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1/02/2012

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 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 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 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.

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.

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

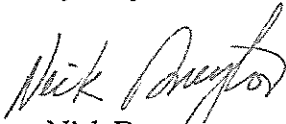
Stormwater drainage will be designed and installed in accordance with the requirements of AS 3500. Stormwater detention will be provided in accordance with the requirements of Ku-Ring-Gai Council's Water Management Development Control Plan-DCP 47. Detention storage volume and location are yet to be determined 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 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.

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 ²	A
3.	Catchment Storage Rate	<u>0.0398</u> m ³ /m ²	B

Site Details

4.	Site Area	<u>7700</u> m ²	$\wedge$	50% of site area	<u>7700</u> m ²	C
5.	Area(s) not draining to the detention system	<u>0</u> m ²				
6.	Total impervious area (roofs, driveways, paving, etc.)	<u>7700</u> m ²				D
7.	Impervious area bypassing detention system	<u>10</u> m ²				E

Permitted Site Discharge

8.	$C [7700 \text{ m}^2] \times A [0.0102 \text{ l/sec/m}^2] =$	<u>78.54</u> l/sec	Flow 1
9.	Adjustment for any uncontrolled impervious flow $E / D =$	<u>0.001</u> (<0.25)	F
10.	Flow 1 $[78.54 \text{ l/sec}] \times F [0.001] =$	<u>0.08</u> l/sec	Flow 2
11.	Flow 1 $[78.54] - \text{Flow 2} [0.001] =$	<u>78.54</u> l/sec	PSD

Site Storage Requirement

12.	$C [7700 \text{ m}^2] \times B [0.0398 \text{ m}^3/\text{m}^2] =$	<u>306.5</u> m ³	SSR1
13.	If the storage is in a landscaped basin, SSR1 x 1.2 =	<u>368.0</u> m ³	SSR2

Outlet Control

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