

pt news

NEWSLETTER No 4 - 2009

FOR AVID PT READERS

An interesting article on post-tensioning in the UAE recently appeared in Construction Week (CW). For interested readers, the article is reproduced on the PTIA web site with permission from CW.

The article presents comments from leading PT professionals including Tim Roberts (Alliance Design Group), Stephen Burke (VSL Middle East), Warwick Ironmonger (Structural Systems), Kahill Doghri (Freyssinet), and Ben Bowsher (UK Cares). It succinctly presents the significant advantages of PT, describing it as "one of the most intelligent technologies of the industry, with developments being made on the concept almost every year".

President's Report

As PTIA reaches the conclusion of its third year, and my term as President draws to an end, it is timely to reflect on our progress over that time.

The early focus of PTIA has been on achieving high standards of design, construction and workmanship. To this end, PT contractor members, PT component supplier members, and PT design consultant members are required to meet specific standards to gain membership, and for these to be maintained and verified annually.

Another major achievement of PTIA has been the development of a comprehensive training scheme for the contracting workforce, with some 300 PT workers already trained, and presently undergoing their annual reassessment. The training focuses on correct work methods and safe working practices. Each trainee is issued with a certification card on successful completion of the training, and in future months you will see these workers sporting a "Trained Stressing Operator" sticker on their safety helmets. Presently the multi-strand training module is being developed. The training video "Stress Safe, Work Safe" has also been completed and is available for purchase.

PTIA also sponsors and supports the Prestressed Concrete Design Workshops conducted by Cement & Concrete Services, providing relevant PT design training for engineers, and offering significant fee subsidies for engineering companies who are Associate Members of PTIA. PTIA has also conducted many PT seminars around Australia in conjunction with Concrete Institute, and plans a new series for 2010.

In order to better interact with our industry, we also created State Branches in Queensland, NSW, and Victoria in 2009.

PTIA is developing an industry set of work standards and procedures to further establish proper and reliable PT

construction. A scheme to audit these is proposed for the future. It is hoped to implement these procedures during 2010.

PTIA has also been an active member of the ACRS Board and is supportive of their accreditation scheme for reinforcing and prestressing steels.

It has been most rewarding to participate in the progress of PTIA and to see its membership continue to grow. In this regard, I welcome SCP Consulting and Bornhorst + Ward as new Associate members.

I welcome our new directors Daniel Coghlan (OneSteel) and Russell Forster (VSL Australia) who were appointed to the Board on 7 September. I also express the Board's and my appreciation to Ian Stuart and Brad Reed who have resigned from the Board, and who both contributed significantly to the direction and progress of PTIA. The PTIA Annual General Meeting occurs on 9 November at which new directors are elected, or existing directors are re elected. At its last Board meeting, Michael O'Neill (APS) was elected as the incoming President, David Carolan (TTW) elected as incoming Vice President, and Max Schweiger (Structural Systems) re elected as Secretary Treasurer. I am confident that these directors will further develop PTIA and lead it well into the coming years.

While 2009 has been challenging for our industry, Australia has come through the Global Financial Crisis relatively unscathed and current trends would indicate that there will be very little change in the coming 12 months and that we still have some difficult and challenging times ahead.

As Immediate Past President, I look forward to continuing my contribution at Board level over the next two years, and I thank all Board members for their contributions.

As the end of 2009 approaches, I extend from PTIA our best wishes for Christmas and the New Year.

DAVID PASH | President

PROJECT REPORT

Top Ryde Shopping Centre

Location: Ryde, Sydney NSW

Client: Bovis Lend Lease

Year: 2008-2010

Design Consultant: Arup

Post-tensioning contractor: Structural Systems (Northern) Pty Ltd

Scope: Shop Drawing, Supply, Installation, Stressing and Grouting of Post-Tensioning



Top Ryde Shopping Centre Redevelopment will be a 130,000m² mixed use development which will be spread over nine floors comprising retail, community, entertainment, commercial and residential uses, completely filling the site. The project is the largest post-tensioning building project ever undertaken in Australia and was awarded to Structural Systems by Bovis Lend Lease as part of the ongoing Strategic Procurement Alliance.

In Australia post-tensioned concrete is used for virtually all suspended shopping centre floors, by all the major developers and owners. Cast-in-situ post-tensioned concrete provides unrivalled flexibility and economy for these floors.

Stage 1 of the redevelopment is valued at over \$440 million and will consist of a 78,000m² shopping centre and entertainment precinct which is planned for completion in 2010. Top Ryde includes about 1600 Tonnes of post-tensioning, for all the suspended floors. Almost 90% of the post-tensioning works and structure are complete at the end

of September 2009. During July 2009 (at the peak of the structure works), Structural Systems installed, stressed and grouted over 170 Tonnes of post-tensioning on this project alone.

Most floors are one-way slabs supported by one-way slab band beams, supported by cast-in-situ structural concrete columns, lift and stair cores.

Structural Systems were awarded and are completing the entire post-tensioning subcontract, even though Bovis Lend Lease split most other structure trades & awarded them to multiple subcontractors. Challenges included procuring materials, supervision and labour to handle a project of this size. Materials were sourced in advance and supervision and labour were drawn from within Structural Systems own workforce. With experience at delivering post-tensioning for many shopping centres, Structural Systems provides a reliable partner for delivering critical structure works to a tight program.



PT Award Winners

The Concrete Institute of Australia recently presented Awards for Excellence at the concrete solutions 09 conference dinner held in Sydney in September.

It was certainly impressive to note the extent of PT design and construction in the many building and engineering project entries.

The National Portrait Gallery (JPW Architects, Arup, John Holland) in Canberra was awarded with the Kevin Cavanagh Medal for outstanding excellence. A careful and complex arrangement of PT enabled the construction of the large cantilever walls which project some 19 metres beyond the building façade.

Other building project entries took advantage of the benefits of PT construction to provide large spans, reduce formwork, improve construction times, and to achieve high quality, durable concrete construction.

Engineering projects also maximised the opportunities offered from PT. Many applications were in bridges, including Eastlink Urban Motorway, New Perth Bunbury Highway, Roe Street Bus Bridge, Tugun Bypass, Taylors Road Rail Bridge, and the Northern Busway in Brisbane. PT base slabs and tensioned precast wall panels were used in both the Drinking Water Tank for Sydney's Desalination Project and the Tarago Water Treatment Plant in Melbourne, with the latter being the first concrete tank of its kind for Melbourne Water, and offering lower initial cost and lower maintenance costs compared with the steel alternative.

An iron ore processing plant at Cloudbreak Mine in WA used a

National Portrait Gallery, Canberra
Photograph by Brett Boardman



Eastlink Urban Motorway, Melbourne



Drinking Water Tank, Sydney Desalination Project



PT slab for its foundations to accommodate the high static and rolling loads. The use of a 350 mm thick PT slab is in contrast to the 1000 mm thick slab (at footings) in an earlier pilot plant.

PTIA congratulates all entrants and winners in the 2009 Awards for Excellence program, and is pleased to note the significant contribution of PT in many of these projects.

SCP Consulting

SCP Consulting is a medium sized structural consultancy specialising in building and industrial structures.

The practice has been established for over 30 years and has undertaken the design of many significant building projects - Fox Studios, New Sydney Showground Pavilions, Erina Fair, Macarthur Square and Rouse Hill Town Centre.

SCP Consulting provides specialist post-tensioning design services and provides in-house design as well as subcontract design for numerous PT contractors.

Recently, SCP Consulting completed the design of the Liverpool Hospital Redevelopment for Bovis Lend Lease. The project includes the design and construction supervision of a new clinical services building (CSB). The new CSB consists of up to eight (8) suspended levels totalling 57 individual pours, all using post-tensioned concrete floor construction. Floor slabs were analysed for dynamic behaviour, particularly in theatre and imaging areas using the benefits that post-tensioned floors offer.

Liverpool Hospital



The building is braced by stair and lift cores, without additional shear walls and was analysed and documented in 3D.

Suspended slab pours were connected with delayed tied corbel joints, allowing for minimal permanent building joints. Post tensioning was installed by Structural Systems.

SCP are proud to be accepted as Associate members of the PTIA. We look forward to providing constructive input and assisting in the PTIA with the valuable functions it performs within the construction industry.

COURSES AND EVENTS 2009

PRESTRESSED CONCRETE DESIGN WORKSHOPS

PTIA sponsored Prestressed Concrete Design workshops are presented by Cement and Concrete Services (CCS). For consulting engineering firms who are Associate Members of the PTIA, there are significant subsidies on the fees for these workshops – details are available from CCS at www.cementandconcrete.com. Registrations for workshops are to be made through CCS.

These two day workshops are developed for engineers who are familiar with reinforced concrete but who have little experience with prestressed concrete and who wish to gain an understanding of the principles of analysing and designing statically determinate prestressed beams. An optional third day workshop on computer aided design for prestressed concrete is also available.

City	Venue	Dates
Brisbane	Mercure Hotel	4, 5 & 6 November
Melbourne	Hotel Grand Chancellor	25, 26 & 27 November
Sydney	Stamford Grand Hotel, North Ryde	7 December (Day 3 – Reinforced & Post-tensioned Software Design)

SEMINARS AND OTHER EVENTS SCHEDULE

PTIA plans a new series of seminars to be conducted in conjunction with the Concrete Institute of Australia in 2010. Details will be shown on the PTIA and Concrete Institute web sites early in 2010.

PTIA SKILLS TRAINING COURSES SCHEDULE

PTIA offers Corporate Member companies a comprehensive Skills Training course which is presented by a dedicated and fully accredited training manager. The courses are offered in all states of Australia, subject to sufficient numbers. The course offers five modules, with modules 1 & 2 (General Safety & Installation) as a one day course, and modules 3 & 4 (Stressing & Grouting) as a second day, advanced course. A new module 5 (Multi-strand) has now been added to the training program.

On successful completion, course attendees are provided with a Skill Training Course card which is current for 12 months. Annual reassessment is required after that. Reassessments are currently being conducted.

For details about course dates and locations, or to book a course for your workforce, contact the PTIA Training Manager, Brad Parkinson on 03 9296 8100 or mobile 0437 439 573, or by email to bradp@structural.com.au.

Stress Safe, Work Safe

The PTIA's new training DVD about post-tensioned construction is now available for purchase.

The presentation is divided into four sections – Installation, Stressing, Grouting and Multi-Strand Post-Tensioning. This allows the presenter to stop for questions or to explain each section in further detail. It also allows the opportunity of incorporating the Stressing section into the site specific induction process on Post-Tensioning projects.

To order, email PTIA at info@ptia.org.au or go to our web site to download an order form. The DVD price is \$77.00 per copy, including GST.

Member Companies

Corporate Members

Australian Prestressing Services Pty Ltd (founding member)
Austress Freyssinet Pty Ltd (founding member)
Structural Systems Pty Ltd (founding member)
VSL Australia Pty Ltd (founding member)



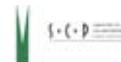
Associate Members - suppliers

Ajax Foundry Pty Ltd
Bluescope Lysaght
Cemex Pty Ltd
Haggie Reid Pty Ltd
OneSteel Wire Pty Ltd
Refobar Australia
Sanwa Pty Ltd
Severs Technical Systems Pty Ltd
Usha Martin Australia Pty Ltd



Associate Members – consulting engineers

Arup
Bentley Systems Pty Ltd
Bornhorst + Ward Pty Ltd
Costin Roe Consulting Pty Ltd
Hyder Consulting Pty Ltd
McVeigh Consultants Pty Ltd
SCP Consulting Pty Ltd
Taylor Thomson Whitting



PTIA welcomes the following new Associate Members

- Bornhorst + Ward
- SCP Consulting

PTIA welcomes the following new Student Member

- Nathan Casanova (University of Wollongong)

Please visit the PTIA web site www.ptia.org.au for details about membership, membership benefits and membership application forms. If you have questions about membership, please contact PTIA through this web site and our office will contact you to discuss your questions.



POST-TENSIONING INSTITUTE
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