

Job No: X10134

22 October 2010

Jacfin Pty Ltd

PO Box 598

SPIT JUNCTION NSW 2088

Attention : Jackie Waterhouse

Dear Jackie,

RE: ROPES CREEK INDUSTRIAL - STORMWATER STRATEGY ADEQUACY REVIEW

Our report, entitled Stormwater Management and Trunk Drainage Strategy, supported the JBA Submission of the Concept and Stage 1 Project Application for employment development on the Ropes Creek site.

We have reviewed the comments from Blacktown City Council (BCC) relevant to stormwater and drainage for the site, dated 19th September 2010 received from the Department of Planning.

Stormwater management and trunk drainage strategy was prepared to meet the Council's policies and guidelines listed in Section 2 and Table 1 of our report and this conformance is presented in detail in our report. The strategy also conforms to industry best practice based on our extensive work on these types of strategies for other developments in the BCC area. The Council has changed parts of its Stormwater Management Policy since the application was lodged with Department of Planning. This change is mainly in the detail not in the primary objective of the policy. Essentially the new policy requires that Stormwater Management facilities be located, where possible, on the development lots. Previously, Council favoured regional facilities on land dedicated to Council. This change does not alter the objectives of the policy but where the facilities would possible be located. This letter confirms that this strategy achieves the overarching stormwater/flooding management objective required by Council. The details can be negotiated at later stages of the process because they are not issues of adequacy.

DETENTION BASINS

Items a), c) and d)

The BCC objective for detention is that the peak flow rate of stormwater from the site in the developed state is not to exceed the rate in the existing conditions. This is achieved with detention



storage to slow down the rate of stormwater runoff. Council also has specific requirements with respect with stormwater detention basin characteristics (refer to our report for details). The stormwater detention strategy proposed in our report achieves all Council's requirements and as such, is adequate.

It is noted that Council now would prefer to revise the detention basin location. This is not a matter of adequacy but an issue of negotiation at later stages. Council is considering a combination of onsite and regional basins. If necessary, our regional basins could be reduced in size and further detention provided on lots. However, we do not consider this is achievable in some areas and not necessarily the best outcome for Council.

There are a number of aspects which detract from onsite detention, viz:

- Their performance depends upon adequate maintenance of the facilities by landowners and research has shown that this is not effective:
- On lot facilities do not allow management of road runoff.

Not with standing this, the area allocated for detention facilities in our strategy will be the same area required by Council for its onsite strategy. It is likely that the final strategy will be a combination on onsite and regional facilities. This could be accommodated by allocating some area on the lots for this storage. All the lots have adequate space in or adjacent to the transmission line easements or by minor revisions to lot boundaries.

This issue was not raised by Council in the Project Team's consultation with them.

It is recommended that our strategy be adopted for exhibition and the strategy detail negotiated with Council following exhibition.

WATER QUALITY

Items b), r), s), t), v), w), x)

The stormwater water quality strategy was prepared to meet the Council's policies and guidelines and this conformance is presented in detail in Section 6, 7 and 8 of our report. The strategy also conforms to industry best practise. The BCC objective of its previous and present policies is that the average annual load in runoff from the proposed development be reduced by specific percentages and not exceed pollutant loads for existing conditions. This is achieved with the water quality control measures proposed in our stormwater strategy. The stormwater water sensitive urban design (WSUD) strategy proposed in our report achieves all Council's requirements at the time of lodgement and as such, is considered adequate.

The achievement of the Council's water quality objective requires allocation of sufficient surface area of facilities as included in our strategy. As such, sufficient space has been allocated on the site for these facilities. This space could be readily reallocated from our regional facilities to the lots to

meet Council's requirements with minor adjustments to lot boundaries or use of areas in or adjacent to transmission line easements.

Again, there are drawbacks with onsite water quality facilities which are the same as those described for the detention facilities above. As such, it is likely that the final strategy will consist of a combination of onsite and regional facilities.

The details of Council's requirements for water quality control can be negotiated along with the consideration of the stormwater detention aspects. The location of these measures can be revised without the adverse impact on the concept plan. These issues were not raised by Council in our consultation with them. As such, it is recommended that our strategy be adopted for the purposes of the exhibition stage and the strategy detail be negotiated with Council following exhibition.

FLOODING

Items e), f), g), h), i)

Council's requirements relating to flooding are performance based in that it is necessary to establish that development will not cause increased flood levels outside the site and that the risk of flood damages and risk of personal safety are not increased as a result of the development.

The flood modelling for Ropes Creek has established that adequate floor levels and road access can be provided to minimise the risk of flood damages and personal safety.

Some minor filling of lots is proposed below the 100 year ARI flood level however, it is proposed that compensatory storage would be provided to offset any adverse impact on flood levels and this will be confirmed in further detail with detailed flood modelling at the development application stage for these lots.

The flood modelling to date has confirmed that the Concept Plan is feasible and adequate. It is considered that it is appropriate for exhibition in its present form.

The required 10% increase in rainfall due to climate change for the 100 year ARI flood, would marginally increase flood levels but can readily be accommodated by proposed floor and road levels. Similarly, the detailed flood and hazard mapping and preparation of flood management plans for the lots along Ropes Creek can be undertaken at a DA stage because they do not affect the feasibility or adequacy but rather are the mapping exercise for Council record purposes. This information will not affect the feasibility of these lots because the level of flooding in these areas is minimal in the 100 year ARI event.

It is recommended that the flood management approach presented in our report be adopted for exhibition purposes.

DRAINAGE DESIGN and DETAILS

Items j), k), l), m)

The detailed design of the pipe network is normally a requirement at Construction Certificate stage and therefore has not been included in the Part 3A Application. It is considered that this is not an issue of adequacy and it is recommended that our stormwater strategy be adopted for exhibition.

DOCUMENTATION

Items n), o)

The Council's policies and guidelines relevant to our stormwater strategy are listed in Section 2 and Table 1 of our report. This section reflects the adequacy of our stormwater strategy and it can be revised at later stages of the process following the strategy details negotiation.

The stormwater strategy as presented in our report meets the test of adequacy as it conforms to Council's Stormwater Management objectives for its new policy, conforms to the published Council policy and guidelines at the time of lodgement and achieves the industry best practice outcomes. It is recommended that our strategy be adopted for exhibition and that negotiations with Council occur following exhibition to formulate the agreed strategy for the preferred project report.

Should you require any further information please do not hesitate to contact Toby Tames or myself on 8808 5000.

Yours faithfully,
BROWN CONSULTING (NSW) PTY LTD



Robert Peterson
Manager – Water & Environment

