

PRECAST NEWS 08

MEMBERS/INDUSTRY EDITION APRIL 09

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



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WORD FROM THE PRESIDENT



Welcome to the 8th issue of the Precast New Zealand Industry Newsletter.

This is our first newsletter since Christmas and it's hard to believe we've reached April already, summer has been and gone, well down south anyway it seems. I hope all our readers had an enjoyable holiday season with their families.

In my first few months as president there has been a hive of activity in and around Precast New Zealand. A couple of our members even visited the beehive. The media is telling us we are living in a world that's in financial crisis and the next 12 – 24 months will be challenging before we get relief.

Cement & Concrete Association of NZ (CCANZ) has had a change of leadership with Patrick McGuire stepping down. Rob Gaimster has been rewarded for his excellent work and is now the new CCANZ CEO. Precast NZ thank and are appreciative of Pat's full support of our organisation during his tenure. We congratulate Rob on his promotion and look forward to continuing to work alongside CCANZ for the good of the industry. Also thanks to Cathy Castle of CCANZ for the administrative work she does for us.

As you read the articles by our project leaders you will note:

- Russell Bennetto (Busck) and Paul Cane (Stresscrete) presented our view about prison labour being used to compete in the open market to the Minister of Corrections, Hon. Judith Collins. Using prison labour to manufacture precast concrete for supply to construction companies is carried out at the expense of jobs for our workers, especially in the current economic climate.
- Paul Sweetman (HEB) and his committee are progressing Plant Certification. This will give the market confidence that product purchased from a PCNZ Member will be to a high standard.
- Rod Fulford led the loop bar flange support double tee test. Rod prepared a protocol to test a flange supported tee flooring unit subject to gravity load while being simultaneously pulled from its support and subject to beam rotations simulating an extreme seismic event. The testing at BRANZ was carried out on the 5th of March. The BRANZ Report should be available to interested parties by

the time this newsletter is published.

- A revised Code of Practice for the Safe Handling, Transportation and Erection of Precast Concrete. This industry review was headed by Precast NZ assisted by industry representatives and the Department of Labour.
- Notices from the February Executive Meeting:
- I have recently completed an industry Precast Concrete Safety and Training DVD that will be distributed to all members before publication of this newsletter. The DVD is dedicated to Stewart Michie, who was tragically killed in 2007 while working in a precast yard. It covers safety practices and quality procedures to make our workplaces safer for our people. I encourage members to regularly show the DVD to their employees, contractors and use it to induct new employees.
- We encourage any members wishing to be part of the executive team or members who wish to contribute their leadership to a project that will benefit our members to please let Ross, Rod or myself know. Or if there is an industry issue that you think should be addressed please contact us. We have an open door policy and it would be great to see some new blood around the table.
- On the 17th of June Precast New Zealand Incorporated is 10 years old and we feel it is an achievement worth celebrating that evening. Past Presidents, two representatives of all members and associated members are invited to a meal on PCNZ at GG's Restaurant at Epsom, Auckland. Look out for the official invite.

I am a strong believer that our businesses and our futures, are only as good as the skills of the people we have working for us. BCITO offers excellent training opportunities for all levels of precast employee working on the shop floor and I encourage members to use this valuable resource.

This edition of our newsletter features the company profiles of a corporate member Stevensons Precast who is a supplier of structural precast and an associate member Bridgeman Ready-mix Concrete who supply ready-mix concrete to our industry.

Be careful out there!

John Marshall *President Precast NZ*

01 Building & Construction ITO (BCITO)

PCNZ is working with BCITO assisting in the preparation of Unit Standards to train 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 (Bradfor's).

New Unit Standards trainees to 23 March 2009 number 10 NZ wide. There have been no recent completions.

Total number undergoing unit standard training within the precast industry is 108.

A total of 18 trainees were discontinued in the BCITO's northern region.

02 FLOORING > Flooring Overview Group (FOG) - Dept. of Building & Housing (DBH)

The objective of this group is to provide means of assessing levels of risk associated with existing hollowcore floors installed prior to more recent design code changes, and where necessary, provide guidance for retrofitting or upgrading.

A very comprehensive document is being prepared that will cover past products and details, as well as looking at many potential failure mechanisms which, although they may not have been observed in the past, could possibly be relevant under some particular set of circumstances.

A preliminary 173 page document was printed and available for inspection at the Earthquake Conference in April. Because of the complexity of some of the issues being considered, it will be some further time before the document is reviewed, comments considered, and a final version distributed.

Compliance with the requirements of the latest revisions of NZS3101, which were developed after considerable research and testing, ensures new designs will perform satisfactorily under design level seismic events. Listing of theoretical failure mechanisms in this publication may cause designers to think the design considerations are much more complex than they really are. PCNZ will consider producing a guide to help designers of new buildings decide which, if any, of the possible failure mechanisms are likely to be relevant to new designs they are considering.

DBH Comment on Newsletter No 7

The following advice was received from DBH after publication of our last newsletter.

We compliment PCNZ on the Newsletter and on keeping its membership informed.

We do have a few important items to raise regarding the article on the Flooring Overview Group, mainly to avoid any wrong impressions.

- **Background:** It should be noted that one of the two solutions in NZS3101 was deleted by Amendment 2. This is an important point.
- **Seismic Retrofit Research Board:** It should have been mentioned that this Board is a collaboration between University of Auckland and University of Canterbury.
- **Flooring Overview Group:**
 - Strictly speaking this is the Precast Concrete Flooring Overview Group (PCFOG). More importantly, the article should mention that this was set up with representatives of SESOC, NZSEE and ConcSoc.
 - The article states that *This (the group) was principally a theoretical and academic exercise looking for the possibility of problems that had not been observed in previous testing or in real buildings that had been subjected to earthquakes here or overseas.* The work of the PCFOG is to develop a better understanding of floor behaviours and to produce guidelines for practitioners. The comment understates the concern that exists about the performance of some hollow-core floors in earthquake.
- **Loop Bar Flange Supported Double Tees:** The tests done initially are described as extensive. This seems to exaggerate the case - to our knowledge only limited tests were done.
- **Addressing concerns:** The DBH convened a meeting on TT floors on 28 October. It did not establish a study group. The PCFOG exists for that purpose. DBH will not "consider implementing their own test programme", but will consider supporting such work. We will consider commissioning a survey of existing installations to obtain data on their characteristics.

We ask that these points be brought to the attention of readers of PCNZ News.

Yours sincerely
David

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Flange supported double tee flooring units

Historically two main types of flange support have been used in New Zealand. The earliest one was a very simple "Loop Bar" developed by Stresscrete, and later the "Cazaly Hanger" system was introduced.

Loop Bar Flange Support - recent BRANZ Loop Bar Testing

The "Loop Bar" was originally protected by patents and was verified by extensive testing over the 35 years it has been in use. Design rules in recent concrete standards developed for a range of structural situations do not provide a suitable analysis to cover the details used and support the performance that is observed in many tests and years of use.

Because of the difficulty some professionals have had in analyzing this detail, they have expressed concern about its suitability for long term performance and accommodating seismic deformations that may be imposed on it.

As a result, PCNZ has commissioned BRANZ to carry out further testing to address some of the concerns. A test carried out on 5 March showed a unit supporting its full seismic gravity load while being pulled 45 mm from its support reducing its seating from 75 mm to 30 mm and simultaneously being subject to displacements equivalent to a 4.75 % seismic drift. These displacements exceed those expected under the maximum credible earthquake, a 1 in 2,500 year event.

At completion of the test, there was a very minor almost imperceptible cracking to the underside of the tee and that closed completely on removal of the load. The supporting beam had some face spalling to a depth of 10-15 mm. There was no apparent cracking over the tee or the flange extension, other than the crack that formed at the end of the flange and which opened as the unit was dragged 45 mm off the support and rotated.

The Loop Bar flange support has been subject to more testing over a longer period than any other flooring unit or flooring detail in New Zealand. Patent protection had previously restricted its availability, but that has now been relaxed and it is available from any PCNZ Member manufacturing double tee flooring systems.

Further Testing

Because of the wide level of interest and very conflicting opinions of the Loop Bar support, PCNZ decided that consulting widely on test details would have delayed testing by several months while still not reaching consensus. For that reason PCNZ decided to test a unit that was typical of past practice, but with some minor changes. That test was carried out on 5 March 2009.

Concrete cover was increased and a McDowell bearing strip was incorporated in line with NZS3101 current requirements. Also load spread to the flanges was eliminated to provide a "worst case".

A decision was made not to incorporate strain gauges, as their presence would alter the behaviour of the unit being tested.

Once the results of this test have been considered, PCNZ will discuss details for the next test with interested parties.

Other Flange Support Systems

With the concerns previously expressed, other flange support details have been developed by PCNZ Members. Stahlton Engineered Concrete has had their Zeus hanger tested in February and expects it to be available from later this year. Stahlton will make it available to other suppliers. Stresscrete also has developed other

flange support systems and any PCNZ Member is able to offer alternatives.

The "Cazaly Type" hanger system has been in use for a number of years and has a wide acceptance.

SESOC

Recent SESOC publications have cautioned against the use of Loop Bar Flange supports and they have a paper prepared for issue in the near future. Concerns raised, amongst others, have included the difficulty of reconciling its observed satisfactory performance with the design rules of NZS3101, and the lack of testing to verify the ability of the detail to accommodate seismic deformations.

A copy of the BRANZ Test report and photos has been forwarded to John Hare of SESOC who is convener of their sub-committee on Precast Double Tee Support Systems.

On 7 April John Hare of SESOC and Rod Fulford of PCNZ met to discuss the differences of our organizations on the Loop Bar detail. The PCNZ view is that the paper prepared by SESOC is postulating possible failure mechanisms that have never been observed during 35 years of in service performance, testing, dissection of test specimens or on demolition of earlier projects. None of the failure mechanisms was observed during the

recent BRANZ test where pull off and support rotation exceeded maximum credible levels of seismic action, or recent gravity testing at Auckland University of a more extreme elongated support.

The PCNZ view is that if SESOC wishes to show a problem exists where none has ever been observed before, they should carry out testing to show that it exists in the real world under normal service or the design seismic event. Until then it is no more than a theory that is claiming all previous testing is invalid while not offering any real tests in support.

John Hare acknowledged the BRANZ report and agreed to include some comments from PCNZ in the SESOC paper but did not agree to delay publication until further investigation had been carried out and did not agree to substantially modify the views in the paper.

We did agree that the differences in positions between our organizations was not in the best interests of the industry and we would endeavor to work towards resolving them. Input will be sought from SESOC prior to the next test of this detail.

Seismic Retrofit Research Board

No further meetings or action.

MEMBERSHIP

CORPORATE MEMBERS	PHONE No.	ASSOCIATE MEMBERS	PHONE No.
Ashburton Prestress Concrete	03 308 2397	0800 Ducting Ltd	07 343 9505
Atlas Tilt Slab	09 426 9497	Allied Concrete	03 217 1612
Bradford Precast Ltd	03 308 9039	Argon Construction Ltd	09 274 5672
Busck Prestressd. Conc Ltd	09 438 3059	BASF Construction Chemicals NZ Ltd	09 414 7233
C. Lund & Son Ltd	03 349 6900	Bridgeman Concrete	06 879 7254
Emmetts Civil Construction Ltd	06 349 1788	Canzac Ltd	03 343 4254
Formstress Precast Ltd (Waiuku)	09 235 7257	Demden Ltd	07 575 5410
Heb Precast	07 575 2325	Firth Industries /Certified Conc.	09 525 9193
Hynds Precast	09 274 0316	Fletcher Reinforcing Ltd	09 270 4247
Lattey Civil Engineers Ltd	06 879 8364	Holcim New Zealand Ltd	09 634 0132
Precast H.B. Ltd	06 835 8315	Humes Pipeline Systems	09 580 0781
Smith Crane & Construction Ltd	03 359 7759	Mainzeal Property & Construction Ltd	09 375 2100
Stahlton Engineered Concrete	0800 STAHLTON (0800 782 45866)	Mike Herlihy Consulting Ltd	03 325 1165
Stevenson Precast Sys. Ltd	09 274 0726	Nawkaw Australia	09 486 1615
Stresscrete Northern Ltd. (Papakura)	09 295 0610	RC Macdonald Ltd	04 472 4924
Stresscrete Wellington Ltd. (Otaki)	06 364 8126	Reid Engineering Systems	09 444 4122
Theilin Construction	03 544 8906	S Austin Carr & Co Ltd	09 535 5245
Wilco Precast Ltd	09 295 1060	Sika (NZ) Ltd	09 828 7002
Wilson Precast Construction Ltd	09 294 7207	Vulcan Steel Ltd	09 273 7214

03 NZ Building Subcontractors Federation (NZBSF) – Registered Master Builders (RMB) / NZBSF Standard Subcontract conditions >
Standard Subcontract Conditions >

Considerable effort has been put in by many individuals representing RMB and different subcontracting groups under NZBSF towards developing a combined standard subcontract.

The objective is to have a subcontract that is widely used with a minimum of amendment, but one that clearly spells out the responsibilities, obligations and risks for each party.

The format will be to have a few pages of special conditions at the front that spell out all the relevant items that may differ between different contracts and will provide the subcontractor with most of the information required to understand and assess the risks. It will cover items such as bonds, guarantees, insurance, retentions etc as well as information regarding timing for claims and payments and any non standard items agreed between the parties for that particular contract or trade. The body of the document will cover all the standard items that should not change unless specifically noted in the Special Conditions section.

It will include sample forms that may be used for payment claims, payment schedules, and bonds. It also contains sample pre letting meeting documentation as the committee felt pre letting meetings should be encouraged.

A draft document has been completed but it is going through several iterations of “plain English” editing and legal reviews from both sides. Further meetings are scheduled for 22 April and 8 & 9 June.

It is hoped to have a draft available for distribution to various contracting and subcontracting organizations by the end of June.

It will not satisfy contractors who will see it as taking away some of their power, nor will it satisfy subcontractors who will see it as still too onerous. Hopefully with goodwill on each side we will be able to get wide acceptance which will ultimately benefit the whole industry.

Subcontractor or Specialist Trades?

There is a proposal to change the terminology used from “Subcontractor” to “Specialist Trade” or “Specialist Contractor”. Subcontractors typically complete 85 – 90% of construction contracts and it is felt that the term subcontractor has negative connotations

whereas Specialist Trade more accurately reflects the role in today’s industry.

It is hoped a change of terminology would recognize the real significance of these organizations, and also inspire some to lift their game and become more professional. It is only a proposal at this stage but if it goes ahead it would require proper marketing input.

04 Prison Labour - Corrections Inmate Employment (CIE) – Market Place Activities >

On 19th of February 2009 PCNZ representatives Russell Bennett and Paul Cane met with the Minister of Corrections the Hon. Judith Collins in Wellington.

It was a very positive meeting. The Minister heard PCNZ’s comments on undercutting, BCITO training, lawyers opinions on CIE market place activities and precast quality with respect to Corrections operations.

The Minister then undertook to gather further information with a view to working closely with Precast NZ to reach a satisfactory solution agreeable to both parties.

The Media:

The Minister was appreciative that PCNZ had not exploited opportunities to go public with the media.

PCNZ feels that it would not be in PCNZ’s immediate interests to offend the Minister by going public.

The media may be an option in the future but until the new Minister has had the opportunity to research and respond to PCNZ the PCNZ Executive will not be commenting to the media.

At the present time a meeting with the CIE management is in the process of being arranged.

05 Industry Review of the Department of Labour - Code of Practice for the Safe Handling, Transportation and Erection of Precast Concrete >

Precast New Zealand and industry representatives have completed the Code of Practice review. The final draft has been forward to the Dept. of Labour for publication and Ministerial approval.

Next steps: Latham Judgment

A recent District Court judgment has brought to the notice of the Code of Practice committee the need for a possible review of the “no go” areas for personnel when lifting is in progress. A further meeting will be held to consider the relevant safety recommendations coming from the judgment.

06 Plant Certification - Progress >

Paul Sweetman (HEB Precast) who is leading this project along with support from Rod Fulford and Ross Cato held their most recent meeting on 12 March 2009. At this meeting Paul tabled a Plant Certification Submission template. The content of this template will be assessed against the approved PCNZ policy and its policy statement. When that is complete it is intended to develop the documentation templates required to enable Precasters to apply for Plant Certification.

07 PCNZ Sales Figures >

The attached sales figures are a composite of Precast NZ Inc. Members sales declarations to March 08.

Financial Years to March	National GST exclusive Sales Returns x \$1,000	Annual Increase/decrease %	Membership Nos
F 99-01	\$104,761		20
F 01-02	\$102,356	-2%	19
F 02-03	\$110,784	8%	20
F 03-04	\$134,163	21%	19
F 04-05	\$177,783	33%	20
F 05-06	\$195,813	10%	20
F 06-07	\$203,333	4%	19
F 07-08	\$169,972	-16%	18
F 08-09			

08 NZ Concrete Industry Conference October 2008 >

This year’s NZ Concrete Industry Conference will again be held at the Rotorua Convention Centre from 08-10 October 2009. The conference will be an engaging and entertaining weekend providing plenty of opportunity for networking, learning and fun, in one of New Zealand’s most popular holiday destinations.

09 NPCAA links to technical publications >

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

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/>



Overview:

Stevenson Precast Systems Ltd is a specialist supplier of precast concrete products to the Auckland and Waikato markets. Stevenson Precast Systems is part of the wider Stevenson Group, as part of the Stevenson Group the company is committed to old-fashioned philosophies and values, which include integrity, quality and "going the extra mile" to provide service.

We are committed to delivering quality product on time and have earned a reputation for the accuracy of our pricing and ability to meet programme requirements and tight production deadlines, which is vitally important in the modern construction industry.

Examples of Products:

Supported by our team of committed and experienced estimators, engineers, project managers and manufacturing staff, Stevenson Precast supplies panels, architectural panels, beams, columns, stairs, and custom made precast products for all types of construction projects.

Research & Development

Stevenson Precast in conjunction with Stevenson Concrete are able to offer to a wide range of high quality specialist concrete mixes including self-compacting concrete, high performance concrete, marine concrete and architectural concrete. Concrete samples including precast samples are manufactured for approval to suit client requirements.

Recent Projects:

Recent projects include Carlaw Park commercial precinct, Sylvia Park car park, Manukau Police Station, Bell Tea, Manukau Hospital, NZ Post, Whangaparaoa College, Blackwood Paykels, Steel & Tube and numerous other projects of varying size and complexity.

Client Services:

- Budget estimates and quotations.
- Technical advice at design stage including cost saving queries.
- Purpose made product samples.
- As built drawings / shop drawings and producer statement.
- Single point of contact / individual project manager for duration of project from contract signing to issuing of producer statement, including managing of all deliveries, queries, payment claims etc.

For More information:

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Facsimile: (09) 915 7878

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Email: ess@stevensons.co.nz

Website: www.stevensons.co.nz





Overview:

Bridgeman Concrete was established in Hastings in 1967. In Napier 1971, Tauranga 1988, Hamilton 1992, Rotorua 1995, Papakura 1999 and East Tamaki in 2005.

We pride ourselves on having a select, experienced and professional team with centuries of combined specific ready mix concrete knowledge.

We have a small open management structure and highly value close personal relationships with our clients.

Led by Nick Tabrum REA (who has 20 years experience in the production, mix designing and quality control of concrete), our technical team thrives on exceeding the requirements of our Precast concrete clients. We also have concrete technicians available for on-site technical support and laboratories in Hastings and East Tamaki.

Bridgeman Concrete is a member of NZRMCA, Precast New Zealand and all operations are Graded Plants and produce concrete to NZS 3104:2003 "Specification for Concrete Production"

We would welcome your call to discuss your next project.

For More information:

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