

# straight up

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DECEMBER 2005



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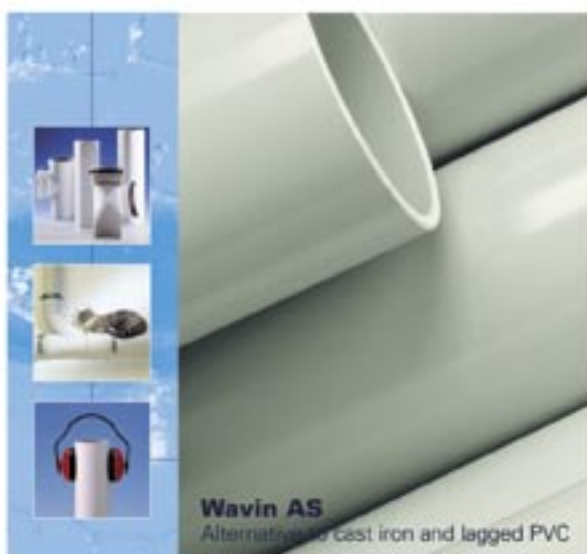


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## NEWS FROM LEN

Hi Folks

It's an exciting time for the Institute at the moment with many initiatives and programmes underway.

The 2006 BOINZ Annual Conference and Expo planning is progressing well.

The exhibitors prospectus has gone out – if you haven't received one and would like to, please don't hesitate to give us a call in the office.

Interest in stands has been significant with stands selling quickly – if you haven't already secured your stand, we encourage you to do so soon to avoid disappointment. The Southern Branch has been busy organising a fabulous technical programme for delegates and with the input from our Australian cousins, with their own technical stream, the conference next year is building to be a "must" event.

Please mark your diaries for 2-5 April 2006 in Christchurch. It will be a fabulous opportunity for us all in the building industry to network together and take away valuable information provided by our high quality speakers.

It is exciting to see the BOINZ Training Academy progressing along extremely well with pilots of the proposed accreditation and licensing process being undertaken shortly in two areas of the country. We are hoping to publish a full calendar of training courses ready for members to sign up for 2006.

The licensing and accreditation for building officials was scheduled to commence on 1 January 2006 however, we have delayed this for a more comprehensive launch at conference in April and more details will be supplied to members as they become available. The main thing to remember is that it is going to be a simple and effective process that meets the needs of

members and the industry for the future.

As members are already aware a Constitution Committee was formed to look at drafting and creating a new Constitution for the Institute. The current Constitution is out of date, ambiguous and legally contestable. The Constitution Committee met on Monday 12 September in Hamilton and went through the proposed changes item by item, and line by line. I would like to take this opportunity to thank senior members of the Institute for their untiring efforts to ensure that we have a modern and practical Constitution for the future. It is envisaged that a final draft will be mailed to all members within the next few weeks.

We have just two events left until Christmas time. The Forums and Events which have taken place around the country have proved to be extremely successful and beneficial to our members with the feedback provided being extremely positive. We will endeavour to continue to provide you with exciting new events for 2006, so keep yourselves informed with our latest information by visiting our website [www.boinz.org.nz](http://www.boinz.org.nz).

We would still love to hear from our members with regards to letters, articles, stories and news on what is happening in your area out there in the industry. This is your journal and we would love your input. Please send your articles and/or letters directly to C/- The Editor at [office@boinz.org.nz](mailto:office@boinz.org.nz).

Finally as this is the last issue for 2005 the board and management take the opportunity of wishing you all the best for the festive season and we look forward to a great year next year.

Kindest regards  
**Lennard Clapham**

CHIEF EXECUTIVE  
BUILDING OFFICIALS INSTITUTE OF NEW ZEALAND

## BOARD MEMBER PROFILE

### Dick Marryatt



This is my seventh year as a Board member and 45th year in the building industry – the last 30 years as a Building Inspector.

During that time many changes have taken place within the regulatory framework of Building Control.

Gone are the days of simple rules for the construction of our dwellings.

- Beam sizes were worked out at 1 inch depth per 1 foot of span (25 mm per 300).
- Bracing was required for every 15 ft (5 m) of wall.
- The Housing Corporation set a standard of work that set the example for the construction industry to follow.

With their demise along with the Ministry of Works in late 1970s, we saw two of the standard setters leave the industry, creating a massive hole to be filled.

More complex documents were released by the Standards Association for Councils to adopt as part of the bylaw system. The industry had to face up to new terms such as Bracing Schedules, wind zones and the like (does anyone have a low wind zone?). This put tremendous pressure on Council Building Inspection teams as these changes required a lot of up-skilling and without recognised training organisations to deliver the news, it was left to BRANZ and the NZ Institute of Building Inspectors (BOINZ) to deliver the message to the industry.

The Building Act 1991 heralded further changes with no body to deliver, leaving the industry to fend for itself.

The 2004 Act will change the way things are done by Councils across the country with more vigorous vetting of plans and inspection and training for the whole industry. It should be remembered that Building Officials do not build buildings – they are a cog in the wheel that ensures buildings are safe. The more complex the regulation becomes, the more chance for mistakes.

My 45 years in the industry has been made up with the usual career path from apprentice to carpenter to foreman carpenter to overseer for the Ministry of Works at the Manapouri project, to sole Building Inspector with the Strathallan County until it was amalgamated with Timaru District and the last five years with the Mackenzie District Council.

BOINZ has a big part to play in the future of Building Control. The Board and the staff are working very hard on behalf of Members to ensure that the vision of BOINZ is at the forefront of any decision making that affects the Members.

The appointment of CEO Len Clapham and his staff is leading the way for the BOINZ of the future and as a Board member, I am proud to be part of the team.



## Introducing BOINZ member - Sarah Mann



**Sarah Mann - Hutt City Council**

I joined Hutt City Council in 2003 as a Plumbing and Drainage Approvals Officer. When I was offered the job, I was "on the tools", as we say, working as a registered Plumber. The job offer from HCC came as a pleasant surprise as I had only been living and working in New Zealand at that point for six months and was looking for employment in the same field, but "out of the trenches."

As a result of being a plumber and on the immigration skills shortage list this made it easy for me to obtain a work visa and subsequently residency.

I turned up from Canada on the promise (from my Kiwi partner) that I would find living on a sunny island in the South Pacific most rewarding. Sunny: no but rewarding yes! My work background from Canada is that I have worked in the plumbing/gasfitting trade for approximately eight years, I have a Gas B licence as well as my Inter-Provincial Trade Qualification in plumbing (in Canada this includes drainlaying).

I had a large amount to learn when I joined Council with regard to the NZ Building Code and all of the relevant standards. The courses, seminars, and my mentor Bruce were what got me through this huge learning curve.

The choice to move to New Zealand was advantageous, in every aspect such as employment opportunities, purchasing an affordable home and the wonderful lifestyle.

## Introducing BOINZ member - Grant Hyde



**Grant Hyde - Timaru District Council**

Hi there. I've done 20 years "on the tools" building, am 37, have four kids and was born in Timaru. I have been at Timaru District Council for five months. I am loving it and learning heaps.

We have a mix of commercial, residential and rural projects to inspect. Our own council rooms are being renovated and a two-year contract for this work has been let. A \$2 million contract for a new motel is also underway, as is a new workshop for Mitsubishi Motors.

I've attended BRANZ courses and courses for building inspectors run by Russell Cooney in Christchurch. I can see this being a great career choice. I didn't think I was academic until five months ago. There is plenty of reading involved and 80% of my work is time spent on project sites. Hey - better go, I'm writing this between inspections.

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# BOINZ member appointed to Licensed Building Practitioners Board

When I was approached to write an article about myself, my appointment to the Licensed Building Practitioners Board and my experience within the Building Industry for *Straight Up* I likened this to the task of writing a CV, which I find quite hard to do.

I am married to Pauline and have six adult children and nine grandchildren.

I have been in the building industry and related industries for 46 years and started my apprenticeship as a Carpenter-Joiner with Boon Bros in New Plymouth in 1959.

Then in 1966 I joined the then New Zealand Forest Service at Kaingaroa Forest as a Leading Hand Carpenter. That began a life in the public service for the next 27 odd years with appointments and promotions in Ministry of Works, Electricity Department and Maori Affairs and finally Te Puni Kokiri. I then joined the Rotorua District Council as a building inspector in July 1992.

I have been a registered member of BOINZ since 12 March 1975, some 30 years, and although I did not at first agree that the changes to the BOINZ hierarchical structure that have just been implemented were for the right reasons, I have now changed my mind and believe that if BOINZ is to survive, it needs to move with the times and become a more professional body and to this end I believe that Len and the Board are on the right track and wish them well for the future.

As most of you will be aware, I will probably

be retired from the position as Building Controls Manager at Rotorua by the time you read this and perhaps who knows, one of you may be sitting in my chair at Rotorua.

However, I do not believe that you will have seen the last of me, the Board appointment is five years so I will be around sometime yet, so complete retirement is not on the cards as I will also be increasing my time on the Bench of the Rotorua District Court as a Judicial Justice (and do not really want to see any of you people there).

I really cannot elaborate on the Board at this stage as we have only met twice at the time of writing this article but I am sure as we progress through the licensing you will be kept up to date.

One thing I would like to mention is that I would like to think that over the years I developed some very good friendships through BOINZ and especially with the Bay of Plenty/Waikato Branch. I intend to remain a member of BOINZ for sometime yet, and would like put a plug in for CADETSHIPS or something similar and believe that the Institute needs to progress along these lines to enable the replacement of us older members.

I wish you all the best for the future and encourage you to support the professional approach that BOINZ is taking.

**Pat Lawrence**

*Recently retired from Rotorua District Council*



**Pat Lawrence**

*If BOINZ is to survive, it needs to move with the times and become a more professional body and to this end I believe that Len and the Board are on the right track and wish them well for the future.*



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# Standards New Zealand (SNZ) update on progress of recent building-related Standards

## UNDER DEVELOPMENT

Current projects underway in the building sector include:

### NZS 3604:1999 Timber Framed Buildings

An amendment to NZS 3604:1999 is underway to incorporate changes in the structural properties of timber, which are set out in the recently revised NZS 3603. This amendment will involve changes to the span tables in this document. Public comment will be invited on this amendment shortly.

### NZS 3604:1999 Timber Framed Buildings

Scoping work has also commenced on a full revision to this widely-used Standard, which gives practical guidance to effectively help the Building Code to function. The key purpose of the revision is to achieve safer, healthier, more weather-proof and durable houses as a result of the updated Standard. It is also timely that the Standard is updated to reflect the current and future needs of industry. The revision is intended to take into account advances in materials, construction techniques and other recently revised Standards and acceptable solutions to the New Zealand Building Code. Industry feedback to guide the revision process has been collected via both telephone and online surveys.

### NZS 2295 Building Underlays

A revision and reinstatement of this New Zealand Standard is underway to supersede AS/NZS 4200. This revision will incorporate new materials and technological advances in building underlays for wall cladding and roof applications.

Publication of this Standard is expected in early 2007.

### NZS 8500 Safety of Swimming Pools Standards New Zealand

A project has begun for the development of a New Zealand standard that will provide an effective means of drawing together the wide range of interests involved in pool fencing and water safety issues and will provide a document that gives appropriate guidance on modern pool safety requirements.

The first committee meeting is scheduled for December 2005.

### NZS 5270 Cable Cars for Private Residences

SNZ has been working with the Department of Building and Housing (DBH) on a new Standard for residential cable cars. The Standard establishes the criteria for performance as required by the new Building Act. It will provide better regulation of the design, construction and maintenance of cable cars. BCAs will have a framework to assess and give consent for new cable car installations, plus potentially require compliance with an inspection regime. Along with industry, the BCAs will also have clearly stated performance measures. Home owners will have the reassurance of knowing that their cable car meets the required safety Standard.

Public comment closed on 5 October and a meeting to review the comment was held on 25 October. The draft will be sent to the committee for balloting on 14 November and it is hoped to publish by late January 2006.

### NZS 4541 Automatic Fire Sprinkler Systems

Standards New Zealand and the DBH have

invited public comment to be received by 16 December 2005 on this Standard, which has undergone a substantial review.

The Standard covers the design, installation and maintenance of fire-control sprinkler systems. Changes to the Standard are wide-ranging and will ensure world-class automatic fire sprinklers protection for buildings.

The real driving force behind this review is that recent research into large warehouse fire protection, which has all been carried out in the USA. The committee has been working to ensure our Standard is up to date with the American research.

Benefits of the revised Standard include increased overall safety, improvements in the flexibility of protection systems, and reduced installation costs.

For a copy of the draft Standard and the response template, go to [www.standards.co.nz](http://www.standards.co.nz)

### NZS 3101 Concrete Structures


A substantial revision of the concrete structures Standard is nearing completion. In November the committee will be balloted with publication due in December 2005.


### NZS 3640 Chemical Preservation of Round and Sawn Timber

A small amendment to this standard was published in October 2005.

### AS/NZS 3500:2003 Plumbing and Drainage Set


Australia holds the secretariat for this set, which is currently being amended.





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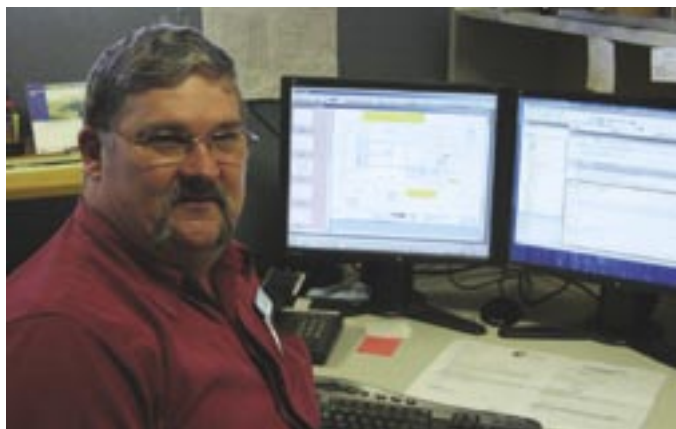
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## Building Inspections past and present - where to from here?



**Bob Tidd**

Those of us that have been in the building industry for a few years will have noticed how much our building inspections have changed over the years. But how far are we prepared to go in the never-ending battle to ensure that new and future home-owners get the satisfactory completion that they deserve for their building projects? How much further do we go to ensure that we do not get our butts kicked, be it as the Council as an entity in itself, or as individuals (although as individuals we do have a degree of protection to avoid personal liability for stupid little mistakes or errors, under the Public Service Act).

In the time before the first Building Act 1991 we just operated under Council bylaws, under which there was a large margin of flexibility. The adoption of building standards were adopted by Council if they decided to do so. The building inspectors had some discretion in their approaches towards a Building Consent from the processing stage to the inspections themselves.

Often the inspections that were required would be adjusted to suit who was doing the building. Sometimes when an inspection was called for there was scope for it to not actually occur. For example, sometimes a builder with a good reputation would ring in and find that it wasn't convenient for the inspector to go that day. However, since concrete had already been ordered, the inspector would say "you know what you're doing, make sure it's done right and go ahead". For a majority of the time this system would work well. When however, an error occurred, the Council management would come down hard on the Inspector in question. He would no longer trust that builder and ensure it didn't happen again (for a little while anyway).

Sometimes there was a small degree of doubt that crept into the inspection process, so a drive by inspection was carried out. A drive by inspection involved just that, driving by the building site, ie, a builder wants to pour a concrete slab, so the inspector would drive past, looking through his car window to see that the construction appeared to be located correctly on site, had reinforcing in place, etc and was ok to pour. Again, this system worked well until something went wrong.

Prior to 1989, when there was a wide-sweeping amalgamation of Councils into just District or City Councils, almost every town had its own Borough, County or City Council. This meant that areas covered by a particular Council weren't that large so the inspectors pretty well knew all the tradespeople around their area. If an "outsider" or a unknown home builder was to do work in the Council's area, suddenly more inspections would be required and the efficiency of the inspectors and the processes they would follow would increase, ie, they would actually get out of their cars and go and have a look at the work.

When an inspector did visit the site (which was, of course, more regularly

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than I indicate thus far), there were two situations that would normally occur: either they would spend considerable time discussing topics that the inspector had an interest in and the actual inspection would often be secondary, or the inspector would go over the job with a degree of thoroughness that would be dependant on who you were.

Unfortunately, sometimes the inspector would confuse what was required by a standard and what they thought would be a good idea.

With the introduction of the Building Act 1991 and while the Councils were settling in to their post-amalgamation roles, more pressure was placed upon the Councils (or Territorial Authorities as they were renamed) to ensure that things were checked and recorded a lot better. But as there was only an occasional audit done by parties operating on behalf of the newly formed BIA (Building Industry Authority), some of the Councils didn't change a great deal from the early days. That is until audits were done highlighting inadequacies and bad reports that would be submitted to senior management and the politicians.

During the first few years under the new Act, Councils would continue to find that, in giving a considerable amount of tolerance to their known builders, things would continue to go wrong, requiring a change of policy. Interesting how most of those affected builders, etc, would moan about all the Building Code changes, even though they had been in for several years, but just not enforced, because they were given the benefit of the doubt that they could be trusted.

The original introduction of the Building Act 1991 meant that many Councils reviewed their Consent procedures. They also increased the number of inspections for the same type of consent that would have been applied for 10 years beforehand.

The Act also provided an official document titled "Notice to Rectify [NTR]" this was designed to give Councils more power in enforcing the correcting of faults that would be found on site after an inspection. It was interesting to see how different Councils applied this same piece of the Act in different ways. For example, some would issue a NTR as soon as an error was identified, while some would issue failure letters, then issue a NTR as a last resort. Some would allow any Building Officer to issue them while others would only allow the senior staff to do so, after the Building Officer was interrogated as to why this action was required.

Unfortunately the Act still didn't really give Councils much power to deal with the law-breakers, whether it be illegal work or inspection items that needed to be rectified. The threat of saying "we won't issue your CCC" meant absolutely nothing to many people. To proceed with prosecution meant the Council would have to commit a lot of money and time into preparing a case, while not being assured of getting any compensation for all or any of the costs.

However, we did see a big change from doing drive by inspections and phone call type inspections, due to there being too many repercussions from either the managers or auditors or mostly from the new owners who wanted someone's head to roll because something had gone wrong.

Properties that had received inspections some years ago but had poor records or details of inspections, caused great embarrassment and costs through the enforced remedial work ordered as a result of a court case against a Council. This meant that Councils could no longer approach inspections in the same ways as the good old bad old days. Many things had changed in the world. The owners wanted accountability, the designers would point the finger to the builder or rely too much on them knowing what is required or should have known what is required. The builder would say "the designer drew it that way and the Council approved it". Fortunately we were able to rely on the fact that if we had missed something at processing time, we could still make it comply with the Building Code at inspection time.

With the introduction of the new Building Act in 2004, which changed a NTR to a NTF (Notice to Fix), the Council was able to exercise a little more power when it comes to assessing compliance. There is also a new section of the Act that allows for an Infringement Notice to be issued by the Council (now referred to as a Building Consent Authority [BCA] for the part of the Council that issues Building Consents).

This can be issued for an offence under the Building Act 2004 and can have a fine attached. However, the details for this part of the Act are yet to be finalised by DBH, but should be helpful when it does materialise.

The Council's ability to ensure compliance with the Building Code is met will also be strengthened when the full functionality of certification for councils, and all the tradespeople that will be involved with a Building Project, is completed. The upshot of all this is that we may finally be getting somewhere in the struggle to be able to properly enforce inspections and compliance.

In summary, we have seen the number of inspections required for a new dwelling increase from around 3 to about 5 or 6 after the Council's amalgamation reorganisation (1989). They increased further to about eight or more after the 1991 Building Act (this depended on whether Councils had separate building and plumbing inspectors or if they were multi-skilled). After the leaking building saga, most Councils increased their required inspections by another 2-4, to allow for different cladding systems. After the new Building Act 2004, we saw some Councils increase their inspections to approximately 10 or 12.

The costs of inspections will vary from Council to Council. Most will have a fixed fee per inspection or inspection type. Some will have a fixed fee based on value or type of construction and will allow for the normal amount of inspections for that type of structure. Some, however, have inspections based on the distance to the site and the number of inspections required and this is established at the time of processing. It is calculated to allow for site time, travel time and expenses plus administration time. This may perhaps be fairer for the in town people but will create large fees for those in the country, which may mean much work is being done illegally.

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*Building inspectors now seem to becoming more like a visiting "clerk of works", in order to protect them from poor workmanship or detailing.*

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Building inspectors now seem to becoming more like a visiting "clerk of works", in order to protect them from poor workmanship or detailing. Most existing building officers (or what ever their titles may be) have expressed more and more concern at how much more covering of the butt do they have to do.

Perhaps the new certification system can be used to take a bit of the responsibility off the Council and put it onto the tradespeople to ensure compliance. For this to work, it will require co-operation from the DBH to pass on a few liabilities.

We as Councils do, however, need to ensure that our documentation is very clear. It also needs to be stored so that it can easily be accessed by us, our customers and any other parties. These records also need to actually be legible. Have you ever tried to read an inspection notation from 5, 10 or 50 years ago, if the handwriting was mine (likewise a few others), then good luck.

An increasing number of Councils are recording their inspections digitally, and this has got to be the way to go - as long as there are good back-up systems that are able to retain information, in case electricity is lost, or a computer has a little fit and decides to break down.

This is likely to be a big consideration for our certification, as are the details of the inspection. For example, it is no good saying "the slab was ok and can be poured". The inspector needs to at least clarify that it complies with the approved Building Consent documents and the main items like reinforcing, vapour barrier, supplementary bars, etc, have been installed correctly.

When a Council is audited, items like this are looked for, as are the checklists that should be used for each inspection. It is perhaps debateable exactly how elaborate and detailed those checklists need to be, especially as we will be clarifying that the items are as per the approved plans.

Anyway, that is enough from me  
Happy inspecting and recording

**Bob Tidd**  
**BUILDING COMPLIANCE OFFICER, HASTINGS DISTRICT COUNCIL**  
*(Please note that I am writing this article as an individual, it is not on behalf of my employers.)*



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## BOINZ CONFERENCE 2006

Kop-Coat New Zealand Limited was established in April 1998 by Kop-Coat Inc in the United States; together we comprise one of the many subsidiaries of RPM Inc, a Fortune 500 company with links to over 30 countries.

The Kop-Coat New Zealand Wood Protection Group is one of the leading providers of innovative protection solutions for timber and wood products exposed to weather. An ISO# 9001 Company, Kop-Coat's products and equipment meet the highest standards of environmental responsibility and worker safety.

Establishing that there was a gap in the marketplace, Kop-Coat actively sought an alternative to LOSP and CCA for treating timber framing to H1.2. This led to the development of Kop-Coat's new and highly innovative timber framing treatment, Tru-Core®, which was launched at the BOINZ Conference in April 2005.

The BOINZ Conference brought to light just how confused people are in general concerning the NZ Standards for new treatment and Stress Grading, which have been introduced at the same time.

For Kop-Coat, the BOINZ Conference was a fantastic opportunity to get the message across to those who actually approve the building products used concerning the efficacy of different levels of treatment, colour coding and branding - please refer to the table below. Much of the information from this table was taken from the WOODmark® Treated Timber pamphlet entitled "The Correct Use for Treated Timber" published by the NZ Timber Preservation Council ([www.nztpc.co.nz](http://www.nztpc.co.nz)).

Hazard Class	Preservative	Preservative Carrier	Preservative No	Timber Colour (Used where no running brand is present)
H1.2	Boron	Water	11	Pink
	TBTO	Solvent	56	Blue
	TBTN	Solvent	62	Blue
	Permethrin + IPBC	Solvent	63	Blue
H3.1	TBTO	Solvent	56	Green
	TBTN	Solvent	62	Green
	Propiconazole + Tebuconazole	Solvent	64	Green
H3.2	CCA	Water	01 or 02	All natural Copper green
	CuAz	Water	58	
	Alkaline Copper Quaternary	Water	90	
	CuN	Solvent	57	

At the next BOINZ Conference we would like to hold group sessions with attendees to clarify in more detail any changes taking place with regard to Standards and how these will affect them.

The Tru-Core® Programme has been accepted by the marketplace and it would appear that Tru-Core® H1.2 has gained dominance and is set to become the new industry standard.

### Kop-Coat New Zealand Ltd

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Te Papa Tipu Innovation Park  
Sala Street, Rotorua

PO Box 6065  
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Rotorua

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[www.kop-coat.co.nz](http://www.kop-coat.co.nz)



# Does our infrastructure meet our needs?

**Care must be taken to ensure that policy actually does make the tasks of those who carry it out easier.**

Take the lot of a Building Control Officer. A few years ago a Building Control Officer could call on experts in the NZ Fire Service and Department of Labour (dangerous goods) because there was a suitably qualified person available to call on for advice – most councils had a Dangerous Goods Inspector on their staff. Today, the chances of finding such a person is remote – the qualified people are just not there. Once of course it was all in-house at the local council.

So just what Building Control Officers do in the meantime about tackling a developer building a motel too close to a hazardous substances site, and who they call for advice,

is not officially prescribed on their to do list, but it should be. Better communication between public organisations could bridge the gap with a view to facilitating exchanges of information. Organisations like OSH and Department of Building and Housing could have a role in providing technical advice to inspectors because when they are challenged inspectors need to be able to back up their decisions based on appropriate advice. They of course need to know what other things may or can impinge on the built environment. Seminars could also be held with site safety and Civil Defence agencies. Knowledge transfer is one of the most important issues facing occupations that have quality control and public safety among their objectives. Inspectors are, after all, the first in the firing line after putting the seal

of approval on developments. Information they need should always be out there, easily accessible and transparent.

**AP Roover**  
*SU Inspection*

*Dear AP,*

*At the 2006 BOINZ conference, building inspector Blair Wilmshurst and a colleague, Rex Alexander, will present proceedings about management of hazardous substances and dangerous goods as a reference tool for building inspectors.*

*Ed.*

## TRU-CORE®

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## Christmas, 2005

Price hikes in oil and petrol sparked renewed concerns recently about how soon the global supply of oil will run out and what we can do now to prepare for it. Enter the Kyoto Protocol. Countries party to this protocol have committed to achieving energy goals between 2010 and 2016. To help reach the targets they have pledged, Britain and Australia are introducing energy measures in housing in 2006. A recent EU directive requires that properties be certified for energy efficiency early next year also.

In New Zealand, the implications for the construction industry and BCAs arising from this have yet to be realised but any changes will involve more demands on resources, financial investment and time, as well as an acceptance of other ways of doing things.



For example, the proposed investment in wind farm technology in South Wellington offers efficiency as well as prospects for manufacturing and employment but there have been complaints here, such as aesthetics, and, overseas, concerns are held about increasing the height of the towers. In addition, leaky homes precipitated a review of building practices and product performance and this hugely increased the workload of people in construction industry services and their focus on issues of competency

and durability has continued since the introduction of the Building Act 2004.

Energy efficiency targeting will be one of the next big upheavals facing the construction industry. Energy use and energy efficiency, and the role of insulation in achieving this, are briefly covered in this issue; there's a report on water use, gas versus electric heating and a call for insulation performance testing in homes.

In retrospect, this year timber quality has taken another hammering with concerns that T1.2 treated timber is an inferior grade timber because it is not fully boron treated but has been approved for use. In contrast, when concerns about the quality of Grade 500E steel were raised a full investigation including tests were put in place. Industry is on notice to check that the steel is used and handled correctly and has been asked to set up educational programmes on this industry wide. Why shouldn't the same process apply to different grades of timber?

Finally, on a lighter note, some pressing questions have been put forward to *Straight Up* by building inspector AP Roover, who when asked for comment on the energy story stated: "Is there a correlation between mould and condensation and windows shut tight and curtains drawn – during the day? Are these the homes of people who tint their car windows nearly black? Should this practice be researched further? Perhaps, we will see a Compliance Document on tinting windows in homes and installing secure open air vents in walls" said AP with a smile. "Just remember though, if you don't have a chimney you will need to keep a suitably proportioned window open on the day for Santa."

*Merry Christmas from the Straight Up research team: Flinty Sparks, Darrell Spout, AP Roover, Gus Main and Chippie Block.*

### Time for a New Year's resolution?

*Straight Up* is calling for expressions of interest from members who have information for Flinty (fire), Darrell (plumbing), AP (inspection), Gus (gasfitting) and Chippie (building). Please send this to [craigc@boinz.org.nz](mailto:craigc@boinz.org.nz) With thanks to all contributors.

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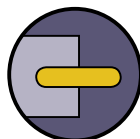
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# Cead Mile Failte 'A Hundred Thousand Welcomes'

During the past five weeks I have had the opportunity to travel through the USA, UK and Ireland and would like to share some of my experiences of this trip with you. My comments are my own personal experience and should not be taken as indicative of what's happening overall in the particular country that was visited.

All these comments are pertinent to the building industry and I took particular interest in some of the relative issues that we all face on a day to day basis here in New Zealand.

Generally I found there is a considerable building boom taking place and the demand for both housing and commercial development seems to be exponentially high compared with other visits I taken over the last 15 years. The building boom in itself brings a myriad of challenges. Most of the countries visited had legislation that has been around for some time and is not dissimilar to our own building act in a lot of respects. Although I must say, it was quite evident that high resources and capacity building accompanied the legislative framework implemented in these countries.

## USA

In the USA there is still a chronic shortage of qualified tradespersons and even more so in the case of building inspectors despite the better remuneration they receive compared with some NZ building inspectors. On average, they are paid between \$65,000- \$85,000 (NZ dollars) and this normally included having a support assistant who handled the compliance and inspection reports. The process was very streamlined allowing the inspector to inspect and the assistant to make



**The Tower of London (with Tower Bridge in the background) undergoing essential repairwork.**

appointments, write reports and teach the understudy some of the particular idiosyncrasies that are present in all industries.

There was also an excellent programme for building capacity within the particular utilities that I visited with a federal wide programme. Although various states had their own peculiarities, there was an extensive push to human resource capacity and asset building within

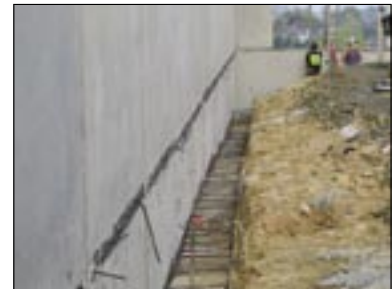
## Incorrect rebending of starter bars can cause massive failures!



It is common practice for starter bars in precast elements to be bent out of the way for transportation and erection. The department of Building and Housing has identified that this is often done incorrectly and in a manner that reduces the strength of the structural connection and commonly results in the bars breaking off on site.



It is a requirement that bars should only be bent to a controlled radius of 5 times the bar diameter. However in practice this is not being adhered to and protruding starter bars are being bent flat against the panel face to allow transportation.



The DBH also confirms Pacific Steel's warning that 500E starter bars should only be rebent after being reheated to 'cherry red' on site. Because this is impractical the rebent starter bars are losing ductility when rebent and are commonly breaking off during the rebending process.



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**Repairs to Westminster Palace, London.**

the people themselves. It is similar to apprenticeship programmes of old here in NZ and in the states of Virginia, Maryland and District of Columbia there were several inspectors who had up to four support staff and trainees. I was impressed at the willingness by utilities to place special emphasis on building up their people and a real caring environment was evident.

The image of building professionals in the USA is also emphasised by registration, accreditation, training and professional development of all building inspection personnel and this ranged from the front counter up to senior managers.

As far as building trends in the USA, most building processes are similar to New Zealand although it varies from state to state. There is a definite trend away from timber and a new focus toward steel frame housing and block or brick with completely covered in timber framing houses. Where there was timber framing, this was marine ply which in some cases was 20mm thick.

## UK AND IRELAND

London in particular is going through phenomenal building growth and rectification of historical buildings at this present time. Once again, an incredible shortage of skill sets and the move away from timber into steel framing was of particular note as you can see from photographs



**Residential housing, rural Ireland.**

enclosed with this article.

In the UK the average building inspector salary range is from \$53,324 to \$60,938 (NZ dollars). Experienced inspectors can earn between \$63,477 to \$71,094 and senior inspectors can earn \$76,161 upwards per year.

Special emphasis in the UK and Ireland is on training and capacity building of personnel along with new streamlined inspection processes and methodologies. There is also a move back to onsite quality assurance being carried out, what we would term as 'Clerk of Works'.

In Ireland, housing complexes are going up at a phenomenal rate in all areas of the country and are being built by specific contracting groups such as our Fletcher Construction here in New Zealand and sub-contractors who were preferred and bonded back to the main construction company.

In most construction sites there were relationships

that had been going on for generations from grandfather to father, father to son and the family had worked for the construction company for many years.

Ireland in particular had a major issue with labour because of the extensive building boom and rectification programme within Ireland. They were importing workers from Poland and this in itself had a particular challenge as they don't have the same base fundamental brick stone and block laying skills and it is obvious that there is tension amongst the industry.

In Ireland I couldn't really find a Building Officials Institute on a national scale and yet with Ireland having 4.4 million people I would have expected to have encountered a group of this sort. It appeared that each county seemed to do their own thing.

## LEAKY BUILDING

Without exception, every country had experienced this issue. I must comment that predominantly the major cause was the level of skill in builders and the use of products that were not fit for purpose. (My does this all sound familiar.)

All in all, while other people have various experiences you can never generalise when visiting different countries but thought to give BOINZ members an insight into my experiences.



**Steel and block construction, Clifton (seaside resort), Western Ireland.**



## Putting product evaluation before use

In the last issue *Straight Up* reported on T1.2 treated timber. The debate over this product raises the question – can or should a product be allowed to be used without some kind of evaluation of its suitability? How does the DBH test products like this before approving them for use given that the success or otherwise of the durability of timber is dependent on its use in situ over time?

*Straight Up* is of the view that products that have not been evaluated should not be validated for use as an Acceptable Solution unless the product has been certified or at least reliably tested. At the very least test results and manufacturers specifications for the product they are being asked to inspect should be available to BCAs.

BRANZ specializes in providing test reports and appraisals and BCAs should note the crucial difference between them. Test reports evaluate only one element of a product's performance. An appraisal evaluates its overall performance. A test report is only one of the building blocks of a BRANZ appraisal. An appraisal is BRANZ's premium product and covers a broad range of performance factors.

BRANZ wishes to communicate with and support BCAs and advises that they should visit the BRANZ website at <http://www.branz.co.nz>. This is where BRANZ gazette all current appraisals and it always contains the most up to date listing. Also, the BRANZ Appraisal Co-ordinator, Ms Darrell Signal can be contacted toll free on 0800 080 063. Please be aware that this number is for appraisal enquiries only.

It is imperative that building controls do provide just that - control over the appropriate product to use and how. BCAs rely on advice from the regulatory authorities as to whether and when a material or method is deemed to be up to standard.

## Rockcote - Commitment in 2005 and ahead at the BOINZ 2006 Conference

The building industry is notoriously fragmented with subtrades here and there making up the whole.

In turn, the forming of industry relationships is critical to ongoing understanding of each individual sectors requirements.

Rockcote Systems makes a concerted effort to be involved not only on the technical, specification, product testing and development fronts but also in building better relationships with key industry partners.

BOINZ members, as with Rockcote, have felt the hand of change more than most with more stringent policies being imposed. One of the major hurdles faced over the past 3 years has been understanding these changes and the future impact to the industry.

Rockcote Systems has been instrumental in keeping BOINZ members up to date with latest advancements in exterior plaster claddings.

This year's conference, as with past events, was an opportunity for our organisation to understand some of the issues BOINZ members are facing and hopefully provide assistance in terms of technical detailing, or what we are undertaking in the market place now and into the future.

A big thank you to all the BOINZ members who we met at this year's conference - we are very much looking forward to catching up with you over the coming year.

Mike Olds

GENERAL MANAGER  
ROCKCOTE RESENE LTD

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# Building controls on outlying islands of New Zealand

## THE CHATHAM ISLANDS



Cover photo: KOPINGA MARAE – REKOHU, CHATHAM ISLANDS. The design is a Moriori concept, based on some key cultural concepts: the Albatross (hopo), with its wings outstretched in flight; the upraised arms of the Rakau Momori figure, and the five sided basalt rocks, which inspires the pentagon shape of the main whare.

Photo taken by Chatham Island and Moriori photographer, Sharon Pirika. Published with kind permission of Hokotehi Moriori Trust © 2005.

The Chatham Islands are a small group consisting of 10 larger islands and numerous smaller outlying rocks and islets. The land area is approximately 960 square kilometres with a resident population of about 700 people. Two of the islands, Chatham and Pitt are inhabited.

The islands are administered by New Zealand's smallest local authority the Chatham Islands Council. The Council which has district and most regional council responsibilities has a staff of six with backup expertise being provided by the Canterbury Regional, Napier City Council and numerous consultants.

The current process that was adopted by the Chatham Islands Council to achieve compliance with the Building Act 1991 is a relatively simple one involving people on the islands and on mainland New Zealand.

When an application for consent arrives and after fees are paid, it is sent firstly to the building compliance division of the Napier City Council. Compliance officers check that all plans and specifications are in order and send it back with a list of inspections for the on island inspector to look at as the project develops. For major projects we will bring the Napier officers to the Chathams for final sign off.

Tom Brown is the local Building Compliance Officer. Tom has been a builder on the Chatham Islands since the mid 1950s and the Building Compliance Officer on an as required basis for longer than he cares to remember. See inset interview with Tom Brown.

The Chatham Islands Council processes, on average, up to 20 building consent applications per year. Most of these will be for alterations to existing buildings, fireplace installations and farm related buildings. New dwellings and commercial projects are few, maybe one or two per year.

There is a major shortage of tradespeople on the islands with most major projects being constructed by New Zealand based companies. The local "handy man" is left to attend to the minor works.

While compliance with the 1991 Act was achieved reasonably well I am not confident that our system fits comfortably with the new Building Act 2004. I have many concerns. These include:

- No trades people to oversee the building projects.
- There are no resident qualified building compliance officers.
- There are no real time electronic aids

available to provide compliance from a distance, eg, cell phones or cameras.

These concerns have been raised with the Department of Building and Housing but to date they have been filed in the too hard basket.

On mainland New Zealand, district and city councils are combining resources to enable compliance to be achieved. This is a sensible thing to do. But who are our neighbours and how can that be of benefit when the Chatham Islands are 800 km away?

For many years the Chatham Islands operated outside of the legislation due to their isolation. In recent times as described above compliance has been achieved but what of the future? Do the islands go back to old habits or is a process involving visiting mainland compliance officers to be introduced and at what cost?

**Owen Pickles**  
GENERAL MANAGER  
CHATHAM ISLANDS COUNCIL



### Interview with Tom Brown, building inspector, Chatham Islands

**Q** Has your career always been "on the tools" and do you get involved in the projects in any way in addition to making inspections? Do you inspect all aspects of the project?

**Tom:** Yes, I have always been a tradesman builder except for 5 years between 1973-78 when I went fishing. My inspection role is over all aspects of a project.

**Q** How did you get into building controls?

**Tom:** I was invited by the County Clerk about 20 years ago.

**Q** What do you like about the job that has kept you involved in it for the last 30 years?

**Tom:** Nothing, I do it as a community service. The pace of industry change makes life as the inspector difficult at times. Napier support helps in this regard.

**Q** How do you keep in touch with the mainland when you are on the island?

**Tom:** Phone/fax and sometimes email. Not adequate. Cellphones and broadband would help.

**Q** What would make your job easier?

**Tom:** Modern technology, cellphone, camera would enable on-site communication with the team in Napier.

**Q** Do you find yourself being a project manager at times being asked to help out with everything that happens on the island and if so how do you manage the potential conflict of interest?

**Tom:** No, I separate the duties to avoid conflict of interest.

**Q** Some say living on an island might be a good life. Would you agree it's a good place to work? Does the weather delay building work at different times of the year?



**Tom:** It is a good life. I wouldn't be here otherwise. Weather has little bearing on the building projects. Chatham's weather is not as bad as the weather bulletins make out.

**Q** How are materials and labour shipped out to the island? Are you involved in arranging this? Are some building materials favoured for use over others for climatic or other reasons and are any products sourced from the island, such as timber from trees grown and processed locally?

**Tom:** All product including timber is imported, usually by ship. No, I am not involved in arranging this. Freight adds up to 30% to the product cost.

**Q** What buildings are there on the island, residential and others?

**Tom:** Some 350 residential houses. Farm buildings and a small amount of commercial property. The largest project was Kopinga Mara.

**Q** Is most of the routine building work done by local people or is additional expertise called on and do tradespeople from the mainland stay on the island for the duration of the job?

**Tom:** Most small jobs are done locally usually by the owner. Big jobs call on teams of tradespeople from the mainland and some stay for the duration of the project.

**Q** Have there been times when building activity on the island has increased for whatever reason? Have there been a lot of changes since you first started inspecting there?

**Tom:** Trends usually follow the fishing industry. The crayfish boom of the 1970s saw a large amount of activity. Building changes here are like any other community.

**Q** How many people live there and what employment is there for them? Has this changed over the last 30 years?

**Tom:** 2001 census, 710 people, 60% employed in the fishing industry.

**Q** Do you live on the island and if so how long have you lived there and are there inspection related reasons that would necessitate you travelling to the mainland, say for training?

**Tom:** I have lived here for 47 years. No trips for training, too old for that now.

**Q** What are some of your most vivid recollections of working on the island?

**Tom:** Trying to build two fish processing factories at once. Had to import carpenters to give me a hand.

**Q** Has tourism had any affect on the island, eg new buildings, services required?

**Tom:** Tourism is our growth industry. Some houses have had homestays added. The hotel had a major upgrade in 1999.

For information about the Chatham Islands go to [www.chathams.com](http://www.chathams.com)

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## GREAT BARRIER ISLAND

I am the Principal Rural Fire Officer/Senior Building Officer for Auckland City Council on Great Barrier Island, and have been in this role for the past 5 years. The composite role makes life challenging, with a major part of my job revolving around prioritising my workload, and working out a balance between statutory requirements, public expectation, and critical need.

I moved here with my wife and three sons in 1989, and worked as a self-employed Building Contractor. In those early days, the Barrier really did feel remote. The Island was administered by the Great Barrier Island County Council, all roads were metal, the vehicles were unwarranted, unregistered, and often wrecks, freight and vehicles were slung from the barge in rope nets. The Sea Bee Air flying boat struggled against the wind and waves for lift off, and incoming planes had to chase the sheep off the grass runway before landing. The phones had crank handles, everyone was on party lines, and calls to Auckland were booked with the local Operator who would sometimes forget you were waiting by the phone. Land and rental property was cheap. The permanent population of 1500 comprised mainly families with low disposable incomes. Housing was basic, people were happy with unlined shacks with a long drop out the back, residents had a resilient attitude, could turn their hands to most things, and were used to coping with adversity.

Now, Great Barrier Island is administered by Auckland City Council. We still have no reticulated power, but most people have efficient alternative energy systems. Most of the main roads are sealed, a roll on roll off vehicle ferry visits the island three times a week, and a freight barge once a week. Vehicles are modern, legal, and even flash. The sealed airstrip is serviced by two airline companies who provide a regular service. The phone system is modern, with fibre optic cable, cell phone coverage is limited, but we have broadband internet connections, and the pressure is on for more speed. Land values have rocketed, families are leaving, and the permanent population is now about 800. A large percentage of the land is owned by

wealthy Auckland owners. As a consequence, the quality of housing has increased dramatically, and so has the demand for city style services.

I have a composite role because of our isolation and small population. I am the Principal Rural Fire Officer for the islands of the Hauraki Gulf (except for those which fall under the jurisdiction of DoC.) As senior building officer I process Building Consents, carry out building inspections, monitor and enforce Resource Consent conditions, give planning advice, issue LIMs and PIMs, handle noise control, cover compliance issues, and occasionally even have to help the medical team or Police at the council provided morgue.

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*Housing was basic, people were happy with unlined shacks with a long drop out the back, residents had a resilient attitude, could turn their hands to most things, and were used to coping with adversity.*

---

Working for a regulatory body in a small tight knit community has both advantages and disadvantages. Every one knows you, and it's impossible to hide. Building good relationships with the community is critical. Saying no to people you live and socialise with is made easier by being approachable and helpful the rest of the time. As a building inspector, I put a lot of effort into becoming part of the team in any building project. It is an advantage being able to deal with the whole building process from start to finish. I can give advice at the project design stage, help people through the District Plan and Building Code requirements, and then work through the project with contractors (most of whom I know) to ensure a high level of compliance, and quality.

I would much rather visit a site and give early advice than visit the site later and issue a Notice to Fix. Local builders appreciate this attitude.

Unlike other areas, the majority of our houses have a rustic look, incorporating skillion roofs, and battened ply claddings. Despite views to the contrary, we are working under the new Building Act (no, not 1991, the 2004 Act) and



**Lance Dixon -  
Great Barrier Island**

are well up to date with the E2 document. My problems are usually with off island contractors who seem to think that anything goes in this outer corner of the Hauraki Gulf.

Every development has to address sewerage and power issues on site. It can be challenging to come up with a sewerage disposal system on an 800 sq m impervious clay site, and without a power supply capable of running a treatment plant. Dosed Syphon Systems, feeding Low Pressure Effluent Disposal (LPED) lines, utilising the KISS principal (Keep It Shallow and Simple) are preferred. These systems use no power, but evenly distribute the effluent over the whole distribution field within the topsoil layer, where the bacteria are active, and evapotranspiration is most efficient.

The compliance role is more difficult to manage. The Hauraki Gulf Island District Plan has been written with the emphasis on conservation. There are strict rules governing indigenous vegetation clearance, earthworks, and development. In a community where bureaucracy is abhorred, there is a deep seated dislike of the District Plan and of its rules. Equally, there is a clash of ideologies between those who support, promote, and enforce the planning rules, and those who feel that their rights as property owners are being ignored. I see my role as a communicator, educator, mediator and lastly an enforcer. I attempt to allay peoples' fears of the RMA, and help them through the Resource Consent process, with the ultimate threat of enforcement should commonsense and compromise fail.

Finally, as Principal Rural Fire Officer, my role involves training, equipping, and maintaining the highly motivated Voluntary Rural Fire force. There is no NZ Fire service present on GBI, so the volunteer force turns out to both Structure and Vegetation fires, as well as other emergency situations. Auckland City Council takes its Rural Fire Authority responsibilities seriously, and provides sufficient budget for me to support the volunteers with equipment and facilities.



# An exciting opportunity for experienced Building Officials

## Are you an experienced building official? Are you committed to improving the quality and performance of building controls within New Zealand? Are you ready for a new challenge?

The Department of Building and Housing is looking for an experienced building official, manager or team leader to work as an Adviser in the Performance Monitoring and Review Team in the Regulatory Compliance area. This is a challenging, exciting and varied position that offers an opportunity to draw on your skills and experience to make a real difference to regulatory building control at a national level.

The role involves monitoring the regulatory building control performance of organisations that undertake regulatory building control work [territorial authorities, regional authorities and building consent authorities] and assisting them to improve their operations. The role is based in Wellington; however, due to the operational focus on the role, the successful candidate will spend a reasonable portion of their time visiting territorial authorities, BCAs and regional authorities in various parts of the country. There will be a strong focus on establishing and maintaining relationships with these organisations as well as organisations such as BOINZ, LGNZ and SOLGM. The Adviser will assist in the facilitation of information sharing between the Department and the sector to improve regulatory building control practices nationally.

The position will have two main roles: undertaking technical reviews; and providing technical advice and reports on a range of regulatory building control issues.

The Adviser will be part of the team responsible for undertaking site visits to territorial authorities, regional authorities and BCAs to conduct these technical reviews. The Adviser will collect information and evidence on how well the organisations are undertaking their regulatory building control operations. This will involve reviewing an organisation's documentation and process, interviewing building officials, accompanying building officials on site inspection visits and undertaking case studies of completed buildings. The Adviser's past experience in undertaking such functions themselves will be invaluable in making accurate observations and judgements during this process and identifying areas of non-compliance.

The Adviser will work with the Performance Monitoring and Review team to develop reports documenting the findings of the technical review. This will include developing recommendations to address any areas of non-compliance identified in the review and which will improve an organisation's performance. The Adviser will be involved in discussing the findings of the reviews with the relevant organisations and working constructively with them to implement any recommendations, both through correspondence with the organisation and through on-site follow-up review visits.

The Adviser will be involved in drafting reports for the Department's management on the findings of the review. They will also be involved in developing public summary reports on the annual findings of reviews of regulatory building control organisations.

The regulatory building control sector is undergoing significant changes as a result of the introduction of the Building Act 2004. The Department is still finalising the BCA accreditation and registration scheme which will help support the requirements of the Act. The Department of Building and Housing is committed to supporting

organisations throughout this time of change to ensure they meet the requirements of the BCA accreditation and registration scheme and the Adviser will be closely involved in liaising and working with BCAs as they prepare for accreditation. The Department will draw on the Adviser's recent experience in the building control sector when determining what are fair and workable requirements for BCAs and when developing information and guidance material for BCAs on the scheme.

If you believe you have the skills and experience to undertake such a role, a commitment to improving regulatory building controls at a national level and are looking for a further challenge in your career, the Department would like to hear from you. A full job description, application form and further details on the Adviser position and the specific skills, knowledge and experience required are available from Human Resources at the Department. Should you have any further job specific questions, please contact Malcolm MacMillan, Manager Performance Monitoring & Review. E-mail: [malcolm.macmillan@dbh.govt.nz](mailto:malcolm.macmillan@dbh.govt.nz)



Department of  
Building and Housing  
*To Tari Kaupapa Whare*

## Influence and improve performance

The Department of Building and Housing was established in November 2004 to bring together building and housing sector policy, regulation, dispute resolution and other related services. Our vision is to create a high performing agency that delivers an effective policy and regulatory environment for the building and housing sector. We want all New Zealanders to have access to quality homes and buildings. The Building Controls Group supports the Department in its provision of regulatory monitoring, scheme and compliance development and advice to the industry in support of affordable housing, good quality buildings and the efficient and affective regulation of the building and housing sectors.

### Adviser, Performance Monitoring & Review Interested in extending your experience in regulatory building controls?

Believe you have the right tools to assist the Department by undertaking performance and specialist reviews of territorial authorities, building consent authorities and regional authorities?

If so, this is the ideal position to create a solid foundation for your future!

Key requirements:

- Proven regulatory building control experience at a senior /managerial level, including thorough knowledge and applications of building control legislation.
- A working knowledge of the operations of Territorial Authorities in their management of building controls and building compliance and a broad understanding of local and central government processes and structures.
- Superior written and verbal communications skills, including the ability to write concise and evidence-based technical reports.
- Excellent administration, time management, co-ordination and organisational skills.

A job description, application form and notes for applicants can be found on our website [www.dbh.govt.nz](http://www.dbh.govt.nz) Applications quoting DBH2005/102 together with a CV and application form should be emailed to [jobs@dbh.govt.nz](mailto:jobs@dbh.govt.nz) or sent to Human Resources, Department of Building and Housing, PO Box 10729, Wellington.



# Prizes won for upcycled plasterboard

Novel ideas for the commercial use of building material waste have been developed by a group of second-year students from the Sustainable Architecture Course at Victoria University of Wellington School of Architecture.

The group's annual competition for "Making a Material from Waste" this year focused on plasterboard.

Three prizes for best ideas were awarded at a ceremony in August by Winstone Wallboards Ltd who are strongly committed to reducing the impact of GIB® plasterboard in the building and construction waste stream. The other sponsor was WasteMINZ, a non-profit organization promoting "life after waste".

According to John Storey, Associate Professor in Sustainable Architecture at Victoria University, industry should understand that there is no such thing as waste: there are just resources that are in the wrong place. Storey is a strong advocate for innovations that can be sourced by industry to make building more sustainable.

"It's not just about recycling," says Storey. "It's upcycling – making "waste" into a product that has practical value".

The student competition has run since 1998 with sixteen students this year being required to invent, develop, make and test materials or products made from discarded plasterboard. The outcome was required to be viable for generating market interest and realistic for mass production.

The exhibition of entries this year was opened by Hon. Marion Hobbs, Minister for the Environment. She commended the students for the calibre of their projects, and strongly advocated the idea of using resources again and again instead of regarding them as waste. This, she said, aligned with the government's focus on sustainable urban design and architecture.

First GIB® prize of \$1000 this year went to Rebekah Nancekivell for her entry "seed and plant raising pots" moulded from powdered plasterboard, compost and soil. With a seed or plant inside, the pot is put in the ground. Gypsum from the plasterboard acts as a



**Three upcycled GIB® plasterboard prizewinners: plant pots (first prize, center); waste bin liner (left) and drywall acoustic insulation panels were both highly commended.**

fertilizer and the pot breaks down into the earth.

In awarding the prize, Joanne Duggan from Winstone Wallboards praised the way the pots put gypsum back into the ground to complete its life cycle. She also liked the way the invention further helps the environment by reducing the need for plastic pots which add to waste.

A second winning entry was James Dinsdale's "enviro-bin" waste bin liner which will utilise the gypsum to act as a fertilizer and encourage decomposition.

The third GIB® winner was a system developed by Karina Madsen for improving the acoustic insulation of walls. It used riven and cut plasterboard pieces fitted on the outside of plasterboard sheeted walls to create sound-suppressing cavities.

Other entrants had created systems whose titles included "earth construction," "acoustic ceiling panels," "fire-retardant bricks," "moveable office walls," "domestic floorboards," "wall heat sink and sound baffling" and "fire blanket".

The judges' selection criteria comprised: potential for resource conservation, inventiveness, refinement, suitability for designated purpose, ingenuity and degree of difficulty. The judges were: Prof. Gordon Holden, VUW; Assoc. Prof. John Storey, VUW; Maibritt Pederson, VUW; Nigel Clarke, WasteMINZ; and Joanne Duggan, GIB®.

Tom Evison  
TECHNICAL PRESS SERVICE

## Fire Service involvement in non-domestic Building Consent approval

### INTRODUCTION

The Building Act 2004 introduced the Fire Service (NZFS) into the building consent review process. To discharge these new obligations, the NZFS established a new unit. This unit has been in operation now for over 6 months and the most common faults detected with the consents it has reviewed is the poor documentation and the reliance on the opinion of the designer rather than engineering fact!

### NZFS INVOLVEMENT IN BUILDING ACT 2004

The Building Act 2004 requires the involvement of the NZFS in a number of areas. A document published in October 2004 by the then BIA on the role of the NZFS within the Building Act stated that the NZFS was included in the consent process to create better linkages between the Building Act and the Fire Service Act. It recognised that the Fire Service Act clearly charges the NZFS with promoting fire safety and that it has, as a specific function, the approval of evacuation schemes. Under the Building Act therefore, the NZFS role in the consent process is to minimise the possibility of NZFS concerns about a building later in the process when it becomes difficult and/or expensive to rectify building design faults. The Determination process is still available but should be unnecessary if the designers use the advice offered by the NZFS. Reflection on many of the Determinations taken to date indicates that poor documentation is central to the problem.

#### **Clause 46: Building consent applications to be forwarded to NZFS Commission**

Clause 46 requires the Chief Executive of the Department of Building and Housing to specify the type of buildings that will be forwarded to the Fire Service Commission (Commission) by a BCA.

#### **Clause 47: NZFS Commission may give advice**

Section 47 allows the Commission to provide a memorandum to the BCA that provides advice as follows:

CONTINUED ON PAGE 22



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- (a) Provisions for means of escape from fire
- (b) The needs of persons who are authorised by law to enter the building to undertake fire fighting

The advice offered in the memorandum cannot exceed the performance requirements of the Building Code. This memorandum is required to be provided by the NZFS to the BCA within 10 days; otherwise the BCA can determine the application without further Fire Service Commission input.

**Clause 48: BCA to take regard of NZFS Commission advice**

In deciding to issue or decline a Building Consent, the BCA must have regard to the memorandum issued by the Commission.

## TYPES OF BUILDINGS

Fire safety reviews of buildings conducted by the NZFS are gazetted by the Chief Executive of the Department of Building and Housing. Gazette number 56 issued in March of this year indicated that the applications to be forwarded to the NZFS shall be either those

designs that 1) utilise performance based fire engineering design or 2) require an approved evacuation scheme in accordance with the Fire Service Act.

## DESIGN REVIEW UNIT

To discharge the legal obligations of clauses 46, 47 and 48 of the Building Act, the NZFS established a Design Review Unit (DRU). This unit is responsible for reviewing the fire engineering design of selected buildings. The DRU, on behalf of the Commission, conducts these reviews and provides advice back to the BCA in the form of a memorandum. Because the NZFS will be reviewing alternative designs it was decided the DRU will be staffed with qualified fire engineers.

The NZFS has not been involved in the Building Consent process to replace the fire engineering peer reviewer and thus the role of the DRU will not be to check all aspects of a fire engineering design.

To assist designers to produce designs that incorporate facilities for fire fighting, a Code

of Practice is being developed for use by designers. This code will allow designers to independently develop a fire engineering design.

Once reviewed, the DRU will provide a memo to the BCA. The BCA is required by clause 48 to have regard to the advice provided by the FSC. The FSC has recourse to the Determination process if its advice is ignored.

## THE FIRST 6 MONTHS

To date the most common problem observed by the DRU has been the poor quality of documentation lodged for consent. The main change brought about by the Building Act 2004 is the need for comprehensive documentation to allow a BCA to be satisfied a building will be constructed in accordance with the Act. A number of Determinations have already indicated that insufficient evidence of compliance was provided yet the design was accepted by the BCA. This of course passes the liability from the designer to the BCA as has happened in many cases taken to court over "leaky buildings".

## CONCLUSION

The adoption of a more comprehensive design process will naturally lead to better documentation. Better documentation will produce more efficient construction. It is far easier to sort a problem out on paper than after it has been constructed!

Simon Davis  
ENGINEERING MANAGER  
NATIONAL HEADQUARTERS  
NEW ZEALAND FIRE SERVICE

# Standards and the Building Code go hand in hand

This year Standards NZ and the Department of Building and Housing coordinated their consultation processes for building controls. They have agreed to run a combined process that will result in the DBH being able to cite a new Standard as soon as it is published. This joint process will also apply to amendments to Standards that are already cited by the DBH.

Beforehand, the DBH, like its predecessor, the BIA, undertook a separate evaluation and consultation process following the publication of a Standard (which meant that there was a period during which a new Standard had no status in legislation, and therefore no guarantee of being cited in the

NZ Building Code). Therefore, TAs relied more on Acceptable Solutions and, when leaky buildings emerged, acceptance of designs that did not comply with Acceptable Solutions became more risky for them.

The consultation requirements of the DBH are much the same as those of SNZ, so there are definite efficiency gains that will result from the combined process. The public comment period for Standards that follow this joint process will be advertised widely by both organisations. At the public comment stage, commentators can give their thoughts on the technical accuracy of the content of a Standard and also on its suitability for citation

by the DBH as a means of compliance with the Building Code.

Mark Batt, SNZ business relationship manager stated, "We will be asking for comments to be submitted to SNZ as usual. SNZ will then evaluate them jointly with the DBH. Comments about the suitability of the draft Standard for citation by DBH will also be considered by the SNZ committee. We expect that modifications to a draft Standard resulting from such comments will mean that when the Standard is published it will be more likely to be a means of compliance that has broad industry support and is a workable effective solution".



## Grade 500E Steel: 100% NZ owned and 100% compliant

**BCAs are again being urged to consult manufacturers specifications for Grade 500E reinforcing steel to ensure that the steel is used correctly.**

This advice comes from the Department of Building and Housing amid concerns over imported steel. Failure of some imported samples in some tests relate to low yield stress, low uniform elongation and incorrect bar markings and configurations.

The *Report on Grade 500E Steel Reinforcement* by the DBH states that it is up to industry organisations to educate designers, engineers, reinforcing fabricators, construction companies and steel placers to ensure that 500E is used and handled correctly.

The DBH report was in response to concerns raised by the University of Auckland and other members of industry about the performance of 500E reinforcing steel. *Straight Up* covered the issues of the day in a story "Shake up in

the steel industry" printed in its March 2004 issue.

The DBHs investigation included surveying Association of Consulting Engineers New Zealand (ACENZ) members on problems with 500E steel; commissioning a report on the compatibility of the various Standards covering the manufacturing, design, welding and handling of 500E steel; commissioning a series of tests on bars nominally sold as Grade 500E, both locally manufactured and imported product; and reviewing the available evidence of the problems arising from the University of Auckland tests.

"Pacific Steel is proud that we were the only manufacturer to show 100% compliance with the New Zealand Reinforcing Steel Standard", said Alan Pearson, General Manager, Pacific Steel Group. Independent testing from SGS New Zealand Limited showed that almost all 500E samples met AS/NZS 4671 standards.

"We undertake rigorous quality testing procedures to ensure we provide our customers with top quality steel that they can trust to do the job. We complete all testing required under the material Standard for every batch that we manufacture, including tensile and bend tests, dimensional checks and chemical analysis of the batch. Test certificates are available for all batches, and records of our testing are kept for a period of 10 years"



"We continue to be concerned about the quality of imported steel as independent tests performed by SGS New Zealand Limited found that bars from all of the three sources of imported product failed to fully comply with the Standard", said Alan.

"We encourage contractors and consultants to demand and inspect mill certificates so they can be satisfied that the reinforcing steel they use complies with the New Zealand Standard"

So, *Straight Up* asks, if this level of scrutiny and apparent transparency is required for steel where are the parallels for timber?

## Keeping a lid on home energy use and insulation

**Appropriate testing and Standards for Minimum Energy Performance Standards (MEPS) and Energy Labels have been recommended in a report by Nigel Isaacs, BRANZ, called "People and energy: how do we use it?" Nov 2004 [www.rsnz.org/topics/energy/peopleenergyconf/energy.pdf](http://www.rsnz.org/topics/energy/peopleenergyconf/energy.pdf).**

One of the findings in this report is that MEPS could achieve significant energy savings in the home. For example, fitting a low flow shower head would be of the order of \$90 per year for one shower per day – or \$360 for a four person household because on average mains pressure water systems have a higher flow rate than low pressure systems – averaging 10.6 litres per minute compared to an average of 7.2 litres per minute. 78% of the 300 homes surveyed had low pressure hot water systems

with the remainder on mains pressure (Isaacs 2004). The latest data on this research is available from the BRANZ web site [www.branz.co.nz/main.php?page=help](http://www.branz.co.nz/main.php?page=help)

*Straight Up* asked Eric Palmer, Master Plumbers Association of NZ, to comment on these findings. According to Eric Palmer, a number of the Australian initiatives for energy and water conservation are being proposed for adoption in New Zealand. Mr Palmer says these proposals tend to ignore the differences in drivers between the two countries. "New Zealand does not face the water supply problems encountered in Australia and so should take an educative approach to water conservation before introducing a heavy-handed regulatory regime. With tapware and shower heads assigned a "star-rating" on the

basis of performance with mains pressure (300 kPa) supply, users may be misled as to their suitability for use on low pressure systems". A review of what is being manufactured and certificated for use in New Zealand therefore seems timely and might prove a useful guide for building inspectors.

Eric Palmer also points out that unlike in many parts of Australia where water heating is gas-fired, electric water heaters are predominant in New Zealand. "Application of a MEPS regime to electric water heaters has resulted in better performance from locally manufactured products, but greater energy savings would be achieved if households adopted gas-fired water heating where the fuel (LPG or natural gas) is available. It is better to use gas directly at 75+% efficiency



than through electricity generation at about 45% efficiency (provided the savings are not lost by consumers taking advantage of the more ready availability of hot water and increasing their usage). If imposition of a MEPS or mandatory labelling regime for gas-fired water heaters (most of which are imported) increases their costs, this will be a disincentive to their installation and so to energy resource conservation" said Mr Palmer.

Factors affecting the efficiency of double glazed windows and insulation in homes have also attracted comment recently. The Cement and Concrete Association of New Zealand (CCANZ) in its submissions to the DBH consultation document on energy efficiency [www.cca.org.nz/shop/downloads/SubmissionH1AS1.pdf](http://www.cca.org.nz/shop/downloads/SubmissionH1AS1.pdf) did not support the revision of NZS4218 and challenged the justification that the change to mandatory double glazing will "result in a reduction of internal moisture through a large reduction in window water condensation". CCANZ's view is that glazing type "does not determine the quantity of internal moisture within a room, this is controlled by occupant behaviour and other considerations". For example, CCANZ stated that "slightly higher internal ambient temperature due to reduced heating loss through the glass will be lost if a decision is made not to use curtaining to maintain

the heat benefit offered by double glazing". A simple solution really, but importantly it highlights the need for carefully considered solutions to improve energy efficiency within buildings, particularly with regards to insulation.

For example, homes built since 1978 have been required to be insulated (the current Acceptable Solution is NZS4218:1996, and a revised Standard NZS 4218:2004 has been released) yet healthy homes also rely on adequate ventilation. Compared with 30 years ago, leaving windows open during part of the day is not a safe or feasible option for some nowadays. As a result, an absence of adequate ventilation in recent years has meant that dehumidifiers have grown in popularity as a means of removing condensation with increasing energy use resulting from that.

SNZ/PAS4244:2003 is the current Standard applicable to the selection of insulation levels and window options to improve the efficiency of houses. In the light of the window glazing debate and the surge in use of dehumidifiers perhaps the time is right to investigate the effectiveness of home insulation products as a means of keeping homes warm and dry and therefore efficient in energy use. Some degree of product performance testing of insulation products in situ seems desirable to

assess how moisture level readings in homes behave under different temperatures and types of insulation. Is the type and extent of insulation used in walls, ceilings and under floors adequate for today's lifestyle now that homes receive little or no natural ventilation at any time of the day and especially during winter? An example from Australia suggests that insulation is the next line of defence after treated timber in protecting a building envelope. A recent report to the Australian Building Codes Board highlights "concern that the insulation properties of wall and roof insulation is degraded by metal heat paths around the insulation. This is worst where there is a metal framing member that is in direct contact with both the wall cladding or roofing and also the inner wall or ceiling lining. Consultant, Mr H. Trethowen formerly of BRANZ, was commissioned to investigate and his report for walls is on the ABCB web page and another one for roofs has now been added. These reports confirm that there can be a significant loss, particularly in the case described above, and demonstrates the need for a thin strip of insulation to provide a thermal break". [www.abcb.gov.au/documents/energy/effects\\_of\\_thermal\\_bridging\\_report.pdf](http://www.abcb.gov.au/documents/energy/effects_of_thermal_bridging_report.pdf)

**Chippie Block**

*SU Building*

## EVENT CALENDAR

### JANUARY 2006

**BOINZ Frontline Lodgement Staff Training Series**

Greymouth, 31 January 2006

### FEBRUARY 2006

**BOINZ Frontline Lodgement Staff Training Series**

Nelson, 1 February 2006

**BOINZ Frontline Lodgement Staff Training Series**

Blenheim, 2 February 2006

**BOINZ Frontline Lodgement Staff Training Series**

Masterton, 15 February 2006

**BOINZ Frontline Lodgement Staff Training Series**

Napier, 16 February 2006

**BOINZ Frontline Lodgement Staff Training Series**

Tauranga, 17 February 2006

### MARCH 2006

**BOINZ Frontline Lodgement Staff Training Series**

Hamilton, 1 March 2006

**BOINZ Frontline Lodgement Staff Training Series**

Auckland, 2 March 2006

**BOINZ Frontline Lodgement Staff Training Series**

Whangarei, 3 March 2006

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Invercargill, 13 March 2006

**BOINZ Frontline Lodgement Staff Training Series**

Dunedin, 14 March 2006

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Christchurch, 15 March 2006

**BOINZ Frontline Lodgement Staff Training Series**

Wellington, 27 March 2006

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Palmerston North, 28 March 2006

**BOINZ Frontline Lodgement Staff Training Series**

New Plymouth, 29 March 2006

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## S Tulsa's Bell Accident Heard 'Round the World

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Lt. Cmdr. Mark J.  
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s theorized that if part  
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hat the same thing hap-  
ls," Capt. Collins said.

at all the bells made by  
ey examined bell after

bell and found many in which crystal-  
lization had taken place," he added.

As a result of the Tulsa bell incident,  
the bureau of ships has conducted  
experiments and research into various  
bells and gong systems that would take  
less energy to ring, be lighter in weight  
and after.

*Capt. Collins said it could be that  
the old Tulsa bell has rung a death knell  
for bells, as the navy has known them.*

★ ★ ★

HE RECALLED THAT THE Tulsa,  
which had a normal speed of 7.4 knots  
and a top speed of 10.4 knots, was one  
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equipped with sails.

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we had no booms. At one point when  
we considered returning from Australia  
to the west coast we thought of using  
the sails."

Instead of returning, however,  
the Tulsa, the last of the Asiatic  
Fleet remained in the Pacific  
throughout the war, and for her  
size and armament had an out-  
standing career.

Lt Cmdr Tom D. Laing, USN, also  
from the Chicago research office,  
accompanied Capt. Collins here. They  
met with members of Naval Reserve  
Division 8-8, Merryville, Wednesday  
night.

Also while in the state they will confer  
with several scientists and mathe-  
maticians engged in naval research  
problems.

Capt. Collins has another tie to the  
state. Mrs. Collins is the former  
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THE WEEKLY NEWS, WEDNESDAY, APRIL 7, 1954

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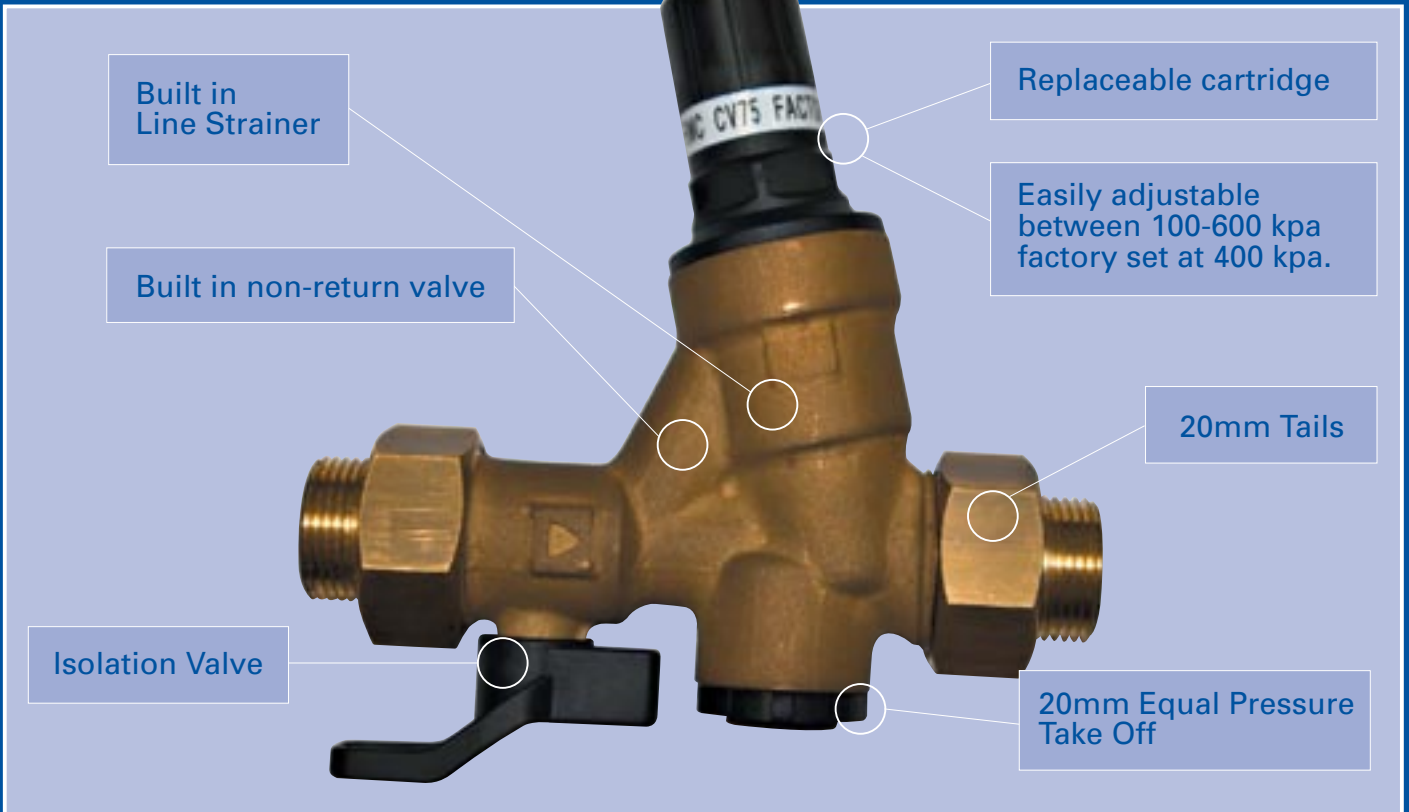






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