MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

AIDE MEMOIRE

Deaf Action NZ Petition for Mandatory Visual Alarms

Date:	31 October 2016	**Priority:**	Medium
Security Classification:	**In Confidence**	**Tracker number:**	1287 16-17

Information for Minister
Hon Nick Smith Minister for Building and Housing

Contact for telephone discussion (if required)				
Name	**Position**	**Telephone**		**1st contact**
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The following departments/agencies have been consulted [double click box & click 'checked']					
☐ Treasury	☐ MoJ	☐ NZTE	☐ MSD	☐ TEC	☐ MoE
☐ MFAT	☐ MPI	☐ MfE	☐ DIA	☐ TPK	☐ MoH
		☐ Other:	N/A or [Insert agency]; [Insert agency]		

Minister's office to complete:

☐ Approved ☐ Declined
☐ Noted ☐ Needs change
☐ Seen ☐ Overtaken by Events
☐ See Minister's Notes ☐ Withdrawn

Comments:

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Visual Alarms in Response to Deaf Action NZ Petition to Parliament

Date:	31 October 2016	**Priority:**	Medium
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Purpose and summary

1. The purpose of this briefing is to provide you with information:

   - On the petition to *Make Visual Alarms Mandatory in New Zealand*, which MBIE understands is to be presented to Mojo Mathers MP on 2 November on the steps of Parliament by Deaf Action New Zealand
   - On the current requirements for visual alarms to be installed in buildings
   - Why visual alarms are not routinely being installed in more buildings
   - That the Fire Programme project *Evacuation for Persons With Disabilities,* will review the requirements for warning systems for disabled persons.

Background

2. On Monday 1 August 2016 at approximately 4:00pm, a fire drill took place at the Kate Edger building at the University of Auckland. A profoundly deaf student in the building, Mr Dean Buckley, was not alerted to the evacuation. He was left unaware of the fire drill evacuation until he was found by a fire warden and told to leave the building immediately.

3. Mr Buckley expressed his disappointment on social media and was approached by Deaf Action New Zealand to work together on creating a petition to make visual alarms mandatory.

4. MBIE understands that this petition will be presented to Mojo Mathers MP on 2 November. MBIE is not aware of any media coverage that may have been been arranged for this event.

5. Mr Buckley has also written to NZ Fire Service and MBIE regarding this matter, responses from both organisations are attached.

Current Requirements

6. The Building Code (the Code) has provision for warning systems in clause F7 – Warning Systems. This clause requires all buildings to have an appropriate means of warning people to escape in the event of a fire or other emergency. However it does not specify if the alarm has to be auditory and visual.

7. The New Zealand Standard NZS 4121 (Design for access and mobility: Buildings and associated facilities) is cited in the Building Act (the Act) s.119 as an Acceptable Solution. It stipulates in paragraph 4.12 that 'fire alarm systems shall have an audible and visual alerting device'.

8. The Acceptable Solution NZS 4121 is one means of compliance, it is not mandatory to follow the Standard to comply with the Code.

Possible reasons why more visual alarms are not being installed

8. The reasons why visual alarms are not routinely installed in buildings include:

    - The Code does not mandate the requirement for visual alarms
    - There is provision for warning systems in the Code but the only explicit reference to visual alarms is in NZS 4121 (which is cited as an Acceptable Solution), which is not referenced in Code clause F7 – Warning Systems
    - There is insufficient consideration by building professionals of the need to install visual alarms

9. There haven't been any Determinations to provide clarification and guidance on the requirement for visual alarms.

Fire Programme project: Evacuation for Persons with Disabilities

10. The Fire Programme project, *Evacuation for Persons With Disabilities,* will review the requirements for warning systems for disabled persons. The project is planned to commence in early 2017. A working group representing all of the affected stakeholders will provide input to the problem definition and proposed solutions. The working group will include representatives from the organisations representing deaf persons.

11. Mr Buckley approached MBIE directly on behalf of Deaf Action New Zealand to propose visual alarms be made mandatory. We advised him the requirements for visual alarms will be reviewed as part of this project and that Deaf Action New Zealand will have the opportunity to provide input to the project.

12. The output from this project will include, an assessment of whether designers and BCAs are correctly interpreting the current requirements, if the requirements for visual alarms in the Code need to be clarified and strengthened and if additional guidance is needed for designers and BCAs on the requirement for visual alarms.

Derek Baxter, Manager Engineering Design and Science
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Ministry of Business, Innovation and Employment
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7th September 2016

Author - Paul Ryan

Fire Review - 2016

I have prepared the following report to provide a brief snap shot of the process followed in the application of passive fire protection products and some of the issues I come across on a monthly basis.

Brief background:

New Zealand has come a long way with regards to raising the standards of passive fire protection - however - we have a number of historical factors that need to be taken into consideration when evaluating the problems we currently face.

Passive experience, knowledge and education is in short supply within New Zealand and that has a impact all the way through the passive fire process.

The others are construction methods and market size.

The two largest markets in the World are North America who adopt the ASTM standard or Europe who adopt the EN standard.

NZ has quite rightly chosen AS 4072.1 - which is the National Standard for our nearest neighbour Australia.

Both markets are lucky in so much as EN 1366/AS 1530.4 are quite similar standards and in many areas we can utilise NATA accredited fire test laboratories to assess EN systems to AS 4072.1.

Australian construction methods - particularly plasterboard walls and concrete floors - are constructed very similarly to European methods.

New Zealand, however, builds differently to Australia/Europe - which means we limit the number of EN 1366 tested systems we can drawn on for assessment.

It's a real challenge for manufacturers to do specific NZ construction testing while maintaining a commercially viable position within the market.

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1) The standards - rogue statements in the market place!

NZ building code requires all penetration seals to be assessed to the AS 4072.1 standard.

Within the standard it clearly states that only BCA registered bodies (NATA accredited) are permitted to write AS 4072.1 assessment reports.

There is good reason for this, AS 1530.4-2005/AS 4072.1 is the standard NATA accredited laboratories fire test penetrations seals - they are the most knowledgeable party to know the specific differences and what can and can't be assessed.

Over the last twelve months - a number of letters/reports have appeared in the market claiming EN is a tougher test standard than AS - so it's ok to use the product specified within NZ (in brief).

These letters/reports are not written to AS 4072.1 and the statements detailed within are questionable!

These reports have been professionally prepared and look quite "official" in appearance - in some cases they are being accepted as compliant.

This is a dangerous precedent and we should consider some guidance within the C/AS 1-7 emphasising who is a qualified body to write the AS 4072.1 assessment - we need to control the quality of the reports being issued to industry.

2) Engineer Judgements - why do we need them?

New construction projects should incorporate the AS 4072.1 standard - no excuses!

However, we have many older buildings that were built using out dated construction methods which few - if any - passive fire manufacturers have supporting test data for fire sealing penetrations within.

When trying to raise the passive fire safety standards within older buildings - regulators should find a mechanism to allow manufacturers to produce Engineering Judgements (EJ's) to support fire stop system proposals.

An EJ is a manufacturers opinion - the opinion will be based on the manufacturers real time fire testing experience, their knowledge of how substrates and services burn and degrade in a fire and the performance of their individual products.

When a manufacturer produces an EJ - it will reference a number of fire tests supporting the proposal with similar substrates and building services.

Manufacturers EJ should be discussed with the fire engineer and council authority so that all parties understand the methodology behind the proposal before installation proceeds.

We should have clear guidance on EJ's within the review - otherwise we run the risk of building refurbishment projects grinding to a halt as EJ's quite often are the only way forward when dealing with the complexities of older buildings.

Councils appear to struggle approving EJ's as there is no guidance currently in place.

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3) Design - the passive industry involved at the early design stage

The passive fire industry needs to be involved much earlier in the design stage of a construction project.

Most issues are preventable!

A manufacture is best placed to recommend the right product for the application in hand - and should produce test data that supports the specification.

The data should then be over viewed by the fire engineer and written into the specification.

It's fair to say over the last twelve months a number of fire engineers have become more active in questioning what products are being proposed - but unfortunately some architects and fire engineers still lack the experience and knowledge to ask detailed questions of some product applications.

More passive fire education training through the FPA or Architectural /Fire Engineering Associations and perhaps a passive qualification could be a consideration.

4) Third Party Construction monitoring

I think in principle - they are a good idea, I have seen firsthand contractors who have been pulled up for installing a product which has not been properly tested - but I do have major concerns surrounding the conflicts of interest and independence of monitors in such a close nit market as we have in New Zealand.

We need to ensure they have no connections with the suppliers of passive fire protection products or installers of the same in any shape or form!

I don't need to spell out the dangers this could pose to industry if unchecked - unfair competition, favoured products being overlooked during construction- inflated prices and questions to whether they are fit for purpose and if the client is receiving value for money!

If we could find a way of ensuring the third party inspector was absolutely independent - through an independent approval panel via the FPA or similar, the appointment of an independent ombudsmen to police the practice then it would certainly be worth further investigation.

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5) Site Staff Education

There simply isn't enough experience on site with regards to passive fire.

There doesn't seem to be any realisation that there needs to be control of how services are planned and installed on site - and if there isn't any forethought - problems come later in the form of manufacturers not being able to supply products with sufficient test data and councils appearing to be difficult in refusing to sign buildings off which results in delays and elevated costs!

With more training on passive for Managers on sites - maybe a passive qualification similar to the one mentioned above for Architects and Fire Engineers would help make sure the services are planned and installed with passive fire in mind.

6) *Accredited Installer*

Currently in New Zealand we have approximately twenty to twenty five specialist passive fire protection installation companies - most aligned themselves with a particular manufacturer for the majority of their product supply needs.

Each manufacturer supports their installer through training and technical support.

We do have a small number of rogue installers in the market place - who appear to mix and match many manufacturers products and tend to be the ones constantly under the industry spot light.

I believe with continued education of architects, fire engineers, construction site management and councils - these installers will change for the better.

7) *Council approval/Fire Engineers*

I do believe councils are having a tough time of it, they are facing legal issues for historical reasons and are nervous going forward with passive fire protection!

Fire Engineers are in a similar situation.

These nerves and frustrations have been brought about simply because there is no clear guidance with regards to certain areas of the buildings code.

I believe this will ease if we get things right with the up and coming fire review.

Summary -

1) More education for industry - maybe even a qualification with differing levels of experience and knowledge required (what we have currently isn't working, isn't utilised or good enough).

2) Clearer guidelines on EJ's and which bodies are allowed to write AS 4072.1 assessments.

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Passive Fire Protection

Date:	30/10/2015	**Priority:**	Medium
Security Classification:	**In Confidence**	**Tracker number:**	1302 15-16

Information for Minister(s)
Hon Dr Nick Smith Minister of Building and Housing

Contact for telephone discussion (if required)			
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Chris Rutledge	Programme Lead, Fire Review	s 9(2)(a)	✓

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		☐ Other:	N/A		

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Passive Fire Protection

Date:	30/10/2015	**Priority:**	Medium
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Purpose

You requested a briefing on Passive Fire Protection measures in buildings.

This followed an article in the Weekend Herald on 10 October 2015 that highlighted multi-unit apartment buildings in Auckland with compromised passive fire protection systems uncovered in the course of weathertightness remediation works.

Derek Baxter, General Manager Building System Performance
T: s 9(2)(a)
Ministry of Business, Innovation and Employment
30/10/2015

Passive Fire Protection

What is passive fire protection and why it is important

1. Passive fire protection is the fire stopping of gaps and penetrations within and around fire separations. Limiting fire and smoke spread to its area of origin has significant benefit in allowing occupants more time to escape to safety, protecting occupants in other areas and protecting neighbouring property.

2. Passive fire protection systems and features prevent early spread of fire through cavities and premature failure of fire separation to other fire compartments. The components of passive fire protection systems include, fire separation walls, fire collars, sealants, dampers and intumescent paint.

Issues with passive fire protection systems in multi-unit apartment buildings in Auckland

3. The Home Owners and Buyers Association on NZ (HOBANZ) is managing the weathertightness remediation of at least three multi-unit apartment buildings in Auckland. In the course of the remediation works HOBANZ uncovered significant issues with the passive fire protection measures in all three buildings.

4. HOBANZ have provided MBIE with information on the buildings illustrating the passive fire protection issues they have uncovered. A copy of the HOBANZ material is attached and it includes photographs of compromised passive fire protection measures including; unprotected penetrations through fire walls, structural beams not protected with intumescent paint, fire walls not extended to upper floors, ducts with no fire damper and fire walls with non-compliant GIB.

5. The three buildings in question were constructed between 1997 and 2002. The additional costs to fix the passive fire protection systems in these buildings on top of the weathertightness remediation costs range from $1m - $3m.

How widespread are the problems with passive fire protection systems

6. The issues with the quality of passive fire protection systems in high rise buildings are not new, the issue pre-dates the buildings HOBANZ has drawn attention to and anecdotal reporting indicates the issues are continuing to occur.

7. In 2008 The Fire Protection Association of NZ (FPANZ) was funded by BRANZ to investigate the quality of passive fire protection in NZ buildings. A small number of buildings were inspected and in the majority the shortcomings in the potential effectiveness of the passive fire protection systems were easily identified. The report concluded there were widespread problems due to poor knowledge, application, systems and processes. Not all of the buildings surveyed disclosed poor quality passive fire protection systems, a small number of the buildings had very good passive fire protection systems.

8. MBIE undertook a Stakeholder Engagement process at the end of 2014 to gauge stakeholders' views on the fire regulations. The feedback on passive fire protection indicates the issues with passive fire protection haven't changed markedly since the 2008 report.

9. We have informal advice of a number of instances of litigation relating to inadequate passive fire protection system installations. This is an indicator of ongoing systemic issues with the design, installation, checking and maintenance of passive fire protection systems.

What is the risk when passive fire protection systems are compromised

10. Fires in high rise buildings in NZ and other comparable jurisdictions are rare. There hasn't been a fatality in a major building fire in NZ since the Ballantynes fire in November 1947 which claimed 41 lives.

11. Passive fire protection is not critical to life safety in high rise apartments as the first alert is the active systems such as automatic fire alarms and sprinklers. Passive fire protection measures are hidden behind structure and become critical only for very large fires that travel into the structure. The main function of passive fire protection is protection of other property and assisting fire-fighting. NZ has not had a significant high rise building fire that has threatened the structure of a building.

12. Most high rise buildings in NZ are fitted with sprinkler systems. This contrasts with the United Kingdom where passive fire protection systems are relied on and buildings, including hospitals, are not typically fitted with sprinkler systems. Sprinklers actively suppress a fire's development and in many situations they will extinguish the fire. Sprinklers ensure more time to escape and decrease the risk of fire affecting building structure.

13. Fires produce smoke and air contamination and the main cause of injury in a fire is smoke inhalation or being overcome by toxic gases. Effective passive fire protection is important to ensure smoke and toxic gases are contained and excluded from the safe path escape routes.

14. The risk of poor quality passive fire protection systems in high rise buildings is considered low due to the presence of active fire protection systems. In the event of a fire in a high rise building with a sprinkler system operating effectively, the impact of compromised passive fire protection systems could be mitigated to an acceptable level in many instances. However the quality of passive fire protection systems in existing buildings and in some new buildings is not satisfactory and MBIE is addressing this concern.

Approach to improve the quality of passive fire protection systems

15. You have previously been briefed on the Fire Programme (Update on Post-Implementation Fire Review and Fire Regulation Development Programme, 8 July 2015, ref 005915-16). One of the projects in the Fire Programme addresses the issues with the quality of passive fire protection systems in buildings. It will run in parallel with a project to address the related issue; Construction Monitoring and Post Construction Compliance (Building Warrant of Fitness (BWOF) and Independently Qualified Persons (IQPs)).

16. In 2012 when the Department of Building and Housing (DBH) made major changes to the fire regulatory system passive fire protection was not addressed in the package of reforms. The Fire

Programme is addressing issues arising from the 2012 reforms along with a number of long standing fire issues including the quality of passive fire protection systems.

17. Improving the quality of passive fire protection systems in existing and new buildings will require a partnership between MBIE and key stakeholders; fire designers, building owners/managers, installers, other trades, suppliers, BCAs and IQPs. We are currently working with FPANZ, the principal peak body for the parties involved in passive fire protection, to form a Working Group with all of the parties involved to undertake this project.