

# straight up

THE MAGAZINE OF THE BUILDING OFFICIALS' INSTITUTE OF NEW ZEALAND

MARCH 2013



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# BUILDING OFFICIALS INSTITUTE OF NEW ZEALAND 46TH ANNUAL CONFERENCE & EXPO

**12<sup>TH</sup> – 15<sup>TH</sup> MAY 2013**  
**ROTORUA ENERGY EVENTS CENTRE**

## KEYNOTE SPEAKERS INCLUDE:

**Hon. Maurice Williamson,**  
*Minister of Building and Construction*

**Bruce Chapman,**  
*Chief Executive NZ Historic Places Trust*

**Dan Ashby,**  
*Executive General Manager Hawkins Construction*

**Adrian Regnault,**  
*General Manager Building System Performance Branch Infrastructure & Resource Market Group*

**John Hare,**  
*President, Structural Engineering Society*  
*Principal, Holmes Consulting Group*

**Mike Stannard,**  
*Chief Engineer, Ministry of Business, Innovation & Employment*

**Rob Gaimster,**  
*Chief Executive, CCANZ*

**Andy Millard,**  
*General Manager, Steel and Tube*

**Jon Tanner,**  
*Chief Executive, Wood Processors Association*

**Lothar Moll,**  
*Director, Proclima – Germany*

**David Ward,**  
*Chief Executive, Horowhenua District Council*

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# From the Chief Executives Desk

## “Maximising Potential”

With globalisation the world is moving at an ever faster rate and the expectations in relation to our capability and services naturally move to a higher level.

I recently read an article quoting our Building and Construction Minister, Mr Maurice Williamson, promoting the new streamlined online consenting process as one of the best ways to make housing more accessible and affordable.

I support online consenting as a significant and positive step for our sector, but for me it is only one of many contributions to achieving accessible and affordable housing. It will however allow a nationally consistent pool of information to enable Building Officials to achieve greater accuracy in the decisions they are required to make.

However, I took from the Minister’s message an equally important and subliminal message, that of “maximising our potential”.

Over the last few years, Building Control has quite rightly been at the forefront of change in the Built environment. Changes advocated through the 2004 Building Act, the subsequent Building (Accreditation of Building Consent Authorities) Regulations 2006 and the 2009 Building Act Review have been about lifting the bar, establishing accountability and most importantly improving build quality.

Any sector undergoing a “reformation” experiences pain and Building Officials can probably attest to this as changes have evolved. However I now believe the majority of Building Officials are now on a different pathway, one of “maximising our potential”. We no longer fear change, rather we look forward to challenges our environment and technologies deliver. We are now only constrained by the budgets we have to work within – not the fear of change itself. We have accepted our roles will be different in the future just as we

have accepted our skill sets will need to be more advanced.

So how did we get to this point? Obviously political and operational visions over the last decade were important. So as were the horrendous build experiences of the 80’s and 90’s. But I believe it has been the coming of age of the Building Control Official as a professional that has been our biggest advancement. We have accepted and are committed to improving our individual potential, and contributing to improvement across the whole built sector.

In meeting members around the country, I am aware of a different and positive attitude. We recognise the fact we are a small country (effectively the size of a small to medium city) and have a need to be more efficient, consistent and accountable. Using education and technology to lift efficiencies and improve our decision making processes is now part of our role.

The Institute has had a role to play in lifting the skills sets of its individual members, as well as providing valuable partnership assistance to Local Government in terms of economies of scale and a consistent national service.

The Canterbury Earthquake Royal Commission recognised our potential and contribution. A recent LGNZ Zone 3 Forum for Mayors, Councilors and CEO’s the concept of the Institute assisting councils maximize potential through partnerships across a range of issues and services was also well received.

Maximising potential can be achieved at both organisational and individual levels. In both environments teamwork is important.

In this issue of Straight-Up you will read about Waitaki District Council’s Peter Newton and Shane Napier who both recently achieved their National Diplomas in Building Control Surveying. The Institute and Otago Polytechnic contributed significantly to bring about a cost effective qualification that recognised the vocational and legislative needs of the sector. Once in place both Peter and Shane saw value in maximising their potential, as did Steven May, their employer. Teamwork at its best!

The recent MBIE consultation document on “Updating and Streamlining Building Consent Authority Accreditation” also seeks to maximise potential. The Institute supported this initiative in the interests of improving efficiency (aka maximizing potential). Similarly the recent consultation on proposals to improve New Zealand’s earthquake prone building has allowed us to look at what a better system could be like. The Institute fully expects that pragmatic forward thinking outcomes will be achieved as a result of both these consultations. As with all conversations of this kind there are the fringe opinions, and occasionally positions that would have the world stand still. As the professionals with quality building outcomes at the very core of our mantra, maximising potential is what we should be about. Testing and challenging is part of the improvement process, so is being qualified.

The way forward is about maximising our potential.

## Metals New Zealand Industry Conference 2013



Metals New Zealand in conjunction with its industry association partners HERA, SCNZ, NZSSDA, NASH, CTNZ, GANZ and TIDA are pleased to announce our intention to hold the Metals New Zealand Industry Conference 2013 at the Classic Flyers Aircraft Museum in Tauranga from the 9th – 10th of May 2013. Registration for Conference can be done at [www.metals.org.nz](http://www.metals.org.nz)



Date	Venue	Location
28 March 2013	Green Property Summit	
13-15 or 20-22 June 2013	NZIQS Conference	Queenstown
10-12 July 2013	The Property Institute Conference	Queenstown
30 July – 3 August 2013	Contractor's Federation joint conference with the Australian Civil Contractors Federation	Queenstown
First week September 2013	Property Council Annual Conference	Brisbane (TBC)
25-27 September 2013	Architectural Designers New Zealand Conference	Dunedin
16-17 October 2013 TBC	IFE & SFPE	Auckland

## Earthquake and Building Safety Expo.

**WELLINGTON TOWN HALL**  
**FRIDAY 26TH APRIL – SATURDAY 27TH APRIL**  
 Free Expo and Seminars. Any attendees welcome



## BRANCH CHAIRS & SECRETARIES

*"All Branch Meetings/AGM's for 2013 have been held over the last two weeks with the exception of Wellington Branch who have their Branch Meeting/AGM scheduled for Wednesday 20th March 2013. Please join us in congratulating those who have either been Re-elected or are Newly Elected in the roles of Branch Chair and Secretary"*

East Coast Branch (Meeting/AGM held Tuesday 12th February 2013)			
Chair	Barry Nikolaison	Re-elected	barryn@hdc.govt.nz
Secretary	Corinne Hamlin	Re-elected	corinne@wairoadc.govt.nz
Canterbury/Westland Branch (Meeting/AGM held Tuesday 12th February 2013)			
Chair	John Blanken	Re-elected	john@stonewood.co.nz
Secretary	Brenda McIndoe	Re-elected	brenda.mcindoe@wmk.govt.nz
Central Branch (Meeting/AGM held Wednesday 13th February 2013)			
Chair	Craig White	Newly Elected	whitec@npdc.govt.nz
Secretary	Tracey Shaw	Re-elected	shawt@npdc.govt.nz
Southern Branch (Meeting/AGM held Friday 15th February 2013)			
Chair	Paddy Kilbride	Re-elected	paddy.kilbride@lakesenv.co.nz
Secretary	Barry Holsted	Re-elected	barry.holsted@icc.govt.nz
Auckland Branch (Meeting/AGM held Wednesday 20th February 2013)			
Chair	Quentin Dagger	Re-elected	Quentin.Dagger@ aucklandcouncil.govt.nz
Secretary	Tineke de Villiers	Re-elected	Tineke.Devilliers@ aucklandcouncil.govt.nz
Convenor of Venues	Grant Brown	Re-elected	grant@conqra.co.nz
Waikato/Bay of Plenty Branch (Meeting/AGM held Friday 22nd February 2013)			
Chair	Ian Mayes	Re-elected	ian.mayes@hcc.govt.nz
Secretary	Alister Arcus	Re-elected	alister.arcus@hcc.govt.nz
Northland Branch (Meeting/AGM held Friday 22nd February 2013)			
Chair	Stu Ferris	Newly Elected	stuartf@wdc.govt.nz
Secretary	Jane Stace	Newly Elected	jstace@kaipara.govt.nz
Nelson/Marlborough Branch (Meeting/AGM held Monday 25th February 2013)			
Co-Chair	Chris Wood	Newly Elected	chris.wood@ncc.govt.nz
Co-Chair	Winton Griggs	Newly Elected	winton.griggs@ncc.govt.nz
Secretary	Paul Guile	Newly Elected	paul.guile@marlborough.govt.nz
Wellington Branch (Meeting/AGM held Wednesday 20th March 2013)			
Chair	Rob Tierney	TBC	rob.tierney@holmesfarsight.com
Secretary	Murray Usmar	TBC	murray.usmar@dbh.govt.nz

## 2013 AGM NOTICES

**The 2013 AGM will be held on Monday 13th May 2013 commencing at 4.00pm in the Main Plenary at Rotorua Energy Events Centre**

### 26th MARCH 2013

Notices of Motion for the AGM shall be received by the Chief Executive by the 26th March 2013

At any Annual or Special General Meeting no business other than that stated on the order paper or properly falling under general business shall be transacted.

- Any Notice of Motion shall be given in writing and shall be dated and signed by the mover and seconder who shall both be financial members of the Institute. The text of the motion shall be accompanied by an explanation of the reasons for the motion.
- Notices of Motion shall be received by the Chief Executive at least forty eight days prior to the Meeting. The Chief Executive shall, by ordinary post and or Electronic means, send to each Member a Notice of the Meeting, a copy of the order paper and the full text of any Notice of Motion at least twenty eight days prior to the meeting.

### 15th APRIL 2013

Notices of Motion and a copy of the order paper including the full text of any Notice of Motion will be sent electronically to members.

To streamline the process of signing in at the 2013 AGM, please remember to bring your current Membership Card to prove your current membership status.

# PrefabNZ's Top 5: Check out these web-links for a taste of innovation, inspiration and intrigue

from PrefabNZ CEO Pamela Bell



Take a look at the Quik House, a prefab kit coming with five modified containers to comprise 3 bedrooms, 2 bathrooms, 2,000 square feet, fully customizable according to your interior preferences. Designed by Adam Kalkin's firm Architecture + Hygiene these homes are moderately cheap, mobile, and fully recyclable.

<http://trendland.com/adam-larkins-prefab-houses/>

The Kiwi Prefab exhibition at Puke Ariki Museum in New Plymouth has been running for three months now and the feedback has been amazing! So have the crowds, with over 36,500 people visiting the exhibition since it opened in December! Be sure to check out all of the upcoming activities on the Kiwi Prefab website. Plus, take a look at this video which shows the installation of the prefab buildings on the New Plymouth foreshore.

<http://www.kiwaprefab.co.nz>  
[http://www.youtube.com/watch?feature=player\\_embedded&v=gnu5ALj3ftc](http://www.youtube.com/watch?feature=player_embedded&v=gnu5ALj3ftc)



If you are looking for somewhere to destress in Christchurch, Gap Filler (along with the goodwill of Christchurch residents and businesses) has constructed a Summer Pallet Pavilion. Built using over 3000 wooden pallets, the outer walls conceal a secret garden, great for getting together with friends and family.

<http://www.gapfiller.org.nz/summer-pallet-pavilion/>



The thought of sleeping in a shipping container may have you asking questions about your travel agent. But now Belgium-based company, Sleeping Around, have transformed shipping containers into fashionable, temporary hotels that pop up at different locations.

<http://www.sleepingaround.eu/>



Catch a flying saucer!

Have you always lusted after a Futuro - the flying-saucer shaped dwelling by Finnish architect Matti Suuronen from the 1960s - well there was one available recently on a fabulous waterfront section in Raglan - one of 12 in NZ and 60 in the world.

<http://www.youtube.com/watch?v=4NFT7XiwQ0&feature=youtube>

# Waitaki District Council's Shane Napier And Peter Newton

## Achieve The National Diploma In Building Control Surveying

The 29th of January bought an exciting day for Peter Newton and Shane Napier of Waitaki District Council in that they both completed their assessment in the National Diploma in Building Control Surveying (small).

Being lead by Piers Heaney, of Capable NZ and supported by their Regulatory Services Manager, Steven May, Peter and Shane are the first to qualify after those involved in the initial pilot. Their graduation ceremony was held at Dunedin Campus on the 8th of March.

Here's what they and those involved have to say about their experience:

### **Peter Newton, Senior Building Control Officer, Waitaki Council**

It is with great satisfaction that I receive my Diploma in Building Controls Surveying along with Shane Napier. I have always been a supporter of initiatives that improve the professionalism and standing of building controls within the overall building industry. Since the time of the Building Act review in 2003 government has signalled the appropriateness of a qualification for those carrying out building controls functions. Only a short ten years, two governments, and many ministers later we have one. Now there is not only a qualification with content based on what it is we do, but we also have an educational provider and a professional body (in our Institute) that is committed to the delivery of the Diplomas. Capable New Zealand recognises that in many cases, for those with long experience in the BCO environment rather than teaching or training being required as a mechanism to demonstrate and document our knowledge and ability the Assessment of Prior Learning approach (APL) provides the qualitative rationale for the diploma. As most of you will know, the Institute's courses have been underpinning our knowledge uptake

and this commitment to our learning has been invaluable in getting us to this pathway.

Assessment of Prior Learning (APL) for me has felt like the best possible option for obtaining the Diploma. I have approached it as my opportunity to present to a panel of highly experienced professionals from the building fields of education, and from building controls, a portfolio that summarises my background and the scope of work I currently carry out for Waitaki District Council.

The hardest part for me was not committing to the Diploma programme. It was getting through the start where I had to develop my proposal outline for demonstrating through evidence of work records that I could meet the key areas of the Diploma curriculum. This is where the strengths of the programme coordinator Piers Heaney come to the fore. With APL there is no one way things have to be done. Just like in our building world there is more than one way to skin this cat. Shane and I took completely different approaches. Both proved appropriate and successful.

I cannot speak highly enough of Piers Heaney in his ability to provide motivation and direction. Shane and I were also fortunate to have much encouragement from our managers and the Council in general for our Diploma studies but it just happened to coincide with the "perfect storm" of increased workloads. Piers was able to keep us believing in our abilities and in the value of the Diploma. He made time available on several weekends which for us became the only quiet moment to get this work done. We probably did too much, but in the end it became a point of pride that we wanted to present our portfolios to our standards.

I found that choosing the right sort

of jobs in producing the "evidence" which I had been involved with and which showed a range of construction methods or a range of legislative requirements was the key. When it came to presenting my portfolio I was able to easily speak directly of this work with the assessors from this real life application of building controls. Having good records is the key. I would encourage anyone considering the Diploma to take opportunities to be involved with as many aspects as possible of a few varied projects and keep records of this. I found photographs excellent to speak to as they prompt memory and discussion.

The presentation to the assessment panel was the highlight of the Diploma experience. While it was carried out in a relatively relaxed and encouraging environment I could tell by the questioning that the assessors were familiar with the content of my portfolio. It was wide ranging and took up an afternoon. Often there was specific intent to the questions to draw out from me an answer that demonstrated my understanding of something. However in other instances it was with genuine interest in the details of a construction technique, code compliance or a method to overcome a problem. At the end of the assessment they provided really valuable feedback that has increased my confidence in my professional abilities. What an incredible endorsement of my skills, abilities and attitudes.

I say to anyone who has found their niche in building controls, get on and push for your opportunity to demonstrate you deserve to partake in the APL process and be awarded this Diploma.



**Shane Napier, Building Control Officer, Waitaki District Council**

After waiting for about 8 years for something to appear with some meaningful value for a Building Control Officer, I was very happy to see a Building Control Surveying qualification on offer.

Working towards and taking part in the National Diploma Building Control Surveying (Small Buildings) was very rewarding, thought provoking and sometimes challenging.

The whole process was great as it made you think and realise just how much you do know and practically undertake without thinking actually thinking about it in your everyday role as a Building Control Officer.

I have thoroughly enjoyed the experience and fully encourage all Building Control Officers to take part in this approved for learning programme run by Capable NZ, to achieve a very meaningful qualification that reflects your knowledge, experience and competency in this very specialised role that we have. I congratulate Capable NZ for preserving in getting this qualification to a point it is available and also the Building Officials Institute for developing the supporting learning material to a point where the sector can now meet its legal obligations.

I cannot speak highly enough of Piers Heaney Project Coordinator at Capable NZ as he was a great help, very encouraging and very accommodating in travelling to help us prepare our evidence folders.

I found once you had a plan on how you will provide the evidence to answer the unit standards, it was not such a daunting task and you could set targets to achieve a way of composing the required evidence in your folder. I cannot give a time frame on time taken as I had an interrupted few months in the middle, but suggest that the more content you have in your folders is

best, as the assessors have your body of evidence about two weeks prior so they have a good idea where you are at by the time you get to do the actual assessment.

As for the Assessors who were Philip Ballard, David Finnie and Chris Hight, I found them all very good, accommodating and thorough. Once you had begun the assessment the time just flew by.

Again I fully recommend the National Diploma in Building Control Surveying and encourage Building Control Officers and their employers to make it possible to complete this recognised National Diploma for the good of our sector and the wider industry.

**Steven May, Regulatory Services Manager, Waitaki District Council**

It was an easy decision for me to support my BCOs in this tertiary endeavour. Firstly, I saw it as a vehicle to support and acknowledge their high level of skills within the building industry. Secondly, the diploma illustrates to our community that Building Control Officers are professionals in their fields with the council willingness to invest in their skill development while also achieving compliance with Regulation 18.

**Piers Heaney, Facilitator, Capable NZ**

To finally achieve the National Diploma in Building Control Surveying, Peter and Shane worked incredibly hard, under stress (with 3 staff short) and put the bulk of their effort in on the weekends. Despite the challenges, they both flew through – I’m really proud of them both, how they worked, and how they supported each other. Their Manager offered exceptional support throughout the process and there is a team of a dozen coming down from Waitaki Council to help them celebrate their graduation. That’s the bit I think that is significant – the support was emotional as well as practical and every time we worked during the weekend, their Manager appeared and sat in for a while, and was willing to take on whatever role I asked of him. That just meant so much to the guys.



*“For more information on the Diploma please visit <http://www.capablenz.co.nz/other-pathways/building-officials.html>”*



Left to Right: Piers Heaney – Project Coordinator Facilitator Otago Polytechnic, Senior Building Control Officer- Peter Newton, Building Control Officer - Shane Napier, Regulatory Services Manager- Steven May”

# The Waitakere NOW Home: 10 years on and what's changed?

Way back in 2003 a project was underway to design and build an exemplar sustainable home, one which was environmentally friendly, affordable and fitted with other homes in its neighbourhood. Most importantly, the design used concepts, products and materials which were already 'on the shelves' – no advanced kit!

This house, the Waitakere NOW Home, was finally opened in 2005. It became one of the most intensively monitored live research homes in the country. For two years, a family went about their day-to-day lives while everything from energy and water use by individual appliances, to temperature and humidity, was remotely monitored.

The results painted a clear picture that simple design principles and attention to construction details can make a huge difference in how well a home performs. By that, I mean how warm and comfortable the home is, how dry and healthy it is inside, how much energy and water it uses, whether it uses healthy and sustainable materials, and how much it costs to run. In a nutshell

Here's how the Waitakere NOW Home performed:

If it's so easy, why isn't it happening today?

The results of monitoring the Waitakere NOW Home helped Beacon to set some benchmarks for how well a home should perform – the HSS High Standard of Sustainability®. The benchmarks covered



Energy use	<ul style="list-style-type: none"> <li>7400 kWh per year</li> <li>33% less than similar households</li> </ul>
Water heating	<ul style="list-style-type: none"> <li>45-55% hot water provided by solar water heater</li> </ul>
Heating	<ul style="list-style-type: none"> <li>Space heating needed on only two days per year</li> </ul>
Water use	<ul style="list-style-type: none"> <li>85 litres/person/day reticulated water</li> <li>50% less than the local average</li> <li>52% total water use supplied by rain tank (all non potable uses)</li> </ul>
Warmth	<ul style="list-style-type: none"> <li>Average winter temperature in living room 21°C</li> <li>Average winter temperature in bedroom 17°C</li> <li>Above World Health Organisation minimums for good health</li> </ul>
Dryness	<ul style="list-style-type: none"> <li>Average humidity in living room 57%</li> <li>Average humidity in bedroom 60%</li> <li>A good result for Auckland which frequently has over 75% humidity</li> </ul>
Homeowners' experience	<ul style="list-style-type: none"> <li>Even, stable temperatures</li> <li>No need for dehumidifier</li> <li>Substantially reduced water and power bills</li> <li>Improved family health, no asthma</li> <li>Improved family mental health – "Everything has been better since being here"</li> </ul>



energy use, temperature and humidity, water use and waste. Given the Waitakere NOW Home had little special kit and was based on very simple principles of design, it should be easy for houses today to reach these benchmarks.

However, even today, ten years later, New Zealand's new homes are still not getting the basics right and most are poor performers.

Recently Beacon monitored the energy and indoor environment performance

of two group builder homes in Rangiora. These were good practice by group builder standards, coming from an eco range and with some thought to orientation and insulation levels. In practice, however, they bore no comparison to the performance of the Waitakere NOW Home.

Although the two Rangiora homes maintained healthy temperatures, energy use was considerably higher than the Waitakere NOW Home, with one home using 10,800kWh per year and the other almost doubling energy use at 14,400kWh

per year. Both houses had energy efficient heat pumps as their sole source of heating, the design; however, thermal envelope and energy efficient features were not enough to offset the heating that these houses needed to maintain warm comfortable and healthy indoor temperatures. In addition, the least energy efficient Rangiora household used the heat pump for summer cooling, driving up their annual power bills. Ten years on, what would Beacon change?

The design of the home got the basics right; there is relatively little that Beacon would change today. The house had a small footprint with a space-efficient layout. It was oriented north with the majority of glazing on the northern side and little on the southern side. High levels of insulation (above Code minimums) in ceiling and walls were complemented by double glazing and an insulated exposed concrete floor to act as thermal mass. The outcome of good passive solar design was virtually no need for heating.

Solar water heating likewise reduced water heating costs, and energy efficiency was further improved by lighting choices (CFLs, no downlights) and appliance choices. Rainwater collection was effectively supplemented by water-efficient showers, taps, toilets and appliances.

There are two areas in which the design could be improved. The first was in the installation of the solar water heater. In an effort to dispel the perception that solar water heaters were obtrusive, the solar panel was installed parallel with the 20° roof. This was 17° shallower than the desired angle – the site latitude – which was 37° (Auckland). Consequently, the solar water heater under-performed and subsequent Beacon projects proved that good installation and sizing could increase supply of hot water to 75% across the year. The second area which could be improved was in shading and ventilation. Although the Waitakere NOW Home performed excellently in every other way, it struggled with overheating. At the height of summer, the house became too hot, especially in the evenings, with a significant amount of time spent above 25°C. The design relied on overhanging eaves and a pergola with a grapevine for shade. However, there was limited cross ventilation in the Waitakere NOW Home, passive vents in the window frames were more suited to condensation control than ventilation, and the windows generally remained closed during the day. A solar powered stack vent was subsequently installed to draw the hot air outside.

With warming climate and design trends favouring large windows, overheating is becoming a bigger problem in many new homes. Increasingly heat pumps are being installed specifically for summer cooling in new houses but these have implications for energy use, as can be seen in the Rangiora homes. With the benefit of hindsight, we would add better shading to northern and western windows in the Waitakere NOW Home, include passive ventilation (such as trickle vents or wooden louvres which can be left open during the day when the occupants are out) and, most importantly, design for cross ventilation and stack ventilation.

The good news is that some changes since 2003 make achieving good performance even easier. The most notable change is in double glazing. Back then, double glazing was unusual especially in Auckland. It was expensive and it proved hard to find an experienced installer. With the changes to the Building Code, double glazing products are much more common and have come down in price. More advanced options are available which provide even better performance – thermally broken aluminium frames, argon filled glass, low e glass.

Another change is in the availability of LED lighting. While the Waitakere NOW Home used CFL bulbs and avoided downlights to prevent heat loss into the ceiling, the excellent energy efficiency of LED lights were not available. Again, these are coming down in price and certainty about their performance is increasing.

Overall Beacon is still very happy with the design and features of the Waitakere NOW Home; it still stands up well against

homes today. Incorporating simple design principles and energy/water efficient features pays off in terms of how well a home performs.

#### **For more information on the Waitakere NOW Home:**

[http://www.beaconpathway.co.nz/new-homes/article/what\\_is\\_the\\_waitakere\\_now\\_home\\_project](http://www.beaconpathway.co.nz/new-homes/article/what_is_the_waitakere_now_home_project)

For more information on solar water heater installation [http://www.beaconpathway.co.nz/further-research/article/installation\\_tips\\_for\\_solar\\_water\\_heaters](http://www.beaconpathway.co.nz/further-research/article/installation_tips_for_solar_water_heaters)

#### **Article written by Lois Easton**

##### **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).*



A recent High Court ruling has highlighted the issue of non-accredited property inspectors referencing the New Zealand Standard for property inspection when providing reports.

Justice Williams in the High Court in Wellington awarded substantial damages to the purchasers of a Wellington property against the pre-purchase inspector, Johnsonville-based Trevor Cunningham, who failed to identify significant weathertightness issues.

Mr Cunningham had stated the house was in generally good condition, with some, mainly minor, remedial work required, and signed a certificate of inspection in accordance with the New Zealand standard.

However, the property subsequently required nearly \$350,000 in remedial work, and Justice Williams ruled that the buyers had been misled by the pre-inspection report and would not have suffered the losses they claimed against Mr Cunningham were it not for his breach of his duty of care.

Nick Hill, chief executive of Building Officials Institute of New Zealand (BOINZ), said that the ruling should serve as a warning to property inspectors that, if they are referencing the Standard when carrying out inspections, then they can expect to be assessed against that if problems ensue.

"In his ruling Justice Williams stated that the Standard was highly relevant to the case because, on the day of the inspection, Mr Cunningham had signed the certification contained in Appendix B to the Standard," said Mr Hill.

"Mr Cunningham had adopted the Standard and certified that he operated in accordance with its terms. Justice Williams also noted that, while an industry standard or practice is not automatically the legal standard for litigation purposes, it has considerable weight when establishing an inspector's legal duties."

The High Court heard that Mike and Sharon Hepburn and Mrs Hepburn's sister Tracey McKinnon, agreed to buy the 260sqm house in Khandallah in 2007, conditional on a satisfactory pre purchase inspection report.

The real estate agent provided them with details for Mr Cunningham, a one-man business operating as ABS Contractors and Cunningham Consulting Ltd (CCL).

Having received Mr Cunningham's report and following verbal discussions with him, the purchase went ahead, with the buyers paying \$652,500.

However, in 2010 they decided to sell the property and received an offer subject to a satisfactory property inspection. That inspection, carried out by Realsure, a

BOINZ accredited surveyor, found serious weathertightness issues - subsequently confirmed by the Weathertight Homes Resolution Service (WHRS).

The owners also found that Realsure had also carried out inspections on the property for two other potential buyers shortly before they had purchased it and both had withdrawn their offers due to issues outlined in those reports.

The owners launched legal action against Mr Cunningham and his business for breach of contract, negligent mis-statement and breach of section nine of the Fair Trading Act.

In the February ruling, Justice Williams awarded them gross damages of \$364,649,53 plus interest - although this was reduced by 50 per cent due to contributory negligence as they had not carried out remedial works which were recommended in the report.

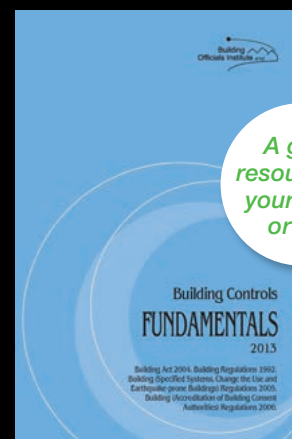
The Hepburns and Ms McKinnon also took action against the real estate agent Elizabeth Capovilla and Tommy's Real Estate Ltd. These were settled in 2012.

Mr Hill said that the case also highlighted the importance of buyers using a suitably qualified and accredited building surveyor to carry out pre-purchase inspections.

"People need to be aware that even if an inspector claims to be an 'accredited building surveyor' (ABS) - although it is not suggested that was the case in this situation - or operate to the NZS4306:2005 New Zealand residential property inspection standard, that does not mean they are accredited," said Mr Hill.

"It is in the interests of the three key players in the property sale - seller, buyer and realty agent to work with an ABS. Only by using one of these can you be confident that your inspector has acquired the professional ability, education and standard of competence required to undertake building survey inspections in accordance with NZ Standard 4306:2005.

"BOINZ has developed the ABS to provide home buyers with confidence in the quality of inspections undertaken and bring much needed professionalism to this unregulated part of the building market."



## Building Controls Fundamentals 2013

**Available now**

### Book Contents:

Appendix Building Amendment Bill (No 4)

The Building Act 2004 and amendments (consolidated with history notes). As at 14 April 2012.

The Building Code - Schedule 1 of the Building Regulations 1992 consolidated with history notes). As at 14 April 2012.

Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005 - SR 2005/32 with history notes and consolidated amendments of the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Amendment Regulations 2005 - SR 2005/338. As at 14 April 2012.

### Book Size:

A5 (approx.) Pages: 300 (approx.)

Visit our book store at [www.boinz.org.nz](http://www.boinz.org.nz)

# Plumbers, Gasfitters and Drainlayers Board launches campaign against unauthorised tradespeople

New Zealand homeowners are being warned not to use unlicensed tradespeople for plumbing, gasfitting and drainlaying work.

The Plumbers, Gasfitters and Drainlayers Board (PGDB), which regulates the industry, is calling on New Zealand homeowners and City and District Council inspectors to ask plumbers, gasfitters and drainlayers for their licence cards to ensure they are authorised to carry out the work.

PGDB Chief Executive, Max Pedersen said it is illegal for anyone to do plumbing, gasfitting and drainlaying unless they are authorised to do so by the Board. From 1 April each year, plumbers, gasfitters and drainlayers must relicence with the Board in order to work legally in New Zealand. "We're reminding homeowners not to risk their family's health and safety or their insurance by hiring unauthorised tradespeople to undertake work. "Unlicensed plumbers, gasfitters and drainlayers potentially place consumers in harm's way with their poor skills. New Zealanders have the right to have confidence that any plumbing, gasfitting or drainlaying service provided to them is safe and compliant."

He added: "Anyone carrying out plumbing, gasfitting and drainlaying must be able to produce their licence card if asked. This provides consumers with an assurance that the work is being legally carried out by an authorised and competent tradesperson, who is currently licensed by the PGDB."

Council inspectors can play a significant role in reducing the amount of work being undertaken by unauthorised people by asking to see the licence cards of plumbers, gasfitters and drainlayers that they see working on building sites in the course of their inspections.

Consumers and Council inspectors can also check to see if a plumber, gasfitter or tradesperson is authorised to carry out the work by logging onto the PGDB's website at [www.pgdb.co.nz](http://www.pgdb.co.nz), he said.

"If a homeowner or Council inspector believes work has been done by someone who is not authorised, or has concerns about the competency of tradespeople, they can make a complaint to the PGDB."

The Plumbers, Gasfitters and Drainlayers Board is the statutory body which regulates the plumbing, gasfitting and drainlaying trades to ensure those providing these services are competent and safe in order to protect the public and property.

For more information, please contact:

**Shelley Brown**  
**Communications advisor**

04 495 2610  
021 414 977  
[shelley@pgdb.co.nz](mailto:shelley@pgdb.co.nz)

## METAL ROOFING & WALL CLADDING COURSE

Compliance Requirements  
CPD Seminar Series

The Building Officials Institute and Metal Roofing Manufacturers (MRM) have worked together to bring a one day Metal Roofing and Wall Cladding Course to our members. The ultimate objectives of this course is to enable building consenting and inspection staff to be able to recognise complaints and quality trade proactively when examining plans, specifications or installations.

The detailed objectives of this course include awareness and details around a building structural integrity and design loads likely to be experience on any site. The attendee will receive an in depth knowledge of material/condition compatibility durability when using different materials around weathertightness and appropriate ventilation provisions to avoid condensations in roof space.

The correct placing of roof underlays and insulation, being a vital roofing component and installation practice is also covered.

Modules covered:

- B1 Structure
- B2 Durability
- E2 External Moisture
- E3 Internal Moisture

Who should Attend:

The course has been designed for Building Consenting Officers and Inspectors to cover aspects of design and installation of plain and painted metal cladding for all buildings. This includes corrugated and trapezoidal profiled metal, self-supporting and fully supported tray and translucent roofing as well as metal tiles.

BOINZ CPD POINTS = 5

See Calendar at the back for full course dates and details



This is a picture of the licence card all authorised plumbers, gasfitters and drainlayers must carry with them.

# Window Flashing Design and Installation

A recent High Court decision of Auckland Council v Lamb highlighted by Legal Vision in the February issue of "Building Today" is of extreme importance and relevance to all TA's.

The Council was found to be fully liable for the damage caused around windows and doors openings in a leaky home claim while the builder was exonerated.

The case centred round a Council argument that the builder had not turned up the ends of the Sill Trays at the bottom of window openings in a direct fix stucco clad building. Initially Council were unsuccessful at WHT and ordered to pay \$340,000 which they consented to.

The Council then sought to recover 80% from the builder. They were unsuccessful in the WHT so then sued the builder for negligence in the High Court where they were also unsuccessful, ending up carrying the full cost of \$340,000 judgement plus the added High Court costs.

This situation focuses on an area that has not received anywhere near enough "practical" attention.

- 12,500 Whrs reports and thousands of private building reports produced to date.
- The vast majority of reports contain a schedule of leaks at the window to cladding junctions.
- There is now 10 years of factual evidence of cladding to window failure. The costs to repair these defects is in the "Tens of Billions"

More than a decade after Leaky Home Syndrome was made public the same repetitive practices and failed details are prevalent. The same sealant reliant details that caused the problems in the first place are still sanctioned and endorsed today in the "Minimum Standards" E2/AS1 External Moisture documents.

The introduction of cavities, the Licensed Practitioner's Scheme and the continuing reliance on sealants in lieu of mechanical flashings will not solve these poor building practices.

The facts bear this out. The case above was reliant on sealant. The sealant failed. Surprise!!

Sadly there are now claims being lodged on cavity constructed homes and we now have a Leaky School Syndrome set to run the industry into the "Billions of Dollars" of damage and costs... again!

How many more years, how much more factual evidence, how many more "Billions of Dollars" need to be spent, how much more report writing, investigation, litigation and repair does the Building Industry need to see before they change their ways?

E2/AS1 is a "Minimum Standards" document and continues to promote the use of sealants at the critical jamb junction between the cladding and joinery frame in lieu of a full mechanical flashing system.

Some cladding manufacturers who supply technical cladding to window junction details based on E2/AS1 weather tightness details also carry written disclaimers regarding their own detailing. This stance is totally unacceptable when those who have most to gain have the least responsibility.

The Leaky Home Syndrome has highlighted serious issues with window and door flashings.

Flashings should "never be called flashings" when they are buried under a thin layer of plaster thereby trapping water that penetrates the microns of paint that serves as the "Deflection" factor in the 4 "D'S" formula.

It is not readily understood that a coat of paint is only 35 microns thick, that means 35 thousandth's of a millimetre. So long as a microscopic skin of paint is serving as the only means of deflection over buried PVC "Mouldings" then we will have on-going problems for years to come.

In 2009 a PricewaterhouseCoopers (PwC) released a report on the size and cost of the weathertightness problem and outlined the expected failure rates of popular cladding types. They made sad reading. What has really changed?

Is the Licensed Practitioners Scheme really going to solve these specific and vital on-going issues?

Is it not time to recognise that "Minimum Standards" carry Maximum costs to ratepayers and place inequitable burdens on Councils?

Understanding Flashing Principles

What are window flashings?

What is their purpose?

What should they comprise?

How do the Junctions and intersecting points of the flashings terminate?

Who is to take responsibility for their

failure?

There are simple, basic principles of water management that are ignored on a daily basis. They are the 4 "D's". The principles are easy to see, understand and to apply.

## Window & Door flashings

1. When installed flashings should always comply with the 4 "D's" Deflection, Drainage, Drying and Durability. If they do not they must be rejected.
2. Window & door flashings should only be installed by skilled and trained personnel who understand weathertightness principles.
3. Installers of these critical flashings must sign off and totally accept accountability, responsibility and liability of genuine errors or omissions relating to their installation.
4. The flashing designs must be tested to E2/VM1 and peer reviewed by recognised independent weathertightness specialists.
5. Flashings should be proven to work by independent testing in the most extreme conditions
6. They should never be reliant on sealant
7. They should not rely on the cavity to act as an internal downpipe.
8. Direct fix should be banned by all Councils as the latest (August 2012) details are unworkable on site and fraught with problem and extra costs. Cost that would cover cavity battens all round. Click on this link to view in depth paper for proof that the above statement is factual. <http://www.ebossnow.co.nz/2011/mike-anticich/direct-fix-cladding.html>

Is it not time for Councils to be Pragmatic, Sensible, Realistic?

Is now the time to look harder at the way windows and doors are flashed and who is qualified and experienced to do this work.

The cladding to window & door junction is the most critical weathertightness leak point and has been overlooked for too long.

## Mike Anticich & Steve Hotton

Directors

Flashman Cladding and Flashing Systems

# GASFITTING CERTIFICATION: New database for “high risk” work

Energy Safety, now part of the Ministry of Business, Innovation and Employment, reminds you that the process for gasfitting certification is changing from July 1, following amendments to the Gas (Safety and Measurement) Regulations last year. For gasfitters the new approach is designed to make your administrative processes simpler while ensuring safer outcomes for customers.

The new regime extends certification to cover all gasfitting. It explicitly recognises both the work, through the Certificate of Compliance (CoC), and the product of the work, i.e. the resulting installation or part installation, through a new Gas Safety Certificate (GSC).

Certification is made more flexible – CoCs can be combined and for simpler low risk work it will be possible to complete just the GSC. Gasfitters will be able to design or customise their own CoCs and GSCs, and store and send them

Electronically. It will also be possible to incorporate CoCs and GSCs, into business documents, such as invoices. This means that gasfitters will no longer be required to complete CoCs through the Plumbers Gasfitters and Drainlayers Board (PGDB) process, thus lowering compliance costs. Energy Safety is working with industry organisations and commercial providers to ensure electronic forms of CoCs and GSCs are available to gasfitters.

New categories for installation work  
One of the most important changes is turning the current groupings of installation work into three risk-based categories:

- High-risk - work determined as presenting a higher risk
- Low-risk - work currently exempt from certification
- General - work not falling into the high or low-risk

These categories better align compliance costs with the level of risk and improve safety by putting more focus on the High-risk area.

Low risk gasfitting is, in general terms, that work which before 1 July is exempt

from certification under regulation 45. The exception is that the 'less than 15 kg' exemption is removed and this work becomes either high risk or general work. The high risk gas fitting category includes:

- Work where the means of compliance in AS/NZS 5601.1 or AS/NZS 5601.2 are not followed.
- Work outside the limitations of the means of compliance.
- Work within 20 metres of a hazardous area.
- Work where air pressure or combustion air may be adjusted independently of the operation of the appliance.
- Work that is in a caravan or boat that has sleeping quarters or is intended for sleeping.
- Alterations or additions to an existing installation (where it is not low risk).

### “High risk” Database

On-line certification of gasfitting is removed. Instead, selected details of high risk gasfitting work will be required to be recorded on a register of high risk work.

Energy Safety is completing work on the new online database for certifying gasfitters to record details of “High risk” gasfitting work. The information for the database will be taken from the CoCs, and must be done within 20 days of issuing the CoC to a customer.

The database will provide public access to information about

### SEND US YOUR ARTICLES

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### 2013 BOINZ TRAINING CALENDAR

On page 20 and on our website  
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As a further membership benefit the Institute has negotiated with Standards New Zealand to become an official Reseller. What this means is that members now have access to a range of published standards and standards related products (Hand books, Codes of Practice etc).

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**Timber Framed Buildings**
- **NZS 4306:2005**  
**Residential property inspection**

## 2013 Building Officials Institute of NZ

# Excellence Awards CALL FOR NOMINATIONS

### STANDARDS NEW ZEALAND CONTRIBUTION TO TECHNICAL AND LEGISLATIVE IMPROVEMENTS AWARD



This award is given to the individual who has excelled in contributing to advancing the technical and/or legislative

### MITEK NZ TRAINING COMMITMENT AWARD



The individual or organisation that has committed to significantly improving the position of training in their field.

### ROCKCOTE SYSTEMS EMERGING LEADER AWARD



Each Branch is to nominate an individual who has shown exceptional leadership skills at a local and / or national level, whose actions have grown the value of BOINZ among members.

### KOP-COAT NZ CONTRIBUTION TO BOINZ AWARD



The individual or organisation who have made a significant impact to the advancement of BOINZ in the market place.

### WINSTONE WALLBOARDS BRANCH OF THE YEAR AWARD



The Branch award is considered by the BOINZ Board each year based on participation, innovation & member value at a local level.



**TO BE ANNOUNCED  
SOON!**



**CALL FOR NOMINATIONS closes 19 April 2013**

Email [office@boinz.org.nz](mailto:office@boinz.org.nz) with your nomination (please inc name, contact details, employer and grounds for nomination)  
Be at the BOINZ 2013 Gala Dinner to support your nomination Tuesday 14<sup>th</sup> May 2013



# Everything councils need to know about the Local Government Amendment Act

The Local Government Act 2002 Amendment Bill was passed by Parliament on 29 November and commenced (in part) on 5 December 2012. The amendment signals Government's intent to constrain councils' activities, to increase performance monitoring of councils, and to raise the benchmarking of councils' performance. Encouraging amalgamations and reorganisation of councils is also a key focus.

## The key changes

The key change for councils is the purpose of the Act and of local government has been amended by removing the four well-beings (to promote the social, economic, environmental and cultural well-being of communities). In its place it is the council's role to:

Meet the current and future needs of communities for good quality local infrastructure, local public services, and performance of regulatory functions in a way that is most cost-effective for households and businesses.

"Good quality" is defined as being efficient, effective and appropriate to present and anticipated future circumstances.

Councils need to amend their decision making templates to make it clear that they have considered the purpose of local government and are satisfied in a particular case that a project or decision falls within the council's purpose.

## Reorganisation

A significant portion of the Act now focuses on the ability for any person to request reorganisation of councils. The procedures to commence a reorganisation are more simple. It is for the Local Government Commission to decide whether a reorganisation proposal can be pursued. The Commission needs to determine whether there is demonstrable community support for a proposal for it to be assessed and publically notified. This easier process will enable more

people to suggest reorganisation proposals which, in turn, will involve councils spending more time on forming a view on whether a proposal is supported or not.

One feature of the reorganisation provisions is that the Minister, by supplementary order paper, has introduced the ability for the Commission to establish local boards, similar to what has happened in Auckland. Once a final reorganisation proposal is prepared by the Local Government Commission it needs to be advertised. A total of 10% or more of persons in a district are entitled to demand a poll. They have 60 working days to do so. If a poll is demanded then the final reorganisation can only proceed if more than 50% of the votes cast in that poll support the reorganisation. If the 50% mark is not reached then the reorganisation cannot proceed. This gives a degree of control to smaller districts that might face 'takeover' by larger councils. The voters in a smaller council will be able to reject an amalgamation if 50% of them prefer that outcome.

## Mayor's powers

The provisions that give mayors of territorial local authorities additional powers is delayed, and will come into force following the next local body elections on 12 October 2013. The Act specifically states it is the mayor's role to provide leadership to the council and the people of the district, including leading the development of plans, policies and budgets, to appoint the deputy mayor and establish committees and their chairs. Once the mayor has appointed a deputy and committees, it remains possible for the elected council to change those positions in the future. The CEO's functions are slightly amended to require that employment of staff needs to be in accordance with any remuneration and employment policy adopted by the council.

## Other changes

Councils' long term plans are now required to be audited by the Auditor General, removing any choice from councils. There is a range of new powers

available to the Minister for Local Government to monitor and intervene in the affairs and management of councils. The Minister is not able to intervene into the operation of CCOs, CCTOs or council subsidiaries.

The Minister has the power to create regulations that establish a range of parameters and benchmarks that councils will be required to report against. The purpose is to enable comparisons between councils and for the Minister to monitor performance and potentially intervene. This will lead to further compliance and information gathering costs for councils.

This proposed reform is of significance for all councils and those who monitor and deal with councils. These changes should be studied carefully and if you wish to discuss the details please contact the writer.

**Article by Michael Garbett, Partner, Anderson Lloyd**

**Michael Garbett, Partner**

Phone: 03 467 7173

Email: michael.garbett@andersonlloyd.co.nz

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# Far North District Council petitions for major change

A Far North District Council review of its future has resulted in a formal application to the Local Government Commission for Unitary Authority status.

District councils are responsible for delivering most local government services – roads, water, wastewater and refuse among others. Regional councils focus more on environmental management, including setting the planning and resource management framework within which district councils have to operate and manage the use of natural resources.

FNDC, whose mayor is Wayne Brown, wants to turn itself into a unitary authority – a single local government body that combines territorial and regional government functions within one geographical area.

The council has outlined to its community the main reasons behind the application to the LGC, saying that becoming a unitary authority would result in an intention to “govern themselves” through:

- Far North decisions being made in the Far North, not in Whangarei;
- Reduced costs for Far North ratepayers
- The Far North getting its share of regional assets and economic development funds
- Local communities, iwi/Maori and the council working together to find effective and affordable solutions to environmental problems;
- The Far North and rural communities having a stronger voice in Wellington
- Maori and non-Maori working together in a strategic partnership to make the Far North a better place to live, work and invest.

If successful there could be two unitary authorities for Northland - our rural-focused Far North Unitary Authority and an urban-focused, Whangarei-based Unitary Authority (if desired).

The council acknowledges the Local Government Act 2002 Amendment Act 2012 passed in December has changed the process for reorganising local government.

The LGC will assess the council’s application and decide whether to reject it or request more information, test whether there is sufficient support for local government change, call for alternative applications and assess these along with the status quo. The Commission will then develop its recommended reorganisation option and consult the community.

LGC will then present its final reorganisation proposal and a poll will be held if 10 per cent of voters in the affected district petition for it. The Commission will prepare and implement a reorganisation scheme if a simple majority of voters support the proposal.

## BRANCH ACTIVITIES



# Tried and Treacherous

(With apologies to Jane Austin)

Paul Probett, MIFPI, MBOINZ, AAMINZ, AMLEADR, MAANZ, ANZLS, NZCB Incodo Ltd, Tauranga



*Paul is a member of the Independent Forensic Practitioners Institute, a building surveyor and principle of Incodo Ltd a consultancy specializing in forensic building investigation and in situ timber strength evaluation*

The issue of when to consign some of what we think is best to the recycling bin and the dangers if we don't look at material compatibility

"Uncomplimentary" or "incompatible". Two words conveying different but similar concepts. Both suggest that some things simply do not get along. A building product may perform brilliantly by itself but may either fail to perform adequately when in proximity with another material, process, component or method of construction that puts such items in some form of contact or proximity. Unfortunately, literature from manufacturers tends to focus on extolling the virtue of the product and the users of such products are left to consider the possible results of each application.

Unfortunately, most information is not as comprehensive as warnings for say, medications which can list foods, actions and other medications that might cause adverse reactions. Side effects are spelt out in detail to ensure users are taken to the stage of reaching informed consent when considering using something coming from a drug company. Arguably, the readiness with which drug companies are sued in the USA has contributed to the detailed warnings.

Such is not the norm when it comes to procuring and assembling the thousands of components that make up a building in the land of the long white cloud. To illustrate, consider the following

## SYSTEM INCOMPATIBILITY

An aluminium joinery manufacturer knows his joinery may leak a little (yes it is or was allowed to do so under test regimes) so the installation instructions require head, jamb and sill flashings – with the sill flashing invariably being open drain. This is the result of a specific design and hopefully exhaustive testing. (If one considers testing one small fixed pane unit once is exhaustive – maybe it was a very heavy window unit - and that's what the "exhaustive" bit means). However, the manufacture of the EIFS monolithic or other cladding that surrounds the joinery requires the sill to cladding junction to be sealed and this too is the result of specific design and exhaustive testing (even though polystyrene is far lighter than joinery). Independent literature ranging from E2/AS1 to product analyses and tests might support both the joinery and EIFS manufacturers. Question: if the assembly of joinery and cladding fails, and perish the thought, leaks, who is responsible? Could it be the Council, designer, builder as they did and didn't follow instructions and maybe the home owner who chose certain materials or suppliers for whatever reason and made a change?

The two tried and tested components demonstrate incompatibility

## MATERIAL INCOMPATIBILITY

Consider, a sheet cladding material has been exhaustively tested and has clearly proven to be stable even if painted black and has clearly demonstrated its ability to withstand extended periods where temperatures reach say 65C. (Which they can and as things are going may inconveniently get truly somewhat higher.) But are the flexible sealants used at its edges, the filler used over screw fixings as well as the underlying building wrap, and bitumen based adhesive strips as well as the extruded PVC, synthetic rubber and other strip materials in contact or proximity all able to withstand the same environmental conditions and most importantly continue to perform for the next 15 years and hopefully longer? And if they do not are they easily replaceable?

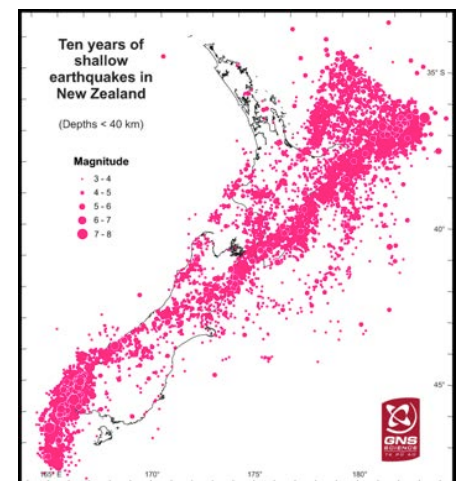
Warnings have been given on carbon pencil use on some metal roofing and galvanic corrosion charts identify when corrosion of in-contact metals is likely to occur. Some limited information is available to show incompatibility issues

with leachates from materials as different as concrete, preservatives, timbers, metals, plastics, translucent sheetings, glass and so forth – but often this is not readily available and little in the way of such warnings is contained on a product or web page.

## ENVIRONMENTAL INCOMPATIBILITY

NZS 3604 makes some allowances for snow loads, wind loads, earthquakes, salt corrosion and sulphur attack.

However localised issues ranging from industrial processes such as battery and vinegar manufacturers for instance do affect neighbouring buildings adversely. And although some areas in NZ have been identified as places where on-going regular seismic events does occur, brick veneer, stucco and other earth tremor unfriendly materials can and continue to be used. Arguably, EQC will be there to fund repairs – but should it?



## MATERIAL EXPANSION INCOMPATIBILITY

BRANZ publish Bulletin No 531 which includes several tables related to building material characteristics includes details of their often very different coefficients of expansion. While the figures may look inconsequential in themselves, their application in the real world becomes highly significant.

Consider a trendy dark coloured ranchslider jamb. It is fixed to a concrete floor so as it heats it can only expand upward. (OK it will expand in section, but only a bit. and if restricted at the top may well bow sideways) A full floor height unit will expand as follows

0.024 Alum CoE x 2.00m H x 55K (degrees) = 2.64mm

Not a huge figure, but as the unit continually expands and contracts over the years how will this affect the smear of sealant between the jamb and the cladding? (It's easy to show how good one's RTV is, and fun as well - plus give opportunity to flex one's muscles in public - if one has such a need and corresponding muscles) Stretching a piece of cured sealant shows that it can be stretched up to say 5 times its length easily. 500% elasticity - fantastic! Unfortunately, it's cross sectional area decreases by about 80% in doing so. There are very high loads placed on the material during such a test and for that reason sealant, manufacturers tend to quote a figure of about 20-25% as maximum "stretch" their products should be loaded to. The follow on is that the thickness of the bead of sealant between the jamb and cladding needs to be 4 to 5 times the length sealant needs to stretch. In the above case and allowing for the sealant being under no load at 20C the bead between joinery and cladding needs to be 10-12mm to perform to the sealant manufacturer's criteria. Clearly, a smear in the corner or a bead of gunned goo flattened by joinery being slammed over cladding is headed for problems as a long-

term and effective weathertightness seal. And this does not take into consideration the difficulty with preparing the sides and back of the sealant point, which would suggest even more caution when designing for loads.

### WHERE TO FROM HERE

The preceding includes very common examples of issues between environments, materials, systems and whatever. Such assemblages have been implicated in weathertightness failures on a regular basis.

These demonstrate that the design and construction of buildings is complicated and an increasing degree of expertise by all involved is required including ongoing training in specific areas. Over the years, various organisations, notably the medical fraternity, have taken steps to ensure high levels of expertise coupled with ongoing training - it is simply expected of members in their profession. (One can no longer call himself or herself a surgeon and operate in a limited capacity on self and family but anybody can call themselves a do-it-yourselfer and do some building work that others will eventually have to live with.) Building has become so complicated that

it has moved from being a trade to a profession. The leaky home experience has bitterly taught many who considered themselves to be adequately skilled - that their knowledge was limited, and that others view their knowledge, workmanship and skills as sins of commission or omission.

Even peripheral players on the building stage have found that one should not associate the word party with fun. The risk to the owner who is actively involved in building their dream home continues to be substantial.

Given the relatively slow uptake of persons seeking registration as building practitioners, the absence of readily accessible online and ongoing training schemes or even any requirement to even attend such, and product information / compatibility issues - there seems an inevitability that the increasing complexity of building processes and products, will not be matched by comparable and adequate expertise of the wider industry. Does this raise the spectre of the building history of the last 20 years repeating itself in some new scary form sometime soon?

## Believe it or Not



The Training Academy and MiTek recently launched a Timber Truss & Wall Frame 'Skeleton' – Load paths and fixings seminar nationwide.

The course is designed to provide attendees with a better understanding of typical loads applied to a residential building and how structural adequacy and fixings are evaluated. Participants are encouraged to think about timber roof trusses, wall-frames and associated fixings and connectors and what to look for on-site with regard to inspection of the timber structure from ridge-beam down to sub floor. Participants will be able to identify critical load paths and construction aspects on-site for inspections and on plans for consent processing.

The seminar is specifically targeted towards building officials and consent/compliance staff wishing to know about the applied structural timber "skeleton" of the house and importance of load paths both on plan and on site.

Seminars in Christchurch, Dunedin, Greymouth and Nelson have been successful, with participants coming away

Location	Date
Tauranga	21 August 2013
Nelson*	15 March 2013
Auckland	18 September 2013
Whangarei*	23 October 2013
Palmerston North*	17 April 2013
Christchurch*	14 February 2013
New Plymouth*	17 July 2013
Dunedin	13 February 2013
Wellington	16 April 2013
Greymouth	13 March 2013
Hamilton*	12 June 2013
Napier	22 May 2013

with various levels of knowledge. Gillian Fielding, Code Compliance Auditor for Christchurch City Council commented on how the seminar was really good, and that she "learnt a lot and it has given me a greater understanding of the paperwork I am seeing in my job. It also confirmed a decision for me to do further study in the building area".

For more information, and to register, please visit our training calendar:

<http://www.boinz.org.nz/training-academy/calendar.php>

**Course Dates and Locations:**

## NZS 3604

The Institute is pleased to bring to our members and clients the much anticipated NZS 3604. The Institute has worked hard to develop a high quality, Diploma recognised course, which will bring those with a desire and need for exposure in this area up to speed rapidly.

The course covers an understanding of NZS 3604 and Acceptable Solutions in B1 and the ability to apply this knowledge to ensure compliance of a completed construction.

The modules covered include:

- Building Controls and NZS 3604
- General
- Site Requirements
- Bracing Design
- Foundations and Subfloor Framing
- Floors
- Walls
- Posts
- Roof Framing
- Remaining Requirements

The course covers Unit 24162 "Explain the effect and impact of loads, forces and physical effects on structural components and materials".

Check the training calendar for upcoming course dates and locations. Greg Burn is the trainer for NZS 3604.

**Greg Burn: NZS 3604 Trainer  
NZCD (Arch)  
Diploma in Business (Marketing)**



Greg has worked in a number of roles within the residential building industry for more than thirty years and for the last nine years has managed his own consultancy business which sees him involved in a number of activities within the industry, ranging from residential design to technical consulting and industry education.

His extensive knowledge and experience

in the process of building design and construction coupled with his understanding of weather tightness issues and technology, led to him becoming a member of the working group that developed the revised compliance document for the external moisture clause of the New Zealand Building Code -E2/AS1. His understanding of not only the design and construction process but also of New Zealand Standards for residential construction and Building Code compliance has seen him involved in the presentation of a number of national seminars for BRANZ (often in conjunction with the Department of Building and Housing).

Greg presented a nationwide seminar on NZS 3604:2011, the structural Standard for light timber frame construction, shortly after it was first introduced and has also run a number of industry based training courses and written many seminars, technical articles and books on a wide range of industry topics. He has also worked with a number of manufacturers in helping to develop new products and systems for residential construction and been involved in the design of a number of large scale residential developments.

# 2013 TRAINING CALENDAR

MARCH		
11, 12, 13	Building Controls	Christchurch
13	Timber Truss & Wall Frame 'Skeleton' - Load paths and fixings seminar	Greymouth
15	Timber Truss & Wall Frame 'Skeleton' - Load paths and fixings seminar	Nelson
14, 15	E2 Weathertightness	Christchurch
22	Communication & Ethics	Wellington
APRIL		
8	NZ Metal Roof and Wall Cladding	Wellington
8,9	E2 Weathertightness	Auckland
10, 11	Plan Processing	Auckland
15, 16, 17	Complex Plumbing	Wellington
16	Timber Truss & Wall Frame 'Skeleton' - Load paths and fixings seminar	Wellington
17	Timber Truss & Wall Frame 'Skeleton' - Load paths and fixings seminar	Palmerston North
29, 30	Site Inspection	Wellington
15, 16, 17, 18	NZS 3604	Auckland
15	NZ Metal Roof and Wall Cladding	Auckland
MAY		
6	Report Writing	Christchurch
6,7	Complex Fire Design	Wellington
8, 9, 10	Building Controls	Auckland
27,28,29,30,31	Plumbing Inspection	Auckland
20, 21, 22, 23	NZS 3604	Christchurch
JUNE		
2,3	Plan Processing	Christchurch
15, 16, 17	Building Controls	Wellington
17	Timber Truss & Wall Frame 'Skeleton' - Load paths and fixings seminar	New Plymouth
18, 19	Site Inspection	Auckland
8, 9, 10, 11	NZS 3604	Auckland
JULY		
2,3	Plan Processing	Christchurch
15, 16, 17	Building Controls	Wellington
17	Timber Truss & Wall Frame 'Skeleton' - Load paths and fixings seminar	New Plymouth
18, 19	Site Inspection	Auckland
TBC	NZS 3604	Auckland
AUGUST		
6, 7	E2 Weathertightness	Christchurch
12	Report Writing	Wellington
20, 21	Fire Documents	Auckland
12,13,14,15	NZS 3604	Christchurch
TBC	NZ Metal Roof and Wall Cladding	Christchurch
21	Timber Truss & Wall Frame 'Skeleton' - Load paths and fixings seminar	Tauranga

## NEW - FIRE DOCUMENTS:

### CODE CLAUSE C PROTECTION FROM FIRE (SMALL BUILDINGS) C/AS1 – C/AS7 COURSE

The Institute is pleased to bring to our members and clients our new two day

#### FIRE DOCUMENTS: CODE CLAUSE C PROTECTION FROM FIRE (SMALL BUILDINGS) C/AS1 – C/AS7 Course.

This high quality, Diploma recognised course will bring those with a desire and need for exposure in this area up to speed rapidly.

The Institute's drive to bring consistency to our members is mirrored by Alan Moule, through his time spent assisting with the development of the materials for the CODE CLAUSE C PROTECTION FROM FIRE UPDATE TRAINING and the Institute's FIRE DOCUMENTS: CODE CLAUSE C PROTECTION FROM FIRE (SMALL BUILDINGS) C/AS1 – C/AS7 Course. These courses have been designed to develop a consistent knowledge base in regards to the Fire Documents, with training coming from the most knowledgeable in the industry.

This is further highlighted by his commitment to contract to IPENZ to deliver this consistency.

Alan's qualifications, as a chartered Professional Fire Engineer ensures any questions directed to him during any training session are answered competently, clearly and in a manner which ensures a strong understanding of the subject material.

**"NEXT COURSE: CHRISTCHURCH 19 – 20 JUNE 2013".**

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)



## NEW FIRE REQUIREMENTS NEED THE BEST PROTECTION

The New GIB® Fire Systems 2012 technical literature includes changes to the NZBC related to fire (which comes into effect from April 2013), new penetration and surface property details, plus new systems.

If you haven't already received a copy, you can order one for free:

- visit [gib.co.nz/request-gib-fire-rated-systems/](http://gib.co.nz/request-gib-fire-rated-systems/)
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**22 – 23 AUGUST 2013  
GRAND CHANCELLOR  
JAMES COOK**

**MORE INFORMATION  
AVAILABLE SOON**

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SEND TO [EVENTS@BOINZ.ORG.NZ](mailto:EVENTS@BOINZ.ORG.NZ)**