



Office of
Environment
& Heritage

Your reference
Our reference: DOC11/35531
Our contact: Jennifer Sage, 9995 6856

Ms Amy Watson
Metropolitan and Regional Projects South
NSW Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Ms Watson

I refer to the Stage 1 Project Application made by Meriton Apartments Pty Ltd to modify the approval for construction of a residential development and childcare facility MP10_0177 and additional information in support of this application, received by the Office of Environment and Heritage (OEH) on 3 August 2011.

The conditions of approval do not currently allow permanent dewatering of the groundwater from the development site. Condition C19a states –

"The design and construction of the structure must preclude the need for permanent dewatering"

In order to meet this requirement, OEH understands that Meriton Apartments Pty Ltd has designed a bypass system to divert the majority of groundwater flow around the building basement however some infiltration ($0.136\text{m}^3/\text{day}$) from the underlying rock mass into the basement is anticipated. This water, along with any stormwater collected in the basement carpark, will drain into two pits fitted with oil-water separators then pumped into the local stormwater system via a gross pollutant trap which discharges into two bioretention basins. These basins are designed to allow water to infiltrate into the groundwater which flows into Warriewood Wetlands.

In order to allow pumping of groundwater that infiltrates into the basement to the bioretention basins, Meriton Apartments Pty Ltd has proposed the wording for Condition C19a be amended as follows –

"The design and construction of the structure permits a permanent pumping system, which would operate intermittently, to be installed and maintained in order to ensure that the basement is free of excess stormwater".

As mentioned in our previous letter on this matter dated 14 July 2011, our primary concern regarding the proposed modification to Condition C19a is that the downstream groundwater-dependent Warriewood Wetlands are protected from water pollution (i.e. that only clean water is discharged from the development to receiving waters) and that the groundwater resource in this aquifer is protected.

The Department of Environment, Climate Change and Water is now known as the Office of Environment and Heritage, Department of Premier and Cabinet

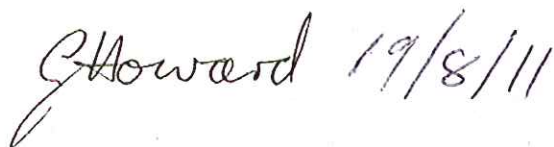
OEH has reviewed the Pump Out Water Management Plan (the Plan) provided by Meriton Apartments Pty Ltd and considers that it provides a suitable framework for the assessment of water quality to be discharged from the stormwater system (which includes groundwater infiltration) and for managing discharges from development to the two bioretention basins. However, we do note that the discharge acceptance levels are conservative and it is possible that they may not be met. We recommend that after implementation of the Plan, the discharge acceptance levels should be reviewed after a period of time which is representative of various weather conditions and surface water and groundwater flows (e.g. 1 – 2 years).

Detailed comments about the Plan are provided in Attachment A.

Should the Department of Planning and Infrastructure approve the modification, OEH recommends that the wording of Condition C19a be modified to ensure that the reason for pumping is transparent (i.e. that a permanent pumping system is required to manage both local stormwater and groundwater infiltration into the basement carpark).

Should you wish to discuss this matter, please contact Jennifer Sage Senior Regional Operations Officer on 9995 6856 or email jennifer.sage@environment.nsw.gov.au.

Yours sincerely



GISELLE HOWARD
Director Metropolitan
Environment Protection and Regulation
Office of Environment and Heritage
Department of Premier and Cabinet

Attachment A

Office of Environment and Heritage comments on Pump Out Water Management Plan for the Stage 1 Development, 14 – 18 Boondah Road Warriewood NSW 2102
Report No. MP130 AC 28 July, 2011

Water Quality Criteria

OEH notes that a number of guidelines have been used to develop the Discharge Acceptance Levels (DALs) in Table 1 of the Plan, including trigger values from the *Australian and New Zealand Guidelines for Fresh and Marine Waters* (ANZECC & ARMCANZ, 2000).

The ANZECC trigger values are meant to apply to ambient receiving waters (e.g. the Warriewood Wetlands) and are not designed to apply directly to discharges or stormwater. OEH considers that the development of DALs using the trigger values is an acceptable, conservative approach, where those levels can be met. It is consistent with the objectives of the ANZECC Guidelines of not allowing disturbed systems to get works, and not allowing contamination to occur up to the trigger levels. However, as information on the quality of the groundwater has not been included in this application, it is not clear whether these trigger values are likely to be met. Given the discharge will include a component of stormwater, and that contaminant levels in urban stormwater runoff can be elevated, it is possible that these DALs will be exceeded.

OEH notes that the DALs for petroleum hydrocarbons and benzo(a)pyrene are sourced from international guidelines. While the DAL for petroleum hydrocarbons appears to be reasonable, that for benzo(a)pyrene is low and may not be achievable. Additionally, the local analytical laboratories may not have limits of reporting low enough to measure this analyte to this level. For information, Volume 2 of the ANZECC Guidelines gives a low reliability trigger (95% level) of 0.2µg/L.

Given the conservative nature of these DALs, we suggest that they be reviewed after a period of time which is representative of a range of weather conditions and surface water and groundwater flows.

Water quality monitoring program

The Office of Environment and Heritage (OEH) notes that the Pump Out Water Management Plan (the Plan) proposes both visual inspections of the pump out pits and water quality analysis of samples collected from groundwater wells A and B and the outlet of the gross pollutant trap (GPT). The discharge from the GPT will consist of groundwater flow into the carpark basement plus and wet and dry weather run-off from the surface catchment of the GPT.

It is not clear who will be responsible for the visual inspection program for the pump out pits or the sampling and analysis of water quality samples collected from the above points. Those nominated should have appropriate training and skills in order to carry out the duties described.

We suggest that the inspections of the pump out pits should also include observations on odour and visual sheens which may indicate contamination by petroleum hydrocarbons.

Additionally, the Plan should indicate the period of time to which the monitoring program and inspections apply and a process should be put in place to review the inspection and sampling program and water quality criteria at a future date.

Contingency Measures Triggered by Failures of the Dewatering System

OEH notes that discharge of basement water into the local stormwater system would immediately cease and not recommence until the water quality meets the proposed DALs and the Environmental Health Section of Pittwater Council is notified by email or facsimile. Given the conservative nature of the DALs, there may be numerous exceedances of the DALs and hence potentially numerous notifications to Pittwater Council that may require a regulatory response. OEH recommends that the role of Pittwater Council in the operation of this Plan should be confirmed with the appropriate area of Council and the appropriate contact details be included in the Plan.
