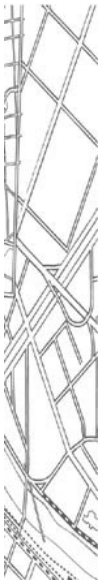
MASSON | WILSON | TWINEY
TRAFFIC AND TRANSPORT CONSULTANTS

20/809 Pacific Highway Chatswood NSW 2067 • (t) 02 9410 4100 • (f) 02 9410 4199
info@mwttraffic.com.au • www.mwttraffic.com.au



memorandum

To:	Company:
Jeremy Thompson	Lend Lease
Abbey Johnson	Lend Lease

From: Michael Lee
Pages: 2
Job No: 073372
Date: 19 November 2008

Subject: **Supplementary Responses to Draft Preferred Project Report**

Following an email from Lend Lease dated 18 November 2008, we provide herein our supplementary responses to public submissions for inclusion in the Preferred Project Report.

Car Park Layout Design

The design of car parking layouts generally comply with Australian Standard, however there are some issues that are currently being resolved. FJMT in liaison with MWT are working through the issues to ensure compliance.

Entry Boom Gate Queue Analysis

We have undertaken a queuing analysis at the entry boom gates on Level B1. Our analysis assumed that a single boom gate would be provided on Level B1 and it would have a capacity of 300 vehicles per hour (as per Australian Standard capacity for ticket issuing boom gate). It is estimated during the busiest period, approximately 45 vehicles per hour would arrive at Level B1. On this basis, the 95th percentile queue length would be less than two vehicles with the absolute maximum about three vehicles long. The design of the entry to Level B1 has sufficient storage to allow four vehicles to queue.

Similarly for Level B2, assuming two boom gates to be provided and an expected peak arrival flow of 180 vehicles per hour into Level B2, the 95th percentile queue would be less than three vehicles and the absolute maximum queue about six vehicles. The design has sufficient storage area to accommodate the anticipated queues.

In conclusion, we note that by the very nature entry boom gates must cause some queuing. In these two cases the provision for queuing will satisfactorily accommodate queues that area likely to form during normal usage.

Harbour St-Day St Intersection Assessment

Our traffic analysis included traffic generated by McDonalds in addition to the development traffic at this intersection. Consistent with the Concept Application traffic report, it was estimated that the McDonalds restaurant would generate about 30 and 40 vehicles per hour during the morning and evening peak periods respectively. In relation to service vehicles, it is anticipated that during the peak periods, service

vehicles volume would very low as there would not be peak receival periods for either an office building or for food outlets that would tend to operate after the morning peak periods. Results from both our SCATES and SIDRA intersection modelling indicate that the left turn would have a maximum queue length of about one vehicle.

We do however, note that left turn exit movements would be affected by northbound queuing in Harbour Street, back from the Bathurst Street intersection. However, in this regard, there would be very few left turn movements out of the main driveway as such a turn would only lead to the Harbour Bridge or northern CBD (via Wheat Road). At most, we expect there would about five left turn exit movements per hour. Such a low number of vehicles would easily be able to exit the site either through gaps in the northbound traffic stream that would be caused by the operation of the site access intersection traffic signals or due to the courtesy of drivers queuing in Harbour Street on the approach to Bathurst Street.

We initially modelled the intersections using the software SIDRA. The SIDRA results have been submitted to the RTA (email 23 October 2008). The RTA has subsequently requested that additional modelling be undertaken using SCATES analysis program. We are currently undertaking SCATES modelling and results will be submitted to RTA by 19 November.

Our intersection modelling results indicate that under future traffic conditions, and having regard to the necessary re-allocation of green time at the Day Street intersection due to accommodate a slightly longer pedestrian walk distance across Harbour Street, the intersections would operate satisfactorily. However, it should be noted that green allocation at signalised intersections will be the responsibility of the RTA. The RTA has particular regard to pedestrian safety when it determines traffic signal settings.

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Mr Jeremy Thompson
Bovis Lend Lease
30 The Bond
30 Hickson Road
SYDNEY NSW 2000

20 November 2008

Dear Jeremy,

Re: Proposed Darling Walk Car Park and Loading Facilities

As requested, we have reviewed the car park for compliance with Australian Standard AS2890.1 2004 Part 1 – Off-Street Car Parking and the loading facilities for compliance with Australian Standard AS2890.2 2002 Part 2 – Off-street Commercial Vehicle Facilities. The following drawings were reviewed – AD0B1001-03, AD0B2001-03, AD0B3001-03 and AD0B4001-03 dated 17 November 2008. Drawings presenting details of the ramp design were also reviewed and they include AD152201 01, AD152401 01, AD152402 00 and AD154003 issued on 12 November 2008. We present our findings below.

Car Parks

Parking Class

The four parking levels have been designed as Australian Standard Class 2 User Class facilities. The Standard cites the following examples for this type of parking:
"Long-term city and town centre parking, sports facilities, entertainment centres, hotels, motels, airport visitors (generally medium-term parking)."

As users of the public car park are likely to be mainly medium term CBD, Darling Harbour or Entertainment Centre visitors, Class 2 parking is considered appropriate for the design of the car park.

The employee car park on the upper level could have been designed to a lower standard as Class 1A parking. However, the dictates of a uniform column grid mean that of necessity, the car park had to be designed to a similar set out on each level.

SYDNEY SUITE 20/809 PACIFIC HIGHWAY CHATSWOOD NSW 2067 AUSTRALIA TEL 02 9410 4100 FAX 02 9410 4199

Parking Bay and Aisle Geometry

Class 2 parking has the following general requirements:

- circulation aisles – 5.8m wide;
- parking bay width – 2.5m;
- parking bay length – 5.4m; and
- height over spaces and in aisles not used by disabled vehicles – 2.2m

In addition, it allows some parking spaces to be "small" spaces. These are required to be:

- 2.3 m wide, and
- 5.0m long.

Aisles on each level are proposed to be 5.8m in width or wider and therefore comply. The only exception to this is opposite the lifts between gridlines 31 and 32 on each floor. In this location, car parking bays have either been made wider to compensate or have been replaced with motor cycle parking and accordingly, the arrangement is considered to be satisfactory.

Proposed parking bay lengths and widths all comply with the requirement for Class 2 parking or, where so marked, for "small" parking bays.

In addition to the provision of Class 2 and "small" parking bays, disabled parking bays are provided on Levels B1 and B2. These are required to be 3.2m in widths and by 5.4m in lengths and these dimensions have been provided.

Head Room

Disabled spaces are required to have 2.5m headroom within the area of the space and 2.3m headroom over the aisles leading to and from the space. We are advised by architect FJMT that these headrooms have been provided on Levels B1 and B2. They have further advised that the required 2.2m headroom is provided on Levels B3 and B4.

AS2890.1 recommends that one to two per cent of parking spaces be disabled spaces. This has been achieved as follows:

Parking Type	Level	Normal Spaces	Small Spaces	Disabled Spaces	Total Spaces
Private/Employee	B1	153	43	4	200
Public	B2	127	33	12	172
Public	B3	161	52	0	213
Public	B4	162	53	0	215

Thus the B1 employee parking and the B2 to B4 public car parks are proposed to have two per cent of disabled spaces each.

Thus the provision of disabled parking is within the required one to two per cent range.

Column Locations

AS2890.1 also specifies acceptable locations of columns adjacent to parking spaces such that door opening would not be inhibited. The design achieves this. However, in some situations spaces that would otherwise have qualified as normal parking spaces have been instead classified as "small" parking spaces because the door opening of normal spaces would be inhibited. This is considered to be satisfactory.

Ramps

Ramps between car park floors have been checked for grades and these have been found to be within the requirements of the standards in terms of both maximum grade and transitions.

The suitability of the curved ramps was tested using the AutoTurn computer vehicle turning path program and were also found to be satisfactory.

Control Gates

Analysis indicates that the 200 employee parking spaces on Level B1 would require one entry and one exit gate to satisfactorily accommodate expected entry and exit traffic flows.

Because of possible mixing effects due to the need to merge with public car park exit traffic beyond the Level B1 car park exit, two exit gates are proposed. This would reduce the incidence of back up exit queuing within the employee car park and is considered to be satisfactory.

The circular entry ramp to the Level B1 car park will have a separate designated traffic lane leading to the Level B1 car park entry gate. The current design provides two entry gates off this access lane within the parking level.

The eastern gate would be satisfactory accessed off the Level B1 entry lane and in our view is sufficient on its own.

The western gate as currently designed would be awkward to access and if it is was necessary to retain this then the design should be modified to improve access to it.

The 600 space public car park would require two entry and two exit gates. These have been provided and their design is considered to be satisfactory.

Service Area

The service area has been designed to accommodate two large rigid vehicles (12.5m long), two medium rigid trucks (8.8m long) and one small rigid truck (6.4m long) as well as a number of courier and van sized vehicles.

There are no reliable published guidelines for loading bay requirements. In our view a reasonable provision would be as follows:

- retail – 3,600m^2 @ 1 space per 1,500m^2 = 2.4 spaces
- office – 58,000m2 @ 1 space per 8,000m2 = 7.3 spaces

- total say 10 spaces.

Of these 50 per cent should be for trucks and 50 per cent for vans or similar small delivery vehicles.

The proposed provision of five truck spaces and eight car/van sized spaces will adequately provide for loading needs and provide some additional parking for couriers.

Obviously, the loading area will need to be managed and some regulation of tenant loading times may need to be implemented based on experience.

Manoeuvring for the trucks has been checked using the AutoTurn vehicle turning path program and found to be satisfactory.

The ramp to this has been designed to provide a maximum grade plus transitions in accordance with AS2890.2 and these are considered to be satisfactory.

The width of the proposed ramp is such as to allow two large trucks to pass on the straight at the top of the ramp, but only one truck to negotiate the bend at the bottom of the ramp. This is considered satisfactory and it is not abnormal for one truck in a loading area to have to wait for another one.

Due to restricted visibility around the bend, it will be necessary to implement the following measures to manage traffic flow at the bend:

- provide a traffic signal system including linemarking and sensors to hold trucks at either on the ramp or in the loading area when another vehicles was approaching;
- provide a convex mirror on the wall on the bend as a back up measure in case the traffic signal was to fail; and
- provide signs advising drivers to turn their head lights on when using the ramp.

Separate entry and exit driveways are proposed off the site's internal roadway at the top of the ramp. These have been designed to accommodate the swept paths of large rigid trucks turning into and out of the driveway and found to be satisfactory.

A large truck turning into the driveway would need to turn into the exit side of the service area ramp before straightening up to the correct side of the road. As such, it would need to give way to an exiting vehicle.

This arrangement is normal at driveways used by large trucks.

Conclusion

Subject to a few minor design issues to be resolved, the car parks and loading area comply with the requirements of the relevant Australian Standards and are considered to be satisfactory.

Yours sincerely

Bruce Masson
Director