ptNEWS

Newsletter 4 - 2012

Post-Tensioning Institute of Australia Limited

Mono-strand Post tensioning Web based Course

A key objective of the Post-tensioning Institute of Australia (PTIA) is "to develop industry work standards which establish appropriate skills of employees, personal development opportunities, a safe working environment, and environmental responsibility".

Since 2008 the PTIA has been offering high quality training programs for the industry. Recently, the PTIA has been working closely with an international E-Learning & Assessment company, ACI Global, developing a course for Mono-strand Post-tensioning. The course has been set up to offer greater flexibility to companies and employees (students) by allowing online and In House Examination of Competence. The platform will supply the learning resources supporting the knowledge and skills related to the national unit of competency CPCCSF3002A. This allows Post-tensioning companies to access the knowledge required to instruct their employees while having the assessment tools available to verify competence.

The E-Learning course will be launched on 14 January 2013.

Companies or their employees will register for the course electronically via the PTIA web site. Once the application is made and paid for the student can download the following documents;

- PTIA Mono-strand Post-tensioning Training Manual CPCCSF3002A
- PTIA Student Learning Onsite Log CPCCSF3002A
- PTIA Competency Assessment CPCCSF3002A

The PTIA Mono-strand Post-tensioning Training Manual is a detailed guide to assist site operatives in the correct methods of installing, stressing and grouting of a Mono-strand Post-tension System. The manual also covers the hazards and controls associated with Post-tensioning and general safety and environmental information for working on a construction site.

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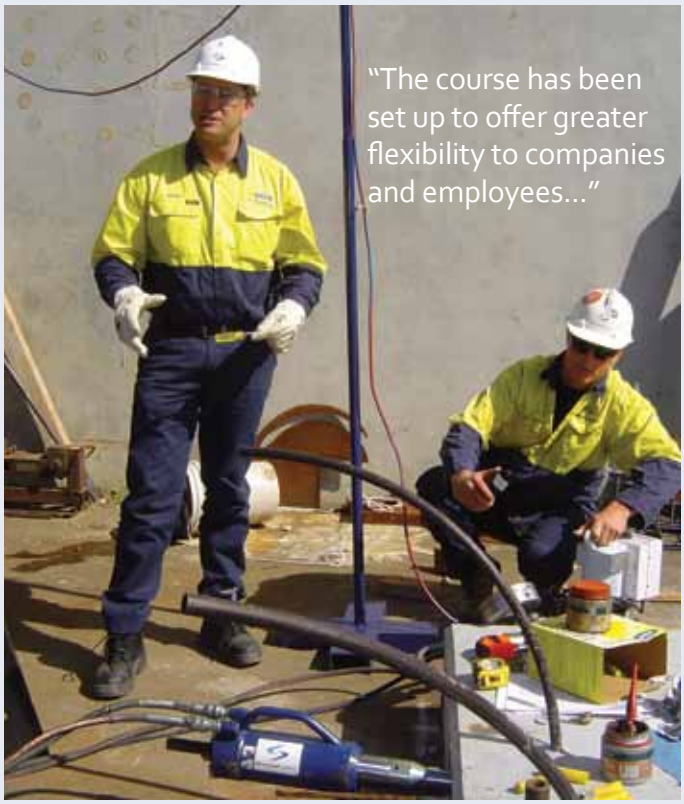

Changes to PTIA Board

At its Sixth Annual General Meeting on 23 October, PTIA approved some changes to the Board.

Andrew Castle (Principal, ABC Consultants) was elected President, with Michael O'Neill standing down after a term of three years. Haydn Kirrage (Structural Systems) was also appointed as a new Director of PTIA.

Contents

Royal North Shore Hospital

Location: *Sydney, Australia*
Client: *NSW Department of Health*
Contractor: *Thiess*
Post-tensioning contractor: *Structural Systems (Northern)*
Post-tensioned Strand Supplier: *OneSteel*
Consulting Engineer: *Hyder Consulting*

In response to emerging technologies, changes in clinical practice and population health, the NSW Department of Health, in partnership with the private sector, provided the funds for the redevelopment of Royal North Shore Hospital. It is the largest ever health Public Private Partnership (PPP) undertaken in NSW.

An ageing population and growing number of people living longer with chronic, complex medical conditions were other convincing reasons to start the project. The redevelopment will consolidate hospital facilities into a new, coordinated "state of the art" facility to meet the changing clinical and health care needs of the community.

Structural Systems were awarded the contracts for the design and installation of post-tensioning to both the Acute Care Facility, (the new main hospital building) and the Community Health Building and also for the Slipform construction of four core structures in the Acute Care Facility.

Post-tensioning: Acute Care Facility & Community Health Building

The Acute Care Facility is relatively low rise, with innovative colour-coded internal spaces to help people navigate the hospital environment. The design maximises local views, light and space to create a welcoming, healing environment, in a relatively compact footprint. It also includes new commercial and retail areas for the convenience of staff, patients and visitors.

The Acute Care Facility will replace the current 'Brown Building', which will be demolished at a later stage for further redevelopment.

A new 'teardrop' shaped helipad is also a part of the Acute Care Facility, where a priority lift provides access between the helipad, Emergency, Operating Theatres and ICU for urgent patient transport. The prominent position of the Helipad makes it visible from many angles, even from the Sydney Harbour Bridge - making the Helipad a new monument for Sydney. The Helipad required a special design approach due to the limited number of columns, large cantilevers up to 7.5m long and the highly variable loading conditions.

Detailed structural analysis was also carried out by Structural Systems for vibration in the slabs to ensure the multitude of sensitive medical equipment would function accurately, especially given the span conditions were typically up to 10.8m.

The new Community Health Building provides a range of facilities to support community health services. It includes four new group rooms, a café, clinical, counselling and treatment areas, and a base of staff that provide services at other community health centres.

Top: Artist's impression of the new Acute Care Facility. Above: The Helipad during the installation of post-tensioning and the top reinforcement. Left: Slipform construction

The completed project contains around 500 tons of 12.7mm low relaxation strand, supplied by OneSteel, in over 105,000m^2 of suspended slabs.

Slipform: Acute Care Facility

Due to the tight program, Thiess examined different options for construction of the four sets of central cores that would directly affect the speed of constructing the buildings 10 levels. Slipform construction was the solution chosen to achieve the program, due in part to its superior speed as well as flexibility in design and operation. The slipform technique is a rapid and economical construction method that can achieve considerable cost savings when compared with the cost of conventional formwork.

Structural Systems has been involved in slipform construction for over twenty five years and is a leader in slipform technology throughout Australia and South East Asia.

The slipform components were all assembled to transportable sizes off site and then transported to site for the final assembly. The existence of tower cranes within some of the lift cores demanded sophisticated steel frames to secure the yokes and panels in their place. Special design provisions were also in place for the numerous openings within the walls.

President's Report

I would like to take this opportunity to outline some of the changes currently occurring within the Post Tensioning Institute of Australia.

The board of the institute has undergone significant change over the last twelve months. Over this period, four new directors have been appointed, being Russell Wheeler, Haydn Kirrage, Andy Kiker and myself. In addition to the new directors, Haydn Kirrage has taken over the role as Secretary and I have been appointed President of the association.

The background of the new directors is quite varied which is assisting the board to consider important issues relating to this industry from differing points of view. The directors come from a mix of suppliers to the post tensioning industry, post tensioning contractors and structural consultancies. The new intake has added to the skill set of the existing directors and we believe that the board is well balanced in regard to all aspects of the post tensioning industry.

With the injection of so much new blood into the board, we are excited to be undertaking some new and important issues relating to the Post Tensioning Industry.

The first item on our agenda is the new training regime which we will be discussing further throughout this newsletter. The board is also currently addressing the use of Post Tension in Green Star buildings.

We would also like to acknowledge the efforts of Max Schweiger and Michael O'Neil, both of whom are founding members of the institute and have contributed large amounts of their time to the institute. Sadly both Max and Michael are reducing their roles within the institute over the coming year, and their contributions will be missed.

Lastly we would like to confirm that it is the aim of all the current directors to ensure the Post Tensioning Institute of Australia becomes a strong industry institute, which is prepared to undertake and deliver on key issues relating to the industry.

I look forward to working with you and keeping you informed with future achievements of the Institute as we realise our goals.

Regards,
Andrew Castle, President

Sustainability Project Update

PTIA continues to work collaboratively with CCAA regarding the current Green Star criteria.

Specifically, actions have been implemented for the better determination of early age strengths required for stressing, more accurate determination of early age strengths through maturity monitoring, closer consideration of the factors influencing initial stressing and a refined examination of the role and extent of use of SCMs relative to these aspects.

Looking forward, PTIA will seek wider recognition of the benefits of post-tensioning through reduction in concrete volumes (through Mat-9 Dematerialisation), reduction in steel reinforcement quantities from the use of high strength prestressing strand (Mat-5 Steel), as well as investigating the potential to claim Innovation Credits (through Inn-1, Inn-2 & Inn-3).

In the next stage of this project, PTIA will aim to provide support to designers and suppliers of post-tensioned concrete systems to enable maximisation of Green Star credits (probably through relevant PTIA Information Sheets), as well as engaging with the Green Building Council to discuss principles for changes to the current scheme to better recognise documented evidence of the efficiency of post-tensioned concrete construction.

> "...PTIA will aim to provide support to designers and suppliers of post-tensioned concrete systems to enable maximisation of Green Star credits..."

Mono-strand Post Tensioning Web based Course

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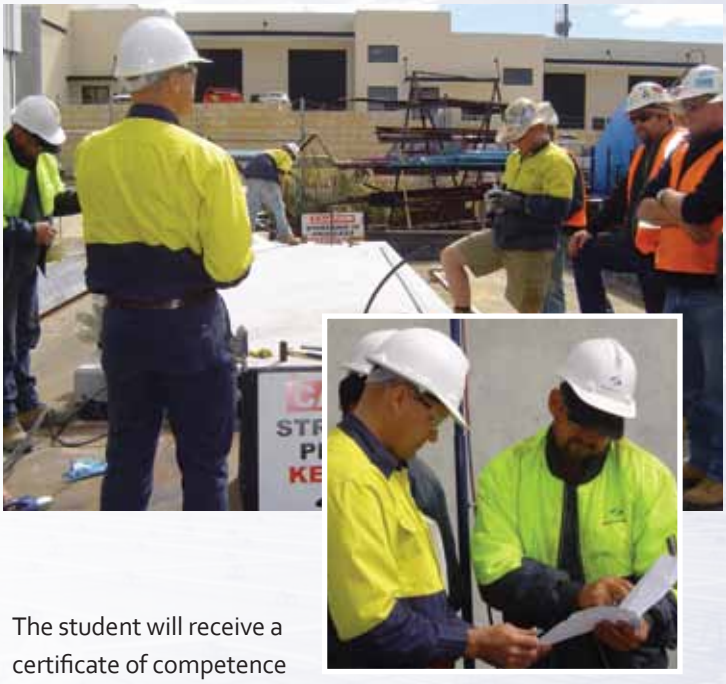
PTIA Student Learning Onsite Log is a step by step record of each element of the post-tensioning process. This log will record the student's progress and understanding of each element within the course and will be verified on site by a senior company representative. The student has the ability to utilise the training manual, as a guide, while gaining practical experience, under the supervision of experienced personnel. Once all sections of the Student Onsite Log have been completed an assessment of their skills will be undertaken.

The Competency Assessment is where the Performance Criteria is documented and evidence is logged for all elements within the national unit of competency. A company Trainer & Assessor will complete the ACI Global Trainer & Assessors course and is responsible for this document and the verification of competence. This document and the Students Learning Onsite Log is completed and loaded onto the learning platform.

Further to the Student Learning Onsite Log and Competency Assessment, the student will complete an online questionnaire that covers Safety and Environmental aspects on a construction site and all elements related to Mono-strand Post-tensioning. The student must obtain a pass mark in each of the elements to successfully complete the course.



The student will receive a certificate of competence once all documents have been completed and loaded onto the E-Learning Platform and a pass mark is achieved for the online questionnaire. The student will also receive a handy credit card size card to keep for onsite verification of their qualification.

The Post-Tensioning Institute of Australia, ensuring standards and accreditation for the Post-Tensioning Industry.

Member Companies

Corporate Members

Australian Post-Tensioning Pty Ltd
Australian Prestressing Services Pty Ltd (founding member)
Structural Systems Pty Ltd (founding member)

Associate Members – suppliers

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

Associate Members – consulting engineers

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

POST-TENSIONING INSTITUTE OF AUSTRALIA LIMITED ABN 86 121 218 228 PO Box 861, Five Dock NSW 2046
Telephone: 02 8765 6199 Facsimile: 02 9743 4013 Email: info@ptia.org.au Web: www.ptia.org.au