

# straight up

THE MAGAZINE OF THE BUILDING OFFICIALS' INSTITUTE OF NEW ZEALAND

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**“We seek to test out new ideas. We propose projects and collaborate with a range of people to make them happen. We seek to exploit the loop-holes or find the triggers of permissions or consents and fly under them. We believe in seeing what IS possible”**

**- Coralie Winn, Director and Co-Founder, Gap Filler – Page 5**

**Gap Filler Summer Pallet Pavilion, photo credit Murray Irwin, 2013).**

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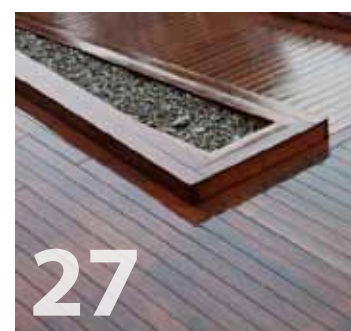
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## IN THIS ISSUE

From The Chief Executive	2
News From The Minister	3
Sector Announcements	4
Gap Filler	6
Christchurch CBD Rebuild	8
Legal Expectations of Building Inspectors	10
A Designer's Perspective	12
Substitution of Materials	18
Commerce Commissions	19
Water NZ Backflow Sig	21
Training Academy	22



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## From the Chief Executive

### **“The Enemy of Great is Good”.**

These words, attributed to Voltaire the French philosopher, were mentioned as part of a recent conversation around business chaos and catastrophes, and have continued to occupy my thoughts.

From my early days with the Institute I foresaw a world where we would have better designed and constructed buildings and the public would thank and praise our Institute members for ensuring better building outcomes. After all, the skills of building surveyors and the building consent process is an owner's best value for money in terms of building compliance.

Our membership makeup consists of building surveyors working in local government, pre-purchase property inspection (PPI) and specialist experts in areas such as weathertight remediation, noise etc. Although we are dominated by building surveyors working in local government and staff supporting this group, our membership has been steadily broadening to a point we are now seeing members move backwards and forwards across the divide between private business and government (central + local) on a regular basis. When one also accepts that our roles are becoming increasingly visible it means public expectations on the Institute and our members where and wherever they work for will escalate.

Over the years our building surveyor membership at local government level has arguably been our core and has also been at the vanguard of building surveying professionalism and quality. Given our momentum over the past few years to move steadily and incrementally towards qualification acceptance and uptake, we are now at a point where significant numbers of members within local government are graduating with their Diplomas in Building Control Surveying. This has tested many of you, but I have yet to meet any graduate who doesn't believe in the process, the need for building surveyors to have a qualification, or accept consistency and ongoing training is part of what we do. Benefits from the commitment to gaining an appropriate and dedicated qualification are starting to show through with increases in productivity, consistency, co-operation, reliability and confidence – all values and benefits vital to the success of the sector, to your employer and to you.

As you know, we work in a very complex and ever-changing workplace, so it goes without saying our employers will want to seek out employees interested in keeping up with new developments and knowledge. That said many

employers still overlook one of the top reasons employees leave their organisations; a lack of career development – learning new skills, techniques, methods, theories etc.; basically the core elements that keep professionalism and quality alive. Career development, or as some call it “talent management” is a tool to impart self-confidence, allow staff to inspire and motivate others, and importantly, do the right things. No matter where you are in your organisation's hierarchy, you are a professional and should feel comfortable and confident about sharing your experiences and knowledge to fellow surveyors and colleagues. That is one of many ways our profession moves from good to great.

Of course BOINZ has been there supporting all the way and we are set to register a record year for the Training Academy having just surpassed our 2013 registrations. Cynics may point to a commitment forced by Regulation 18, however I see a “sea change” in the sector demanding professionalisation, linked to employers finally addressing and assessing staff career needs, retention risks, and an acceptance the building surveying role is highly skilled.

Moving around the country and talking to members and their managers there is no doubt as to the increasing commitment to knowledge and skill development. I am seeing levels of solid commitment and excellence up and down the country but can we say we have actually moved from “good to great”? The answer is most likely we are on the pathway to a point where “good” will be eclipsed by “great” and the sector will ultimately reap the reward of positive public recognition and reliance. The additional reward, and one yet to be realised is the career pathways our commitment to training and qualifications opens up. BOINZ is already working in the space to create a public awareness about the exciting challenges a career in building surveying offers. It is also gratifying to see Auckland Council's graduate programme encouraging bright young minds into our sector.

With the recent election results indicating New Zealanders support a stable leadership platform it would not be improbable to expect the incoming National led government to continue to focus on housing affordability, smoothing the boom bust cycle, improving construction sector productivity, and maintaining momentum of the Canterbury Rebuild. I believe we will also see some changes to the building consenting system nationally, as there is room for improvement particularly in areas of national consistency and efficiency.

So let's not forget the importance of the role of building surveyors in this political vision. No matter what the area of work, we provide professional advice and analysis on property and construction which spans across residential, commercial, industrial public and agricultural projects. These building projects can be small, large, new, additive, remediative, heritage, complex, specialist, and will vary in price and products used. Ultimately we need to ensure the buildings are safe, fit for purpose and comply with regulatory requirements. Quite a job description by any stretch of the imagination, and a very good reason for ensuring competency.

So we are on the pathway – what about all the others in the building and construction chain? My prediction is, our wider build and construction outcomes will only be “good and not great” until we initiate a strengthening of skills development and committed leadership across the entire built sector. Appropriate skills capacity is desperately needed across the built environment sectors from design through to the build trades to ensure customers of new builds, additions, renovations and rebuilds end up the quality outcome they pay for. All too often the pressure on “the build” is on initial pricing when the reality is the owner ends up paying for poor quality long after the 10 year warranty limitation. We are already seeing and hearing horror stories around standards of new builds particularly in the residential sector. And let's not forget the weather tightness legacy which is already heading to being an inter-generational handicap and a drag on our economy. Is it time for more robust workplace requirements and accountabilities.

Our boom bust cycle puts pressure on skills availability, but there is no excuse for the low quality plans received from lowly skilled and sloppy designers or the limited knowledge of many builders in regard to the building code, who use the consenting system as their “private moderation vehicle”. Thankfully at the highest level the industry associations that support these groups recognise they have a role to play to lift the professionalism, quality and credibility of their lower skilled members. As the entire design, building and construction sector moves to lift its game, pricing and quality will improve, the cowboys will be forced out and unskilled labour will not be left unsupervised to impinge on quality.

In July our President Stu Geddes and I met with the then new Minister of Building and Construction Hon Dr Nick Smith. Our intention was simple – we wanted the Minister to understand Building Surveyors, our role in the building process – whether working in the public or private sector – and that we as an Institute were leading the change and lifting our game professionalising our sector and committing to “quality” building outcomes.

We debated the tensions between price and quality and discussed increasing building compliance flexibility versus risk for building owners and the rate payer. We hope we left the Minister with the impression the Institute was forward thinking, professionalising our membership and adding value to the built sector through positive partnerships particularly in the training area with other groups. As I write this the Prime Minister has yet to announce his Cabinet Portfolios, however whoever is the incoming Minister of Building and Construction we will want them to know the Institute is committed to assisting the built environment, improve its outcomes, ensuring the public have confidence in organisations and the people they employ do design, build and comply their buildings. Part of moving from good to great is understanding the now so you have a vision for the future.

**Nick Hill**  
**Chief Executive**

# Summary of Minister's speech to BECA and IPENZ engineers event:

## Minister's announces major changes proposed in respect of the regulation of engineering.

On the 4th September, Hon Dr Nick Smith spoke to the delegates of an IPENZ Centennial event, updating on progress on the implementation of the Royal Commission's recommendations, and also announced significant proposed changes to the regulation of professional engineering in New Zealand.

These 4 major proposed changes include:

1. The introduction of a legal requirement that significant buildings be designed and certified by a Chartered Professional Engineer, registered in an appropriate practice field.
2. To have a robust system to hold engineers to account when their work is substandard.
3. In respect of the Chartered Professional Engineer title and standard, to ensure a better consistency of assessment, greater degree of rigour and improved connectedness with equivalent overseas titles and qualifications. This includes introducing a tiered qualification system that better identifies the type of design and supervision work that an engineer is sufficiently qualified and experienced to do.
4. To put more effective checks and balances into the regulatory system, proposing the registration authority

be 50% nominated by the profession, and 50% by the responsible Minister. It is also proposed that there be a new construction industry occupational body to approve the standards, make disciplinary decisions on serious breaches and be responsible for appeals.

The proposals announced were released in a discussion paper for consultation, in which the wide input from the profession and public was welcomed by the end of October.

## Minister updates on the finalisation of Government's approach to earthquake-prone buildings.

Dr Nick Smith also spoke about the next major phase of work regarding finalising the Government's approach to earthquake-prone buildings. "This is a fraught task that requires a delicate balancing of interests of public safety, significant economic costs and the desire to retain heritage buildings. This issue is causing significant angst for some local councils that are worried, particularly in many of our smaller provincial towns, of the huge impact of this law on their communities".

The Government has formed a joint working party with Local Government New Zealand to work through these issues. The decision has been made to exclude farm buildings, with a note that other classes of low-risk buildings might also be excluded.

## Two issues the Government believes will not be revisited:

1. **The requirement for a nationally consistent approach.** "This was a strong recommendation of the Royal Commission, and we see no advantages in every one of New Zealand's 69 local authorities grappling with this complex issue. Few realise that the New Building Standard already takes into account the differing earthquake risk around New Zealand, just as it does for wind and snow loadings, and this is not a sound reason for dropping a national approach".
2. **The Government sees no justification to shift from the 34 per cent New Building Standard threshold for defining earthquake-prone buildings.** "We believe a lesser standard would put insufficient weight on safety, and a greater level would be putting too large a cost burden on building upgrades. The areas where we are exploring alternative solutions are in focusing upgrades on those building components that pose greatest risk, on how best to deal with buildings with low occupancy, and what range of age of buildings should be required to have an assessment." (For full media release please click here - <http://www.beehive.govt.nz/speech/speech-beca-and-ipenz-engineers-event>)

## From the Technical Manager, Tony Conder

Many will know me from my previous lives; at BRANZ, my time as a contract writer and sojourn at the DBH (MBIE) as well as the honorary National Training Advisor for BOINZ. Well we all progress and since July, I have been happily employed with Nick and the crew as Technical Manager.

The priorities for the position at the moment are to continue to update existing courses and complete the suite of short courses that support the National Diplomas. H1 has recently been introduced with rave reviews and B2 is currently in the pipeline with other updates having been made, particularly to the C course – so keep watching this space.

Another very important and exciting role that looks to the future of the Building Surveying industry is the Targeted Review of Qualifications (TRoQ). This review is being carried out by NZQA for all qualifications and is being led by BOINZ in conjunction with Otago Polytechnic and The Skills Organisation NZ in conjunction with other stakeholders. It will result in an Industry qualification tailored specifically to the needs of Building Surveyors working in areas of building compliance.

I must say that after my long association with BOINZ, working here is like coming home. I look forward to getting to know our members better and assisting them in a very challenging, but very important and rewarding career.

**Tony Conder, Technical Manager, Building Officials Institute of New Zealand.**



# NZ Wood Processors' Association and Pine Manufacturers Association Merger launched

The merger of New Zealand's Wood Processors' Association and Pine Manufacturers Association into the Wood Processors and Manufacturers Association of New Zealand (WPMA) was celebrated at the recent official launch.

The idea for the merger was seeded a few years ago and through the effort of both boards led by Chairs Brian Stanley and Tom Boon over the last 18 months, an association has been created that powerfully links up the whole value chain for wood-based products: saw millers, panel makers, pulp and paper makers, packaging providers, construction component fabricators, bio-chemical and bio-energy producers and the vital support industries that make up one of New Zealand's biggest manufacturing and exports sectors. Representatives from all parts of New Zealand's manufacturing and primary industries, as well as government departments including industry regulators, trade facilitators, science and technology investors and skills providers attended the official launch.

Brian Stanley, WPMA Chair remarked, "we are here tonight to speak to the whole of New Zealand Inc and not just ourselves – a real change in the way we operate".

Brian highlighted that as the only major industry that is based on totally renewable natural resources, the industry can create new jobs and attract new investment to the regions whilst protecting the environment. Brian introduced the idea that the wood industry is "Renewing New Zealand" and challenged other sectors to make the same comprehensive claims.

The Ambassador of Japan to New Zealand, Yasuaki Nowaga was the keynote speaker, discussing the scale of the Japan/New Zealand relationship in the wood sector, the cultural affinity the Japanese have for wood, the value of wood in providing resilience to natural disasters and the plans for future large scale building in wood, including the construction of facilities to accommodate the Tokyo Olympics in 2020. He also noted that Japan needs no convincing that wood is good and that New Zealand is a trusted supplier.

Vice Chair Tom Boon concluded by outlining what the CEO of a member company now expects from WPMA –

1. Advocate for a level playing field in international trade
2. Up to date building standards that recognise that wood is a supplier construction material
3. That wood and the wood industry must be promoted through the NZ Wood Industry story.

## Highlights from Keynote Speech by Ambassador of Japan to New Zealand, Yasuaki Nogawa, at WPMA launch event:

- Relationship between New Zealand's and Japan's wood industries goes back over 50 years
- For the past half century, New Zealand and Japan have been great partners in the wood industry – In 1995, New Zealand exported 400,000 cubic meters of logs and sawn timber to Japan. Today over 10% of Japan's imported logs come from New Zealand.
- Recently, Oji Holdings Corporation and the Innovation Network Corporation of Japan made a significant investment of more than 1 billion dollars to acquire the Carter Holt Harvey's pulp, paper and packaging business in New Zealand.
- Wood products are receiving more and more attention in Japan – an example of this is the Wood First Act passed in October 2010 which will increase the use of wood for public buildings, many of which are currently non-wooden buildings. The government will also promote the use of wood buildings among local government and the private sector, aiming to have a ripple effect on housing and other types of buildings in order to increase the general demand for wood.
- Although the Wood First legislation does not make wood buildings compulsory, wood is increasingly being utilised for government buildings and warehouses and its uses are growing wider with previously unheard of examples such as large wooden cow barns and wooden guardrails.
- The Wood Use Points Program started last April encourages the use of wood in housing and interior and exterior work by giving out points to those who use wood or buy wooden products (which can be claimed for local agricultural projects, gift vouchers or donated to help with conservation of forests). New Zealand's Radiata pine is eligible within this programme.
- These initiatives are based on the philosophy that the conservation of forests not only ensures the production of wood and employment but also protects water sources and biodiversity as well as countering climate change.
- In disaster-affected areas, wood is being used extensively in houses and buildings as part of the new urban planning processes.
- Japan is a country full of wood architecture. Built in the 7th century, Horyuji (or Temple of the Flourishing Law) is widely acknowledged to be one of the oldest wooden buildings in the world and there are many other old wooden buildings in Japan. Such heritage buildings need to be repaired and rebuilt every 100 years; however recently it has become increasingly difficult to obtain timber of the appropriate width and length required for repairing these heritage buildings and to help with this Japan has begun growing trees over 200 to 400 years in their national forests.
- A pilot construction design using Cross Laminated Timber (CLT) was completed in March and in its new Growth Strategy announced in June the Japanese government articulated that design methods using CLT will be developed by 2016.
- Another innovative technology being developed by Japan is called cellulose nanofiber materials. Many of the technologies of nanocellulose are still being developed; however many research institutes and paper manufacturing companies as well as electronics, automobile and cosmetic companies are working to advance research and development of these materials, with practical applications hopefully seen in 5 to 10 years time.



## Registered Master Builders Appoints New CEO

The Boards of the Registered Master Builders Association (RMBA) and Master Build Services Ltd (MBS) are pleased to announce the appointment of David Kelly as their new Chief Executive.

RMBA Chairman Anthony Leighs said that he's thrilled that the organisations have secured such a high calibre leader in David particularly with his exceptional level of understanding of the construction industry.

"We are really excited about David's appointment. The depth of industry experience he will bring to enhance the delivery of services to our members and the wider industry is second to none," says Mr Leighs.

"RMBA is at a milestone time in its history and we recognise that David's strong leadership qualities, industry knowledge along with valuable networks and relationships, will strengthen Registered Master Builders industry leadership position."

David has spent the last seven years with the Ministry of Business Employment and Innovation (MBIE formerly DBH) as its Director Canterbury Recovery Programme and, prior to this, the Deputy Chief Executive Building Quality. Both of these roles have included developing and establishing programmes of work vital to the industry and requiring large degrees of sector engagement for successful delivery. His previous experience is in Local Government.

"I am excited and privileged to be taking up



the role of Chief Executive with Registered Master Builders and Master Build Services," David says.

"Registered Master Builders have a long and proud history supporting the construction industry. We have worked closely over a number of years on key issues and opportunities for the sector and I have always found them to be thoroughly professional and forward looking".

"I look forward to building on the strong foundations that are already in place to support the members in continuing to provide excellent services to their clients, and to promote a professional and productive construction sector."

David will start his role at RMBA on 10 November 2014.

## Wood Processors & Manufacturers Association of New Zealand welcome the new Technical Manager



Jeff Parker has returned from Australia to take up the Technical Manager's position and is looking forward to working with WPMA members and the wood industry. Jeff has many years' experience in the industry. He has worked at Forest Research Institute (now SCION), Fletcher Challenge Forests, Carter Holt Harvey, Lockwood Homes and Boral Timber.

Jeff has experience in research, innovation, standards development, quality assurance, energy efficiency in buildings and has been involved in life cycle assessment projects. Jeff is making contact with WPMA members, and engaging with industry on technical needs.

## Council Provides timeframe to Lodge applications involving multi-fuel burners

On the 2nd of September the Invercargill City Council advised people that they only have until Friday the 6th of September to lodge applications for building consents which include multi-fuel burners, following changes to Environment Southland's proposed Regional Air Quality Plan 2014. The new rules, which ban the issuing of permits for non-approved burners are effective from September 6 2014.

The new rules were brought in to raise the air quality in Southland to standards set by the Government and will require all open fires and non-approved burners and boilers within the Invercargill and Gore airsheds to be phased out by January 2029.

The Air Quality Plan also specified new requirements for outdoor barbecues, outdoor fires and fuels for home heating. It affects all Southland Councils which include: Invercargill City Council, Southland District Council, Gore District Council and Environment Southland.

"People can still use gas fires, pellet fires, diesel burners, and wood burners approved by the Government National Environment Standards for Air Quality. You can find an approved list of wood burners at [www.mfe.govt.nz](http://www.mfe.govt.nz) and search for approved wood burners.

Regional Councils are required to take action in the urban areas that are failing to meet the goals in the Government's National Environment Standards for Air Quality (NES). It allows for only one exceedance of the PM standard each winter, both Invercargill and Gore regularly exceed the required standard.

Other rules will take immediate effect, such as the requirement to install only a NES approved burner when installing a new burner or replacing an existing burner or fireplace in the Invercargill and Gore airsheds. This also applies to all properties under 2 hectares throughout Southland including those in townships, rural properties and small lifestyle blocks. Rules relating to the application of agrichemicals and fertilisers and what fuels and materials can be burnt also come into effect immediately.



# PrefabNZ Top Five

PrefabNZ's Pamela Bell headed to Japan for a mix of housing factories and Disneyland experiences, one dominated by dancing robots and the other by, well dancing robots...a visit to four different factories uncovered a mix of panel and volumetric production in both steel and timber. Check out the house models from Misawa Homes, their R & D Centre, and the Sekisui Heim showhome (images below).

Did you know that in Japan, two-storey standalone houses sell around \$2,400 /m2 which is 8% above average house prices and the prefab industry produces 15% of annual housing - output is about 12,000 houses per manufacturer so it only takes two of these large manufacturers to make New Zealand's total annual residential output.



Photo courtesy of NZIA

The Mystery Creek Fielddays presented an opportunity for Keith Hay Homes to showcase their latest design. The Horizon is designed by Andre Hodgskin and is an affordable prefabricated home that combines a simple horizontal aesthetic with a clearly articulated layout to provide a palette for easy living.



PrefabAus announced that they have formed a partnership with the Manufacturing Excellence Taskforce Australia (META) to establish a new hub that is dedicated to increasing the competitiveness of local prefabricated building products. The Hub, which was launched at the PrefabAus conference, aims to grow the Australian prefab industry. (Picture is of One9 Apartment Building in Melbourne)

Auckland firm S3 Architects' recently took out the Akepiro Design Competition with an innovative timber building that will be constructed using a prefabricated cross-laminated timber system.

The competition was organised by the New Zealand Institute of Architects and developer Ockham Residential, and with the support of Auckland Council, and the building will located at 11 Akepiro Street.

The eco-digital fabrication project which runs out of the University of Auckland is interested in pushing the boundaries of what digital technology can do for the design, engineering and construction industries. Take a look at their Ecosystem software project here

(<http://design2edfab.wordpress.com/>)







# Gap Filler

The Arcades. Wolf Just, 2013 – The Arcades. A collaboration between Andrew Just, Ryan Reynolds, Jessica Halliday for FESTA 2012.

Gap Filler is an urban regeneration initiative bringing temporary ideas to life on vacant sites or in vacant buildings in Christchurch. We work with engineers, artists, designers, teachers – anyone really - and every project is volunteer-powered. With the rebuild put at just 10% complete, there is still a huge amount of vacant space in Christchurch and a lot of potential for pushing the boundaries. That's where Gap Filler comes in. Highly collaborative and creative, we find what's possible within the rules and regulations and exploit this for maximum public benefit.

Gap Filler has undertaken more than forty projects in 3.5 years that vary in theme, duration, scale and location. Some have been in For Lease building spaces, but the majority have occupied ex-demolition sites. Well-known projects include the Dance-O-Mat, the Pallet Pavilion, Gap Golf, the Cycle-Powered Cinema and more. Gap Filler is just one of a range of new organisations and projects operating at a grass-roots level. Also, importantly, it is giving people the chance to test out new ideas and get involved. The private and public sector have a huge role to play, but everyday people should be able to participate in their city's recovery too. A great city is like an eco-system. We need the weeds as well as the trees to keep things vital and interesting.

Gap Filler was started in response to the quakes, but has grown to be something that is part of the rebuild, bringing people back in to the city to explore and helping to put Christchurch on the map. This was no more apparent when at the beginning of 2014 Christchurch was listed by the New York Times as the #2 city to visit this year. The city's innovative, creative-led recovery was a key factor, listing Gap Filler as a major driver behind this powerful perception. A range of other projects from small to large are contributing to this new more experimental, innovative identity: Greening the Rubble gardens, Life in Vacant Spaces enabled

projects, the Re:Start container mall, the Transitional (cardboard) Cathedral, Art Box and more.

Gap Filler is a values-led organisation: Collaboration. Creativity. Resourcefulness. Leading by example. Experimentation. Let's come back to the last two.

In all of our projects, we seek to test out new ideas. We propose projects and collaborate with a range of people to make them happen. We seek to exploit the loop-holes or find the triggers of permissions or consents and fly under them. We believe in seeing what IS possible. As I said in a talk to the BOINZ conference in Christchurch in August, we live in a culture of permits. And sadly, many people have internalised this, assuming that things CAN'T be done. Gap Filler is all about encouraging people to experiment in the city, try new ideas, push the limits and bring life to the city through doing so. We seek to show what CAN be done and hopefully, inspire people to try things out for themselves.

We built our HQ, a sub-consent, relocatable office from recycled materials. It fills a gap on a vacant site. Our Dance-O-Mat project is a coin-operated dance floor powered by an ex-laundromat washing machine with speakers on poles, 4m high out of reach.

The iconic community venue, The Pallet Pavilion, was our first project requiring a building consent. The engineered 'building' created using 3000 stacked and pivoted CHEP pallets, had four metre-high walls and no roof. Inside were tables, 'chairs', a range of plants and a stage. Built by 250+ volunteers over six weeks in late 2012, it was a much-needed venue and hosted hundreds of markets, movies, classes, music gigs and more in its 17-month life. It was awarded a silver pin in the BEST Design Awards, 2012 by the Designer's Institute of New Zealand. Intended to last only one Summer, public pressure led to a crowdfunding campaign on PledgeMe

(the largest at that time ever run) that saw \$80 000 raised in 29 days to help retain the Pallet Pavilion for another year.

The consent process was a challenge, despite good support from CCC. From a structural and accessibility point of view, it was pretty straight forward, but the fire component was extremely restrictive and problematic. The Fire Service was concerned about arson risk and potential spread of fire to neighbouring properties. The only way they would support the project was if we agreed to have someone on site 24-hours a day. We did just that, but at a huge financial and emotional cost for our small organisation. For what was originally intended as a 5-month project, our consent was around \$8000. That's a lot for a community project with a budget of 'as little as possible.' We hoped the Pallet Pavilion might inspire other creative, temporary architectural projects in the city, but with such high consent costs, the likelihood of this happening has been reduced. This highlights how after a disaster, processes can prohibit experimentation and exclude community-led projects. Surely it is a good thing for NGOs to be involved in rebuilding after disasters alongside the public and private sector?

There are many shared challenges facing cities. Of late, Gap Filler is approached by local governments around NZ and Australia (Auckland, Perth, Freemantle, Melbourne, Adelaide) about sharing our approach so that more cities can enable creative, community-driven activity to bring new ideas, connectivity and life to our cities. We need to keep striving to find ways to balance risk and safety against enabling experimentation.

**Coralie Winn, Director and Co-Founder, Gap Filler**

*Gap Filler is a registered charity. You can donate or support us via our website: [www.gapfiller.org.nz](http://www.gapfiller.org.nz)*



# GAPFILLER



Dance-O-Mat. Gap Filler – The Superhero Dance Squad in action on the Dance-O-Mat!



Dance-O-Mat. Gap Filler – The Royal Dance-O-Mat – HRH Prince Charles dances up a storm.



The Commons, Gap Filler – Gap Filler HQ, The Commons 2014.



Gap Filler Summer Pallet Pavilion. Guy Jansen, 2013.



Gap Filler Pallet Pavilion. Guy Frederick, 2012.



Gap Filler Pallet Pavilion. Maja Moritz, 2012.



# A look at the Christchurch CBD

As part of this year's Senior Building Control Officers' Forum, delegates were given the opportunity to visit the Christchurch CBD and hear insight about the innovations and challenges being faced during the rebuild. Members Kevin Pointer of Holmes Farsight and Aaron Haymes and Adam Modica of Christchurch City Council lead delegates around key projects, giving them the opportunity to walk the streets and get an up close view of the progress happening within the CBD.

A couple of key project highlights from the tour are described below.

A huge thank you to Kevin Pointer of Holmes Farsight, who provided the following project summaries.

## 134 Victoria St



Number 134 on Victoria Street was the first major rebuild in the area and has an exciting mix of post tensioned laminated timber construction mixed with our favourite material – structural concrete.

Architect Jasper van der Lingen, of Sheppard & Rout explains 134 Victoria St as "A first in Christchurch – a commercial, multi-level, timber-framed building and the way we're using the technology is also a world first. Tensioned cables running through hollow beams are designed to flex and give during an earthquake, then return to their original form". The technology was developed at Canterbury University and the wood used in the framing is radiata pine grown in New Zealand.

More information on the use of post-tensioned laminated veneer lumber (LVL) building system can be found here - <http://architecturenow.co.nz/articles/seismic-design-in-wood/>

(photo credit: Architecture Now)

## Victoria St / Salisbury Street Corner

This area is now starting to see some new construction underway, the new iconic looking building has recently opened and is another mixed use tenancy looking for that work/play vibe that you see in many cities around the world. The Harlequin Restaurant/Bar establishment, owned by Johnny Shwass and was formerly known as Iron side House, was moved to the rear of the site, a new foundation constructed and then the building repositioned back on the

new foundation prior to a full refurbishment undertaken. Rumour has it that you can get a burger for \$500.00?

## Cashel Street

The Cashel street area and the surrounding streets are about to undergo some of the most intensive construction ever seen anywhere in New Zealand. The projects within proximity include the new Justice and Emergency precinct (information below), PWC House, The new Bus Exchange and The new Lichfield Car park building.



(Above - The Bus Interchange – a high-quality facility that has been designed as a place for people using state of the art technology to make buses as efficient as possible. By 2041 the Interchange will be used by about 70,000 people per day – more info here - <https://ccdu.govt.nz/projects-and-precincts/bus-interchange> ).

The planning for Colombo Street is well underway for the new Triangle Centre and on the right hand side of that we will soon hear about the Carter group's plans for the new Crossing Development that is in planning and design stages.

(photo credit: Christchurch Central Development Unit)

## Justice and Emergency Precinct



We're not talking it up when we say this project is big: it's been described as 'the largest multi-agency government co-

location project in New Zealand's history'. The intelligent building and engineering solutions required raised many eyebrows and had heads scratching on numerous sleepless nights – like base isolating a building that doesn't have a basement! Bringing the site design to life was a huge challenge that was met by using Revit as the central communication platform for the many internal and external contributors to the project.

The precinct will be the largest multi-agency government project in New Zealand's history, and is the first major public building to be built in Christchurch by the government since the earthquakes of 2010 and 2011. Another landmark development that Christchurch and indeed New Zealand can be very proud of. Two time-lapse cameras are recording the construction from start to finish with images being updated every 15 minutes. Click here to view the Precinct site web cam - <http://ccdu.govt.nz/projects-and-precincts/justice-and-emergency-services-precinct/precinct-site-web-cam>

More information and the latest news on this site can be found here - <http://www.justice.govt.nz/justice-sector/christchurch-precinct> (photo credit: Christchurch Central Development Unit)

## The Isaac Theatre Royal



The rebuild of Christchurch's cherished 100 year old arts and theatrical performance venue has thrown up some complex engineering design challenges. Preservation of its distinctive façade and elegant décor had to be balanced with the technical realities of site constraints, a tight construction programme and an almost complete rebuild of the majority of the working structure. Designed to match the original layout in terms of sight lines and

access, this world class restoration project will ultimately result in a more robust building that maintains its former spirit and personality. The façade was carefully supported while the area behind was demolished and rebuilt from the foundations up. The historic plaster dome was secured and lowered, allowing restoration of the fragile canvas panels, and the elegant marble staircase protected with a plywood casing. Following the extensive restoration, The Isaac Theatre Royal will again host some of the world's leading performers—as it has for more than a century.

The Isaac Theatre Royal will open in November. For more information on this project click here - <http://www.isaactheatroyal.co.nz/TheatreHistory/EarthquakeUpdates/>

### Christchurch Town Hall



Acclaimed world-wide for both its architecture and acoustics, the Christchurch Town Hall enjoys a nostalgic spot in Cantabrians' hearts. Its position at the centre of the new Performing Arts precinct reinforces its status as a premier gathering place for both performances and events.

This conservation project is both complex and interesting with significant portions being upgraded and restored, and additional areas undergoing a complete rebuild, it offers the full spectrum of challenges.

Following the stabilisation of the ground a new raft foundation will be constructed to tie the existing building elements together, and the completion of the four-year project will see an overall upgrade to 100% of New Building Standard. Maintaining the original identity of the building provides a tangible link to pre-quake Christchurch, this project is currently "On Hold" whilst Christchurch City Council are reviewing budgets.

More information and updates on this project can be found here - <http://www.ccc.govt.nz/cityleisure/projectstoimprovechristchurch/christchurchtownhall/index.aspx>

### Transitional Cathedral



(Photo above taken of delegates during the Senior Building Control Officers' Forum Christchurch CBD Tour)



The first civic building completed as part of Christchurch's post-quake reconstruction, this unique temporary home for the Anglican Cathedral congregation also provides a stunning public venue for concerts, exhibitions, civic and community events. Intense public and media interest has surrounded the project, due in part to the unique construction method and materials used by Pritzker Prize winning Japanese architect, Shigeru Ban (more information on Sigeru and his international projects can be found here - <http://www.pritzkerprize.com/>) The design utilises cardboard tubes reinforced with laminated wood beams and modified shipping containers to provide service areas along sides. An innovative raft foundation system was designed to span areas of potential ground instability in future earthquakes.

Geometric dimensions of the basic A-frame structure were derived from analysing drawings of the original cathedral, and sections of the traditional stained glass rose window have been replicated in the stunning end wall feature. The adoption of innovative materials necessitates challenging the normal means of compliance. This was a challenging and important engineering project for what is already a landmark symbol of the Christchurch rebuild process.

### The Arts Centre Of Christchurch



This iconic central city site consists of 23 heritage buildings. During the 2010-2011 earthquakes, the Arts Centre buildings sustained varying degrees of damage ranging from minor masonry cracking to partial collapse.

The Arts Centre's architectural and historical importance has been the key focus in designing structural designs that not only avoid unnecessary deconstruction, but limit the visibility of the strengthening and repair works.

Where possible, reinforcing elements have been constructed within existing walls, and the original appearance of both interior and exterior facades has been carefully maintained. With a staged rebuild expected to be completed in 2019, our treasured hub is looking forward to another 100 years of service. For more information on the rebuild and restoration of this massive project click here - <http://www.artscentre.org.nz/rebuild---restore.html>

### Christ's College

The complex restoration and rebuild presented significant engineering and construction challenges, particularly in the sympathetic integration of strengthening to buildings more than a century old.

The limitations of a compact site and the need to minimise disruption to the school added another layer of difficulty.

Advanced low damage design technology and NZ's first slotted beam system has been specified for the new West Wing development, which has been designed to function as a post-disaster facility.

### Convention Centre Precinct



Plenary Conventions New Zealand, a consortium of proven international infrastructure firm Plenary Group, and experienced local firm Ngāi Tahu Property and The Carter Group, has been selected as the preferred operator for the master planning and development stage of the Convention Centre.

The Crown has committed \$284 million to the project, including the purchase of land for the precinct.

For more information - <https://ccdu.govt.nz/projects-and-precincts/convention-centre-precinct>

(Photo credit – CERA).



## Operation Suburb – Share your Memories

*"Remember, reflect and recognise the resilience of the people of Christchurch"*

It's been over 3 years since the Christchurch earthquakes shook up the city, and dramatically altered the lives of the people in Christchurch, and the city's landscape forever. Although the scars remain, there is hope for the city's future. The Christchurch rebuild is underway, and the steady progress of the build allows the people of Christchurch a glimpse at their future city. During this time of growth and progress, it becomes important to acknowledge the resilience of the Christchurch people, as it is their strength and spirit which helps fuel the rebuild.

In recognition of this resilience, the Institute is looking to compile a video of the experiences of those who assisted the people of Christchurch in the initial aftermath of the earthquakes, focusing on those who were involved with 'Operation Suburb'. We see this as an opportunity to capture and archive our member's experiences, detailing the technical and emotional experiences of anyone who played a role assisting with the recovery and evaluation work post disaster.

This is your opportunity to express your admiration of the people of Christchurch, and share your stories and memories. Whether your stories are examples of the technical challenges you faced and what can be learned from these, or the moments of human strength, compassion and generosity you experienced, your contribution is valuable to both your peers (nationally and internationally) and importantly, to the people of Christchurch.

Geoff Peck (Masterton District Council) was involved in Operation Suburb, and we were grateful for his agreement to share his experiences at this year's Senior Building Officials Forum in Christchurch.

Although tentative to come forward at first, Geoff believes that by sharing these experiences, we can learn lessons from the disaster. "There is the perception that we have done our bit, hence why I was hesitant to come forward at first. However, by sharing our experiences, we can improve on aspects of the duties we were charged with, which were to assess the physical damage as quickly as possible, assist with the human impact the event had on the population, and provide any immediate support that was required.

"It was history, and as such people should see how we as a Nation responded, including the impact this had on all involved, including our humble efforts being part of Operation Suburb."

All too often we capture statistics, but often the real value is in the real life experiences. We hope you agree, and by sharing your stories, together we can remember, reflect and recognise the resilience of the people of Christchurch, as well as share and learn from the experiences of all those who were in Christchurch during this time.

If you would like to contribute to the project, we will have filming slots available at the 2015 Conference (19-22 April, in Auckland), or alternatively, you may contact us at [events@boinz.org.nz](mailto:events@boinz.org.nz) or 04 473 6002.

## Legal expectations of building inspectors

**Paul Robertson and Shyrelle Mitchell of Heaney & Partners presented at the Institute's Annual Conference & Expo held earlier this year in Wellington. Here is an excerpt from their presentation**

What do the courts expect from building inspectors?

*[221] The obligation of the Council can be no higher than expressed in the [Building Act 1991] itself: namely, to be satisfied on reasonable grounds that a building consent should issue; to take reasonable steps in carrying out inspections and to be satisfied on reasonable grounds that code compliance should be certified.*

**What does reasonably satisfied mean when carrying out inspections?**

For a start, the courts expect that the council officer is inspecting the part or parts of the building that they have been called out to inspect.

That can be problematic for areas that are difficult to access, such as roofs or some basements. Roofs are particularly a problem in Wellington because of steep sloping sections. The courts do expect that the council either inspects such areas, or obtains a producer statement or similar assurance. The courts have also referred to the power of an inspector to get work opened up to check a construction detail.

It is quite unclear whether an inspector should be looking beyond the construction detail that is the focus of the inspection. The common expectation amongst inspectors is that if work was passed by a previous inspector, then there is no need to re-inspect it. This is one reason to have clear records of what has and hasn't been inspected.

However, the courts expect that any problem that is obvious to an inspector should be picked up at some point in the process.

**But how far do you have to go?**

In the High Court decision of Birch an inspector was visiting a house to check the progress of building work and whether a further formal inspection was necessary. He undertook a very general inspection to gauge progress and then had a cup of tea with the owner as she complained about the builder. No more inspections were called for after that. The allegation later was that the inspector should have seen a problem with the rafters. This was the

absence of birdsmouthing.

It was unclear whether this problem with the rafters could have been seen at the time the inspector dropped by to have a cup of tea. On balance, the court held that the problem could have been seen and the council was found to be liable. The court was swayed by the fact that the inspector didn't know what birdsmouthing was.

So, even though the inspection wasn't on site to inspect the roof rafters, the court expected the inspector to notice the problem.

**Relying on a builder - inappropriate**

What if the construction detail has been covered up? Can the council rely on an "it's all OK" by individuals/contractors from the site and pass the inspection? This was an issue in the case of Morton v Douglas Homes.

In Morton two flats were constructed on difficult filled land in Christchurch. An engineer was engaged to inspect the piling. The council inspector knew this. The builder called for an inspection when the engineer was away. The inspector asked the builder to confirm that the pilings had been completed. He was assured that they had and that the engineer had inspected the driving of the piles.

At trial the inspector said he had no reason to doubt the builder and so had gone on to inspect the boxing and reinforcing. He did not concern himself with the driven piles because he relied on the builder's assurances that the piles had been driven under the direction of the engineer or someone from the engineer's office.

In fact the inspector had been misled. The front flat had not been piled at all, nor had the garage or the terraces; and the engineer had checked no more than the piling of the western wall of the rear flat.

After looking at what could and could not have been seen at the inspection, the court accepted that the inspector could not have seen whether the driven piles had achieved the necessary set – but considered that he could have seen whether or not the requisite number of piles at the requisite intervals had been driven at all.

The judge found that the inspector's failure to do so showed that his inspections must have been of the most cursory nature and came to the conclusion that the inspector relied almost entirely on the assurances given to him by the builder.

The judge did not accept that the inspector was entitled to do that. He found that his duty was to inspect what was capable of inspection. He was entitled to rely on inquiry from others where he could not see for himself, but only if the person giving the information was appropriate.

Relying on a builder - appropriate

In a case called Hooft it was alleged that the council was at fault because there was inadequate sealant behind the reveals of windows.

The council records were missing.

However, the builder was located and he gave evidence that he had placed sealant behind the reveals, and that he had told the council inspector that the sealant was in place.

The Tribunal found that the council was not negligent - it had been reasonable for the council to have relied on the assurance of the builder that sealant had been installed.

The decision was appealed to the High Court. The parties bringing the appeal argued in the High Court that based upon a case called Dicks the judge should find that:

- Sealant for exterior joinery should be a proprietary sealant;
- The sealant needed to be placed between the joinery and the cladding;
- in this case the sealant had been negligently applied; and
- The Council's failure to pick up this inadequacy was a negligent failure of inspection.

However the flashing detail in Dicks was different. No seals at all had been installed and the court had found that it was possible by simple observation for the council inspector to check whether there had been any seals. In contrast, in Hooft the presence or absence of a sealant could not be seen by looking as they were hidden behind the reveals of the windows:

*[161] Here, however, the presence or absence of a sealant could not be ascertained by observation. Thus, beyond the assurance of the builder that he had constructed a window detail in accordance with the competent standard of the time (which [the builder] gave in evidence) there could be no further expectation on the Council. In those circumstances I am satisfied that the Tribunal is correct in that the appellants have not established that the Council was negligent. Nor was there any evidence to support the claim the builder had negligently installed the windows. The fact that many years later the windows leaked illustrated that the known standards at the time of construction were, with the benefit of hindsight, inadequate.*

So it came down to the question of whether the inspectors could have seen the problem. If not, they were able to rely on credible assurances.

### You can't always rely upon the experts

Another good example of when an assurance can, or in this case cannot, be relied upon – is a case called Zagorski .

Here the inspector noticed that in some places there were inadequate ground clearances. He was concerned enough to phone his team leader who told him to take it up with the cladding installer. He then had a heated discussion with the cladding installer who he described as "pretty forceful and persuasive". The installer insisted that the clearances were appropriate even though they contradicted their own technical literature and the inspector accepted this assurance.

The Weathertight Homes Tribunal found that the council inspector breached the standard of a reasonable inspector. It did not accept that because the cladder was satisfied with ground clearances, which did not comply with its own

specifications, that it was right for the council to also be satisfied and to approve them.

In summary the ground clearances obviously did not comply with the specifications and therefore the cladding should not have been passed.

### Relying on architects?

The High Court has confirmed that a council is entitled to place reasonable reliance on a designer. Building in accordance with the plans lodged with the building consent can be proof of the council taking reasonable care.

In Hooft the owners complained that the deck should not have been approved. They complained about:

- The top fixing of the handrails through a membrane;
  - The way that the membrane was fixed on the side of the deck (a strip of timber used to hold the membrane in place where it folded over the edge); and
  - The absence of a drip edge.
- The deck as designed by an architect was held to be appropriately passed by the council:

*[104] The Council is entitled to take into account in deciding whether there has been compliance, that an experienced professional has specified a particular detail and the builder has built the detail according to the plans. In the absence of any reason to doubt the efficacy of the plan and the specified detail, it could not be said the failure to identify either "defect" by the inspector was negligent. I, therefore, agree with the Tribunal's assessment and reject this ground of appeal.*

So, what is in the plans can sometimes be relied upon as proof that the council took reasonable care.

In the next edition Paul and Shyrelle consider how the courts have viewed producer statements.

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# From A Designer's Perspective

## Challenges faced by design professionals and building officials working to increasingly compressed deadlines:

*At the Institute's recent Senior Building Control Officers' Forum in Christchurch, we invited New Zealand Institute of Architects Canterbury Branch Chairman Colin Corsbie to present on the challenges faced by design professionals and building officials working to increasingly compressed deadlines.*

*Colin is an award winning registered architect who has practiced in Christchurch 35 years. Colin is currently a Partner with Opus Architecture, the third largest Architectural Practice in New Zealand, and a Fellow of NZIA. Colin is extensively involved with the Christchurch rebuild and is at the forefront of the trial CCC Commercial QA Consenting process. Colin is responsible for business development, design, documentation and contract administration/observation on a broad range of projects and has extensive experience working in multi-disciplinary design teams on large, complex and intricately serviced buildings.*

*Current projects under construction include commercial office buildings in Victoria Street and Moorhouse Avenue and the Christchurch Justice & Emergency Services Precinct project.*

## **Below are some reflections from Colin on changes he has observed during his career so far with respect to the design, documentation, consent and construction process:**

I have spent 35 years as a Registered Architect, with no building failures or laws suits. In a profession where you learn something new every day, the day you claim to know everything is the day you need to get out of the profession. Without stifling innovation "Learn from the mistakes of others not your own. As much as possible find out what works, why it works, and use it". Don't try to reinvent the wheel!

The old system of design and documentation worked around a Concept/Preliminary Design/ Developed Design /Construction Documentation/ Checking/Clerk of Works Review/ Full contract administration and observation/specialist Clerk of Works process. The design and documentation checking process was robust and allowed time for checking/corrections to be made/back checking, (30/60/90 checks/COW check/QS Check).

**Attention to detail was key and this**

## **meant that what was designed and documented was actually built.**

In the current construction market with issues like "leaky building syndrome", and the joint and several professional liability concerns faced by the design profession, the need for quality design content and QA process is even more critical.

Buildings (particularly large projects) are typically becoming much more sophisticated and complex in terms of both design and compliance. There are thousands of different materials, products and systems to choose from. In order to reduce risks for both ourselves as a profession, and our clients, we draw on a huge resource of technical expertise from throughout the world. Most of the product manufacturers have in-house technical experts within their companies who will work alongside the architect to develop design solutions and construction details that have been proven and tested. We also use systems and products that we ourselves have used previously over a number of years without problems. Critical high risk or complex areas such as foundation design, primary structure, fire protection services, and external envelopes typically require independent peer reviews by other consultants.

Risks can be further mitigated by using a highly experienced design and construction team. Selected Main contractors and Sub-Contractors. Experienced and knowledgeable Building Officers.

More often than not these days the timeframes for large architectural projects are being set by Project Managers/Clients who have limited construction knowledge and little or no appreciation of the design time and rigor required to successfully deliver these buildings. We are being expected to design and document very complex buildings in very short timeframes and this leads to high risks. Most, if not all, architectural practices are typically undertaking their final documentation co-ordination checks concurrent with the Building Consent process and/or the Tender Process. Some don't even bother with a final documentation

check expecting any problems to be picked up during the consent, tender or construction process. We rely very heavily on the technology REVIT/BIM Models to identify clashes but any changes/corrections to drawings still need to be checked and verified. This takes a lot of time to do properly, and this is time that is not fully allowed for in design and documentation programmes, and architectural fees.

I have experience with all types of building procurement processes – traditional, negotiated contract, GMP contract, Fast-track. Most projects we are involved with progress directly from Preliminary Concept Design directly into Construction Documentation. Unfortunately these days, every project is "fast track". This is what Clients have been lead to expect is the norm and the PM's advising them are very persuasive in convincing them this is the best procurement option. **The reality is the people setting these timeframes have no accountability or professional liability relating to the finished building.**

In conjunction with the Royal Commission Enquiry into the building failures resulting from the earthquakes, I was also on a national working party established by the New Zealand Registered Architects Board which was tasked with identifying "lessons to be learnt for architects" from these failures. **A number of the building failures resulting from the earthquakes were the direct result of the fact that what was designed, documented and consented, was not in fact what was built** – under strength concrete; concrete not fully vibrated through the reinforcing steel, and so forth. Low fees, fast-track projects, limited or no architectural observation during construction, were all contributing factors.

**One of the real opportunities provided by the earthquakes is the opportunity to not only rebuild what we had but to rebuild better than what we had.** Our practice, and myself personally are fully committed to designing better buildings. Most of the other local practices are adopting

the same approach and to a large extent this is in response to the demands of our clients. Clients are now very knowledgeable about how seismic events impact their lives, businesses and property, and the benefits of designing more resilient buildings is better appreciated. Questions I typically get asked now is what is going to happen to my building, what is going to fall off it, will I be able to still use it, and how do I get out of it?

Apart from creating unrealistic expectations for clients these compressed delivery programmes are extremely challenging for all those involved in the design and consenting process. The approach of fast-tracking the design, documentation, and construction process can certainly work if properly managed but too often it leads to poor quality documentation which results in delays during consenting, and also introduces design and construction risks which invariably have time and cost implications for clients. It also reflects poorly on us as a profession when substantial cost variations occur during construction. Building Officers also cop a lot of "flack" from Architects and our Clients as frustrations with delays create tensions.

## SUMMARY

- New Technologies (BIM Modelling) do make design co-ordination easier and arguable faster but as a profession we need to take back ownership of the design, documentation and procurement process – highlight the added value and added benefits of allowing more realistic design timeframes – and make it clear that "faster is not always better". Additional time inputs need to be reflected in the Architects' engagement fee. We need to strike a better balance between expediency and quality.
- Having sufficient time incorporated in these programmes to undertake robust design and documentation co-ordination checks would reduce RFI's during the consent process, expedite the consent process, deliver higher quality design outcomes, reduce cost risks and variations during construction, achieve much better built outcomes, and ultimately much more satisfied clients.
- New technologies/processes need to

be developed to make the Building Consent process easier and more consistent. This would be possible if the design professionals were able to demonstrate at the time of consent lodgement that robust design checks and verification/peer review processes have in fact been adopted. The Building Consent process could simply be an audit check.

- **There needs to be better communication and engagement between the Design Professions and Building Officers.** Presenting to and learning from each other through joint training workshops perhaps. How can we make each other's jobs easier? This includes the development of new approaches like the CCC Commercial QA Consent Process where the design and construction professionals need to be consulted and involved.
- A genuinely collaborative "One Team" approach is required involving Design Professionals/Building Officers/Construction Managers if we are to deliver quality design and built outcomes for our clients.

**Colin Corsbie, FNZIA**

**Registered Architect, NZIA Canterbury Branch Chairman & Principal Architect Partner at Opus International Consultants Ltd.**



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# Towards a better building consent system

The building consent system is an important part of ensuring the quality and safety of New Zealand's buildings. However analysis undertaken by the Ministry of Business, Innovation and Employment (MBIE) of how the system operates now, has revealed that while aspects of the system work well other aspects do not. These findings were at the core of a presentation by MBIE Strategic Planning and Engagement Director, Kevin Currie, at the BOINZ Senior Building Control Officers Forum last month.

Last year, MBIE established the National Building Consent System programme (NBCS) to help improve the system. The NBCS programme looks at the role the Building Consent System plays in achieving sector productivity and is on track to deliver a business case to Government by the end of this year presenting potential options for change.

"What we know is that the system's not perfect, but if the right changes can be made, New Zealand will enjoy a fully productive building and construction sector and a consent system that customers can rely on. The purpose of the business case is to lay out what these changes might look like," Mr Currie said.

The programme considers all components of the building consent system – the processes, the people, the IT tools and the legal requirements they work within.

Mr Currie said that framing a 'current state view' was a vital component of the NBCS programme. "It's a really important step, because only when we have a clear view on the current state are we able to identify what's working and what improvements need to be made," he said.

Mr Currie shared with conference delegates

that the NBCS programme's research had shown that there are frequently delays in processing consents, often brought about by deficient applications. Uncertainty and inconsistencies were also identified within the consent system that in turn are contributing to unnecessary costs for applicants.

"Many builders tell us that they face quite different requirements and issues when working across several districts. We also know that implementation of the system is fragmented; with no regular and consistent reporting mechanism to collect data about the performance of building control processes across councils.

"Consistency across councils is a real issue and something we will be addressing in the business case," he said.

The NBCS team is collaborating with councils and the building and construction sector in developing the business case; including a range of groups external to MBIE providing the bulk of the data required for the current state view.

"We've worked with people from across the sector, including councils; builders; professional and industry bodies; and homeowners. We really appreciate the input which has enabled us to paint a picture of how the building consent system works in practice." Some insights gained on how people use the consent system include:

- Only 19% of owners apply for their own consent. The majority use their architect or builder
- The majority of customers expect a residential consent to be turned around in 11 days, an amendment within 4 days and a code compliance certificate within 5 days
- Customers expect that large complex consents would take 40 -60 days – this is at

odds with the regulatory requirement of 20 days.

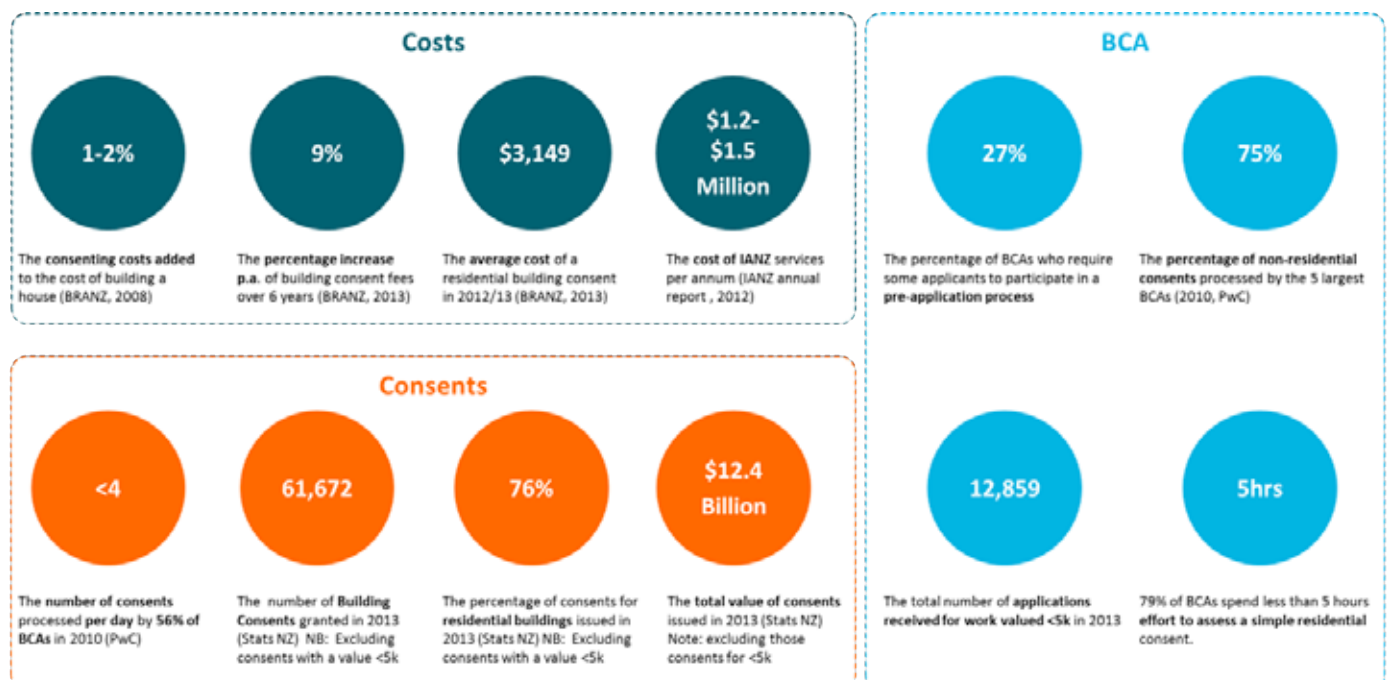
- 77% of layperson customers believe their builder has the majority of the responsibility for following building rules and regulations with 54% also believing this is the responsibility of the council
- Around half of applicants have difficulties completing the Certificate of Design work.
- Most customers prefer to receive services online, in particular an online channel to lodge applications
- Only 70% of councils process more than five consents per day.
- Over half the nation's building consents are handled by just nine councils.

Mr Currie also shared that the amount of time spent working on an application is less than 10% of the total time taken between consent lodgement and approval. "The bulk of the time is taken up waiting for required documentation, waiting on requests for information, delays at hand-over points between teams, and from resource constraint."

Mr Currie said the current state view analysis had been exceptionally useful. "As a result of this work, we've got a much better understanding of the complexity of the environment, and are very conscious that a range of interests need to be considered." "We also appreciate the opportunity to come and talk to the sector at events like this. It's important that you are involved in the programme and we are committed to sharing information with you through-out the process," he said.

## OPTIONAL EXTRA INFORMATION

Here is a sample of other current state information that has come to light:



# Special Housing Areas – an opportunity for change

**By Nick Collins, Beacon Pathway**

The creation of Special Housing Areas provides a unique opportunity to influence our homes and neighbourhoods of the future. Starting in Auckland, but being extended over the country, Special Housing Areas are part of the government's strategy to meet future housing demand. Currently, in Auckland, 63 special housing areas will deliver an additional 40,000 consents over the next five years.

The strategy focuses on increasing the quantity of building consents to house Auckland's future population and to address the affordability issues created by demand outstripping supply.

However, it is evident that quality (good design, operational affordability, sustainability) is not part of the central government discussion. And that's where we are missing an opportunity to create houses and neighbourhoods that will serve us well into the future.

Creating quality neighbourhoods Special Housing Areas, by their very nature, are creating new neighbourhoods, either as a stand-alone development or within existing neighbourhoods.

Neighbourhoods, and the way they are designed, influence the behaviour and outcomes for the communities that live in them. Well-designed neighbourhoods are adaptable, liveable, and environmentally efficient. Residents have access to community facilities, shops and work. It is easy to get around and there are transport options (other than cars). There's a good sense of community and lots of activities available locally. Neighbourhood design can maximise how well houses perform.

Beacon's evidence has shown that a sustainable neighbourhood – one which is higher density and mixed use - saves the city money in the long run. And there is increasing evidence of the costs of low density, sprawling neighbourhoods – in transport, roads and traffic, increased infrastructure, lost time and quality of life. It is much easier to get design right at the master-planning stage, than once the neighbourhood is built. As we plan the development of Special Housing Areas, now is the time to get these new neighbourhoods right.

So, for example, it's the time to think about clever ways to increase density by considering house forms other than stand-alone single homes, and creating larger shared spaces for residents to enjoy. Layout of the development should optimise each home's solar orientation – the more sun the better. In fact, now's the time to consider options for neighbourhood-level energy generation, rainwater capture, treatment through natural swales and recycling for gardens, car washing and toilets. This can have economies of scale, reducing

the overall costs of supply and installation. And think about what the new community might need to make it a buzzing and sustainable neighbourhood – from access to public transport, to safe biking and walking, places for recreation, shops and community facilities. Encouraging a range of businesses to establish themselves in or near the neighbourhood will ensure residents don't need to travel as much, and offering different house types (size, configuration) means residents can stay in their neighbourhoods as they age.

## Creating quality homes

Within the master-plan of the new Special Housing Area developments sit the house designs, another opportunity to influence the quality of life for New Zealanders. House concept designs are often approved early at resource consent stage, so that's the time to think about the future.

The sun is the only free heating available to households, so orientation is critical. Living areas and bedrooms need to face north with most glazing on this side to let the sun penetrate into the house but with adequate eaves for summer.

Overheating is a growing problem in new housing which generally has higher insulation levels, more airtight construction and inadequate ventilation. Care needs to be taken with western oriented glazing particularly in northern New Zealand. Designs need to include windows which can be left open on each side of the house for cross ventilation. Bedrooms with only one window, or newer homes where sliding doors are favoured over windows, can miss out on cooling breezes. With two storey homes, even more care is needed to ensure that adequate stack and cross ventilation is provided to get rid of rising summer heat. House design stage is the time to ensure there are enough windows for good solar gain, light penetration and ventilation. At the same time, too many windows on the southern aspect can make the house hard to heat. And house design is the time to consider including energy and water saving technologies that will save residents – and the city – money in the future. Photovoltaic panels, efficient or renewable hot water, rainwater harvesting, grey water systems. Unlike the neighbourhood design, Auckland Council has set a quality benchmark for its Special Housing Areas. Under the Unitary Plan, any development over five houses needs to demonstrate how it is achieving a Homestar rating of 6. This should be easily achievable – in fact, the challenge is to do better than that!

## Let's get it right for the future

The houses that we build now in the Special Housing Areas will form the neighbourhoods and existing housing stock of the future. We

know our current housing stock is, by and large, under-insulated, damp and energy inefficient. We need to pay attention now to the quality, and not just the quantity, of new housing to ensure our future housing stock meets our needs, performs well (warm, dry, efficient) and doesn't cost the country.

## Beacon can help

Beacon's tools and expertise have considerable value to add to the design of the Special Housing Areas. Our Neighbourhood Sustainability Framework can be applied to new developments in existing communities and to master-plans for new developments to improve the sustainability and community aspects. Post-development, it can be used to evaluate whether the development achieved what it set out to deliver. Our team can review both subdivision layout and individual or typology-based house design for optimal performance.

We've already worked with one of the first Auckland Special Housing Areas, Waimahia Inlet, to peer review the master-plan, provide feedback on house designs, and review the designs in terms of meeting Homestar requirements.

## About Beacon Pathway

Beacon Pathway is an Incorporated Society committed to transforming New Zealand's homes and neighbourhoods through research and demonstration projects that show how to make homes more resource efficient, healthier to live in, adaptable, resilient and affordable.

For further information about Beacon

Pathway visit [www.beaconpathway.co.nz](http://www.beaconpathway.co.nz).



Houses in this development have their garages on the northern, sunny side, wasting the opportunity for solar gain.



The Hobsonville Point master-plan ensured that community facilities such as walks, parks and playgrounds were an early feature of the development.



GIB® PLASTERBOARD SYSTEMS

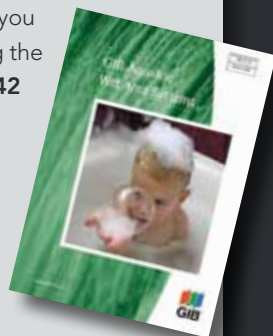
# BEST PRACTICE SERIES

No.1 WET AREAS

For best practice, and to avoid time-consuming and costly call-backs, incorporate a wet area system that maintains integrity when inadvertently exposed to water and steam.

The GIB Aqualine® Wet Area Systems literature contains all the information you'll need to correctly install GIB® Wet Area Systems.

If you don't already have one, you can get a FREE copy by calling the GIB® Helpline on **0800 100 442** or view online at [gib.co.nz/systems](http://gib.co.nz/systems)



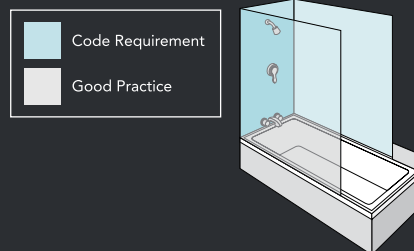
LOOK  BEYOND THE SURFACE®

## 7 THINGS TO CONSIDER WHEN BUILDING OR RENOVATING A BATHROOM.

These recommendations are not a substitute for the full information contained in the GIB Aqualine® Wet Area Systems literature. Please refer to this literature before proceeding with any project.

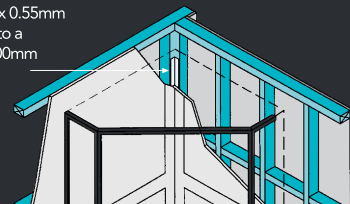
1. Always use GIB Aqualine® on walls and ceilings to help protect against moisture and steam damage.
2. Use waterproof membranes in the right areas – such as to the edge of showers, baths and vanities to be tiled.

e.g. Enclosed shower over bath

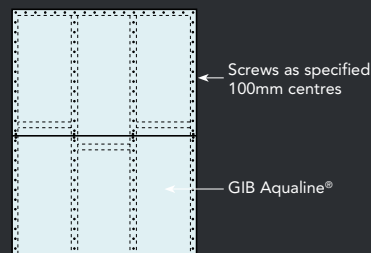


3. To provide stability, a 32 x 32 metal angle must be attached to the internal corner of timber framed shower walls.

Vertical corner 32 x 32 x 0.55mm galvanized steel angle to a minimum height of 1800mm



4. Fix GIB Aqualine® horizontally where possible to reduce joints and improve the finish.
5. Use 13mm GIB Aqualine® on ceilings to protect against moisture and steam.
6. When tiling\*, fasteners are required at 100mm centres to the perimeter of the sheet and to all intermediate studs.



7. Bracing systems must not be located behind showers or baths because of durability requirements, renovation likelihood and other practical issues relating to fixing bracing elements.



## Standing Up By Ourselves

**Geoff Penrose | General Manager | Lifemark**

Industries develop at different stages, and the maturity of an industry is its ability to innovate and understand itself. The building industry has received its share of brick bats and now it's time for some bouquets. Lifemark is an independent voluntary certification system that advocates for accessible and adaptable design, and has received significant support from the building industry leaders such as Mike Greer Homes, Horncastle, Universal homes and Jennian Homes. In the retirement sector Summerset and BUPA are also strong advocates. There are now over 100 accredited building companies, architectural firms and retirement village operators who can offer Lifemark Certification. Over 600 certificates were issued last year, representing just under 3% of all residential homes and more are expected over the next 12 months.

The Lifemark Certification process recognises a minimum of 25 standards that have been met to obtain a 3 star rating ranging up to a 5 star rating for higher levels of performance. The actual costs of these inclusions was estimated to be under \$1,700 as evidenced by BRANZ research in 2011, although for some sites and units the cost is only a few hundred

dollars. In return the dwelling will have wider doorways, level entry access (often through the internal garage), strengthened walls in the bathroom, light switches and power plugs at convenient heights and other design features that promote safety and adaptability. These homes are then more suitable to meet the changing needs of the occupants and any retrofitting costs (estimated by BRANZ in 2011 to cost \$17,000) to obtain the same features will be slight or non-existent.

Demand for this type of housing design is expected to significantly increase as our population ages and these adaptable features become more valued. Lifemark Certification is an easy way to ensure everybody, no matter what age, stage or ability, can occupy, visit and live independently in their home.

International research indicates that such homes may command a price premium of between 3 and 5% in the future, because their future orientated designs will appeal to a wider range of people. The advantage of this approach is that for most occupants, the differences are largely invisible. A future orientated bathroom has extra nogs in the wall, not visible to the naked eye, however if you wish to add a grab rail at a later stage because your mobility has changed, then you simply screw in the rail, eliminating the need to reline the wall or renovate the

bathroom because the support in the walls is already in place ready to be used when and if it is needed.

The industry leaders recognise these benefits, not just to the occupants but the wider community as it allows people to live longer in their homes and age in place. This creates diversity that makes great communities and by incorporating these universal design features, these areas will work well for everyone.

Lifemark Certification is a voluntary system and relies on the industry educating consumers about what will help them in their new home. Lifemark Accreditation includes an online training programme, support material, standards handbook, access to expert access advisers and a rating system relevant for any house, apartment or retirement unit.

The building industry can feel proud that it is incorporating best practice and that it does not need regulation to make the changes. The more Lifemark Certification is used, the greater the benefit to the occupants, neighbours and wider community, so the return on investment is good for everyone as the designs include everybody.



**Photo 2:** Innovative Access Solutions – accessible access to a residence doesn't have to be ugly, it could also be as simple as internal level access from the garage which is very achievable.



**Photo 3:** Lifestyle Living – Consideration to the placement of light switches and Power points, use of lever handles and room appropriate flooring as examples can positively benefit the lifestyle of those living a Lifemark Certified home.



**Photo 1 -** Adaptable Bathroom – an example where extra nogs were placed in the framing to accommodate grab rails at a later date. Had the nogs not been included in the initial design of this bathroom, the addition of a grabrail beside the toilet would have required a major restructure of the bathroom wall.



# Substitution of Materials and Components in a system

**Author – Jim Malone, Technical Manager, CHH Woodproducts**

Imagine if you turned up for a rugby test with an expectation of seeing your favourite stars playing and find they had been side-lined and substituted with a couple of unknowns from the lower grades or worse still a couple of imports who weren't even eligible to play for the national team in the first place. It just wouldn't be the same. They might perform to the same standard on the field, but it is highly unlikely and in any event you just wouldn't know because they have no history and haven't been tested in the heat of a rugged test. As far as the team is concerned, choosing the unknown or untested is a risk and while they might be good players and have been tested as individuals, they have not been tested in the team environment.

Like your favourite rugby stars, building materials are selected because they have a history, proven performance and have been thoroughly tested and deemed fit for purpose. Important too is the fact that they are likely to be part of a system, the team environment, where the material is just one component of a team of materials which all contribute to the end result.

If we side-lined the best players, would the outcome at the end of the game be the same? We might not be in such a hurry to risk our money at the betting shop.

Out of the hundreds of technical calls I get each month, the most common, from building officials, is around substitution of materials and components in a system. If it is a generic material or component straight out of the Acceptable Solutions, then if it is as described in the relevant acceptable solution it will automatically comply. However if the system is an alternative solution then the game changes because the system will have been assessed or tested to confirm compliance.

The building code does not have an acceptable solution for bracing. Bracing is designed either as a specific design by a qualified person or by way of the method explained in the Bracing Section (section 5) of NZS 3604 using bracing units.

The NZS 3604 method relies on industry to supply methods and systems to achieve bracing units. This is done by a test method called the P21 test which consists of a set of three racking tests.

In the case of Ecoply bracing types the P21 tests were carried out using specific components and in order to replicate the published results of those the brace panel must be built exactly how it was tested using the same components. If components are substituted, just like the Rugby team, the system may not perform to the same standard.

Ecoply EP bracing specifies the use of Ecoply. All Ecoply branded plywood is structural grade manufactured to the AS/NZS 2269 standard. The P21 tests for Ecoply EP bracing were also carried out using the GIB Handibrac hold down. Other hold down brackets may not have the same inherent characteristics and may result in a change in performance.

## ACRS Delivering confidence in steel connector compliance

Building on the success of its product certification scheme for structural and reinforcing steels, ACRS (Australasian Certification Authority for Reinforcing and Structural Steels) will soon be offering Technical Approvals for connecting elements such as structural steel bolts and reinforcing couplers, fixings, anchorages and inserts.

Set to launch in early 2015, ACRS Technical Approvals will provide a standardised approvals mechanism and a national framework for testing and assessment of products not covered by product certification to accepted AS/NZS Standards.

Structural connectors play a critical role in structural integrity and performance. From low and medium density residential construction, through to high-rise structures, industrial buildings, tilt-up construction, bridges and other structures constructed using large precast elements, most modern construction incorporates a range of steel structural connecting elements.

The move to establish ACRS Technical Approvals follows completion of an extensive feasibility study and needs assessment, and the establishment of a unique detailed framework to guide all aspects of the Scheme. Not surprisingly, many aspects of the new framework are similar to ACRS' highly successful and internationally respected Product Certification Scheme.

Interestingly, the development of the new Technical Approvals system has been 'demand driven' by stakeholders from a number of industry segments.

As ACRS Executive Director, Philip Sanders, explains:

"With the ACRS Product Certification Scheme now covering the majority of structural, prestressing and reinforcing steels used in Australia, ACRS has been approached by a number of industry representatives - including engineers, specifiers, procurement organisations and several major suppliers - about the lack of a formal, recognised assessment framework for structural connectors"

"Whilst ACRS has been providing a national certification scheme since 2003 for construction steels, there is no technical approvals scheme for the connecting elements linked to a unified national framework" he said.

"Furthermore, it was clear from approaches to ACRS, that stakeholders across a number of key industry segments were not only harbouring serious concerns about this gap, but that there was significant support for ACRS to create an ACRS-style, nationally accepted framework and assessment process to fill it." Philip Sanders said.

After a thorough investigation of the needs of Australian and NZ industry, products supplied to the local market, and undertaking a detailed benchmarking study of international best practice including a technical visit to its European peer

certification bodies, ACRS has developed a unique framework which incorporates rigorous market testing with appropriate review of factory production control. This is similar in many respects to the world recognised European system, and therefore is well understood and accepted by quality product suppliers around the world, but is adapted to the specific requirements of the Australian and New Zealand market.

Importantly, it also builds on ACRS' well-established and highly respected product certification scheme, which is held in high regard throughout Australasia and internationally. Indeed, the ACRS certification scheme is widely considered to be an 'international best practice' model.

"As with ACRS Product Certification Scheme the main catalyst behind the development of the Technical Approvals Scheme is a focus on quality construction using quality materials," Philip Sanders added.

"We want specifiers, engineers and customers to have a high level of confidence that when they specify or purchase a product that it will be fit for purpose."

With the framework developed and formalised, ACRS is now finalising the assessment process for the first two product categories: structural bolts and mechanical couplers for reinforcing bars.

The assessment rules and processes for the first products are currently being developed by committees consisting of ACRS personnel and representatives from key stakeholders, and the new Approvals system is expected to be launched in early 2015.

"Although manufacturer's product information is important, having an independent, technically proficient expert review is a critical factor in determining fitness for purpose for conditions in Australia and New Zealand. The new technical approvals scheme will provide a comprehensive and easy to follow method for suppliers to provide specifiers and end users with a high level of confidence in the fitness for purpose of their products," Philip Sanders said.

ACRS Technical Approvals will provide a standardised Australasian approval mechanism that can be accepted throughout Australia and New Zealand by specifiers, designers, procurement managers and suppliers. Importantly, it has also been developed with a focus on being easy to understand and follow for product suppliers seeking an approval certificate for products that are not covered by product certification to an accepted AS/NZS Standard.

For further information, please visit the ACRS website [www.steelcertification.co.nz](http://www.steelcertification.co.nz), or contact ACRS, Phone: +612 9965 7216.



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**Using non-compliant steel can take on a new meaning if something goes wrong.**

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# Regret.

**(verb.)** *a feeling of sorrow or remorse for a fault, act, loss, disappointment, expressing regret for a poor choice.*

- Don't regret your choices. The ramifications from using non-compliant steel far outweigh the initial cost savings.
- Heavy losses and damaged reputations are just some of the ways you could be affected.
- It's important to be confident that structures that are built comply with Australian/New Zealand Standards and the Building Codes.
- It's your responsibility to check the steel you use to avoid penalties in the future.
- Just because it looks the same doesn't mean it complies.
- Understanding how you can protect yourself is critical. You have the power to refuse to use non-compliant steel.
- Don't leave steel compliance to chance, demand the ACRS Certificate of Product Compliance.

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**Demand ACRS Certificates of Product Compliance. You won't regret it.**

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Independent Third Party  
Australasian Standards  
Certification & Verification of  
Reinforcing, Prestressing &  
Structural Steels  
Compliance

Contact ACRS on +612 9965 7216 or [info@steelcertification.com](mailto:info@steelcertification.com) or visit [www.steelcertification.co.nz](http://www.steelcertification.co.nz)

ACRS – The Australasian Certification Authority for Reinforcing and Structural Steels Ltd ABN 40 096 692 545



## Backflow – Who Knows the Unknown – Time to Say No

Unless you have addressed the potential cross connections within a building then installing a boundary backflow device is only half the job done. If there is only a boundary device installed, the contaminant is kept inside the boundary. If the water supplier is unaware of the potential risks within the building and or the cross connections have not been addressed correctly then to only install a boundary backflow device could in fact place the people within the building at risk. As opposed to having no boundary backflow device and thus giving the potential for the contaminant to be diluted out into the towns mains. Since the introduction of the Drinking Water Amendment Act 69ZZZ we have seen a focus on boundary protection by the water supplies. The water suppliers now have a better understanding of backflow. As a result there is no doubt more and more boundary devices are being installed, this is great. However, very little change has been noticed with enforcement within the boundary. Water supplies work under the Health Act and the 2010 Water Suppliers Code of Practice is ideal to use to help meet requirements of the Act. The Building Act is responsible for inside the boundary. Note G12 is only a minimum acceptable solution to meet the requirements of the 2004 Building Act. No reason why we can't aim a little higher. In some cases the water suppliers are not fully aware of what is happening within the boundary. This might be because they are only focused on their responsibilities up until the boundary. Water supplies and local council must interact with each other to get a clearer understanding of what is happening within the property and the consequences that are at stake. In doing so we lower the risk and help make the unknown become known. Say no to just going with the flow. Break down any perceived barriers to ensure everything is covered for individual, zone and boundary protection. Following on from its success with the Testing Standard and the Code of Practice, the Water NZ Backflow Special Interest Group (SIG) now focuses its attention on the importance of an industry standard for Backflow surveying. Surveys help eliminate the unknown. It is expected that the survey standard

will be referenced in G12 – Water Supplies of the NZ Building Code. The survey standard will be of interest to a wide range of people within the industry in particular council staff members seeking assistance during the consent stages of new connections. The standard will give detailed information on what to be mindful of regarding potential cross connections and solutions will be offered to ensure the towns mains and the people within the property are protected. For many people the workplace can be considered a second home. Commercial sites are often considered a higher risk than the average residential home. Many backflow incidents are reported in and around commercial properties. Residential homes are also at risk and they too need to be addressed.

For many years the occurrence of backflow in residential homes was unknown. The

American Water Research Foundation in association with the US Environmental Protection Agency, America Water and the University of Southern California has completed a report on Determining Vulnerability and Occurrence of residential backflow. A very brief summary below:

Backflow of water from residential homes into distribution systems is probably more widespread than currently thought and is thus a potential public health

concern for the water industry. Analysis of data from backflow sensing water meters has shown that backflow events occurred at a rate of 1.6% of residential services each month, with 5% of homes registering a backflow each year.

Do not underestimate the amount of potential cross connections within a residential home.

It is important that we make every effort to protect the towns main and the water supply within any property. Compared to a commercial property, the average residential home would be considered less vulnerable to significant surges within the system. If we are surprised about what is being recorded in our home then we might be even more surprised about what is happening at our work place and it is here where the risks to one's health are generally considered higher.

**For more specific details about the American Water Research Foundation report please contact the Water NZ Backflow SIG.**

### 2015 NZ Backflow training seminar:

The NZ 2015 backflow training seminar will be held 23rd-24th of April at the Mercure Resort in Queenstown. The event will have international guest speakers and will offer a number of CPD points. The new backflow survey will be discussed in detail. It will be the perfect forum for local council, installers, testers, suppliers and backflow industry experts to come together and discuss a number of important topics. Registrations will open soon and a discount applies to Water NZ Backflow SIG members. Now is a good a time as any to become a member and receive all the various benefits of being a member. The backflow SIG would like your input into what you would like to see at the training seminar so please send any suggestions to the backflow SIG Liaison amy.aldrich@waternz.org.nz.

The information on this page helps illustrate the progress the backflow SIG continue to have within the industry. Please continue to interact with the backflow SIG via the Water NZ website including the backflow forum, Facebook page and their liaison Amy Aldrich. <http://www.waternz.org.nz/MainMenu> ; <http://forum.waternz.org.nz> ; [bsig.nz@facebook.com](mailto:bsig.nz@facebook.com); [amy.aldrich@waternz.org.nz](mailto:amy.aldrich@waternz.org.nz)



## Cross BCA Collaboration – Panellised and relocated homes.

### Kerry Walsh Team Leader Building, Hurunui District Council

In recent years Canterbury has been an increase in the demand for relocated and panelised housing solutions but with this often comes the problem of BCA's having to issue two building consents for one project. One for the construction of the system in the factory, and one for the onsite work (when in different TA boundaries). This is especially an issue where a number of TA's surround a large population. You can get housing companies constructing in one BCA area and move the finished product into another.

We have a number of houses coming into our district as a complete system and some houses going out of our district on the back of a truck as panels or complete units. BCA's should look to make simple solutions for this type of build to avoid doubling up on consents and potential delays for clients in obtaining approvals from both BCA's.

The Hurunui District for example has a tilt up timber panel housing company, constructing quality eco-friendly homes of any design. These are being shipped to locations as far north as Auckland and as far south as Queenstown. Our BCA is carrying out inspections on these panels for any BCA that requires the inspections, we are sending inspection slips, any applicable prompt sheets, and photos to the BCA concerned; which in the end they will use to support the decision to issue of the CCC.

We invoice the respective BCA directly our standard inspection fee to cover costs and these costs are passed onto the applicant as part of the consent application. This works well when housing companies contact the relevant BCA at the early stages of consent processing to inform the appropriate BCA that

part of the building work is going to be built in another area and so that arrangements can be made with our BCA. We also encourage the neighbouring BCA's, if they wish, to inspect the build at the production facility without any involvement of our BCA.

It's our experience that some BCA's deal with these panels in different ways; some assess onsite when they arrive and are comfortable to check compliance then and others want inspection audits of some panels carried out during construction by our BCA prior to delivery.

Another example of this is where quality houses are being manufactured on mass in a rail type production line in South Canterbury and are being transported in whole or in truck-sized parts to many areas. Our BCA's have agreed to propose a single consent system where only one consent is applied for with our BCA (where the house eventually ends up) and we engage the South Canterbury BCA (Timaru District Council in this case) to carry out the inspections on our behalf. This needs no on-going agreement with the construction company as a file is sent to the inspecting BCA upon our consent approval so that the Timaru District BCA can carry out their inspection, include slips and photos etc and return the file when the house is transported into our area and again we use this as evidence for being satisfied to issue the CCC.

To make these arrangements more permanent we have signed a shared services agreement between the BCA's.

In a third example a client in the remote North Canterbury settlement of the Conway, 2.5 hours north of Christchurch, wanted to build his architectural style house in a yard in Christchurch City to reduce costs for builders. Both Christchurch City Council and Hurunui

Council agreed that the HDC would issue one consent and HDC inspectors would inspect the project in the yard in Christchurch with follow up inspections on site in the Conway. This reduced costs in consenting and timeframes to the client and worked out well for both BCA's.

As mentioned at the recent Senior Building Officials Forum in Christchurch, Mike Greer Homes is about to step this panelised/relocated building system up a notch with a massive target of 1000 homes to be produced in a \$10 million production line in Rolleston. Panels from this facility will present new challenges for BCA's in dealing with quality assured house panels on mass being delivered to a house site near you!

I can only encourage other BCA's to do what they can to help out these customers, reduce compliance costs and cut out unnecessary down time but at the same time ensuring no drop in quality.



Genius Homes production line in Timaru.



Truce Green Homes panel assembly plant in Amberley



The True Green homes team in action!



From the left Timaru District Council Building Control Manager Grant Hyde with Genius Homes Production Manager Glen Chittock and Kerry Walsh Team Leader - Building Controls Hurunui District Council.



# H1 Energy Efficiency– A New Course

**Some thoughts from Chris Randell, BOINZ Training Academy Facilitator**

Earlier this year I was approached by BOINZ to deliver the newly developed H1 Energy Efficiency course. A few things went through my mind when I was asked if I was interested. First and foremost was the question, “what do I know about H1”? The second was what a fantastic opportunity to be able to deliver the course considering the benefits to our communities that accrue if buildings are insulated to the level required by the building code and the third was I will have a lot of learning to do myself, and after a brief pause I jumped at the chance.

To answer my first question I thought I must know plenty. After all I have processed hundreds of consents for residential dwellings and small commercial buildings. Similarly I have carried out hundreds of inspections of buildings that had insulation installed. I have consumed the regular industry training on H1 that was on offer at the time. But I also knew that H1 is not such a straight forward building code clause to apply and for the course to be a success I had to do some research and relearning.

So, I poured through the building code clause itself, the verification method and the acceptable solution. I then had a thorough look through the course material written by the very experienced Tony Conder. Tony has done an excellent job writing the course material. The course notes are well set out and in an easy to follow format. It soon became apparent that my knowledge was less complete than I first thought.

While researching and preparing to deliver the course I had quite a few “lights on” moments. I had many unresolved questions about the application and effectiveness of insulations that lingered in the back of my mind. Some had been there for a long time. No longer being under the pressure of working in a BCA I had the luxury of time to research more thoroughly. Those mysteries I had held for so long were finally being resolved. I was also enlightened on the other H1 aspects apart from the thermal envelope e.g. lighting, hot water services and HVAC.

The first course was held in Christchurch in August. There were some senior building control officers amongst the group as well as some who did not have as much experience or high standing in their organisations. As the course unfolded it was hugely rewarding to see similar “lights on” moments happening for all those that attended. They benefited by the luxury of being away from the normal pressures in their day to day roles in their organisations and were able to concentrate on gaining new learning and understanding while reinforcing what learning they had already gained.

At the end of the course the feedback from the participants was positive to say the least and based on that feedback I would highly recommend the course to team leaders, building consent processors and inspectors alike. The course will continue to develop and improve as it moves forward. Personally I am really looking forward to presenting it again in Wellington in October.

**Chris Randell**

MiTek now offers apps for the ever popular MiTek Structural Fixings On-site Guide for Building Code Compliance. The apps are available from the Android or Apple store.

MiTek is driven by design software and timber engineering where the company positions itself as technically accurate in the application of timber connectors and structural brackets within the structure. The On-site Guide is helpful to Building Officials and builders because illustrations are clear and easy to follow on-site. The on-site guide is also useful to building designers who are now required to provide solutions and increase the detail they offer to builders. Based largely on NZS 3604:2011 this is the 4th edition of the guide which was first published in 2004 in response to changes to the Building Act.

We commend you to download the apps and enable your on-site guide to be continuously updated in a way that the hard copy has struggled keep pace with both with new fixing products and changes in application.

## Here's something designed for site inspections

Download our FREE app for the MiTek Fixings Guide



[www.mitekknz.co.nz](http://www.mitekknz.co.nz)

## 2014 Training Academy Public Schedule Calendar

OCTOBER		
13,14	TA005 Plan Processing	Wellington
15,16,17	TA020 Fire Documents	Wellington
20,21,22	TA012 H1 Energy Efficiency	Wellington
16-17	TA006 Site Inspection	Christchurch
29	TA010 Light Steel Framing - Confirmed to Run	Christchurch
NOVEMBER		
3	TA001 Communication/TA003 Ethics	Wellington
3,4,5	TA009 NZS 4229 Concrete & Masonry Building	Christchurch
10,11,12	TA002 Building Controls	Auckland
10,11,12,13	TA008 NZS 3604 Timber Framed Buildings	Auckland
13	TA015 Clause D1 Access Routes/ TA015 Clause F1 Safety of Users	Auckland
26,27,28	TA020 Fire Documents - Confirmed to Run	Dunedin
DECEMBER		
1,2	TA013 E2 Weathertightness	Auckland
3,4	TA005 Plan Processing	Auckland
5	TA010 Light Steel Framing	Wellington
8,9,10	TA012 H1 Energy Efficiency	Auckland
8,9,10	TA020 Fire Documents	Christchurch

The Training Academy also provides an Inhouse training option for many of our courses. This has been utilised by individual councils and cluster groups of councils. Should you wish to customise a course please don't hesitate to discuss options to allow us to assist you meeting your objectives.

Please be aware that for various reasons we may have to change our dates so just keep checking the BOINZ website for the most up to date information. For more information, course details and to register please visit our training calendar

<http://www.boinz.org.nz/training-academy/calendar.php> or email [training@boinz.org.nz](mailto:training@boinz.org.nz)

## Industry Events Calender

DATE	CONFERENCE	LOCATION
24 – 27 September 2014	ADNZ Annual Conference	Bay of Islands
9 - 11 October 2014	The Concrete Industry 50th Annual Conference	Wairaki
28 November 2014	IPENZ NZ Engineering Excellence Awards	Auckland
NOVEMBER		
10 – 12 February 2015	New Zealand Institute of Architects Conference	Auckland
13 – 14 March 2015	Engineering Profession's Forum	
19 – 21 March 2015	New Zealand Institute of Landscape Architects	Rotorua
19 – 22 April 2015	Building Officials Institute of New Zealand 48th Annual Conference and Expo	Auckland
23 – 24 April 2015	New Zealand Backflow Training Seminar	Queenstown
13 – 17 May 2015	HVAC&R Trade Exhibition & Industry Conference	Christchurch
2 – 4 July 2015	The Registered Master Builders' Conference	Hamilton
30 July – 1 August 2015	The Association of Consulting Engineers NZ (ACENZ)	Hanmer Springs
3 – 5 September 2015	Metals New Zealand	Auckland
11 – 12 September 2015	Property Council Conference	Wellington
8 – 10 October 2015	Concrete Industry Conference	Rotorua
August 2015	Building Officials Institute of New Zealand Senior Building Control Officers' Forum	Hamilton

## LIGHT STEEL FRAMING COURSE

BOINZ in close partnership with NASH have developed a new course on Light Steel Framing, being offered by BOINZ as part of the Diploma in Building Control Surveying.

The one day course offers the delegate a thorough immersion and understanding of Light Steel Framing and will include manufacture, distribution, quality control, roll-forming as well as specifying documents such as the NASH Standard, which was the first to be officially cited as a method of compliance in the Building Code. The course will also cover all the essential building elements and assist in developing the delegate's competency when considering compliance issues to be considered prior to the granting of a building consent and practical processes for on-site inspections.

The course is a mix of presentations, group work, discussion and assignment. It will ensure that delegates that come from organisations with differing approaches to Light Steel Framing are comfortable with the topic and have a common approach to compliance in this emerging sector of our economy.

**The next Light Steel Framing course confirmed to run is in Christchurch, on the 29th October. There is also a course scheduled for the 5th December in Wellington. Please visit our training calendar on our website to register, or contact Training Manager Victoria Purdie on 04 473 6003 or [training@boinz.org.nz](mailto:training@boinz.org.nz)**



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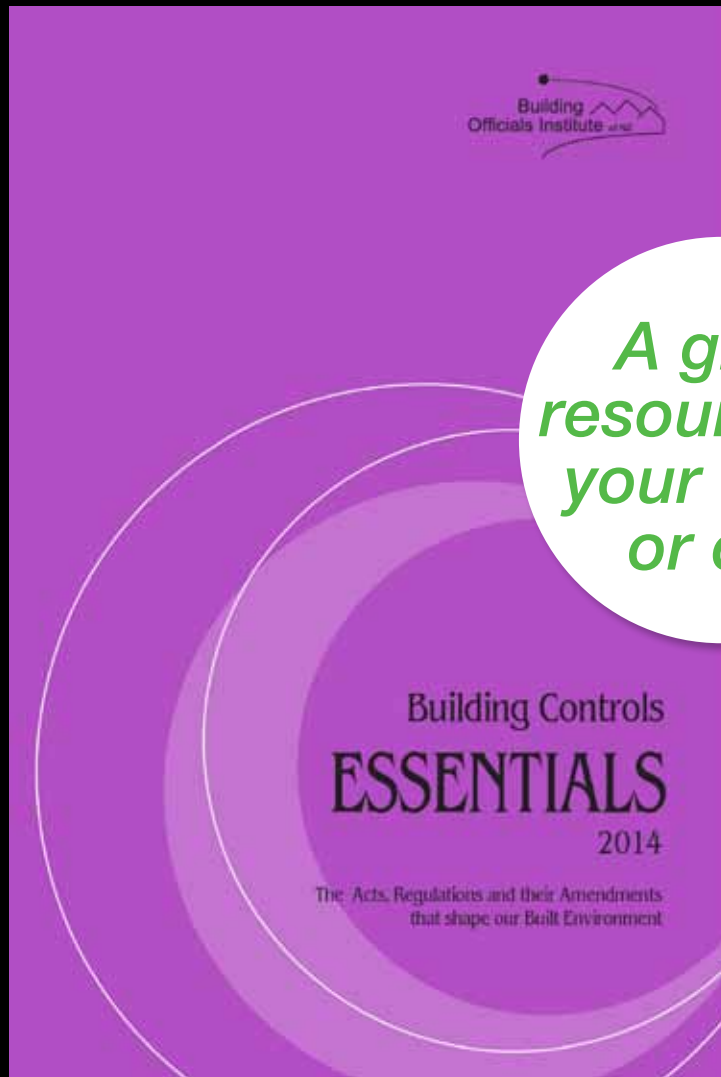
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