

pt news

NEWSLETTER No 2 – 2009

PT TRAINING VIDEO

PTIA is finalising an informative DVD presentation which details procedures for installing, stressing and grouting of post-tensioning tendons. It will be used as a training aid and as an introduction to new personnel on the safety aspects of post-tensioning. The DVD has been produced in a logical sequence of events for incorporating a post-tensioning system into a structure, namely the installation process, stressing of the tendons and finally the grouting procedure. The Multi –Strand process is also covered. The DVD will be used in PTIA training courses. It also provides the opportunity to incorporate the stressing section into site specific induction process on post-tensioning projects. A better understanding of the process and safety aspects of Post-Tensioning benefits all involved, from the PT labourer to the client and the end user of the product.

An optimistic outlook from PTIA

On the economic front, the residential and commercial sectors remain at the mercy of the banks which remain unwilling to lend unless very stringent criteria are met. Meanwhile there are signs that infrastructure work is becoming more prevalent, but not sufficient to spark new confidence. Certainly more opportunities exist in Victoria and Queensland. New South Wales remains very uncertain.

In spite of the economic outlook much is happening at PTIA.

PTIA welcomes McVeigh Consultants as new Associate Members and they are based in Queensland. We hope they will take the opportunity to join our new branch committee in Queensland to help develop and improve the post-tensioning industry in that State.



PTIA Director M Schweiger with Malcolm Turnbull at the recent MBA Builders Luncheon, sponsored by PTIA

PTIA has now held Branch meetings in Queensland and Victoria. Branch committees have been formed in both states and will meet on a regular basis to discuss issues, including technical matters, relating to the post-tensioning industry that will help promote and enhance the use of post-tensioning in their respective markets. In our bid to increase membership, we are urging as many of the less well known post-tensioning companies and consulting engineers to join. Their membership, we believe, will improve the visibility of the industry and give the engineering fraternity the confidence that the product we deliver is a seriously viable option against conventional reinforcement and steel.

PTIA recently held a reception at the offices of Hyder Consulting (Associate Member) for consulting engineers in Sydney. PTIA Directors presented its objectives and the benefits for consulting engineers of joining the Institute. There was much animated discussion during the course of the reception. This clearly indicates that the consultants have a lot to offer and we hope that they will join PTIA and offer their services both on the Board and the Technical Committee.

PTIA is currently developing a post-tensioning specification with the aim of adoption across the country. This will help all entities that are involved in post-tensioning knowing that there is one reference document.

Finally, we welcome Mica Simovic (Austress Freyssinet) and Brad Parkinson (Structural Systems) to the Board of Directors.

IAN K W STUART
Vice-President

PROJECT REPORT

Sydney Wharf 8 & 9

Main Contractor: Multiplex Constructions

Consultant: Robert Bird Group

Specialist Contractor: Austress Freyssinet



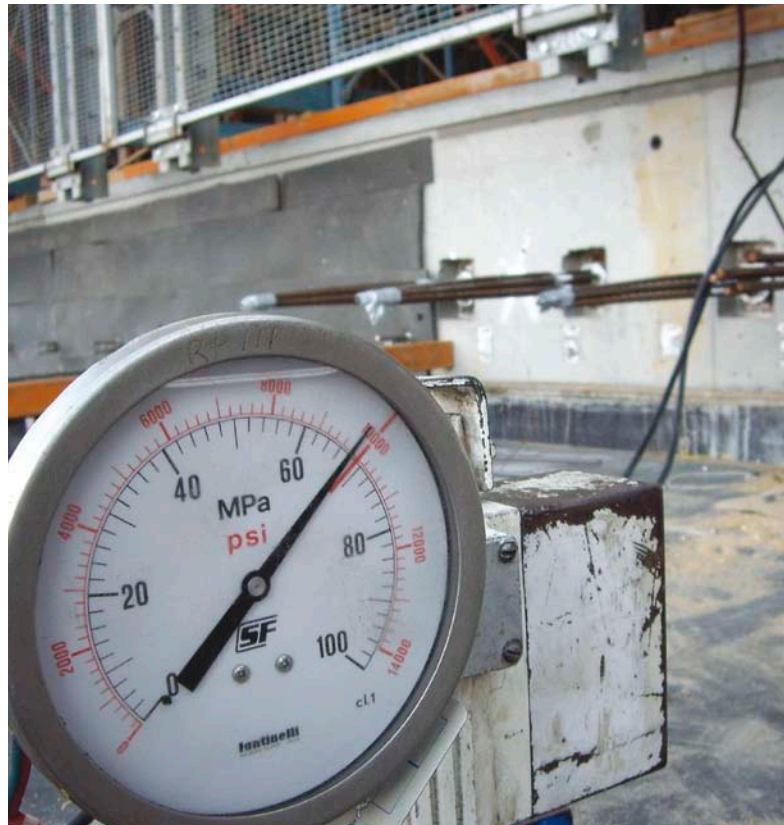
Located at the northern end of Sydney's Darling Harbour, this project comprises two 6 level Finger Wharves – Wharf 8 and Wharf 9 - with a common podium slab and a 200 space, submerged basement car park. There are a 54 berth marina and a café located on the podium level surrounded by 11,000 sq m of timber board walks. 104 luxury apartments over 5 levels, with penthouse suites, boast mezzanine levels and plunge pools. The project was completed mid 2008.

The basement car park is located under the mean high water mark for Sydney Harbour, so the perimeter walls were post-tensioned to provide a water tight structure. These walls were stressed using 5/12.7mm tendons with cast-in ducts and 'dummy' strands used for overlapping tendons at construction joints to ensure the joints remained in full compression. This jointing system was chosen in lieu of PT couplers to minimise congestion with the heavily detailed wall reinforcement.

The level 1 podium slab between the two wharves was designed to be watertight using a combination of 12.7mm and 15.2mm diameter strands. The achievement of a watertight design was dependant upon the correct choice of concrete quality, placement and curing and an appropriate level of precompression induced by the post-tensioning. The Level 1 structure beneath the residential blocks was a transfer structure due to the transition of column locations from the carpark to the residential layout. The transfer beams in this zone were post-tensioned using 7 strand 15.2mm multistrand C Range tendons. As the 8,200 sq m podium slab almost encompassed the whole site, there was a total of 18 concrete pours.

Typical apartment floors start on level 2 with penthouse suites located over two levels starting at level 5. The apartment levels were designed as part of a D&C contract by Austress Freyssinet as 200mm flat plate concrete slabs. The post-tensioning consisted of 4/12.7mm tendons spaced at 1500mm centres in both directions, with a non-uniform column layout. Concrete strength was 40MPa while design loads were 2.0 kPa superimposed dead load and 1.5 kPa internal live load. There were some minor transfer beams on Wharf 9 at Level 2 which had a maximum beam depth of 500mm due to head height constraints and were very heavily post-tensioned as a result. The total floor area for Levels 2 – 5 was 21,000 sq m.

Non-typical areas, such as large 10m end bays, required additional tendons to control deflection. Due to the heavier loads exerted by the plunge pools located on the mezzanine levels of the penthouse suites, tendon spacing in the main direction was decreased to suit.



Each of the 2 structures was made up of 3 zones/pours connected with STAFIX shear connectors. There are 11 lift cores over the two buildings - five on Wharf 8 and six on Wharf 9. Any zones that contained 2 lift cores had additional reinforcement detailed to control restraint between the cores.

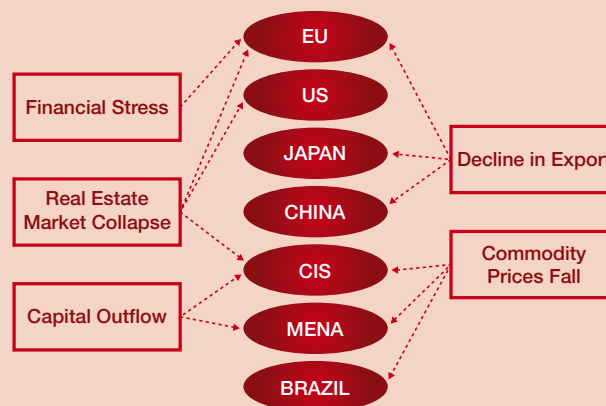
Austress Freyssinet worked closely with the project consulting engineers Robert Bird Group to co-ordinate the design drawing to maximise efficient post-tensioning construction and installation.

GLOBAL ECONOMY

The world is going through an economic storm which started in the United States of America. Collapse of property markets, a credit crunch, and loss of confidence has dealt a severe blow to the investment and consumer durables as well as the construction sector. GDP in the US in the quarter ending December 2008 fell by 6.2% over the previous quarter.

Europe is also suffering from financial problems as well as declining exports. China is experiencing a slowdown driven by the real estate sector and monetary tightening in their domestic market as well as weak export abroad. GDP growth for the quarter ending December 2008 was only 6.8%.

The diagram right summarises the impact of the crisis:



Source: Worldsteel

Most of the countries have been announcing stimulus packages to revive the economy. These packages ranged from providing cash bonuses to infrastructure funding. Apart from these stimulus packages, there are also rescue packages for the financial institutions whereby the governments guarantee the bank deposits in case the banks fail.

China

China's exports in February declined 25.7% compared to February 2008. This is the sharpest decline reported by the Chinese government since it began keeping records in the 1990s. Their imports fell by 24.1% in February 2009 following the decline in January of 43%. China's 4 trillion yuan (US\$586 billion) stimulus that was announced in December 2008 is meant to reduce reliance on exports by pumping money into the economy through higher spending on public works.

According to China's government, spending on factories and other fixed assets picked up in January and February, rising by 26.5% as its stimulus package sparked a jump in investments by state companies. Another positive impact of the stimulus is sales of domestically made vehicles rose by 25% in February from a year earlier to 827,600 units, following a tax cut on smaller cars.

which relies heavily on tourism and foreigners in their construction sector is experiencing the economic slowdown .

Australia Economy

Australia has also introduced packages to help stimulate the economy. They are:

- \$700bn bank guarantee (October 2008)
- \$4bn injection to non-bank institutions (October 2008)
- \$6.2bn automotive industry package (November 2008)
- \$10.4bn stimulus package (December 2008)
- \$1.6bn investment allowance for businesses (December 2008)
- \$42bn stimulus package (February 2009)

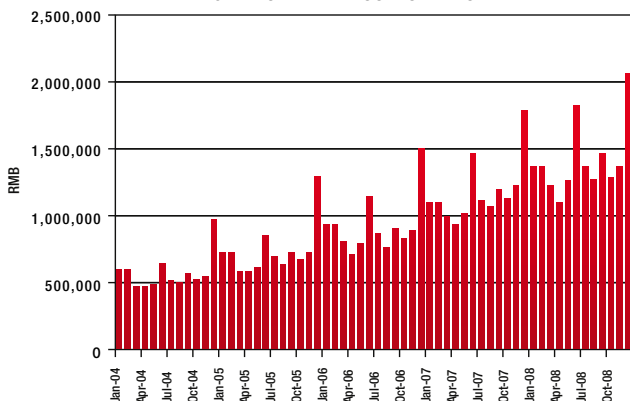
The first-home buyers grant boost introduced in the \$10.4 bn stimulus package has seen some positive impact. First-home buyers accounted for 26.5% of all home loans issued in January 2009 making it the highest proportion since records began in 1991. There has also been a 13% increase in loans for the construction of new homes in December and January.

It is still too early to see the effects of the latest \$42bn stimulus package. This package covers:

- \$14.7bn for school facilities;
- \$12.7bn for families, low to middle income earners, farmers and students;
- \$3.85bn for energy efficient homes;
- \$2.7bn Business Tax Break;
- \$890m for community infrastructure and roads

Similar to the rest of the world, Australia is suffering from a high unemployment rate of 5.2% as at February 2009. Industries such as finance, heavy manufacturing, mining and construction were being hit particularly hard by redundancies. The weakening labour market has caused household spending to decline and savings to increase.

CHINESE FIXED ASSETS INVESTMENT



Middle East

The Middle East is as much affected by the global economic slowdown as anywhere else in the world. The automotive, construction and retail sectors are the most affected. Dubai

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	May 11, 12 & 13
Melbourne	Hotel Grand Chancellor	Jun 15, 16 & 17
Sydney	Stamford Grand Hotel, North Ryde	Aug
Brisbane	Mercure Hotel	Oct
Melbourne	Hotel Grand Chancellor	Nov

SEMINARS AND OTHER EVENTS SCHEDULE

PTIA will not be conducting a seminar series with Concrete Institute in 2009 but hopes to have a number of papers accepted for presentation at Concrete 09 in Sydney from 17-19 September.

Some PTIA seminars may be held in regional locations and details will be announced in future newsletters and on the PTIA website.

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 four 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. Course fees are \$220.00 (inclusive of GST) per attendee – this fee is a one off payment, covering any or all of the modules.

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. A fee for the annual reassessment is yet to be established.

Following the first round of courses in all states in 2008, and covering several hundred Corporate Member employees, the PTIA Skills Training Course is now offered as required. For details about course dates and locations, contact the PTIA Training Manager, Brad Parkinson on 03 9296 8100 or mobile 0437 439 573, or by email to bradp@structural.com.au.

The following dates and states have been scheduled for January to June, 2009. In each set of dates, the first day covers Modules 1 & 2, the second day covers Modules 3 & 4, and the third day is a course for Senior Personnel.

VIC	NSW	QLD	WA
Apr 7,8 & 9	-	Apr 21, 22 & 23	-
May 12, 13 & 14	May 5, 6 & 7	May 19, 20 & 21	May 26, 27 & 28
Jun 10, 11 & 12	Jun 2, 3 & 4	Jun 16, 17 & 18	-

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
 Cement Australia Pty Ltd
 Cemex Pty Ltd
 CMC (Australia) 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

Bentley Systems Pty Ltd
 Costin Roe Consulting Pty Ltd
 Hyder Consulting Pty Ltd
 McVeigh Consultants Pty Ltd
 Taylor Thomson Whitting



PTIA welcomes the following new Associate Member

- McVeigh Consultants

Post-Tensioning Institute of Australia Limited

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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.

