

3 September 2015

Our Ref:20140438

ARH Warriewood Pty Ltd  
Level 1, 76 Queen Street  
Woollahra NSW 2025  
ATTENTION: JOHN TYREE

Dear John,

**PROJECT:** STORMWATER FOR STAGE 01 [S.96 APPLICATION]

**ADDRESS:** 53C WARRIEWOOD RD, WARRIEWOOD NSW

Please find following our assessment of the stormwater works required for the Stage 1 works for the above project.

### Preliminary Information

Jones Nicholson have completed a Flood Study and a Water Management Plan for the original Development Application (Council reference N0330/14), and these documents should be consulted for a full understanding of the stormwater management and flooding issues at the subject site.

### Staging Plan

It is currently proposed to conduct the development in two stages as follows:

1. Stage 1: subdivision of the land into 3 lots as shown on the attached plan. No actual works are proposed for this stage;
2. Stage 2: Subdivision of the large Lot 3 and associated road and drainage works; this Stage is DA approved and covered in further detail in the aforementioned Jones Nicholson Water Management Plan and associated Flood Study.

### Required Stormwater Management Measures for Stage 1

The required stormwater management measures typically required by Council for a development in the Warriewood Valley include onsite detention (OSD) to manage stormwater quantity, and water sensitive urban design (WSUD) to manage stormwater quality. These are addressed following.

### Onsite Detention (OSD)

As noted in Pittwater Council's "Warriewood Valley Urban Land Release Water Management Specification" (February 2001) "The need for on-site detention (OSD) results from the requirement to maintain existing peak flows so that following development flooding will not be worse than the pre-existing condition" [Section A1, p.64]. Given that no actual works are planned for Stage 1, the post Stage 1 peak flowrates will be identical to the existing condition flowrates. As such, no OSD is required for the Stage 1 works as Council's criteria are satisfied without it.

### SUTHERLAND

ABN 51 003 316 032  
Suite 45, 40-44 Belmont Street,  
SUTHERLAND NSW 2232  
PO Box 477, SUTHERLAND NSW 1499  
Tel: 02 9521 3088 Fax: 02 9521 3066  
Email: mail@jonesnicholson.com.au  
www.jonesnicholson.com.au

### OFFICE LOCATIONS:

SYDNEY-CBD SUTHERLAND WOLLONGONG  
NOWRA GOULBURN PICTON SINGLETON



We also highlight that Pittwater 21 DCP Part B (Amendment 18 May 2015) Clause B5.7 states that “An OnSite Detention (OSD) facility is to be installed where the development results in additional hard (impervious) surface area of greater than 50m2...” Given that no additional hardstand is proposed, there is no requirement under the DCP to install OSD.

#### **Water Quality Measures (WSUD)**

As noted in the aforementioned “Warriewood Valley Urban Land Release Water Management Specification” the ultimate goal of the [Water Quality measures] is to “ensure that the developed conditions do not worsen the existing conditions and that the opportunity is taken to improve/reduce constituent loads towards the outcomes (i.e. Council's long-term water quality goals)” [p.24, Section 4.3.3]. In this regard we highlight that, as no actual works are planned for Stage 1, the post Stage 1 water quality of the site will be identical to existing conditions. Furthermore, the Stage 2 works (including construction of the full WSUD measures) are planned for late 2015, and there is therefore no need to address Council’s long-term water quality goals (which are met or exceeded by the Stage 2 WSUD measures). Therefore, no WSUD measures are required for Stage 1 as Council’s objectives are achieved without them.

Furthermore we highlight that Pittwater 21 DCP Part B (Amendment 18 May 2015) Clause B5.9 states that “[Water Quality controls are] applicable when the development results in an additional hard (impervious) area of more than 50 square metres.” Given that no additional hardstand is proposed, there is no requirement under the DCP to install WSUD measures.

#### **Summary**

In summary we note that:

- No works are planned to be undertaken stage 1 (see the attached plan as reference);
- The existing stormwater runoff from the site appears to be currently managed in a satisfactory manner and no changes are proposed under Stage 1;
- No OSD is required for Stage 1 as the post Stage 1 peak flowrates will be identical to the existing condition;
- No WSUD measures are required for Stage 1 as the post Stage 1 water quality runoff will be identical to the existing condition;
- Stage 2 works (planned for late 2015) will include a large OSD and full WSUD measures as detailed in the aforementioned Jones Nicholson Water Management Plan.

For and on behalf of Jones Nicholson Pty Ltd



Andrew Wiersma

Reviewed by:



Alistair McKerron  
BE, MIEAust, CPEng, NPER  
Project Engineer  
NPER no. 2220277