

H - Hydrological / Flooding Advice

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IRC Property Estates P/L
PO Box 9
DRUMMOYNE NSW 1470

Attention P. Biasotto

Dear Sir

MOONEE WATERS RESIDENTIAL SUBDIVISION RESPONSE TO SUBMISSIONS

A response to the issues in submissions is provided relating to drainage, water sensitive urban design (WSUD), flooding and climate change. Our report dated October 2007 addressed these issues for the above development.

1. Water Sensitive Urban Design

1.1 Reliance on Site Soils

The performance of the water sensitive urban design mechanisms such as raingardens and bioretention swales do not rely on the site soil characteristics. These features are designed with a special drainage media which maximises the infiltration and treatment of runoff as well as supporting the growth of vegetation to physically filter the runoff and utilise the nutrients and water trapped in the special drainage media. An underdrain system ensures these systems remain dry after rainfall.

1.2 Maintenance

The bioretention swales in the proposed roads would be maintained either by the Council (for Torrens Title) or a body corporate in the event of a community title development.

The raingardens within the lots would be maintained by the residents. The raingardens would be covered by a covenant on title with a requirement to report on its maintenance to the Council on an annual basis. In the event of the community title development, the raingarden would be common property. The body corporate would require the residents to maintain the raingardens but would have the power to undertake the maintenance if required.

1.3 Perimeter Swale

The perimeter swale width should be 10m not 8m or 8.8m.



2. Flooding

2.1 Climate Change

The DECC guidelines for consideration of climate change were released in November 2007 which post dated our report and assessment of climate change impacts on flood behaviour.

The DECC guideline recommends sensitivity testing of the full range of the IPCC and CSIRO predictions for sea level rise on the NSW coastline. It does not recommend adoption of a particular level. This should be considered in the light of the NSW government Floodplain Development Policy which requires assessment of the appropriate flood management response given consideration of the whole range of social, economic and environmental aspects. It recommends against unnecessary sterilisation of land.

The IPCC formulated a range of world condition scenarios relating to population, greenhouse gas production and environmental conditions. The best, average and worst case scenarios predicted sea level rises up to 2100 of 0.18m, 0.55m and 0.91m respectively for the NSW coast (including CSIRO derived extra factors for the NSW coast).

The predicted 100 year ARI flood in Moonee Creek and the ocean dominated floodplain of Sugar Mill Creek in 2100 under these scenarios would conservatively range from approximately RL 2.8m AHD to RL 3.5m AHD.

Our report recommended minimum habitable floor levels of RL 3.6m AHD which would provide a 100mm freeboard if the worst case sea level rise eventuated in 2100 i.e. the floor level would not be inundated.

Only minor filling in the southern and northern areas would be required to have the development area above a level of RL 3.6m AHD.

2.2 Filling Impact on Flooding

The area of filling required to have the development area at a minimum level of RL 3.6m AHD is negligible and would have an immeasurable impact on the flood behaviour and levels in the area. The minor filling would not have a measurable impact on the significant tree retention plan.

3. Sediment and Erosion Control

There is a commitment in Section 9.4 of our report for the preparation of a sediment and erosion control plan in accordance with the State and local government guidelines.

Yours faithfully
WorleyParsons

Mark Tooker
Manager, Environment NSW