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Issue 11 September 2015

The next step in alarm evolution

Transforming the Fire Triangle FireNZ Conference 2015

Ambo-fire dispatch glitch sorted

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FireNZ welcomes articles and letters from our readership. These can cover any aspect of fire protection, fire engineering (performance and design), legislation, fire safety practice, fire industry product development, fire fighting operations, techniques, equipment and case studies and technical news. All articles will be assessed by an editorial panel prior to publication who, at their discretion, reserve the right to either decline use of the article or seek amendments. Articles should inform, debate, educate and help our readership through sharing of both knowledge and expertise.

Themes for the upcoming magazine production will be promoted in advance of editorial committee deadlines to ensure all contributors are able to meet the final magazine delivery timelines.

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Presidents Message

Fire Protection Association New Zealand

It's a pleasure on behalf of the FPANZ to extend a welcome to everyone attending FireNZ 2015.

An event such as this is the result of a lot of work by a very dedicated team from FPANZ, IFE and SFPE. No sooner has one event finished than planning starts in earnest for the next year's event.

FireNZ 2015 is the largest and most diverse event so far and full credit and thanks must go to the organising committee and FPANZ staff team for this. Well done to you all.

David Nathan
President FPANZ

Each year FireNZ gives us the opportunity to step away from our normal activities and take stock of what's happening in our industry, where we have come from and where we are heading. The ability to spend two days looking, listening and talking with like-minded people is a rare opportunity and as I think about this event, I can't help but reflect on the achievements of the recent past.

The past year has seen significant growth and achievement within FPANZ. Probably the most important measure of our progress and success is evident in the continuing membership growth. Each month we see new members from within all spheres of our interest groups and a number of affiliated groups joining to support, contribute and gain from all that the FPANZ has to offer the industry.

The rebranding and reimaging of our association is complete and members are starting to see the benefit of new logos, our 'code of practise' and how regular focused activity by our special interest groups (SIG's) can make progress with the varying issues we face. Our new website has made member and visitor communication timely and effective and gives a great platform to work from in the future. Our approved equipment registers are now on line and free access for members is given.

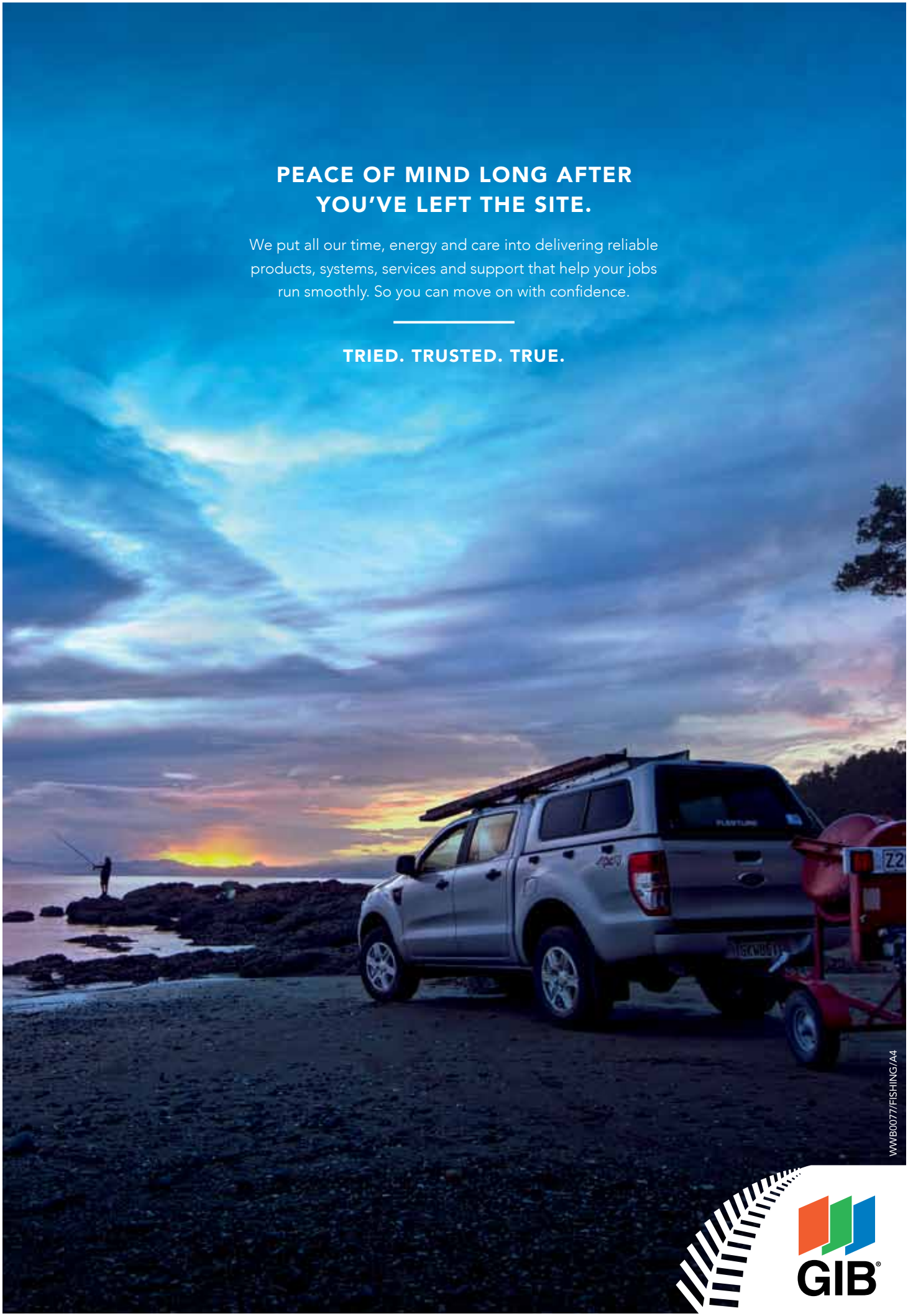
The wider community will see that we have another drive on Halon recovery underway. With the assistance of funding from Ministry of the Environment (MoE) we are collecting around 4.5tonnes of halon and exporting that for destruction overseas. Our first shipment has left our shores.

This last year has also seen a lot of time invested in assisting with and representing our industry with the building code review process. It is heartening to see the desire to consult with our industry in an effort to improve our fire regulations further and good communication with MoE is still occurring in this area.

Looking forward, Industry Training and Education remain as the big ticket items to improve. Recently we have had various seminars around the country sponsored by Viking, Victaulic and AON which have been well supported.

We need to move to better ways of engaging students to improve delivery of the off job units and continue with more on job related practical seminars and workshops to improve consistency and better work processes. The FPANZ through a newly formed training SIG group are working hard to advance this and in so doing lift the student numbers whilst reducing the time taken to complete.

David Nathan.
FPANZ President.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Presidents Message

Institution of Fire Engineers (NZ Branch)

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Greetings to all
As my final year as your President draws to an end, I will take this opportunity to reflect on past achievements and promote the future of the New Zealand Branch. It has been a busy three years and I now appreciate the time sacrifices past presidents have made to ensure the Branch continued to grow. To all past presidents may I acknowledge your efforts and commitment to the Institution.

Graeme Quensell
FIFireE, Grad.Dip. Building Fire Safety & Risk Engineering, FNZFBI, NCAET

President of the Institution of Fire Engineers New Zealand Branch. Leader of the Institution of Fire Engineers International General Assembly.

Many of you have served as mentors and sounding boards for me on numerous occasions over my term of office empowering me with your passion.

There have been many memorable moments and achievements over the last three years but one that stands out for me is how the Branch Council has developed under the succession policy. I am confident that we now have a strong and capable Branch Executive and the councillors to support them. The transition from my term to the next will be effortless and without disruption, the same passion and drive will see the Branch continue to grow under the leadership of Trent Fearnley. I will continue on as Past President assisting where required working on special tasks and offering feedback from the International General Assembly. The members of Branch Council are all motivated, well developed and keen to see new initiatives introduced that will support our members and attract new applicants. The Branch is in a very good place at the moment and I am very proud of what the Branch Council has achieved.

One of the more memorable moments was when I was privileged to present IFE Companion Jack Maddox with a slice of the old Takapuna Fire Station pole in recognition of 25 years of examination invigilation. Jack has been a member since 1957 and I remember Jacks comment to the gathering that "the IFE has done more for me than I have done for the IFE". Well said Jack and I couldn't agree more. On this note I have also enjoyed making contact with another long time member and past president Kevin Henderson. It is always good to have words of wisdom from our founder members and we have several that regularly attend IFE functions.

Over my term I have had the luxury of tremendous support from our partner companies PSL Fire &Safety, APC Techsafe and Metalcraft Insulated Panel Systems. These three companies and the New Zealand Fire Service have played a huge part in the development of the Branch and continue to support us with many new initiatives to help develop the knowledge of our members and provide us with the confidence to expand into new ventures. They share our passion and ideals and I thank them for their continued support.

Looking ahead to the future I can tell you that the New Zealand Branch has never looked better. As mentioned before Trent will take over from January 2016 and I am really looking forward to seeing the direction we go and to what heights. He has passion, experience and is very motivated. He will be assisted by Ed Claridge as Executive Director, another very experienced councilor with drive and qualities that will

compliment the new President. Both will have the support of a good blend of councilors from all over New Zealand and me as past president. The future looks good as membership is growing at a steady pace and this is very pleasing and comforting for the new president and the team. In July 2015 we will see Brian Davy take on the role of International President Elect and I am Leader of the International General Assembly (IGA). This is great for the NZ Branch as it recognises the level of respect our Branch is given by the IGA and the Board of Directors. The appointment of Brian to International President is another memorable moment I will take with me from my term.

If there is one aspect of my term that has not pleased me it is that I have not been able to get local groups functioning as I would have liked. It's all very well discussing how successful the Branch Council has been at developing ideas but we need to get local groups being just as active. We need the Groups to be running seminars and field trips, supporting local members and encouraging new ones. To do this we need members like you to take the IFE challenge and become involved at the local Group level, attend meetings, get elected to the committee and start introducing new initiatives. We now have Groups established in all major cities and new ones in the formation stage so the challenge is there for you to take.

Before I finish I must mention the 2015 FireNZ Conference and AGM. This year's conference is shaping up to be a great event with presenters from all over the globe. This year's theme of "Transforming the Fire Triangle" will discuss design, safety and innovation so will appeal to all sections of the fire community. Our International President Steve Hamm and International President elect (our very own Brian Davey will be present) to present and to chat informally. The IFE has continued to provide international presenters that will provide you with insights into global fire engineering and lessons learnt from actual incidents. So put the 15th and 16th of October in Wellington into your planners now.

These are great times for the New Zealand Branch and the Institution as it nears its 100 year centenary in 2018 and I would like to thank you all for your support and for allowing me the privilege of being President of this historic Branch. So I will finish with Jack Maddox's words "the IFE has done more for me than I have done for the IFE".

Regards
Graeme Quensell FIFireE
President Institution of Fire Engineers NZ Branch

Leader International General Assembly of the Institution of Fire Engineers

Presidents Message

New Zealand Chapter of the Society of Fire Protection Engineers

Time has gone quickly since the last President's message, and the last FireNZ conference, with this year's conference coming up rapidly.

Before getting into other matters, I need to thank the executive committee for their huge support while I have taken a big step back from Presidential duties to become a full time Mum to baby Beth. Particular thanks to Vice President Geoff Merryweather who has stepped up in numerous ways including drafting much of this president's message. I would also like to thank Michael James for his contribution to organising the SFPE elements of FireNZ and can say they wouldn't be happening without him.

Claire Williams
President New Zealand Chapter of the Society of Fire Protection Engineers

Looking back over the past year, the SFPE New Zealand Chapter has been working hard on a number of important local initiatives some of which we will outline briefly below and some of which will be discussed at the AGM to be held at the end of the first day of the conference on 15th October 2015 (hope to see you all there!)

Plugging the skills gap

To address the skills shortage in the fire industry and following on from previous year's very successful efforts, the SFPE is again running presentations at the University of Auckland on the different careers that are available in fire engineering related fields, and the benefits of the Fire Engineering course at the University of Canterbury. Previous years SFPE NZ careers seminars and the hard work of the University course staff led to a full capacity intake of Fire Engineering Students this year, we hope that the recent well attended session will have a similar effect on next year's intake.

A number of companies have taken the initiative and supported internships for graduates and students. Meanwhile the SFPE NZ executive are hoping to finalise the details of a chapter supported internship as discussed at last year's AGM.

Geoff Merryweather
BA MEFE MBA CPEng MIPENZ
Vice President New Zealand Chapter of the Society of Fire Protection Engineers

Industry stakeholder liaison

SFPE NZ have been continuing to work hard to provide a linkage between the members and MBIE this year. We have opened up our technical sessions to allow MBIE to speak directly with members. We have been participated in the Engineering Design Reference Group which meets quarterly to discuss matters of national importance in the wider engineering sector. We also provided SFPE NZ representation on a committee that looks at the way the Ministry use IT to disseminate information. Invitations to formally represent as an organisation are a great reflection on the dedicated work of the executive committee and active members who have assisted the Ministry in their

personal roles, earned respect and championed the role of the SFPE NZ with the Regulator.

SFPE NZ chapter have also been working closely with IPENZ and the Construction Industry Council to harmonise Practice Note 22 and the NZ CIC Guidelines, particular thanks to the active members who have assisted in this work by attending the workshop and providing feedback on drafts some months ago. We hope this work will be ready to go out for full membership consultation in the forthcoming year.

SFPE NZ have also held discussions with IPENZ on member concerns regarding increasing liability and are in the process of accurately scoping this potentially significant issue.

This year substantial groundwork has been done to maintain and improve transparency and consistency of CPEng assessments. The Fire Practice Field Guideline has undergone draft updates to reflect current practice and awaits the next steps to publication. A fire assessor benchmarking workshop is also in the pipeline. We would like to take this opportunity to say a huge thanks to all members who put in significant hours to be CPEng fire assessors.

SFPE NZ also worked together with SESOC to host a series of seminars on fire engineering considerations for structural engineers to help plug any potential the gaps between the two disciplines.

SFPE Organisation

SFPE NZ chapter has been working closely with the wider SFPE to ensure that the benefits of full Membership meet our local needs. Those who are friends of the local chapter may be interested to know the many benefits of applying for full professional Membership of SFPE;

- great webinars by world renowned fire engineers on a range of topics from CFD and Evacuation modelling to business topics such as web-design (streamed live or accessed later on the SFPE YouTube channel).
- Access to the fire protection journal
- The SFPE magazine
- Voting rights on wider SFPE and Chapter matters

Please see the website www.sfpe.com for full details of the valuable professional member benefits.

As you can imagine all of this work takes time, thank you to all of our dedicated Executive Committee and active members who continue to volunteer their time to help achieve the vision of the organisation to be "leaders in engineering a fire safe world". Please do not hesitate to join us if you are keen to get more involved.

Claire Williams
President

Geoff Merryweather
Vice President

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evolution Darwin's most famous theory; it states that evolutionary change comes through the production of variation in each generation and differential survival of individuals with different combinations of these variable characters.

The theme of this year's Fire New Zealand conference of Transforming the Fire Triangle: Design, Safety and Innovation fits comfortably with Brooks's. For over 40 years we have been providing life safety products and engineered solutions for residential and commercial markets. The latest innovation from Brooks, the 160e Series of Residential Alarms and the next generation RadioLINK+©, are pioneering a new era in the design and performance of residential alarms. Brooks in conjunction with Ei Electronics in Ireland have over 40 years introduced many industry firsts. Brooks have once again set a new standard in innovation with the new 160e series of alarms.

The 160e Series are mains powered with rechargeable lithium cells from Panasonic, and provide tamperproof and maintenance free rechargeable lithium back-up for the whole 10 year life of the alarm – offering best value for money. Since Ei introduced Panasonic rechargeable cells to their previous 160 series in 1999 they have not had a single battery failure during the life of the alarm.

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With the introduction of the 160e series Brooks is also introducing the next generation of its industry leading RadioLINK technology – RadioLINK+©. The RadioLINK+© module can interconnect wirelessly with other RadioLINK© and RadioLINK+© alarms and accessories via a plug in module. The module just slots into the 160e series alarm and is automatically activated ready to be House Coded in with the rest of the system. RadioLINK+© has an enhanced self-monitoring function that recognises system tampering or alarm head removal. RadioLINK+© is currently available only on the 160e series. If using wireless interconnection by adding the EIB450 RadioLINK© Alarm Controller there is no need for ladders or rickety chairs to test or silence your system – convenience at the touch of a button.

To see the latest in residential alarm technology come and see Brooks at Stand 41 and 42 at this year's Fire New Zealand Conference and Exhibition TSB Bank Arena Queens Wharf Jervois Quay Wellington on the 15th and 16th of October.

Ambo-fire dispatch glitch sorted

By Keith Newman

A robust fix is finally in place eight months after an emergency communications glitch was first detected between St John Ambulance and NZ Fire Service requiring an old school phone back-up protocol to remain in place, until recently.

News that important messages from St John had been lost on four occasions wasn't escalated to national level at the NZ Fire Service until five months after the first occurrence, raising serious concerns that firefighters were being placed at risk.

The New Zealand Professional Firefighters Union (NZFPU) first raised the matter with the NZ Fire Service (NZFS) in March when it learned "unacceptable" glitches and "unreliability" had resulted in potentially life threatening circumstances.

When it appeared nothing had been done, a second critical memo was leaked to the NZ Herald by an unknown party. NZ Fire Service national operations manager Ken Cooper says once the issue was escalated from a technical glitch to one involving the safety of fire crews it "got onto the right radar" rapidly.

An initial fix scheduled to go live at the end of June was broken when it was put through rigorous testing by NZ Fire Service and St John. The issue was finally resolved in the first week of July.

Ken Cooper, NZ Fire Service, national operations manager

Stephen Wilson, Intergraph New Zealand manager

After an urgent high-level meeting on 18 March this year software provider Intergraph was on the case and emergency services covered themselves by phoning messages and alerts for all fire and ambulance callouts.

Cooper says this was "a wake-up call" which ended up "ripping the plaster off the wound" to identify other areas that could be improved, especially through communications with the Police. "The main concern is the constant dynamic environment the three emergency services are working in".

According to Paul Turner, the NZFS medical response project manager who took the lead in overseeing the system fix, several issues were found but it was decided to focus on a "point fix", targeting the intermittent "dropping out" of messages between ambulance and fire.

An initial fix scheduled to go live at the end of June was broken when it was put through rigorous testing by NZ Fire Service and St John. The issue was finally resolved in the first week of July.

Missed messages

Firefighters Union national secretary Derek Best, although glad the issues have been rectified, remains concerned the fix took so long.

"Many of these issues were bought to the attention of the fire service some time ago but nothing seemed to happen until we raised it again."

It was initially claimed the problem didn't affect police or ambulance communications, "if the Fire Service has a problem then the others do as well. I don't think it affects only one organisation."

He's gracious in saying the NZ Fire Service is probably no better or worse than a lot of institutions, "Unless there's a disaster nothing seems to happen".

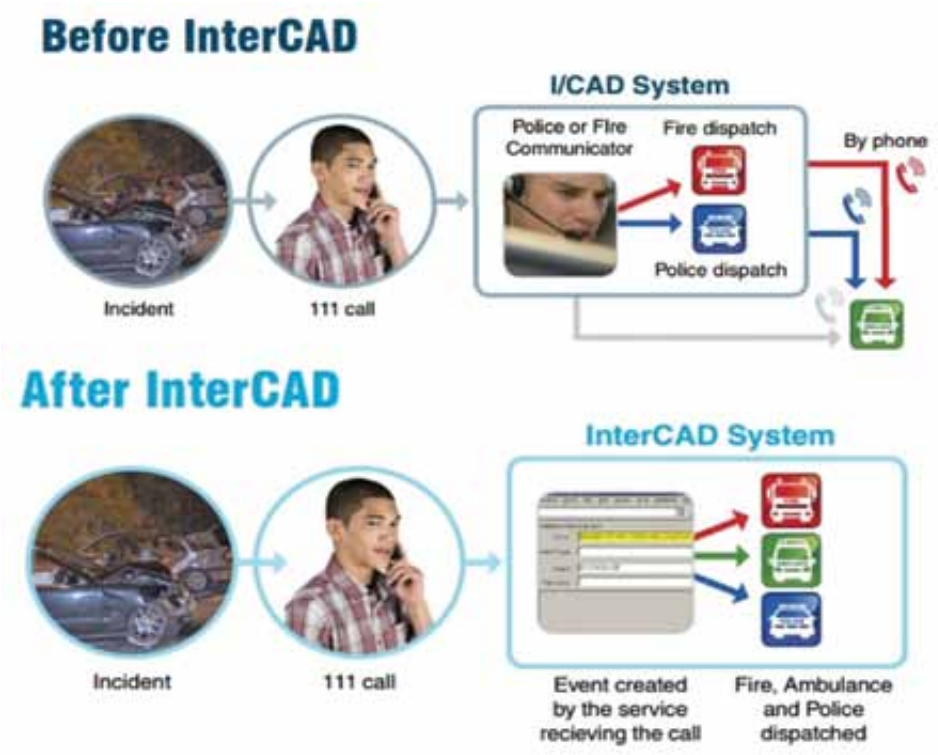
In November last year St John despatchers sent a warning to a fire crew heading to a Corromandel address but the message never got through and they found themselves confronted with a gun wielding man. They had to secure the loaded weapon before proceeding.

In another case firefighters weren't informed a "possibly violent" person was in attendance at a fire in Dairy Flat in October. On another call-out a message informing them they'd been stood down never arrived and in a fourth incident a message telling crew that a helicopter was 12 minutes away failed to arrive.

Part of the problem is that Police and the NZ Fire Service use the InterCad (iCAD) system to link with the main emergency communications centre and St John uses a different system known as VisiCAD. The systems work slightly differently and require tight synchronisation.

Fire and Ambulance services signed off a formal memorandum of understanding (MOU) in December 2014 a decade after the NZFS agreed to pick up an increasing workload of first responder and medical emergency work.

Turner says across the new multi-agency environment there are now "50 million data packets an hour being transferred around the system". Entire incident reports are shared between agencies for each initial call out and in subsequent communications everything is filtered out except new comments.



Technically speaking the problem was in "the logic tree" within the software. On unpredictable occasions when multiple packets were sent between fire and ambulance simultaneously "it wouldn't necessarily bring all the right data across".

Turner says the problem isn't specifically with the St John system but he agrees "if we were all on the same system we wouldn't need to have InterCAD".

A back-up protocol remains in place. If an acknowledgement has not been received within 30 seconds of a message being sent, a follow up phone call is made to ensure information hasn't been lost.

"We need to make sure information gets to the front line every time and we've been quite vigilant to ensure that it has," says Turner. "We'll keep that up until the three agencies...decide the way forward."

Intergraph put together its own local and global task force and worked around the clock with a series of rigorous tests to identify the issue. Stephen Wilson, Intergraph New Zealand country manager, describes the problem as a configuration issue related to supplementary comments from Ambulance despatch.

He insists there's no problem with the underlying Fire and Police dispatch system (CARD) or the primary incident information passed between dispatch systems.

An important key in resolving the problem was the ability to have VisiCAD data, being shared between NZFS and St John, run through Intergraph's Wellington laboratory to isolate areas of concern.

An award winner

Intergraph's InterCAD system, first implemented in 2009, enabled the real-time sharing of essential 111 caller information between Police, the Fire Service and Ambulance. By June 2011 it had dealt with 135,000 emergencies and was described in a case study as a 'no wrong door' solution with services mobilised immediately no matter who received the call.

The new hybrid fire-ambulance vehicle being piloted with outlying brigades around the country as part of the closer working relationship.

All 111 ambulance emergency calls terminate at one of three clinical control centres in Auckland, Christchurch and the Wellington Free Ambulance centre. Essential call data is shared with the NZ Police and NZ Fire Service, who are often first responders.

It won the Excellence in Networked Government category of the 2010 annual Institute of Public Administration of New Zealand awards.

InterCAD was part of an overarching vision promising faster, safer, more efficient, shared emergency services through linking the common Intergraph despatch systems at Police and Fire with the one used by Ambulance.

Previously if a second service was required the request had to be made by phone often resulting in delays and errors through double handling of information. The agencies also required different sets of information and had different ways of dealing with it.

When the new system was first scoped out in 2008 it was a world leader. A budget of $600,000 was allocated with members from each agency and Intergraph reporting to a steering committee as they tackled what was described as "significant technical and organisational hurdles".

The different systems and call handling processes had to be aligned without compromising existing IT and call centre systems while assuring privacy and security of information.

More refinements ahead

St John first began implementing the VisiCAD despatch system from US-based Tritech in 1996 which gave it GIS map-based display of resources linking incident addresses and vehicle locations to street maps.

Lee Brooks, St John Assistant Operations Director of Clinical Control Services insists the recent issues were not related to load or traffic as the platform is designed to handle high intensity workloads.

He says St John has invested significantly to ensure its service is as seamless as possible and after working with Police and Fire it was determined no further development was necessary from VisiCAD's developers.

"We have been fully engaged with both agencies to provide all the assistance needed to ensure the interface between our systems remains at the desired level."

He says there's been no thought of St John moving to the same system as Fire and Police although it is working on a future CAD roadmap and migrating to new infrastructure to ensure continued reliability. No details were available at publication date.

"We are committed to making our CAD system the best possible solution it can be, recognising that at the centre of decision making will be the interests of our patients and our specific emergency, non-emergency and clinical needs."

Now that the glitch between NZFS and St John systems has been ironed out, there are plans to further improve and enhance the InterCAD system so it's easier for people in the main communications centre to use, including tracking who put what information where.

NZFS medical response project manager, Paul Turner says data comes to emergency services with an address, which needs to be verified for accuracy before the incident is accepted and imported into the GPS map-based system used by fire and ambulance to give directions. This is likely to become "more seamless".

Discussions are also underway with communication centre staff, their union and frontline fire service people on how their interactions with the Intergraph systems might be improved. This includes the "whole package of how we can work more efficiently with ambulance," says Turner.

One enhancement that has been agreed on is the addition of time stamping so St John can see automatically when a fire truck has arrived at a job. "At the moment we have to send it through manually and they enter it manually. This will free them up to do other work."

Turner says NZFS and St John now have "far better processes for dealing with issues more quickly" and communication with Intergraph is much improved.

And while ideas are being shared about future enhancements he says "these aren't something you just plug in, they have to be thoroughly worked through in a test environment".

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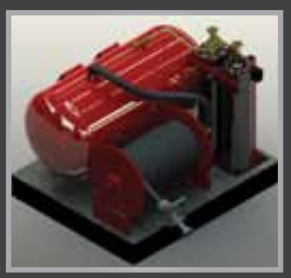

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Flush mount with horn
255mm H x 183mm W x 84mm D

STI-6518 Ref. 720-060
Flush mount, no horn
170mm H x 95mm W x 49mm D

STI-13210-NG Ref. 720-094
Surface mount, horn and label optional
200mm H x 135mm W x 100mm D

All **STI 'Stoppers'** are made of tough, UV stabilised polycarbonate. Many can be supplied with or without a 105 dB horn. Other models and sizes available including weather resistant options.

STI-WRP-R-11 Ref. 720-059R
Resettable call point surface mount, DPDT. Positive activation mimics the feel of breaking glass. Visible warning flag confirms activation. Simple key to reset operating element - no broken glass. **IP 67**

STI-RP-WS-11/CN Ref. 720-052W
Resettable call point surface mount and flush, DPDT. Positive activation mimics the feel of breaking glass. Visible warning flag confirms activation. Simple key to reset operating element - no broken glass.

STI-RP-GF-11/CN Ref. 720-051G
Resettable call point surface mount and flush, DPDT. Positive activation mimics the feel of breaking glass. Visible warning flag (pictured) confirms activation. Simple key to reset operating element - no broken glass.

STI-RP-RS-02/CN Ref. 720-058
Resettable call point surface mount and flush, SPDT. Positive activation mimics the feel of breaking glass. Visible warning flag confirms activation. Simple key to reset operating element - no broken glass.

STI-6255 Ref. 720-042
Mini Theft Stopper discourages inappropriate use of equipment. Sounds a powerful 105 dB warning horn when activated. Tough, ABS construction. Reed switch activation for cabinets and display cases or unique clip activation for freestanding equipment. Does not interfere with use of protected fire fighting equipment. Compact design 85mm H x 85mm W x 25mm D.

STI-6720 Ref. 720-047
Break Glass Stopper. Keys under plexiglas. Protects emergency keys from inappropriate use. Keys remain visible. Fast, easy installation. Simple, inexpensive plexiglas. 3 year guarantee against breakage of the ABS housing within normal use.

Battery Tester Ref. 730-100
ViTech rugged steel case 5, 15 and 30 amp battery tester for fire and alarm use.

Fire Brigade Alarm: (Closed/Open) Ref. 730-201
ViTech branded Type X and Type Y models with temperature compensated pressure transducers with digital display showing pressures for defect, fire and pump start.

Anti-Interference Device
Ref. 730-400 series
ViTech AID for sprinkler valve monitoring; fits all ball valve sizes.

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21067

Fire Safety Review a slow burner - Greater industry input urged

A poor fire industry response to an extensive review of fire safety regulations and practice in New Zealand means critical changes, now being considered as part of an extended Fire Programme process, have been influenced by around 10 percent of those eligible to have a say.

NZ Fire Protection Association chief executive Keith Blind warns the New Zealand fire industry has become far too apathetic about its own future. "People either aren't across the issues or they don't care about them. We need a more cohesive cross industry view."

FPANZ CEO Keith Blind

The MBIE effort to get industry involved, including a comprehensive questionnaire on issues impacting fire safety, saw around 80% of those involved making no comment and many failing to even tick the basic choice boxes.

Serious concerns have been raised about conflicts, confusion and misunderstanding since the revision of the Building Code provisions and supporting documents for fire safety were first released in April 2012.

The law change which came into effect in July 2013 was supposed to improve criteria and methods for designers, fire engineers and Building Consent Authorities so that fire design could be applied more consistently.

MBIE conceded the fire and building industry had struggled with significant changes in content and structure, leaving things open to interpretation and resulting in inconsistencies with the way the new fire safety requirements were interpreted.

After six months of processing industry feedback MBIE announced at the end of July, a series of 14 projects known as the Fire Programme, designed to make fire safety more "performance based".

Slipping into the future

While the timeline stated it would be all done and dusted by around August 2016, MBIE project manager Chris Rutledge admits there's likely to be spill over into 2017 for at least six of the projects.

Serious concerns have been raised about conflicts, confusion and misunderstanding since the revision of the Building Code provisions and supporting documents for fire safety were first released in April 2012.

Each project has a timeframe and review process to ensure it is on track with quarterly updates provided and opportunities for stakeholders to have input. In several cases there will be a need for further extensive consultation.

Rutledge says it's unlikely any of the Fire Programme adjustments will need legislative changes, although any Building Code changes will require detailed or full public consultation, including those relating to acceptable solutions and timber linings.

MBIE Fire Programme project leader Chris Rutledge

FPANZ takes a stand

The Fire Protection Association (FPANZ) membership survey on fire safety issues gave a strong indication that unnecessary costs could be avoided if qualified Fire Evacuation Consultants were involved in building design from the outset.

That would also ensure the need of people with disabilities were met.

There was general agreement that a Building Warrant of Fitness (BWOF) should reflect the integrated nature of all fire protection systems to enable evacuation consultants to more effectively plan and manage a relevant fire evacuation philosophy.

There was opposition to building owners removing hand held fire equipment from buildings where it was in accordance with the original design.

There was strong agreement that any firefighting equipment in a building should be part of a building's code of compliance and little doubt that designated persons or wardens should be trained in the use of those appliances.

MBIE has confirmed that FPANZ feedback provided a useful input ahead of the current Fire Programmer being established.

FPANZ is determined to remain part of the discussion to ensure its findings are adequately dealt with and pursued further.

"Code changes require ministerial decisions and some will be delegated to the chief executive of MBIE and the general manager of building systems performance."

In the meantime the industry will have to work with existing codes and requirements. "There's nothing technically wrong with existing fire regulations. This is an opportunity for stakeholders to work with MBIE to make changes around how the system works."

Rutledge agrees some aspects of the system are "not working as efficiently as they need to be from anyone's perspective, particularly in relation to consenting...which is probably harder than it needs to be."

The goal is to achieve as much as possible by the end of 2016. "A good approach to anything like this is to take a pause after 18 months, assess what we have achieved, look at what's left and apply what we have learned to the rest of the programme."

Rutledge says four projects are underway including supported housing (for the disabled) and the reintroduction of alternate solutions and the effectiveness of the fire engineering brief (FEB) process which are at an early stage

The review of acceptable solutions (C/AS1-7) is also underway and fire design for prisons, fire stations and other specialist buildings is "quite a way down the track". Passive fire protection will kick off early next year.

MOBIE chief engineer Mike Stannard says the Fire Programme charts a clear direction and comprehensive plan for the future development of fire regulations.

"It is expected that through a more interactive and inclusive stakeholder engagement, coupled with other sector-based initiatives, MBIE and the sector will be better able to deliver on their expected roles within the regulatory system."

Failure to ignite interest

The Fire Safety Review was designed to improve co-ordination across the sector and with MBIE but failed to ignite a groundswell of interest in the initial consultation process.

Around 3700 representatives of the wider fire industry, excluding the NZ Fire Service, were given the opportunity to participate in five workshops in major centres last year seeking to understand what was and wasn't working.

Only around 250 turned up throughout the country. Then, of the 220 stakeholders responding to emails in October 2014, an average of less than 20% ticked the boxes or gave any written feedback to questionnaires "designed to drill deeper into the key issues" raised during the workshops.

Project manager Chris Rutlege says MBIE has an email list of 800-900 stakeholders, representing the majority of those who want to be actively involved. "We think a quarter of those turning out to the workshops to give us feedback is pretty good."

But what about the low response from the questionnaire? He reckons a lot of that had to do with the number of questions and how they were structured. "A lot of people only answered those questions in which they had a specific interest."

While the feedback was low at one level, those on the mailing list helped give a fairly representative view. "I think we would design the questionnaire differently if we did the same thing again."

Rutlege is hoping for "high level of engagement as we move into these projects including participation in working groups and feedback on what's been developed."

"A good approach to anything like this is to take a pause after 18 months, assess what we have achieved, look at what's left and apply what we have learned to the rest of the programme." MBIE Fire Programme project leader Chris Rutledge.

Fire Programme projects

1. Fire Safety Requirements for Supported Housing
2. Alterations to Existing Buildings and As Near As Reasonably Practicable (ANARP) Decisions for Fire Safety Requirements
3. Material Group Numbers – Timber Linings
4. Role of the New Zealand Fire Service (NZFS) in Consenting
5. Stakeholder Access to MBIE Guidance and Advice
6. Re-Introduction of Alternative Solutions and the Effectiveness of the FEB Process
7. Review of Acceptable Solutions C/AS1-7
8. Understanding Building Categorisation Systems
9. Fire Design for Prisons and Fire Stations and other Specialist Buildings
10. Structural Stability and Storage Buildings
11. Evacuation for Persons with Disabilities in Commercial Buildings
12. Installation and Compliance of Passive Fire Protection Systems
13. Construction Monitoring and Post-Construction Compliance
14. Understanding all of the Legislation and Regulations that applies to Fire Safety in buildings

Although valuable high-level comments reflecting wider industry concerns were made during the process, FPANZ CEO Keith Blind remains concerned at the level of apathy.

Most contributors appeared to be fire engineers and building controllers, "where, for example were the property management groups?"

Even a separate FPANZ survey didn't attract the level of response it was hoping for to ensure all stakeholders were informed about proposed changes.

The FPANZ survey seeking answers to 30 questions including 15 specific member concerns, was accepted after the MOBIE deadline in an attempt to add value to the research.

Time to move forward

In presenting the summary of the initial review of the 2012 Fire Safety Building Code, MBIE's chief engineer Mike Stannard, stated much had been learned and it was now "time to move forward".

He concluded: "Re-litigating issues and concerns around the history of the changes will only slow and stymy the progress we can collectively make."

The goal was to achieve a collaborative sector-wide approach to achieve "an effective and efficient best practice regulatory system for fire safety in New Zealand".

The review partly arose from a briefing of key MBIE staff in September 2014 where concerns were raised about earlier fire safety code changes, particularly engagement with "fire review stakeholders".

Among the top issues raised were the need for further guidance around alterations to existing buildings including how passive fire resistance was treated along with concerns about delays, increased costs and a lack of accountability and confidence.

There was a need to clarify the building inspection regime and WOF compliance schedule to address a disconnect with legislation which had led to uncertainty.

Industry feedback showed concern at the widely varying advice offered by BCAs and a recommendation that more training and guidance on Fire Safety Design be provided to them, architects and tradies.

Feedback suggested it was difficult to find qualified fire engineers and BCA's with sufficient knowledge and proper training.

It was suggested the Building WOF Compliance Schedule should include signage and passive fire protection measures, including greater awareness of the inter-dependency of systems

Consenting inconsistencies

Claims were made of inconsistency between what was agreed during resource consent and evacuation regulations with designers hiding behind the Building Code level of performance "creating conflict and issues for their client down the track."

It was also suggested current "acceptable solutions" had increased costs for building owners without increasing safety or providing value for money with

Fire Safety Review Stakeholder Summary

Overview of comments and questions

- Errors within Acceptable Solutions and Verification Method documents
- Performance based Code versus prescriptive elements
- Inconsistent approach from fire engineers, designers and BCA's
- Lack of fire engineering or fire sector resources nationwide
- Code and associated documents too open to interpretation
- Disparate views, varying opinions on key issues

High level summary (Top 12 issues)

1. More guidance for alterations to existing buildings
2. Concern changes have increased costs, caused delays and loss of accountability
3. Building inspection regime, WOF and Compliance Schedule need clarification
4. Disconnects between legislation creating uncertainty
5. Clarify the role of NZ Fire Service and firefighting water requirements
6. Re-address interior surface finishes and performance level requirements
7. More consistent advice needed from MBIE
8. BCA advice varies widely, requiring more training on Fire Safety Design
9. Guidance needed on Passive Fire Protection and service penetrations
10. Verification Method should be more flexible and allow innovation
11. Fix errors and inconsistencies in Acceptable Solutions C/ASx
12. Review acceptable solutions for Community Care, Property Rating, Disabled Evacuation and Fire Fighting

errors across multiple documents causing confusion, delays and uncertainty.

Some acceptable solutions were allegedly inconsistent with the Building Code, with councils not understand the consenting and compliance requirements and designers spending too much time having to justify their designs.

The NZ Fire Service came in for its fair share of criticism in the Review document. The role of Fire Service involvement was questioned with suggestions it should limit its advice to what was required by the Building Act without requiring "an engineering review on top of the peer review".

It was alleged that there were too many requests for further information arising from the Fire Service consent review, resulting in delays and increased costs.

Another response suggested the Fire Service ought to be better resourced with qualified fire engineers and get back to the basics of "looking at operational reviews or evacuation scheme approvals and administration of trial evacuations." There was a request for a complaint process for NZFS failings.

New era of fire industry innovation

The fire industry is entering a new era of innovation, improvements in design and changing legislation and needs to "step forward and lift the level of professionalism," says New Zealand Fire Protection Association CEO, Keith Blind.

The theme of this year's fire industry conference "Transforming the Fire Triangle" is about the need for a refresh across design, safety and innovation based on changes in fire safety legislation, the latest technology and international trends.

The annual two-day conference at the TSB Arena and Shed 6 on Wellington's Queens Wharf from 15-16 October is designed to provide insight and learning and extend thinking around key industry issues including the latest developments in fire protection.

The event run jointly by FPANZ, the Society of Fire Protection Engineers (SFPE) and the Institution of Fire Engineers (IFE) has attracted keynote speakers from the USA, Australia and New Zealand and industry professionals from throughout the Pacific.

Three key areas being worked through are accreditation, certification of products and "bright new ideas and elements that are shifting in the design space," says Blind.

FPANZ is backing the launch of 3D software packages for the designers of fire protection systems that plug into CAD design suites and will host training workshops on their use.

In the passive fire protection space, FPANZ is working with MBIE and BRANZ on delivering a suite of design guideline documents for the installation and maintenance of passive fire systems. The programme, expected to be completed in 12 months, is industry funded and supported.

"There's a lot going on in the training space with the update of qualifications and registering new ones within the existing framework."

An accreditation and certification scheme for the hand operated fire fighting equipment (HOFFE) market will also be introduced at the conference in an attempt to "improve quality and lift the market".

A new registration scheme is being introduced alongside a listing of fire equipment product. "If you are an importer or supplier to the HOFFE market you will need to be registered and listed with us and the equipment will need to be standards approved by an independent body," says Blind.

A complete refresh of the fire evacuation consultants code of practice, designed to replace an earlier attempt in 2012, will also be launched at the conference. "This will provide terms of reference and guidelines for people preparing and supplying evacuation plans for different types of buildings."

Anyone with an interest in fire safety can attend including fire protection contractors, consultants, fire engineers, architects, surveyors, developers, manufacturers, distributors and installers of fire equipment, insurance professionals, regulatory authorities, fire service personnel, property and facilities managers.

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As the leading supplier of fire alarm systems in NZ, Pertronic Industries prides itself on its ongoing commitment to research and development, as evidenced by the company's comprehensive range of analogue addressable and conventional fire control panels and accessories. R&D and production is based at the NZ-owned company's Lower Hutt headquarters, with a sales/support office in Auckland and branches in all Australian states. Recent innovations such as FireMap® PC-based graphics allow fire alarm installation companies to develop and maintain this interactive fire management system directly for their clients in a cost-effective manner. New introductions to the product range, in addition to FireMap, will be on display at the Pertronic exhibit.

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Hilti provides leading-edge technology to the global construction industry. Hilti products, systems and services offer the construction professional innovative solutions with outstanding added value. Hilti excels through outstanding innovation, top quality, direct customer relations and effective marketing. Two-thirds of the employees work directly for the customer in sales organizations and in engineering, which means a total of more than 200,000 customer contacts every day.

Hilti upholds a clear value orientation and pursues a policy of stakeholder value. Integrating the interests of all the company's partners – customers, suppliers and employees – into its strategy and actively honoring its social and ecological responsibility creates the foundation of trust that makes possible the long-term success of the company.

PROGRAMME

Thursday 15th October 2015

PUBLIC DEMONSTRATIONS IN FRONT OF TSB ARENA		
Demonstration One	Demonstration Two	Demonstration Three

7.30am – 8.00am	REGISTRATION: All Delegates
8.15am – 8.30am	Opening Address
8.30am – 9.15am	Keynote Speaker – NFPA
9.15am – 10.00am	**Speaker: IFE** John Buckheit – High Rise Buildings
10.00am – 10.45am	*Morning Tea – Exhibitors Area*
10.45am – 11.15am	**Speaker: SFPE** Martin Feeney Holmes Fire - ASB North Wharf - A case study for innovation and change during the design and construction process
11.15am – 11.45am	**Speaker: IFE** Steve Hamm – Business Community Resilience
11.45am – 12.30pm	**Speaker: SFPE** David Youssef – Docklands High-rise Apartment Fire - Managing Community Consequence Case Study
12.30pm – 1.30pm	*Lunch – Exhibitors Area*

1.30pm - 3.15pm WORKSHOP SESSIONS				
	Workshop 1 – FPANZ	Workshop 2 – IFE	Workshop 3 – SFPE	Workshop 4 – FPANZ/Design
1.30pm – 2.30pm Session One	**Matthew Wright** *Product Compliance the Australian Model*	**Steve Hamm - BECA**	*Driving creativity in the film or advertising industry.*	**David Molnar - Victaulic** *Revit pipe routing, BIM best practices and coordination*
2.30pm – 3.15pm Session Two	**Lance Hunt** *Portable Fire Equipment Certification/Product Listing*	**Steve Hamm - BECA**	*Driving creativity in the highly regulated Aviation Industry.*	**David Molnar - Victaulic**
	Ela Langford *Evacuation of Buildings and a Code of Practice*			

3.15pm – 3.45pm	*Afternoon Tea – Exhibitors Area*

3.45pm - 5.15pm WORKSHOP SESSIONS				
	Workshop 1 – FPANZ	Workshop 2 – IFE	Workshop 3 – SFPE	Workshop 4 – FPANZ/Design
3:45pm- 4:30pm Session Three	**Competenz** *Training in the Industry the Future of Qualificationsl*	*Couch Session with* **John Buckheit, David Youssef** *and* **Daryn Glasgow** – *Q&A*	*Fire Engineering Case Study*	**David Molnar - Victaulic**
4:30pm-5:15pm Session Four	**Aaron Grey** *A Software approach to passive system information*	*Couch Session with* **John Buckheit, David Youssef** *and* **Darren Glasco** – *Q&A*	*Presentation of Ideas to regulators and obtain feedback*	**David Molnar - Victaulic**

5.15pm – 6.15pm	**AGM – IFE and SFPE**
	SIG Group Meetings – EVAC, PASSIVE and INSPECTORATE
	Drinks and Canapés – Exhibition Area
6.15pm – 10.30pm	*Gala Dinner and Event – TSB Arena*

AON FireNZ CONFERENCE DINNER

The Fire NZ Conference Dinner is sponsored by AON and will be held on Thursday 15th October.

This year's Conference Dinner will begin at 6:15pm followed by some entertainment which will involve it being themed around the Rugby World Cup, we will have each table allocated with a Country and battle it out with interesting games and activities to see who will be crowned the champion, with prizes to be won.

Since interest in attending this event is high, we urge you to make your reservation as soon as possible. Please complete and return the registration form to: amelia@fireprotection.org.nz

FRIDAY 16TH OCTOBER 2015

PUBLIC DEMONSTRATIONS IN FRONT OF TSB ARENA		
Demonstration One	Demonstration Two	Demonstration Three

7.30am – 8.30am	Delegates Breakfast/HOFFE Meeting

OPTION 1: SITE VISITS		
Busses depart 8.30am – Return to TSB 12.00pm	#1 BRANZ – *Refer to page 10*	#2 Pertronic and Fraser Engineering – *Refer to page 10*

OPTION 2: SPEAKERS	
8:30am – 9:10am	**Speaker: SFPE** Ben Hume and Kevin Weller – *FDS and Sprinklers*
9:10am – 9:40am	**Speaker: FPANZ** Satya Nand – *COTEC Innovative Solutions Designed into new generation of Passive Fire Protection Coatings.*
9:40am – 10:00am	**Platinum Speaker:** Hans Gerlich - *Post-Fire Stability*
10:00am – 10:45am	*Morning Tea – Exhibitors Area*
10:45am – 11:15am	**Speaker: FPANZ** David Molnar – Victaulic *BIM requirements become the norm, what does that mean for industry?*
11:15am – 12:00pm	**Speaker:** Eddie Tieppo – Xtralis – *Innovation and Early Warning Detection.*
12:00pm – 12:30pm	**Speaker:** FPANZ Dr Geoff Thomas – *Sustainable Building Features and Fire Safety.*

12.30pm – 1.30pm	*Lunch – Exhibitors Area*
1:30pm – 2:00pm	**Speaker: FPANZ** Peter Whiting BRANZ – *Fire Compliance Testing for interior surface finishes.*
2:00pm – 2:30pm	**Platinum Speaker:** David Percy Pertronic
2:30pm – 3:00pm	**Speaker: FPANZ** Michael Belsham MBIE
3:00pm – 3:30pm	*Afternoon Tea – Exhibitors Area*
3:30pm – 4:00pm	**Speaker: SFPE** Mohd Zahir – Carpark Fires
4:00pm – 4:30pm	**Speaker: SFPE** Geoff Merryweather – Bomb in the Basement –risk assessment of basement plant rooms
4:30pm – 5:00pm	*Wrap up of the Conference*

WORKSHOPS

Thursday 15th October, 1.30pm - 5.15pm

FPANZ Workshop Stream

Session 1 **Matthew Wright – The Increased Profile of Product Compliance – FPA Australia's Response.**

Fire Protection Association Australia has been championing changes and improvements into the requirements for demonstrating products are fit-for-purpose in Australia for over two years.

Reductions in local manufacturing have increased Australia's participation in the global economy for building products and free trade agreements established to foster this, are predicated on reducing technical barriers to trade in pursuit of broad productivity gains.

Recent high profile incidents including the identification of inferior electrical cable and the ongoing investigations into the Lacrosse building fire and associated cladding material have increased the profile of product compliance and bought into question what impact the current flexible product assessment options are having on safety.

This presentation will discuss FPA Australia's position and the conceptual risk based framework that the Association has presented to government aimed at ensuring safety objectives are delivered.

Session 2 **Lance Hunt – Portable Fire Equipment Certification/ Product Listing.**
Ela Langford – Evacuation of Buildings and a Code of Practice.

Session 3 **Competenz – Training in the Industry – The Future of Qualifications**

Session 4 **Aaron Grey – A software approach to passive system information.**

Thursday 15th October, 1.30pm - 5.15pm

SFPE Workshop Stream

Driving Creativity and Innovation in a regulated Fire Engineering environment

Come and take part in the best SFPE workshop ever. You will be working collaboratively in teams to create a concept fire engineering design that pushes the limits of possibilities, and then present it to another team who will act as the regulator. You will explore the creative process, gain skills in presenting challenging concepts to a regulator and understand the issues that regulators face with unconventional designs.

1.30 – 2.00 Guest Speaker from **Weta Workshops** will talk about the creative process when the sky is the limit.

2.00 – 2.30 **Introduction to the design brief**. Teams explore your design brief.

2.30 – 3.00 **Damian Camp, CEO of Pacific Aerospace Ltd** – Designing for the highly regulated aviation industry.

3.00 – 3.30 Team brainstorming design session and afternoon tea.

3.45 – 4.15 **Chris Rutledge from MBIE** - Using the Alternative Solution route for driving innovative designs.

4.15 – 4.35 Teams prepare your concept design for presentation to the regulators

4.35 – 4.55 Teams present your design to another team who will act as the regulator. *10 minutes per presentation.*

4.55 – 5.15 Key learnings

Thursday 15th October, 1.30pm – 5.15pm

IFE Workshop Stream

Climbing High – *informal couch discussion on high-rise building advancements*

Session 1 **Steve Hamm: London Olympics**. How the London Fire Brigade planned for this event from preplanning including mass evacuation and fire safety and design approvals through to responses during the event and business continuity.

Session 2 **Alan Kerr: Rio Olympics.** We now look at how the pre - planning of the Rio Olympics is looking and how this compares to the London Olympics. Have they incorporated any lessons learnt from the London Olympics.

Session 3 & 4 **All you wanted to know on high-rise.** An informal interactive session with some specialists in the high-rise building arena. Their backgrounds in design, firefighting, evacuation and fire investigation. We will discuss lessons learnt from recent high-rise fires, some new techniques being used by fire services and how different countries deal with the evacuation of the buildings.

This is a Q&A session where you can ask tough questions that you have always want to know the answers too. It is an open style discussion so that we can all learn on the advances in modern technology in high-rise buildings and get a peek at newest high-rise to be built in NZ.

Thursday 15th October, 1.30pm – 5.15pm

Victaulic Design Workshop

Contractors and engineers look to the experienced and trusted Victaulic Piping Coordinators to train their teams on piping best practices, prefabrication and coordination. Training event will include Revit pipe routing, BIM best practices and coordination, and lean prefabrication techniques.

Victaulic 1 Day Group Training includes:

- Revit Preference and Smart Family Set up
- Victaulic Tool Bar Setup
- Scheduling
- Working Sharing and Revision Control
- Victaulic Procurement Tool Training
- Custom Tagging and Assemblies
- Template Set Up

SITE VISITS

Friday 16th October, 8.30am - 12.00pm

PERTRONIC

Pertronic industries is one of only two manufacturers of automatic fire alarm control equipment in New Zealand. The site visit will give delegates an overview of the company's operations, including product support, lean line production, operation of the automated surface mount printed circuit board assembly system, and fire panel assembly. Pertronic Industries has 73 people employed at their Wingate facility. Unfortunately for reasons of commercial confidentiality, the tour will not be able to include the R&D area.

Friday 16th October, 8.30am - 12.00pm

FRASER ENGINEERING

Fraser Engineering Group is a customer focussed company that utilises the latest CNC technology to produce quality components and products. We will work independently or alongside you to find the best solution for your project, using our 3D software to visually communicate throughout the process. We are an engineering company who also design and manufacture fire appliances and we can tackle any project, from simple and small components, to large scale architectural builds.

Friday 16th October, 8.30am - 12.00pm

BRANZ

A demonstration fire test will be carried out in the BRANZ Fire Test Laboratory on the small Pilot furnace (1.0 m x 2.2 m). The tested specimen will be configured to show the impact of incorrect specification or installation of passive fire protection features into a wall that is required to be a fire rated wall. It is expected that the test will run for approximately 30 minutes.

SPEAKERS & PRESENTATIONS

OPENING ADDRESS

Thursday 15th October, 8.15am – 8.30am

Key International Speaker presented by FPANZ: NFPA

Thursday 15th October, 8.30am – 9.15am

Key International Speaker presented by IFE: John Buckheit

Thursday 15th October, 9.15am – 10.00am

John Buckheit is a New York City Fire Chief with nearly three decades of firefighting and emergency response experience. Growing up on the South Shore of Long Island, New York, John put himself through college while working numerous jobs, including off-shore fishing and masonry. He was Department Scholar in 1984, and graduated Magna Cum Laude in 1985 with a degree in Geology, engineering track, from the State University of New York at Brockport.

In 1986 John joined the Fire Department of New York and was assigned Downtown Brooklyn. Five years later he transferred to Squad 41, South Bronx, into the second busiest unit of the City's ~350 Companies. Crack cocaine and abandoned buildings resulted in high fire rates in the area with the fire units continuously being tested for skill, tactical, and strategic readiness. John would earn six awards for rescues and outstanding fire ground operations during this time.

Firefighter Buckheit turned down promotion to Fire Marshall (responsible for fire investigation and arson apprehension) in 1993, but became Lieutenant Buckheit in 1996 and continued working in economically depressed neighbourhoods. In 2002 he became a Captain, working in a factory and then a mixed area. In 2008 He became a Battalion Chief in Midtown Manhattan, responsible for administration, training, and emergency operation of 7 fire units, comprised of 7 Captains, 21 Lieutenants, and 140 Firefighters. The area has hundreds of Hi-Rise buildings, thousands of occupancies, hundreds of thousands of residents, commuters, and visitors; as well as such critical infrastructure features as Penn Station Transportation Hub, Lincoln Tunnel, Madison Square Garden Arena, Empire State Building, Macy's Department Store, The Google Building, et cetera.

Chief Buckheit studied for Deputy Chief, qualified, and is pending promotion. At the same time he earned his Graduate Degree, Sum Cum Laude, in Protection Management, from John Jay College. He has taught and lectured across the United States on forcible entry techniques, "reading buildings" (size-up techniques), and High-Rise Building fire operations. He has sat on numerous development and review boards within the FDNY and for Fire Engineering of Penn Well Corporation on current fire service topics. Chief Buckheit also worked overseas in South America developing and delivering training for fire departments for a non-for-profit group, Mutual Aid Americas, as well as currently doing risk assessment and countermeasure selection with a private enterprise for a complex in South East Asia.

Aside from all the work John enjoys a peaceful home life with his family, enjoys surfing, spearfishing, sea-kayaking, and winter camping/ mountaineering.

Speaker: Martin Feeney

Thursday 15th October, 10.45am – 11.15am

Martin Feeney is a Principal and Senior Fire Safety Strategist with consulting fire engineering firm Holmes Fire, based in Auckland. He has a Master's degree in Fire Engineering from the University of Canterbury.

During his 30 years of consulting engineering he has developed expertise in performance based fire safety design for a wide range of building types. Like many Aucklanders, he is happy to express his opinion when asked, and often when not. He is passionate about performance based design and motivated to push for continual improvement in standards of applied fire safety. He is a Chartered Professional Engineer in New Zealand and Past-President of the New Zealand Chapter of the Society of Fire Protection Engineers.

Key International Speaker presented by IFE: Steve Hamm

Thursday 15th October, 11.15am – 11.45am

Steve is currently the IFE International President, Director of CFOA National Resilience Ltd in the UK and his portfolio deals with business development, assurance of resilience capabilities and overseas opportunities. He has an extensive career background in the UK fire and rescue service, his last appointment being as Assistant Commissioner with the London Fire Brigade until 2014 where he was responsible for Operational

continued overleaf...

SPEAKERS & PRESENTATIONS

Resilience. This portfolio covered aspects such as the Operational Planning for significant events in London, Contingency Planning for a range of scenarios, delivering the London Fire Brigade Emergency Planning responsibilities and the delivery of Specialist Operational Capabilities in London, including components of the Fire and Rescue National Resilience programme.

For the Olympic and Paralympic games in 2012 Steve undertook a Gold Command role in London and was involved in the work required to ensure that specific measures for the games were correctly planned, implemented and tested.

Steve has a broad experience base in strategic operational command and has attended a number of high profile events in London, including the civil disturbances of 2011 and the Vauxhall helicopter crash in Central London in 2013. In 2014 Steve was heavily involved in the command and control arrangements for the flooding that affected large parts of the UK.

Steve has over 25 years of experience in the Fire and Rescue Service following a period of service in the Royal Air Force and he is a Chartered Fire Engineer. He is currently a director of CFOA National Resilience and also a Director and the Vice Chair of the board of the Institution of Fire Engineers, and will become the Institutions International President in July 2015. He is also a director of London Fire Brigade Enterprises Ltd.

Thursday 15th October, 11.45am - 12.30pm

Key International Speaker presented by SFPE: David Youssef

David joined the MFB as a recruit fire fighter in 1985, after serving for a number of years as an SES volunteer. During his 30 year career he has undertaken lengthy and rewarding placements with Civil Aviation Authority – Rescue Fire Fighting Service, Brampton Fire Department, Ontario, Canada, and the Victorian Department of Justice.

David leads MFB's service delivery to the North West Metro Region which covers the Northern, Western and Central suburbs of Melbourne, inclusive of industrial areas and incorporating 27 Major Hazard Facilities as well as a growing inner city residential component. The region comprises a large multicultural population, major airports and hospitals, the CBD and port and harbour facilities. There are 1100 operational and corporate staff in three district offices and 29 fire stations, with 54 appliances providing 24/7 fire and emergency services to 2.2 million citizens across 13 municipalities.

David routinely performs the role of MFB State Agency Commander on the State Control Team and has particular interest in the use of technology in multi-agency incident management. He has recently led the introduction of MFB's IT based fire ground accountability system linked to Automatic Vehicle Location technology. He was also the joint lead end user of the Bushfire CRC FIRE-DST project and is currently leading the MFB's FIRECOM replacement project.

Friday 16th October, 8.30am - 9.10am

Speaker: Ben Hume

Ben Hume is a Technical Director at Beca in Fire Engineering. Having studied Mechanical and Fire Engineering at the University of Canterbury, he joined Arup in London where he developed and lead the advanced fire modelling team. On returning to New Zealand, he joined Beca and is now involved on a number of fire specific and multidiscipline projects while leading Beca's Central North Island Building Services -team. Ben specialises in advanced fire modelling techniques such as FDS and the development of engineered solutions.

Speaker: Kevin Weller

Kevin Weller is a fire engineer with Beca, based in Tauranga. He is the Chair of the Beca Advanced Fire Modeling team, and is experienced in CFD fire modeling, and specializes in specific fire engineering design of commercial buildings. He has recently completed his studies towards a Masters of Engineering Studies in Fire Engineering at the University of Canterbury.

Friday 16th October, 9.10am - 9.40am

Speaker: Satya Nand BSc (Chemistry / Physics), Post Graduate Diploma in International Marketing

Work Experience: 30 years with Akzonobel (world's largest paint manufacturer). Worked in various roles, last being as Business Manager (Middle East and Africa) looking after Coil and Extrusion Business.

Worked in Various countries: New Zealand / Australia / Malaysia / Middle East / Africa

Started with Coating Technologies Ltd in April as Business Manager to manage sales in New Zealand and Regional countries.

Platinum Speaker: Hans Gerlich

Friday 16th October, 9.40am – 10.00am

Hans Gerlich is a Chartered Professional Engineer and Technical Manager for Winstone Wallboards Ltd. and has worked in consulting, research and development, product appraisal, local authority building control, and for the last 20+ years in the plasterboard industry with special interest in structural engineering, fire engineering and the regulatory environment.

Speaker: David Molnar

Friday 16th October, 10.45am – 11.15am

As BIM requirements become the norm what does this mean for the industry? How can a software choice, the use of smart content, increased fabrication and field acceptance increase profitability for Engineers, Contractors, Owners, and General Contractors? How can your choice of software and content bring all of these parties together to create a more profitable environment? Often BIM is primarily thought about as a drafting department task. BIM has to be accepted and implemented in each department; Estimation, Drawing, Purchasing, Fabrication, and Field Install.

The Victaulic Toolbar for Revit combined with Victaulic's smart families is designed to allow the contractor and engineer to increase modelling efficiencies, procurement accuracy and fabrication timeliness. It is one example of how companies have to look at new solutions to issues during pre-construction. BIM is forcing contractors to re-look at how they see the front office, and with the utilization of BIM this is becoming increasingly apparent.

Just as CAD and prefabrication have revolutionized the design and construction functions and become the industry norm, BIM processes are set to become standard practice for efficient life cycle management of building projects. Understanding the importance smart modelling and content within the BIM process will help companies remain on the forefront of the BIM revolution.

International Speaker: Eddie Tieppo

Friday 16th October, 11.15am – 12.00pm

Eddie Tieppo has a Degree in Mechanical Engineering, Diploma in Management and 20 years of experience in Fire Detection. During his career Eddie developed markets for Aspirated Smoke Detection in India, China, South East Asia and South Africa within Power, Telecommunications, High Tech Industry and Recreational Facilities for Sydney and Beijing Olympics. He commenced the process of introducing the codes and standards for Aspirated Technology in Beijing and Shanghai and today China has a National Standard. He introduced Aspirated Detection to Correctional Facilities in NSW which is now a standard for these facilities across Australia. Eddie is more recently in the role of Sales Director for Australia, New Zealand, India and South Africa.

Speaker: Dr Geoff Thomas

Friday 16th October, 12.00pm – 12.30pm

Geoff Thomas is a senior lecturer at the School of Architecture at Victoria University of Wellington, lecturing in Fire Safety, Building Codes and Structures. Prior to this Geoff was the Fire Engineering Manager at Sinclair Knight Merz, with projects, in New Zealand, Hong Kong, The Philippines and Indonesia. His PhD was the first awarded in New Zealand in Fire Engineering in 1997. Geoff also runs a consultancy, involved in peer review of complex projects and structural fire engineering. He reviewed the AIR Worldwide post-earthquake fire loss models for Japan and Canada developed for re-insurers. Geoff has been active in the profession being a Practice Area assessor for Fire Engineering for Chartered Professional Engineers (C.P.Eng.) since 2007, and a member of the Competence Assessment Board, the decision making body for C.P.Eng, Technologist and Technician registration from 2008 to 2013. Geoff also led the development of the Practice Area Assessor guidelines for C.P.Eng. Fire Engineers.

Geoff has lectured in Tokyo University of Science's international degree program for Fire Engineering, the leading such degree program in East Asia, and has been an invited speaker at several Asian Fire Education and Research Symposiums. Current research interests are fires following earthquakes, the effect of fire on structures and development of fire codes. Along with the Victoria's Architecture School's strong focus on sustainability, and in conjunction with colleagues in the field of sustainability he is currently developing a research theme of fire safety and sustainable buildings, their impact one each other and compliance with building codes.

SPEAKERS & PRESENTATIONS

Platinum Speaker: David Percy

Friday 16th October, 2.00pm – 2.30pm

David Percy is a Fellow of the Institution of Professional Engineers (FIPENZ) and is the Managing Director of Pertronic Industries Ltd. Pertronic Industries is one of the major fire alarm equipment companies in New Zealand.

He has been involved in the fire protection industry for over 40 years and has served on the NZ Standards Committees involved with the preparation of the New Zealand Standard NZS 4512.

Speaker: Michael Belsham MBIE

Friday 16th October, 2.30pm – 3.00pm

Michael Belsham is a Fire Engineer with the Ministry of Business, Innovation and Employment. Michael has worked for several multi-national companies in New Zealand, Australia & United Kingdom as a fire safety engineering consultant for nearly 20 years. He has a Master's Degree in Fire Engineering from Canterbury University having graduated in 1995.

He has extensive knowledge and experience in Fire Safety Engineering and Fire Protection Systems & Features and Construction Monitoring. He has provided design and construction advice and also has expert knowledge on fire engineering methods and modelling.

Michael spent 10 years working in Wellington and Christchurch to gain Chartership in Fire Engineering. His notable projects were Midland Park Tower, HSBC Tower and Wellington International Airport. His specialist expertise extended to special hazard protection, fire safety in cold storage, and industrial fire risk assessments.

Moving to Scotland in 2006 Michael became Principal Fire Engineer leading several projects including national school redevelopment programme, shopping center extensions, high rise office towers and international energy company headquarters in Aberdeen. Michael also assisted with projects in European Continent and Middle East.

Michael has returned to New Zealand with MBIE and is project lead of the MBIE Fire Programme to develop the strategic direction of fire safety environment for the New Zealand Government.

International Speaker: Mohd Zahir

Friday 16th October, 3.30pm – 4.00pm

Zahir is currently a PhD of Fire Engineering candidate in the University of Canterbury, New Zealand. He graduated from the University of Manchester in Master of Engineering in Chemical Engineering in 2009. After a year stint as a tutor at University Putra Malaysia, Zahir was sent to further his PhD study in University of Canterbury under the sponsorship of Malaysian Government. After he finishes his PhD study, he will eventually go back to his own country,

Malaysia to be a lecturer at his parent university, University Putra Malaysia. Zahir's PhD research is about fire risk analysis in car parking buildings. The main objective of the research is to investigate the level of adequacy of the current and future of fire safety systems in car park buildings. In order to achieve the objective, a probabilistic fire risk analysis method will be developed and the method itself will be a by-product of this research. Zahir currently has been working on compiling design fires for different types of passenger vehicles. He collated numerous of single vehicle experiments data from accessible sources. These data are categorized by their curb weight and probability distribution curves are obtained for each fire severity characteristic.

Analysis of the data shows that the total heat released and the time to peak rate of heat release are shown to exhibit an increasing trend with curb weight. This piece of work leads to another work which characterizes the heat release rate curves for different class of vehicles.

Speaker: Geoff Merryweather

Friday 16th October, 4.00pm – 4.30pm

Geoff Merryweather is a Chartered Professional engineer who was the NZ technical discipline Leader at WSP for 8 years prior to starting Anvil Fire Consultants in 2013. Prior to completing his Masters in Engineering (fire engineering) he was involved in the design, construction and installation of mechanical ventilation systems.

KEY SPONSORS

Conference Bag Sponsorship - Pertronic Industries

Fire NZ Cafeteria - Pertronic Industries

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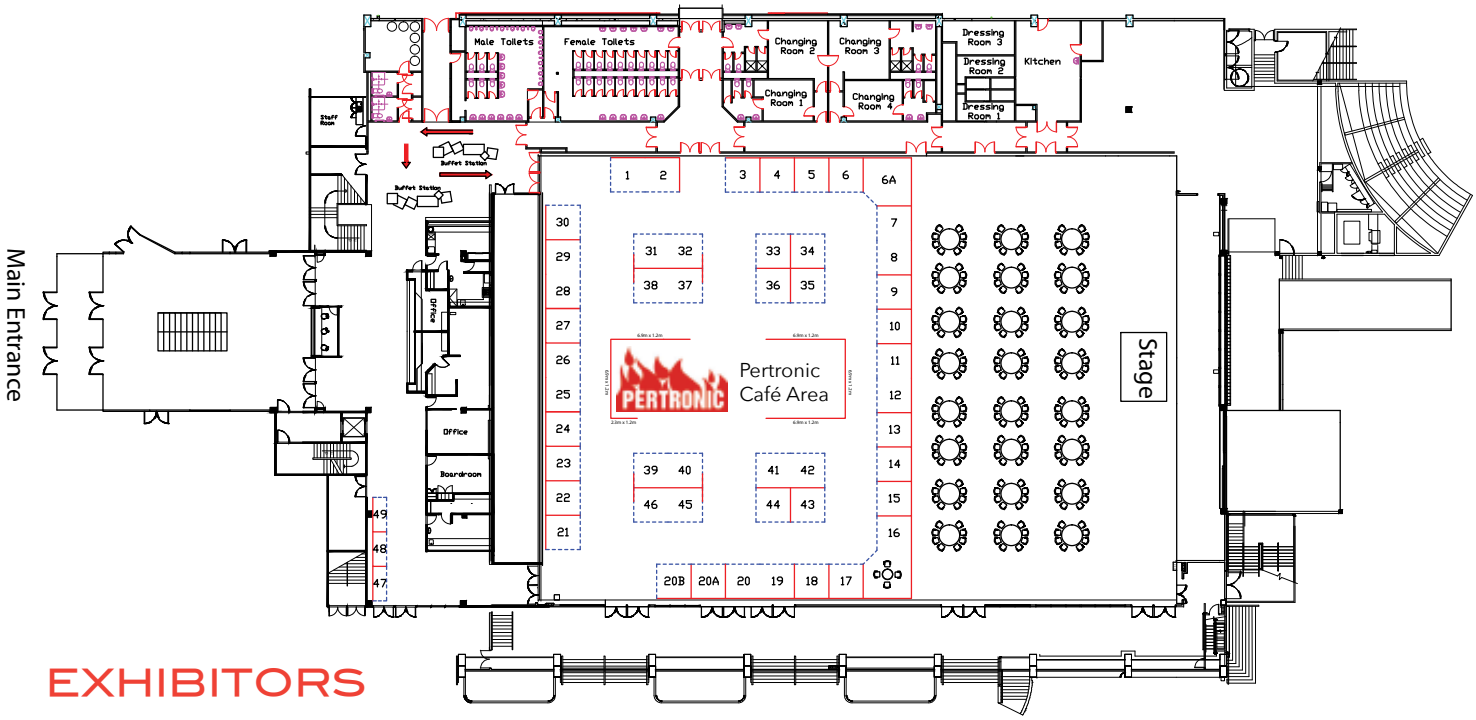
EXHIBITION FLOORPLAN



EXHIBITORS

Company	Booth No.
Alarm New Zealand Ltd	22
ALGOTECH Fire Protection	34
Altex Coatings	10
AMPAC Pacific Ltd	11/12
APC Techsafe	15
Automatic Fire Alarm Monitoring	3
Bensan Distribution	25/26
BONDOR New Zealand Ltd	4
BRANZ	36
BROOKS New Zealand	41/42
Chubb New Zealand Limited	24
Coating Technologies LTD	23
Colt Products and Systems	17
Ecoglo International	21
ERICO	20A
Fire Group Consulting LTD	27
Fire Protection Technologies	31/32
FPANZ/Halon/T&T Publishing/Burns Trust and Wellington Free Ambulance	16

Company	Booth No.
H.J. Asmuss & Co Ltd	9
Hilti NZ Ltd	43
Holyoake Industries Limited	45/46
HONEYWELL Fire Safety	1/2
Hydroflow Dist	19
Loktronic Limited	5
Lorient PTY LTD	44
Metalcraft Industries	14
NAFFCO	33
Pertronic Industries Limited	39/40
PSL Fire and Safety Systems	13
Steel & Tube Holdings	28/29
Tasman Tanks New Zealand	35
Tycab NZ Limited	30
Tyco Fire Protection Products	7/8
Victaulic Australia Pty Ltd	20
Viking	20B
Winstone Wallboards	37/38
Xtralis	18

Smart thinking gives fire training an edge

A leading edge interactive fire training system is operating at the NZ Fire Service National Training Centre in Rotorua after a trio of industry partners came up with the idea at an Institution of Fire Engineers New Zealand (IFE) dinner.

There was a eureka moment when Rob Fenton of Lower Hutt-based fire detection manufacturer Pertronic Industries and IFE president Graeme Quensell got together with Robin Morrison from sprinkler systems specialist Fire Security Services.

The trio were chatting about a remote controlled fire panel-based training system Petronic had developed and saw an opportunity to pull their components into a leading edge system for the National Training Centre (NTC) to simulate real world alarm and sprinkler system scenarios.

Pertronic and Fire Security Services installed the equipment and IFE made up the shortfall for the $16,000 project which is now live.

The interactive analogue addressable panel, based in a lecture room, works in conjunction with various types of sprinkler heads so students can view and activate different detectors and see how the panel acknowledges and displays information.

The sprinkler system at the training centre was upgraded to include two fully functioning fire alarm panels, a sprinkler valve room and sprinkler heads that can be activated and stopped remotely in different areas of the the multi-story building.

Remote control scenarios

Quensell says the instructor can use a remote to control the sprinkler heads during an exercise. "When an appliance arrives at the front of the building trainees can see what's happening through the panel and the instructor can control the different scenarios."

The NTC project team, Robin Morrison, Rob Fenton, Ian Pickard and Graeme Quensell

Ian Pickard (NTC Commander) discussing the new training system

Until recently, he says, all they had was the pipework with no fire alarm panels. "Now they have realism with proper operating systems."

Quensell hit on the idea to have the system installed in exchange for naming rights for the multi-storey building at the training centre, which now has Institution of Fire Engineers House emblazoned on one side. "When there's a training exercise the radio messages say IFE House ... it's getting our name out there."

NTC trainer Nic McQuillan says the training system was factored into high rise training within a week of being installed and is now used for fire, flooding, salvage and hazchem scenarios.

"It's allowed us to expand our training in a realistic and practical way. We are using the sprinkler and alarm system as part of our station officer training programme and students are getting direct and immediate benefit because they no longer require them to imagine scenarios, what they see is what they get."

The $10 million NTC facility opened in March 2012, touted as one of the most sophisticated in the Southern Hemisphere. Previously Kiwi personnel were sent to a facility in Brisbane for practical training. Police and the armed forces are also able to use the facilities.

The NTC facilities include a tiny township complete with 11 sites and 30 points of ignition including a train wreck, a petrol station that regularly explodes and the high rise apartment building that often has flames licking out the windows. Ignition can be triggered by an instructor's flick of a remote switch.

Quensell is determined that further upgrades of current technology will keep things at the leading edge.

"Buildings are getting smarter all the time. We need to keep up with the fire safety systems that are already in place and remain upskilled because we're missing out on a lot of the features and facilities."

He'd like to see the training package advance every year so trainees get to work with the latest fire engineering and fire safety systems, and sees IFE as helping to drive this.

Quensell says the IFE international body, which he now heads, has been keeping a close eye on New Zealand for ground breaking ideas and has shown an interest in the training panel system.

He's written papers for the General Assembly outlining how the panel-based training system might work in other parts of the world, although they would need to adapt it and built their own support partnerships.

NFPA-Approved Firefighting Cameras

Thermal imaging cameras (TIC) have found their way in the tool kits and trucks of firefighting teams around the world

With the several different types and brands of TICs on the market, it can be hard to decide which camera to purchase. To simplify that choice and to guarantee that TICs have minimum quality standards which allow firefighters to do their job, the National Fire Protection Association (NFPA) has defined specific criteria for the design, performance and production of thermal imaging cameras. With the FLIR K65, FLIR Systems offers firefighters a dedicated TIC that has been designed, developed and tested according to the NFPA 1801-2013 standard.

Who Is NFPA?

The mission of the international organization NFPA is to reduce the worldwide burden of fire and other hazards on the quality of life by providing consensus codes and standards, research, training and education. NFPA is the world's leading advocate of fire prevention and an authoritative source on public safety. It develops, publishes, and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks.

With the NFPA 1801-2013 standard, the organization has outlined requirements for new thermal imagers used by fire service personnel during emergency incident operations. NFPA 1801-2013 was established to provide minimum design, manufacturing, testing, performance and certification requirements for fire service thermal imaging cameras.

The green power button is one aspect of usability, which is a special focus in the NFPA 1801-2013 standard

Current Standards For Thermal Imaging Cameras

The NFPA 1801-2103 standard focuses on three main areas, viz. interoperability/usability, image quality and durability.

Interoperability/usability

TICs from different types or brands should have similar functionality, so that firefighters can use them with minimal training. The idea behind this is that uniformity in the user interface and ease of camera operation should facilitate training and, ultimately, acceptance of thermal imagers by end users. Among other things, this means that TICs should have a green power button and a basic image mode that merely displays a grayscale image with a temperature bar, digital temperature readout and heat-indicating colour with a colour reference scale. Another requirement is that a TIC should be easy to operate with a gloved hand.

Image quality

For firefighters, it is critical that a thermal imager provides a quality image, so they can quickly visualize a plan of attack, locate hot spots, or even to save lives. NFPA 1801-2013 imaging performance tests pay attention to field of view, contrast, spatial resolution and sensitivity. Another important criterion is image recognition, which means

GAIN THE GREATEST TACTICAL ADVANTAGE

THE NEW FLIR K65

NFPA FIREFIGHTING CAMERA

NFPA 1801
COMPLIANT

FLIR's affordable new NFPA-compliant K65 helps you see better than ever. Featuring real-time FSX™, the K65 provides an unprecedented level of thermal image detail, making it easier to find your way and identify targets so you can attack fires more strategically, locate stranded victims faster, and stay safer under the smokiest conditions.

Learn more at www.flir.com/K65

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Phone: 1300 729 987
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The images displayed may not be representative of the actual resolution of the camera shown. Images for illustrative purposes only



The NFPA 1801-2013 has durability requirements to help ensure that TICs are fit for fire ground duty. From left to right: durability test (tumble test), impact acceleration resistance test (drop test) and heat & flame test

that firefighters should easily recognize things on the thermal image and that the quality of the image is high enough for use on the fire ground.

Durability

Needless to say, that firefighters need to operate in rough environments. That is why the NFPA 1801-2013 has durability requirements to help ensure that TICs are fit for fire ground duty. TIC durability tests conducted include those for ingress protection, heat/flame resistance, impact acceleration and vibration resistance, and corrosion.

Firefighters might also operate in potentially explosive environments. That is why NFPA-compliant TICs must meet ANSI/ISA 12.12.01 Class 1 Division 2 requirements, meaning that TICs are suitable for use within conditions where potentially explosive quantities of dust or vapor may be present.

FLIR K65: NFPA-Approved Firefighting Camera

The K65 is FLIR's new NFPA-approved TIC which allows firefighters to see more clearly in the darkest, smokiest environments, maneuver more strategically, stay better oriented and find victims faster.

Easy-to-use, even with gloves on

The K65 has an intuitive and simple user interface and can be controlled by 3 large buttons on top of the unit - ideal for a gloved firefighter's hand.

Clear and Crisp Thermal Images

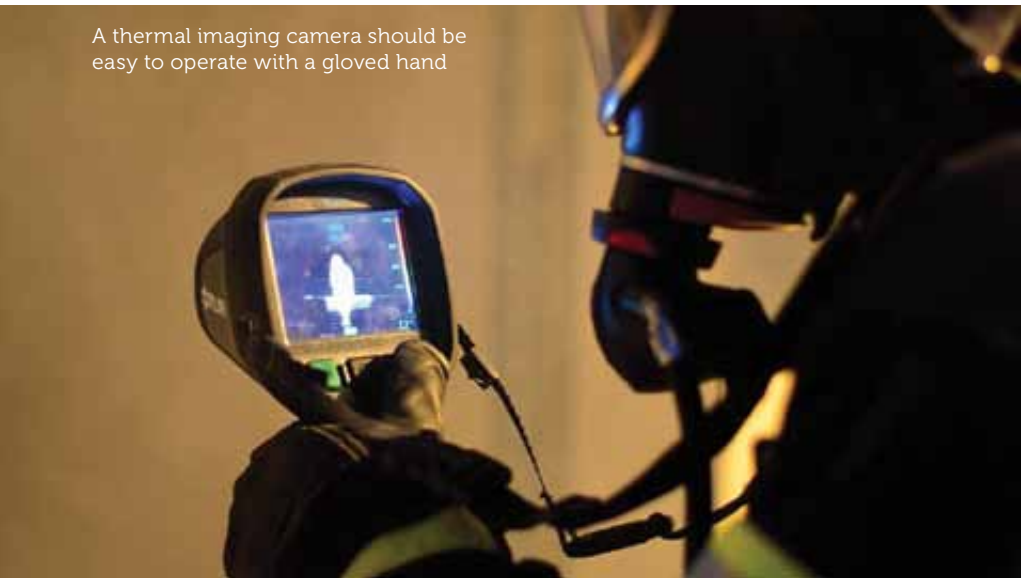
The K65's maintenance free uncooled microbolometer sensor produces crisp images at 320 x 240 pixels. Thermal images are displayed on a large bright 4" LCD. The K65 also has FLIR's proprietary FSX™ Flexible Scene Enhancement technology which enhances thermal images through real-time digital processing inside the camera. The result is an ultra-sharp image that shows extraordinary structural, edge, and other instantly-recognizable detail. This helps make it much easier for firefighters and rescue teams to find their way through the smokiest, darkest environments, and to instantly identify targets in scenes with extreme temperature dynamics.

Rugged & Reliable

The K65 is designed to meet tough operating conditions. It withstands a drop from 2 meters onto a concrete floor, is water resistant (IP67) and fully operating up to +260°C/+500°F for 5 minutes.

Firefighters sometimes operate in potentially explosive environments, such as oil platforms, petro-chemical or power generation industries. That is why the NFPA-compliant K65 also meets the HazLoc standard, meaning that it is suitable for use in hazardous, potentially explosive conditions. As possible ignition sources, the K65's USB port and battery compartment are well protected, in such a way that they cannot be opened during normal operational conditions or operational maintenance. They are sealed to restrict entry of an external atmosphere.

For more information about thermal imaging cameras or about this application, please visit: www.flir.com/fire



A thermal imaging camera should be easy to operate with a gloved hand

The Innovative Tyrip Seam

Fire alarm cable is an essential part of the installation of any fire detection system. All Certified Installers will insist on compliant Fire Alarm cables and will select the cable that is best fit for purpose. This depends on the design of the system, but essentially most cables are similar in design and are usually either a flat cable, a circular twisted pair or in some cases Fire Rated or have Low Smoke Zero Halogen materials.

In 2010 changes to NZS4512 specified that "cable used within a building for detector circuits, alerting devices, loudspeaker circuits or ancillary control circuits shall generally comply with AS/NZS5000.2 or AS/NZS5000.3 and shall either be sheathed in polyvinyl chloride or installed in conduit." Refer Section 402.1. Both AS/NZS5000.2 and AS/NZS5000.3 are the Standards for 450/750 volt cables. We understand the objective is to have cables with a higher level of mechanical protection.

One of the biggest impacts of these changes is for a circular multicore cable the outer sheath had to be a minimum thickness of 1.2mm, refer sections 8.3.2 and 13.2 in the respective Standards. Previously flat cables were 0.90mm so the additional thickness, 33% more PVC, coupled with the cables being circular in design, proved to make them more difficult to strip, especially where longer tails may be required, e.g. control panels.

Being the leading manufacturer of cables for the Fire Detection market Tycab came up with the innovative "Tyrip" concept. In simple terms it is the inclusion of a seam/strip so that the installer can rip the sheath open using one or all of the conductors in the cable.

These cables are manufactured to meet AS/NZS3808 "Insulation and Sheathing Materials for Electric Cables". This Standard specifies the required tensile strength for various types of materials. Tycab's innovative extrusion tool ensures the softer strip does not compromise the compliance with the AS/NZS3808 or other relevant Standard.

The key benefit for the installer is it makes the stripping of the outer sheath and exposing the conductors for termination much easier and hopefully the whole process more productive. There is also less likelihood of inadvertently damaging the insulation on the conductors.

Tycab has always been at the leading edge when it comes to innovations that make it easier for the installer. Previous examples included the introduction of:

- The efficient and easy to use reel in a box, no more cable rollers.
- The 0.75mm twisted pair cable following changes to NZS4512, excellent for cost savings where there are smaller runs and no risk of voltage drop.
- Tinned conductors to provide that extra level of robustness in some of New Zealand's harsher environments.

Fire funding options squeezed

By ruling out a general taxation as an option from the public debate on the future funding of the NZ Fire Service the Government has made "a mockery" of genuine public consultation, claims Insurance Council chief executive, Tim Grafton.

The ICNZ submission to the NZ Fire Services Review Discussion Document, says casting aside general taxation and property-based rating options when a fundamental review of the Fire Service is underway was "a dereliction of duty."

NZIC chief executive Tim Grafton

Grafton is confounded the options were deemed "too expensive" before the process began, despite Department of Internal Affairs' (DIA) officials listing the many advantages in their recommendations to Cabinet.

The NZIC submission calls the process predetermined and "undemocratic".

The NZ Fire Service (NZFS) is largely funded through individual fire insurance contracts, giving non-payers free access to fire call outs, roadside rescue and medical and related emergencies, which ICNZ sees as unfair.

Grafton says around 8500 ambulance response a year are attended by the NZFS along with hundreds of false alarms and other incidents that have little or nothing to do with fires and yet their work is paid for by taxing the insurance on homes, vehicles and businesses.

He accuses Government agencies of being among "the biggest free-riders" by not taking out insurance coverage and slams commercial property owners for constructing cover to minimise their fire service levy payments leaving domestic insurers to pay more.

Grafton insists a levy on insurance is the worst possible option for funding the NZFS and about 20 reports produced since 1993 support this finding.

In the 2013/2014 financial year $339 million of the Fire Service Commission's $350 million expenditure came from the Fire Service Levy on property and vehicle insurance. It'll be closer to $400 million in the current year.

With general taxation off the table, the ICNZ is left keeping things pretty much the way they are or a mixed funding model which it sees as "the lesser of two evils".

As a result of the NZ Fire Service's Vision 2020 and expansion of its services this "will no doubt continue to rise," says Grafton.

ICNZ, representing an industry that insures over $600 billion worth of New Zealand assets and liabilities, insists general taxation is the fairest, most cost effective and sustainable and predictable option, ensuring all taxpayers contribute.

It was the most strongly supported option for funding the Fire Service, argued for by most of the submitters to the 2012 Independent Fire Review Panel (the Swain report).

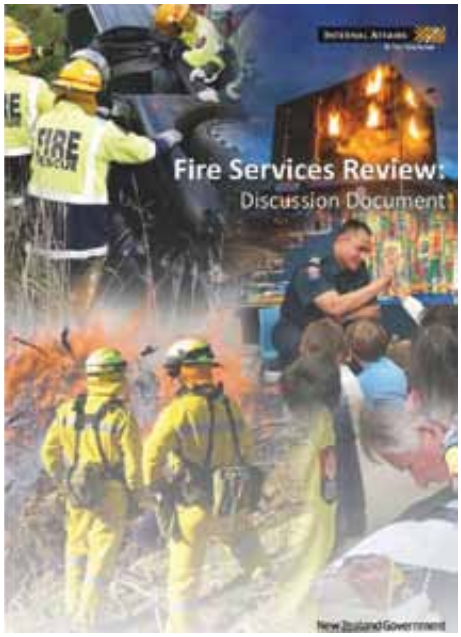
According to a UMR Research poll conducted for ICNZ in May this year, 59% believed the current funding of the Fire Service needed to change, 24% believe it was fair and only 9% supported the levy on insurance premiums.

Grafton suggests the Government sidestepped this discussion because it wanted to bring its own books back into the black. "In our view politics should not interfere with public administration and consultation on public policy in this way."

With general taxation off the table, the ICNZ is left keeping things pretty much the way they are or a mixed funding model which it sees as "the lesser of two evils".

That model will see the levy come off motor vehicle insurance and placed on car registration or road user charges, which will see all motorists paying, not just those who insure their vehicles.

The ICNZ submission urges the Government to reduce the burden on those who bear a disproportionate amount of costs by making a lump sum contribution to help fund the Fire Service.



The way to stop some of the biggest Crown property owners "free riding" by minimising their exposure to the levy, it suggests, would be a "public good" appropriation to the NZ Fire Service.

If things stay the same, the ICNZ also want ambiguities and complexities in the present collection systems sorted out and insurers collecting the levy to be fairly compensated for their efforts without being penalised for delays in payments by brokers

Fire Services Review debate heats up

It will be at least another year before the ongoing review of the NZ Fire Service Act passes through the consultation stages and legislation more suited to a modern fire and rescue service is enacted.

Passage into law will depend on the outcome of the current Fire Services Review and the willingness of the Government to respond to the years of submissions, findings and industry consultation.

Three options are now under consideration; keep the NZ Fire Service as it is with some enhancements, a restructured but more co-ordinated service delivery or a single national structure integrating urban and rural, volunteer and career fire services.

All options promise improved support for firefighters, enhanced governance, a mandate for responding to non-fire events and options for how to fund the fire service in the future.

In May, the public were given six weeks to make submissions on Internal Affairs Minister Peter Dunne's Fire Services Review discussion paper.

The Fire Services Review, is supposed to be the sharp end of over a decade of calls from fire industry stakeholders to modernise the 40-year old NZ Fire Services Act.

It is based on the findings of the December 2012 independent Fire Review Panel, aka The Swain Report but has languished through two ministers and a multitude of fire industry discussion papers and submissions.

Internal Affairs minister, Peter Dunne

When submissions closed at the end of July there were more than 230 responces made by industry stakeholders. The next step includes a series of workshops to go through the options.

During the consultation Mr Dunne met firefighters from around New Zealand, along with local councils, forest owners, farmers, and community representatives and is confident there's strong support for refocussing the way rural, urban, volunteer and career fire services operate.

He says consultation will be ongoing. Formal submissions will be made available on the Department of Internal Affairs website once they've been analysed.

Mr Dunne will take a paper to Cabinet covering the main themes with a decision expected by the end of the year. He expects that legislation will be introduced into the House "as soon as possible" in 2016.

Last call to surrender ozone depleting gas

by Keith Newman

The Fire Protection Association (FPANZ) wants all businesses and the public to hand over their remaining fire extinguishers and tanks containing environmentally destructive halon gas by March next year to be safely disposed of.

The final "mop up" targeting at least 4.5 tonne of the gas still unaccounted for in New Zealand is an extension of work begun over 20-years ago through FPANZ work with Halon Recycling.

The gas is shipped to Australia so it can be safely disposed of at the specialist A-Gas (formerly DasChem) plant just outside Melbourne.

FPANZ wants people to check their homes, boats, cars, workshops, caravans, tractors and aircraft for the yellow (halon 1211) extinguishers and call a certified agent to have them replaced.

Halon Recycling chief executive John Fraser

Halon extinguishers can no longer be serviced and there are concerns they may fail if there's an attempt to use them in the event of a fire.

Funding was raised from the Ministry for the Environment to cover the cost of shipping, destruction and some overheads, including a subsidy for private users.

Doing the right thing

FPANZ chief executive, Keith Blind, says the subsidised disposal costs for a small domestic ABC-style halon extinguisher is $10-$20 and the likely replacement cost for a new legal one is around $25-$35.

Commercial users, typically those with large storage tanks or extinguishers (halon 1301) will pay the going rate, $44 per kg for disposal.

While it's not illegal to keep the old ones, he says it's really a matter of doing the right thing.

If not disposed of, Blind suggests, older yellow extinguishers will gradually rot and the gas will escape. While it's not necessarily harmful to humans the biggest damage is to the atmosphere.

"This is the mop up. For those willing to get rid of it this is their opportunity; there's no other way to professionally and safely dispose of this stuff."

It'll be the last project for Halon Recycling chief executive John Fraser, now in his late 80s, who pioneered the nationwide clean up in the early 1990s and is still helping to identify commercial and industrial users who are holding on to the gas.

> *"…1.4 kilograms of halon 1211 in a yellow hand-hand extinguisher could destroy about 20 tonnes of atmospheric ozone or the equivalent of 500 dairy tankers full of ozone."*
>
> **FPANZ website**

Fraser says in the previous effort which had a much greater input from the Ministry for the Environment, 29 shipments totalling 36 tonne of fire protection gases was sent to Australia for destruction alongside another 3400 tonne of refrigerant gas.

From that collection process another 12 tonnes of halon 1301 went to Air New Zealand to keep its planes flying, at least for the life of their existing aircraft.

No hole at the Pole

Fraser claims the effort between Australia and New Zealand to remove halon-based gases from service has, according to NIWA in New Zealand and US researchers,

has been a major contributor to the fact there was no ozone hole above the Antarctic last summer.

Fraser estimates there is around 8.5 tonne left in the country, much of it in airport crash truck tankers although there's a reluctance to release this. Negotiations are ongoing.

From the early 1970s until the Ozone Layer Protection Act 1996 was passed, New Zealand was a big user of halons in the refrigeration and fire protection industry.

Halon 1211 is a streaming agent for liquid extinguishers while Halon 1301 transforms liquid into a gas suppressant for flood dispersion of computer rooms or switchboard fires without damaging electronic equipment.

FPANZ describes halons as "highly ozone destructive" suggesting 1.4 kilograms of halon 1211 in a yellow hand-hand extinguisher could destroy about 20 tonnes of atmospheric ozone or the equivalent of 500 dairy tankers full of ozone. A kilogram of halon 1301 destroys an estimated 50 tonnes of atmospheric ozone.

Yellow halon cylinders ready for destruction at the Melbourne plant

Once the law was passed it became illegal to import halon gas, manufacture product that used it or to service equipment.

Blind notes that some industrial and commercial users insist they're not yet ready to dispose of their often large halon gas stockpiles including airlines, the Defence Department and NZ Steel. "They'll have their own time and plan for disposing of what they don't use."

Ahead of FireNZ going to press the second phase plan had already recovered in excess of a tonne of gas. The clean-up project will wrap up on 31 March next year when FPANZ will supply the Ministry of the Environment with a list of what's been collected from who and a list of potential users who are still holding halon.

fire nz

Advances in Fire Suppression Technology Hybrid Water Mist Systems

fire protection TECHNOLOGIES

Victaulic®

Advances in fire suppression technology in recent years has seen hybrid water mist systems emerge as a viable alternative to both conventional gaseous suppression and water mist systems.

The patented Hybrid Water Mist technology transcends the boundaries of the individual conventional fire suppression systems and offers a real solution in situations when agent retention time or pressure relief venting is problematic. Hybrid water mist technology can be deployed for Class A, B & E fires with high or low heat release rate and can easily extinguish small, low energy fires. These small fires are the most difficult challenge for any fire suppression medium.

The Victaulic Vortex system is a hybrid water mist system incorporating liquid (water) and inert gas (nitrogen) extinguishing agents discharged together from a single emitter (nozzle) assembly.

Water atomization of 10 Micron (Dv99 <10µm) droplets is achieved by a patented supersonic technology which produces a very high velocity at low pressure to form a dense homogeneous suspension of nitrogen and water. The result of this mix is an enhanced ability of water to absorb heat and block radiative and convective heat transfer, thereby minimising fire and water damage during and after the discharge phase.

The vortex hybrid system is designed to actively suppress large and small scale fires alike, even in leaky enclosures, using the combined efforts of cooling and inerting via the unique patented twin fluid delivery method.

In general water mist systems are tested to comply with FM5560 which is a testing standard set out by Factory Mutual (FM). Since Vortex is classified as hybrid water mist system Factory Mutual have developed a hybrid test standard, FM5580, specifically for this purpose. Vortex has been successfully tested to this standard.

Vortex has also demonstrated the capability of extinguishing all fire scenarios of NFPA 750 and NFPA 2001, regardless of room integrity, discharge time or agent hold time constraints.

One main advantage of the Vortex are the system emitters. These can be installed in pendent or horizontal configurations and are positioned using simple volumetric calculations depending on the application i.e. Machinery Space or Data Centre design solutions as defined by the original equipment manufacturer (OEM), Victaulic.

As the Vortex system only discharges pure nitrogen and water, there are no environmental or life-safety risks as a result of a system discharge. The United States Environmental Protection Agency Significant New Alternatives Policy (SNAP) approval recognizes the

Vortex homogenous suspension discharge as a suitable replacement for Halon 1301.

As a result of the Vortex system comprising solely of water and nitrogen, it is not subject to specific government regulations that relate to some gaseous agents such as Ozone Depletion or Global Warming Potential.

The Vortex system offers the ultimate in system design and flexibility. This is a huge benefit for the installer and end user and it is available in three product lines, Vortex 500, Vortex 1000 and Vortex 1500.

About Fire Protection Technologies

Fire Protection Technologies is the leading independent supplier of product, design and engineering services in New Zealand, Australia and Asia Pacific. A specialist fire protection company focused on the protection of unique and special hazard applications and fire risks. With our extensive expertise in providing design and engineering solutions we strive to provide the right solution for any given hazard.

Vortex 500 (V500) is a scalable and modular system for Data Centre applications ranging from 18m3 to 127m3, these systems are ideal for MCC Rooms/LV Switchroom etc with an anticipated low heat release rate fire scenario and are very quick and easy to install, saving time and money.

For applications beyond the V500 there is the fully engineered and Factory Mutual (FM) approved Vortex1000 (V1000) for Machinery Space volumes of up to 3600m.

The Vortex 1500 (V1500) is another fully engineered version of the system which can be used for Machinery space and Data Centre applications without volume limitations.

Vortex Hybrid Water Mist systems have been available and supplied to the market in New Zealand for nearly two years. During this time we have seen a major shift in the acceptance of the hybrid technology with many companies choosing these systems purely on the basis of system performance and the reduction in ongoing maintenance costs associated with risk integrity, pressure relief venting and fan integrity testing.

For more information about the Vortex Hybrid Water Mist System contact David Boff,
Fire Protection Technologies
www.fire-protection.net.nz
or call (09) 415 5488

Kiwis take reins of IFE - Bridge building time

By Keith Newman

Bridging the knowledge gap between operational fire staff and the wider fire engineering community has been a driving passion for Graeme Quensell during his three years as New Zealand branch president of the Institution of Fire Engineers (IFE).

Quensell carries that passion forward with his appointment as leader of the UK-based IFE International General Assembly (IAG) along with a desire to use social networking to improve global fire industry relationships and promote internationally recognised engineering qualifications.

The IGA, the governing body which hosts delegates from around the world twice a year, is now very much a Kiwi-led affair with former NZ Fire Service national manager of operations and IFE board member Brian Davey, stepping up to the IFE international presidency.

Quensell says it's great to be seen in such key roles. "We were the first branch in the world to have the international presidency with Graham Wrigley's appointment back in 1994. Until then the president was always from the UK."

Ahead of his appointment to IGA "world leader", Quensell was pinned down between fire call outs, the arrival of new Mann fire appliance at Auckland Central Fire Station, and meeting with Internal Affairs minister Peter Dunne to discuss the Fire Services Review.

New IFE International General Assembly (IAG) leader Graeme Quensell

Bran Davey, the new IFE international president

Quensell's new qualifications saw him bridge the glaring gap between fire engineers who design and sign off fire safety systems and NZ Fire Service operational engineers by getting "the engineers on the fire trucks and firemen into the engineering office".

Quensell, currently senior fire officer at Ohehunga, is one of a small group of highly qualified Kiwi fire engineers championing stronger links between those who design fire systems and operational fire staff who have to use them.

He first became fascinated with the uniforms, sirens and shiny red engines of the NZ Fire Service at primary school and from 12-years became a junior firefighter on Waiheke Island. "It was like joining Scouts in a way."

Aged 16, he was big enough to wear breathing apparatus and joined the volunteers. When he'd left school he became a telephone and telegraph engineer with the Post Office installing the first fire call out system on Waiheke to remotely trigger the siren.

Breaking new ground

In 1981, at the age of 21-years Quensell became a full time firefighter. On his training course were Anne Barry and Liz England the first two professional female fire officers in Australasia.

He recalls Ann Barry, despite completing her training and passing IFE exams, had to go through the Human Rights Commission to be accepted. "She broke the ground and since then the Fire Service hasn't looked back."

While still volunteering at Waiheke in 1977, Quensell took his first IFE exams by correspondence and a decade later was on the Auckland IFE committee.

He returned to his studies in the early 1990s completing Graduate and then Member exams and in 2001 became a branch council member.

In 2009 his desire to keep ahead of fire engineering advancements saw him follow a couple of other Kiwis to enrol at the University of Melbourne for a two year long Post-Graduate Diploma in Building Fire Safety and Risk Engineering.

Given his new qualifications he began bridging the glaring gap between fire engineers who design and sign off fire safety systems and NZ Fire Service operational engineers by getting "the engineers on the fire trucks and firemen into the engineering office".

It seemed neither actually understood what the other did. While fire engineers are invited to briefings during building construction they rarely had operational experience or appreciated what fire fighters were up against and how fire safety and evacuation systems worked in practice.

During his Melbourne studies he became acutely aware that academic exercises often didn't match the reality.

Why, for example, did it take so long to track down the area indicated on the main fire panel of large buildings? And why does it usually take longer to evacuate a building than the engineering specifications suggest?

"We were going up the stairs with all our gear on and they thought that might be a problem because people would be coming down the other staircase. I had to explain that never happens, everyone just heads for the exit, they came in through when they arrived at work," says Quensell.

"When you get to Auckland University and it takes you about 5 minutes to find the indicated area, because it's been built on and built on until even the security guard can't find the building you're looking for, it can be quite an eye opener."

Who cares if it's ugly?

Some stakeholders in art galleries for example might object to the fire panel being placed at the front for aesthetic reasons until they realise that's where the fire brigade pull up and its efficient and practical to have it there, he says.

IFE is now leading the charge for greater interaction and awareness so fire engineers working with the Building Code for example can make life easier for fire fighters.

So what's the difference between a fire fighter and a fire engineer? "Well there's not a lot of difference until it comes to signing off on things and then you need the qualifications," says Quensell.

While long serving members of IFE, including Jack Maddox who's done 50-years, could say they're a fire engineer, the introduction of University level qualifications has redefined and formalised the profession as a separate and distinct discipline.

Although Quensell admits having qualifications is only a recent trend, it's part of a push to create a more informed and professional industry partly driven by harmonised legislation and stricter codes of compliance.

"More fire fighters are looking at developing their knowledge and doing external exams including the TAPS (Training and Progression System) programme within the Fire Service and the IFE exams which allow people to expand their knowledge and get the big world-wide picture."

Quensell finally achieved his full qualification at age 50-years but says undertaking 20 assignments a year over two years extramurally is "a hard way to do it".

Century old vision

IFE will be 100-years old in 2018 and Quensell's input will help ensure it remains a forward looking, skilled and technically astute organisation. However, he says the founding chief fire officers who gathered in Leicester, UK, in 1818 were so visionary the revised strategic plan won't need much tweaking.

"I'm just amazed that charter document seems so current. They recognised the fire service had to raise their level of operation and their skills, as well as their educational levels, to meet the demands of not only the public but also the local government and local bodies."

Quensell says IFE will continue to develop the minds and skills of its members in the areas of fire and safety examinations, promote the gathering together of like-minded people to discus and develop skills "so the world is a safer place from fire".

Graeme Quensell with 50-year IFE member and examiner Jack Maddox

IFE will continue to develop the minds and skills of its members in the areas of fire and safety examinations, promote the gathering together of like-minded people to discuss and develop skills "so the world is a safer place from fire".

Graeme Quensell

However, he says it's only in the past two decades that the NZ Fire Service has recognised the need to up the ante as its activities increasingly came under the spotlight. Even fire engineering has "only really popped out of the woodwork in the late 80s and 90s".

He sees the role of the Institution of Fire Engineers as promoting improved skill levels and industry knowledge through an internationally recognised century-old examination pathway including the Engineering Council in the UK, for people who wish to become Eng.Tech and CEng (Chartered engineers).

Quensell says IFE New Zealand is envied around the world. Unlike the UK or Australia which have multiple authorities and departments there's a single national organisation, cross-industry relationships including an annual conference and a common magazine which are seen as a big plus.

He says IFE New Zealand is in a healthier state than it has ever been, having recovered from the trauma of the 1990s industry shake-down with a refreshed vision and strong support from partner companies and the NZ Fire Service.

Industry synergy celebrated

He says this close synergy between the Fire Protection Association (FPANZ), Fire Engineers the New Zealand Chapter of the Society of Fire Protection Engineers (SFPE) and IFE is helping to strengthen the broader industry. "We want the same things and working together we ensure we're pushing the barrow in the same direction."

Having operational fire fighters working more closely with fire engineers "breaks down any mystery on both sides...it's stepped things up another level."

What he wants to take away from his three year term as New Zealand president is that there's now a more developed branch with "really good talent, great ideas and a strong succession plan...They won't even notice me going."

His IFE executive director Trent Fearnley who's about to succeed him in January 2016 as local IFE president was among the first New Zealanders to attain Building Fire Safety and Risk Engineering degrees and is currently studying for his Masters while serving in the Fire Engineering Department at the Auckland Central Fire Station.

As IAG leader Quensell wants to strengthen networking and inter-branch communications between the bi-annual meetings using social media and provide more online resource and guidance.

That means greater collaboration and information sharing across the 43 branches, assisting smaller and Third World branches get up to speed and encouraging new branches where there's a distinct need.

He's already working with the executive on improving communication between the IGA and its directors and trustees to ensure there's a better understanding of global priorities and strategies. "You have to really knuckle down if you want to make changes in the short time you have."

He says there are a lot of opportunities in the fire industry to make things work better. "I find if you take an opportunity other doors start to open and it leads to something else."

When he first joined IFE Quensell says it simply seemed like a good idea. "Now I'm travelling the world talking to high ranking people from all over the place and I sometimes wonder, how did I get here?" The answer clearly is that he saw an opportunity and ran with it.

Truer course unfolding after disruptive decade

by Keith Newman

The New Zealand fire industry has "come ahead in leaps and bounds" since the turmoil of the nineties when badly managed attempts to restructure the NZ Fire Service resulted in a stand-off with the Professional Fire Fighters Union.

Institution of Fire Engineers (IFE) New Zealand president and 30-year NZ Fire Service veteran Graeme Quensell, says the industry is back on track, better connected, and looking forward to the Fire Service Review to complete unfinished business.

Quensell says the restructuring became disruptive for IFE, the NZ Fire Service, politicians and everyone else involved. "There was a lot of turmoil and bitterness...it was quite a nasty period ...quite a challenging time ..."

He says IFE struggled and lost a lot of members during that time of turbulence "because people were digging fox holes and protecting themselves."

It's now recognised that fires are dropping off as a result of education and better engineered buildings and the NZFS needs to be doing other things.

The shake-up began with the 1990 Fire Service Amendment Act with the positions of chief executive, national commander, and national rural fire officer being rolled into one and three commissioners from outside the fire service taking over the Fire Service Commission.

In 1995, after an 18 month investigation, the country's six fire regions and 20 fire areas became three regions and 11 areas. However, suggesting firefighter numbers be reduced prompted a legal challenge from the Fire Service, the Professional Firefighter's Union and the Public Service Association.

> *"There was a lot of turmoil and bitterness … it was quite a nasty period … quite a challenging time …"*
>
> **IFE president Graeme Quensell commenting on the turbulent 90s in the New Zealand fire industry**

A citizen's referendum held in December revealed 87% opposed staff reductions.

There was further upheaval in 1997 when the NZFS was restructured into eight fire regions with a corporate office and national service centre and new policies and objectives focussed on fire prevention, risk management, and community responsibility for fire safety.

Within a year efforts were underway again to reduce firefighter numbers and change employment conditions, leading to industrial unrest. A legal challenge by the New Zealand Professional Firefighter's Union forced a hold on restructuring.

The whole process was seen to have backfired in 1999 when the Audit Office criticised disagreements between the Fire Service Commission and its CEO on a proposed agreement with the union.

Commissioner Roger Estall and CEO Jean Martin were forced to resign and Dame Margaret Bazley stepped up as interim commissioner. When the Court of Appeal ruled against Estall's methods, modernisation proposals were withdrawn.

A collective agreement with the NZPFU was eventually signed in June 2001 ending a long-running industrial dispute.

Now in 2015, Quensell says everything seems to be back on track and the adversarial stance between the unions and the NZ Fire Service seems to have shifted.

"The NZFPU is stating they're a key partner with the NZ Fire Service in Vision 2020 and that's quite a change."

They're saying they want to be part of the solution not part of the problem.

"We've all evolved over the years of struggle and are now at a place where we want to work together for the betterment of everyone. I think that's great because I'm a member of the union too".

Evacuation consultants in spotlight ahead of legal framework alignments

By Keith Newman

Fire Evacuation Consultants are hopeful they'll receive greater acknowledgement for the important part they play when the Ministry of Building Innovation and Employment (MBIE) realigns the various regulations and laws relating to fire safety.

To ensure their skills and involvement aren't overlooked the industry's Fire Evacuation Consultants Special Interest Group (SIG) will deliver the latest revision to their code of practice at the Fire Protection Association AGM in October.

In the absence of a standard, like its Australian counterpart, the New Zealand code defines an expected level of technical expertise and knowledge of legislation relevant to the safety of building occupants in the event of a fire.

The code will also provide for the first time, a framework for a training module and industry recognised qualifications.

Ela Langford, Fire Safety and Evacuation SIG chairperson

The SIG is concerned proposed law changes will place greater pressure on Fire Evacuation Consultants (FEC) who will be required to assist building owners and occupants comply with the Fire Safety of Building Evacuation Regulation 2006 and the Fire Service Act 1975.

SIG chairperson, Ela Langford believes the renewed code will help raise the profile of about 80 skilled and mainly self-employed people whose contributions to building and fire safety often go unrecognised.

Langford, CEO at Auckland-based fire safety trainer and evacuation consultants Aware Ltd, says a solid framework is needed that will "stand up to scrutiny, with a level of credibility that enables us to ensure our industry has a future".

If they get it right with the code, she says, there's a good chance a more cohesive working environment can be created between councils, building owners, occupiers and other stakeholders including fire engineers and evacuation consultants. Things will be less complicated for everyone."

Langford says the country is in a major review process of building and fire safety legislation. "Often when new legislation finally hits us we find we're not ready and then scramble about to make sense of it."

Defining a code of practice

> *"The reality is that the country is in a major review process of existing legislation, pertaining to building and fire safety. Often when new legislation finally hits us we find we're not ready and we scramble about to make sense of it,"*
>
> **Fire Safety and Evacuation SIG chairperson, Ela Langford**

The 10-15 person SIG provides technical peer support, networking and a platform for professional development for fire evacuation consultants. Regular meetings are attended by stakeholder representatives including the NZ Fire Service and the Fire Protection Association (FPANZ).

Currently Langford says the role of FEC in the building design stage is not recognised as an obligation. "It's only a recommendation for a fire engineer, building owner or architect to consult with fire evacuation consultants."

She's hopeful changes in legislation will recognise the interconnectedness of fire safety and evacuation requirements, although serious work is needed to achieve a more collaborative

approach so practical elements of fire safety, building compliance and health and safety aren't overlooked.

Potential issues were highlighted to Langford earlier this year when she visited a building that was fully compliant with the Building Act 2004 and its Amendments Act 2012 but lacked safe evacuation considerations in its design.

"The newly occupied building fitted out as a child care centre with under two year olds present had passed compliance and yet the cots were 6cm wider than the door frame."

Langford and her team originally drafted a code of practice which was released in September 2012 but shifts in legislation meant it was inadequate, when further changes were proposed, including in the Health and Safety in Work Act,

With all the cross referencing a complete rewrite was necessary. The current more in-depth second edition has taken Langford well over 300 hours to compile.

The code of practice work provides a framework to ensure consultants have the technical, legislative, building and fire protection systems knowledge and expertise in relation to the safe evacuation of occupants from buildings in the event of fire.

Landford rattles off one of the sections she's had to work through which references the Building Act and Building Code clauses with qualifications about "acceptable risk" and links to "additional information". To an outsider it sounds like it needs a team of lawyers to decode.

Interconnection unhooked

Prior to 1991 a proscriptive method was applied to fire evacuation in New Zealand. Fire engineering reports were not required and it was up to Fire Safety Officers to determine how to use fire protection systems in relationship to buildings and occupancy.

After 1992 the industry began requiring fire engineering reports for building consents, but relatively little attention was paid to the requirements of the Fire Safety and Evacuation of Buildings Regulations (2006) and the Fire Service Act (1975).

It was left to building owners to ensure all occupants were safe and could be evacuated in a timely manner and required "relevant buildings" to have a NZ Fire Service approved evacuation scheme in place.

Because the majority of New Zealand buildings are industrial style premises with a relatively defined use: office, warehouse, machinery or production, there's been a common matrix for fire and safety procedures. That's been viewed as relatively straight forward so "people haven't felt the need to involve a Fire Evacuation Consultant," says Langford.

However, dealing with complex buildings like hospitals and aged and mental health care facilities requires specific skills and knowledge. "You need to draw together technical and legislative knowledge as well as understanding the operation and occupancy."

Often, says Langford, larger, more complex 'level four' buildings require staged evacuation and passive and active fire protection systems to enable occupants to be evacuated from one fire cell to the next.

"A good fire evacuation consultant has solid knowledge of passive and active fire protection systems and their functionality in relationship to the building occupancy and its use."

Langford says "it would be fantastic if more fire engineers and architects recognised the importance and value of evacuation consultants in the early design stages".

Buck stops with owners

To ensure MBIE compliance a higher level of responsibility is about to be placed on FEC and building owners. In future training requirements are likely to be extended to not only cover fire evacuation but emergency management risks and risk reduction modules.

Langford, who has been a fire safety trainer with the Canterbury Health Board, says there are so many fundamental aspects of fire evacuation that apply in other emergencies like earthquakes.

"In the case of an earthquake, your early warning devices go off at the same time as fire alarm systems instructing you to evacuate. All your alarms go off; if the ceiling tiles come down the smoke signals activate in response to the increased dust or particles in the air. Smoke control doors close, the voice over happens and so on."

Although an emergency management team takes control in a large scale hospital emergency, she says there's still the practical need to evacuate to a "place of safety" on a different floor or level within the building or to an external place.

Langford says, key players in the fire industry need to be more proactive and willing to recognise the value and expertise of FECs.

While the Fire Service people

Strong support for FEC role

An FPANZ membership survey submitted as part of the Fire Safety Review showed strong support for fire evacuation consultants (FEC) having a much wider involvement in designing evacuation systems and procedures.

Asked whether they supported procedures being provided by a qualified FEC at the conceptual stage of a new build or for significant alterations that may affect the means of escape, 84% agreed.

It was also thought unnecessary cost could be avoided if building owners engaged a consultant at the conceptual stage to address the means of escape and egress for persons with disabilities (82%).

And 89% agreed it would be prudent that a Building Warrant of Fitness (BWOF) reflected all fire protection systems and their integrated nature enabling consultants to effectively plan and manage a relevant fire evacuation philosophy.

know how to put out fires, she says their knowledge of fire evacuation, is likely to be limited and that's why FACs need to be involved in planning within the context of the building, building design, use and occupancy.

Broader conversation needed

Unless the work of Langford and the collective knowledge of her SIG are embraced in a cohesive way, she fears fire and evacuation knowledge will be lost. "We need to have better communication across the industry".

While the Building Code outlines requirements for safety from fire in buildings, the Building Act 2004 and its Amendments Act 2012 and Fire Safety and Evacuation of Buildings Regulations 2006 are yet to be aligned.

> *"The newly occupied building fitted out as a child care centre with under two year olds present had passed compliance and yet the cots were 6cm wider than the door frame,"*
>
> **Ela Langford.**

Building owners have come to believe that if they are Building Act compliant, they're also compliant with Fire Safety and Evacuation of Building Regulations but "that's not always the case," says Langford.

"Fire safety and safe evacuation must be understood as a whole. There are no separate issues when it comes to evacuating people from places of danger to places of safety."

To date an immense amount of knowledge and time had been invested in creating the new comprehensive FEC Code of Practice, covering off all the legislation consultants are expected to be familiar with.

Delivering the new code of practice to the FPANZ AGM will be a major milestone.

"Everyone in the industry should be properly trained"

A eighteen-year fire protection career in Germany has convinced Fire Control Services technician Alan Shearing of the value of nationally recognised qualifications which set clear standards, endorsed by the industry, for the skills and knowledge a competent fire protection technician needs.

"I'd love to see more New Zealand technicians gaining national qualifications," says Alan who holds three European qualifications in fire protection.

"Training to a national qualification is the best way to lift standards in our industry.

Experience counts, but it's no substitute for showing you can work to a standard that's recognised across the industry – and that's what a national qualification proves."

John Stevenson, Account Manager (Fire Protection) at industry training organisation Competenz says national qualifications like the nine national certificates in fire protection benefit employers and employees.

"If you're an employer taking on a new person, you can be confident that someone with a National Certificate can do what they say they can do. And if you're an employee, you can stand out from the pack and show employers that you've got what it takes to get the job done to a standard that's recognised across the industry."

Alan is so convinced that national qualifications are the way to go that he's currently working towards New Zealand qualifications (the National Certificates in Hand-operated Fire Fighting Equipment Level 3), with the support of his employer, Auckland-based Fire Control Services.

He also sees the benefit of training in business subjects to complement his technical skills. "Much of a technician's job is about making sales, so sales training can be well worth doing too."

As an older learner himself, Alan says it's never too late to start working towards formal qualifications. "If you're like me and already have lots of experience on-the-job, you can often shorten your study time."

Alan says he is receiving 'very good support' from his manager at Fire Control Services, Albert Amels. "The company's doing what I'd like to see all employers in the industry doing – investing in their people with training."

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Security-based fire alarms raise concerns about delays

Slow or inappropriate responses to basic fire detection systems monitored by security companies can result in significant delays, often resulting in a blaze being well established before the NZ Fire Service arrives on site.

The NZ Fire Service Fire Research and Investigation Unit (FRIU) says the rapid growth of fires means early intervention and suppression is critical to avoid smoke damage or the loss of buildings and stock.

The FRIU is concerned at the number of cases where rudimentary security alarm monitoring has meant a third party is first sent to check the site or there's a delay in the key-holder calling the fire service.

NZ Fire Service engineering manager, Simon Davis

While non-addressable smoke or heat detectors on a single loop are non-compliant with relevant fire alarm standards they can provide significant benefit when a building is unoccupied. However, the FRIU says that's pointless if information isn't passed on to the fire service in a timely manner.

NZ Fire Service engineering manager Simon Davis says it's a multi-faceted problem that can give building owners and occupants a false sense of security, for example assuming the security agent is trained to deal with fire alerts and is complying with a recognised standard.

He warns this may lead to legal recourse if the system fails to provide early enough warning.

Slow key-holder reaction

"We have many instances where a fire has grown to such a size that we receive multiple calls from passers-by and have begun firefighting before the key-holder or mobile patrol arrive," says Davis.
A school toilet block was totally destroyed in January last year and significant damage done to a classroom after the key-holder went to check the scene. That resulted in a 6 minute delay before appliances were called.

In February this year a security monitoring company notified a warehouse key-holder that four detection zones had been triggered. Although the fire brigade was called, critical details were not passed on contributing to a six minute delay and the building being destroyed

At the end of April 2015 a monitoring company despatched a security guard to investigate a fire in a classroom block. By the time he got there a passer-by had already notified the fire service which was already on site.

In March this year a company monitoring a warehouse noted that smoke was detected and a passive infrared sensor (PIR) activated. The key-holder asked a security guard to check it out, resulting in a 23 minute delay. Although the fire was limited there was extensive smoke damage to all areas of the building and to stock.

At the end of April a monitoring company despatched a security guard to investigate a fire in a classroom block. By the time he got there a passer-by had notified the fire service which was already on site. There was extensive damage.

Simon Davis questions whether point style smoke detection as an add-on to a security system is appropriate in the case of some warehouses and factories.

He says the appearance of smoke detectors may give rise to a false assumption based on home experience, that occupants or owners will be warned with a specific tone if there's a fire. The fire alarm Standard (NZS 4512) requires detectors to be placed about 10m apart and to emit a specific tone to warn occupants. "Failure to do so can cause false or even delayed alarms."

Davis cautions that if a fire alert is indistinguishable from the main security system it could have important life safety issues. "Any breach of workplace safety regulations could have very serious repercussions."

Access to detectors for maintenance purposes can also be challenging in buildings with a high roof, particularly if racks or machinery have been placed below them after installation. "Heat detection may be more appropriate."

And Davis says many operators of security call centres have not been trained to read the signals coming from fire detectors. "They need to interpret fire alarm data accurately and react accordingly "as part of their training."

Although a single smoke detector is likely a false alarm requiring a timely investigation, he says multiple detectors followed by a PIR is undoubtedly a real fire and should result in an immediate 111 call.

Preferred options

Monitored alarm system are there to help monitoring companies and building owners make informed decisions remotely and the FRIU suggests if they're not comfortable with the level of data they should opt for more advanced systems.

It strongly recommends detectors be correctly labelled and placed on separate loops to security elements so they can be identified by the call centre when they are activated. "This is not only important in an emergency but valuable for troubleshooting and regular maintenance," says Davis.

Addressable systems or those with several detection zones can make it even clearer that you are dealing with a real fire rather than a false alarm. "This is particularly true if the activations are sequential and progressing through the building."

Some security devices, such as PIRs can also react to fires. "If smoke detectors and security sensors activate in short succession this may indicate a developing fire and the fire service should be given this information."

Security panels should also be located in an obvious place near front of building. "If a key-holder is the on-call person they need to pass all information to the fire service first hand," says Davis.

Collective bargaining for fire levy doused

The battle to determine the fairest way to fund the New Zealand Fire Service Commission took another twist in May when the Supreme Court unanimously agreed that insurance brokers can no longer rort the levy system through collective agreements and other legislative loopholes.

The Supreme Court came out in support of the Commission, preventing insurance brokers doing deals to reduce the fire levy by offering groups of building owners a single policy.

The long running stoush to prevent brokers using this practice overturned a previous Court of Appeal decision.

The Insurance Brokers Association and Vero originally took the Commission to the High Court to clarify its practices including collective agreements. Both the High Court and the Supreme Court declared they were based on "fair interpretations of the legislation".

The Commission challenged brokers who took out low indemnity cover and a secondary policy on excess combining commercial properties in a collective fire policy, claiming this was a misuse of legislation that deprived it of revenue.

Vero continued to argue a single insurance policy and levy was all that was necessary for a collective of eight New Zealand ports in its test case. The Commission persisted and in its latest legal challenge won the day.

Justice Mark O'Regan in setting aside the previous appeal decision, found the correct interpretation required a levy to be paid on the true indemnity value of the property which better reflected the level of insurance cover.

As regards the New Zealand ports collective agreement, Justice O'Regan declared each port should be levied as if they had their own insurance contract, particularly as each had interests in different properties and there was no collective ownership.

The Insurance Council of New Zealand (ICNZ) received assurance from the NZ Fire Services Commission that the changes would take effect from the time of the court decision and would not apply retrospectively.

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