

NEWSLETTER

Strata Engineering Solutions

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September / October 2006

South Avenue, Double Bay

Heritage Building Balcony Strengthening

Design Engineer: David Wright
Contractor: Structural Systems (Remedial) Pty Ltd
Strata Manager: Alldis & Cox (Coogee) Pty Ltd

This three storey heritage building was constructed in 1932 and contains curved concrete balconies on the front and rear elevations.

Strata Engineering Solutions were contacted to attend site in the aftermath of a balcony collapse to one of the Units. Fortunately, nobody was injured as a result of the collapse.



Investigations were carried out and it was determined that the cause of the collapse was attributable to a combination of factors which included spalling concrete, crack propagation and the non-existence of top steel primary reinforcement.

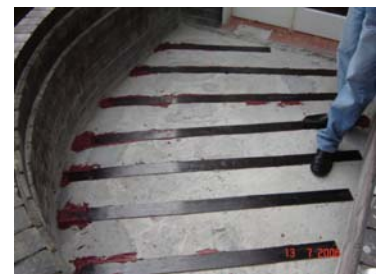
The Owners Corporation responded immediately to the situation by ordering an investigation into the condition of the remaining balconies to ensure the safety of residents and to determine what remedial action might be required.

Structural Systems carried out the investigatory work which revealed that minimal concrete cover was causing corrosion to the band beam reinforcement and that none of the balconies contained top steel reinforcement. This combination revealed a catastrophe waiting to happen!



Given the nature of the existing construction we were required to undertake extensive strengthening works to ensure the safety and longevity of the balconies. The other option was to demolish and re-construct the balconies which would have been disruptive and costly to the Owners.

The rectification method involved the replacement of the corroded reinforcement in the band beam and conventional patch repairs to the slab soffit. Carbon fibre reinforcement was bonded to the top surface of the slab to provide adequate strength to the cantilevered section of the slab.



Membrane coatings were then applied to the top and bottom of the slab to provide further protection against the elements.

Structural Systems are nearing the very successful completion of this project whereby the balconies on this heritage building will be structurally sound for many years to come.

This project was definitely an 'eye opener' for all involved.

Alldis & Cox (Coogee) Pty Ltd, the Owners Corporation and Structural Systems have done a great job in responding to the needs of the building. Well done to all.

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About Strata Engineering Solutions Our People

Strata Engineering Solutions is a division of CostinRoe Consulting, a medium sized consulting engineering practice specialising in providing civil, structural, and remedial engineering advice.

The firm has been established since 1989 and has grown to provide a diverse range of professional services to clients in the building construction and insurance industries.

Strata Engineering Solutions

Strata Engineering Solutions are dedicated to servicing the remedial and structural engineering needs of the strata industry.

We have a strongly established reputation in providing excellent value in our remedial services, numbering amongst our clients are Body Corporate Services, TSS Strata Services, Community Strata Title Management, Bright & Duggan, Andreones Lawyers, Strata Associates and Dynamic Property Services.

Forensic Engineering

This service provides facility owners and other stakeholders a better understanding of their structures' problems and causes, and importantly how the structure's life can be extended. We arrange for investigations into a building's deterioration and advise on the appropriate and most cost effective remedial works.

Project Management

Extending from our forensic work, we combine what we have learnt of the building condition, with our expert knowledge and experience to develop remedial works Specifications, Scopes of Works, Tender Documents and the availability to co-ordinate the entire tender process. We then work with our clients to select the best qualified and experienced contractors to undertake works. Finally we will Project Manage the contract, monitoring the work on site, handling the sometimes tricky relationship between principal and contractor.



David Wright
Design Engineer

David Wright graduated with a degree in Civil Engineering from the University of Sydney in 2000 and has also furthered his studies by completing a Masters degree in Structural Engineering in 2004.

David started in the field of designing curtain wall systems for high rise buildings and has been involved in a number of large projects both locally and abroad, David was also in charge of prototype testing of the facades working in conjunction with the CSIRO.

David has been employed with Strata Engineering Solutions as a Design Engineer since February 2003 and his versatility allows him to diagnose building defects and project manage remedial work as well as carry out structural/civil design for new construction.

Recent remedial projects have included work for:

- Balcony strengthening
- Concrete repair
- Parapet wall strengthening
- Waterproofing
- Internal wall removal
- Underpinning
- Retaining wall construction