

PRECAST NEWS 11

MEMBERS/INDUSTRY EDITION APRIL 2012

PRECAST NEW ZEALAND INC. WWW.PRECASTNZ.ORG.NZ



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WORD FROM THE PRESIDENT



We have been experiencing the most prolonged building slump we can remember and the worst natural disaster in our history,

with aftershocks preventing a return to any semblance of normality in Christchurch. These combine to make it the most trying of times any of us should ever experience and on that basis things can only improve.

It has been some time since our last newsletter, and it is my first as president. The lack of newsletters does not imply your executive has been inactive, on the contrary so much has been happening that our resources have been stretched.

The Christchurch earthquakes will continue to dominate and bring changes to our building

processes for some years to come. The drive for better building performance in extreme events has shown gaps in our knowledge. Changes to design codes based on initial observations will take a year or two to make it through to publication. Results from research projects being initiated to fill gaps in our knowledge will take up to a decade to filter through to our design codes and building practices. It is vital for our industry to be involved as far as possible through all these processes to protect the interests of our members.

I sincerely thank all our associate members for their continuing support through these difficult times. Our members should acknowledge their contribution by continuing to use their services.

Andrew Sinclair
- *President Precast New Zealand Inc.*

01 Membership Changes >

Unfortunately we are sorry to advise the loss of Stresscrete Southland from our membership. We are optimistic that improved economic times will see them rejoin our society.

On a more positive note we welcome Nauhria Precast to our membership. Established since 2001 and based in Auckland, Nauhria Precast offers the "Monarc Creative Precast" system which utilises the only automated vertical grinding machine in NZ. It is also very satisfying that one of their first tasks will be to seek Plant Certification.

We are also pleased to welcome Gregory Draughting Ltd as an Associate Member. They offer Structural and Precast Concrete shop drawing services and are looking forward to being of service to our members. They can be contacted through their web site www.gregorydraughting.co.nz

02 CHRISTCHURCH Activities >

The ongoing earthquakes in Christchurch have dropped off the news headlines but for those living through them it can be an ongoing nightmare of uncertainty, insecurity and disruption – made all the worse by having no known end date. Our very sincere sympathy goes out to all those affected. Two members of PCNZ Executive were involved in Christchurch.

For John Marshall, our immediate past President and National Technical & Design Manager for Stahlton Engineererd Concrete in Christchurch, business continues through the ongoing earthquakes and the disruptive aftershocks. Fortunately John's own house constructed with extensive use of precast concrete, survived with minimal distress despite other houses in the vicinity suffering extensive damage.

Being a Chartered Professional Engineer, John was extensively involved in post earthquake assessments and was frequently called on for his specialist knowledge of precast concrete.

Rod Fulford, Precast New Zealand Inc (PCNZ) Executive Director and engineer, was also involved in the aftermath of the 22 February quakes. He spent time in the CBD red zone as local liaison of an American PCI team that was investigating the seismic performance of precast concrete.

All multistory buildings constructed in Christchurch over the past 50 years or more used concrete in parts of their construction and all these buildings showed cracking after the earthquakes. The distinction between normally occurring shrinkage cracks and damage of structural significance is something that is lost on the majority of people. Promoters of competing materials can work this to their advantage. Correct interpretation of the damage and its causes is vital to assessing proposed changes to current practices and building standards.

It is vital that PCNZ is involved as much as possible in the forums influencing the future of construction. Effective participation requires time, knowledge and research and PCNZ is directing resources to this. [main menu](#)

03 Future Directions – Damage Avoidance Design (DAD) >

Despite the Feb 22 earthquake being classified as a 1 in 10,000 year event, and buildings constructed to modern building standards (post 1995) performing generally as intended, there is an understandable call for changes to our building codes.

Previous objectives were for certain buildings, as specified by the Loadings Code AS/NZS 1170.5:2004, to withstand a 1 in 500 year earthquake with only minor, if any, structural damage, and to survive a 1 in 2,500 year earthquake without causing loss of life through structural failure. There were no collapses of post 1995 buildings, but the damage has been considered unacceptable.

In many cases, demolition of relatively modern buildings is due to a combination of permanent ground displacements, foundation failure, damage to building services, damage to finishes and overall reinstatement costs rather than simply due to structural issues. Also the scale of the disaster means that a building

that could have been repaired if it had been an isolated case, may be demolished because of lack of resources and the need to complete demolition before the rebuild can get underway.

Some buildings that remained functional through the various earthquakes, have incurred very significant costs for repeated repairs of non structural items such as wall linings and services.

Considerable research is being directed towards Damage Avoidance Design (DAD). The objective is to provide economic design solutions for buildings to withstand more extreme earthquakes without requiring expensive repairs, and be able to continue to function without interruption. The effects on services and finishes are also an important consideration.

Precast Seismic Structural Systems (PRESS) has exciting potential for Damage Avoidance Design and is a focus for further investigation and development. The PRESS system was developed over a decade back and has been subjected to large scale testing to validate it. Because it involved different design concepts and construction methods, its use in New Zealand has been limited to a small number of buildings involving progressive designers, far sighted clients and versatile builders.

Experience so far has shown PRESS delivers a high added value in terms of enhanced performance at minimal if any additional cost. The Southern Cross Endoscopy Building has survived the Christchurch earthquakes without the need for repairs and with no disruption to the occupiers. Happy building owners, occupiers and insurers leading to enhanced reputations for the builders and designers.

The PRESS system relies heavily on precast concrete components. CCANZ has a seminar for designers and builders planned for later this year with PCNZ involvement.

CCANZ has produced two videos in their “Concrete Futures” series promoting PRESS and Damage Avoidance Design using concrete systems. They will be available via the CCANZ web site. [main menu](#)

04 Cladding and Facades >

John Marshall was representing Precast NZ on a group considering the performance of cladding and facades in the Christchurch earthquakes. Cladding panels represent a significant use of precast concrete

and it is vital that our industry is involved in assessing performance of these and making recommendations for future details and design requirements. [main menu](#)

05 Design Standards >

Although building structures designed to our current standards generally performed as intended, the performance criteria are under review and the inevitable changes will affect design standards and construction practices.

PCNZ was represented at a scoping meeting held for a review of NZS3101 Concrete Structures Standard, and is involved in a working group considering diaphragms. Floors in multistory buildings act as diaphragms to distribute horizontal loads to those parts of the structure that are designed to resist the loads. Although we are not aware of any structural collapses being initiated by floor failures, there is need to gather more information on diaphragm behaviour, beam elongation, and fracture of floor topping reinforcing mesh.

Inspection of damage to floors showed little that was surprising, but much consideration is being given to how we can further reduce damage and improve performance in extreme events.

There is much to be learned from Christchurch and gaps in our knowledge have shown the need for further research. This will involve New Zealand and overseas researchers and further testing.

Changes are being made to building codes and these changes will affect all future use of precast concrete throughout New Zealand. There is a danger that well meaning professionals under extreme time pressure, could propose changes that adversely affect the use of precast concrete due to misinterpretation of observed damage.

Precast NZ is actively involved wherever possible to protect and promote the interests of our industry within the limits of our resources and influence. [main menu](#)

06 The CANTERBURY EARTHQUAKES ROYAL COMMISSION >

The Royal Commission web site <http://canterbury.royalcommission.govt.nz/> provides access to their interim report and the numerous submissions they make available.

There is a need for quick answers to enable rebuilding to better match new expectations.

The scope and volume of work has stretched resources and the need for speed may have reduced the amount of consultation and opportunity to review and comment.

Precast NZ has made a submission on 1 December last year, and has reviewed and suggested changes to other submissions. As a result PCNZ has been invited to participate in a Royal Commission Hearing on New Building Technologies

We have also been keeping a watch on submissions published on the commission web site but with the 100's of pages published, our overview is limited. [main menu](#)

07 SESOC Publications >

The Structural Engineering Society New Zealand Inc recently published their Practice Note – Design of Conventional Structural Systems Following the Canterbury Earthquakes – Versions No 4 21 December 2011

This document is available on the Royal Commission web site where they quote that it is - "Interim design advice from SESOC for designers in advance of potential code changes, in order to 'future-proof' new building designs, to the extent practical"

It appears to be written addressing concerns for high rise ductile frame design, but that is not clear in the report and PCNZ is concerned that some of the recommendations may result in inappropriate restrictions and difficulties being inappropriately imposed on other types of structural systems.

Submissions on that Practice Note can be made to the Royal Commission, but that is not likely to have a major influence on designers who will be more aware of the SESOC publication.

Precast NZ is considering responses to such articles. [main menu](#)

08 Flooring Overview group (FOG) >

The FOG meetings at the Department of Building and Housing has not progressed since their preliminary 173 page report printed in April 2009. With the resources diverted to the Christchurch earthquake, it is unlikely that the Flooring Overview Group will reconvene in the near future. Difficulties in obtaining consensus on some aspects led to the publication of University of Canterbury Research Report 2010-02 "Assessment of hollow-core floors for Seismic performance" by Richard Fenwick, Des Bull and Debra Gardiner.

This 164 page document is a research report which endeavors to bring together the knowledge, research testing and theory at that time as viewed by those authors. Unfortunately, by its very completeness, it brings together many possibilities that are unlikely to be a problem in the vast majority of buildings which are not multistory flexible frame structures.

The level of complexity and the amount of work involved implied by the Research Report may well cause some designers to give preference to other types of suspended floors. This is a concern that needs to be addressed. [main menu](#)

09 Subcontract Agreement SA-2009 >

It is some time now since SA-2009 was approved and some contractors still have not adopted it. Hawkins, Fletchers, Mainzeal were three main contractors involved in developing this and it is supported by Master Builders Federation.

Precast NZ recommends the all tenders or offers to head contractors carry the tag "This offer is made on the basis that any subcontract entered into will use Subcontract Agreement SA-2009 as developed with the Registered Master Builders Federation"

Members should fight hard for this as a subcontract agreement is primarily an AGREEMENT and you do not need to agree to terms or conditions that you do not wish to simply for the convenience of the contractor. [main menu](#)

10 E2/AS3 Acceptable Solution >

The CCANZ CP 01:2011 provides details that are deemed to be acceptable solutions for compliance with the Building Code. This includes precast concrete panels and the document is available from CCANZ or can be downloaded directly from www.ccanz.org.nz/images/document/CCANZ-CP%2001%202011.pdf [main menu](#)

11 Future Seminars >

CCANZ is proposing seminars on Damage Avoidance Design. Although content has not been fixed, both PRESSS and Base Isolation will be covered. Following the Christchurch earthquakes, there will be demand for buildings to be designed to survive earthquakes without requiring costly repairs and both these systems hold real promise in this respect. Buildings constructed using either PRESSS or Base Isolation experienced no loss of functionality

and did not sustain expensive damage to finishes, services, claddings or structure.

These are very significant to the future of precast concrete and Precast NZ will be supporting these. [main menu](#)

12 Health & Safety > Dept. of Labour – Approved

Code of Practice (ACOP) 2010 Review
Code of Practice for the Safe Handling, Transportation and Erection of Precast Concrete.

The working group responsible for revision of this ACOP completed their work and passed it to the Department of Labour for publication in 2009. More than 2 years of frustration followed while your executive pushed the DoL for progress.

We are hopeful that with a change of personnel at the DoL, we may see the revised ACOP issued for public comment by May and the final document approved this year. [main menu](#)

13 Plant Certification >

Plant Certification has slowed due to the current market causing pressure on members resources. Nevertheless Precast NZ is still firmly committed to this for two reasons. Firstly buying product from a Certified Plant will provide customers with a level of reassurance and show commitment to a certain level of professionalism. Secondly unless our industry sets appropriate standards and controls, they will inevitably be imposed from outside as the building industry becomes more regulated, and we will lose a certain amount of control if this happens. [main menu](#)

14 Corrections Inmate Employment >

In October Judith Collins, Minister for Corrections visited the Stresscrete Auckland plant accompanied by some staff responsible for the prison precast operations. Three members of your executive also attended. Following an inspection of the precast operation, a useful discussion took place covering corrections objectives and how they could be met without damaging private enterprise by obtaining work in the tender market at below cost prices. The minister was sympathetic to our concerns and we felt there was a positive outcome from our discussions. Of course post election cabinet reshuffle means we just have to keep pushing the message with a new minister.

15 Marketing and Website >

Progress is continuing toward updating and replacement of the PCNZ web site. [main menu](#)

16 NZ Concrete Industry Conference October 2012 >

This year's NZ Concrete Industry Conference will be held at the NZ Concrete Society Conference Claudelands Conference Centre, Hamilton, from 11-13 October 2012.

The Precast NZ Annual General Meeting will also be held at the conference – timing to be announced. [main menu](#)

17 National Precast Concrete Association of Australia (NPCAA) > Web Links to NPCAA technical publications

Are you interested in obtaining technical / architectural data about precast buildings and sustainability?

Then the following link will take you to the NATIONAL Precaster published by the National Precast Concrete Association of Australia: <http://www.npcaa.com.au/datasheets/Prec53.pdf> Or for the latest edition of Precaster go to <http://www.npcaa.com.au/datasheets/Prec63.pdf> [main menu](#)

18 Building & Construction ITO (BCITO) Quality Products through Staff Training >

Precast NZ (PCNZ) is working with BCITO assisting in the preparation of Unit Standards to train factory workers to a level that will ensure that quality products will be delivered to the market place. Our representatives to BCITO are Colin Beavis (Wilco) and Greg Fleming (Bradfords).

A review of ITO's is currently underway and it is likely there will be a reduction in the number of ITO's with some consolidation. [main menu](#)

19 NZ Specialist Trade Contractors Federation Inc (NZSTCF) >

PCNZ continues to be represented on the Executive of the Specialist Trade Contractors Federation. This gives us a voice in matters of wider concern to the subcontracting industry.

This includes PCNZ representation on the NZS3910 Conditions of Contract review committee. Although PCNZ members do not sign up directly to this document, it is the most common Head Contract document and its conditions directly feed through to those imposed on subcontractors.

There are many areas where the interests of the subcontracting industry need to be taken into consideration when regulations, policies, legislation, standards etc are being proposed and our members interests are better served by participation in a body with industry wide recognition. [main menu](#)

20 Department of Building and Housing

The Prime Minister announced that as from 1 July 2012 a new government department will take over the functions of:

- The Department of Building and Housing
- The Ministry of Economic Development
- The Department of Labour
- The Ministry of Science and Innovation

While this will not have an immediate direct affect on our members, given the influence of the DBH on construction matters, we expect the changes affecting our industry will be significant. [main menu](#)

MEMBERSHIP

CORPORATE MEMBERS

PHONE No.

| | |
|--------------------------------------|-----------------------------------|
| Ashburton Prestress Concrete | 03 308 2397 |
| Atlas Tilt Slab | 09 426 9497 |
| Bradford Precast Ltd | 03 308 9039 |
| Busck Prestressd. Conc Ltd | 09 438 3059 |
| C. Lund & Son Ltd | 03 349 6900 |
| Emmetts Civil Construction Ltd | 06 349 1788 |
| Formstress Precast Ltd (Waiuku) | 09 235 7257 |
| Heb Precast | 07 575 2325 |
| Hynnds Pipe Systems Ltd | 09 274 0316 |
| Lattey Civil Engineers Ltd | 06 879 8364 |
| Nauhria Precast | 09 262 1065 |
| Precast H.B. Ltd | 06 835 8315 |
| Smith Crane & Construction Ltd | 03 359 7759 |
| Stahlton Engineered Concrete | 0800 STAHLTON (0800 782 45866) |
| Stresscrete Northern Ltd. (Papakura) | 09 295 0610 |
| Stresscrete Wellington Ltd. (Otaki) | 06 364 8126 |
| Theilin Construction | 03 544 8906 |
| Wilco Precast Ltd | 09 295 1060 |

ASSOCIATE MEMBERS

PHONE No.

| | |
|--------------------------------------|---------------|
| 0800 Ducting Ltd | 0800 38 28 46 |
| Allied Concrete | 03 217 1612 |
| Argon Construction Ltd | 09 274 5672 |
| Austin Carr (2008) Ltd | 09 817 6202 |
| BASF Construction Chemicals NZ Ltd | 09 414 7233 |
| Bridgeman Concrete | 06 879 7254 |
| Canzac Ltd | 03 343 4254 |
| Demden Ltd | 07 575 5410 |
| Firth Industries /Certified Conc. | 09 525 9193 |
| Fletcher Reinforcing Ltd | 09 270 4247 |
| Golden Bay Cement | 09 525 9031 |
| Gregory Draughting Ltd | 09 573 0099 |
| Hanham Transport Ltd | 03 385 3523 |
| H J Asmuss Co. Ltd. | 09 573 0099 |
| Holcim New Zealand Ltd | 09 634 0132 |
| Humes Pipeline Systems | 09 580 0781 |
| Machinery Movers Ltd | 09 278 6700 |
| Mainzeal Property & Construction Ltd | 09 375 2100 |
| Mike Herlihy Consulting Ltd | 03 325 1165 |
| Nawkaw Australia | 09 486 1615 |
| RC Macdonald Ltd | 04 472 4924 |
| Reid Construction Systems | 09 9204360 |
| Sika (NZ) Ltd | 09 828 7002 |
| Supacrete Concrete Ltd | 07 541 2565 |
| Thorpe Reinforcing Ltd | 07 575 7803 |
| Vulcan Steel Ltd | 09 273 7214 |
| Unicon Systems Ltd | 03 351 9952 |



Hynds Concrete:

Hynds Concrete is the manufacturing division and trading brand of New Zealand's leading civil and rural infrastructure supply business. With a nationwide network of 28 branches, Hynds Pipe Systems is focused on selling asset owners, contractors and farmers with solutions for the management of water and water-based waste for municipal, commercial, private and rural applications.

Hynds is a family-owned and managed business set up in 1973 by John and Leonie Hynds, who are still the inspiration behind the Company. John & Leonie's son Adrian is now Managing Director, leading a team of 600 employees across New Zealand.

Hynds Concrete manufacture spun concrete pipe in its Auckland and Christchurch plants, as well as precast products in 9 locations from Whangarei in the North to Winton, just north of Invercargill. The precast range includes manhole products, large bore pipe to 3050mm diameter, channel systems, pits, chambers, retention tanks, box culverts and bridges. Hynds Concrete is also a major producer of concrete tanks, troughs and cattle stops for farming and lifestyle properties. Recently Hynds developed and launched a new farm dairy effluent management system which incorporates its innovative Hypond and Megapond water storage ponds. Its specialist Hynds Environmental Systems division is also New Zealand's leading supplier of stormwater and wastewater treatment systems, which utilise the Company's precast capabilities in conjunction with sophisticated treatment componentry.

When John Hynds originally set up the business in the backyard of his home in South Auckland, he manufactured retaining wall products, and recently the Company has returned to its roots with the purchase of the manufacturing rights to the Lusit retaining wall system developed in Germany. Lusit precast panels are now produced at Hynds precast factory in Takanini, just a few miles down the road from where the company started 38 years ago.

For more information

Visit www.hynds.co.nz

Hynds Hypond Dairy Effluent Management System

LUSIT LAS Elements used for a retention pond application

Hynds DownStream Defender Stormwater Management System

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Austin Carr (2008) Ltd

Austin Carr (2008) Ltd:

Austin Carr (2008) Ltd was established in May 2008 after the death of Richard Carr, or "Dick" as he was known throughout the Prestressed Concrete Industry in order that the service and supply of equipment would remain available to those in the industry.

The new Company is owned and operated by Pam Wood who was with S Austin Carr & Co Ltd since 1982.

Austin Carr (2008) Ltd has continued the importation and supply of the CCL pretension barrels and wedges, the supply of post tension barrels and wedges and the supply of the open throat stressing jack.

We stock and supply 13mm and 15mm post tension and 5mm, 9.6mm 11mm 13mm and 15mm pretension equipment with the corresponding 'O' rings and our New Zealand manufactured Blackstick graphite lubrication crayon. Other less often used wedge and barrel sizes are available on indent.

The open throat stressing jack manufactured for us in America since 1995, with a 12" stroke is available including spare parts. The jack stressing wedges for the various sizes of strand, 9.6mm, 11mm, 13mm and 15mm, and the wedge handles are a stock item. This jack superseded the SAC 300 stressing jack manufactured for us in Mt Wellington to S Austin Carr's design, but we are proud to say, there are still a few of these rather old jacks in operation around New Zealand.

Austin Carr (2008) Ltd

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P O Box 20087, Glen Eden, Auckland 0641

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Jack



Wedges and barrels/joiners