

appendix 13

Geotechnical Assessment

Our Ref: 6472_2D
3 October 2003



Australian Super Developments Pty Ltd
Level 5, Nauru House
80 Collins Street
Melbourne VIC 3000

Attention: Ms Fiona Dunster
Manager Project Development

Dear Ms Dunster

Re: Peninsula Gardens Retirement Village Stage 2
Structural/Civil Assessment

Proposal

ASD seeks to make some minor modifications to the approved 'Stage 2' development. These minor changes involve:

- Small extensions to balconies.
- Conversion of areas previously designated for storage into habitable floor area.
- Alteration of the arrangement of upper and lower floor area on two of the unit clusters.
- These changes are accompanied by a reduction in the total number of self-care units to be provided in Stage 2 from the 112 permitted by the development consent, to 73 self care units.

This reduction in the total number of units is achieved through rearrangement of internal walls of the approved buildings to replace one-bedroom units with two bedroom units.

The geotechnical work has been carried out by Tim Rannard of SMEC Pty Ltd consisting of a slope stability assessment of the proposed site of Stage 2 of Peninsula Gardens Retirement Village located at Cabbage Tree Road, Bayview. The investigation was performed with hand and machine augering and cone penetration testing.

First Floor

370 Norton Street

Leichhardt NSW 2040

PO Box 256

Leichhardt NSW 2040

Phone: (02) 9550 9966

Fax: (02) 9564 3209

Email: email@lowhooke.com.au

Offices in

Newcastle & Sydney

Geoffrey Bubb

Cosmo Farinola

Roger Hooke

Tom Krapeshlis

Kevin Leedow

Garry Myers

Peter Waugh

Tony Yu

ACN 002 419 525

ABN 41 919 674 323



Slope Stability Assessment

The assessment of Risk of Slope Stability Report, dated August 2003 (Report No 31333.020) assesses the likelihood of slope instability as unlikely and the consequences of slip as medium leading to the assessment of a low risk category.

Building Footings

The stability assessment indicates that care needs be taken in any excavated area. Foundations should ultimately bear on rock and a suitable solution would be pier and beam type construction. Testing carried out by SMEC indicates rock approximately 0.8 metres to 6.0 metres below existing natural ground levels. The ground floor construction is likely to be suspended off the perimeter and internal beams, with a proprietary formwork or precast slab solution. Refer to "Building Structure" for further commentary.

Stormwater and Site Roads

The need to control the stability of the sloping site means particular care will be required with excavations for stormwater lines and cut sections of roads. Geotechnical control of proposed works will be needed to ensure slope stability is controlled.

Building Structure

The sloping site indicates sloping voids under ground floors. The requirement to maintain access clearance under timber bearer and joist floor construction indicates timber floors may not be appropriate. Potential excavations are likely to be 500mm deeper than required for a concrete slab solution.

Concrete slabs if formed would require complicated formwork as the slab varies from on ground founding to suspended with continually varying formwork depths. This indicates either ribbed metal formwork such as Bondek or a precast concrete beam and slab system such as Ultrafloor would be appropriate. Given the slab is likely to be on ground in places, lost or sacrificial formwork versus the precast ultrafloor solution will be considered in the construction certificate stage.



General

The geotechnical investigation contained in the report by SMEC indicates the site is low risk for slope instability and special precautions are necessary in reference to construction design (Section 3.2 and Section 3.3) and long term maintenance (Section 3.4).

In conclusion we believe the buildings can be constructed on this site with the precautions outlined in this and the SMEC geotechnical report.

I attach my current CV and note that the above report has been prepared in accordance with the Land and Environment Court Expert Witness Practice Direction 1999.

Yours faithfully,
LOW & HOOKE PARTNERS PTY LTD

A handwritten signature in black ink, appearing to read 'Peter Waugh', written over the company name.

PETER WAUGH

cc: Ms Frances Richards Gadens Lawyer 9931 4888



DIRECTOR

PETER NORMAN WAUGH

Date of Birth

15th March, 1956

**Formal
Qualifications**

1978 Diploma of Technology (Civil Engineering) with Distinction NSW University of Technology (NSWUT).

1979 Bachelor of Civil Engineering with First Class Honours (NSWUT).

1983 Member of the Institution of Engineering Australia. No. 49610

Registration on Board of Professional Engineers of Queensland.
RPEQ No: 2339

1990 Member of the Association of Consulting Engineers of Australia.

1990 Member of the Association of Consulting Structural Engineers of Australia.

Registration on the Northern Territory Housing and Local Government Practising Structural Engineers.

NPER - 3 Registered Engineer, Civil and Structural Engineering

Committee Member - Australian Standards BD/23 - Structural Steel

EXPERIENCE

Dec 1985 to present

Appointed Senior Design Engineer and then Director with Low & Hooke Partners Pty. Limited.

Full design and supervision of major civil and structural projects including:

- 10 unit Industrial Development at Gardener's Road, Alexandria (\$10 million);
- 8 unit Waterloo Business Centre at O'Dea Avenue, Waterloo (\$10 million);
- Boral Cyclone "Protector" Prefab Building range from 8 to 40m span;
- 3 storey Linley Cove Residential Development (\$5 million);
- 16 storey Royal Garden Hotel, Pitt Street, Sydney (\$15 million);
- 16 storey Campbell Street, Residential Development (\$10 million);
- 12 storey Furama Hotel, Haymarket (\$35 million);
- 3 storey 10 unit St. Hilliers Road, Industrial Development, (\$22 million);
- Frenchs Forest, O'Riordan Street Industrial Complexes;
- Welded Mesh at Milperra (\$5 million);
- Hexham Engineering Workshop (\$5 million);
- Regents Park Blocks S and T (\$10 million)

Director in Charge of Civil and Structural Design/Documentation and Supervision of:

- Pepsi Seven Up Bottling Facility (\$50 million) Huntingwood;
- New Hawkesbury Hospital (\$70 million);
- 21 Storey Railway Square Mercure Hotel (\$90 million);
- Bankstown Lidcombe Hospital (\$72 million);
- Structural Design of 52m Span Eurocopter Hangar Bankstown (\$6 million);
- Residential Development Cremorne (\$5 million);
- RAAF Williamstown Office (\$2 million);
- Sunbury Private Hospital (\$6 million);
- North Gosford Private Hospital (\$12 million);
- Blue Mountains Public Hospital (\$4.2 million);
- Nordland Industrial Complex (\$2.5 million);
- Officeworks Artarmon (\$4 million);
- Residential Development for Australand, Hurstville (\$4 million); Belrose (\$3 million), Marsfield (\$3 million)
- Westmead Institute of Health Research (\$8 million);
- ANZAC Health and Medical Research Foundation (\$5 million);
- 8 storey, 1-5 Randle Street Apartments, Surry Hills (\$5 million);
- Residential Developments at Lane Cove, Rose Bay and Abbotsford (Combined Value \$5 million);
- Concord Supermarket for Coles (\$4 million);
- Lord Street Botany, Building E (\$5 million).
- Rex Road Nursing Home Bankstown (\$5 million)
- St Mary's Nursing Home, Saddington Street (\$5 million)
- J.L. Stewart Warehouse, Glendenning (\$3 million)
- Resolan at Huntingwood Warehouse (\$3 million)

Civil and Hydraulic Engineering for:

- Liverpool CBD Mall Renewal (\$2.2 million);(Engineering Excellence Award);
- Banks Road Detention Basin (\$1million);
- Hastings Park Detention Basin (\$0.8 million)
- Wyong Bus/Rail Interchange (\$2.0 million)

Director/Engineer in charge of:

- Department of Housing Projects at Orange, Eveleigh Affordable Housing, Matraville, Wallsend, Regents Park, Carey Bay, Fennell Bay, Blue Haven, Narraweena, Smithfield, Gosford, Riverwood, Padstow, North Ryde, Canley Vale, Pymont, Canley Heights, Maroubra Hinchinbrook, Lithgow. (Approximate Combined Value \$27 million).

- Corlette Street Pensioner and General Housing; (\$6 million).
- Director in Charge of 19 Storey Southern Cross Apartment Building, Sydney (\$16 million),. Goodchap Road Residential (\$3 million).
- Director/Engineer in Charge of 3/4 storey industrial complex, Chilvers Road, Thornleigh (\$4. 0 million).
- Director/Engineer in charge of twin tower 12 storey Regatta. Residential complex for Bovis Lend Lease (\$25 million).
- Director/Engineer in charge of 3 tower /\$50 million Kogarah Town Square residential development.
- Director/engineer in charge if the \$130 million Gosford and Wyong Hospital Redevelopments for a Design/Document and Construct contract.
- Director/Engineer in charge of \$4.5 million upgrade at Coledale Hospital.
- Expert Engineer Witness in recent court cases
Abigroup V Karim,
MAHI V others
NSW Land & Housing Corp V Napoli Projects Pty Ltd.
Betona Versus Birzulis.
- Director/Engineer in charge \$4 million Illawarra Family Medical Centre.
- Director/Engineer of Proposed \$8 million Hammond Health Care project, Woy Woy.
- Director/Engineer of \$2 million Housing Development for BNAI B'RITH Parents Home, Wahroongha.
- Director/Engineer of Proposed \$14 million expansion of Cherrybrook Shopping Village.
- Director/Engineer of \$18 million Mental Health Facility/Liverpool.
- Director/Engineer of \$70 million Woolooware Bay Retirement Complex for Anglican Retirement Village.
- Director/Engineer in charge of \$25 million. Hunter Valley Golf Club Resort for Hightrade.

- Director/Engineer of the \$8 million residential project Sailors Bay Road, Northbridge for YLM & Associates.
- Director/Engineer of the \$8 million residential project of Anzac Parade, Kensington for YLM & Associates.

Sept 1981 to Nov 1985 Senior Design Engineer with W & L Meinhardt and Partners.

Duties included initial structural design then detailing and site supervision of a wide range of industrial, commercial and institutional buildings including:

- ACI Glass making Foundary, Ingleburn (NSW);
- Waverley Council Chambers (VIC); (\$10 million)
- 3 storey Penrith Leagues Club (NSW); (\$15 million)
- 6 storey Southport Custom Credit House (QLD); (\$5 million)
- 12 storey Castlereagh Street Development (NSW); (\$6 million)
- Nestles, Ecks, LNC Industries and Protector Sureguard Factories (NSW); (Combined Value \$15 million)
- 9 storey State Bank Building and Ashfield NSW Distribution Centre; (Value \$15 million)
- Emu Plains and Ellison Road Public Schools (NSW). (Value \$8 million)

Jan 1979 to Aug 1981 Professional Engineer with Elcom.
Design work included Diesel Generator Buildings, Earing Station Myuna Bay Ash Dam service and flood spillways, spillway bridge and Contract Administration of the Ash Dam.

March 1974 - Dec 1978 Trainee Civil Engineer with NSW Electricity Commission (Elcom) (Now Pacific Power).
In work semesters, duties included site supervision, quantity surveying and design of power station structures.