

5 July 2019

Robert and Susie Nugan  
32 The Strand  
Whale Beach NSW 2107

c/o Michael Haynes <michael@bbfplanners.com.au>

**Hydraulic engineering design for the new dwelling at 32 The Strand, Whale Beach**

Dear Robert and Susie

Please find attached the drawings describing the stormwater management plan for the proposed new dwelling at 32 The Strand, Whale Beach.

The stormwater management plan is described in the following Stellen Consulting drawings:

|               |                   |                                   |
|---------------|-------------------|-----------------------------------|
| <i>DR-000</i> | <i>Revision 1</i> | <i>Legend</i>                     |
| <i>DR-001</i> | <i>Revision 1</i> | <i>Pipe Layout – Second Floor</i> |
| <i>DR-002</i> | <i>Revision 1</i> | <i>Pipe Layout – First Floor</i>  |
| <i>DR-003</i> | <i>Revision 1</i> | <i>Pipe Layout – Ground Floor</i> |
| <i>DR-110</i> | <i>Revision 1</i> | <i>Details</i>                    |

The stormwater management plan conforms to the relevant requirements of the following with noted exception:

- *Australian Standard AS3500.3 – Plumbing and Drainage: Part 3 Stormwater Drainage*
- *Northern Beaches Council Pittwater 21DCP Part B5.7 – Stormwater Management* <sup>(1)</sup>

Exception:

1. Northern Beaches Council Pittwater 21DCP Part B5.7 requires the application of OSD when post development additional “hard stand” areas exceed 50m<sup>2</sup> when compared to pre-developed site. However, no OSD was recommend for the following reasons:
  - a. The site is at the bottom of the catchment and improves the catchment’s peak flow hydrograph because the site’s peak discharge flow during a storm event would occur before the catchments peak flow.
  - b. The site does not discharge or pass through any of council’s stormwater infrastructure.
  - c. An easement is required to achieve a stormwater discharge connection to Whale Beach carpark. Also, a natural gully is present in the site’s backyard therefore a 12.8m<sup>3</sup> absorption system is proposed. The absorption trench has similar drainage philosophy to that as an OSD system because it captures, stores and slowly discharges stormwater.

We recommend the stormwater design (as described in the drawings) as a safe and practical solution to support the development.

Kind regards,



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