

# *Sydney All Services* PTY LTD

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PMDL Architecture & Design

PO Box 1465

CROWS NEST NSW 2065

For the attention of Ms. Deborah Yong

RE: PLC Masterplan Stage 2

Dear Deborah,

Our proposal for the treatment of stormwater drainage and other hydraulic services for this development is as follows:

**Stage 1, New Aquatic + Fitness Centre, plus relocation of Mollie Dive Field, provision of services path, landscaping, pavement works, and upgrade of the existing Jeanette Buckham PE Centre:**

Stormwater drainage will be designed and installed in accordance with the requirements of AS 3500. Stormwater drainage and detention will be provided in accordance with the requirements of Ku-Ring-Gai Council's Water Management Development Control Plan-DCP 47. It is anticipated that the detention volume required for the new Aquatic and Fitness Centre will be in the order of 48 M3, to be provided below the new Aquatic Centre. Please refer to the attached 'Appendix 3 On-Site Detention Calculation Sheet'. The orifice plate diameter will be determined after the configuration of the storage is resolved during the detailed design stage.

It is proposed that the existing stormwater detention for Mollie Dive Field be relocated to suit the new field location during Stage 1.

Stormwater detention provided for the new Aquatic and Fitness Centre may be relocated to the Mollie Dive carpark during Stage 2, with the storage provided during Stage 1 being utilised as rainwater storage for irrigation and other purposes.

**Stage 2, Raised Molly Dive Field and Carpark under, plus Piazza and Terrace:**

Stormwater drainage will be designed and installed in accordance with the requirements of AS 3500. Stormwater drainage and detention will be provided in accordance with the requirements of Ku-Ring-Gai Council's Water Management Development Control Plan-DCP 47. At this stage it is anticipated that the stormwater detention will be contained in the basement carpark, with an approximate volume of 368 M3 and depth in the order of 100mm. The orifice plate diameter will be determined after the configuration of the storage is resolved during the detailed design stage.

We note that 'Engineer Comments' in the pre-development meeting report suggest that 'surface detention storage in the basement carpark may not be suitable within a school

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environment', and draw attention to the fact that surface detention storage in a basement carpark has been in place at the school for some years, below the Conde Library.

On site stormwater detention previously provided for Stage 1 may be relocated and incorporated in Stage 2. This will be determined during the detail design phase of Stage 2.

**Stage 3, New Dining Facility, plus landscaping, pavement works, courtyard upgrades and upgrade of the service access way:**

Stormwater drainage will be designed and installed in accordance with the requirements of AS 3500. Stormwater drainage and detention will be provided in accordance with the requirements of Ku-Ring-Gai Council's Water Management Development Control Plan-DCP 47. Detention storage volume and location are yet to be determined and may be incorporated in Stage 2. This will be determined during the design development of Stage 2, with the detention volume and permitted site discharge being adjusted accordingly.

**Stage 4, New Healthcare centre plus landscaping and pavement works:**

Stormwater drainage will be designed and installed in accordance with the requirements of AS 3500. Stormwater drainage and detention will be provided in accordance with the requirements of Ku-Ring-Gai Council's Water Management Development Control Plan-DCP 47. Detention storage volume and location are yet to be determined and may be incorporated in Stage 2. This will be determined during the design development of Stage 2, with the detention volume and permitted site discharge being adjusted accordingly.

**Ecologically Sustainable Development:**

ESD principles will be incorporated throughout all stages of the development, following the principles currently adopted throughout the school. These will include the following measures;

- ✓ WELS rated tapware throughout
- ✓ Harvesting and re-use of rainwater for hose taps, irrigation and other appropriate uses
- ✓ Natural gas used for room heating
- ✓ Natural gas used for water heating
- ✓ Natural gas used for heating the swimming pool.

**Utilities:**

A section 73 Certificate for the development will be obtained from Sydney Water to ensure that the available infrastructure is adequate for the development.

The College has an existing connection to an AGL (Agility) gas main in Avon Road which currently supplies gas to all required fixtures throughout the grounds. Whilst some reticulation pipework within the College will require reconfiguration to cater for the new development, the overall gas consumption for the College is not expected to rise significantly. The primary existing loads are catering and heating the swimming pool. The catering load may increase slightly in the new development; however savings in gas consumption may result from the introduction of an indoor swimming pool. Thus, it is anticipated that the existing gas supply will be adequate for the proposed development. Appropriate applications will be made to the supply authority in due course, during the design phase.

**Flooding:**

Following consideration of the relevant provisions of the NSW Floodplain Development Manual (2005) it is our opinion that a flood study is not required, as;

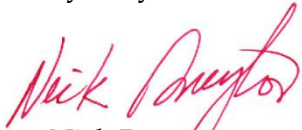
- The site is located at the upper end of its catchment area
- The site is not affected by a major river system
- The site is not in a floodplain
- The site is not in a floodway
- Given the OSD measures to be adopted, the development will have no significant impact on the existing flows within the catchment.

**Drainage:**

Refer to Drawing No's H01A, H02A, H03A, H04A, H05A, and H06A.

We trust this satisfies your enquiry; should you require any clarification or further information please contact the undersigned.

Yours faithfully,  
Sydney All Services



Nick Drayton

Cc:

### Appendix 3 On-Site Detention Calculation Sheet

Address PLC (MOLLIE DIVE FIELD)

#### Catchment Detail

1.	Catchment Name	<u>AC1</u>		
2.	Catchment Discharge Rate	<u>0.0102</u>	l/sec/m <sup>2</sup>	A
3.	Catchment Storage Rate	<u>0.0398</u>	m <sup>3</sup> /m <sup>2</sup>	B

#### Site Details

4.	Site Area	<u>77.00</u>	m <sup>2</sup>	^	<u>68%</u> of site area	<u>77.00</u>	m <sup>2</sup>	C
5.	Area(s) not draining to the detention system	<u>0</u>	m <sup>2</sup>					
6.	Total impervious area (roofs, driveways, paving, etc.)	<u>77.00</u>	m <sup>2</sup>					D
7.	Impervious area bypassing detention system	<u>10</u>	m <sup>2</sup>					E

#### Permitted Site Discharge

8.	C	[ <u>77.00</u> m <sup>2</sup> ] x A [ <u>0.0102</u> l/sec/m <sup>2</sup> ] =	<u>78.54</u>	l/sec	Flow 1
9.	Adjustment for any uncontrolled impervious flow E / D =	<u>0.001</u>	( <u>&lt;0.25</u> )		F
10.	Flow 1	[ <u>78.54</u> l/sec] x F [ <u>0.001</u> ] =	<u>0.08</u>	l/sec	Flow 2
11.	Flow 1	[ <u>78.54</u> ] – Flow 2 [ <u>0.001</u> ] =	<u>78.54</u>	l/sec	PSD

#### Site Storage Requirement

12.	C	[ <u>77.00</u> m <sup>2</sup> ] x B [ <u>0.0398</u> m <sup>3</sup> /m <sup>2</sup> ] =	<u>306.5</u>	m <sup>3</sup>	SSR1
13.	If the storage is in a landscaped basin, SSR1 x 1.2 =		<u>368.0</u>	m <sup>3</sup>	SSR2

#### Outlet Control

14.	Height difference between top water surface level and the centre of the orifice		m	G
15.	Orifice Diameter	$21.8 \times \sqrt{\frac{PSD}{G}}$	mm	OD

PSD = Permitted Site Discharge

SSR1 = Site Storage Requirement (except for landscaped basins)

SSR2 = Site Storage Requirement (landscaped basins) (Note: Use only SSR1 or SSR2)

OD = Orifice Diameter

Signature..... Name.....

Qualifications..... Date .....