

ptNEWS

Newsletter 2 - 2014



PRESIDENT'S REPORT

The past couple of President's Reports I have been commenting on what the Post-Tensioning Institute of Australia has been planning to undertake in order to become a more relevant industry body. I am pleased to announce that we have held two successful PT Industry Forums, held in Brisbane and Sydney.

During these forums, technical presentations were held covering topics such as monostrand stressing guidance and what the current best practice is for grouting post-tensioned cables. Importantly at the end of the technical presentations, well attended networking events were held where many got the chance to discuss what has been happening in the industry recently.

The PTIA will continue to hold events such as these in order to assist in informing people about important topics within the post-tensioning industry and to provide these excellent networking opportunities.

Another key driver of the PTIA directors over the last year has been to increase our representation of companies throughout the post-tensioning industry. We welcome Tensioned Concrete and ADG Engineers as new members to the PTIA and look forward to working with both of these companies to better support the industry.

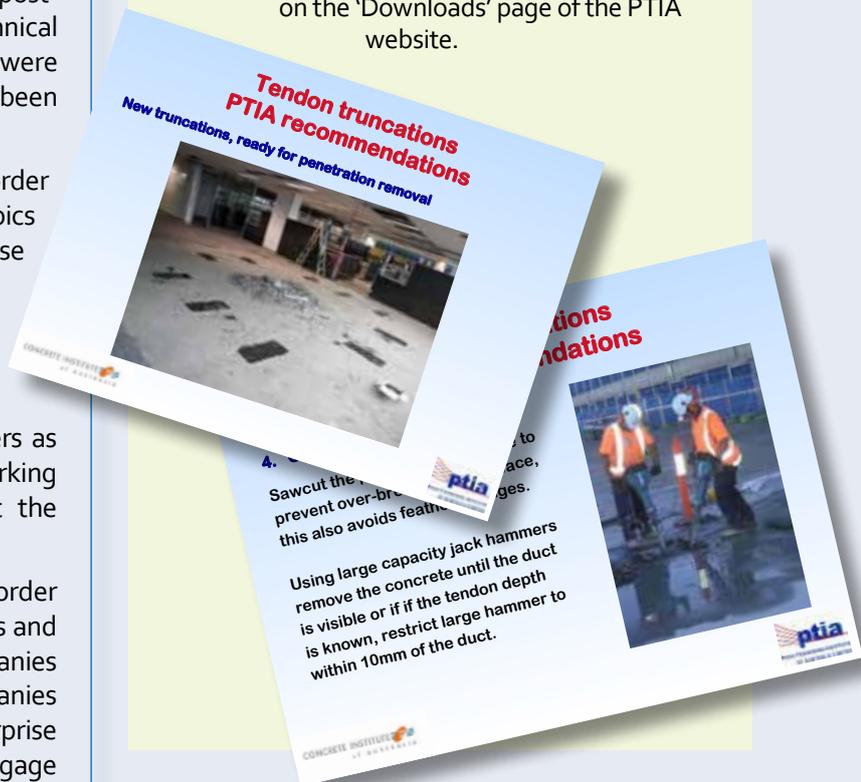
I wish to point out that there are key requirements in order to join the PTIA, such as appropriate Quality Manuals and Procedures, assurance that the participating companies have suitably qualified staff, and that the companies abide by requirements such as appropriate enterprise agreements. This means that when contractors engage a PTIA Member Company, they can be assured they are dealing with a company that satisfies the appropriate standards for our industry.

Regards,
Andrew Castle
President

TRUNCATION OF POST-TENSIONED TENDONS

PTIA presented at the Concrete Institute NSW Branch seminar on Structural Strengthening of Concrete Structures on 21 May. Haydn Kirrage – General Manager Australian Prestressing Services, and Director of PTIA, presented on Truncation of Post-Tensioned Tendons.

The slide presentation on this topic can be found on the 'Downloads' page of the PTIA website.



CONTENTS

President's Report & welcome new members	1
Project Report: Interspan	2
ACRS	3
PTIA welcomes Tensioned Concrete & ADG Engineers	3
Events & members	4

Charles Perkins Centre

Location: *Camperdown, Sydney, Australia*

Client: *University of Sydney*

Contractor: *Brookfield Multiplex*

Post-tensioning Contractor: *Interspan (NSW)*

Consulting Engineer: *Robert Bird Group*



The Charles Perkins Centre was named in honour of the late Dr Charles Perkins who was the first indigenous graduate of the University of Sydney and who received many accolades throughout his career including an Order of Australia in 1987, NAIDOC Aboriginal of the Year in 1992 and an honorary doctorate from the University of Sydney.

The 10 level facility was delivered to the University of Sydney by Brookfield Multiplex on time and within budget, and contains nearly 47,000m² of research and education space. The building comprises twin parallel floor plates with a large central atrium. The world class facility will focus on research into the causes and treatment of obesity, diabetes and cardiovascular diseases.

Interspan provided full post-tensioning design, supply and installation services to Brookfield Multiplex for this project, including detailed dynamic analysis of all floor plates for the various uses including:

- Primary laboratory areas
- Tertiary laboratory areas
- Office space
- Areas with provision for future flexibility to be used as laboratory areas

In a structure with these usages, it is important that the structural response to footfall induced vibration is not perceived to the extent that it would affect the work being undertaken, and in particular that sensitive equipment can be used without being affected by any undue vibrations. For each area and usage, the client set out the performance requirements to be met; Interspan then calibrated the structural depths to ensure these requirements would be met. Sophisticated 3D modelling using Oasys GSA software enabled Interspan to simulate various walking paths, walking frequencies, locations and modes, and to measure the response of the slab to any induced vibrations at various receptor locations. With a typical building grid of 10m, it was essential that this aspect of the design was carried out with care, as the relatively long spans are susceptible to vibrations. A peer review was therefore carried out by both the Builder's engineer as well as the University's consultant.

A flat plate system was adopted, as this provided the mass required to reduce the structure's response to induced vibration, as well as providing a relatively shallow section. A more traditional banded slab would have resulted in much deeper bands which would not have worked within the given building envelope. The flat plates also provided for flexibility with respect to future use, allowing laboratories to be located in various zones within the structure. In areas with higher performance criteria relatively deep sections of 525mm were adopted.

This required particular attention to concrete mix design, placement and curing as well as to the design of the reinforcing elements to reduce heat and avoid early thermal plastic shrinkage cracking from developing.

Once the structural depths were determined, further design to ensure conventional strength and deflection criteria was carried out. The post-tensioning and reinforcement were detailed to enable speedy construction, with a high degree of repetition and economic use of materials. 350 tonnes of post-tensioning was used in the structure; 15.2mm strands were primarily used to reduce the number of individual tendons required to be installed.



PTIA REPRESENTED ON ACCREDITATION BOARD

Members are no doubt aware that PTIA has a representative on the Australasian Certification Authority for Reinforcing and Structural Steels (ACRS) board, Mr Michael O'Neill. Michael is available to handle all your questions relating to ACRS and its PTIA related activities.

ACRS is at the forefront of checking and accrediting suppliers of reinforcing and structural steel in Australia and New Zealand. It ensures the compliance of materials used meet the requirements of Australian and New Zealand standards and their statutory requirements.

ACRS members are reinforcing and steel suppliers, consumers and authorities in the construction industry.

ACRS has teams of auditors who visit manufacturing and fabrication facilities and check the supplier chain for reinforcing and structural steel products. Annual reviews of the suppliers' manufacturing and delivery service are included in requirements for continued accreditation with ACRS. This process ensures accredited suppliers continue to meet the standards.

ACRS not only operates in Australia but is now across the Tasman. The name change to "Australasian" in September 2013 reflects the importance ACRS puts on the relationship with New Zealand suppliers and authorities with whom we now interact. ACRS not only now has New Zealand members but also New Zealand representatives on the ACRS board and committees. An important step more recently has been awarding the JAZ-ANZ accreditation as a certifying body. This means ACRS is accepted with full international accreditation as required by the new governing standards 190/IEC17065.

Accreditation to this new governing standard independently benchmarks the governance, probity, general operation, independence and impartiality of our certifications on the international stage.

In relation to post-tensioning, we have introduced discussion on the ACRS board to consider accreditation of prestressing bar in addition to prestressing strand already under the ACRS umbrella. I will keep you informed as to any progress in this area.

Michael O'Neill, Director, PTIA



ADG ENGINEERS AND TENSIONED CONCRETE JOIN PTIA

Tensioned Concrete is a proven and established company that has delivered efficient post-tensioning solutions to the construction industry for the past 15 years. Our number one priority is to maintain safety and quality on all our sites. Tensioned Concrete has also created a great culture amongst our staff which is proven by having so many long serving employees as we put an emphasis on a lifestyle and work balance. This culture also outworks itself into our projects as we have a friendly and common sense approach to the challenges faced in day to day contracting.

We look forward to continuing our existing relationships and also making new contacts as we all work together to build the future and help make a positive contribution to the construction industry.



Newly opened ABC Office Accommodation alongside the Brisbane River QLD. 125.0t of post-tensioning supplied and installed into the flat plate suspended Office slabs for Leighton Contractors.



ADG is a multidisciplinary engineering company with civil, structural, building services and hydraulics capability that works together as one firm in a truly integrated way. We have over 100 staff, and offices in Brisbane, Perth, Darwin, Melbourne, the Sunshine Coast, the Gold Coast and have recently added a Sydney office.

ADG has a long history in the provision of specialist PT design services for the building industry throughout Australia, South East Asia, the Middle East and UK. Our founding directors have worked with, and on behalf of, a number of PTIA members over a period of 20 years. Our building designs promote the integration of PT into the overall structure and we encourage its benefits and use within our broader client base.

Since our beginning in 2002, we have focused on delivering structural solutions that are cost effective and tailored to meet the changing market, site conditions and geographical constraints.

We differentiate our offering through combining the latest technology, construction techniques and innovative ideas to provide unique solutions to complex projects. We have a track record of working closely with all levels of the project team including consultants, contractors and sub-contractors to develop the most suitable and effective outcome for all the stakeholders.

Program, materials qualities, cost, logistics and labour are all taken into consideration through the design process. We're often employed by contractors to redesign structures to be more cost-effective and considerate of the construction timelines and constraints they impose and are widely respected for this capability.



Gasometer Project, Newstead Brisbane



10,000 workers and their families thank you for buying OneSteel Australian Made Strand!

Networking Events

PTIA held its first PT Industry Forum in Brisbane on 15 April. Guests were able to network and meet with PTIA Directors. Short presentations on the Monostrand Guidance Note, Grouting, and PTIA activities also featured.

Forums will be held in – Sydney on 10 June; Melbourne on 19 August. To attend either of these events please email info@ptia.org.au.

Training Course

The PTIA Monostrand Post-Tensioning Training course (CPCCSF3002A), including assessment for Recognised Prior Learning (RPL) can be accessed through the "News and Events" page of the PTIA website – www.ptia.org.au

Technical Seminars

PTIA presented on Truncation of Post-Tensioning Tendons at the Concrete Institute NSW Branch seminar held on 21 May. A copy of this presentation can be found on the PTIA website 'Downloads' page.

MEMBER COMPANIES

Corporate Members

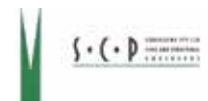
Australian Post-Tensioning Pty Ltd
 Australian Prestressing Services Pty Ltd (founding member)
 Interspan (NSW) Pty Ltd
 Structural Systems Pty Ltd (founding member)
 Tensioned Concrete Pty Ltd

Associate Members – suppliers

Ancon Building Products
 OneSteel Wire Pty Ltd
 Refobar Australia
 Severs Technical Systems Pty Ltd

Associate Members – consulting engineers

ABC Consultants
 ADG Engineers (Aust) Pty Ltd
 Arup
 Bornhorst + Ward Pty Ltd
 Costin Roe Consulting Pty Ltd
 Hyder Consulting Pty Ltd
 McVeigh Consultants Pty Ltd
 SCP Consulting Pty Ltd



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