

25 July 2024

Attention: Brendan Price
The Dott Developments Pty Ltd
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BY EMAIL

Dear Brendan

Re: Response to the Whitehead review - 37 Annie Pyers Drive Gundagai NSW 2722

I refer to the verbal instruction from yourself to provide a response to the Review of Wastewater Management Report compiled by Whitehead & Associates (Whitehead) dated 19 June 2024.

The development application for the site is for Stages 1 and 2 only which involves the construction of Buildings BO1 and BO3, then BO2 respectively.

The agreed cumulative hourly traffic movement (standalone to the DOTT) for Stage 1 is 15 and for Stage 2 is 28 as per the JMT report.

Whitehead has assumed an hourly traffic movement of 129 for Stage 1 and has adopted this for Stage 2 as well which gives an inaccurate representation of the agreed visitor numbers which has a knock-on effect for the overestimated hydraulic load presented in the review.

The wastewater design flow criteria adopted by Whitehead for is for tearooms/lunch bars from New Zealand data presented in AS1547 (2012). AS1547 states the following around the use of this data - *these flows should be used for design purposes unless past experience demonstrates lower actual flows. Design flows should be based on the maximum figure in the range unless justification for lower values can be provided by way of actual water use data.* Whitehead also assumes that the retail premises (BO2) is a tearoom/lunch bar which is not the case. We have used Sydney Water data in preference to AS1547 for our calculations as they based on actual water use for retail units and café/fast food developments.

Around the DIR, AS1547 recommends the hydraulic properties of the subsoil be considered when determining the soil category for the irrigation systems. The medium clay subsoil within the proposed irrigation area was limited to investigations 1 and 2 on the higher ground. However, this soil can ameliorated with deep ripping and the incorporation of organic matter to improve the structure and permeability. At investigation location 1 for example the medium clay layer from 0.5-0.9m is underlain

by a moderately well-drained silty clay therefore if this clay layer is ripped, access to the underlying well-drained silty clay is obtainable which will improve permeability and abate potential issues around temporary waterlogging and run off. This soil profile is likely to extent under investigation location 2 owing to the catenary relationship. It is also well established that wetting patterns and plant type influence soil water movement and I assess that with subsoil amelioration in conjunction with the highly suitable clay loam soil for irrigation, and management practices, the DIR of 3.5 preferably applies.

In summary I have concern over the accuracy of the Whitehead review around:

- The overestimated hydraulic load based on inaccurate hourly traffic movement of 129 instead of 15 for Stage 1 and 28 for Stage 2.
- The overestimated hydraulic load based on New Zealand estimates and not actual water use data as recommended by AS1547.
- The recommended DIR of 2.0mm/day which does not consider the highly suitable topsoil and clay loam B-Horizon for irrigation and also the concept of subsoil amelioration to improve permeability.
- The recommended removal of trees is not in line with AS547 which states - *irrigation systems operate both by soil absorption and by evapotranspiration from plants including grass, shrubs, and trees*, and it goes onto state around limited sites - *where feasible, plant trees and shrubs nearby to encourage evapotranspiration*.

If you have any queries about the contents of this response, please contact the undersigned.

Yours sincerely



David McMahon

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