

Stephen Simpson
Senior Project Design Manager
Mirvac
6001 (Bay 6) and 7006 (Bay 7),
2 Locomotive Street Eveleigh NSW 2015

Arcadis Australia Pacific Pty Ltd
Level 5, 141 Walker Street
Locked Bag 6503
NORTH SYDNEY NSW 2060
Tel No: +61 2 8907 9000
Fax No: +61 2 8907 9001
arcadis.com

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Australian Technology Park Building 2 Section 96 – Travelator Access to F0004-AA009582-AA-NSL-04 Locomotive Workshops

Dear Stephen

We, Arcadis Pty Ltd, being Structural Engineers within the meaning of the Building Code of Australia, are responsible for the structural design of the above-mentioned project.

The Locomotive Workshops are located adjacent to Building 2 at the Australian Technology Park (ATP). Arcadis understands that Mirvac proposes to provide connection between the two buildings by way of a tunnel between the basement of Building 2 and a travelator into the Locomotive Workshops. This letter is to support the submission by Mirvac of a Section 96 for the above works. The proposed travelator work are shown in drawings SA-AR-DWG-BB-B4-0410 and SA-AR-DWG-BB-B4-0411 by Sissons Architects.

The proposed structure consists of shoring walls extending from the existing shoring line of Building 2 under the perimeter wall and into the Locomotive Workshops. The tunnel is proposed to pass under the existing foundations of the Locomotive Workshops with the new travelator providing access in to the building from the carpark.

Arcadis notes that the design and construction of the shoring walls and other subterranean tunnel structures are to be carried out by a Design and Construct (D&C) contractor. Arcadis' concept scheme includes construction of the shoring walls which consist of 600mm diameter piles at 2 metre centres embedded into rock below the tunnel floor level. A 180mm thick shotcrete wall is to span between the piles to provide support to the soil beyond. The interface details between the shoring walls and Building 2 will need to be coordinated between the D&C contractor and Building 2 designer.

Arcadis has proposed an excavation and temporary works procedure to ensure that all existing in-ground services will be supported during and after the installation of the tunnel. Arcadis has also proposed a works procedure to reduce the excavation required and minimise the impact on the adjacent roadway. Arcadis has determined the foundation levels from geotechnical information provided by Douglas Partners in report 84955.04 R.001.Rev 0 *Report on Geotechnical Investigation Locomotive Shed Redevelopment*.

The base level of the tunnel aligns with the basement level of Building 2 and is supported by shoring piles embedded into sound rock. The proposed system does not

apply additional loads to the structure of Building 2 and therefore will not have an adverse impact on the stability of the basement.

The proposed construction of the travelator is likely to affect the stability of the existing masonry foundation at the Locomotive Workshop façade due to the required excavation works. Arcadis proposes underpinning steel beams to be installed on each side of the existing masonry piers. These beams are to be concrete encased and supported by new piles. In addition, concrete encasement around existing masonry arch will also be required in order to reinstate the lateral stability of the foundation.

The current concept design for the shoring and associated structural works are shown on the attached drawing *AR-ST-DWG-BB-B4-3010 [A]*.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Joyce Lee', is positioned above the printed name.

Joyce Lee
National Discipline Leader – Building Structures
0417 757 762

Enc. *AR-ST-DWG-BB-B4-3010 [A]*