fire NZ
Issue 12 | March 2016

Passive protection facing active crisis

Fire engineering under microscope

Skills shortage FPANZ priority

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

FLIR Systems Australia Pty Ltd
Phone: 1300 729 987
(NZ: 0800 785 492)
E-mail: info@flir.com.au

www.flir.com/fire

FLIR® | The World's Sixth Sense™

fired up protection

LOKTRONIC's expansive product range has just become even wider with these first class **EGRESS** and **FIRE PROTECTION DEVICES** and **PROTECTIVE COVERS**.

STI-1130 Ref. 720-102
Surface mount with horn and spacer
255mm H x 179mm W x 135mm D

STI-13000-NC Ref. 720-090
Flush mount, no horn
206mm H x 137mm W x 69mm D

NEW

STI-13B10-NW Ref. 720-092
Surface mount, horn and label optional
206mm H x 137mm W x 103mm D

STI-1100 Ref. 720-054
Flush mount with horn
255mm H x 179mm W x 86mm D

STI-6518 Ref. 720-060
Flush mount, no horn
165mm H x 105mm W x 49mm D

STI-13210-NG Ref. 720-094
Surface mount, horn and label optional
206mm H x 137mm W x 103mm 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.

NEW

STI-WRP2-RED-11 IP67
Ref. 720-062R
Also available in White.

STI-RP-WS-11/CN
Ref. 720-052W
Available in White, Green, Blue & Yellow.

STI-RP-GF-11/CN
Ref. 720-051G
Available in White, Green, Blue & Yellow.

STI-RP-RS-02/CI
Ref. 720-058
Cover included.
Flush Mount Available.

- Approved to EN54-11
- **Current Rating:** 3 Amps @ 12-24V DC, 3 Amps @ 125-250V AC
- **Material:** Polycarbonate
- Comes with Clear Cover
- 2 x SPDT switches
- Positive activation that mimics the feel of breaking glass.
- Visible warning flag confirms activation.
- Simple polycarbonate key to reset operating element - no broken glass.
- **Dimensions:** 87mm Length x 87mm Width x 23mm Depth (Flush Mount) & 58mm Depth (Surface Mount)

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.

NEW

Battery Tester Ref. 730-101
ViTECH, strong, lightweight aluminum case, 5, 15 and 30 amp battery tester for fire and alarm use. Weight: 500gms, Size: 165mm x 90 x 70mm.

Fire Brigade Alarm: (Closed/Open) Ref. 730-202
ViTECH branded Type X and Type Y (illustrated) 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.

ViTECH products are designed and produced in New Zealand.

Loktronic

Loktronic Limited Unit 7 19 Edwin Street Mt Eden Auckland
P O Box 8329 Symonds Street Auckland 1150 New Zealand
Ph 64 9 623 3919 Fax 64 9 623 3881 0800 FOR LOK
mail@loktronic.co.nz **www.loktronic.co.nz**

ISO 9001:2008 REGISTERED FIRM

FPA MEMBER

21451

Index

Fire Protection Association New Zealand
Private Box 302372, North Harbour
Auckland 0751

Ph: + 64 9 414 4450
Fax: + 64 9 414 5707

fpanz@fireprotection.org.nz
www.fireprotection.org.nz

Institution of Fire Engineers
New Zealand Branch
PO Box 3961
Wellington 6140

secretary@ife.org.nz
www.ife.org.nz

Society of Fire Protection Engineers
New Zealand Chapter
PO Box 91511, Victoria Street West
Auckland 1142

Ph: + 64 9 308 7030

secretary@sfpe.org.nz
www.sfpe.org.nz

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.

The views expressed in this publication are not necessarily those of the Fire Protection Association New Zealand, Institution of Fire Engineers (NZ Branch) or the Society of Fire Protectionn Engineers (NZ Chapter).

Articles are published in good faith but FireNZ Magazine and its agents do not warrant the accuracy or currency of any information or data contained herein. FireNZ magazine and its agents do not accept any responsibility or liability whatsoever with regard to the material in this publication.

FireNZ Magazine is published by DEFSEC Media Limited on behalf of Fire Protection Association New Zealand, Society of Fire Protectionn Engineers (NZ Chapter), Institution of Fire Engineers (NZ Branch)

DEFSEC Media Limited
27 West Crescent
Te Puru 3575
Thames RD5
New Zealand

Contact Details

Craig Flint
Phone: + 64 (0) 7 868 2703
Email: craig@defsecmedia.co.nz

firefighters helping firefighters
awhi atu awhi mai

THE NEW ZEALAND FIREFIGHTERS Welfare SOCIETY
0800-65-3473 (OK FIRE)

For all people involved in firefighting: rural, volunteer and paid staff as well as administrative staff.

Benefits:

Holiday & Convalescent Homes
Discretionary Loans & Grants
Corrective Lens Benefit
Hearing Aid Benefit
Birth of a Child Benefit
Gift Baskets
In Hospital Visits
Home Visits
In Hospital TV Rental
Hospital Parking
Assistance with out of town travel costs for medical visits
Home Help
Counselling
Disaster Fund
Child Adoption Assistance
Funeral Assistance

HEALTHCARE 99 Firefighters helping firefighters

www.firefighters.org.nz

AON

Presidents Message

Fire Protection Association New Zealand

In association with our partners we are pleased to bring you the First Edition of Fire NZ for 2016. Since forming in February 1975 The Fire Protection Association New Zealand (FPANZ) now celebrates its 40th year of operation as a not for profit member organization. FPANZ is the national body for fire safety that provides information, services and education to the fire protection industry and the community at large. With a mission statement and ongoing focus being.

Keith Blind
President FPANZ

"To provide a professional forum and be the unified voice of the fire protection industry by drawing on our expertise and collective knowledge to reduce the impact of fire in New Zealand"

We are here to assist our members and the wider community in relation to Fire Protection and the need to ensure we have suitably qualified people within all facets of the industry.

My tenure as president has so far been devoted to helping promote the need for training in industry and further develop the material and support structures to ensure we have the necessary tools to continue the vision.

The ongoing work required to support MBIE and the review of fire codes continues to be a key element of focus over the next 12 to 18 months. Our special interest groups are engaged in ensuring that we have a collective voice to support these initiatives and rely on our members being involved to give appropriate feedback.

If you are not yet involved then you may want to contact our office and talk over the different opportunities each group has to offer.

I believe that the next 2 years for the association will see us step forward with delivery of a number of new initiatives and a variety of benefits that allow us to continue to add value to members. Scott Lawson as FPANZ executive director has a key focus on improving systems, SIG Group activity and outcomes.We continue to invest in our CRM records and keeping the communication via our newsletter and website relevant to members needs.

We are making progress in working with a number of codes of practice or guides relevant to fire evacuation consultants, hand operated firefighting equipment and passive fire protection.

Our groups are now well positioned in planning for the annual Fire NZ conference in November. We expect it to be a successful showcase of our capabilities as an industry and supporting our key objectives. I look forward to sharing with you our key outcomes over the next 12 months with these and other issues it promises to be exciting as we continue on our next 40 year journey.

Presidents Message

New Zealand Chapter of the Society of Fire Protection Engineers

With the start of the New Year, it is time to look forward to the upcoming year and the changes that are already expected. It promises to be a busy year ahead for fire engineers with potential regulatory changes as well as the ongoing challenge of balancing continuing professional development against the current workload; it is easy to put off this important task to a later time that never arrives.

The MBIE Fire Review is well underway with working groups looking at the whole range of the fire regulations, compliance documents and procedures, with the intent of getting the right balance of community safety and compliance costs. SFPE members are involved in all areas of this, along with other stakeholders from other industry organisations such as architecture, Councils and specialist groups. Many of these will be reaching a conclusion this year with public comment and input.

Part of this process has been the development of industry design guides for "best practice" or where the Acceptable Solutions don't recognise unusual features of a type or use of building. These design guides are developed by the industry groups for their specific needs and will have a robust review process before being issued under S175 of the Building Act. Current design guides underway include supported care houses, prisons and fire stations. SFPE is also represented on the special hazards Code of Practice committee as a stakeholder along with manufacturers, inspection agencies, Fire Service and FPA as this guide is developed by the experts in these systems.

While the internet has made the world a smaller place and provides access to knowledge and learning resources, an interactive session is often more effective. It is easy when we are at the end of the world to miss out on presentations and upcoming developments as we don't have the low cost access to the international conferences.

We are planning on having a number of overseas lecturers and technical experts both this year and next year on a wide variety of fields such as structural fire engineering, smoke control and evacuation from buildings. Where possible, these will be throughout the country to give all members an opportunity to attend and this is in addition to the technical group meetings held around the country with local presenters on topics of interest.

The SFPE has always had a good relationship with our colleagues in the IFE and FPA, and we look forward to continuing this throughout this year. A number of the SFPE members attended the IFE workshop on fire fighting and found it useful for understanding the practical implications of a fire design for other stakeholders in the building. This will be extended further this year with planned training sessions with the passive fire group of the FPA, as fire engineers are increasingly required to do site inspections in order to support a Producer Statement PS4.

Until the next edition, enjoy summer while it lasts and prepare for a busy year ahead.

Geoff Merryweather
BA MEFE MBA CPEng MIPENZ

President New Zealand Chapter of the Society of Fire Protection Engineers

Presidents Message

Institution of Fire Engineers (NZ Branch)

IFE our Vision
"A global organisation of fire professionals striving to build a society safer from fire".

Kia ora koutou katoa,
Ka Hari Huri Tau Hau ki a koutou,
Happy New Year to you all.

This year has started as we had left off last year, extremely busy. The first engagement of the year was the Biennial IFE Asian Pacific Association Conference (APAC) which was hosted by the United States Branch. This forum is held for the Asia Pacific members to collaborate on initiatives for members of this region. It is also to ensure that the IFE Board of Directors are aware of the issues we face so that they can include them in the Institutions up and coming business plans. The most important issue discussed was that of additional training for Engtech assessors for the APAC region as the current training given is at an hour not suited to this side of the world. Members from Canada, Australia, Singapore, and US branches supported APAC along with myself. I was fortunate enough to be also given admission into the FireHouse World Conference following the APAC forum which allowed me to gain new ideas for our Branch conferences.

This forum was closely followed by a 'Fire Fighting Operations for Fire Engineers' workshop held at the NZFS National Training Centre, Rotorua. This workshop was attended by 45 fire engineers, building officials, IQP's, university lecturers and fire technicians from around the country. The workshop was designed to give the participants an insight into the challenges faced by fire fighters when they attend fires.

Participants were asked to run out deliveries, take a charged delivery through a building and up

Trent Fearnley
GIFireE, GradDip Building Fire Safety and Risk Engineering
President Institution of Fire Engineers New Zealand Branch

Firehouse World Conference

Demonstration of aprtment building fire

BA Search and rescue of an aprtment building

to the 4th level, conduct a BA search and rescue and were able view a live fire burn of an apartment. Many of the participants regularly deal with members of the fire service around fire engineering design, water supplies and the fire fighting checklist. This day provided them with a practical view of the issues often debated. There was robust discussions and learning throughout the day and I believe all participants thoroughly enjoyed themselves and took something of benefit out of the day. I would like to thank Ian Pickard, Alan Cleator and their team of trainers for their assistance on the day and for providing the participants challenging activities.

I would also like to thank the IFE Branch members who gave up their time to assist the trainers and Senior FRMO Gary Beer and FRMO Jason Goffin for providing advice to the participants. I am sure all participants would agree that the National Training Centre is a world class facility and it made for a more realistic training day. We are looking to run another workshop in late April if there is interest, so please contact me if you would like to attend, president@ife.org.nz

For those of you who have recently joined the IFE through the Individual Case Procedure and are members of the NZ Professional Fire Fighters Union you will be aware of the contract issues. The IFE has worked hard in assisting you in getting awarded the Graduate grade membership. Unfortunately the IFE is not party to the contract even though we are mentioned in the contract; the contract is between the NZFS and the Union. We have however produced documents for the Union and NZFS and provided advice and assistance to the Union on these issues and will continue to do so. I would therefore ask you to please have patience whilst the Union and NZFS negotiate through this and hopefully we will have a positive outcome. I know that the NZFS still supports the IFE and supports the qualifications awarded by the IFE. As members I hope you continue to support the IFE.

Lastly I would like to say that this year we are going to try to hold more CPD events (workshops and seminars) around the country to try and benefit all members. The next to be held is a ½ day seminar by the Auckland Group on the Tamahere Coolstore fire and storage building fires. This will be followed by a seminar in Christchurch on Insulated buildings. So please keep checking the website and our media sites for up and coming events. I look forward to a busy year and if there is some interesting topic that you want the IFE to do a seminar on, please contact me.

No reira, tena koutou, tena koutou, tena koutou katoa,

Trent Fearnley
GIFireE, GradDip Building Fire Safety and Risk Engineering
New Zealand Branch President

THE INSTITUTION OF FIRE ENGINEERS

FOUNDED 1918 • INCORPORATED 1924

Passive protection

Where there's smoke there's fire the old adage goes, but smoke is a potential killer and spoiler of goods and property, moving rapidly to find gaps in walls, ceilings and compromised or poorly built passive fire protection systems encouraging flames when they should be contained.

Keith Newman uncovers the worsening crisis in passive fire protection and what's being done about it.

Lawyers and investigators are ramping up efforts to identify culprits ahead of litigation as widespread breaches of fire safety regulations and passive fire protection (*PFP*) are being exposed during leaky building investigations.

The leaky building crisis along with health and safety and other code and regulation reforms are forcing people to be more conscious of risk, creating a trail of accountability that places faulty workmanship under a legal microscope.

PFP is now is becoming something of a blame game, with property owners, builders, tradies, installers, councils and those responsible for signing off compliance and potentially building warrants of fitness in the firing line.

The irony is that passive fire protection is a largely unregulated area, with the various parties involved often unaware of the requirements for such systems and how interdependent they are.

PFP is the requirement to design buildings to resist and contain fire through the use of specified fire-rated building materials, fire resistant paints and fire stopping sealants, wraps and collars for all plumbing, electrical and other penetrations of walls and ceilings.

As multi-story apartments in particular are pulled apart for weather tight repairs, inadequate or non-existent passive fire protection systems reveal that life and property is potentially at risk unless millions of dollars of repairs are undertaken.

Inadequately stopped

Fire industry group, the Fire Protection Association (FPANZ), has warned for over six years that many *PFP* systems aren't up to scratch.

The FPANZ *PFP* special interest group (SIG) is working closely with the Ministry of Business Innovation and Employment (MBIE) on law changes to ensure fire protection systems are more specifically described along with the associated responsibilities and compliance checking.

New FPANZ chief executive, Scott Lawson, says the *PFP* issue is "a can of worms" that needs to be approached responsibly, with the right research.

"We don't want to be saying 'we told you so'. It's a very complex issue and we need to be seen as part of the solution and get more involved at the coal face to see what's been going on."

Although industry guidelines are still some time away, he says FPANZ has to be pro-active "so this doesn't continue happening".

FPANZ continues to make it clear to industry and regulators that too many *PFP* jobs have been signed off without proper knowledge or understanding and those responsible may yet find themselves in court for failing to do their job.

While yawning gaps are being exposed in regulation and monitoring, the Government is ramping up pressure on local authorities to get building consents signed off more quickly.

Ron Green, chairman of the *PFP* SIG, has been a voice in the wilderness, warning regulators and others that inadequate PFP systems place building occupants at risk jeopardising business continuity and potentially insurance cover.

Passive SIG chairman, Ron Green

Insurance Council head Tim Grafton

facing active crisis

He says there's been a systemic failure across the construction and fire protection industry. "The days of glancing at something and ticking the box are over because it's going to come back and bite you if you don't get it right."

Green says a number of cases are already before the courts or about to head that way. While insurance may cover repairs he says there's a cost to business including increased premiums.

He says the recent legislative shift to place health and safety liability on everyone from building owners to suppliers and tradies is a long overdue wake-up call.

Insurance Council of New Zealand (ICNZ) CEO, Tim Grafton, says fire protection non-compliance in residential multi-unit buildings is serious and verging on criminal. "Lives are at stake, so deliberate short-cuts or failure to properly ensure compliance is inexcusable."

He says many at-risk buildings have compliance certificates "upon which the insurer relied" but should never have been issued and could potentially invalidate any claim.

> *"The days of glancing at something and ticking the box are over because it's going to come back and bite you if you don't get it right."*
>
> **Ron Green, PFP SIG chairman**

However, that decision would be made by each insurer on a case by case basis. "One option could be to pay the claim and seek recovery from those that issued the building code compliance documents."

Not in leaky league

While it is a serious issue from the life safety perspective, Grafton wouldn't compare the PFP crisis with 'leaky buildings'.

"They rot and leak as a matter of course while non-compliance with fire safety doesn't in itself materially damage the building...and the number of multi-unit building fires is relatively low."

The leaky building or water tightness crisis was created by a combination of poor design, unsuitable materials and shoddy work practices during the decade from 2004 when non-compliant buildings were often signed off by private certifiers.

Many of the tradespeople responsible and practitioners who certified those buildings are long gone, having foreseen the litigation and going into liquidation or reinventing themselves under new names.

The cost to the country of repairing those leaky buildings has been variously estimated at $11-$33 billion. In the process of investigating or gearing up for repairs, widespread breaches of fire safety requirements are being exposed.

Geoff Merryweather, president of the Society of Fire Protection Engineers (SFPE), says the more he learns about the passive protection issue "the scarier it gets", claiming too many have been able to get away with slack practice for far too long.

He says if you pulled most buildings apart, no matter how well they're built, you'll find defects but some of the things he's seen raise serious concerns.

"I'm aware (through the grapevine) of probably half a dozen leaky building cases that have morphed into passive fire cases in Auckland and some down the line as well."

He says even inspectors aren't aware that things need to be installed in a certain way with different materials required and "it goes all the way through until something goes wrong and the lawyers get involved."

Wrap fell down leaving a gaping hole where sealant was required between concrete and wrap

"The way the leaky buildings were handled was a fiasco with factions all over the industry from builders to consultants and councils pointing the finger."

Scott Lawson, new FPANZ CEO

While Scott Lawson would like to see things happening more quickly, he'd also like to see greater recognition for FPANZ at Government level as "a recognised voice of the collective industry".

The group wants to be viewed as the first stop for informed advice to ensure messages being put out by the industry are "consistent and responsible".

The worst case scenario, he says, would be to allow different parties to use this situation for their own soapbox. "The way the leaky buildings were handled was a fiasco with factions all over the industry from builders to consultants and councils pointing the finger."

Lawson says clear statements need to be made about where things are at, what's happening and what's being done to ensure it doesn't happen again. That voice he suggests should be FPANZ which has been on the case for many years.

PFP changes urged

FPANZ' passive protection SIG is working closely with the Building Research Association (BRANZ) and the NZ Fire Service on a code of practice it wants adopted as part of the current MBIE review.

Feedback from an FPANZ industry questionnaire raised the issue of whether *PFP* was being installed correctly, whether systems within existing buildings needed regular inspection and maintenance and if this should done by a licensed building practitioner.

Concerns were raised about the standard of PFP suggesting trades need improved skills and accountability for their installations. New requirements for internal surface finishes were challenged as potentially being "too prescriptive and not justified" with alternative solutions not allowed for.

It was suggested "a proper study" be undertaken on surface finish requirements, taking into consideration the risk in terms of the number of related fires, and the relationship to fire protection.

Response to the questionnaire suggested prescriptive elements, including explicit numbers, be removed from the Building Code and the issue be revisited with the Fire Advisory Panel after broader consultation with the industry.

It suggested more regular guidance might assist in settling disputes and "answering issues with misinterpreting documents."

Compliance chaos

Ron Green, who's also chairperson of the Association of Building Compliance (ABC) and a director of Building Compliance and Fire Group Consulting, claims in the majority of buildings he inspects for the first time PFP does not comply with the Building Code.

As an independently qualified person (IQP) he's called on to sign off on work and more recently to assess leaky buildings. "We get asked to review the passive fire systems and sometimes there's no fire stopping or only partial. On one job 30% of penetrations had no fire stopping; while 70% were there, 70-85% were wrong and fire resistance rating would have been next to nothing."

Green was recently invited by a local council to inspect a South Island rest home 10-days before it was due to open.

"I spent most of my time in the roof space because that's where the penetrations were. Despite the engineer having signed it off, they had to do everything again as they got it all wrong. It cost them an extra $120,000 to fix it."

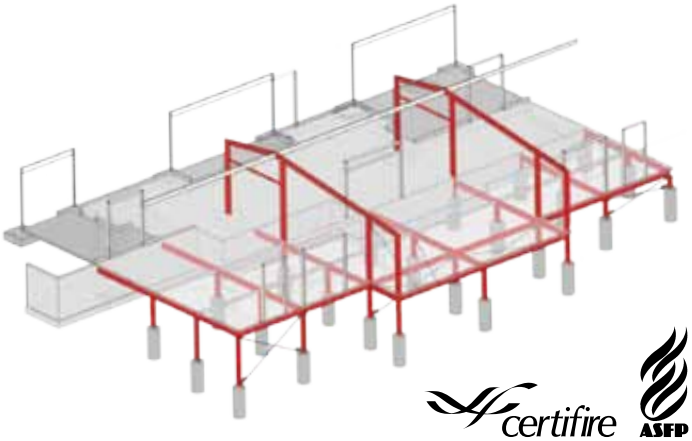
Tradespeople didn't know what they were doing. "They guessed and used foam where they shouldn't have, used the wrong sealant and didn't use the right depth. To the fire engineer it simply looked okay."

When you sign a council producer's statement (PS3 and PS4) to prove compliance, you are stating *PFP* has been installed to the

Foam trick again and not even fire rated foam

ALTEX COATINGS

FIREPROOFING Systems

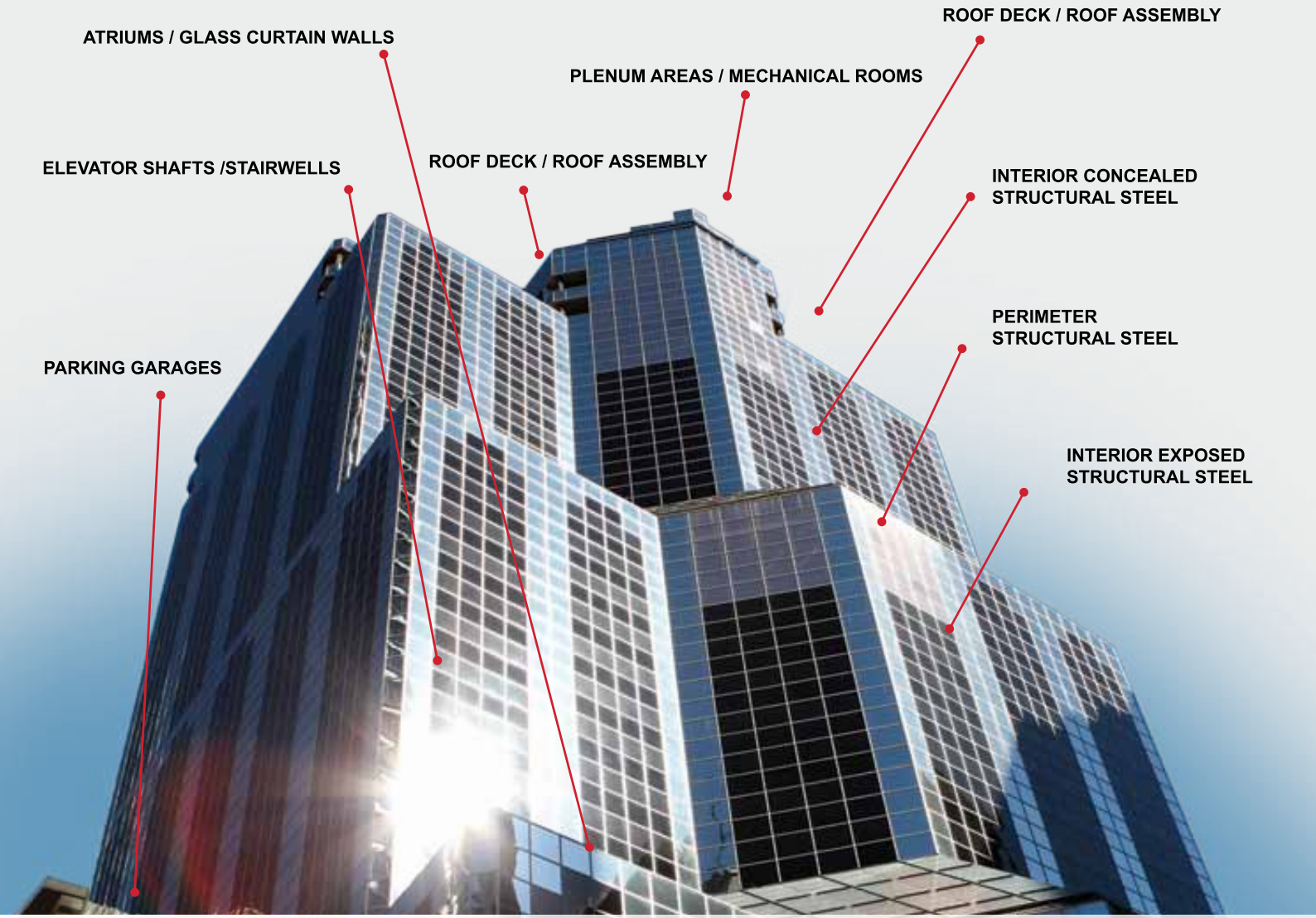


certifire ASFP

SUPERIOR FIRE PROTECTION FOR COMMERCIAL APPLICATIONS

Altex Coatings is proud to bring you the most advanced fireproofing technology available.

With **intumescent** or **lightweight cementitious** coatings used to protect steel in both conventional and hydrocarbon fires, we have a full range of products to solve the toughest challenges, dramatically delaying the time it takes for steel to heat up to a critical deformation temperature. Our in-house software and databases provide rapid, accurate and easily updated fireproofing loading information.



carboline Coatings - Linings - Fireproofing

Nullifire Enhancing Fire Protection

Toll Free. 0800 258 390
www.altexfireproofing.co.nz

Resene GROUP

Our Brands | Altex Coatings Ltd | A Resene Group Company

Completed by an electrician thinking he had stopped the cables but the fire foam was mainly for gaps between concrete not cables

Building Code. "If you haven't got the skill and knowledge, how can you sign it off?"

While fire engineers are required to prepare a report informing others what fire resistant ratings are required for relevant floors and walls, their knowledge of PFP and fire stopping has not been a strength, says Green.

FPANZ is recommending MBIE include passive fire protection as restricted building work signed off by a trained and qualified person. Green says these changes could improve the situation dramatically but no-one will know for certain until the MBIE review work is completed.

Ideally he says the SIG would like to see passive fire protection become part of the design process rather than people just talking about structure and how nice it should look.

"No-one talks about planning passive protection, saying 'right where will our cable routes go, where will we put the PVC pipes, how do we approach fire stopping and what can we do to futureproof this for future penetrations'."

Mystery stopper

As part of determining market awareness Ron Green often acts as "a mystery shopper" turning up at various hardware and trade outlets asking for advice on the use of products used in construction.

"I can guarantee if you went to any well-known electrical wholesaler tomorrow and said, 'Hi, I want to fire stop some cables', the person at the counter will most likely sell sealant with a two-hour rating with no information on the label and ... give misinformation because they haven't been trained. I haven't had anyone get it right yet."

Green says trade stores shouldn't sell product they don't know about and at least should advise people to find out online before using it.

Under Section 14G of the Building Act, suppliers and manufacturers are liable. "If I buy something from your shop and you give bad advice, you're potentially liable."

Everyone from the person who sells sealant at the trades outlet to the plumber who put in the PVC pipe and the fire engineer who ticks off compliance are liable if they're deemed to have been complicit in building damage or decay. "Not properly understanding the requirements is not an excuse," says Green.

Smeared sealant.
Signed off by an engineer but completely inadequate for purpose with obvious gaps

Guidebook, workshops to raise PFP awareness

A series of industry workshops, hands on training and a guidebook in conjunction with Building Research Institute (BRANZ) are planned by the Fire Protection Association (FPANZ) to lift the professionalism of fire protection installers and engineers.

The guidebook, to be published toward the end of 2016, will clearly explain what passive systems are, what they can and can't do, how to design them and plan for cabling and plumbing penetrations to ensure they remain fireproof.

It's aimed at fire engineers, architects and the building industry, including electricians, plumbers and others who may need to make holes in fireproofed walls and for those who sell Gib board, sealant and other elements of fire protection systems to the trade.

"It's to explain to people this is not something random. You have to put some effort into designing and planning and there are certain things they have to do to get it right," says FPANZ SIG chairman Ron Green.

The Association of Building Compliance is also working on a PFP inspection guide which hasn't yet been finalised but is also expected to be released late in 2016.

Use it or lose it

The FPANZ SIG will also be conducting hands-on training for members involved with fire alarm cables and sprinkler pipes. "We'll start out with theory then build some actual walls and show them how to do it in conjunction with various suppliers," says Green.

The approach will be trialled in Auckland with up to 60 people and after being evaluated will be rolled out around the country to members and possibly others.

"From a professional point of view, we have to do something different...it won't change if people are not trained and educated."

And Green warns it's a waste of time coming along to workshops if that training and knowledge isn't put to use within the first month. "If you are not doing this regularly you'll lose it."

Auckland and Christchurch city councils are now saying fire engineers have to sign off this kind of work. "Some are nervous about this, others are joining the fire group for training...but there are still those who think they're cool and don't need training.?"

Unplanned evolution

So how have we come to this place? The industry has evolved unchallenged largely because there have been few major fires that have showed up poor passive protection work. "It hasn't been on the radar apart from the odd case," says Green.

Because the architect, builder and other tradespeople don't know what's required for fire protection everyone expects "the fire guy to know...which often he doesn't."

It's left to each trade to fire stop the holes made for their pipe or cable but Green suggests the buck should stop with "a passive specialist", perhaps a new role in the fire industry, especially for larger projects.

Green's Fire Group Consulting is one of several consultants checking installation work. And that's not straight forward either as Hilti, 3M and others all have their own passive systems with different requirements.

"If you put a cable tray through a wall and it's quite big you have to plan for that but people just stick their cable through then stop the hole with some sealant and don't know that the penetration was to be framed and lined — if it's done wrong it costs a lot of money to fix."

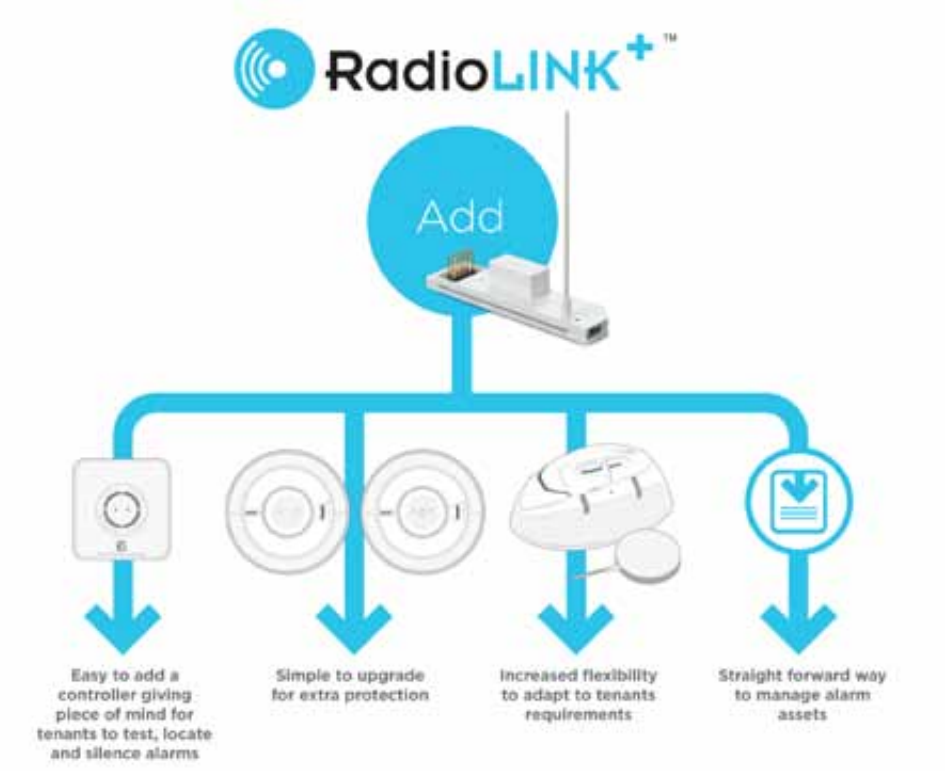
Brooks – Innovative solutions...

Brooks – Tried, Tested, Trusted

Brooks have been at the forefront of providing innovative fire products and solutions for the residential markets for over 40 years. As the first company to introduce Photoelectric technology to the Australian and New Zealand markets Brooks continue to lead the way in early warning.

The latest 160e series of smoke and heat alarms along with the soon to be released " i " series intelligent 10 year battery operated models continue this tradition. As well as the new 160e series bringing a whole raft of enhancements to increase performance and higher protection the new series has improved styling, increased resistance to nuisance alarms, is easier to install, is future proof, can provide whole system data extraction and more importantly is compatible with existing Brooks systems. But it doesn't stop just with providing the earliest possible warning as Brooks provide a comprehensive range of accessories to further enhance the reliability and ease of use of the product.

So the next step in alarm evolution is not limited to the latest alarms, our award winning RadioLINK technology has also evolved into RadioLINK+. RadioLINK



has traditionally been known for its ability to provide optional RF (wireless) interconnection along with the option of wired interconnection between alarms. RadioLINK+ has an enhanced self-monitoring function that recognises system tampering or alarm head removal. At installation details of the system can be collected , information such as number of units, types of alarms, location of alarms, RF signal strength between alarms, serial numbers of the devices and how long the alarms have been in operation.

Once a system has been set up information can be accessed securely from within or because it utilises RF technology, from outside the property if access is an issue. Event logs can be retrieved as many times as necessary and for each alarm, on the system, retrieving data such as how many direct button testes have been performed and when, there have been any issues with the battery and/or mains supply. Carbon Monoxide (CO) levels detected if a CO alarm is in the system, RF signal strength between alarms, age of alarms and if any alarms have been removed. All the data can be extracted securely and saved to a central location to be stored. Data extraction can take place again and again, building up a history of alarm systems in individual dwellings.

With Brooks expanding an existing hard wired interconnect alarm system to RadioLINK+ is simple. By replacing just one alarm in the hard wired system to a RadioLINK+ alarm, you can add other RadioLINK alarms and accessories, making it ever more flexible.

Brooks specialise in residential Fire and CO protection – it's what we do and have done for the past 40 years. By fitting Brooks alarms you can be confident you're getting the best protection.

Contact:
BROOKS New Zealand
Ph: 0800 220 007
web: www.brooks.co.nz

BROOKS Australia
Ph: 1300 78 FIRE
Web: www.brooks.com.au

BROOKS
fire • evacuation • warning systems

BROOKS...

Continuing Innovative Solutions for more than 40 years

To find out more just give us a call on 0800 220 007

BROOKS New Zealand Unit 106, "The Zone", 23 Edwin Street, Mt Eden, Auckland 1024
Phone: 0800 220 007 **Web:** www.brooks.co.nz

BROOKS Australia 4 Pike Street Rydalmere NSW 2116
Phone: 1300 78 FIRE **Web:** www.brooks.com.au

BROOKS
fire • evacuation • warning systems

Combustible cladding concerns

By Keith Newman

An Auckland lawyer wants an investigation into claims that cheap imported low or non-fire rated aluminium cladding is being substituted for specified panels on high-rise buildings amidst concerns that consenting authorities may not be able to tell the difference.

Lawyer Adina Thorn says cladding products in general need to be investigated to ensure claims of fire resistance stack up, particularly aluminium composite material (ACM) panels similar to those that contributed to towering infernos in Melbourne and Dubai. Thorn says serious research is needed to ensure the same issues don't arise here, as she's been told by experts that some panels sold as fire resistant "start burning...the cladding lights up."

ACMs or sandwiched cladding panels bonded to a non-aluminium core, mainly used in external commercial building facades, are sold under multiple brands in New Zealand. "Waiting until there's a fire is not a great idea. MBIE, fire engineers and manufacturers should be asking the right questions."

> *"It's very difficult to tell the difference between fire rated and non-fire rated product, even building inspectors and project managers on site have difficulty clarifying this."*
>
> **Alisa Bennett, PSP building products specification manager**

Thorn, who's involved in a $200 million leaky buildings class action, says she's interested in building and fire defects and began enquiries into New Zealand's use of ACMs when she learned the Victorian Government was conducting an inquiry into combustible cladding after the Docklands fire in Melbourne in November 2014.

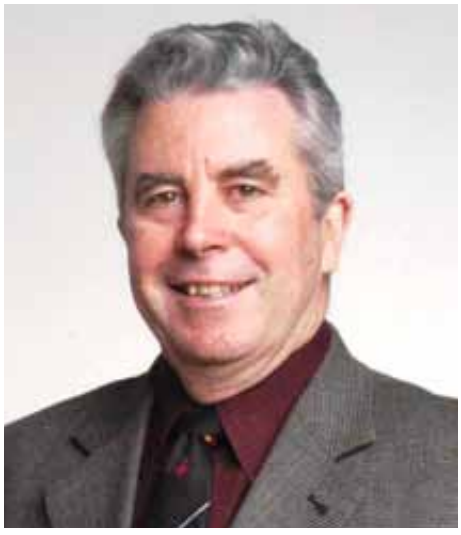
That interest was further piqued on learning the same cladding accelerated the flames in the New Year's Eve blaze in Dubai in 2015 and was available from a number of New Zealand suppliers.

That spectacular blaze soared up the sides of the 63-storey building within minutes, fueled by the melting composite panels. Internal sprinkler systems kept the fire, caused by an electrical fault, contained to the outside of the building, where sandwich panels melted and broke creating a flaming trail of debris as they fell to the ground.

Low cost replicas

Alisa Bennett, national specification manager for building products firm PSP, is also concerned less scrupulous New Zealand contractors and installers may be substituting non-fire rated product to save costs.

Lawyer Adina Thorn



Expert witness Brian Davey

Alisa Bennett, national specification manager for building products company PSP

While most suppliers and distributors are aware of the risks and educating customers about fire rating, they have no control over "contractors or installers substituting this for a lower cost material that isn't fit for purpose".

Bennett says the problem is compounded by the fact that ACM is now almost considered generic. "It's very difficult to tell the difference between fire rated and non-fire rated product, even building inspectors and project managers on site have difficulty clarifying this."

There are a multitude of ACM brands in the local market; Alucobond, Alucobest, Alpolic, Renabond…and she says if you walked around construction areas in Christchurch you would find "at least half a dozen different Chinese brands".

Bennett says some installers import their own product and in Auckland they're bringing in container loads of basic ACM, some with .3mm aluminium skins when specified product is typically thicker.

The problem is they all look similar and once the wrapping is off "it's difficult to tell whether they're fire-rated or not" and generic product can be imported without testing.

As for historic high rise buildings constructed before the Building Code was tightened, she claims there are "huge numbers" without fire rated cladding.

While PSP's non-fire rated ACM panels are typically used for signage, she says there is nothing in the Building Code to prevent them being used on residential and light commercial premises up to two storeys high, although her company discourages this.

The Ministry of Business Innovation and Employment (MBIE) is currently considering how the use of ACM panels might affect buildings in New Zealand based on the findings of the Victorian Building Authority (VBA)

John Gardner, manager of determinations and assurance, says MBIE has briefed senior building control managers at metropolitan councils where multi-storey buildings are common. As at mid-February it had not been advised of any instances of inappropriate use of the material.

"MBIE will soon be issuing two sets of guidance to help designers, councils, product suppliers and assessors deal with aluminium composite panels."

Gardner says this will explain Building Code obligations in detail related to external wall cladding products with advice on correct use and compliance.

Society of Fire Protection Engineers (SFPE) president Geoff Merryweather says the requirements haven't changed since 1991 and should be well known. The only way cheaper systems could be substituted would be if the architect hasn't specified the cladding correctly to meet the fire design.

He agrees that "it is visually difficult if not impossible" to tell the difference between the two types of panel unless you are an expert on cladding

NZ Fire Service chief engineer Simon Davis is unaware of any widespread use of non-fire rated panels, especially in residential tenancies.

He believes most buildings are in accordance with the Acceptable Solutions of the Building Code where there's comprehensive coverage of external facades (Section 5.8 on Exterior Surface finishes relating to ISO 5660)

The standards relate to the fire properties of external wall cladding systems which must comply to "reaction-to-fire tests, heat release, smoke production and 'mass loss' and 'heat release' rates (C7.1.1)." Panels must withstand a 15-minute heat test in a range of conditions. Cladding with a metal facing and a melting point of less than 750°C, including aluminium, covering a combustible core or insulant must also undergo heat tests without the metal facing.

The aftermath of the fire that spread through ACM panels on the Address Hotel in Dubai on New Year's eve 2015.

Davis suggests this type of façade has been less popular in New Zealand following "the problems we've had with leaky buildings." Their use hasn't been raised as an issue by MBIE or NZFS leadership.

PSP's Bennett says getting a building consent is now a very onerous process for specifiers of ACM but product substitution is an "ongoing challenge" that exists closer to the building process.

In the past architects would often project manage the entire process but since the industry became litigious as a result of weather tightness they're now "very risk averse".

Side view of an ACM panel

Fire resistance under spotlight

Adina Thorn, the Auckland lawyer heading one of several class action cases against providers of building cladding blamed for the leaky building crisis warns fire protection rating could be the next big thing in litigation.

Her $200 million plus claim is on behalf of the owners of 350 buildings and was filed in the High Court in Auckland in December 2015.

The case alleges James Hardie designed, manufactured and sold defective cladding materials made of wood fibre and cement and that joints between sheets filled with plaster cracked when the building moved

James Hardie claims it simply provided sheets of fibrous cement but claimants argue the sheets were part of a cladding system.

Thorn insists the quality of product is not fit for purpose. "James Hardie say they work but we're saying they don't work and couldn't work...They don't join well together, they leak and they're just not a robust system.". If there was expert evidence of a fire rating problem "then our claim is likely to become wider."

Thorn is aware of "a couple of cases before the courts for lack of compliance to do with cladding" and believes fire protection rating could be the next big thing.

She's also aware internal building structures are being found non-fire compliant as part of the leaky building investigations. "All I'm saying is the next area could be defective fire products."

Her firm is backed in its leaky buildings claims by Harbour Litigation Funding, one of the UK's largest providers of litigation funding, which is "massively resourced and has put a whole team of barristers" on the case.

Bennett says many of the larger practitioners are still being dragged through the courts and "while this was not the intention of the law" they're deemed liable as soon as they step on a site.

This means most designers will only back what they draw on the plan but never visit the site "to avoid being liable for any changes that may have been made".

One way to resolve the problem, she suggests, would be to "stitch up" the Building Code so tight so that all building projects have to use fire-rated material.

An ACP panel as part of external cladding

"The code doesn't allow for this at the moment and so non-fire rated product is still being used legally" in residences and light commercial buildings.

Bennet says in Australia the construction company has to offer a warranty but in New Zealand developers or contractors can walk away once they get a code of compliance.

"Maybe contractors should be held accountable for any products they substitute. Legally they're required to go back to the specifier to sign off on any such changes."

Flame spread ignorance

Brian Davey, former NZFS national operations manager called on as an independent expert witness in the inquiry into the 2009 Lakanal House blaze in South London, suggests lower cost and poor understanding often allow panel products to be used without appropriate fire testing.

"While changes to building regulations may address the use of alternate products, there are the issues of existing buildings and the cost of putting things right."

He says there seems to be a lack of understanding by authorities, developers, architects and others relating to the speed of external flame spread.

In the Lakanal case external cladding was a factor contributing to fire spread and at the conclusion of the inquiry in 2013, Davey urged New Zealand firefighters to have more accurate information about buildings, registering unusual layout and construction, to avoid the chaos that caught the London Fire Brigade off-guard.

Davey wonders whether the use of ACMs poses a greater risk to the public and firefighters "as they fall during a fire", potentially supporting an argument for retrofitting once such use has been identified.

Dubai newspaper, The National, questioned the quality of fire testing and claimed most of the towers built there prior to 2012 used non-fire-rated exterior cladding.

The 35,000 square metres of composite panels that covered The Address Hotel were made by UAE-based Eurocon Building Industries, which claimed they were fire tested in 2007.

Samer Barakat, the chief executive of Alumco which supplied the panels agreed two thirds of Dubai's buildings were covered in non-fire rated aluminium composite panels which complied with specifications at the time.

While much attention was on the combustibility of the panels, there was little focus on the silicone and rubber gaskets on building facades which Baraket said were also combustible and "may not be fire rated".

The National, said that during Dubai's property boom years most buildings did not use fire-rated panels which were only stipulated when UAE authorities introduced new building codes in mid-2013.

That was too late to prevent the New Year's Eve blaze or the 79-story Torch skyscraper, which opened in 2011 and caught fire in February 2015. Owners were ordered to have damaged panels replaced with fireproof cladding.

The problem hit closer to home when flames ripped through the 21-storey Lacrosse apartment building in Melbourne's Docklands in November 2014 and investigators blamed the rapid spread on cheap cladding imported from China.

"Panels must withstand a 15-minute heat test in a range of conditions. Cladding with a metal facing and a melting point of less than 750°C, including aluminium…must also undergo heat tests without the metal facing."

NZ Fire Service chief engineer, Simon Davis

A cigarette left burning on a balcony table sparked a fire that engulfed 13 storeys in less than 15 minutes forcing the evacuation of up to 400 people.

The product specified in the building consent was Alucobond which has a fire resistant mineral fibre core on the inside but this was substituted with Alcubest with aluminium on the outside and polythene or plastic fibre inside.

CSIRO combustibility tests found it to be highly flammable and in further tests conducted with Melbourne's Metropolitan Fire Brigade, Alucobest caught fire in less than a minute.

The owners of the 400 apartment Lacrosse building were given less than a year to replace non-compliant Alucobest cladding

A major investigation from May 2015 revealed the product in question had been used in many high rise buildings in major cities throughout Australia. The Victorian Building Authority (VBA) issued audit notices to builders and surveyors to investigate 170 buildings.

In October 2015 the Metropolitan Fire Brigade placed six major buildings, including the Royal Women's Hospital, a billion dollar Victorian Cancer Centre still under construction, two apartment buildings and a nursing home, on a "heightened response" due to fears flammable cladding could fuel an unusually ferocious blaze.

This new rating would see extra firefighters and trucks called in the event of a fire.

"Why they could catch fire - and why entire buildings are covered with flammable material in the first place - are topics worth pursuing," said engineering professor Karl Stephan in Mercatornet.com days after the latest Dubai blaze.

He says heat-softening (thermoplastic) plastics burn very easily and despite fire retardant materials being introduced into the plastic core of such panels to make them fire resistant, US building code authorities continue to prohibit them from use in high rise buildings taller than four storeys.

Stephan claims that if one panel near the base of a clad building catches fire "you are in big trouble". Aluminium has a low melting point and melts away from the plastic cladding as soon as the flame reaches it "exposing more plastic to air and letting the fire feed on itself with hot air and flames travelling upward to the next panel and so on".

He says this is what happened in Dubai to the Address Hotel, several other Dubai high rises and in China, Melbourne and elsewhere in recent years

Both Australia and the UAE have changed their building codes to require sandwich panels to pass certain fire-retardant tests, although Stephan suggests the problem still remains as to how resistant a panel needs to be to prevent a fire spreading on a tall building.

Additional sources:

Mercatornet: *www.mercatornet.com; keywords Stephan, Dubai fire*

Gulf News: *http://gulfnews.com/news/uae/property/tower-cladding-in-uae-fuels-fire-1.1016836*

Radio NZ: *http://www.radionz.co.nz/news/national/272603/investigation-into-aluminium-cladding-in-nz*

Helping your apprentice **develop a career that rocks!**

The fire protection industry offers great careers. And, as the results of recent Competenz research show (Getting the best from your investment in training an apprentice, October 2015), career opportunities are particularly important to apprentices. In fact, offering career opportunities, and talking about these opportunities early in an apprenticeship, are key to retaining apprentices when they qualify.

Here are some tips to help you help your apprentices build successful careers with your business.

1. **Get to know your apprentice as a person**
   Understand their personality, motivations, and interests outside work. Fulfilling careers take all these factors into account.

2. **Talk about career opportunities early in the apprenticeship**
   This will motivate your apprentices to learn and help you retain them when they qualify.

3. **Set clear expectations**
   It's your apprentice's career, not yours. Make sure they understand that they need to put their hand up for development opportunities – and that you'll support them when they do.

4. **Develop a career plan with your apprentice**
   Identify their career goals, the skills and experience they need, how they'll gain these and by when. Then track their progress.

5. **Take a broad view of career opportunities**
   These take many forms other than 'climbing the ladder'. Involve apprentices in business activities like job costing; let them supervise others as they gain experience; offer them training to help them gain skills like team management.

6. **Hold regular 'career conversations' – and follow up**
   Set aside time several times a year to talk about career goals and progress. Ask thought-provoking questions and give apprentices time to reflect. Then follow up, with a project or training opportunity. This shows your apprentice that you're genuinely interested in th0eir career.

7. **Connect your apprentice to development opportunities**
   Find them a mentor; identify opportunities for further training (e.g. management); seek out projects that help them gain experience.

8. **Help your apprentice build 'soft skills'**
   Being a technical expert isn't enough to get ahead in a career. Help your apprentice communicate effectively, solve problems, and work well under pressure.

9. **Focus on your apprentice's strengths, not their weaknesses**
   Many career coaches believe that focussing on strengths is the key to a successful career. If your apprentice is particularly good at an activity and enjoys it, help them be the best they can at it.

10. **Help your apprentice look ahead**
    Talk to your apprentice about future trends in your industry *(e.g. new technology they need to master)*.

More information
Your Competenz account manager John Stevenson can give you more information to help you support your apprentices' careers, including advice on career development and training programmes.

j.stevenson@competenz.org.nz
Ph: 09 539 9888 or 027 692 3760
www.competenz.org.nz

Getting Flexible with Fire Protection

By Jack Carbone, Senior Fire Protection Engineer at Victaulic

Invented before the turn of the 20th century, flexible metal hoses have been utilised in a wide range of industries and applications, but only recently have they experienced significant growth. The pioneering inspiration behind the original concept of a metal hose providing flexible, leak-tight, reliable and corrosion-resistant conveyance of fluid is as relevant today as it was over one hundred years ago, particularly when considering the life safety and property protection aspects that modern fire sprinkler systems are expected to provide.

Flexible hoses were used to connect fire sprinklers to their supply lines in lieu of traditional threaded steel pipe. Since then, the inherent mechanical benefits, together with ease and speed of installation, have driven a significant surge in the popularity and use of these products. This has resulted in the adoption, specification and installation of flexible sprinkler hoses in fire sprinkler systems globally.

"Why should I use flexible sprinkler hoses?
I've always used hard-pipe."
The adoption rate of flexible sprinkler hoses over traditional hard pipe arm-overs has steadily increased over the past several years and will continue as the installation and performance benefits continue to be fully realised. While the reasons for the rapid increase in popularity have focused on the labour savings and improved project completion rates, there are also several critical performance and safety benefits flexible sprinkler hoses provide over traditional hard pipe.

Foundations settle and ceilings can shift and sag over time. This presents a problem specifically with respect to the sprinkler position in relation to the ceiling surface. By code, hard piping is required to be anchored to the building structure separate from the ceiling structure. Because of this de-coupling between the pipe and ceiling, the sprinkler elevation relative to the finished ceiling surface cannot always be guaranteed to remain constant. Under an extreme "sagging" condition of the ceiling surface, a sprinkler can become excessively recessed above the ceiling surface over time, potentially to an installed condition considered to be outside its agency Listing or Approval.

What this really means is that in the event of a fire, the sprinkler's operational response time and spray pattern characteristics would be severely impacted, thereby allowing the fire to grow unchecked in the affected area. In contrast, a flexible sprinkler hose is required to be securely attached with an anchoring bracket to the ceiling's structural elements, such as suspended "T-grid" ceiling channels or wood/metal joists or studs. This positive bracket attachment to the ceiling structure ensures the elevation of the sprinkler remains consistent over time. The inherent "adjustability" of the flexible hose accommodates the expansion, contraction, and settlement of the ceiling structure, preserving the designed operational response and water distribution characteristics of the sprinkler.

DEFINING INNOVATION *since* 1919

Vic Flex™

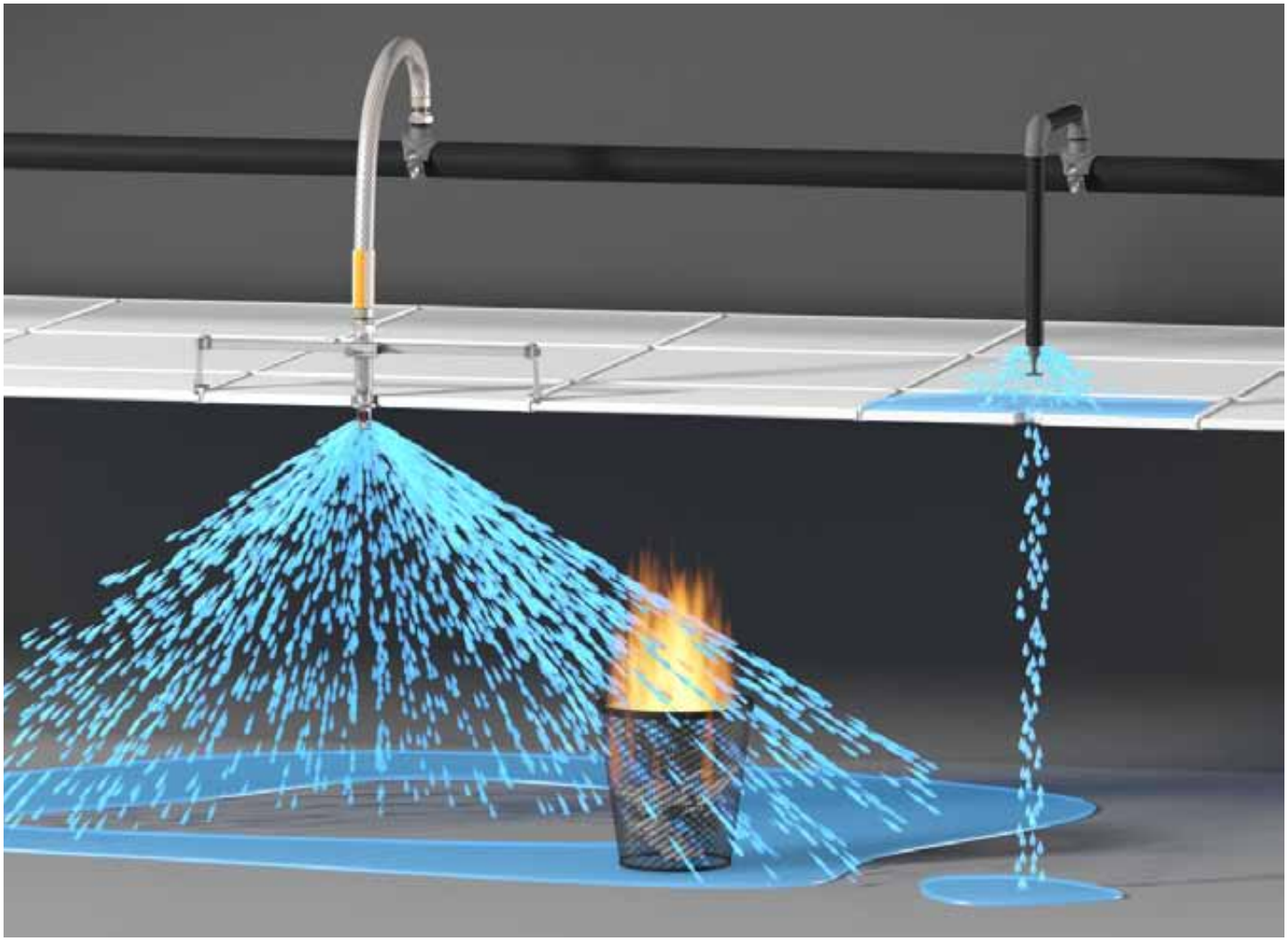
SPRINKLER FITTING SYSTEMS

CONFIDENCE. SPEED. PERFORMANCE.
Style AB6 Bracket for Cold Storage Applications

victaulicfire.com | vicaust@victaulic.com

9512 REV A 02/2016

Victaulic®



Additionally, due to their inherent properties and required installation designs, flexible sprinkler hoses also provide a greater level of performance in seismic events than hard pipe.

Different design elements:
All hoses are not created equal
Flexible sprinkler hoses currently available on the market today have vastly different design constructions. Most are manufactured from an austenitic grade of stainless steel; however some designs are "braided" hoses, while others are "non-braided". Additionally, subsets of each of these may have "wide pitch" or "narrow pitch" convolutions – again, each having some very important trade-offs affecting key performance characteristics of a hose, including minimum bend radius, flexibility and pressure resistance

Braided sprinkler hoses are designed with an external stainless steel wire woven sleeve providing the necessary strength to withstand internal forces from system pressures, while the corrugated tubing underneath is able to remain relatively unaffected and flexible. The non-braided hose's convolutions are farther apart ("wide pitch"), thereby reducing flexibility and increasing stiffness. Because this type must simultaneously maintain pressure resistance while attempting to provide flexibility, albeit significantly diminished, the non-braided type falls short of fully reconciling these two critical features. Comparatively, braided hoses can withstand higher pressures than non-braided hoses without permanent elongation or deformation. Braided hoses typically are also capable of achieving a smaller bend radius, permitting a greater number of bends, resulting in the ability to accommodate installations in tighter, lower clearance locations. The external braiding also provides vibration attenuation properties in a high flow condition and an added level of external abrasion protection.

"Wide pitch" hose, either braided or non-braided, is more difficult to bend due to its inherently stiff cross-section and is more susceptible to "kinking" upon installation. "Kinking", defined as a reduction in cross-sectional area due to inducing a bend beyond its limits, can occur during installation, which results in a deleterious effect on hydraulic friction-loss and corrosion resistance. In contrast, "narrow pitch" hose provides greater flexibility due to the increased number of convolutions per unit length, resulting in less effort to bend, and in many cases, eliminating the possibility of "kinking".

While non-braided hose types continue to be used and are accepted, the clear answer is that "narrow pitch" braided hose types provide a higher level of performance and reliability. Because of their superior flexibility, higher pressure ratings, vibration attenuation properties and safer net-installed-condition,

these "narrow pitch" braided hose types have quickly become the standard within the fire sprinkler industry.

Regulatory Testing and Approvals

Over the past decade, industry standards governing the performance and manufacturing requirements of flexible sprinkler hoses and their anchoring brackets were set, with an average of 16 distinct performance tests between them. The requirements include accelerated corrosion tests, high pressure activation and flow tests, long-term heat aging tests, hydrostatic pressure tests including water hammer, fatigue flexibility tests, low temperature tests, and an extensive series of vibration tests, among others.

During initial type-testing of a design, each model of flexible sprinkler hose and its anchoring bracket is subjected to a series of controlled vibrations at varying frequencies and displacements. Connected to a branch-pipe and anchored to simulated ceiling grid structures, the flexible sprinkler hose assembly is subjected to 90 hours of vibration cycles in each three-dimensional axis from 18 to 37 Hertz and at a maximum displacement of about 1/8 inch. Following the vibrational fatigue condition, the hose assembly must pass hydrostatic pressure tests to multiple times the rated working pressure without leakage. Additionally, approved flexible sprinkler hoses are subjected to cyclical fatigue tests, "U-bending" a hose at its minimum allowable bend radius upwards of 50,000 times, and again must pass hydrostatic pressure tests without leakage at several times its rated working pressure.

To meet the requirements established by the regulatory agencies, all manufacturers are required to conduct factory pressure tests on 100% of their flexible sprinkler hose production. These tests are intended to ensure leak-tight performance at a pressure of up to twice its rating. Also, random samples are required to be taken at periodic intervals to perform additional required quality checks, such as hydrostatic burst testing, elongation under hydrostatic pressure, and dimensional checks.

Similar to any listed or approved fire protection product, the regulatory agencies conduct periodic audits at each manufacturer's production facility. Agency auditors will check records of the mandatory production testing, compare product drawings with actual production parts, verify the listing or approval mark is applied correctly, and conduct an overall survey of the manufacturing process. All of this activity is designed to ensure flexible sprinkler hoses and anchoring brackets are consistently produced to the manufacturer's specifications and continuously meet the performance levels defined by the agency's standards.

Conclusion

Today, there are a wide range of flexible sprinkler hose models, coupled with an equally large selection of brackets, fittings and other accessories, available for a broad range of building and construction types, system designs and water delivery requirements. Flexible sprinkler hoses not only install faster than hard-pipe, but more importantly they are able to accommodate ceiling shifts and sagging over time, ensuring sprinklers remain at their original installed elevation. When manufactured under robust quality systems, subject to periodic audits, and carrying global product approvals, flexible sprinkler hoses are able to help ensure sprinkler systems remain reliably in service and ready to provide their rated fire suppression capability in any critical event. As building owners, insurance underwriters, regulatory agencies and authorities-having-jurisdiction all require an increasingly high level of performance, safety and reliability of a fire sprinkler system throughout its life, these products have become an easy choice in meeting all of these requirements.

Skills shortage
FPANZ priority

Raising the profile of fire protection, attracting new recruits to address skill shortages and ensuring they get the right qualifications are priorities for new Fire Protection Association (FPANZ) executive director Scott Lawson.

He says the industry is under pressure needing more "grass roots trainees" and investment in training as it moves into a new era of professionalism.

Lawson, who moved into his new role in December 2015 has "hit the deck running" well aware of industry struggles but admitting "there's no overnight fix."

He says FPANZ wants to be the conduit through which training and training outlets move to the next level and will talk to Government departments to see how they can help attract more recruits.

"People talk about becoming a plumber or an electrician but not a fire alarm or sprinkler technician. We have to raise that profile because they're good paying jobs as compared to some other industries."

He says the industry is facing a skill shortage and a culture has grown up of "the good guys getting paid good money to go from one company to another" and is "not doing a good enough job of filling those gaps".

Lawson stepped up to replace executive director Keith Blind who's now become FPANZ president and will continue having an active role in the strategic direction and guidance of the organisation. Chris Mak, a certifier with Aon sprinkler systems is new vice president.

Lawson, with 26-years in the fire protection industry came from a fire detection and alarm background having worked his way up from technician with Wormald to distribution and logistics with Tyco locally and in Australia.

Scott was bought in as a contractor in mid-2014 to assist FPANZ with its new membership drive, working closely with past president David Nathan and Keith Blind in the restructuring process.

He's been with the industry through major changes. "When I started out you were paired up with an older experienced person or tradesman who had been in the industry a long time and then later you trained people but there were no formal qualifications."

Much industry training comes through Firetech Training, a private company owned by Fire Protection Inspection Services with key industry stakeholders.

Lawson says there's some discussion around the future as all qualifications are in the process of being rewritten. "Competenz is involved in looking at what's required and what industry knowledge and input is needed."

He wants the profile raised so FPANZ becomes first port of call when people are having problems with work done in their homes or businesses and don't know who to contact about fire protection.

New FPANZ executive director, Scott Lawson

"We'll point them in the right direction to members who are reputable and do aquality job."

While some are pushing for FPANZ to become an industry umbrella group he doesn't think that's the right term, although there is now a much higher level co-operation and interaction between itself and the Society of Fire Protection Engineers (SFPE) and the Institution of Fire Engineers (IFE).

"The FireNZ conference in Wellington last year is a good way of showing how we're working together; it was the biggest and most successful and we'll be building on that this year."

FireNZ 2016

CONFERENCE & EXHIBITION

9TH – 11TH NOVEMBER 2016
ASB SHOWGROUNDS

GREENLANE • AUCKLAND




YELLOW IS OUT
RED IS IN

HURRY: Last day for discounted disposal rate is 31st September 2016

Yellow extinguishers, Halon extinguishers, are so old – if you have one, the chances are they will let you or your family down in a fire.

Halon damages the ozone layer which in turn can affect our health, causing skin cancer, cataracts and other illness as well. Damaging the ozone layer can also impact on our weather, our soil and our crops.

Protect yourself, your family or business, by handing in your old yellow extinguisher. It's easy to do – simply take it to the nearest local approved Fire Extinguisher Service Agent. A list can be found at www.fireprotection.org.nz

While you are there, talk to these experts about your needs and how best to protect against fire, including alternatives such as a red fire extinguisher*, a fire blanket, a smoke alarm, and other effective choices. Often a combination is the best approach.

So **act now** and hand in your old yellow extinguisher. It's a service for the general public and small businesses. A discounted recovery charge will be set at $10 per extinguisher (up to 11kg in size).

For more information
call FPANZ on 09 414 4450
or visit us at www.fireprotection.org.nz

**There is more than one type of red fire extinguisher on the market. Ask which one best suits your needs.*

FPA NEW ZEALAND

Report adds weight to extinguisher debate

The fire and insurance industries have finally crunched the numbers to produce compelling evidence that fire extinguishers and hose reels are essential for building fire protection.

By Keith Newman

A legal requirement for all non-residential buildings to be equipped with handheld firefighting equipment (HOFFE) could save owners and tenants around $47.4 million annually, according to a new report sponsored by the Fire Service Commission contestable research fund

Even after the $23.4m cost of providing extinguishers and hose reels, around $24 million a year could be saved through preventing fires, making a compelling case to turn back the clock to pre-2012 days when this equipment was compulsory.

A new report conducted by the New Zealand Fire Service Commission (NZFSC) and supported by the Fire Protection Association (FPANZ) and the insurance industry confirms the "gut feeling" of various working groups.

The HOFFE report affirms premises are better protected when people can contain or extinguish small fires before they escalate, claiming that unless strong action is taken hand held equipment will continue to be removed from existing buildings or not installed.

The report written by Greg Marr of Civic Futures will inform an ongoing campaign to keep extinguishers in mainstream use, at a time when many developers and building owners believe they're saving money by dumping them.

The reality is failure to have HOFFE has resulted in a growing risk to lives and property resulting in increased fire losses, call outs and pressure on NZFS resources.

The report indicates a 5-15% decline in HOFFE over the near to short term, with the related cost "to building owners and society" increasing up to $5.3m a year.

Baseline for strategy

NZFS engineer Arne Inghelbrecht who managed the collection of data for the report says it "weaves the strands together" for an informed debate after many years of anecdotal evidence and several international reports which showed HOFFE played a major part in minimising fire costs.

Senior fire service management have shown strong interest in using the report as "a baseline for a strategy," says Inghelbrecht with other stakeholders using it to ramp up their educational efforts, ahead of submissions to Government.

The report is also seen as supporting the Fire Service Commission's goal to reduce "the incidence and consequences" of fire in New Zealand. Unless HOFFE is stipulated in legislation, it's feared the Commission's target of keeping non-residential building damage below $55 million per year could be at risk.

The report says the greatest benefit of compulsory HOFFE would be to farm buildings, hospitals, nursing homes, office administration buildings and storage buildings.

Education and industrial buildings, factories, hotels and other accommodation, restaurants and taverns, shops and social, cultural and religious buildings would also derive benefits. Benefit to factories and industrial type buildings was $18m and restaurants and taverns $2.7m.

Although more than two years of solid effort have gone into trying to get the necessary data to support the case, it was only when the NZ Fire Service took over the collection of data on fire extinguisher use from FPANZ that any real progress was made.

The more neutral role of the NZ Fire Service helped change attitudes and resulted in the collection of data from over 500 incidents.

Logical to make changes

FPANZ special interest group (SIG) head Lance Hunt says the decision to go with NZFS dovetailed perfectly into the ongoing review of fire-related legislation and a successful application for a $35,000 grant from the New Zealand Fire Service Contestable Research Fund.

"It's been immensely important to quantify the trend, prove the case and put dollars around the benefits from a public policy point of view so that it is logical to make changes," says Hunt.

Fire extinguishers were considered specified systems requiring mandatory maintenance until the Ministry of Business, Innovation and Employment (MBIE) removed them from the building compliance schedule in March 2012.

Until then most property owners believed HOFFE was required in all commercial and industrial buildings under the Health, Safety and Employment Act, the NZ Fire Service evacuation regulations and ultimately the Building Act.

In other words HOFFE, including fire extinguishers, fire hose reels and fire blankets, were typically available in non-residential buildings as a first line of defence against smaller fires.

The Building Act, solely focused on the safety of building occupants, now makes no mention of fire extinguishers or fire hose reels. While specific standards developed for health and safety, fire access and sprinkler regulations specify this equipment, the Building Act legally overrides these.

Some stakeholders in the new report want HOFFE back on the compliance schedule and for MBIE to rethink its 2012 'clarification' that technically removed

Hoffe Sig Group: Brett Neilsen, Simon Paton, Steve Smith, Lance Hunt, Mark vanDorsten , Eddie Grey

that requirement from the Building Act. They also want the Department of Internal Affairs to support their call in the current Fire Services Act revision.

Still at first base

It's taken two years to gather the numbers and analyse them in a way that is acceptable at the highest levels of decision making but there's still a long way to go before lobbying can begin for law changes.

"This is still first base, there's a long way to get around the diamond. We're taking this seriously in having this data analysed professionally...We will keep reporting back as more data comes to hand but the crusade is really just beginning," says Hunt.

The report suggests that appropriate regulations requiring HOFFE are likely to be "economically desirable and necessary...(but) unlikely to be achieved unless provision is mandatory".

It says regulations should be pursued carefully and in conjunction with the property management industry, with particular attention paid to the life-safety message.

"Any regulations must accommodate the wide range of unusual situations and specific risks across non-residential buildings (and) it would also be appropriate to consider the cost of NZFS (or another agency) operating any HOFFE regulations alongside its existing operations."

In the current environment the report says the fire safety provisions of the Building Code make it "less likely that HOFFE would be provided and maintained in the future"

That's despite past research, including the BERL (2002) report for the Fire Service Commission on the cost of non-residential fires which in 2011 was estimated at $55 million per annum.

Several international reports have already made it clear that between 60-80% of small fires are prevented from escalating through the use of handheld equipment, neither require fire call outs or insurance claims.

Initially the report will be used to raise awareness and for educational purposes. FPANZ special interest group will make it the starting point for a membership education and as part of code of practice on importation and servicing of HOFFE.

The NZFS will use it internally and externally, possibly creating a campaign similar to its smoke alarm awareness.

Raising the level

"It makes common sense to bring HOFFE back into the picture," says Hunt. "The industry has become very deregulated and a lot of product sitting in retail is non-compliant and it's a matter of bridging the gap to make it aligned with what's required at a more professional level."

One of the issues raised in favour of removing HOFFE is that it may distract from the priority to get people out of buildings and that anyone using HOFFE needs to be trained.

While property owners might view this as a life safety issue, Inghelbrecht of the NZFS says the reality is that injury and fatalities in non-resident building fires are relatively rare and its logical that key staff, specifically fire wardens, would be well aware of how to use HOFFE.

FPANZ SIG chairman Hunt says its "a common sense reaction" that people use HOFFE which is simple to operate. In many cases "you will often never know if an extinguisher has been used. It's like a first aid kit that you might use if someone has a minor cut, it never goes to ACC or a doctor."

It would be different however dealing with industrial or other types of fires. "There are areas where you need specialist training and unit standards to qualify."

The big hurdle now is to justify the inevitable costs of installation, maintenance and compliance to property owners and occupiers. "The Government won't act unless it knows this is the right thing to do and that imposing those costs is warranted."

The report shows that even after HOFFE costs are added to fire protection systems the potential savings are significant. There will also be an impact on the Fire Service levy which reflects the cost of operating the NZFS and the cost of fire damage.

The report notes that the NZFS, through its nationwide presence, its databases and online service portals could operate the regulations at a moderate cost.

The HOFFE Report recommends the NZFS continue monitoring data from its evacuation scheme database to identify further trends in HOFFE provision for existing and new buildings.

Future extinguisher surveys could capture more information about the object on fire, and whether the fire is "contained" to further assist with quantifying the benefits of HOFFE.

Further data is likely to be requested from Statistics New Zealand to determine whether it can provide details on the scale of unreported fires through its business frame survey.

It will be up to each group FPANZ, the Insurance Council and NZFS to decide how to use the report and how to respond when the time comes for submissions to try and amend legislation.

The Department of Internal Affairs, which administers the fire safety and evacuation regulations has indicated it is open to discussing the various legislative and regulatory options available.

Volunteer culture, funding at risk in NZFS shake-up

By Keith Newman

Maintaining strong relationships between volunteer fire fighters and their communities and concerns about equitable funding are high on the list of unresolved issues as the logistics of creating a single national fire organisation are worked through.

United Fire Brigades' Association (UFBA) chief executive George Verry, representing 80% of all fire personnel, is urging the Government not to undermine the carefully cultivated community-based culture volunteer fire brigades have built up over more than a century.

He says the existing structure, similar to that of a club or incorporated society, is an "excellent model to ensure there's a cohesive group".

Verry says it's critical this continues and warns a new centralised culture overlaid on volunteer brigades could result in the loss of that unique community relationship.

The fire chief and deputy have a contractual arrangement with the NZFS to look after a particular district, which produces confidence in that community.

He says, the current structure gives chiefs a lot of power with a set of rules that "varies only slightly around the country" along with disciplinary measures similar to the armed forces.

The UFBA is submitting on ways to ensure this culture is not lost, with Verry confident Internal Affairs Minister Peter Dunne will listen to its views and consult on proposed changes "before it hits the headlines".

Powerful network

The UFBA was among those that put forward comprehensive submissions to the Fire Services Review. While not wanting to play a political card, Verry says with 10,500 volunteers including rural services, "all with pretty good roots into their communities, we have a powerful network".

Responding to recent allegations of bullying in the fire service, Verry concedes that paid firefighters in particular have a tendency to be a little macho, and this is currently being investigated as part of the restructuring.

Verry says there's much detail to work through in revising the 40-year old Fire Services Act (1975), particularly around defining the areas where volunteer fire fighters are operating outside the original mandate to fight fires.

That's not just road crash, rescue and medical emergencies but fire education in schools and visiting the homes of the elderly and infirm "changing batteries in their smoke alarms".

Changes to the Building Act also place further responsibilities on fire fighters with its beefed up fire


George Verry, UFBA CEO


Internal Affairs minister Peter Dunne


Insurance Council head Tim Grafton

protection requirements. "While we felt our submission was well received...we want to be confident we can have strong input into the drafting of legislation."

Other outstanding issues that need working through include whether current funding arrangements are adequate for the new regime, particularly with the inclusion of rural firefighters into the proposed new structure.

Although Minister Dunne has promised increased funding for volunteers, Verry says the reality may present a challenge. "If you have one fire service you probably need to have the same level of equipment, uniforms and safety gear and that'll be a challenge."

While local authorities may be relieved that they're no longer going to be responsible for funding rural fire brigades, Verry says "the devil is in the detail". That will mean extra funding has to come from somewhere.

Requiring more for less?

Currently individual rural fire forces and their funding vary depending on which local authority they're under, community needs and the level of volunteers in small towns. "It's a mixed bag and there will be a few challenges putting all this together as one fire service."

He concedes there's a risk some groups may be disadvantaged by being asked to do more with less funding. Ownership of assets such as equipment and even fire stations paid for through community fundraising may also present an issue in the transition.

Verry says more work needs to be done on how the NZFS is funded, particularly considering the shifting workload. UFBA continues to argue the burden should fall where the benefits accrue, that NZFS efforts should at least be partly funded by ACC, Land Transport New Zealand and the Ministry of Health.

"A golden opportunity to pick up some of that funding came when the cost of motor registration was reduced and perhaps the Ministry of Health should contribute to the growing involvement of volunteers in CPR and medical emergency call outs."

Verry says the Government is probably resisting change because its "nice and convenient to have it stuck on an insurance premium and get a bulk cheque from the insurance companies."

He points out that there's also been something of a "tax avoidance" approach from certain parties who arrange their affairs to not pay the Fire Service Levy. "Our overall view is that there's got to be a more equitable way to do this."

Funding rethink urged

The Insurance Council of New Zealand (ICNZ) has also waged a long campaign pushing for general taxation and property-based rating options, dismissed by Minister Dunne as "too expensive" before the Fire Services Review was completed.

The review stated the main source of funding, levies on home and building insurance, would not change although "some details" on future funding options were still being worked through.

ICNZ chief executive, Tim Grafton, says that does not remove "the glaring unfairness of funding a public good service by only taxing those who do the right thing and insure themselves".

He urges the Government, "which contributes a paltry amount" to make a much greater contribution

The ICNZ and the UFBA agree those who fail to insure their property for fire, are subsidised by those who do pay premiums and get the additional benefit of accident rescues, ambulance support and other activities.

Grafton says over 16 independent reports on the Fire Service over the past 20 years have mostly recommended shifting away from a levy on insurance.

"It is 150 years since the UK Government took over the running and funding of brigades. Australia has also thrown out a levy on insurance leaving New Zealand out of step with the rest of the world."

ICNZ will continue to advocate for the removal of the levy from motor vehicle insurance and a greater contribution from the Crown or Government departments to fund the NZFS.

"The cost of the service's response to motor vehicle accidents should be funded via motor vehicle registration or the dedicated fund within NZTA that addresses road safety issues."

After all, says Grafton, the attendance by the NZFS at a road accident is not to save the vehicle but the person inside. ICNZ will continue its advocacy on the issue until "a Government" supports "a just, fairer way of funding the Fire Service".

Fire engineering under microscope

By Keith Newman

Fire protection engineering needs to pick up its game in construction and design quality, documentation, maintenance and improved training, says Society of Fire Protection Engineers president, Geoff Merryweather.And if the prescriptive raft of changes going on across the Building Act, Building Code, Health and Safety Act and other legislation aren't incentive enough then the threat of legal action may be.

Fire engineers are increasingly coming under the microscope for their involvement in designing, assessing and signing off work with law suits looming if something goes wrong over the life of a building.

"I personally think it's something we've done fairly poorly in New Zealand," says Merryweather who recently stepped up to the role of SFPE president.

SFPE president, Geoff Merryweather

> *"They obviously want to limit their liability, so they're looking at passing it onto the fire engineers. The problem with that is fire engineers don't design or specify stuff."*
>
> **SFPE president Geoff Merryweather**

Fire tends to drive elements of building design and revised codes, regulations and legislation require fire engineers to be more involved at resource consent stage or earlier, says Merryweather.

"It's is going to affect us all in the fire industry, because fire's the next big 'leaky buildings' in my opinion and that of several lawyers," says Merryweather.

More involved earlier

The issue of liability is bringing about a massive rethink, with local authorities in particular becoming more robust about who they allow to sign off projects.

"Building consent authorities, usually the local council, are regularly audited and need to justify why they issued a consent, and why they relied on certain information," he says.

"If the fire engineer has issued a PS4 (engineer's producer statement as part of a construction review), been involved in construction observation or even passed the site gate as I jokingly put it sometimes, they get named in the action because they shotgun everybody in."

The challenges facing fire engineers not only highlight inadequacies of the past but the differences between the way things are done here.

"New Zealand's a little bit unusual internationally...If you go to Australia, typically they'll have full design fire protection drawings... Whereas we tend to go for design and build, which is perhaps where things get a bit waffly."

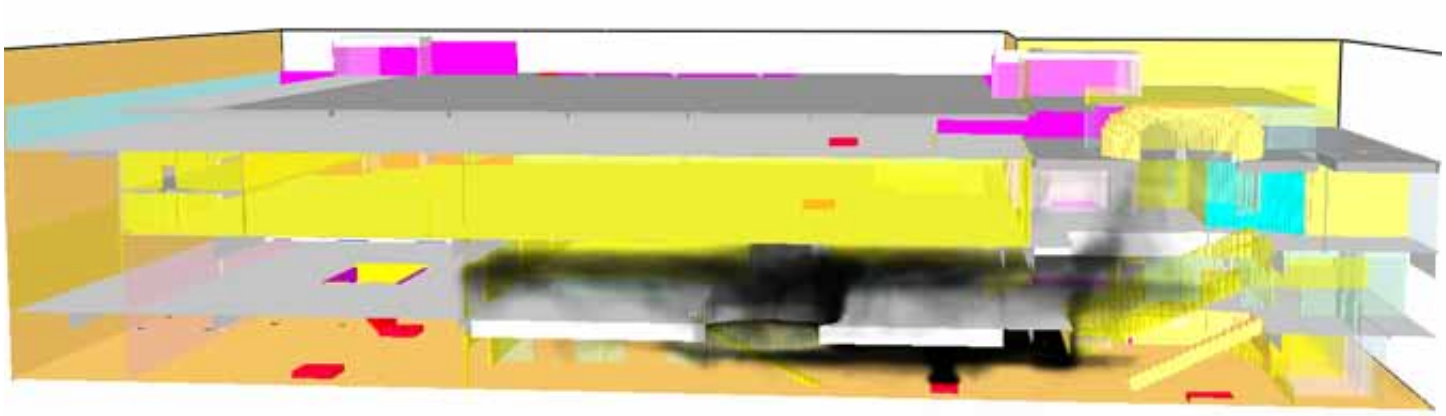
Elsewhere you don't have a fire report because the architect is responsible for ensuring it meets acceptable solution building requirements. "The fire engineer comes on board when there's a problem that doesn't meet the prescriptive code."

Locally Merryweather says fire engineers have done fire reports by checking building compliance against documents which were fairly generous and often covering most building types.

Each discipline works separately often unaware of each other's requirements and "it doesn't always go well," highlighting ongoing issues with training and skills, says Merryweather.

Caught in the middle

What's being picked up now is historical, with councils becoming more aware of their liability, "and we're talking millions of dollars in some claims," much of it on the back of leaky buildings.



A computer model of a South Island shopping centre showing how smoke would travel through the building atriums to assist with resolving design details

"They obviously want to limit their liability, so they're looking at passing it onto the fire engineers. The problem with that is fire engineers don't design or specify stuff."

While fire engineers might say a wall needs to be built to withstand 60 minutes in a fire situation, the architect can still go away and say it's going to be Gib board, says Merryweather.

Fire engineers are caught in the middle. "The issue is that we're potentially becoming the equivalent of a private certifier. If a fire engineer completes a PS4 the council say, 'Great, the building complies' and signs it off, and in effect they're taking responsibility for at least the next 10 years."

Merryweather continues to discuss the matter with the Institution of Professional Engineers (IPENZ) to find a solution. "Councils obviously want to pass the buck onto somebody else and the architects won't issue PS4s even though they perhaps designed and specified the particular wall."

He says the New Zealand Institute of Architects (NZIA) is well aware of this "because they've had an early start on it with leaky buildings."

Like leaky buildings, he says, if the fire design, construction and inspection were done correctly "you wouldn't have the problem at the end."

World is watching

While major changes are underway to promote "better cross discipline awareness and training rather than learning the lesson after you need it" there's still a lot of work to do.

Merryweather says the world is watching how New Zealand copes with changes designed to provide a consistent set of inputs and acceptance criteria between projects, particularly the Verification Method C/VM2 as part of the Building Act 2012.

"We'll be one of the first in the world with a performance-based building code that goes beyond the aspirational aims of the Building Code 1991."

Previously he says It was hard to know whether a building was compliant. The "brave step" of putting numbers behind the code means there's now "a hard benchmark" and everyone's watching to see whether the VM is workable or there are downstream impacts where buildings might be compliant but not safe.

There have already been five revisions (of C/VM2) within 18 months "because testing in the real world showed up unintended consequences the committee hadn't realised" making it difficult to manage and design buildings.

Geoff Merryweather

He says there have already been five revisions within 18 months "because testing in the real world showed up unintended consequences the committee hadn't realised" making it difficult to manage and design buildings. Merryweather says it's become bigger than anyone ever imagined "once you get into the details, applications and practicality."

A lot will come back to the quality methods of the engineer. "It's no different to any other engineering. You can get any answer you want if you ask the right question."

Documentation delays

Further efforts to clarify fire safety considerations across disciplines are expected through a long delayed revision of the Institute of Professional Engineers (IPENZ) Practice Note 22 (PN 22) first introduced around 2007 to improve the quality of documentation and building design.

Initially, Merryweather says, expectations were low and a generic fire report was delivered. Problems arose when costs increased along with skill shortages and pressure to perform.

"Often the fire engineer hands in his report and account but his recommendations aren't translated into the architect's drawings, the mechanical drawings or anywhere else."

No-one's responsible for stitching it all together and making sure it's correct which results in "mutual finger pointing".

A classic case might be the need for a specific kind of paint for fire protection of steel beams. "Who

specifies it, is it part of a structural system that takes loads or the architect's responsibility? Who's responsible for deciding which steel structure is to be protected and whether it needs to be spray-on mineral fibre, or what?"

Then, he asks, who will ensure it ends up in the plans with the appropriate set of documentation, and that the builder actually puts it on?

PN22, championed by SPFE, an IPENZ technical working group on fire related issues, the Institution of Fire Engineers (IFE), the NZ Fire Service and the then Department of Building and Housing (now MBIE), was intended to bring some clarity to all of this

"If it's done properly it should improve consenting times, reduce contract variations and remedial works and the liability of those involved in the industry."

Merryweather is hopeful the changes, currently with the New Zealand Construction Industry Council (NZCIC), will be consulted on in 2016 although it's hardly a priority. "Given that they've got about 50 industry groups, it's a long and slow process and isn't going to happen quickly."

Current guidelines only cover the "larger scale deliverables and responsibilities over the design programme and contract".

Incomplete consents

While the level of documentation is improving, Merryweather says there are definitely cases where building consents are ill considered or incomplete and can often be traced back to the design team.

While everybody is cross-checking their work and other people's work "to the limits of their knowledge", time and knowledge are often limited.

As a fire engineer Merryweather says he might look over the mechanical and architectural drawings and ensure the fire dampers are in the walls for example. "If something's been missed lawyers become involved and the person who's signed the work off becomes liable."

Having supporting documents for the Building Act 2012 Verification Method which he calls "fire engineering for dummies...a cook book for fire engineering designs" makes it simpler because it contains the inputs and expected outcomes.

Merryweather says the VM has allowed more innovative building designs. "The old alternative solutions tended to be bogged down in a lot of arguments between councils, the NZ Fire Service, engineers and peer reviewers because there was no clear-cut set of rules for good engineering practice."

If followed, the VM should result in a qualified fire engineer being able to sign off fire protection design, escape routes and spread-of-fire in compliance with stated fire ratings.

SFPE is also heavily involved in aspects of the MBIE Fire Review Programme including the role of the NZ Fire Service in the Building Act and other areas of legislation.

Overall, he says, this period of transition means closer working relationships are needed all round. "We can't just look after our own little patch, because it all inter-connects, and a change in the sprinkler standard will affect fire engineers...at least indirectly...If there were no fire safety regulations, our industry wouldn't exist."

Greater cohesion among related industry groups is essential when tackling common issues. "The more people involved...the more likely you are to have changes occurring...A submission from a recognised industry-wide group carries more weight."

Merryweather would like to see FPANZ take on a broader role. "They're seen traditionally as being focused on the contractors but it's quite possible they may well become an umbrella association, for SFPE and FPA as we have done with the FireNZ conferences and with working group committees on specific issues."

SFPE New Zealand

Risk-based thinking challenge for SFPE

Keith Newman

The close-knit fire protection engineering community is being forced to ramp up its technical knowledge and mentoring as it takes on greater responsibility in an increasingly risk-based environment.

Society of Fire Protection Engineers (SFPE) president Geoff Merryweather says risk recognition is going to become more prevalent in terms of legislation and performance-based targets and will require fresh thinking and design that recognises people don't always respond as expected.

For example if an alarm goes off people don't just grab their bag and head for the door, "they wander around, go get the kids, maybe try and finish their shopping first."

He likens the challenge to that of designing buildings to withstand earthquakes "You might say build an earthquake proof building but no-one could afford to build it or live in it, likewise you'll never eliminate fire completely but someone has to determine what is an acceptable level of risk."

Merryweather says there's a worldwide shortage of fire engineers and demand for their skills is expected to grow significantly in New Zealand along with new qualifications to meet market demands. "I don't think any decent fire engineer's ever been unemployed for very long."

Currently there are less than "four dozen" chartered fire engineers in New Zealand. "The reality is fire is only beginning to establish the level of qualifications that are on par with other engineering related disciplines and skills levels."

> *"I don't think any decent fire engineer's ever been unemployed for very long."*
>
> **Geoff Merryweather**

While the centre of higher fire engineer skills is the Canterbury University Engineering School, graduates are already in high demand once they complete their four-year undergraduate degree. "They get offered jobs and don't go on to do another two years to get a Masters in Fire Engineering."

Urestricted term

Historically Merryweather says the term fire engineer has been loosely used in New Zealand. "It's not a restricted term...anyone can call themselves a fire engineer, download a copy of the acceptable solutions and hang out their sign."

However, the role has undergone significant changes in recent years as has the demand for more professionalism, specifically through the changing requirements of the new Building Code and related compliance documents.

SFPE New Zealand is chapter of US-based SFPE International with a primary focus on fire-related design and build.

Its role is to promote fire engineering as a career, ensure technical skills are up to scratch through technical workshops, bring in international experts and assist industry regulator the Ministry of Building Innovation and Employment (MBIE).

SFPE members are heavily involved in working groups assisting with MBIE's Fire Review Programme and the review of the New Zealand Fire Act, and ensuring revisions to the Building Act 2012 and its Acceptable solutions and Verification Methods tie in with other legislation.

The SFPE New Zealand chapter also acts as the Institute of Professional Engineers (IPENZ) technical interest group on matters relating to fire engineering. The membership of about 130, includes "a handful" in the NZ Fire Service engineering unit, those employed across a range of consulting companies including the self-employed, the bulk being consulting engineers.

Two decades later

Merryweather, who became president of the SFPE in November 2015, is director of Anvil Consulting, a chartered fire safety and fire protection engineer with two decades experience in the construction industry, specialising in fire protection, fire engineering and modelling of smoke and fire behaviour.

He says fire engineering is a relatively young industry, coming out of post-war building studies in the UK only really taking off in the past 25-years.

One of the challenges ahead is broadening its reach and using video conferencing to stream technical meetings so it's not so Auckland focused.

Burn Support Group Charitable Trust

Statistics tell us that there are over 500 children a year are admitted into hospital with Burn Injuries serious enough to require hospital admission!!

Burns are traumatic injuries for both patients and their family/whanau. Burn patients can be faced with many losses – their usual physical appearance, sometimes their home, income, and perhaps they are also grieving the loss of a family member or colleague involved in a fire. This is often experienced whilst also enduring a long hospitalisation period. Children who are severely burned often require many operations and special treatments over extended periods of time and have to deal with life-long consequences of disfigurement from their burn injuries. Clearly the emotional and social costs of burns to our children is just too high.

The Burn Support Group Charitable Trust is a non-profit organisation founded in 1987. Burn Support Group is committed to offering individuals who have experienced burn injuries and their families/ whanua, emotional and practical support during recovery and beyond.

- Visiting patients and their families in the Hospital Environment.
- Improving patient care through the funding of equipment to help burn patients, services over and above that are funded by the health service.
- Offering to accompany and support children who have burn injuries when they return to school.
- Providing opportunities for mutual support for burn survivors, workshops, coffee groups and Annual Burn Support Children's camp for 7-18 year olds. Funded completely by Burn Support Charity.
- The once in a life time opportunity to attend the Phoenix World Burn Congress held annually in the U.S.A. Visit website for information on submitting application forms, www.burns.org.nz
- Creating burn prevention awareness by attending appropriate community events with our display stand and relevant resources.
- Working with community groups such as NZ Fire Service, Safekids and Kohanga Reo. Providing free resources to interested schools, clubs and kindergartens.

The Burn Support Group Charitable Trust relies solely on the generous support of the public and different organisations who have and continue to donate generously to the Charity which is very kindly appreciated. We believe Burn Support Charitable Trust Group is making a difference in the community.

Burn Survivor Sunday
(Auckland) - Sunday 13th March
- Sunday 19th June
- Sunday 18th September

Baby Show
- Friday 19th-23th August

Fire Protection Conference
- 10th-12th November
- A.S.B. Stadium, Akld

Phoenix Society World Burn Congress 2016 (Providence Rhode Island, USA)
- 19th-23rd October

Charity Race Night @ Alexandra Park Raceway
- Friday 18th November

Burn Support Christmas Party
- Sunday 4th December

2017 CAMP AWHI-NZ Children's Camp
- December 25th-29th

Yes I want to make a difference to the lives of burn survivors and their families

Please accept my donation of $

Details:

My email address is:

I'd like to donate by:

☐ Online at www.burns.org.nz OR

☐ Enclosed cheque made payable to Burn Support Group Charitable Trust. (PO Box 97164, Manukau City, Auckland 2241)

Please contact me about:

☐ Making regular donations

☐ Leaving a bequest in my will

All donations to the BSG are tax deductible and receipted. Charities Commission No: CC48691.

Loktronic

SECURITY • TECHNOLOGY • RELIABILITY

HOLD ON A MINUTE

...OR AN UNRIVALLED 10+ YEARS!

Not all products are created equal.
Take Loktronic's premium quality Fire Door Holding Electromagnetic FDH40...
they are simply the best in their field.

10 YEAR GUARANTEE

PLAY IT SAFE AND LOCK IN
Loktronic quality, every time

FDH40S: Standard, floor mounted


FDH40SS: Flush mounted


FDH40SS: Surface mounted

Designed, tested and produced in NZ to AS4178

10 year guarantee*

Unbreakable universal mounting

Floor or wall mounting options

Superior quality materials and fastenings

Full and immediate on-shore support

Loktronic Products • Designed, Tested and Produced in N Z • SINCE LNZ 1989

ISO 9001:2008 REGISTERED FIRM

FPA MEMBER

Loktronic

Loktronic Limited Unit 7 19 Edwin Street Mt Eden Auckland
P O Box 8329 Symonds Street Auckland 1150 New Zealand
Ph 64 9 623 3919 Fax 64 9 623 3881 0800 FOR LOK
mail@loktronic.co.nz **www.loktronic.co.nz**

For expert advice and assistance with **your** security locking needs, trust in Loktronic, call us on **0800 367 565**

*Standard terms & conditions of sale apply.

21070

BRANZ

Guide to the Acceptable Solutions: *Protection from Fire*

This guide provides a better understanding of the New Zealand Building Code (NZBC) Acceptable Solutions for Clause C Protection from Fire

Developed for architects, designers and building consent officers, this **free guide** is intended as a basic introduction.

Some content, such as tables, may prove to be useful to those who have a good working knowledge of the document.

This downloadable guide should be used in conjunction with Acceptable Solutions C/AS1–7, as reference is made to various paragraphs within those documents.

The Acceptable Solutions provide one way of meeting the objectives of the NZBC. Buildings designed using the Acceptable Solutions will comply with clauses C1–C6 of the NZBC.