

Our Ref: 16-00464-LTR-JBA-2016-12-06.docx
Your Ref:
Contact: Con Vink

6 December 2016

JBA Planning
Level 7
77 Berry Street
North Sydney NSW 2060

Attention: Michael Oliver

Dear Michael,

**Woollooware Bay Town Centre
Section 75W Application MP 10_0229 (MOD 2)
Impact of Proposed Amendment on Infrastructure**

The original Retail Civil Infrastructure Report prepared by AT&L (11-59-5003 Rev 03 dated February 2013) for the Project Application for the Woollooware Bay Town Centre project described the existing and proposed infrastructure servicing the development.

Page 3 of that report details the Concept Plan as being in three stages:

Stage 1 – New Neighbourhood Retail Centre, Medical and Leisure facilities on the eastern car park site with rooftop car parking and redevelopment of the Leagues Club facilities;

Stage 2 – Residential Master-Planned Estate on the western car park and field area; and

Stage 3 – Extension and improvement of the Sharks playing field facilities including grandstand extensions.

Stage 1 (now referred to as Stage 4 Residential/Hotel) is proposed to be amended through an application under Section 75W of the Environment Planning and Assessment Act 1979 to incorporate additional visitor accommodation, community facilities and residential apartments as follows:

- One serviced apartment / hotel building
- Three residential flat buildings and a small number of terraces with 222 dwellings and associated amenities;
- Landscaped podium with private communal open space;
- Additional car parking.

The Secretary's Environmental Assessment Requirements (SEARS) were issued by the Department of Planning on 20 October 2016. This report addresses the impact of the proposed amendment on infrastructure and in particular it addresses two of the identified Key Issues for the Environmental Assessment (EA) to be lodged with the Section 75W Application, which are reproduced on the following page for clarity:

13. Drainage and Stormwater

The EA shall:

- Address any potential impacts on the riparian land along the southern shore of Woollooware Bay and the watercourse on the site; and
- Provide information on the sewage management arrangements.

15. Utilities

The EA shall:

- Document consultation with relevant agencies on the existing capacity and requirements of the development to provide utilities, including any staging of infrastructure works; and
- Set the potential for the proposal to impact on any water, stormwater or wastewater infrastructure

In response to these Key Issues, the impacts of the proposed amendment would be as follows:

1. Stormwater discharge

The original concept proposed to drain the site towards the existing stormwater drainage system in Captain Cook Drive. It is now proposed to discharge the water north towards Woollooware Bay, thereby relieving the load on the existing stormwater system and reducing the impact on flooding in the area.

The stormwater drainage works to the north of the building, through which the building (including Stage 4 Residential/Hotel) will discharge, will be constructed in two stages.

Drawings C2-100, C2-101 and C4-120 shows the works to be completed in the first stage. The works include a bio-retention swale and discharge structure with a trash basket and scour protection at the outlet apron. The scour protection apron will reduce the velocity of discharge and direct the discharge into a stilling basin formed by a level spreader running east-west. This stilling basin will further reduce the risk of scour by preventing concentrated flow.

Drawing C2-201 shows the works to be completed in the second stage. The bio-retention basin and outlet works from Stage 1 will remain in operation. Stormwater drainage from the building will connect to the drainage works constructed in Stage 1.

2. Stormwater quantity

The proposed stormwater drainage catchment plan C4-260 is attached. On that plan, catchments 1, 2 and 3 refer to the building on which the proposed Stage 4 Residential/Hotel amendments are located.

The proposed changes to Stage 4 Residential/Hotel do not change the catchment area and thus have no impact on the quantity or flow rate of water discharged.

3. Stormwater quality

All stormwater from the site will be treated before discharge using primary, secondary and tertiary treatment. Details of these treatment systems have been shown on the attached drawings.

The stormwater discharged from the foreshore area will be treated by a bio-retention swale before discharge through a proprietary Trash Rack to collect gross pollutants (litter and coarse sediments) that might be washed downstream from the swale.

The stormwater from the building will be treated by a gross pollutant trap (Continuous Flow Deflector or CDS Unit) to remove litter and coarse sediment and further treated using a cartridge filtration system such as Storm360 or Humes Jellyfish units to remove fine sediment and nutrients. The gross pollutant trap will also treat water discharged from the site during construction. However, in that situation it would be a second line of defence after treatment of site runoff from within the construction site by the builders, before discharge to the drainage system.

The type of gross pollutant trap chosen was selected for its ease of maintenance (as discussed with Council) and its low risk of blockage. It is located near the access road to allow trucks to access the unit with a small crane to lift the litter basket from the unit as part of the maintenance process.

The cartridge filtration system is a most effective method for removal of fine sediments and nutrients. The cartridges would be replaced as required by the operators of the retail site. The filtration chamber is located close to the access road and the individual cartridges can be removed, replaced and carried to a nearby truck by a single person.

This standard of treatment would be at least as specified by Sutherland Shire Council and the Department of Primary Industries (Fisheries). The treatment has been modelled using the MUSIC software package for both stage 1 and stage 2 works, and has taken into account the proposed Stage 4 Residential/Hotel amendment. There will be no reduction in the quality of water discharged from the site as a result of the proposed amendment.

The multiple stages of treatment have improved on the concept provided in the original Retail Civil Infrastructure Report prepared by AT&L by the addition of a gross pollutant trap (CDS unit) and cartridge filtration system that are more effective and more readily maintained to ensure that water quality targets can continue to be met in the future. In addition, the trash basket at the outlet provides a measure of redundancy and a visual indication of treatment efficiency. The presence of litter in that basket would be a trigger for checking whether the other upstream units might require maintenance.

4. Flood evacuation

During a flood event, residents will not be affected by flooding as all areas are well above peak flood levels. Evacuation should not be necessary except in the case of medical emergency. An evacuation route that is clear of the 100-year flood has been provided via the proposed car park entry/exit off Woollooware Road North.

5. Water supply

A water main upgrade incorporating a new 200mm main from the existing 375mm trunk main has been already completed in Captain Cook Drive to service the Woollooware Bay Town Centre.

Anticipated potable water demands for the proposed Stage 4 Residential/Hotel site including the proposed amendments were provided by the hydraulic consultant, Insync, to the Sydney Water Servicing Coordinator for the water main upgrade, Amanpreet (Aman) Kalsi of Qalchek Pty Limited.

The changes to water demand resulting from the proposed amendment have already been taken into account in the water main upgrade.

6. Sewerage reticulation

A 225mm diameter sewer extension will be provided from the existing 225mm diameter sewer in Captain Cook Drive to service Stage 4 Residential/Hotel. The existing 225mm sewer connects to an 1800mm diameter trunk sewer main.

The anticipated occupancy of the proposed amendment has been provided to the Sydney Water Servicing Coordinator for the sewer main extension, Kiara Thomas of Qalchek Pty Limited, who have confirmed that the extension will have sufficient capacity for Stage 4 Residential/Hotel including the proposed amendment.

7. Electrical supply

Ausgrid has extensive electrical infrastructure in the area, ranging from low voltage mains through to 11kV, 33 kV and 132 kV high voltage mains.

The maximum electrical demand for Stage 4 Residential/Hotel including the proposed amendment has been calculated by the electrical consultant for the development, Donnelley Simpson Cleary Consulting Engineers Pty Ltd. Mr Arthur Gormly of DSC has confirmed that this anticipated demand has been taken into account in the design of new substations and switch rooms within the site, and in the application for supply to Ausgrid.

The supply application was made by Connect Infrastructure and Mr Glen Saunders of Connect has confirmed that these demand figures have been provided to Ausgrid who confirm adequate capacity in the network to supply this demand.

8. Telecommunications

National Broadband Network (NBN Co) has committed to servicing the proposed development at no cost to the developer. This was confirmed by email on 13 April 2016. The proposed amendments will not affect this commitment.

9. Gas

Jemena has extensive gas main assets in the area ranging from 110mm diameter nylon mains to 300mm diameter high-pressure steel mains, and confirm adequate capacity to service the site. The proposed amendments will not affect the ability to supply the site.

Accordingly, we conclude that the amendments proposed in the Section 75W application will have no impact on the ability to service the site.

Yours faithfully
Calibre Consulting



Con Vink
Principal Engineer

ATTACHMENTS

1. Drawing C4-260 Rev B Stormwater Drainage Catchment Plan
2. Drawing C2-100 Rev D Stage 1 General Arrangement Plan Zone X1
3. Drawing C2-101 Rev C Stage 1 General Arrangement Plan Zone X2
4. Drawing C2-201 Rev C Stage 2 General Arrangement Plan Zone X2
5. Drawing C4-120 Rev C Stage 1 Stormwater Drainage Details