from the first flush system and generally be of good quality coming straight off the roof. A silt trap and trash screen has been incorporated into the OSD tank and will collect silt and any litter washed into the system. A maintenance schedule shall be set up to clean out the tank every 3 months and after all large rain events.

Yours faithfully,

Paul Carpenter

