

# PRECAST NEWS 07

MEMBERS/INDUSTRY EDITION NOVEMBER 08

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



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## WORD FROM THE PRESIDENT



Welcome to the 7th issue of the Precast New Zealand Industry Newsletter.

At the October 2nd AGM in Rotorua elections were held for the bi-annual changing of the guard of Precast NZ's leadership. I'm John Marshall of Stahlton stepping up from Vice President to President and my new "wingman" elected as Vice President is Ron Dickson of Stevenson Precast. Paul Sweetman of HEB Precast and Paul Cane of Stresscrete Northern were elected Executive Officers.

Firstly I would like to acknowledge the fantastic job Russell Bennetto did holding the reins as president. Secondly I acknowledge the passion and willingness for involvement of our existing corporate and associate members, as well as CCANZ in supporting our industry and Precast NZ. We couldn't exist without it.

This leads me to outline a significant outcome of the AGM which approved the restructuring of PCNZ for the future. The Executive dedicate their own costs and time for the greater good of the industry to represent and attend various industry organization meetings, to chair Precast NZ project meetings, as well as trying to run their respective businesses. This led to a major risk that projects would not receive the time necessary for their satisfactory completion.

A committee was formed to address this issue and to recommend the path forward for Precast NZ. The committee recommended that Executive Members should volunteer to lead and be responsible for at least one project. If a project did not attract a leader then the project would be considered to not have sufficient industry importance.

I encourage corporate members with an interest in a particular project to make contact with the project leader and offer assistance to help its progress.

A further restructuring recommendation was the appointment of Rod Fulford as Executive Director charged to use his vast experience to assist in the day to day running of PCNZ between ski trips.

Peter Watson, Duncan Morrison and, through Golden Bay, Len McSaveney have offered their services and knowledge as industry enthusiasts to help projects gain momentum.

We have also secured additional funding for pre-approved projects from Holcim Cement, Golden Bay Cement and Stahlton Engineered Concrete of Fulton Hogan.

As the Northern Manager of Stahlton, based in Christchurch, my role involves a fair amount of travel around New Zealand. One initiative I would like to bring to the presidential role is visiting our members by appointment to gain some face to face feedback for improvements, updating members about PCNZ activities and offering any of my experience gained over 20 years in the industry to ensure our members get value from their support of PCNZ. Last month I visited Hugh Lattey of Lattey Civil Contractors in Hastings, and it was a good chance to meet the members that make up this great organization. I would also encourage members to involve their key suppliers and customers by providing factory tours for example, for new associate memberships and promoting PCNZ and the precast concrete industry. Brochures can be obtained from our website: [www.precastnz.org.nz](http://www.precastnz.org.nz).

I look forward to facing the challenges that meet our industry over the next 2 years, in an industry I am passionate to see is successful for both PCNZ members and the users of our products.

This edition of our newsletter features the company profiles of a corporate members Bradford Precast Ltd from the Mainland who is a supplier of structural and architectural precast, Stresscrete Precast Group and an associate member Fletcher Reinforcing who supply prestressing strand, reinforcing steel and a variety of other steel products to our industry.

**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 produce quality precast products into the market place. This is a key role to providing succession for the future of our industry.

New trainees to 30 August 2008 number 113, 5 of which have completed their unit standards. Total number undergoing unit standard training within the precast industry is 120. A disappointing statistic is that 80 were discontinued predominantly in Auckland region.

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

### Background

Following the Jeff Matthews test on Hollowcore flooring at Canterbury University which showed unexpected failure mechanisms, a group of academics, professionals, and industry representatives was convened. Their purpose was to examine the implications of the observed behaviour and to come up with possible design modifications, test them, and make recommendations for improved future use. The precast industry was very involved in this process and funded further testing of design modifications and construction details. The process worked well and modified details resulting from that process have been incorporated into New Zealand standards enabling Hollowcore flooring to continue to be used with confidence that it can sustain forces and deformations likely to be imposed on it by extreme seismic events in all but the most unusual situations.

### Seismic Retrofit Research Board

Subsequently two further groups were formed. One was the Seismic Retrofit Research Board (SRRB) with the objective of investigating the risk imposed on New Zealand's existing building stock by our earthquake threat and examining ways of dealing with that. This looks at buildings from the earliest to those constructed right up until the recent design standards came into force to consider how to bring them up to an acceptable level of earthquake resistance. They will be considering all aspects of building construction as well as precast concrete and various types of flooring system. Although this group is concerned with existing buildings, how they have been constructed, and how to minimize seismic risk, their findings may also have a flow on effect to methods of construction for new buildings.

### Flooring Overview Group

With input from the Structural Engineering Society (SESOC), a second group, the Flooring

Overview Group (FOG) was formed under the auspices of the Department of Building and Housing to examine the implications of the original Matthews test in more detail. This was to consider the possibility that there may be other potential forms of failure that had not previously been considered. This 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. It was intended that investigations by this group should carry on to other types of flooring, but the scope could be broadened further.

To put this into perspective, the Matthews test was in response to a failure observed in a Californian earthquake. That particular failure was limited to one building with unsatisfactory seating details while other buildings and floors in the same area did not exhibit the same problems in that earthquake. Following this, we understand the Californian building authorities have not imposed any changes to their Building Standards for this flooring system, which is in contrast with the New Zealand reaction.

### Flange Supported Double Tees

A popular detail for double tee flooring construction was to use a flange support system. Instead of the flooring unit being supported from underneath, seating is through an extension from its top flange. This can reduce construction height as well as providing other benefits. There have been two main flange support systems used in New Zealand over the years. The "pig tail" or "loop bar" uses specially detailed reinforcing bars, while the "Cazaly" or "Bar Hanger" type uses an extension of solid steel or a structural steel section to transfer the load.

### Loop Bar Flange Supported Double Tees

The loop bar detail was developed by Stresscrete nearly 40 years ago. Its original concept was reviewed by Sir Ron Carter (of Beca Carter Consultants) and incorporated some modifications suggested by him. It was subject to extensive testing initially, and again when modifications to the original detail were proposed. Further tests were periodically carried out as demonstrations simply to provide users and designers with confidence that it would indeed carry the required floor loads with adequate factors of safety.

Development of this detail required an extensive testing regime, and because the final detail was subject to patent protection, its use was initially restricted to the Stresscrete group of companies. Over the last 35 years, many buildings have been constructed using

this detail, and to date authorities have not reported any instances of observed failure or capacity problems associated with it. It has been widely accepted as a standard flange support detail for a wide range of tee depths and applications.

### Design Concerns

On some recent building projects where flange supported double tees were specified, the winning tenders were based on the standard loop bar design which is significantly more cost effective than any alternatives currently available. After the contracts had been awarded, the consultants questioned its design. Although Sir Ron Carter's design method consistently produced conservative estimates of gravity load capacity, it is acknowledged that the design and detailing of the loop bar is not in accordance with the design procedures in the current New Zealand Concrete Standard. Application of the design rules in the standard would not predict loads resembling those consistently demonstrated by testing. This is not surprising as the design procedures in the Standard are written to cover major structural elements such as beams and columns.

A group convened by the Structural Engineering Society (SESOC) has issued recommendations that the loop bar detail not be used. Each member of that group is experienced and well respected in their field, but as far as Precast New Zealand Inc (PCNZ) is aware, most do not have experience of load testing this detail, and members of SESOC with the greatest detailed knowledge and experience of previous testing and design work on the loop bar are not members of that group.

### Addressing Concerns

Although there were design concerns, no problems had arisen over many years of satisfactory use of this widely accepted standard detail. In these circumstances, if there were reasonable concerns, it would have been appropriate to adopt a similar process to that following the Matthews test on Hollowcore. Indeed the precast industry has proposed further testing and requested the DBH to establish a study group to examine the concerns raised.

A study group has recently been convened by DBH to examine the issue, consider previous testing and to look at the concerns being raised. The group consisted of government representatives, academics, practicing consulting engineers, representatives of manufacturers and included expertise in large scale testing. They will be considering

if it is appropriate to make recommendations regarding design or detailing changes, or suggest limitations on the use of this detail. The initial meeting of this study group was held at the University of Auckland on 28 October 2008. Following this, further testing is being commissioned by PCNZ. Once the detail of this testing is available the study group will look at how to best advance the issue.

Because of the interest in the issue, and the implications for existing buildings, DBH will consider implementing their own test programme depending on the outcome of the next tests undertaken and further deliberations.

It is anticipated the detail will also be the subject of further post graduate detailed study, testing and research at Auckland University over the next two years.

The precast flooring industry accepts that knowledge has advanced over the years and design and detailing practices have changed in the light of ongoing research and testing. While the loop bar has only ever been used within certain parameters, it may be that it is now appropriate to place further restrictions or conditions on its use. In the absence of any known problems, a reasoned and in depth investigation would seem an appropriate course of action and one that is fully supported by the precast flooring industry. In the circumstances, an immediate moratorium on its use would seem a rather extreme and unjustified reaction.

There is no question that Precast NZ Inc is committed to the advancement of knowledge and to safe construction practices and it fully supports the involvement of the Department of Building and Housing and the objectives and aims of the group they have formed.

### **03 NZ Building Subcontractors Federation (NZBSF)** > Proposed Combined Registered Master Builders (RMB) / NZBSF Standard Subcontract conditions

Historically, Subcontractors were expected to enter into subcontracts in which the terms and conditions were created by the builders principally to protect the interests of the builders, and these subcontracts were imposed on the subcontractors on a take it or leave it basis.

Negotiating changes was difficult and time consuming. It was also difficult to become familiar with the different forms of subcontract, and even where a "Standard" document was being used, each contractor would add several pages of their own unique specific conditions.

Time spent on familiarization with the different subcontracts, and negotiating appropriate modifications was a costly

waste for all parties and not conducive to commencing the relationship on good terms.

Over many years Subcontractors have tried to engage with Contractor organizations such as RMB, or individual Contractors to have input into Subcontract documents in an effort to develop more equitable terms and obtain greater clarity so the subcontractors could fully understand the work they were expected to perform and the allocation of risk. Subcontractors (or more appropriately Specialist Contractors) are typically responsible for 80% to 90% of a building project, with the Head Contractor fulfilling a Project Management role.

Obviously there is a very real interdependence between the Head Contractors and their Specialist Contractors and the relationships should be for the benefit of all parties.

Despite the obvious need, attempts by Specialist Contractors and their organizations to work with the Contractors to develop better Subcontract Conditions have been unsuccessful until last year when the NZBSF approached Standards New Zealand with a view to developing a New Zealand Standard for Subcontract conditions. Following meetings of interested parties to consider development of New Zealand Standard, RMB and NZBSF established a joint working group to try to develop a joint set of standard Subcontract Conditions.

The objectives were

- To have a standard document that could be used without amendment across a wide range of projects.
- To have a document where responsibilities were clear and understood by both parties prior to commencing work.
- To remove some of the more onerous terms being incorporated into subcontract documents.

Unless the finished document was one that the majority of Contractors would be prepared to use, it would be a waste of effort. For this reason some Specialist Contractors may be disappointed that the conditions are not more favourable to the Subcontractor, but if the stated objectives are achieved, it will represent significant progress. It will also establish the first standard Subcontract with input from both parties, and that should ensure continued bipartisan involvement as the document goes through future amendments and development.

Considerable effort has gone into reviewing different documents and trying to capture most areas of concern. The document is rather lengthy at this stage. This is because of the inclusion of a number of clauses that have been dropped from some of the more recent standard documents and the addition

of appendices. Hopefully the addition of these extra clauses will reduce the need for Contractors to add pages of their own special conditions.

The committee considers "Pre Letting Meetings" are highly desirable and to be encouraged. To this end draft example minutes for such meetings have been appended and reference to them included in "Subcontract Specific Conditions" "Additional Documents" which will take precedence.

An appendix covers changes applicable to "Supply Only" subcontracts. There are a number of clauses in the contract that will not apply to "Supply Only" Subcontracts, but these have been ignored as they will have no effect anyway.

There will be a number of other specifics relating to different trades etc that have not been covered, and these should be included in the pre letting meeting or the "Special Conditions" of the "Subcontract Specific Conditions". This will be the case for suppliers of precast concrete products, and they, along with other trades, will need to ensure items of importance to them are covered.

A two day meeting is scheduled for 10 and 11 November 2008 in Wellington to review a full draft.

This will attempt to get agreement on each individual clause. There will also be specialist input for insurance, and the document will then go for legal review as well as being edited for use of plain English to make it more easily understood.

There are a number of further steps prior to distribution for comment by member organizations and to other organizations to see if we can get a wider acceptance of it.

An approach has been made from parties involved in house construction but at this stage the group is limiting its considerations to the typical Head Contractor / Subcontractor relationship for larger projects but that will not prevent its use on smaller jobs although it would be "overkill" for many.

It is planned to have the document available around mid 2009. A guide for its use will be developed and a series of short seminars may be held around the country to explain it and encourage its use.

### **04 NPCAA links to technical publications** > Are you interested in obtaining technical 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/>

**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 almost completed the Code of Practice review. Eight meetings have been held over the period February to October 2008 and a final draft is now ready for signoff by the attending committee.

**Next steps:**

PCNZ will provide the finalized CoP text to the Department of Labour to commence preparing the updated CoP to receive Ministerial approval.

This will be followed by a wide circulation of industry associations for comment. At this point it may be necessary to arrange a

committee review. DOL have agreed to place the updated CoP on their web-site for the purpose of reaching industry.

**06 NZ Concrete Industry Conference October 2008** > This year's NZ

Concrete Industry Conference was held at the Rotorua Convention Centre from 2-4 October 2008. Aply hosted by President Chris Munn (who also presented a paper The Pike River Coal Mine Project) the conference was once again an engaging and entertaining weekend providing plenty of opportunity for networking, learning and fun, in one of New Zealand's most popular holiday destinations.

The technical program included industry-leading presenters and projects, underpinned by a look at the year's hot topics.

**07 Plant Certification** > Paul Sweetman (HEB Precast) has volunteered to lead this project. Paul has formed a small team to progress this long running under-resourced project. The objective is to ensure members maintain minimum product quality, environmental and safety levels for the benefit of our members and customers. If a plant certification appraisal indicates that a corporate member has gaps in their procedures then that plant will be assisted to close those gaps for the good of the precast industry.

The current project status is that a brief overview of the policy and policy statement was presented for approval to the Executive. This approval was given and now the sub-committee will develop the project detail.

MEMBERSHIP

<b>CORPORATE MEMBERS</b>	<b>PHONE No.</b>	<b>ASSOCIATE MEMBERS</b>	<b>PHONE No.</b>
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
Fulton Hogan Concrete Div	03 418 2880	Firth Industries /Certified Conc.	09 525 9193
Heb Precast	07 575 2325	Fletcher Reinforcing Ltd	09 270 4247
Hynds Precast	09 274 0316	Holcim New Zealand Ltd	09 634 0132
Lattay Civil Engineers Ltd	06 879 8364	Humes Pipeline Systems	09 580 0781
Precast Compts (Wgtn) Ltd	06 364 8355	Mainzeal Property & Construction Ltd	09 375 2100
Precast H.B. Ltd	06 835 8315	Mike Herlihy Consulting Ltd	03 325 1165
Smith Crane & Construction Ltd	03 359 7759	Nawkaw Australia	09 486 1615
Stahlton Prestressed Concrete	09 831 0107	RC Macdonald Ltd	04 472 4924
Stevenson Precast Sys. Ltd	09 274 0726	Reid Engineering Systems	09 444 4122
Stresscrete Northern Ltd. (Papakura)	09 295 0610	S Austin Carr & Co Ltd	09 535 5245
Stresscrete Wellington Ltd. (Otaki)	03 344 3014	Sika (NZ) Ltd	09 828 7002
Theelin Construction	03 544 8906		
Wilco Precast Ltd	09 295 1060		
Wilson Precast Construction Ltd	09 294 7207		



## Overview:

Bradford's Precast facility was established in 1987 to produce the Precast concrete cladding panels for the redevelopment of the Christchurch Public Hospital.

In the years since we have grown into one of the South Island's premiere precasting operations with perhaps the largest capacity. We have earned ourselves a reputation for quality and innovation and as a result we have been asked to undertake a wide range of projects throughout the country. We have a policy of not compromising quality for price and have forged a reputation for delivering quality on time. The following is a selection of some of the major projects on which we have supplied the Precast concrete.

## Tourist Industry:

Boxer Hill Clubhouse – Arrowtown (Winner of NZ Architectural awards)  
Brinkley Village – Methven  
Christchurch Casino  
Dunedin Casino  
Queenstown Casino  
Lakefront Hotel – Queenstown (Cophorne Hotel)  
Millennium Hotel – Queenstown  
Shotover River Resort – Queenstown  
Luxmore Resort Hotel – Te Anau  
The Hermitage – Mt. Cook

## Education:

University of Canterbury Commerce Building and Halls of Residence  
Villa Maria Auditorium – Christchurch  
Hagley High School Teaching Block – Christchurch  
St Andrew's College new Technology Building – Christchurch

## Processing:

Canterbury Meat Packers – Ashburton  
Five Star Beef – Ashburton  
Butter Plant Building – Clandeboye  
Powder Plant Building 1 Synalait – Dunsandel  
Freezing Works – Pukeuri  
PPCS Lamb Cutting Plant – Fairton

## Commerce and Retail:

ANZ Bank – Christchurch  
ASB Building – Christchurch  
Biotron Research Facility – Lincoln University  
Countdown – Kaiapoi  
New World – Frankton  
New World – Waimate  
Smith City – Belfast  
Farmers – Ashburton  
Pack'n'Save – Timaru  
The Warehouse – Queenstown  
Shotover Street Development – Queenstown



## Houses

Alderson Lodge – Wanaka  
Smith House – Christchurch (Winner of National House of the Year 2003)  
Brosnan House – Timaru  
Jagged Edge – Queenstown  
Rackley House – Nelson  
Queen Ward House – Rangiora  
Holmes House – Ashburton  
Gallery Apartments – Christchurch  
McRae House – Wanaka  
Prebble House – Christchurch  
Tudor House – Christchurch

## Various

Ashburton Event Centre  
Christchurch Airport Expansion  
Department of Social Welfare – Timaru  
Hadlee Stand, Jade Stadium – Christchurch  
South Island Leisure Centre – Invercargill  
Selwyn Council Buildings – Rolleston  
Lamb & Hayward Funeral Home – Rangiora  
Theatre Royal Upgrade – Christchurch  
Pier Terminus Building – Christchurch

## Government Work

Paparua Prison (Gate Houses)  
Rolleston Prison (YJS Youth Offenders)

## For More information:

### Bradford Precase Ltd

Telephone: 03 308 9039

Facsimile: 03 308 6300

General Manager: Greg Fleming

Website: [www.bradfords.co.nz](http://www.bradfords.co.nz)



**Overview:**

Fletcher Reinforcing offers a complete service of reinforcing steel requirements including estimating and pricing, detailing, supply, cut, bend and fabrication to all aspects of the construction industry. We supply products to many precast operations around the country.

**Estimating, Quoting and Detailing:**

We offer a free, no obligation quoting service and our team of estimators and detailers have many years of experience behind them. Our detailing/contract management system is the most advanced in New Zealand and provides more detailed reports than those from our competitors.

**Reinforcing Cutting and Bending and Fabrication:**

Fletcher Reinforcing has one of the most comprehensive and advanced range of cutting and bending machines in New Zealand. We also offer prefabrication and on site fabrication

**Contact us at eight convenient locations**

**Auckland** 5 Beach Road, PO Box 22-201  
Otahuhu, Auckland  
Ph: (09) 270 4247, Fax: (09) 270 0861

**Tauranga** 19 Reynolds Place  
PO Box 11-076, Papamoa  
Ph: (07) 542 0982, Fax: (07) 542 0983

**Wellington** Burnham Street, PO Box 33-254  
Petone, Wellington  
Ph: (04) 570 8480, Fax: (04) 570 8481

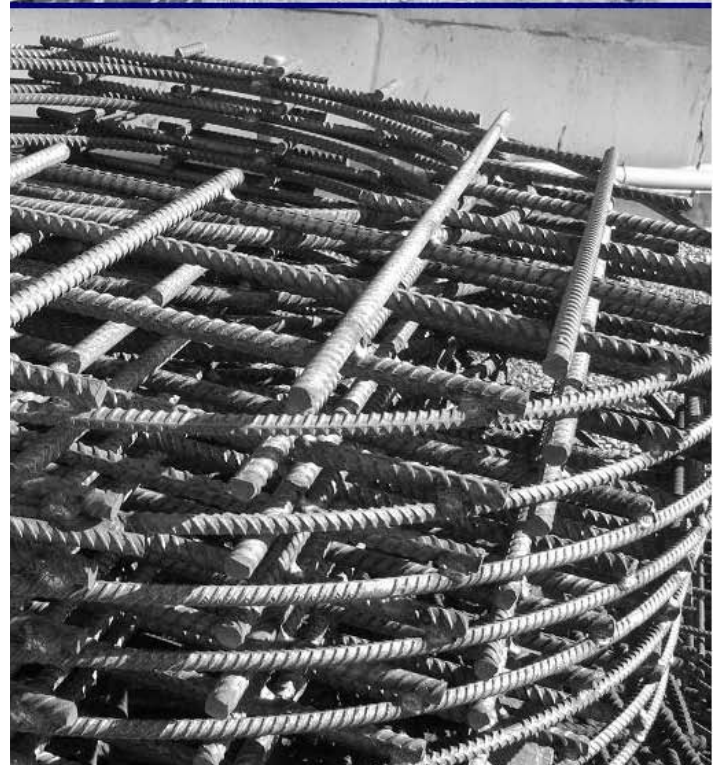
**Dunedin** Corner of Leander and Parry Streets  
PO Box 5681, Dunedin  
Ph: (03) 479 2730, Fax: (03) 479 2731

**Hamilton** Tawa Street Industrial Estate  
PO Box 837, Hamilton  
Ph: (07) 843 6358, Fax: (07) 843 6176

**New Plymouth** 52 Corbett Road  
PO Box 9077, New Plymouth  
Ph: (06) 755 9052, Fax: (06) 755 1760

**Christchurch** Corner of Waltham Road & Mowbray Street  
PO Box 30 183, St Martins, Christchurch  
Ph: (03) 377 1190, Fax: (03) 365 7510

**Invercargill** 54 Tweed Street  
PO Box 957, Invercargill  
Ph: (03) 214 9090, Fax: (03) 214 9099



Visit our web site: [www.fletcherreinforcing.co.nz](http://www.fletcherreinforcing.co.nz)



## New Look to Our Business

*The continuing development of the Stresscrete Precast Group.*

A little over 18 months ago the Stresscrete Precast Group was formed by an amalgamation of three leading businesses; Stresscrete Northern; Stresscrete Wellington and Formstress Precast.

So what can you expect from the new Stresscrete Precast Group?

It's now 100% owned and operated by people with passion and knowledge of the industry who are focused on providing all your Precast and Prestressed design solutions.

In continuing the Group's development, the Cane and Russell families are pleased to welcome Ian and Rochelle Finlayson as General Manager and Contracts Manager/Estimator respectively, and John Blacklow as Commercial Manager into the shareholding of this entirely family-owned business.

Ian and Rochelle have recently joined the Group and offer a wealth of knowledge and experience gained through many years within the industry. Collectively they cover the complete spectrum of Precasting and Prestressing expertise — from Panels through to Bridge Beams. Ian, Rochelle and John are all based at Stresscrete Northern Limited in Papakura, Auckland.

We're excited by this development within our Management Team. We are confident that together with our already established team, the Group and our customers will see the benefits of their added value.

**Paul Cane**, Managing Director

**Brett & Alf Russell**, Directors

**0800 2 PRECAST (0800 27 73 22 78)**



Ian & Rochelle Finlayson, John Blacklow, Paul Cane