

Referral Response - Environmental Health - Waterways

Application Number:	DA17/1092
Referral Officer	Tim Gowing
Referral Unit	Environmental Health - Waterways
Date of referral	20 June 2018
Land to be developed (Address):	Lot 2 DP 1108408 13 - 15 Park Road WALLACIA NSW 2745
Proposed Development:	Staged Construction of Wallacia Memorial Park including Cemetery for 88,000 Burial Plots, Chapel & Related Crematorium & Function Rooms, Administration Building, Services Outbuilding, Parkland Areas, Internal Roads, Car Parking & Associated Landscaping & Site Servicing Works

Recommendation

Not supported

Detailed assessment

I have reviewed the documentation provided with the application and my review included in the following:

Wallacia Cemetery Water Sensitive Urban Design Strategy and Stormwater Management Plan prepared by Stormy Water Solutions dated 11 October 2017 (ECM # 8202284)

Stormwater Layout Plans, prepared by Warren Smith & Partners, Job number 5936000, Issue 2 September 2017 (ECM # 8202279)

Additional Information Response Wallacia Memorial Park prepared by URBIS, 21 May 2018

Letter from Martens, dated 22 March 2018 prepared in response to Council's letter dated 23 February 2018 (ECM 8063701)

Watercourse Assessment prepared by Travers bushfire and ecology, October 2017, Reference # A17162W

Civil Engineering Services Report, prepared by Warren Smith & Partners, Issue 20 October 2017

Statement of Environmental Effects prepared by URBIS 3/11/2017

Landscape Plans prepared by Florence Jaquet Landscape Architect, DA Issue, 24/10/2017

Landscape Design Response prepared by Florence Jaquet Landscape Architect Cemetery Specialists, dated 20/10/2017

Preliminary Geotechnical, Groundwater and Salinity Assessment: Proposed Wallacia Cemetery, prepared by Martens consulting engineers, October 2017

In relation to stormwater management, I am of the view that insufficient information has been provided to demonstrate compliance with Council's WSUD Policy.

Based on a review of the revised documentation and additional information and plans provided a

number of ponds, swales, wetlands and bioretention systems are proposed. In response I provide the following comments:

- I was not able to open the MUSIC Modelling saved in ECM. As such, was not able to complete an assessment of the strategy against the requirements of Council's WSUD Policy.
- The concept drainage plans prepared by Warren Smith and Partners do not incorporate all of the details outlined in the Stormwater management report prepared by Stormy Water Solutions. In this regard, the concept plans prepared by Warren Smith and Partners need to be amended to reflect the commitments made in the Stormwater report and supporting MUSIC modelling.
- In relation to water conservation, the stormwater report does not include a commitment incorporate rain water harvesting and reuse and no details on how the requirements will be met as required by Council's WSUD Policy. Councils WSUD Policy includes a requirement for water conservation measures to be incorporated into the development.
- It is also noted that no operation and maintenance manual has been prepared for the proposed stormwater treatment measures associated with the development.

As raised in my initial review, in relation to the risks and management of groundwater, the Preliminary Geotechnical, Groundwater and Salinity Assessment prepared by Martens concluded that while the risk to groundwater was relatively low, however the report recommended a number of further investigations including that further assessment of groundwater conditions should be undertaken to determine the risk and management considerations for groundwater and specially recommended:

- Detailed surveying of the groundwater well locations and levels to obtain more accurate groundwater data,
- Ensure groundwater monitoring period includes a minimum of 2-3 significant wet weather events and corresponding dry weather periods, and
- Detailed groundwater modelling (using MODFLOW) of the site to determine groundwater levels over the entire site.

In response to these concerns, in the letter from Martens, dated 22 March 2018, it was suggested that additional groundwater monitoring is required and is currently being carried out. The letter also suggested that if burial plots are proposed in the vicinity of MW104 and MW117, the additional groundwater monitoring wells and monitoring would be required to better determine groundwater levels in these areas. In reviewing the landscape plans, it appears that burial plots are proposed in the vicinity of these wells.

As such, it is suggested that additional details are required in relation to the potential impact on groundwater and prior to finalising the assessment of the application, the following information should be prepared.

1. Electronic version of the MUSIC modelling

I was not able to open the MUSIC modelling which was saved in ECM. The files were in a drains format, As such this needs to be resubmitted.

2. Revised Concept Plans

The plans must reflect the MUSIC modelling and stormwater management strategy. The plans shall be prepared in accordance with Council's WSUD Technical Guidelines and include cross-section details, swale sizing details and planting details (vegetation type and density) etc. The GPT types and other treatment measures including details on access for maintenance must also be shown on the plan.

3. Water Conservation

Details on water conservation measures as outlined in Section 3.1 Council's WSUD Policy will also need to be provided.

4. Operation and Maintenance

A Draft Operation and Maintenance manual should also be provided of for the proposed stormwater treatment measures. The manual should include details on the cleaning / maintenance requirements as well as provide an estimation on the annual and lifecycle costs associated with the proposed treatment measures.

Council's WSUD Technical Guidelines are available on Council's Website and were prepared to outline how to comply with the requirements of Council's WSUD policy and outline Council's requirements in relation to the contents of a WSUD Strategy and detail required for concept designs to be lodged with the development application. The guidelines refer to resources which guide the development of suitable plans for submission with a development application.

5. Groundwater / Water Management

It is also suggested that the recommendations provided in relation to the management of groundwater in the report prepared by Martens be completed prior to the approval being granted. Specifically, these included:

That further assessment of groundwater condition be undertaken for contamination of the groundwater risk and management considerations, including:

- Detailed surveying of the groundwater well locations and levels to obtain more accurate groundwater data,
- Ensure groundwater monitoring period includes a minimum of 2-3 significant wet weather events and corresponding dry weather periods, and
- Detailed groundwater modelling (using MODFLOW) of the site to determine groundwater levels over the entire site.

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As such, it is suggested that additional details are required in relation to the potential impact on groundwater. In this regard, I suggest the Preliminary Geotechnical, groundwater report should be finalised prior to the approval being granted.

Note: As suggested in my initial review, I also recommend that Council engage a suitably qualified consultant to provide a comprehensive assessment of the proposal in relation to the risks and management of groundwater.

Note:

The referral assessment did not include the review of site flooding or any OSD requirements, as such I recommend that proposal is referred to Councils Engineering Stormwater Supervisor for further assessment.

Should you require additional information regarding this matter please contact me.

Regards

Tim Gowing