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Attention: Cameron Martin

Dear Cameron

SYDNEY ADVENTIST HOSPITAL REDEVELOPMENT
RESPONSE TO SUBMISSIONS LEADING TO PREFERRED PROJECT REPORT

We have reviewed the various submissions received relating to the Environmental Assessment for the Sydney Adventist Hospital Redevelopment at Wahroonga and specifically relating to the comments made on civil engineering and stormwater drainage matters.

Firstly it is important to note that our intent is to design and construct the stormwater drainage and associated systems to be in accordance with Ku-ring-gai Council's Water Management Development Control Plan – DCP 47. The Stormwater Management Plan for the redevelopment indicates that DCP 47 will be used as the Standard or Guideline for the proposed works and we consider this to be the minimum standard for the project.

To ensure compliance with other requirements and obligations, for example, the "Wahroonga Estate – Hydrology and Nutrient Management Plan" (aka, Biodiversity Management Plan for the area) additional measures over and above those required by DCP 47 will be incorporated into the stormwater drainage system designs.

In response to specific queries raised by Ku-ring-gai Council, we offer the following advice:

1. The Civil Engineering Report for the project indicates that the piped stormwater drainage system will be designed for a 1 in 20 year ARI event.

   To ensure compliance with DCP 47, we agree that the piped stormwater drainage network will be designed to capture and convey storm runoff from a 1 in 50 year ARI event.

2. OSD is being provided to limit storm flows to pre-development flows. This is to control peak storm flows in downstream drainage systems (which includes Coups Creek) and is consistent with the objectives of DCP 47. Council shows concern that perhaps discharges should be further limited, which in fact, has already been considered and allowed for. The Stormwater Management Plan describes additional controls that will be implemented as follows:

   - Flow control will be provided to limit peak discharges and runoff volumes to existing for storm events up to a 1 in 2 year ARI. This will provide greater control of peak storm flows for more frequent storm events.

It is important to note that this is an additional requirement that we have imposed on the design which is over and above the requirements of DCP 47, but is required to ensure consistency with the objectives of the "Wahroonga Estate – Hydrology and Nutrient Management Plan".

- Rainwater retention and reuse of harvested rainwater on site will be an effective measure in reducing the frequency and volume of stormwater runoff from the hospital site.

3. The Stormwater Management Plan indicates several end uses for harvested rainwater, viz., irrigation of landscape areas, hosing in wash down areas and toilet flushing in selected areas.

   Whilst it is intended to utilise rainwater for these non potable uses, the hospital needs to be mindful of infection control and therefore rainwater reuse for toilet flushing may not be possible within some areas of the hospital. This is subject to further investigation during the detailed design.

   The important commitment of the project is that on average, approximately 7,500L of harvested rainwater will be reused on site per day to achieve an effective water balance; it is of lesser importance what the rainwater is to be used for.

   By achieving an effective water balance, the frequency and volume of storm water runoff to downstream areas (i.e. Coups Creek) will be reduced. This is consistent with the objectives of the "Wahroonga Estate – Hydrology and Nutrient Management Plan".

4. Concern has been raised about the proposed design of the stormwater drainage outlet structures from the site. The intention is to utilise the existing outlet structures but upgrade them to be consistent with current "best practice".

   Currently the outlet structures are essentially small "stilling" basins with a low gabion wall on the downstream side. The site stormwater drains discharge into the "stilling" basins where the water essentially slows to a minimum velocity and is allowed to percolate through the gabion wall (which is acting as a level spreader).

   The proposal is to convert the existing "stilling" basins into small bio-retention basins (or rain garden). This will allow stormwater to infiltrate into the sub-surface.

5. We acknowledge that the Concept Sediment and Erosion Control Plans do not currently show stockpile locations for topsoil. This will be addressed during the Construction Certificate Application phase(s) of the project.

   We agree with Council's comment that stockpiling and re-use of topsoil on site is a basic requirement of most civil works specifications. This project is no different and it is certainly proposed that topsoil removed during earthworks will be stockpiled on site and reused within landscape areas wherever possible.

Yours faithfully

Anthony Mancone
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