

Our Ref: SY222054
Enquiries to: Andrew Wallis

16 February 2023

Northern Beaches Council
PO Box 82
MANLY, NSW 1655

Attention: Megan Surtees

**Re: DA2022/2230 – LOT 6 DP246526, KILLARNEY HEIGHTS, 1 LANFORD AVENUE
STORMWATER DRAINAGE – ENGINEERING REFERRAL RESPONSE LETTER**

This letter has been provided in response to council's engineering referral response letter (DA2022/2230), for the proposed development of Lot 6 DP 2465526, 1 Lanford Avenue, Killarney Heights, NSW 2087, to provide comments and clarification of the proposed stormwater and On-site detention design for the development.

See below response to DA assessment officer comments:

- 1. As per provided stormwater plan, the subject property is proposed to be drained against the direction of natural catchment.***

We note the following in regards the existing and proposed catchment & direction of flows.

- Currently, the existing roof drainage is draining towards the Lanford Avenue street frontage. This coincides with the proposed stormwater drainage design.
- Most of the pervious site areas for the existing drains naturally to the rear of the development as with the proposed.
- With the addition of the OSD proposed peak flow discharging to the road will be reduced to flows less than the predevelopment flows and therefore provide a decrease in gutter flow.

Refer to the table 1 for proposed and existing flows.

- 2. The applicant needs to provide gutter flow analysis and information regarding the flow to be discharged to Lanford Avenue.***

Results as per table 1 from a DRAINS model demonstrate that overall flows from the site are similar, flows to the street and to the rear are similar. This coincides with a PSD equivalent to a 35% impervious site as per council direction (see following response).

The DRAINS model can be provided upon request from council.

	Design Flows			Existing flows		
	Discharge to Street (with OSD)	Discharge to Rear	Total	Discharge To Street	Discharge To Rear	Total
Catchment (m2)	510	350	860	355	505	860
20% AEP (l/s)	13	10	23	11	14	25
5% AEP (l/s)	17	16	33	18	23	41
1% AEP (l/s)	20	34	54	23	31	54

TABLE 1. DRAINS DESIGN SUMMARY SPREADSHEET RESULTS

3. *The Onsite Detention (OSD) volume is to be sized based on the streamlined method as per section 9.3.2.2 of council's "Water Management for Development Policy"*

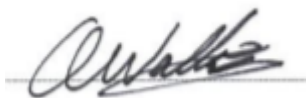
Correspondence with council officer in August 2022 provided direction to site discharge requirements. Alex Kwok at Northern Beaches council required our design to take 35% pre-development impervious site area, as a basis for assessing OSD volume. This has been used to determine an OSD size of 6kL as documented on our C401 drawing and the site discharge as presented in the table above.

In this case the streamlined method cannot be applied to size the OSD as there is no allowance for existing impervious area.

Because of the following, we believe that the submitted DA application (DA2022/2230) with the additional information provided in this letter, demonstrates compliance with comments outlined in council's engineering referral response.

Should you have any queries please do not hesitate to contact us.

Yours faithfully,
Van der Meer Consulting



Andrew Wallis
B.Eng, MIEAust,
CPEng, NPER No. 2575060
 Manager, Civil Engineering