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Job No. 08643

1st December 2009

Senior Development Manager – Simeon McGovern
Lindsay Bennelong Developments
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Email: simeon@bennelong.com

Dear Sir,

RE: PROPOSED DEVELOPMENT SITE - 110 EUSTON ROAD, ALEXANDRIA
STATEMENT ON SITE FLOOD CONDITIONS

We refer to the development site known as 110 Euston Road, Alexandria. Northrop provides this statement to describe the susceptibility of the subject site to flooding, and the potential impact on development and existing site features. It is also noted that there is potential for establishing Data (Security) Centres on the subject site.

'Trunk' Drainage Context

1. The site is located approximately 100m west (upstream) of Alexandra Canal.

2. An open channel is located on the southern side of the property and conveys water from Sydney Park Rd to Alexandra Canal. It is in control of Sydney Water.

Flooding

3. The site is affected by floodwaters resulting from backwater affects from Alexandra Canal – east side, and excess overland flow crossing Euston Road – west side.

4. The "Flood Planning Level" (FPL) is of particular relevance to development. This can be defined as the "threshold" level for achieving flood protection to habitable / operational floor areas, basements and basement car park entries.

Flood Study

5. A Detailed Flood Study was completed by Cardno in February 2009.

6. Results of the Flood Study indicate a portion of the south-eastern corner of the site is subject to inundation. In this regard, suspended construction (if any) above the PMF flood level is required in order to maintain this area for flood storage.

7. Cardno has recommended the minimum FPL for industrial-type development should be the greater of "the 100-year ARI storm event level + 500mm freeboard" or "the Probable Maximum Flood (PMF) level". This is in general accordance with City of Sydney Council Policy for other development areas, and similar policies for other Councils.

Flood Planning – Higher Risk-Profile Development

8. Standard approaches to calculating the Flood Planning Level (as outlined in 7.) may not be appropriate for higher risk-profile development (e.g. Data (Security) Centres). This is particularly the case in flood-prone areas.

9. Higher risk-profile developments require increased confidence in achieving protection from catastrophe (including flooding). This is with a view to protecting secured property, and essential services / infrastructure.

10. Flood protection for higher risk-profile development can include raising floor levels (above standard FPL) and incorporating physical measures (e.g. flood-gates and flood protection ('bund') walls).

11. Physical measures can be constructed to optimize space, while restricting floodwaters from entering lower portions of the site and affecting external operational areas (e.g. loading areas, car parks, access-ways, etc.). These measures also provide an important interface where levels of the development site and street are closely related (e.g. driveways, pathways, and building / site frontages).

Site Specific Considerations

12. Preliminary plans for development indicate opportunities to maintain existing site levels in the south-eastern corner. This is important to retain existing flood storage provisions on the site.

13. The Flood Planning Level (FPL) for development on either the Euston Rd or Burrows Rd frontages will be at least 1m higher than existing street / footpath levels. It is likely flood gates and / or 'bund' walls will be required to control potential inundation of the site; protect car parks, loading areas and access-ways; and integrate vehicle / pedestrian pathways required for connectivity to the street.

14. 'Bund' walls are constructed to offer long-term flood protection. In this regard, they will need to maintain their structural integrity throughout their design life. This will need to ensure the walls (a) are not exposed to potential cracking by tree roots or retained earth pressures, (b) withstand impact loads from debris during flood events, and (c) incorporate sound foundations.

    It is noted that the close spacing of existing trees along Burrows Road (and the high nature of tree roots), means installation and integrity of the 'bund' wall is likely to be compromised without affecting the trees and / or tree root system.

Northrop has provided these summary points to inform planning and consultation for development. We remain available to provide further information at your discretion.

Yours faithfully,

NORTHROP
Mathew Richards
Principal – Civil Engineering Manager