

31 August, 2000.

Mr Michael Woodland
Department of Planning
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SYDNEY NSW 2000



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Dear Mr Woodland

Michael

WARRIEWOOD – 14 -16 BOONDAH ROAD: REQUEST FOR ADDITIONAL INFORMATION

Further to our telephone conversation yesterday, it is our understanding that there are three additional requests for information, which are discussed below.

The Impact of Stormwater on the Wetlands

The Warriewood Wetlands contains many endangered ecological communities and threatened species. The area is a regionally significant vegetation community for local and international fauna species and as significant habitat area.

During the course of preparing the submission, it was considered most suitable for the project Ecologist, Total Earth Care (TEC) to address this issue. Specifically, at Page 5 of the TEC report provides the aims of the report as follows:

"The aims of the current report are to update the previous flora and fauna assessment, in accordance with the Director General's Requirements dated 23/12/09 and comments received from DoP, DECCW and NOW. The aims are to:

- *Confirm the presence or likely occurrence of threatened species, populations and ecological communities (or their habitats), as listed under the Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act 1999 and NSW Threatened Species Conservation (TSC) Act 1995;*
- ***Address the significance of potential direct and indirect impacts on flora and fauna, including threatened species, populations or endangered ecological communities or their habitats, including off site impacts to Warriewood Wetlands;***
- *Make recommendations to avoid-mitigate-compensate (offset) the identified impacts; and;*
- *Clearly set out environmental management measures that are to be implemented before, during and after construction. This includes the implementation of measures to protect and rehabilitate Fern Creek, Warriewood Wetlands area and the CRZ and VB within the riparian corridor".*

Page D16 of the TEC report introduces the impact assessment, as follows:

"The potential direct and indirect impact of the proposal on any threatened species, populations, endangered ecological communities is provided below. This includes consideration of any critical habitat and any relevant recovery plan related to threatened biodiversity. In order to assess the

*potential impacts the extent, nature and timing of the construction works is considered as well as any maintenance activities and the ongoing occupation of the site. **Activities that need to be considered include the construction of buildings, provision of utilities, site access, drainage and stormwater management structures.** The proposed landscaping works and asset protection zone treatments will also be considered”.*

Specifically, Page D19 addresses the potential stormwater impacts of construction on the Warriewood wetlands as follows:

“The proposed development of the site may indirectly impact the adjacent Warriewood Wetland. The boundary of the wetland was assessed in detail during the 2004 assessment (TEC 2004) and it was concluded that the distance of the wetland boundary from the subject site varies from approximately 6.8 metres to 29.8 metres to the south and west of the site boundaries respectively. This wetland boundary line is included on the design plans for the proposal, and has been used as the basis of locating the CRZ and subsequent riparian and asset protection zones. Increased stormwater volumes will enter the wetland due to the increased hard surface catchment area as a result of the development. Stormwater will enter the wetland from the two overland flow paths, the flood storage area, overflow from the Bio-retention Basins and the stormwater pipe adjacent to Road 04.

The movement of ground water is from the north east across the site and drains towards Fern Creek and the wetlands at the southern boundary. The subject site slopes down towards the wetland at an average of 1° with groundwater depth decreasing in proximity to the wetland boundary (Jeffery and Katauskas Pty Ltd 2009). The proposed construction for the underground car parks and building foundations involves cutting through the bedrock, therefore intercepting groundwater flows. The proposed design includes a groundwater collection and diversion system that will act to intercept flows on the high side of the development, diverting the groundwater through a series of subsoil drains under the construction, and then disperse it below ground towards the wetlands. The Hydrogeological Report confirms the drainage structures are capable of transporting intercepted groundwater around the development and discharging it back into the water table at a similar volume and depth as the existing situation. Obstruction of groundwater from the construction, according to the report should be negligible and the impact or changes to the hydrological regime into Warriewood Wetlands, and the associated vegetation communities not considered to be significant. Water quality and flow is expected to remain consistent with current flows. Regular monitoring will assist in the management of the ground water and wetlands, and should assess the degree of impact to the water quality within the wetlands and the wetland vegetation”.

Section 10 starting on Page D22 includes the environmental management measures to mitigation these potential impacts on the Warriewood Wetlands.

Brown Consulting addressed the impacts on flooding and water quality and based on recommended mitigation measures from the TEC report incorporated the bioretention basins and rainwater tanks into the water balance and water quality strategies for the site.

Cut and Fill through the Bio Retention Ponds

Cross sections are currently being finalised by AT and L which will clearly demonstrate typical sections through both Bio Retention Pond A and B and will be shortly forwarded to the Department of Planning.

Additional Photomontages

Three additional photomontages are currently being finalised through sections of Stage 1 and three additional "Artist Impressions of Future Stages" is being prepared from the Views indicated on the attached plan.

Should you have any further questions, please do not hesitate to contact me in the first instance.

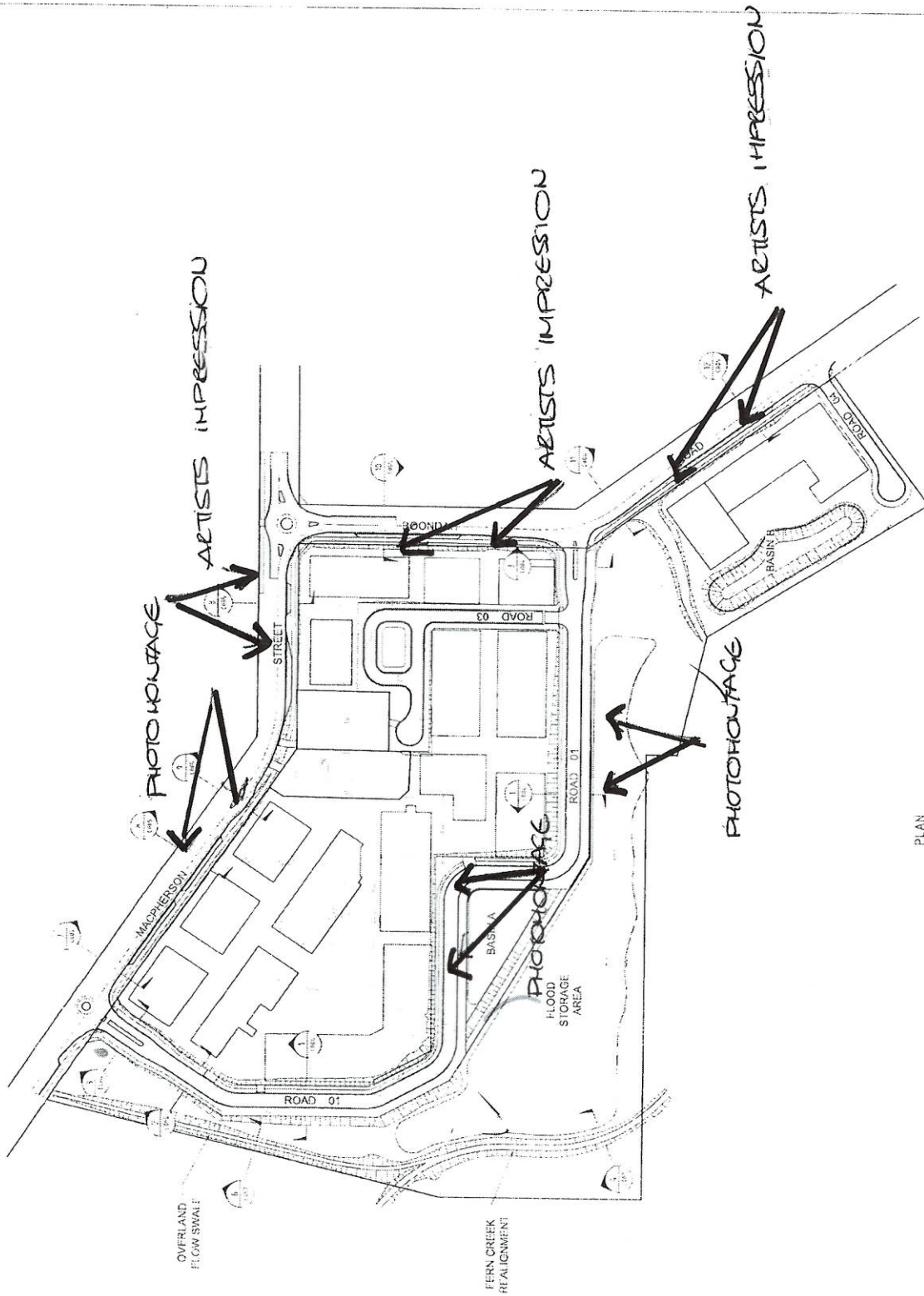
Yours faithfully

MERITON APARTMENTS PTY LIMITED



Walter Gordon

Manager, Planning and Development



PLAN
SCALE 1:1000

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KEY PLAN

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