



ASSESSING LOW-LEVEL COMPLIANCE WITH THE ESSENTIAL FIRE SAFETY MEASURES IN VICTORIA, AUSTRALIA

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ABSTRACT

This project determines the underlying reasons for perceived low-level compliance with the Essential Safety Measures in Victoria, Australia. These were found to be lack of building owner awareness, maintenance costs, contractor unreliability, inconsistent enforcement and minimal compliance incentives. The report provides information on sound approaches already being used in other jurisdictions to address these causes and to promote compliance with fire safety regulations. This was accomplished through interviews, surveys, case studies, literature review and shadowing building surveyors in the field.

AUTHORSHIP

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EXECUTIVE SUMMARY

The *Building Regulations 2006* of Victoria, Australia defines the Essential Safety Measures (ESM) as all life and fire safety systems, passive and active, installed or implemented in a commercial building. The Country Fire Authority (CFA) has become aware of a perceived low level of building owner compliance with the maintenance of the Essential Safety Measures. It is the building owners' legal responsibility to ensure that the essential safety measures within their building are adequately maintained. Without proper maintenance, these essential safety measures may not operate properly in the event of a fire, increasing the risk of life and property loss. The goals of this project were to determine the underlying reasons behind the perceived low level of compliance and to provide information to the CFA on sound approaches used by other jurisdictions to promote adequate maintenance of fire safety measures.

The team compiled information related to the extent and causes of the low level of compliance through open-ended interviews with 23 selected representatives of relevant government and private organisations directly involved in both enforcement of and compliance with the ESM. The team gathered opinions of building owners on ESM compliance, enforcement, incentives and education through 73 surveys from an educational seminar; through which, they found evidence of the low level of building owner compliance with the ESM. Interviewees cited a lack of building owner awareness of legal responsibilities and the high cost of maintenance as the two main reasons for the low level of compliance. These representatives also identified other factors contributing to the low level of compliance including the complexity of current legislation, unreliable service provider contracts, lack of building owner awareness of the cost of fire-related incidents, a lack of compliance incentives and inconsistent enforcement due to limited resources within municipalities.

The team also explored the correlation between compliance in maintaining essential safety measures and fire incident outcomes by reviewing existing databases containing relevant statistics and by investigating pertinent incident cases; through which, they found that malfunctions in fire safety systems such as sprinklers or detection devices often lead to

devastating losses. These malfunctions could have been prevented through proper maintenance of the essential safety measures.

Through literature search, survey data and interviews with fire safety officers in other areas of Australia, the team identified several educational, enforcement and incentive strategies employed by other jurisdictions and within Victoria to promote compliance with fire safety regulations. These address many of the reasons for the low level of compliance with the ESM in Victoria. Many other jurisdictions employ the use of both informational pamphlets and brochures to promote fire regulation awareness. Successful educational seminars in Victoria were advertised to specific building owners and tenants. By offering similar seminars on a regular basis and distributing education material, Victoria could increase building owner awareness of ESM legislation.

In addition to educational strategies, other jurisdictions also have methods of improving enforcement and compliance incentives. One company in Queensland simplifies the inspection process with the use of Personal Digital Assistant (PDA) systems. The use of hand-held, centrally linked PDA systems in Victoria would lessen the stress on resources in municipalities by decreasing paperwork and standardizing inspection check lists for building surveyors and service providers.

Building owners often rely on contracted service providers to ensure that their buildings are in compliance. A government registration or licensing process for individual technicians or companies by mandatory minimum training in Victoria would ensure that service providers are held accountable for their contracts with building owners. Additionally, greater insurance provider involvement in adjusting premiums depending on building compliance would give building owners a cost incentive to comply.

In conclusion, the team was able to present the CFA with evidence describing the extent and causes of the low level of building owner compliance with the Essential Safety Measures. The team was able to address many of the underlying reasons behind the low level of compliance with suggestions to promote building owner understanding, service provider reliability,

enforcement of the fire regulations and incentives for compliance. Figure 1 summarizes the results of this study. The research and recommendations outline initial steps in improving the level of building owner compliance with the Essential Safety Measures and consequently increasing overall building safety.

CAUSES OF LOW COMPLIANCE & SUGGESTIONS FOR ADDRESSING THEM

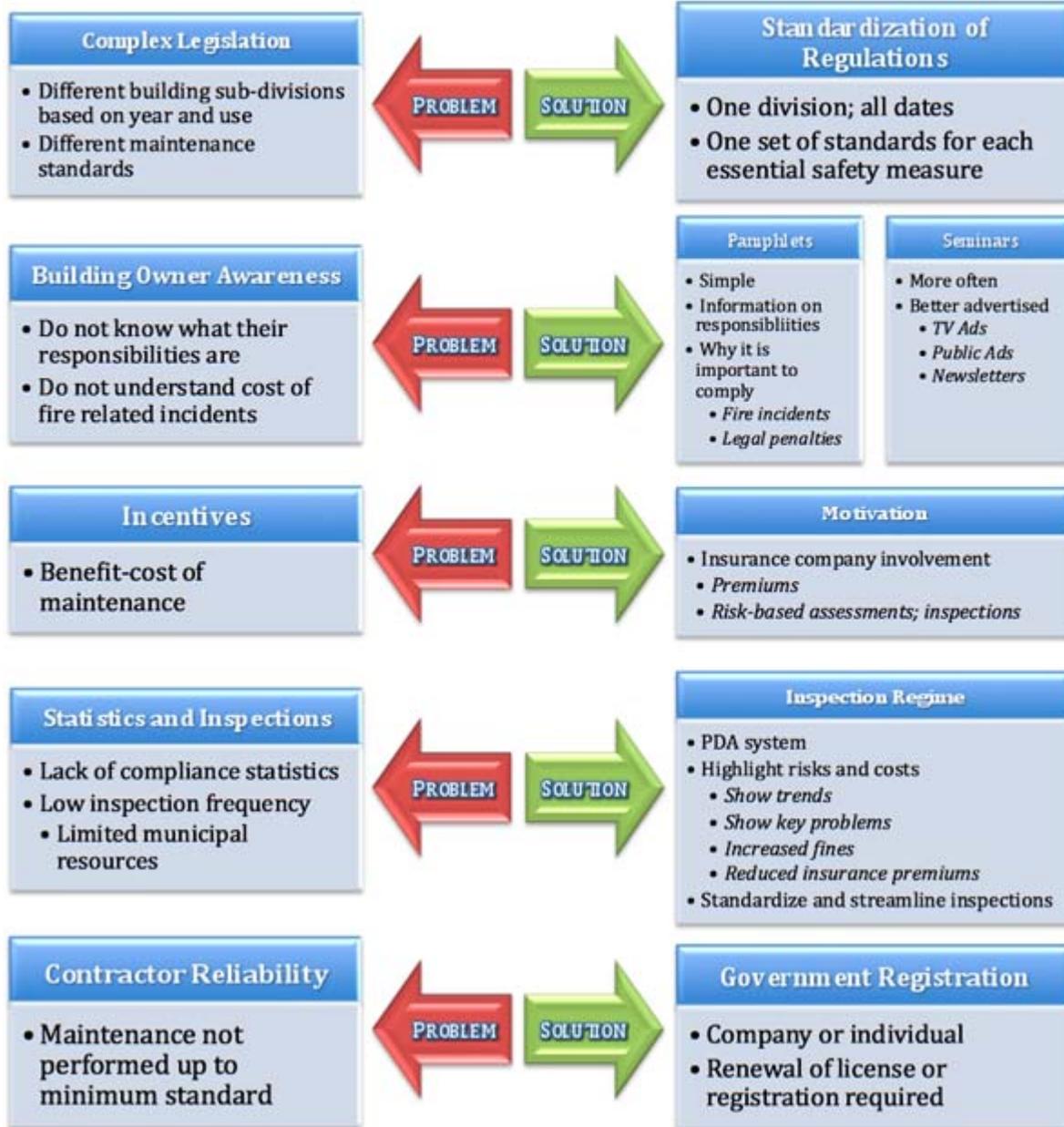


Figure 1: Causes of Low-Level Compliance and Recommendations

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CHAPTER 1: INTRODUCTION

Fire safety and prevention are concerns shared by building owners and occupants worldwide. Building regulations set safety standards but cannot ensure that these conditions are being met throughout the life of the building. Over time, a building's fire safety equipment needs both maintenance and replacement to maintain operational reliability (Building Commission of Victoria, 2006). Arthur E. Cote, the National Fire Protection Agency's executive vice president and chief engineer, lists lack of maintenance as one of the four frequently cited problems in major fires with large losses of life. "Large losses of life or property are virtually unknown in buildings that comply with the fire protection requirements of modern codes" (Cote, 2003). Though legislation may establish fire regulations, ultimately the responsibility for the maintenance of fire safety features in commercial buildings rests with the building owner.

The Country Fire Authority of Victoria (CFA) is part of the State Government portfolio of the Department of Justice, which is responsible for overall performance and compliance with fire legislation (Country Fire Authority, 2008). According to the CFA's Annual Report, there were 3,169 structure fires in all buildings throughout Victoria in 2007 with damages totaling over \$114,000,000 in total dollar loss. Without data, it is difficult to say how many of these structure fires could have been prevented through the proper maintenance of the essential safety measures. As found in the *Building Regulations 2006*, the essential safety measures are the fire or life safety devices installed into a commercial building. A low-level of commercial building owner compliance with the ESM is a major concern of the CFA that may threaten the health and safety of all building occupants (Building Commission of Victoria, 2006).

The Building Commission of Victoria has reported the problem of "the perceived lack of compliance, awareness, consistent enforcement, accurate data, appropriately qualified personnel, and education in the area of essential safety measures maintenance across the state" at the briefing of an industry forum on February 18, 2008. Recently, the Building Commission has implemented programs to promote building owner compliance with the maintenance of the essential safety measures. *The Essential Safety Measures Maintenance Manual* is a revised document that has been produced by the Building Commission in light of the new legislation. The purpose of the manual is to set out in detail the requirements and the parameters building owners must work within to meet their regulatory obligations. The Building Commission and local councils are also running seminars through 2008 and throughout the

State of Victoria to explain the maintenance of the essential safety measures and how to use the new manual.

The manual and the seminars are good steps towards essential safety measure education but they only reach a small number of building owners. Despite these attempts to educate building owners, the low level of compliance with the ESM throughout Victoria remains a major concern of the CFA. A lack of awareness is only one possible reason for the low level of compliance and without understanding the other causes, it is impossible to effectively address these reasons. There are no current data that link compliance levels to fire incident outcomes to emphasize the need for essential safety measure maintenance. To date, there has not been a study on building owner compliance with the ESM, though the Building Commission has stated that there is “anecdotal evidence” of the lack of compliance. Anecdotal evidence needs to be compiled and analyzed to facilitate further research.

The goals of this project were to determine the underlying reasons for perceived low-level compliance with the Essential Safety Measures as described by the *Building Regulations 2006* and to provide information to the Country Fire Authority on sound approaches already being used in other jurisdictions to promote adequate maintenance of fire safety measures. We accomplished these by determining the extent and causes of the low level of compliance with the Essential Safety Measures legislation, exploring the level of correlation between incident outcomes and compliance with maintaining essential safety measures and identifying successful approaches already being used in other jurisdictions to promote adequate compliance with fire safety regulations. We were able to compile evidence of the extent and causes of the low level of building owner compliance with the essential safety measures as well as address many of these causes with recommendations to promote compliance and building safety.

CHAPTER 2: BACKGROUND

The Victorian Legislation mandates that all commercial building owners must comply with the maintenance regulations as stated in the *Building Regulations 2006* (Building Commission of Victoria, 2006). The Country Fire Authority is concerned that there is a low level of compliance with the Essential Safety Measures. This section covers the necessary background on the Country Fire Authority and the Essential Safety Measures, including both owner responsibilities and maintenance of the essential safety measures, the perceived low-level of compliance and approaches already taken in Victoria to promote compliance with the ESM.

2.1 Country Fire Authority

The Country Fire Authority (CFA) is one of the largest volunteer-based emergency response organizations in the world. Based in Victoria, Australia, the CFA services all of the country areas and regional townships within the state, as well as both large portions of the outer suburban areas and growth corridors of Melbourne not covered by the Metropolitan Fire Brigade. The CFA was constituted under the Country Fire Authority Act 1958 and is ultimately responsible for overall performance and compliance with fire safety related legislation (Country Fire Authority, 2008). The CFA's Community Safety program has begun to recognize the need for more structural fire safety education as outgrowth affects the regions CFA services.

2.2 Essential Safety Measures

Essential Safety Measures (ESM) refers both to all fire or life safety devices and items installed into a building to ensure adequate levels of fire safety for the life of the building. These items include all traditional building fire services such as fire extinguishers, exit signs, fire alarms and other fire prevention devices. They also include passive fire safety mechanisms such as both fire escapes and paths of travel to the exits as well as fire resistant construction. A sample list of essential safety measures in a building constructed post 1 July 1994 can be found in Appendix B. These essential safety measures are defined by the *Building Regulations 2006* as instituted by the Victorian Legislation in Division 1, Part 12 of the *Maintenance of Essential Safety Measures* (Building Commission of Victoria, 2006).

2.2.1 Owner Responsibilities and Maintenance of the ESM

Buildings and places of public entertainment are required to obtain an occupancy permit that ensures that the owner complies with certain safety requirements. The permit lists “all the essential safety measures (ESM) pertaining to that building or place of entertainment; and specifies for each essential safety measure listed, the level of performance determined by the relevant building surveyor to enable the essential safety measure to fulfil its purpose” (Building Commission of Victoria, 2006). A surveyor will both assess the level of performance of an essential safety measure and then determine the type of maintenance that is required to uphold the integrity of the essential safety measure. The surveyor will then list these essential safety measures in the occupancy permit, which must be displayed somewhere in the building, as the permit specifies.

A building owner is required to prepare an annual report in accordance with the regulations instated by the Commissioner, as found in Appendix B. The annual report must include the owner’s signature, details of any inspection report made and a statement declaring that the owner will continue to take any necessary steps to ensure that all the essential safety measures are at the required level of performance. The maintenance of the essential safety measures is a necessary step that building owners must take to ensure that their fire systems are operating at the proper level for the safety of all occupants as outlined by the legislation. Maintenance for these systems include, but are not limited to:

- General wear and tear — i.e. electro-magnetic hold-open devices on fire doors, shut down of air conditioning system in fire situation, replacement of emergency lighting batteries and tubes;
- Reliability of a system operating — i.e. sprinkler system, mechanical ventilation system (used as a smoke hazard management system), early warning and intercommunication system;
- Faults after commissioning of a system — i.e. emergency power supply; and
- General housekeeping — i.e. ensure paths of travel to exits are not obstructed, fire-protective coverings are maintained, portable fire extinguishers remain in place.

(Building Commission of Victoria, 2006)

The building owner must also ensure that the building’s essential safety measures have been maintained to the conditions of the occupancy permit that was issued to them following final

inspection. The owner is liable for both any alteration to the fire resistant construction and the building in general and must obtain a building permit to make any changes.

Annual inspections are performed to establish whether the building owner is maintaining all the essential safety measures. These inspections can be done by any person the owner asks to represent them or by the owner themselves. Typically the surveyor drafts a maintenance schedule after a building is finished being constructed to assist the owner with maintaining the essential safety measures. When the maintenance schedule is made for a building, the surveyor must ensure that anything specified by the occupancy permit within that building must also be listed in the schedule along with any maintenance required. A surveyor is able to amend the maintenance schedule at any time by adding additional essential safety measures or any related maintenance requirements that are established after the date of the maintenance schedule.

2.2.2 Perceived Low-level Building Owner Compliance

The Building Commission of Victoria has reported the problem of “the perceived lack of compliance, awareness, consistent enforcement, accurate data, appropriately qualified personnel, and education in the area of essential safety measures maintenance across the state”. There has been very little research on this subject, though the Building Commission has stated that there is “anecdotal evidence” of a lack of compliance.

During the 2004-2005 fiscal year, the Metropolitan Fire Brigade inspected 436 premises in relation to the maintenance of essential safety measures. Of these inspections, 260 premises warranted second inspections to verify the rectification of identified non-compliant essential safety measures. Further, at the time of second inspection 36 premises had failed to adequately rectify the identified matters resulting in communication with the relevant municipal building surveyor to achieve enforcement. This equates to almost 8% of building owners (Building Commission of Victoria, 2006).

Likely causes for the low level of compliance include both the lack of awareness and education of building owners of the requirements for maintenance of buildings, both inconsistent and inappropriate documentation of occupancy permits and certificates of final inspection and inconsistent monitoring and enforcement of the requirements (Hogan, 2008).

According to the CFA's Annual Report, there were over 3,000 structure fires throughout Victoria in 2007 with damages totaling over \$114,000,000 in total dollar loss.

Table 1: CFA Annual Report, Structure Fires in Victoria (Country Fire Authority, 2007)

CFA Area	No. Structure Fires	Structure Fires with Loss Value	Total Dollar Loss	Median Dollar Loss
South West	119	61	\$6,451,640	\$5,000
Barwon Corangamite	351	187	\$10,905,300	\$5,000
Westernport	770	383	\$39,389,559	\$4,000
Gippsland	332	152	\$7,556,070	\$5,000
Yarra	356	203	\$14,805,160	\$3,200
Outer Metro NorWest	346	165	\$9,395,080	\$7,000
Midlands Wimmera	288	130	\$10,467,530	\$5,000
North West	292	156	\$7,082,130	\$6,000
North East	324	162	\$8,615,050	\$10,000
Total	3169	1597	\$114,590,519	\$5,000

*These statistics include residential houses

Without enough significant data relating to the causes of fire, it is difficult to say how many of these structure fires could have been prevented through the maintenance of the Essential Safety Measures.

2.2.3 Previous Efforts to Increase ESM Compliance

The Building Commission has made efforts address the low level of compliance with the ESM through programs to increase building owner awareness of their responsibilities according to the regulations. The *Essential Safety Measures Maintenance Manual* is intended to aid building owners in understanding the regulatory requirements for maintaining the essential safety measures. The manual provides a detailed explanation of each safety measure listed in the legislation. Made for ease-of-use, this manual is divided into individual sections for each safety measure so that building owners may easily identify the parts of the manual directly relating to their building's needs. The manual provides sample checklists as well as a sample annual report to aid the building owners in maintaining their essential safety measures. It is not expected that building owners will read the entire manual, though they are expected to know and understand their obligations towards the upkeep of the Essential Safety Measures (Building Commission of Victoria, 2006). The Building Commission also published an eight page pamphlet explaining

ESM legislation, building owner requirements and penalties. The pamphlet directs building owners to the maintenance manual for further information.

Along with this manual and pamphlet, the Building Commission and Councils are running seminars through 2008 and throughout the State of Victoria to explain the maintenance of essential safety measures and how to use the new manual. Despite these attempts to educate building owners, the low level of compliance with the ESM throughout Victoria remains a major concern of the CFA.

2.3 Summary

This chapter provides background information for the problem of compliance with Essential Safety Measures for commercial buildings in Victoria, Australia. Research of owner responsibilities, under both the current legislation and the strategies already being used in Victoria to promote building owner compliance, helped the team develop sound methods to determine the causes of the low level of compliance. This helped the team form a basis for comparative research into methods used in other jurisdictions to promote building owner compliance with fire safety regulations.

CHAPTER 3: METHODOLOGY

The goals of this project were to determine the underlying reasons for building owner low levels of compliance with the Essential Safety Measures as described by the *Building Regulations 2006* and to provide information to the Country Fire Authority on sound approaches already being used in other jurisdictions to promote adequate maintenance of fire safety measures.

These goals were attained by meeting the following objectives:

1. Determine the extent and causes of the low level of compliance with the Essential Safety Measures legislation.
2. Explore the level of correlation between incident outcomes and compliance with maintaining essential safety measures.
3. Identify successful approaches already being used in other jurisdictions to promote adequate compliance with fire safety regulations.

The team compiled information related to the extent and causes of the low level of compliance through open-ended interviews with 23 selected representatives of relevant government and private organisations directly involved in enforcement of and compliance with the ESM. The opinions of building owners on ESM compliance, enforcement, incentives and education were gathered through 73 surveys from an informational ESM seminar. The team also explored the correlation between both compliance in maintaining the essential safety measures and fire incident outcomes by reviewing existing CFA databases containing relevant statistics and by investigating documented incident cases. Through literature search, survey data and interviews with fire safety officers in other areas of Australia, we identified several educational, enforcement and incentive strategies employed by other jurisdictions to promote adequate maintenance of fire safety measures. The following sections expand on these methods. A complete timeline describing the steps followed throughout the seven weeks allotted can be found in Appendix D.

3.1 Determine the Extent and Causes for a Low Level of Compliance with the Essential Safety Measures Legislation

The team interviewed 23 representatives of both government and private organization including Municipal Building Surveyors (MBS), Relevant Building Surveyors (RBS), directors of several private organisations and officials from government organisations such as the Building Commission. A Key Informant interview style was used in which the interviewees were asked for in-depth information concerning the legislation and compliance levels (University of Illinois, 2008). The

interview plan used can be found in Appendix C. This plan was made to investigate how the level of compliance with the ESM relates to education of building owners, incentives to comply and enforcement of the fire regulations.

Before an interview, the interviewee was asked to sign or give verbal consent to the interview consent form found in Appendix C. This was done to inform the interviewee of the intentions of the project and to gain their voluntary consent to use interview data in the study. Part of this agreement allowed the team to digitally record the interview with a digital voice recorder, as well as take notes. This allowed the team to gather as much primary source information as possible. Sample templates for recording interview data are shown in Appendix B.

Following the interview, the interviewee was given an opportunity to clarify any opinions. The interviewee was given a post-interview document (Appendix C) with the team's contact information as well as a copy of the interview consent form. The interviews were conducted throughout the first five weeks of the project to gather adequate information regarding the level of compliance. All interviews were conducted in person with the exception of one, for which a phone interview was conducted. The team protected the identity of the interviewees by associating their interview summary only with their respective organisation and their job title as shown in Table 2. To further protect interviewee identities, all interview recordings were encrypted and stored using only date and time to identify them and were destroyed after the project.

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Table 2: Interviewee Information Table

Government & Private Officials	Job Title / Position
Australian Institute of Building Surveyors	Executive Officer
Building Commission	Manager-Technical and Research Services
Building Commission	Senior Technical Advisor
Country Fire Authority	Community Safety Officer
Country Fire Authority	Fire Equipment Maintenance Officer
Country Fire Authority	Fire Equipment Maintenance Officer
Country Fire Authority	Fire Safety Officer
Country Fire Authority	Fire Safety Officer
Country Fire Authority	Fire Officer
Country Fire Authority	Operations Manager
City of Greater Geelong	Municipal Building Surveyor
Fire Safety Consulting	Director
Fire Protection Association of Australia	National Executive Director
FM Global	Vice President
Gardner Group	Director
Hendry Group	Essential Property Services
Knox City Council	Municipal Building Surveyor
Maintenance Essentials	Director
Metropolitan Fire Brigade	Commander
Metropolitan Fire Brigade	Senior Station Officer
Philip Chun and Associates	Director
Philip Chun and Associates	Manager- Essential Safety Measures
Verified	Director

The team attended an educational seminar endorsed and run by the Knox City Council in Victoria to educate building owners about their responsibilities regarding maintenance of the Essential Safety Measures. The team prepared a quick response questionnaire (Appendix E), which was included along with the informational handouts that each attendee received. Seventy-three questionnaires were collected at the end of the seminar. The results from the questionnaire were used to discern building owner perceptions of compliance with the ESM.

The team was given the opportunity to shadow building surveyors during two routine inspections and one fire alarm testing. This both allowed the team to observe, firsthand, how inspections were conducted and to see common non-compliances with regulations.

3.2 Explore the Level of Correlation between Incident Outcomes and Compliance with Maintaining Essential Safety Measures

The team compared the outcomes of various incidents with building owner compliance with the fire regulations to find the consequences of lack of maintenance and the necessity of compliance to minimize fire-related risks. This was accomplished both by gathering CFA Post Incident Reports and conducting case studies to investigate fire-related incidents. The CFA offered statistics to support this research through the Fire Incident Reporting System (FIRS), a log of all fire-related reports in Victoria in recent years. FIRS is useful in generating statistics by entering a specific search query.

3.3 Identify Successful Approaches used in Other Jurisdictions to Promote Adequate Compliance with Fire Safety Regulations

The team investigated educational strategies used by local councils and the Building Commission to promote compliance with the Essential Safety Measures in Victoria as well as attempts made by other jurisdictions to promote adequate compliance levels with fire regulations. This information helped the team address the causes for low-level building owner compliance with the ESM in Victoria.

The team explored the usefulness of the *Essential Safety Measures Maintenance Manual* published by the Building Commission in Victoria and related seminars through interviews with private and government organisations. The team also gathered building owner feedback after an educational ESM seminar offered by the Knox City Council. The seminar provided information about the legislation, building owner responsibilities, legal penalties for non-compliance, and the use of the maintenance manual through presentations by local council, CFA and Building Commission representatives.

Through continuous literature search, the team investigated many approaches used in other areas including enforcement, educational and incentive strategies. The CFA suggested the study of Queensland in particular. The CFA provided the team with the contact information necessary for a phone interview.

CHAPTER 4: RESULTS AND ANALYSIS

The goals of this project were to determine the underlying reasons for building owner low levels of compliance with the Essential Safety Measures as described by the *Building Regulations 2006* and to provide information to the Country Fire Authority on sound approaches already being used in other jurisdictions to promote adequate maintenance of fire safety measures. This section discusses findings for the extent and causes for low-level compliance with the Essential Safety Measures legislation, the correlation between incident outcomes and compliance with maintaining essential safety measures and successful approaches used in other jurisdictions to promote compliance with fire safety regulations.

4.1 Determine the Extent and Causes for a Low Level of Compliance with the Essential Safety Measures Legislation

In the following section, statistics generated using government and private organisation interview data are linked with information gathered through building owner survey and contextual inquiry.

4.1.1 Level of Compliance among Building Owners

During the government and private organisation interview process, we asked 23 representatives what they thought was the current level of building owner compliance with the Essential Safety Measures. The results in Figure 2, show that a majority, 78 percent, of interviewees perceive the compliance level to be low on a subjective scale. Some interviewees stated that the level of compliance varied depending on the type of building. These interviewees also stated that larger buildings, aged care facilities and hospitals were more likely to comply due to increased risks and federal accreditation processes.

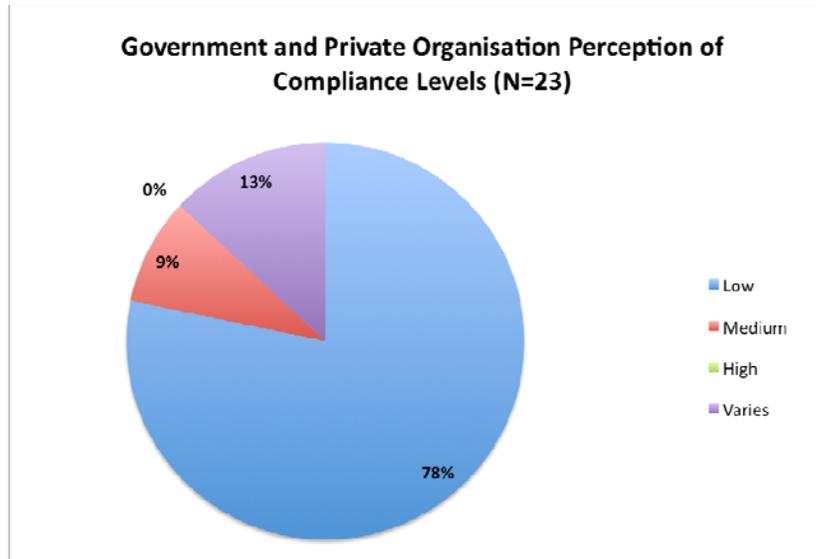


Figure 2: Government Organisation - Compliance Level

4.1.2 Building Owner Awareness

After conducting 23 interviews from government and private organisations, the team determined that most building owners are not aware of their responsibilities regarding the legislation of Essential Safety Measures. Thirteen of the interviewees thought that the legislation regarding the Essential Safety Measures was too complex for building owners to understand. Currently, Division 1, Part 12, of the *Building Regulations 2006* deals with maintenance of the Essential Safety Measures in commercial buildings. Division I subdivides buildings built or altered before 1 July 1994 or prior to 1 July 1994 into Subdivisions 1 and 2, respectively. These subdivisions outline different requirements for building owners. The buildings are also divided into classes depending on type and use. Maintenance schedules for each essential safety measure differ depending on building class. When asked if there were parts of the legislation that building owners found particular unclear, one of our interview summaries states:

“Yes, the difference between Subdivision 1 and Subdivision 2 and what the level of performance that they are required to maintain to.”

Some of the interviewees suggested combining Subdivisions 1 and 2 into one division or standardizing a maintenance schedule for each essential safety measure regardless of building type.

During one inspection the team attended, the building owner stated that he had delegated his responsibilities to the tenant through their lease agreement. When asked about his responsibilities towards fire system maintenance, the building owner replied, “I only own the outside of the building.” When one of the inspectors told the owner that the lock on one of the doors did not comply with regulations, he replied that it was the tenant’s door, not his. One of the inspectors attested that it is a common problem for building owners to try to delegate responsibility to tenants through their lease agreements, which does not release the building owner from their legal responsibility to ensure the maintenance of all essential safety measures in the building. The building owner can still be persecuted for non-compliance. This demonstrates that building owners are unaware of the legislation as well as their responsibilities as a building owner.

The survey given to building owners at the seminar in Knox also contained a few questions to determine how knowledgeable the building owners were with the legislation. However, these questions received biased answers because the survey was collected at the end of the educational seminar after they were educated on the questions asked.

Another open ended question that we asked government and private organisation interviewees was:

“Why do you think building owners have a low- level compliance with regulations?”

All the interviewees responded similarly. The majority answered that the high cost of maintenance or lack-of building owner awareness of their legal responsibilities were the main factors, as shown in Figure 3.

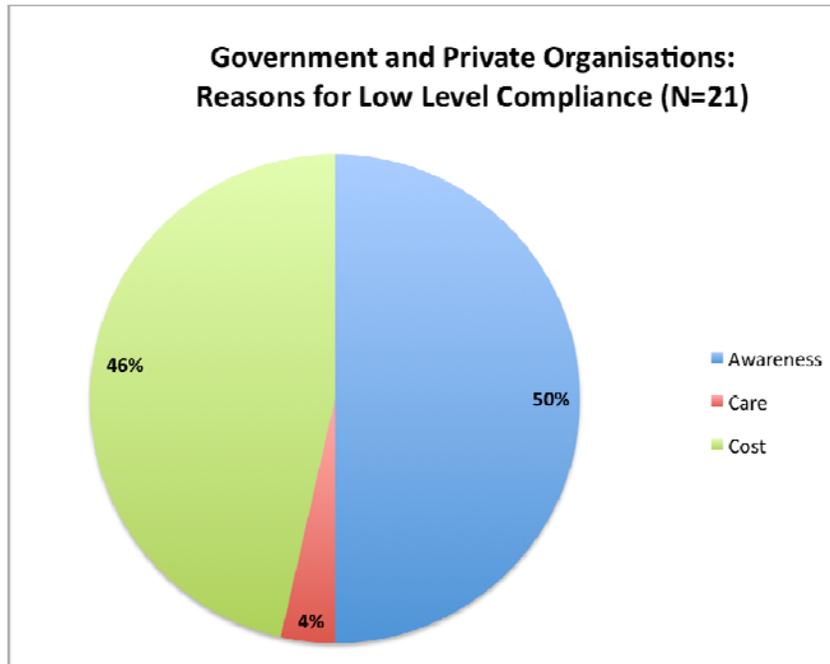


Figure 3: Government Organisation - Reasons Behind Compliance Levels

We also asked government and private organization representatives whether they thought building owners were aware of the cost related to fire incidents. One hundred percent of the interviewees attested that building owners are unaware of the overall cost. Some said that building owners may understand the cost of replacing the building; however, they do not consider the cost of loss of business during the rebuilding period. In the building owner seminar survey, we asked a similar question,

“Do you think your business could survive rebuilding after a large fire?”

In this case, 71% of the owners who participated said that their business could survive a large fire. Damages to a building can be exceedingly costly and the majority of building owners do not seem to comprehend how devastating a fire incident can be. Some examples of building fire damage costs in Victoria are the following:

- Club Kilsyth – Bayswater North
November 2005 - \$22 million
- DTM Logistics – Dandenong South
January 2007 - \$36 million
- Food processing factory – Springvale
March 2007 - \$1.35 million

These are only a few examples of how much it costs to physically repair a building that has burned down. These numbers do not include profits lost from the inability to conduct business during reconstruction.

4.1.3 Building Owner Priority

Not all building owners are unaware of the Essential Safety Measures. Some building owners are aware of them; however, there are no methods to ensure compliance except small fines. When asked if he could suggest any potential changed to the legislation, one building surveyor interview summary stated:

“It’s a very broad question, because, for us, as an enforcement agency, it’s costing us in excess of \$2200 to issue a \$200 fine. The problem is the penalties are too small and too lenient. Not only are they too lenient, but also the prosecution is so in favor of the owner, that no one will even bother issuing building infringement notices anymore. The agency that is trying to prosecute is trying to jump through so many hurdles, that it’s just not worth the time for the agency, so they just don’t bother unless it’s a safety issue. We find that overall we just are lacking funds, so writing the notices is cost prohibited.”

Due to low resources within the municipalities, most building inspections are risk-based or complaint-based. Unless a building is being inspected or must be accredited to operate, such as aged-care facilities, maintaining essential safety measures is usually a low priority among building owners.

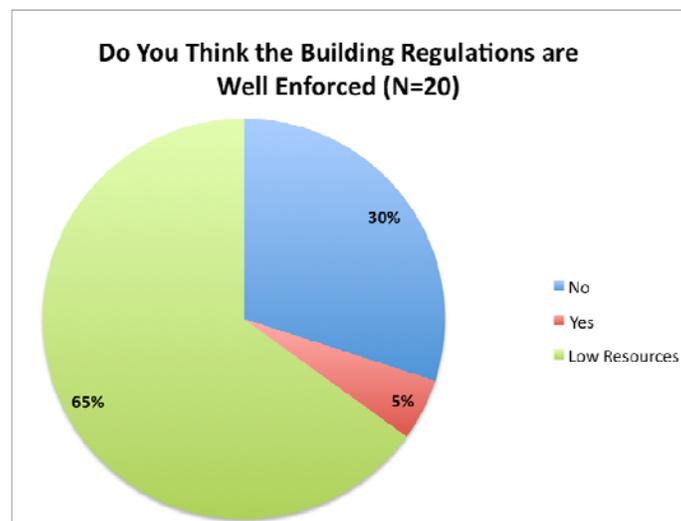


Figure 4: Government Organisations - Enforcement of the Regulations

During interviews, individuals were asked if they thought the building regulations were well enforced. Figure 4 shows 65 percent of people answered said that the regulations are not consistently enforced due to low municipal resources. For example, one interviewee summary stated:

“In theory the legislation has been delegated to the local governments and they don’t have the resources to make sure that they are being adhered to. There is a gap between what the Building Commission can cover and what the municipality can cover.”

Government and private organisation interviewees were asked:

“What incentives would encourage building owners to comply with Building Regulations?”

Forty-seven percent of the interviewees answered that insurance premium adjustments depending on ESM compliance would serve as an incentive. Seventy-one percent of interviewees agreed that insurance premium reductions would increase compliance.

The participants of the seminar survey were asked to rate four possible compliance incentives: tax reductions, insurance premium reductions, official safety certification from Metropolitan Fire Brigade (MFB) and being placed on an exclusive “Safe Building” list. Their responses were on a scale of 1 to 10, 10 being the most appealing. The average of the responses shows which incentive is most appealing for them. Insurance premium reductions were the most appealing to the participants at a rating of 7.6; tax reductions and a official certification had very similar interest with 6.9 and 6.8 respectively and to be placed onto an exclusive list was the least appealing at 6.5 (Figure 5).

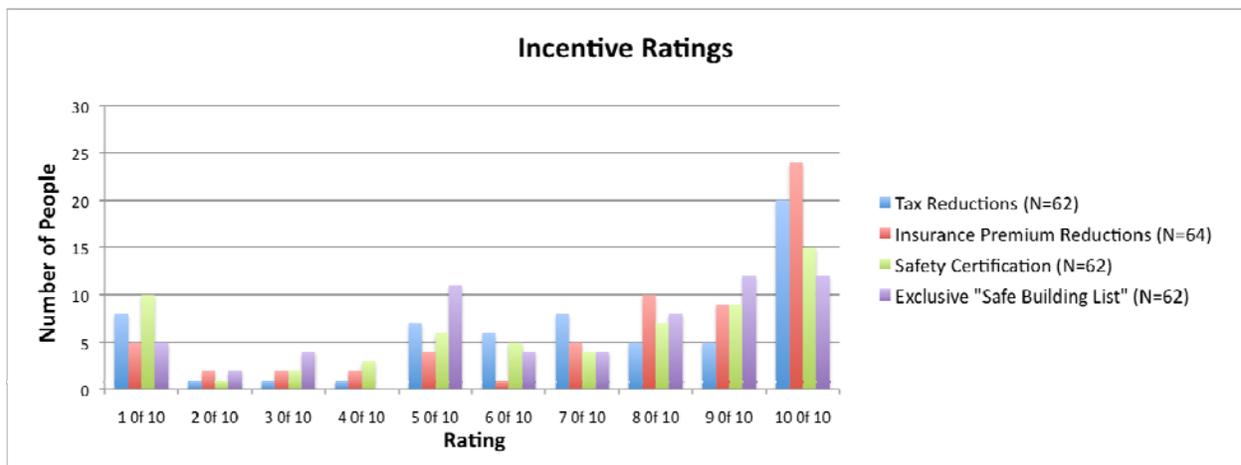


Figure 5: Incentive Ratings

4.1.4 Contractor Reliability

During a fire alarm testing, our team was led to the main control room, Figure 6 and the sprinkler room, Figure 7. Here we saw the complexity of some of the systems required to be maintained in order to achieve 100% compliance. The relevant building surveyor attributed the difficulty of compliance to the increasing complexity of building fire safety systems. Even though these systems are meant to increase compliance, they require special maintenance. As a result, these essential safety measures are becoming increasingly difficult to maintain by building owners. Unless building owners are technically inclined, they will require assistance from service providers to ensure compliance.



Figure 6: Main Control Panel



Figure 7: Sprinkler Room

According to many interviewees, when building owners hire service providers to ensure compliance, sometimes they are unaware of exactly what they have contracted them to do. In some instances, service providers may only be contracted to perform weekly or monthly tests on a particular essential safety measure. In which case, the yearly test of the essential safety measure is not being done; therefore, the building is not complying with the legislation. In another instance the contractor may be contracted to perform all the tests for the essential safety measure and the yearly or monthly tests are not being performed correctly or at all. Confusion among contractors is a consistent factor of building owners low level of compliance. One interviewee stated:

“One of the biggest complaint lines we still get is people complaining about these companies trying to scam them.”

During our interviews, we asked all the interviewees whether service providers should be registered or have a minimum level of training. All interviewees felt that they should have a minimum level of training; however, some felt that a registration process was not feasible and therefore would not work.

4.1.5 Summary

The low level of building owner compliance with the Essential Safety Measures can be mainly attributed to building owner awareness, building owner priority and contractor reliability. Building owners are generally unaware of both their legal responsibilities and of the costs related to fire incidents. Building owners have difficulty understand their requirements because of complex legislation. Maintaining Essential Safety Measures is a low building owner priority because of inconsistent enforcement due to low municipal resources and because of the lack of cost incentives for compliance. Building owners often rely on service providers to educate them and to ensure that their building is in compliance. Contractors, though, are not always adequately trained to perform maintenance up to the proper standard.

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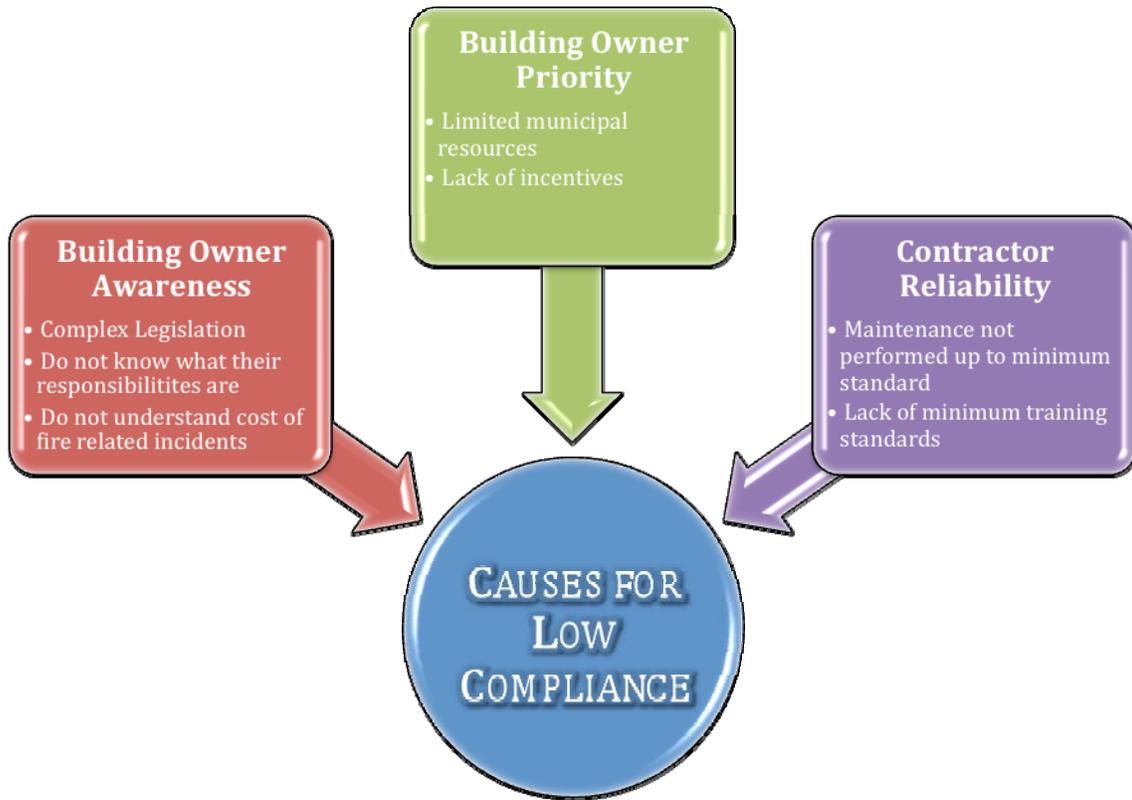


Figure 8: Low Level Compliance Summary

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4.2 Explore the Level of Correlation Between Incident Outcomes and Compliance with Maintaining Essential Safety Measures.

This section relates statistical evidence and documented incident reports to explore the relationship between incident outcomes and compliance levels.

4.2.1 Fire Incident Reporting System

The CFA stores a log of all fire-related reports in an electronic database called the Fire Incident Reporting System (FIRS). The results acquired from this system varied depending on how much information was entered into FIRS after each incident.

Smoke alarms are a vital element of the ESM and are required to be installed in all commercial buildings. Of the major commercial structure fires that were entered into FIRS, within the last year, 663 of them had a record of whether a smoke alarm was installed within the building. Only 35% of them complied with the legislation and had the detectors installed (Figure 9). Ninety-two percent of 121 fires which occurred in buildings which had smoke detectors installed showed that the smoke detector worked properly.

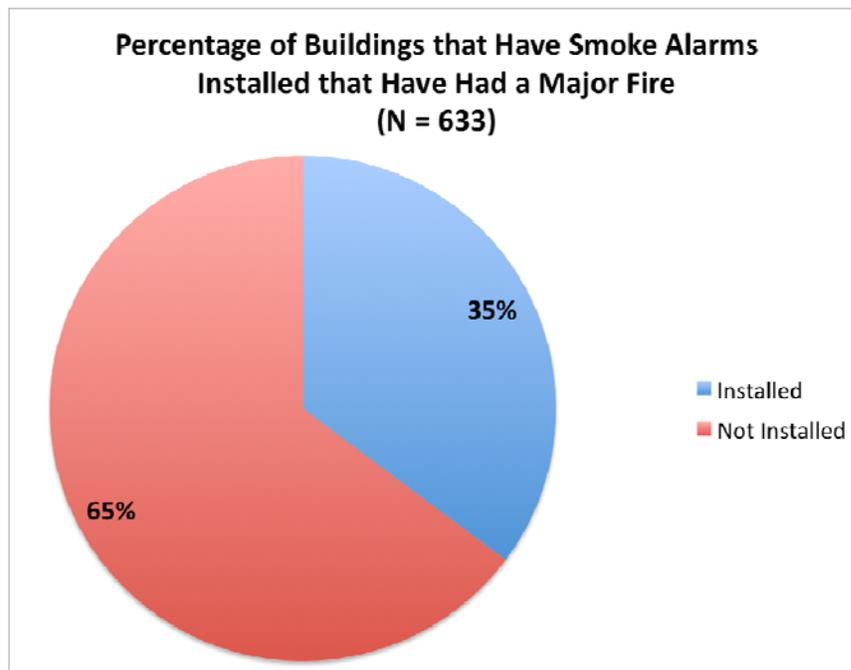


Figure 9: Smoke Alarms Installed v Not Installed

Once the data regarding installed smoke detectors was gathered, the team compared how they operated to how they affected the occupants. Eighty percent of the smoke detectors which were installed alerted the occupants of a fire (Figure 10). Even when an alarm alerts the occupants, 3% of the time the occupants failed to respond to the alert. Of the alarms that did fail, Figure 11

shows that there is no consistent reason for them to fail. This data portrays that smoke alarms are very effective in assisting the life safety of the occupants within a building as long as the detectors are maintained. Only 3 of the 100 detectors on file failed to alert the occupants.

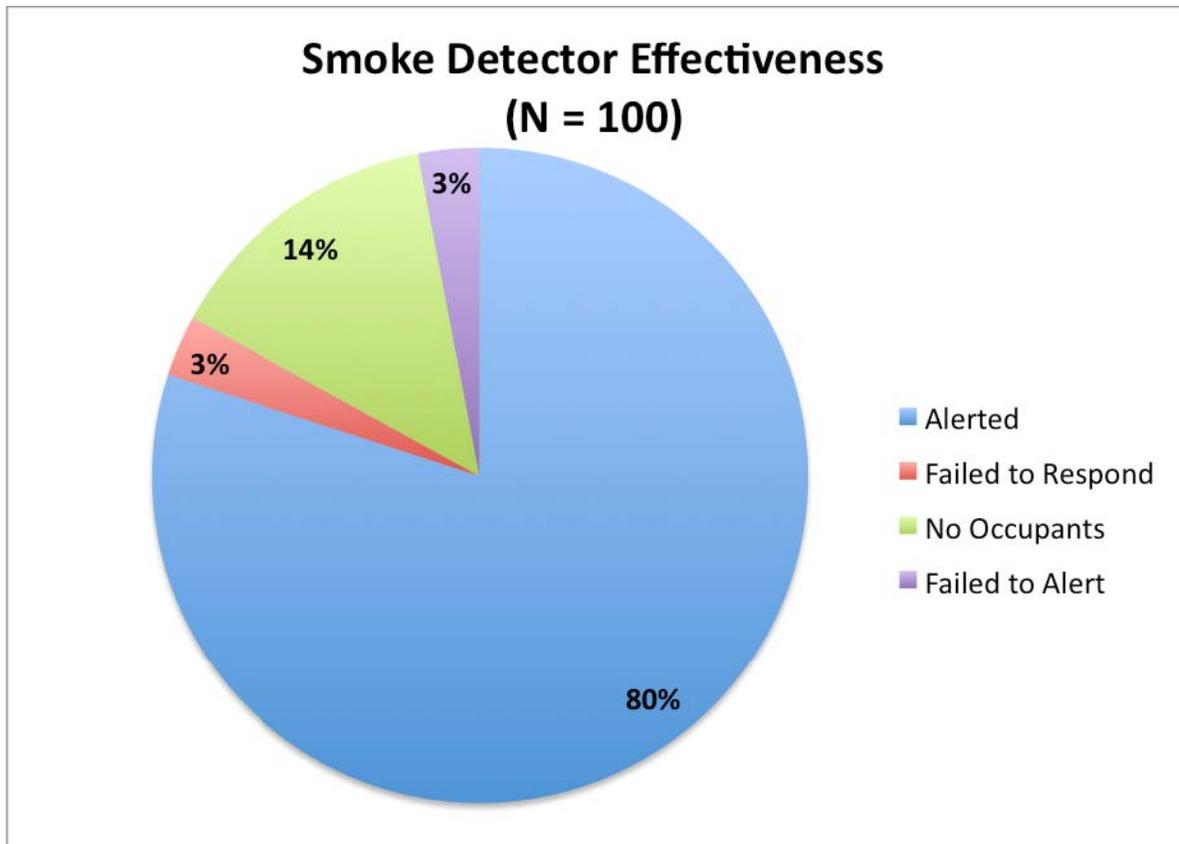


Figure 10: Smoke Detector Effectiveness

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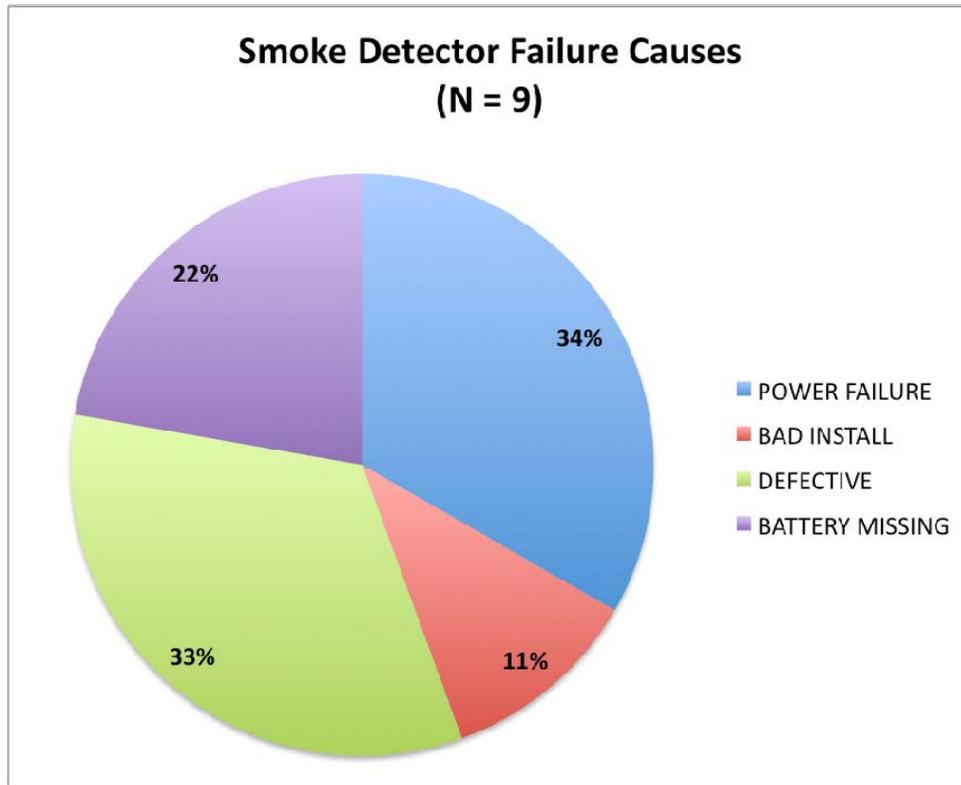


Figure 11: Smoke Detector Failure Causes

Sprinkler performance is another concern among fire fighters. Sixty-seven percent of the sprinkler systems installed within a commercial structure extinguished the fire and 14% of the sprinkler systems prevented the spread, Figure 12. Even though the data sample is not large, the percentage of positive effect is high. This data exemplifies that proper maintenance of a sprinkler system can prevent serious damage to a commercial building.

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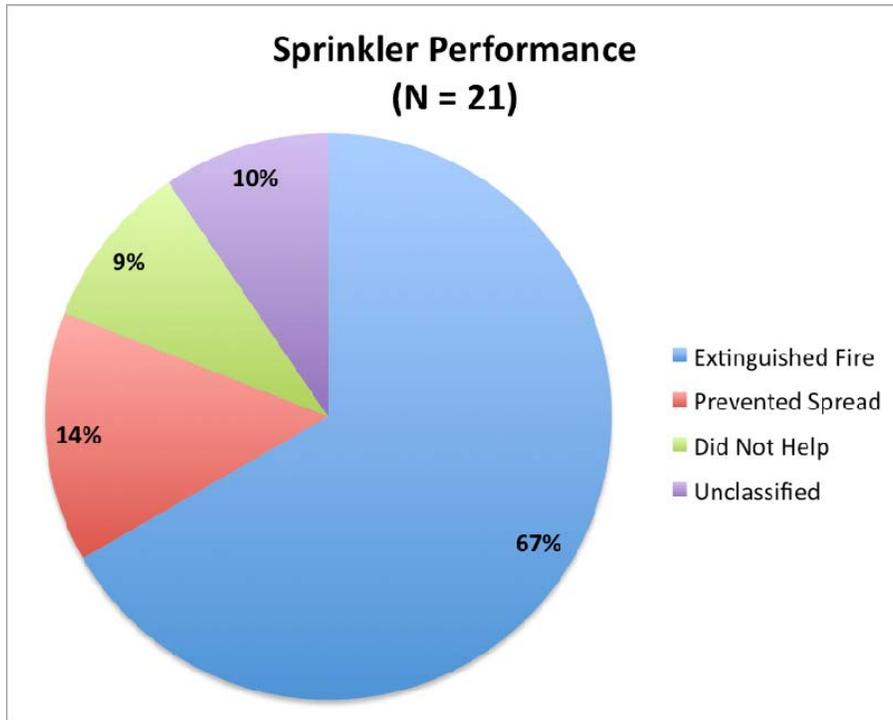


Figure 12: Sprinkler Performance

The data collected from FIRS shows that when essential safety measures are properly installed and maintained, they work to lessen the risks of life and property loss in the event of a fire.

4.2.2 Analysis of Incident Reports and Case Studies

Post Incident Reports differ from FIRS entries in that they are only written after investigation into fire incidents, which resulted in a large loss of life or property. These reports are much more detailed than FIRS entries and contain specific information concerning the cause of the fire.

The CFA’s Post Incident Report of a fire incident in 2005 that destroyed approximately 75% of a factory building in Victoria cites several non-compliance issues in the building that may have contributed to the spread of fire such as fire door failure to close. “...it appears that a lack of fire door maintenance prevented the complete closure of the fire doors, which contributed to the spread of fire.” Though the extent of smoke detection compliance could not be determined, the installed alarm system was not linked to the Fire Brigade. Had direct fire brigade connection been provided, the report states that response times would have improved, almost certainly resulting in reduced fire damage. The CFA also reported “the work practices constituted an occupancy of excessive hazard and would require the building to have sprinkler protection in

accordance with the BCA requirements.” An active sprinkler system could have significantly limited fire growth (CFA: Structural Fire Safety Section, 2005).

Another Post Incident Report of a 2005 warehouse fire in Victoria that caused approximately \$9 million in damages states that non-compliances in sprinkler installation and in the smoke alarm detection system contributed to fire spread and fire damage (CFA: Structural Fire Safety Section, 2006).

An early morning fire on 26th of June 2005 in the Cosmopolitan Hotel in Trentham, Victoria resulted in over half a million dollars damage. The hotel was one of the premises inspected as part of the program, ‘Identification and Implementation of Fire Safety Improvements to High Life Safety Risk Sites’. The hotel had been inspected by Hepburn Shire Council, with support of the CFA, in December 2004. The hotel was given a report with recommendations for fire safety service improvements. The owner met all of the requirements within five months and adopted the report’s recommendations. Brendan Brown, CFA Fire Safety Officer, stated that the installation and proper operation of these fire safety items prevented the fire from becoming more devastating:

“These items contributed to the safe evacuation of all ten people in the hotel, in particular the operation of the smoke alarms and the exit doors ensured the immediate and rapid exit of all occupants. Anecdotal information from one of the occupants was such that he formed the opinion that if the fire safety upgrade had not been required by CFA and Council then a different and potentially more tragic outcome may have resulted.”

4.2.3 Summary

Malfunctions in fire safety systems such as sprinklers or detection devices often lead to devastating losses during fire incidents. These malfunctions could be prevented through continual maintenance of the Essential Safety Measures. By maintaining their essential safety measures, building owners are less likely to experience large losses of life or property in a fire-related incident.

4.3 Identify Successful Approaches used in Other Jurisdictions to Promote Compliance with Fire Safety Regulations

Our team researched methods employed by other jurisdictions, as well as Victoria, to promote compliance. These jurisdictions include the states of Queensland and New South Wales in Australia, the City of Milwaukee in Wisconsin and New Zealand.

4.3.1 Approaches in Victoria

Currently in Victoria, the Building Commission and local councils hold seminars to educate building owners of their responsibilities regarding ESM.



Figure 13: Knox Seminar

At the seminar held by the Knox City Council, attendees received a survey, Appendix F, to fill out. Of approximately 200 attendees, we received 73 responses, although some surveys were incomplete. Of those who participated, 45 participants gave the value of seminar information a rating of 8.0 percent or better on a scale of 1 to 10 as shown in Figure 14.

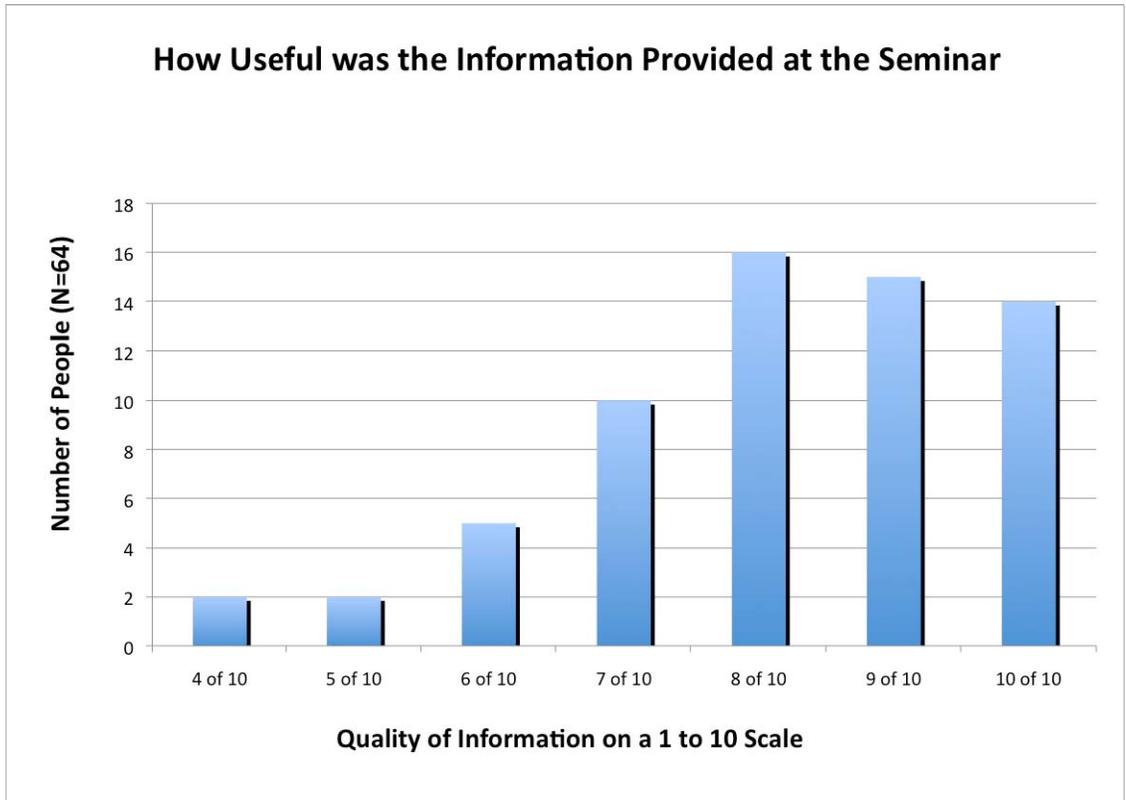


Figure 14: Seminar Information Usefulness

The building owners were asked some yes or no questions to help verify the responses we received from the interviews. Those questions and their answers can be found in Figure 15.

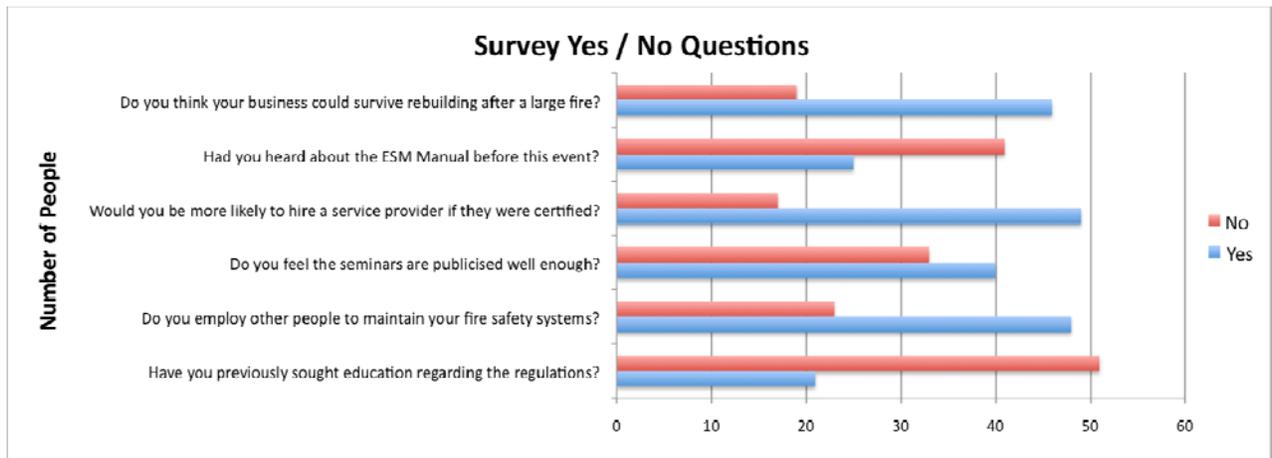


Figure 15: Survey - Quick Response Questions

Government and private organisation interviewees were asked how effective the Building Commission's *Essential Safety Measures Maintenance Manual* and seminars have been in

educating building owners about the ESM. Of those interviewees who responded, most thought that these measures are a good start in improving building owner awareness but that they just scratch the surface. One interviewee summary stated:

“I think they've been good, but they don't just capture a big enough audience. The people who do attend are the interested ones who already are making themselves educated as opposed to the ones who normally wouldn't attend those sort of forums.”

The CFA has resources invested into residential community safety through programs such as Fire Ready Victoria and Community Fireguard. These programs educate home owners through community meetings on survival techniques regarding bush fires. They use refrigerator magnets, survival information cards, brochures and posters to promote key safety measures. To inform residents about these programs, they are partnered with ABC Radio, local municipalities and community groups.

4.3.2 Education

Brief informational pamphlets made easily available to building owners have proven helpful in improving awareness and education. The City of Milwaukee Department of Building Inspection, in Wisconsin, USA, used a pamphlet in 1997 to try to educate building owners of common fire code violations in an effort to promote fire code compliance. New Zealand used a similar pamphlet to educate owners of building regulations. The City of Winnipeg in Manitoba, Canada issued a short brochure to explain Life Safety Tests, which describes the general responsibilities of contractors, building owners, consultants and city authority. Junee, NSW provides a brochure on building owner responsibilities for fire safety measure maintenance. These educational brochures and pamphlets can be found in Appendix H.

4.3.3 Enforcement

In 2007, a service providing company in Queensland implemented a new system to aid inspectors. The new system allows for an inspector to take a Personal Digital Assistant (PDA) into the field with them, which is connected to a central server. The PDA serves a variety of functions, from speeding up the entire process to making the inspector's job easier. “The PDAs tell them where to go, what to do, and enable them to log their work without filling the van with

paperwork” (Miller, 2007). This system improved overall safety as it allowed for the service provider, FireVac, to generate work orders and respond to situations much more efficiently.

In an interview with one representative from the Queensland Fire and Rescue Service, the team found enforcement strategies used in Queensland’s state fire regulations. The regulations call for large fines for non-compliances, including on-the-spot fines. Unlike Victorian legislation, there is no maximum fine for non-compliant building owners, rather fines can be added for each non-compliant item in the building. Substantial penalties for fire-incidents which resulted in loss of life and property are also instated. When asked about service provider registration or licensing, the representative described new legislation coming out later in 2008 calling for occupational licensing to give service providers more accountability.

4.3.4 Incentives

FM Global provides global commercial and industrial property insurance. During an interview with a representative of FM Global, the team asked what incentives would motivate building owners to comply with the building fire legislation. The representative’s interview summary stated:

“From our perspective, when they comply, they get very insurance premium rates...for other companies; there is very little incentive except for a big stick with a fine on the end of it.”

This insurance company has a unique program, which allows buildings to be individually inspected and serviced by fire engineers. Premiums are then adjusted on a case-by-case basis depending on many risk factors, including human elements such as maintenance. The interviewee attributed the company’s success to its close involvement in risk-assessment processes.

4.3.5 Summary

Some successful strategies used to promote building owner compliance with fire regulations include educational, enforcement and incentives approaches. Pamphlets, seminars and community safety programs are effective ways to inform building owners of their responsibilities and increase building owner awareness. Enforcement strategies include the use of PDA systems, punitive measures and occupational licensing requirements for service providers. Insurance providers can provide cost incentives for building owners by offering compliance-based premiums.



Figure 16: Increase Compliance Summary

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Building safety is a worldwide concern. According to the legislation of Victoria, Australia, commercial buildings are required to have routine maintenance to ensure the reliability of their essential safety measures. The consequences of inadequate maintenance of these safety systems can be devastating. This project provided the CFA with a compilation of the underlying reasons for the perceived low level of compliance with the maintenance of Essential Safety Measures as described by the *Building Regulations 2006* and information on sound approaches already being used in other jurisdictions to promote adequate maintenance of the fire safety measures. More specifically, this study determined the extent and causes of low-level compliance with the Essential Safety Measures legislation, explored the level of correlation between both incident outcomes and compliance with maintaining the Essential Safety Measures and additionally identified successful approaches already being used in other jurisdictions to promote compliance with fire safety regulations. A visual summary of conclusions and recommendations can be found in Appendix I. By addressing the reasons for the low level of compliance with the maintenance of the essential safety measures, we hope to raise compliance levels throughout Victoria, lower the risk of life and property loss and increase building safety.

5.1 Conclusions

The low-level of building owner compliance with the Essential Safety Measures can be partly attributed to the following factors:

- Complex legislation
 - Subdivisions of building classes depending on the building construction date
 - Different maintenance schedules described for each essential safety measure
- A lack of building owner awareness...
 - ...of legal maintenance responsibilities
 - ...of the benefit-cost of maintenance
 - Consequences of fire-related incidents
 - Legal penalties for non-compliance
- Inconsistent statistics and inspections
 - Lack of compliance statistics
 - Inadequate resources within municipalities
- Lack of compliance incentives
- Contractor reliability

The team found that malfunctions in fire safety systems such as sprinklers or detection devices often lead to devastating losses. These malfunctions could have been prevented through continual maintenance of the Essential Safety Measures.

The team also identified several educational, incentive and enforcement strategies employed by other jurisdictions to promote adequate compliance with fire safety regulations. Many other jurisdictions employ informational pamphlets and brochures to promote fire regulation awareness. In Victoria, successful educational seminars were advertised to specific building owners and tenants. A company in Queensland, FireVac, simplifies the inspection and maintenance process with the use of PDA systems. Queensland uses enforcement strategies such as large fines and occupational licensing for service providers, which will come into effect later this year. Some insurance providers give building owners a cost incentive to comply through their own inspections and visit-based premium adjustments.

5.2 Recommendations

The following section provides recommendations to address the causes of low-level building owner compliance with the Essential Safety Measures.

5.2.1 Complex Legislation

We recommend the support of new legislation to consolidate building classes into one division regardless of building age. A standard maintenance schedule for each essential safety measure will make the legislation more palpable for the average building owner. The new legislation will dictate that building owners need to maintain all essential safety measures listed on their occupancy permit, all essential safety measures in their building or a standard list of essential safety measures written into the legislation.

5.2.2 Building Owner Awareness

We suggest the development and distribution of educational materials such as the brochure in Appendix I to be made available to building owners during inspections, both at seminars and at local Fire Brigades. The CFA has resources in Fire Ready Victoria and Community Fireguard to produce these types of materials. These short informational materials will highlight the

importance of maintaining essential safety measures through information on the cost of fire-related incidents, statistics regarding business survival after a fire incident as well as legal penalties for non-compliance. They will also briefly describe the legal responsibilities of business owners according to the ESM. The team suggests that the CFA includes a framework to deliver these resources in Community Safety's Business Planning to promote building owner awareness of the Essential Safety Measures.

The team also suggests that informational seminars, like those already conducted in municipalities in Victoria, such as Knox, be conducted regularly and advertised specifically to local building owners. Advertising for these seminars may include television ads, radio ads, public ads, emails and especially newsletters. The CFA's partnership with ABC Radio and local municipalities can assist in advertising needs.

5.2.3 Statistics and Inspections

To motivate building owners to maintain their essential safety measures, we recommend the implementation of data collection and enforcement strategies. Enforcement issues due to limited resources in many municipalities will be minimized with the aid of Personal Digital Assistant (PDA) technology through standardized checklists and a connection to a central server; both the CFA and municipalities will use this technology. By storing statistics in a central database, evidence will be collected to persuade building owners to comply by making them more aware of risks, costs and business continuity after fire incidents. Data might encourage legislators to increase fines and streamline the processes for prosecution to encourage compliance. This technology will allow for maintenance logs to be stored centrally and will enable inspection data to be submitted electronically, allowing for faster processing and less paperwork. The device will be able to generate an annual report for the building owner upon request. The central database will also show trends in fire incidents to show insurers the benefits of reduced premiums based on identified risks.

5.2.4 Incentives

The team suggests that the CFA maintains a continuous effort in advising insurance companies of the benefits of promoting building owner compliance with the ESM. A greater insurance provider involvement in adjusting premiums depending on building compliance will give building owners a cost incentive to comply and will lower risk for the insurance company.

5.2.5 Contractor Reliability

The team recommends a government registration or licensing process for individual technicians or companies via mandatory minimum training in Victoria to ensure that service providers are held accountable for their contracts with building owners. The license or registration certificate will expire after a pre-determined period, requiring service providers to renew their license or registration.

5.3 Future Work

Prior to this project, information on the low level of compliance with the Essential Safety Measures was entirely anecdotal in nature. This project successfully determined the extent and causes of the building owner low level of compliance with the ESM through a concentrated effort to gather information by selectively interviewing high ranking representatives of both government and private organisations, surveying building owners and shadowing building surveyors in the field. However, it is recommended that a formal study be conducted to document this through investigation of council building notices and statistics.

The team suggests that a further study on the compliance levels within different municipalities in Victoria be conducted. This will allow CFA to gather information on how different municipalities attempt to raise awareness as well as show the CFA where they need to concentrate their efforts on compliance.

The team recommends that a future study be dedicated to investigating the different building fire regulations of the states of Australia and comparing the compliance levels within each state. This study could highlight how fines and enforcement affect fire regulation compliance levels.

Time constraints did not allow for a full investigation into the possibility of an ad campaign to increase essential safety measure public awareness. It is suggested that this possibility be further explored in future works.

It is also suggested that a future study be conducted regarding insurance provider awareness of building owner responsibilities according to the ESM. The team suggests the creation of an

education process to encourage insurance providers consider compliance levels when adjusting premiums.

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APPENDIX A: ADDITIONAL BACKGROUND

HISTORY OF THE COUNTRY FIRE AUTHORITY

In the late 1880's, there were uncontrollable conditions which Australia had to endure that caused many serious fires which resulted in many tragic deaths. There were several major fires in 1889 with substantial property damage and six firefighters lost their lives that year (Metropolitan Fire Brigade, 2007). In 1890 the Fire Brigades Act was created and subsequently two boards were formed, a Melbourne Fire Brigades Board (MFBB), later to be known as the Metropolitan Fire Brigades Board for the metropolitan area and the Country Fire Brigades Board (CFBB) for the nine County Fire Districts.

In 1926 the state of Victoria endured serious bush fires which led to the formation of the Bush Fire Brigades. The Bush Fire Brigades were harshly under-budgeted and only supported by the States Forest Department, which resulted in firefighters with inadequate supplies. Later, in 1939, a Royal Commission recommended a sole organization for the State of Victoria to unite the firefighters into one organization. Five years later in 1944, many fires wreaked devastation among the people of Victoria which gave ample support for the Royal Commission's recommendation, establishing the Country Fire Authority (CFA) on April 2, 1945.

Currently the CFA has evolved to become one of the world's largest volunteer based emergency services. It has been involved in fighting a number of major fires, including the Ash Wednesday Fires [CFA Ref]. As of 2007 there were around 58,000 volunteer members, 400 career based firefighters, and 700 career support staff and administration. The CFA is divided into 20 regions with 1200 different fire brigades.

ENFORCEMENT POLICIES

The purposes of the regulations stated in the *Building Regulations 2006* are to ensure that the occupiers are in a safe environment. Maintenance inspections are conducted for all essential safety measures and to be sure the necessary fire safety equipment is provided as well as functional to assist the fire brigade intervention. Violations are assessed by determining the severity of the incident, determining whether the owner had verbal or written warnings prior to the incident and the level of public concern. In the

event of an owner breaching the established legislation there are a series of events that may occur to enforce the appropriate penalty:

- **Warnings:** When an infraction occurs that is minor and can be solved quickly a written or verbal warning will be issued to the building owner.
- **Building Infringement Notices (BINs):** Offences that refuse to comply the Regulations will result in an issuance of BINs.
- **Prosecutions:** May be filed if breaching of the legislation occurs.

BUILDING INFRINGEMENT NOTICES

The Chief Officer under section 255 of the *Building Act 1993*, has the authority to issue a building infringement notice (BIN). This notice is given to a building owner in the event that a offence has occurred which violates the *Building Regulations 2006*. "A BIN serves two main purposes:

- i) To penalise a person for committing a 'prescribed offence' without bringing proceedings in a court (that is, without commencing a prosecution); and
- ii) Where appropriate, to require a person to take additional steps to 'expiate' (make amends for) the offence concerned."

(Metropolitan Fire, 2007)

APPENDIX B: TABLES AND FIGURES

<ul style="list-style-type: none"> • Air conditioning systems • Emergency lifts • Emergency lighting • Emergency power supply • Emergency warning and intercommunication systems • Exit doors • Exit signs • Fire brigade connections • Fire control centres • Fire control panels • Fire curtains • Fire dampers • Fire detectors and alarm systems • Fire doors • Fire extinguishers (portable) • Fire hydrants • Fire indices for materials • Fire-isolated lift shafts • Fire-isolated passageways 	<ul style="list-style-type: none"> • Fire-isolated ramps • Fire-isolated stairs • Fire mains • Fire-protective coverings • Fire-rated access panels • Fire-rated control joints • Fire-rated materials applied to building elements • Fire-resisting shafts • Fire-resisting structures • Fire shutters • Fire windows • Lightweight construction • Mechanical ventilation systems • Paths of travel to exits • Penetrations in fire-rated structures • Smoke alarms • Smoke control measures 	<ul style="list-style-type: none"> • Smoke doors • Smoke vents • Sprinkler systems • Stairwell pressurization systems • Static water storage • Vehicular access for large isolated buildings • Warning systems associated with lifts • Any other fire safety matter which is required by the Act or Regulations and the relevant building surveyor designates on the occupancy permit or otherwise determines in writing
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List of the Essential Safety Measures (Building Commission of Victoria, 2006)

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Building Act 1993

Building Regulations 2006

REGULATION 1209 & 1215: ANNUAL ESSENTIAL SAFETY MEASURES REPORT¹

Property Address:

Building/s or part of building:

Classification of building/s or part of building:

PART A – Post July 1994 building

This part of report is in relation to occupancy permit no: *(insert no)* issued: *(insert date)*
or maintenance determination dated: *(insert date)* and is required to be prepared before each anniversary of the date
of that occupancy permit or maintenance determination.

Maintenance personnel details

The following personnel carried out maintenance on the essential safety measures in this building during the preceding
12 months.

Essential safety measure	Name	Address

Annual Report Form Page 1 (ESM Manual, 2006)

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PART B - All Buildings (pre and post July 1994 Buildings)

1) Details of any inspection report provided under section 227E² of the Building Act 1993; and

2) Compliance

I hereby state that I have*/the owner has* taken all reasonable steps to ensure that—

* Delete as applicable

- (i) each essential safety measure is operating at the required level of performance or to fulfil its purpose; and
- (ii) where applicable each essential safety measure has been maintained in accordance with the occupancy permit or maintenance determination and will fulfil its purpose; and
- (iii) since the last annual essential safety measures report there have been no penetrations to required fire-resisting construction, smoke curtains and the like in the building, other than those for which a building permit has been issued; and
- (iv) since the last annual essential safety measures report there have been no changes to materials or assemblies that must comply with particular fire hazard properties, other than those for which a building permit has been issued; and
- (v) the information contained in this report is correct.

Signature

Owner/agent of owner*³

* Delete if inapplicable

Signed:

Date:

Notes

1. The owner must ensure that this annual essential safety measures report and records of maintenance checks, service and repair work are available on the premises for inspection by the municipal building surveyor or chief officer after 24 hours notice. The penalty for non-compliance is a maximum of 10 penalty units.
2. Section 227E of the *Building Act 1993* provides the power for the chief officer and municipal building surveyor to inspect essential safety measures.
3. Under section 240 and 248(1) of the *Building Act 1993* an agent of the owner must have written authority from the owner to act as their agent. Also note the general rules of "Agency" also apply.

Annual Report Form Page 2 (ESM Manual, 2006)

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14

KEY
0 = Yes
1 = No

Survey Template to Record Responses

Number	Question	Answer
1	Would you be interested in getting a copy of this final report?	
2	What do you perceive to be the current level of building owner compliance with the legislation?	
3	Do you have any statistics to support this?	
4	Are there consistent non-compliance issues?	
5	Are there differences in levels of compliance between Division 1 and 2	
6	What key essential safety measures are most important to be maintained?	
7	What effect has the introduction of the legislation in 1994 had on building	
8	How has the introduction of the Building Regulations 2006 enhanced this?	
9	Why do you think building owners have a low level compliance with regulations? (For example if interviewee is confused: Lack of education? Care? Cost? Enforcement?)	
10	How well do you find building owners understand the new requirements in the Building Regulations 2006?	
11	Are there specific areas of the regulations which building owners find particularly unclear?	
12	Do you think the legislation is too complicated?	
13	Can you suggest potential changes?	
14	What methods do building owners use to educate themselves of their responsibilities?	
15	Do you think building owners rely on service providers to educate them and ensure their building is in compliance?	
16	Should service providers be responsible for ensuring that building owners comply with regulations?	
17	What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?	
18	Do you think service providers should be registered or have a minimum level of training?	
19	Have previous efforts to educate building owners been effective?	
20	How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?	
21	Do you think it is more important to maintain essential safety measures in larger buildings? (Large = 500m ²)	
22	What level of priority do you think building owners place on building safety?	
23	Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?	
24	How do you think the cost of this maintenance compares to other costs of owning a building?	
25	Do you think building owners are aware of the expenses related to fire	
26	Do you think the building regulations are well enforced?	
27	What steps have been taken to ensure they are enforced?	
28	How often do Municipal Building Surveyors inspect buildings?	
29	What incentives would encourage building owners to comply with Building Regulations?	
30	Do you think recognition by insurance providers in reducing premiums would encourage compliance?	

Government and Private Officials Template to Record Responses

APPENDIX C: INTERVIEW DOCUMENTS



INTERVIEW CONSENT FORM



We are students at Worcester Polytechnic Institute in Worcester, Massachusetts. We are conducting a research project on behalf of the CFA to determine causes of low level compliance with the Essential Safety Measures as described by the *Building Regulations 2006*. As part of this project we are conducting a series of interviews with key individuals. We have asked you to participate because we believe you have unique knowledge of this issue that will be valuable to the project.

I, _____, the assignor, agree to be asked any questions that the assignees deem necessary to ascertain any information they deem to be important. I understand that my participation in this interview is entirely voluntary. I understand that I may refuse to discuss any question or terminate the interview at any time. I understand that I will not be given a chance to review any of these questions beforehand. I understand that my answers to these questions will not be held against me and that they will be kept in confidence. I understand that the CFA has the right to have one representative present at said interview and that this representative will not hold me legally responsible for any of my answers to these questions under any circumstances. I understand that the students from WPI are not to be considered representatives from the CFA and that their primary purpose here is to complete a task assigned to them by WPI.

I understand that this entire interview will be recorded to help the team process responses later. This recording will only be used for the purposes of this project and will be destroyed afterwards. The WPI team agrees never to connect my name with any of my answers under any circumstances.

_____	_____
Assignor	Date
_____	_____
Jason M. Hutchins	Date
_____	_____
Matthew B. Murdy	Date
_____	_____
Morgan E. Oexner	Date
_____	_____
CFA Representative	Date



POST INTERVIEW FORM



We are students at Worcester Polytechnic Institute in Worcester, Massachusetts. We are conducting a research project on behalf of the CFA to determine causes of low level compliance with the Essential Safety Measures as described by the *Building Regulations 2006*. As part of this project we are conducting a series of interviews with key individuals. We would like to thank you for participating because we believe you have unique knowledge of this issue that will be valuable to the project.

We want you to understand that the purposes for this project are strictly for us to gather anecdotal and statistical data to actually be able to prove lower levels of compliance. Your input is invaluable and we are grateful that you took the time to complete your interview. We will not be quoting you without your written permission. Before even this would happen, we would tell you exactly how we plan on quoting you, as well as show you how it will be used in context of the report. A copy of the consent form you signed earlier will also be left along with this document. If you have any questions or concerns or would like us to disregard any of your answers, please do not hesitate to contact our team.

Thanks,

Jason Hutchins

Matt Murdy

Morgan Oexner

8 Lakeside Drive
Burwood East, Vic 3151
Telephone:
Email:



*ESM GOVERNMENT AND PRIVATE ORGANISATION
INTERVIEW PLAN*



Where:

When:

Interviewee(s): Business Name:

Title:

Interviewers:

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?
- What do you perceive to be the current level of building owner compliance with the legislation?
 - Do you have any statistics to support this?
 - Are there consistent non-compliance issues?
 - Are there differences in levels of compliance between Subdivision 1 and 2 buildings?
 - What key essential safety measures are most important to be maintained?
 - What effect has the introduction of the legislation in 1994 had on building safety?*hard to answer, not all complying.
 - How has the introduction of the Building Regulations 2006 enhanced this?
- Why do you think building owners have a low level compliance with regulations? (For example if interviewee is confused: Lack of education? Care? Cost? Enforcement?)
 - How well do you find building owners understand the new requirements in the Building Regulations 2006?
 - Are there specific areas of the regulations which building owners find particularly unclear? *1 know they have to do maintenance, 2 know if div1/2, op?, level of maintenance?
 - Do you think the legislation is too complicated?
 - Can you suggest potential changes?
 - What methods do building owners use to educate themselves of their responsibilities?
 - Do you think building owners rely on service providers to educate them and ensure their building is in compliance?
 - Should service providers be responsible for ensuring that building owners comply with regulations?

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?
- Do you think service providers should be registered or have a minimum level of training?
- Have previous efforts to educate building owners been effective?
- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?
- Do you think it is more important to maintain essential safety measures in larger buildings? (Large = 500m²)
- What level of priority do you think building owners place on maintaining essential safety measures?
 - Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?
 - How do you think the cost of this maintenance compares to other costs of owning a building?
 - Do you think building owners are aware of the expenses related to fire incidents?
- Do you think the building regulations are well enforced?
 - What steps have been taken to ensure they are enforced?
 - How often do Municipal Building Surveyors inspect buildings?
- What incentives would encourage building owners to comply with Building Regulations?
 - Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Give brief oral summary of information gathered and give Interviewee opportunity to clarify.

Thank Interviewee for his/her time.

APPENDIX D: INTERVIEW SUMMARIES



ESM Government and Private Organisations Interview Summary



Where: Australian Institute of Building Surveyors: Melbourne, Australia

When: April 4, 2008 at 10:00am

Interviewee(s): Business Name: Australian Institute of Building Surveyors **Title:** Executive Officer

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

Between 10% and 15%.

- Do you have any statistics to support this?

No, it's anecdotal.

- Are there consistent non-compliance issues?

Yes, there is a problem with service providers checking boxes on forms without actually checking what they claim to be checking.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

Yes, division one probably has a higher achievement rate, 2 is where it falls.

- What key essential safety measures are most important to be maintained?

Sprinkler systems, probably don't save life, but they can help to prevent loss of life.

- What effect has the introduction of the legislation in 1994 had on building safety?

I know it has been reduced, but I don't know the actual percentage.

- How has the introduction of the Building Regulations 2006 enhanced this?

Formalized it more and made it better known among both commercial and private sectors.

- Why do you think building owners have a low level compliance with regulations?

Cost.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

The ones that actually do it as a profession have a good grasp of what is out there and what they need to comply with. The ones that just own a building are just in it for making money and will just let their compliance slide.

- Are there specific areas of the regulations which building owners find particularly unclear?

Yes, there are, they are not necessarily related to essential services maintenance. I think the CFA and MFB need to undertake a major education for property holders.

- Do you think the legislation is too complicated?

No, it's straightforward and laid out in clear, simple terms. There is some legal jargon in there to make it into a piece of legislation.

- Can you suggest potential changes?

Just make sure that it is kept up to date with the Australian standards.

- What methods do building owners use to educate themselves of their responsibilities?

Attendance at institutions and professional associations such as ours. We just had an essential services seminar and had over 150 people attend.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

At the end of the day, they shouldn't be relying on anyone but themselves because the responsibility is theirs in the end.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

Yes, because they have a contract and that contract says that they will perform the maintenance.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

I think it just confuses the issue.

- Do you think service providers should be registered or have a minimum level of training?

Yes, and ongoing professional development.

- Have previous efforts to educate building owners been effective?

Minimalist, those who are keen on maintaining their level of knowledge are going to stay current, but those who don't are not going to care.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

It's been good at educating the industry, but not the owners.

- Do you think it is more important to maintain essential safety measures in larger buildings?

Absolutely, larger buildings are the ones that will cause multiple deaths. A good example is the world trade center.

- What level of priority do you think building owners place on maintaining essential safety measures?

They do it because they have to, because it is a legal requirement to have a maintenance program. By hiring a service provider and getting the program, the building owner has met the minimum level or requirement.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

Absolutely, everything is economical. They don't understand that at the end of the day \$20,000 may save 10 people's lives. All they see is the money.

- How do you think the cost of this maintenance compares to other costs of owning a building?

It just part of the cost of operating a business and should only be considered that.

- Do you think building owners are aware of the expenses related to fire incidents?

No, and I think that is something that the insurance companies should be more open about to make building owners aware.

- Do you think the building regulations are well enforced?

In theory the legislation has been delegated to the local governments and they don't have the resources to make sure that they are being adhered to. There is a gap between what the building commission can cover and what the municipality can cover.

- What steps have been taken to ensure they are enforced?

I think there are no real steps at the moment, but people are getting ready to take those steps.

- How often do Municipal Building Surveyors Inspect buildings?

When they have a change of purpose or when someone has called in and reported a breach of the building's safety. They will only go out there if they have cause.

- What incentives would encourage building owners to comply with Building Regulations?

Tax deductions, rebate and cheaper fee for service. It just relates to money. It's not that they don't want to do it, just at the end of the day they don't want to be losing money. They don't want a death to occur on their hands, but they just go to the minimum standards to prevent it.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Yes, insurance industry has probably been a little bit too greedy over the years. A lot of people seem to forget that the building industry was basically founded on fires. Over the years, they have influence the minimum levels of requirements. Then when they do have an incident, they try to raise the standards, to minimize their risk. The insurance industry is where it got introduced.

Where: CFA HQ: East Burwood, Australia

When: March 14, 2008 at 2:00pm

Interviewee(s): Business Name: Building Commission of Victoria **Title:** Senior Technical Advisor

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- What do you perceive to be the current level of building owner compliance with the legislation?
Very low.
 - Do you have any statistics to support this?
No, not at the moment, we don't have a statistic collection. It's something we need to work on
 - Are there consistent non-compliance issues?
Yes, all of it. Main issue is the actual maintenance regimes themselves. Issues tend to start with the permit which is not correct from the start. Testing isn't being done when it should be.
 - Are there differences in levels of compliance between Subdivision 1 and 2 buildings?
Yes, subdivision 1 buildings, we see people trying to maintain them. The pre 1994 buildings, we still see some people who are trying to do it. But after 1994, people did not get the information.
 - What key essential safety measures are most important to be maintained?
All of them. All carry the same weight if they are on the occupancy permit. CFA would usually say the sprinklers or hydrants.
 - What effect has the introduction of the legislation in 1994 had on building safety?
There are probably still the same number of fires and same issues. It has probably not had a big impact as thought. Sprinkler systems do have some impact on the fires, so there is less damage. Number of fires is still the same.
 - How has the introduction of the Building Regulations 2006 enhanced this?
There was a fairly major change. Owners are now required to sign an annual report for pre - 1994 buildings. The major change was just for the older buildings, to force people to say that they have been maintaining them.
- Why do you think building owners have a low level compliance with regulations?

For two reasons, one having working in the private industry, I have seen it myself, the issue is the paperwork being filled in incorrectly. The biggest reason, someone wouldn't want to comply is the cost of it. For the bottom line, for the owner, it's money.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

I feel it's pretty low for private industries. But healthcare or government healthcare industries, the levels are actually very high. The healthcare buildings are also often maintained as a high risk building. The 'mom and dad' factories tend to be less knowledgeable. Larger buildings are maintained more than smaller ones.

- Are there specific areas of the regulations which building owners find particularly unclear?

It depends on the audience. If it's someone who knows they have to do maintenance, then they probably know it word for word. If it's someone who doesn't even know that they even have to do maintenance, then they probably would have some trouble understanding it. In sub division 1, it is very specific. Sub division 2 is a very broad statement that ranges from building methods and fire plans. Sub division 1 tells how to maintain, while sub division 2 does not. An issue is that building owners will just contract it out and then not care to understand the safety measures.

- Do you think the legislation is too complicated?

Yes.

- Can you suggest potential changes?

Do away with the divisions and just have one set of regulations for all buildings. Clearly define, in the regulations, what maintenance needs to be done. This means that all buildings will be maintained the same way. Size, age or type of the build doesn't apply... if you have sprinklers, then maintain them in this way.

- What methods do building owners use to educate themselves of their responsibilities?

Not many, but most will put their hands up and state that they attend seminars. They might go to the FPA as well. It depends on where you are, but the seminars probably barely see a portion of the building owners.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Yes.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

Yes.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

It wouldn't be any different if it wasn't a performance based design. The information that is provided to the owners by the service providers may not be appropriate.

- Do you think service providers should be registered or have a minimum level of training?

Yes.

- Have previous efforts to educate building owners been effective?

No, we are seeing the same level of issues and the same questions being raised over the last ten years.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

Again, only scratching the surface of the number of owners. There has been a positive effect on the owners who have taken the manual away and have actually used it. I have presented to over 3000 people and only had 1 person come back and say that he didn't like it. That was because he owned multiple buildings of multiple ages.

- What level of priority do you think building owners place on maintaining essential safety measures?

Probably not as high as it should be. If you mean from the point of view of property protection or safety, then they will prioritize with making money first and then building safety and maintenance. It's not the highest of priorities.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

Yes.

- How do you think the cost of this maintenance compares to other costs of owning a building?

I would like to get that stat, but we don't have that statistic. Probably around 5%

- Do you think building owners are aware of the expenses related to fire incidents?

I think everyone has a perception, but most people don't realize the actual costs.

- Do you think the building regulations are well enforced?

No, definitely not. There are not enough inspectors or auditors or quality control. Lack of resources says we only do it on a complaint basis.

- What steps have been taken to ensure they are enforced?

Risk-based analysis. They all operate on a complaints based service.

- How often do Municipal Building Surveyors Inspect buildings?

Fairly rarely, they only inspect based on a maintenance schedule or a complaints basis. Inspecting 300 to 600 buildings a year within the city, I would probably say that is not sufficient.

- What incentives would encourage building owners to comply with Building Regulations?

Bigger fines. Maybe some million dollar fines or some jail time... for now \$5000 is the biggest you would get from us.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Yes, in theory, but no, in practice. Insurance companies don't care at the moment. They will just take your money, no matter what. However, if a fire comes, they may refuse to pay up. If it doesn't improve the profit, then they aren't going to use it. Fires don't happen often enough for them to justify lowering rates for compliance.

Where: Building Commission: Melbourne, Australia

When: April 3, 2008 at 2:00pm

Interviewee(s): Business Name: Building Commission of Victoria **Title:** Manager- Technical and Research Services

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

Anecdotally, probably less than 10%, but I think that it is increasing. We have been running programs, here at the building commission for the building owners. We have probably given out 3500 copies of the current essential safety measures manual. They are free now, but used to be \$30.

- Do you have any statistics to support this?

We don't, trying to figure out how to measure it is the difficult part. Giving that information is what is going to be the different part.

- Are there consistent non-compliance issues?

I think the biggest issue for us is the administration of it all. The owners knowing about the OP and that there are the measures on it that they have to maintain it is often a big problem. So the big thing is the awareness of the building owners. Then getting the MBS to record everything that they do as well as getting the building owners to document everything they do and getting an annual report together. We have a standard blank annual report form on our website that has three parts, new, old, under construction. From an enforcement point of view, the owner is always responsible and liable for the maintenance of the essential safety measures. It doesn't matter what the contract between the building owner and the person leasing the building actually says, the MBS will always come to the building owner to talk about the issues in the building. The only thing that the occupier can get into trouble is blocking an exit.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

Yes. Anecdotally, we believe that to be the case. The older buildings are probably the worse case scenario because the owners just don't understand what they are supposed to do. The newer buildings have the information on the permit, making it easier for the owners to comply.

- What key essential safety measures are most important to be maintained?

Obviously the ones that are related to the fighting of fire, sprinklers, reels and hydrants. You are also going to want to know where the exits are and how to get out of the building if you have to evacuate. It's hard to prioritize and put one on the top of the tree. I feel that are all fairly equal.

- What effect has the introduction of the legislation in 1994 had on building safety?

I would love to say that it was a vast improvement; the problem is that a lot of people don't know about it, don't understand it or just don't want to know about it.

- How has the introduction of the Building Regulations 2006 enhanced this?

I think that it has raised awareness. There wasn't a lot changed in there. It included a provision for annual reports for pre-1994 buildings. The only thing they have to do now is produce an annual report and show that they are actually performing the maintenance on their buildings. Smoke control and smoke evacuation are newer things, so it would be hard to require the older buildings to have those systems in place.

- Why do you think building owners have a low level compliance with regulations?

I think it has a bit to do with the leasing and the contract agreements between the owners and the people leasing the buildings. They don't often live in the buildings and the feel that they are still responsible for the building. We are trying to get the message across that they can't just cut corners and that they need to have some understanding, especially if they are a new building owner, they will be able to find out about this information.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

It's varied. Some building owners have no understanding at all and employ other people to do all the work for them. They may not even live in this country. There are the building owners that live in the buildings themselves and want them to be safe. There are government buildings as well.

- Are there specific areas of the regulations which building owners find particularly unclear?

I think for the older buildings, the new annual report process is going to be something that they are probably going to struggle with. By this time next year, we will find out if there are enough practitioners to actually get it all done in time for next year.

- Do you think the legislation is too complicated?

I don't think that it is. Before I worked here, I actually felt that it was a bit complex. I just feel that it is just one of the responsibilities of owning a building.

- Can you suggest potential changes?

At this stage, no. But the monitoring of how each stage is working, we are trying to assess whether or not Part 12 is achieving what it was supposed to do. Find out if it is worthwhile and maybe find out what the compliance level actually is. I wouldn't want to go changing anything until we

actually get that data in. Maybe there are some older regulations that we just don't need anymore.

- What methods do building owners use to educate themselves of their responsibilities?

I think they go and seek help. If they have a question about something, they go and ask for help. We always encourage them to go and ask for help if they feel they need it. Go and find out what they need to do and what they are supposed to be doing.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Yes. There are a lot of service providers, certain practitioners need to be registered with the building practitioner's board.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

If a service provider is contracted by the owner to maintain a particular service, then they have the responsibility to ensure that it is maintained up to code and should be held liable if it is not.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

Pretty big, I think because the alternative solution may have a different type of maintenance and what types of standards that have to be met.

- Do you think service providers should be registered or have a minimum level of training?

We still have not decided if they need to be registered. We are not sure if it will actually improve things. There would be an extra cost imposed upon the industry for those people to get trained and then to get registered. Unquestionably, they need to have a minimum level of training.

- Have previous efforts to educate building owners been effective?

I don't think they have. We take a responsibility for a part of that. In the past, we probably would have tried to target the practitioners and such, but now we are starting to target the owners and such.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

The have been very effective. The manual is now three parts, depending on which era the building was in. If people use it, they would certainly be very far along the path of complying.

- Do you think it is more important to maintain essential safety measures in larger buildings?

It depends on what the building is. For example you may have a very large warehouse that may only have two people working in. But you might have a much smaller theater that has mass people in it or the MCG that are a much higher

risk. However, the Essential Safety Measures are only concerned with life safety and not as much the actual safety of the building itself.

- What level of priority do you think building owners place on maintaining essential safety measures?

I don't think it's very high. I think they are probably more concerned that the building is fully occupied. I would think that these days, health and safety legislation awareness is rising.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

Yes. I think that would be the number one reason. On the other hand, if they were going to release the building and maybe they would have to upgrade that building for them to get a good tenant or a release. Then maybe that would get them to make that building comply.

- How do you think the cost of this maintenance compares to other costs of owning a building?

Difficult for me to say, my current role, I don't get involved anymore.

- Do you think building owners are aware of the expenses related to fire incidents?

I think they probably are. Two aspects are the building and the capitol cost of replacing the building and the down time for their business with not staff and no income.

- Do you think the building regulations are well enforced?

I think it varies. I think the building regulations in general differently across the state. It depends on the resources of the councils, they all do it at different levels.

- What steps have been taken to ensure they are enforced?

The building commission actually carries out audits. For example, we just did an audit of a municipal building surveyor and making sure that they are doing everything up to what the legislation says they are supposed to be doing.

- How often do Municipal Building Surveyors Inspect buildings?

Again, that would vary; it depends on the group of surveyors. They run each report through a filter and if it is not important, then they will leave it with the private surveyor. That filter criteria is enforced differently across the state.

- What incentives would encourage building owners to comply with Building Regulations?

There are no attractive incentives. Its more the other way, if something does happen, then you have a real problem on your hands. The incentives are more negative ones rather than positive. Maybe if someone was really good about maintaining the essential safety measures, then maybe the insurance companies would help them out.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

I think they should and I think that the companies should hold the essential safety measure much higher than they currently do.

Where: CFA HQ: East Burwood, Australia

When: March 14, 2008 at 2:00pm

Interviewee(s): Business Name: Building Commission of Victoria **Title:** Senior Technical Advisor

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- What do you perceive to be the current level of building owner compliance with the legislation?
Very low.
 - Do you have any statistics to support this?
No, not at the moment, we don't have a statistic collection. It's something we need to work on
 - Are there consistent non-compliance issues?
Yes, all of it. Main issue is the actual maintenance regimes themselves. Issues tend to start with the permit which is not correct from the start. Testing isn't being done when it should be.
 - Are there differences in levels of compliance between Subdivision 1 and 2 buildings?
Yes, subdivision 1 buildings, we see people trying to maintain them. The pre 1994 buildings, we still see some people who are trying to do it. But after 1994, people did not get the information.
 - What key essential safety measures are most important to be maintained?
All of them. All carry the same weight if they are on the occupancy permit. CFA would usually say the sprinklers or hydrants.
 - What effect has the introduction of the legislation in 1994 had on building safety?
There are probably still the same number of fires and same issues. It has probably not had a big impact as thought. Sprinkler systems do have some impact on the fires, so there is less damage. Number of fires is still the same.
 - How has the introduction of the Building Regulations 2006 enhanced this?
There was a fairly major change. Owners are now required to sign an annual report for pre - 1994 buildings. The major change was just for the older buildings, to force people to say that they have been maintaining them.
- Why do you think building owners have a low level compliance with regulations?

For two reasons, one having working in the private industry, I have seen it myself, the issue is the paperwork being filled in incorrectly. The biggest reason, someone wouldn't want to comply is the cost of it. For the bottom line, for the owner, it's money.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

I feel it's pretty low for private industries. But healthcare or government healthcare industries, the levels are actually very high. The healthcare buildings are also often maintained as a high risk building. The 'mom and dad' factories tend to be less knowledgeable. Larger buildings are maintained more than smaller ones.

- Are there specific areas of the regulations which building owners find particularly unclear?

It depends on the audience. If it's someone who knows they have to do maintenance, then they probably know it word for word. If it's someone who doesn't even know that they even have to do maintenance, then they probably would have some trouble understanding it. In sub division 1, it is very specific. Sub division 2 is a very broad statement that ranges from building methods and fire plans. Sub division 1 tells how to maintain, while sub division 2 does not. An issue is that building owners will just contract it out and then not care to understand the safety measures.

- Do you think the legislation is too complicated?

Yes.

- Can you suggest potential changes?

Do away with the divisions and just have one set of regulations for all buildings. Clearly define, in the regulations, what maintenance needs to be done. This means that all buildings will be maintained the same way. Size, age or type of the build doesn't apply... if you have sprinklers, then maintain them in this way.

- What methods do building owners use to educate themselves of their responsibilities?

Not many, but most will put their hands up and state that they attend seminars. They might go to the FPA as well. It depends on where you are, but the seminars probably barely see a portion of the building owners.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Yes.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

Yes.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

It wouldn't be any different if it wasn't a performance based design. The information that is provided to the owners by the service providers may not be appropriate.

- Do you think service providers should be registered or have a minimum level of training?

Yes.

- Have previous efforts to educate building owners been effective?

No, we are seeing the same level of issues and the same questions being raised over the last ten years.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

Again, only scratching the surface of the number of owners. There has been a positive effect on the owners who have taken the manual away and have actually used it. I have presented to over 3000 people and only had 1 person come back and say that he didn't like it. That was because he owned multiple buildings of multiple ages.

- What level of priority do you think building owners place on maintaining essential safety measures?

Probably not as high as it should be. If you mean from the point of view of property protection or safety, then they will prioritize with making money first and then building safety and maintenance. It's not the highest of priorities.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

Yes.

- How do you think the cost of this maintenance compares to other costs of owning a building?

I would like to get that stat, but we don't have that statistic. Probably around 5%

- Do you think building owners are aware of the expenses related to fire incidents?

I think everyone has a perception, but most people don't realize the actual costs.

- Do you think the building regulations are well enforced?

No, definitely not. There are not enough inspectors or auditors or quality control. Lack of resources says we only do it on a complaint basis.

- What steps have been taken to ensure they are enforced?

Risk-based analysis. They all operate on a complaints based service.

- How often do Municipal Building Surveyors Inspect buildings?

Fairly rarely, they only inspect based on a maintenance schedule or a complaints basis. Inspecting 300 to 600 buildings a year within the city, I would probably say that is not sufficient.

- What incentives would encourage building owners to comply with Building Regulations?

Bigger fines. Maybe some million dollar fines or some jail time... for now \$5000 is the biggest you would get from us.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Yes, in theory, but no, in practice. Insurance companies don't care at the moment. They will just take your money, no matter what. However, if a fire comes, they may refuse to pay up. If it doesn't improve the profit, then they aren't going to use it. Fires don't happen often enough for them to justify lowering rates for compliance.



ESM Government and Private Organisations Interview Summary



Where: CFA: East Burwood, Australia (Phone)

When: March 28, 2008 at 1:00pm

Interviewee(s): Business Name: Country Fire Authority **Title:** Fire Equipment Maintenance Officers
(2 Interviewees)

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

Not very high, very low. Below 50%.

- Do you have any statistics to support this?

No, just anecdotal.

- Are there consistent non-compliance issues?

Fire extinguishers and exit lights and other things like paths of travel and doors may be jammed. Perhaps they are not displaying the certificate of occupancy. There is a much lower level of compliance in places that have never been visited by the CFA or MBS.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

You will generally find that pre-1994 buildings don't have much compliance at all. Post 1994 buildings have been told by their certificate of occupancy what they are supposed to be doing, so their level is much higher.

- What key essential safety measures are most important to be maintained?

All are equally important. Maybe sprinkler safety.

- What effect has the introduction of the legislation in 1994 had on building safety?

It would have a better effect on building safety if it was enforced. But there just are not enough people out there to enforce it. Unless a person is introduced to essential safety measures, they just are not going to know. The legislation has a positive effect on building safety, but I feel that the legislation is a bit ahead of reality... there just is no one there to enforce it.

- How has the introduction of the Building Regulations 2006 enhanced this?

I'm not 100% sure. I think it would again get back to the policing side of things. There are people out there that are prepared to take the risk that it will never happen to them.

- Why do you think building owners have a low level compliance with regulations?

I think the main reason is ignorance.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

Most of them probably don't understand the old ones, let alone the new ones.

- Are there specific areas of the regulations which building owners find particularly unclear?

We mainly deal with essential services stuff here, but to my knowledge, that hasn't changed a great deal. I think one of the biggest issues for building owners understands that they are ultimately the ones responsible.

- Do you think the legislation is too complicated?

Yes.

- Can you suggest potential changes?

Perhaps a way to keep up with how people are using their buildings. For example, when a new tenant comes in and changes the use of the building, they would have to get a permit.

- What methods do building owners use to educate themselves of their responsibilities?

9 times out of 10, they just turn over their OP and then they would go to the fire brigade to ask them questions.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Yes they do, definitely.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

That's pretty hard to say, because they can suggest what the building owner is supposed to do, but whether or not the building owner actually does it, is not the service providers responsibility.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

Complicates things.

- Do you think service providers should be registered or have a minimum level of training?

There should be a minimum level, certainly. If we tell them to do a certain level of training and then register them, I would certainly support that.

They have registration in other parts of Australia, such as Queensland and Tasmania.

- Have previous efforts to educate building owners been effective?

Yes, educating them on the premises is very effective, but there are just not enough resources to make this practical. In some ways, the educating is usually by stealth, by inspections, beating people on the head.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

I've never really been to one. If I owned a small business, the last thing I would be thinking of is maintaining the essential services I'd be more worried about getting money in the door.

- Do you think it is more important to maintain essential safety measures in larger buildings?

I believe that in all buildings, it is important to maintain the essential services safety measures. The larger communities are usually much better with the essential services. The smaller businesses are usually not as high.

- What level of priority do you think building owners place on maintaining essential safety measures?

Pretty low. In larger buildings, it is usually higher. In the smaller buildings and businesses, they have a very low priority on the essential services.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

It definitely is. Perhaps not in the big industry, because they are aware of what they have to do and what is required of them. I know that 10 or 15 years ago in Ballarat were built at 490 meters instead of 500 so they didn't have to put the fire protection in.

- How do you think the cost of this maintenance compares to other costs of owning a building?

A reasonably large building is going to be a decently large portion of your overhead income. I was sure that there was a percentage that came out of your cost and I was surprised at the size of it that went towards the maintenance of your sprinklers and other essential services. Some places have chosen to upgrade their systems to reduce the frequency of checks, but this ends up costing them a much larger sum of money.

- Do you think building owners are aware of the expenses related to fire incidents?

Not until they get a bill.

- Do you think the building regulations are well enforced?

There just are not enough resources and the building owners are willing to take the risk. Some will even go as far to do risk assessment and determine whether or not it is worth their time to stay up to code. Most of the stuff we hear from the building owners comes in the form of an inquiry when they are trying to get new insurance and

need to find out whether or not they are up to code. There are a lot of businesses out there that are not fully aware of what their risks are.

- What steps have been taken to ensure they are enforced?

No. I think that it is a resource issue. I sat in on the MBS conference and essentially there was every surveyor in the state there and there were only maybe 200 people there. Not often at all, I would say. They are still miles behind the 8 ball.

- How often do Municipal Building Surveyors Inspect buildings?

The high risk ones are serviced maybe once or twice a year. But everywhere else is not serviced unless there is a problem.

- What incentives would encourage building owners to comply with Building Regulations?

How about theatre and barbeque. I don't know what you want us to say.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

I don't think insurance providers are going to reduce their premiums. I don't think they are knowledgeable about the essential services. Maybe they should be trained. As long as the advice that is given, is the right advice.

Where: Dandenong Fire Station: Dandenong, Australia

When: March 27, 2008 at 3:00pm

Interviewee(s): Business Name: Country Fire Authority **Title:** Fire Safety Officer

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

It depends on the item that we are talking about. The items the CFA is not involved in are fairly low. Fire hydrants are fairly low, exit lighting and emergency lighting as well. It also depends on the age of the building, the ones that have to have the OP and ESMs displayed at their door have more understanding. It also depends on the size of the building. Smaller, less than 20 employees, is very low 20 - 100 is usually higher and more than 100 is very high.

- Do you have any statistics to support this?

No, it's all anecdotal, but we could easily get the statistics by surveying our customers.

- Are there consistent non-compliance issues?

Consistent as in the form of not having any servicing. Fire hydrants, exit lighting and emergency lighting. Consistent issues are probably the quality in the work being done. There is no evidence to determine that there is a competent level of service. The law just says the person needs to be competent, not their work.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

The newer buildings are more compliant because they have to go through the extra steps.

- What key essential safety measures are most important to be maintained?

Anything to do with smoke detection, especially in the residential environment. I would also say that the fire hydrants are also very important.

- What effect has the introduction of the legislation in 1994 had on building safety?

Very little, it's only been in the last couple of years that the building commission has started to make the building owners aware of their responsibilities. The legislation has existed since 1994, but they are only starting to tell the people about that within the last few years. If the government makes the legislation and then doesn't take the time to educate the people, then what's the point. Legislative change doesn't have a significant impact. It just gives us more powers and we don't exercise those powers very well.

- How has the introduction of the Building Regulations 2006 enhanced this?

The regulations by themselves don't do very much. Now we can stand behind the building commission and help.

- Why do you think building owners have a low level compliance with regulations?

Lack of understanding and awareness.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

Unless they have been to a seminar or have an interest they don't understand. It also depends on the size of the buildings again.

- Are there specific areas of the regulations which building owners find particularly unclear?

No, I think it's just a general awareness issue. I don't think that compliance is too difficult.

- Do you think the legislation is too complicated?

Yes, it is too complicated. It would be far easier if there was one set of rules that applied to every building.

- Can you suggest potential changes?

Standardization.

- What methods do building owners use to educate themselves of their responsibilities?

Those that are proactive are in the fire brigade. They often call the fire brigade if they have issues and questions. They don't think to call the MBS or a service provider because they think that the fire brigade is the center of knowledge on fire.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

I don't know about educate, but they expect their service providers to service up to the legislation and in accordance with standards and that they have the competent personnel that they are supposed to have. They need to take an interest and not blindly trust the service provider.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

I think a bit a responsibility goes to both. We should be regulating service providers, they should be providing certificates. They

should have competent staff. I should know, as a building owner, that when I hire a service provider and they show me the certificate, it should stand up in court.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

It has a potential to complicate things.

- Do you think service providers should be registered or have a minimum level of training?

Yes.

- Have previous efforts to educate building owners been effective?

They generally are effective. You find that once they have been made aware of their responsibilities, they are generally a lot more active. The problem lies in making them aware.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

It's a good step.

- Do you think it is more important to maintain essential safety measures in larger buildings?

I think it applies to all buildings.

- What level of priority do you think building owners place on maintaining essential safety measures?

I'd say that it is reasonably low.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

It is for smaller businesses. I don't think it's such an impediment for larger businesses.

- How do you think the cost of this maintenance compares to other costs of owning a building?

It's probably quite high for most buildings. It depends on the age of the building. They find that they may have to spend a lot more on ESM than on not.

- Do you think building owners are aware of the expenses related to fire incidents?

I don't think they understand that at all.

- Do you think the building regulations are well enforced?

It varies, in some of our municipalities, there are very active MBS. We don't have the resources to make up for the ones that do not care.

- What steps have been taken to ensure they are enforced?

Probably just encouragement from MBS.

- How often do Municipal Building Surveyors Inspect buildings?

It varies. In some areas, they inspect once every two years. In others, they have never done it or will only do it when they have an inquiry from someone like us.

- What incentives would encourage building owners to comply with Building Regulations?

A reduction on their insurance would be a good one.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Yes. I think the insurance companies have a significant role to play in that area.

Where: CFA: Ballarat, Australia

When: March 19, 2008 at 2:30pm

Interviewee(s): Business Name: Country Fire Authority **Title:** Fire Safety Officer

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

Very low.

- Do you have any statistics to support this?

We have statistical information about the number of inspections. This would be better serviced by the city council or the MBS. Most of our data is anecdotal.

- Are there consistent non-compliance issues?

Yes, lack of compliance with recording the maintenance, lack of awareness of what systems are in the building what needs to be maintained. Occupancy permits aren't visible. ESMs aren't available and owners don't understand what they mean or do they understand their liability.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

Not a great deal, both divisions have just as high a frequency of non-compliance.

- What key essential safety measures are most important to be maintained?

All of them.

- What effect has the introduction of the legislation in 1994 had on building safety?

Hasn't had any affect as to a level of compliance, probably a regulatory effect so now the regulators can now enforce the act. There is now a push to try to promote essential safety measures, but people are oblivious to their responsibilities.

- How has the introduction of the Building Regulations 2006 enhanced this?

Strengthened it to the degree of retrospective requirements, such as sprinkler systems.

- Why do you think building owners have a low level compliance with regulations?

Cost and awareness.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

They don't.

- Are there specific areas of the regulations which building owners find particularly unclear?

They're obligations under the act. They tend to think that their agreement with the tenant abdicates them from their requirements.

- Do you think the legislation is too complicated?

Yes.

- Can you suggest potential changes?

No.

- What methods do building owners use to educate themselves of their responsibilities?

I don't know that they actually do. It is driven by government organizations, such as the MFB and the CFA.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Building owners engage service providers to provide a function. They just hire them to go into the building to meet the requirements. They may not be qualified.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

No.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

Performance design may have clouded the issue because service providers may not realize how it changes when people get in the building.

- Do you think service providers should be registered or have a minimum level of training?

Yes, they should be registered and have a minimum level of accreditation and not be allowed to practice outside it.

- Have previous efforts to educate building owners been effective?

The sessions may not be effective because they don't cover enough of the building owners.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

It's a good start. It helps companies that work with the building owners. Whether it's successful or not, is hard to measure.

- Do you think it is more important to maintain essential safety measures in larger buildings?

I don't think it actually matters, because as the building expands, so do the requirements for safety measures.

- What level of priority do you think building owners place on maintaining essential safety measures?

On a scale of 1-10 a 0.5.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

It's an added cost that they probably don't factor into the cost of maintenance of the building. It's generally minimal cost to maintain, big to replace.

- How do you think the cost of this maintenance compares to other costs of owning a building?

Same as before, it is a minimal cost to maintain and a large cost to update.

- Do you think building owners are aware of the expenses related to fire incidents?

No.

- Do you think the building regulations are well enforced?

No.

- What steps have been taken to ensure they are enforced?

There has been a high level of engagement with municipalities with the CFA to not impose this proactive approach of inspecting buildings to affect the workings of the council. High risk buildings and risk based are targeted first.

- How often do Municipal Building Surveyors inspect buildings?

It varies across municipalities; we try to schedule a program that won't cause a problem with the municipality. While we are there to support, it varies based on the workload they are able to manage.

- What incentives would encourage building owners to comply with Building Regulations?

Potentially a reduction in insurance premiums, maybe some sort of advertisement. Maybe an area that can be talked about as a high compliance area.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Potentially, it might. If it was advertised and pushed by the insurance councils it would have a bigger effect.

Where: Dandenong Fire Station: Dandenong, Australia

When: March 27, 2008 at 3:30pm

Interviewee(s): Business Name: Country Fire Authority **Title:** Fire Officer

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

I would say its average, not very good at all. In the older area, you don't see much at all.

- Do you have any statistics to support this?

No, only anecdotal.

- Are there consistent non-compliance issues?

Exit paths and blockage of exits tend to be the ones we see. Hose reels are another one of the ones we see a lot.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

Yes, we see a difference. See a lot of compliance in the new buildings.

- What key essential safety measures are most important to be maintained?

Fire fighting equipment, paths, locked doors and things that allow people to escape from the building.

- What effect has the introduction of the legislation in 1994 had on building safety?

Honestly, I think none.

- How has the introduction of the Building Regulations 2006 enhanced this?

Can't really say much on that. I cant really say I've seen much.

- Why do you think building owners have a low level compliance with regulations?

Because it costs them money. They aren't interested in safety unless it generates a punitive part on the other end. Some of them have a conscience, but they are in the minority.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

In the newer buildings, I would say yes.

- Are there specific areas of the regulations which building owners find particularly unclear?

No comment.

- Do you think the legislation is too complicated?

Personally, I don't. I do think the initial setup could be too complicated for the owners.

- Can you suggest potential changes?

No.

- What methods do building owners use to educate themselves of their responsibilities?

No comment.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

I think so, I also think they rely on the MBS and council a lot. I don't think there is much education out there for the pre 1994 owners.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

I think it would help, but the building owner should have some responsibility themselves.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

I think it's probably made it worse as they will get a maintenance regime that just ends up not getting followed.

- Do you think service providers should be registered or have a minimum level of training?

Yes.

- Have previous efforts to educate building owners been effective?

No comment.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

Never been to one, only seen the manual, couldn't tell you.

- Do you think it is more important to maintain essential safety measures in larger buildings?

Just as important in all buildings. Fire and danger is present in all buildings it shouldn't differentiate based on size.

- What level of priority do you think building owners place on maintaining essential safety measures?

Low.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

Yes.

- How do you think the cost of this maintenance compares to other costs of owning a building?

I think it's probably a little higher because some service providers charge a little more for life safety systems.

- Do you think building owners are aware of the expenses related to fire incidents?

No, not at all.

- Do you think the building regulations are well enforced?

Parts of it. Generally I would say yes, but there are some weaknesses as well.

- What steps have been taken to ensure they are enforced?

Not much.

- How often do Municipal Building Surveyors inspect buildings?

Not very often, I don't know.

- What incentives would encourage building owners to comply with Building Regulations?

Civic duty, having a conscience. I suppose we could use ISO to affect the insurance premiums.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Yes.

Where: CFA HQ: East Burwood, Australia

When: April 8, 2008 at 1:00pm

Interviewee(s): Business Name: Country Fire Authority **Title:** Operations Manager

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?
Yes.
- What do you perceive to be the current level of building owner compliance with the legislation?
Medium, because of the process in place through council and building surveyors.
 - Do you have any statistics to support this?
No.
 - Are there consistent non-compliance issues?
Not sure.
 - Are there differences in levels of compliance between Subdivision 1 and 2 buildings?
From buildings that I go into, the pre-1994 ones are certainly a lot worse off than the more modern buildings.
 - What key essential safety measures are most important to be maintained?
Active systems, such as sprinklers and smoke evacuation. Hydrants, hose reels, hose reels for passive ones.
 - What effect has the introduction of the legislation in 1994 had on building safety?
It has definitely improved it. Pre-1994, everything then relied on the building surveys. There were no private surveyors. There were no follow-up inspections being done, just because they couldn't get back to the buildings.
 - How has the introduction of the Building Regulations 2006 enhanced this?
Don't know.
- Why do you think building owners have a low level compliance with regulations?
Everything they do or try not to do is all related to cost.
 - How well do you find building owners understand the new requirements in the Building Regulations 2006?

I would say not very well. Even people that are involved in the fire protection industry don't seem to know them that well.

- Are there specific areas of the regulations which building owners find particularly unclear?

Once you get into the technical aspects of smoke alarms and smoke separations, they tend to get really complicated as to what needs to be done. Once you start getting into the technical stuff, it is very hard to read.

- Do you think the legislation is too complicated?

In part, I think some of it is very good.

- Can you suggest potential changes?

It is technical by nature and has to be that way.

- What methods do building owners use to educate themselves of their responsibilities?

I think they try to get external advice and that advice can be good or bad.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

I think they see the service providers as a not free service. They always come to us first because we don't charge them.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

It used to be the fire brigade who was the building code police, but if it's the building surveyors, then it should not be the fire brigade.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

There might be half a dozen different ways of getting a building to comply. It's opened it up for people to meet the requirement in different ways.

- Do you think service providers should be registered or have a minimum level of training?

Yes. One of the biggest complaint lines we still get is people complaining about these companies trying to scam them.

- Have previous efforts to educate building owners been effective?

From a fire station perspective, the building owners basically know what's required. I don't know if it's from the fire fighters or how they know.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

Don't know.

- Do you think it is more important to maintain essential safety measures in larger buildings?

In any building at all, if there are requirements under the code, then it has to be maintained. Size doesn't matter.

- What level of priority do you think building owners place on maintaining essential safety measures?

Pretty Low.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

Yeah, it probably is, but to a larger degree, some of it is ignorance. I think it falls back to the fire protection companies, which do extra stuff, which companies end up paying for.

- How do you think the cost of this maintenance compares to other costs of owning a building?

It's probably up there, take away running costs like electricity, but since it's an annual cost, I recon it would be a fairly significant cost.

- Do you think building owners are aware of the expenses related to fire incidents?

No.

- Do you think the building regulations are well enforced?

Yes. I think the councils have been very vigilant and anything brought to their attention is then taken care of.

- What steps have been taken to ensure they are enforced?

Most of the stations already have processes in place for annual inspections.

- How often do Municipal Building Surveyors inspect buildings?

Only if they receive a request to do it or if there is some kind of reason for them to go and do it.

- What incentives would encourage building owners to comply with Building Regulations?

Primarily, insurance costs. That, to some degree does happen. They seem to be the ones who can wield the biggest stick.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Yes.

Where: Municipal Building Surveyor's Building: Geelong, Australia

When: March 26, 2008 at 2:00pm

Interviewee(s): Business Name: City of Greater Geelong **Title:** Municipal Building Surveyor

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

I would say it's probably around 15 - 20% range, across the board. Hospitals and nursing homes probably have an 80-90% range. Schools are probably in the 90 - 100% range. Larger shopping centers are around 80%. Individual buildings or chain stores are around 70 or 80%. Outside that, new buildings are 50% for first twelve months, and then they fall off very quickly after that.

- Do you have any statistics to support this?

Just our audits. It's not uncommon to see that between audits, the building's compliance will drop off significantly.

- Are there consistent non-compliance issues?

There probably is a mixture of things depending on what field you are in. Entertainment or nursing homes tend to have locked doors because it's easier than having the security. Bad ventilation. Shopping centers tends to have unlit exit signs.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

Division 1 buildings are typically more non-compliant because they are older buildings. The division two buildings are relatively new and are much more likely to be up to code.

- What key essential safety measures are most important to be maintained?

It depends on the building. In a single story factory, the concern there would be emergency lighting and ventilation. In a building such as this, it would be more critical to have emergency lighting and good access as well as fire services. Nightclubs have been chaining the exit doors closed to keep people from sneaking their friends in the back, if there is a fire by the front door, and then no one is going to get out of that building. In a nursing home, it's very important to have early detection because there

are a lot of bed ridden people and a very minimal staff. Some things are more critical than others.

- What effect has the introduction of the legislation in 1994 had on building safety?

I forced the occupancy permit to list the essential safety measures that needed to be maintained. It took a few years for the effects of that legislation to come to light because the building which had their permits already was grandfathered in. There can be appeals which can take a long time to resolve.

- How has the introduction of the Building Regulations 2006 enhanced this?

It's changed the way people think at the end of the day. It gives more power to the councils, CFA and the brigade. It makes the owners more aware that the need to keep their buildings up to code. The fines are there, but they are peanuts compared to the risks.

- Why do you think building owners have a low level compliance with regulations?

Ignorance, dollars and cents. The owner doesn't know much about the fact that their occupancy permit has the information on the back regarding which essential services they are supposed to be maintaining. They just don't care, we booked a venue for 250 people to inform them and only 44 people ended up attending. Of the population of 250,000 people, that's not a very good ratio. We sent out flyers and put it in the paper, and the outcome was very disappointing. The owners don't even want to buy the book that tells them how to do the maintenance, and that is very frustrating from our point of view. We see owners turning off exit signs to save money on electricity. Some building owners will try to push the responsibility back to the tenants.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

Generally they have very little knowledge. They rely on the architect and the builder, unless they are foreign or are a multinational organization.

- Are there specific areas of the regulations which building owners find particularly unclear?

I'd say that the general owner finds most of it unclear and has no knowledge of the general regulations. We find that they are ignorant of even where to find the OP and its obvious that they have no knowledge of what it actually says or that they are supposed to maintaining the service measures.

- Do you think the legislation is too complicated?

Complicated to a point where if people like us are reading it, then it's not too complicated but for someone who is making something like headlights for a Ford, will have no knowledge of a building or whether or not it is up to code. The large national or chain companies are usually more up to code because they have people on staff who are in charge of going around and making sure that everything is up to code and informing the staff.

- Can you suggest potential changes?

There are probably a lot of things that could be changed. Probably the educational processes are in need. It would be helpful if the legislation would provide more resources for the organizations that are in charge

enforcing it. Your fines generally won't cover the costs at the end of the day. So yea, it needs more resources, money, building surveyors.

- What methods do building owners use to educate themselves of their responsibilities?

Word of mouth is probably the only thing that some of them use. Some may engage a consultant to come on board and help them set up and then maintain them themselves. If you maintain something, you spend less money fixing it than maintaining it.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

A lot do and are led by example where a consultant firm will engage in many jobs and just do them without explaining it to the owners.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

They should be if they are engaged, but most of them are only engaged for a contract period. After the period, they are no longer obligated, so after that period, a lot of them just drop off.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

I'd say that it has caused further problems. Sometimes the occupancy permits do not list those items that have been listed under performance assessment. Often the paperwork for these designs gets lost and in a lot a cases it just gets lost that these things even exist.

- Do you think service providers should be registered or have a minimum level of training?

I really believe so. It's been pushed for years that they need to be a competent person. This means that they should have some expertise in some field, whether it is electrical, mechanical or fire. They often will just blindly follow what is written on the piece of paper and if that is wrong and they are not competent, then they will be doing the wrong work.

- Have previous efforts to educate building owners been effective?

No comment.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

No comment.

- Do you think it is more important to maintain essential safety measures in larger buildings?

The larger buildings are generally more complex, so essential services in those are more critical to the building. A big warehouse will not be forced to have the hoses in the middle where as malls do.

- What level of priority do you think building owners place on maintaining essential safety measures?
 - It depends on the level of awareness.*
 - Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?
 - Some are driven by dollars.*
 - How do you think the cost of this maintenance compares to other costs of owning a building?
 - Very minimal, probably on average of 1%. The more services that are in a building the more costs that are going to be incurred. Service providers do charge for each measure that maintain, however some do charge for some that they do not. Such as the story about one that had been turned of for 13 to 16 years and the service provider had been there every 6 months and been charging the owner for that service.*
 - Do you think building owners are aware of the expenses related to fire incidents?
 - Probably not, until you hear on the news about some big building going up in flames. Not just about the loss of the building, but also the cost of losing the business and the stock in that building.*
- Do you think the building regulations are well enforced?
 - No.*
 - What steps have been taken to ensure they are enforced?
 - We have a system in place here where we do audits. The long story is that we are just understaffed. It's very hard to keep staff in this industry.*
- How often do Municipal Building Surveyors Inspect buildings?
 - Very frequently. We are very proactive.*
- What incentives would encourage building owners to comply with Building Regulations?
 - Not having their buildings closed down or having to go to court. Maybe if we started prosecuting people in court, but we have found that this doesn't produce as good results. The problem is that in 13 weeks, I closed down 9 nightclubs and not one of those made the paper or the news. But unless we write it ourselves and put it into the papers, then it just doesn't get aired.*
 - Do you think recognition by insurance providers in reducing premiums would encourage compliance?
 - I believe that this would be the most efficient way. That would be the most beneficial way to go and make it part of their policies for the building owners to comply with the codes. Perhaps have a list of questions to go through and score the building and then generates their rates based on what they score on that test. It's frustrating because that certainly, from our point of view, boost the level of compliance.*

Where: Fire Protection Association of Australia: Boxhill, Australia

When: March 25, 2008 at 11:30am

Interviewee(s): Business Name: Fire Protection Association of Australia **Title:** Executive Director

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

Probably would be inadequate. Anecdotal evidence seems to be that there is not an appropriate level of compliance.

- Do you have any statistics to support this?

No.

- Are there consistent non-compliance issues?

There seems to be an issue around the testing of sprinklers. The area of hydrants and hose reels. They are also the ones that we hear about are supposedly tested, but you can see that there are not.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

No comment.

- What key essential safety measures are most important to be maintained?

Anything really connected to life safety and people getting out of buildings. Alarms, lights and anything relating to notifying people properly.

- What effect has the introduction of the legislation in 1994 had on building safety?

I wouldn't be aware of what was happening before 1994.

- How has the introduction of the Building Regulations 2006 enhanced this?

I think it has. I think the building owners are becoming a bit more focused. Every different territory in Australia has a different level of legislation. We are a national organization, so the inconsistency is a bigger issue for us.

- Why do you think building owners have a low level compliance with regulations?

I don't think the building owners have a good understanding of what is required. I don't think they have been properly briefed.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

I think the building owners rely a lot on the service people and sometimes the service people themselves don't know. It has to do with how the information trickles down the organization.

- Are there specific areas of the regulations which building owners find particularly unclear?

I think it would be the essential services area. Once the building has been built, this is what they have to be aware of, I just don't think they have a good understanding.

- Do you think the legislation is too complicated?

Generally speaking, I think most legislation could do with more supporting documents.

- Can you suggest potential changes?

Maybe something that allows for less water to be used when you test pumps and hydrants.

- What methods do building owners use to educate themselves of their responsibilities?

I think they still rely on their contractors to tell them. I don't believe the bodies that really represent the building owners, the council, recognizes that they have the responsibility to disseminate the information.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Absolutely.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

I think they have a responsibility to advise the building owners when their building is not in compliance.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

It's probably made it even a little bit more trickier. I've certainly identified a need for the engineers who have come up with an alternative solution need to document better.

- Do you think service providers should be registered or have a minimum level of training?

Absolutely.

- Have previous efforts to educate building owners been effective?

I think so; I think some of the things we have run to date have helped educate them. It's ongoing.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

I think they've been good, but they don't just capture a big enough audience. The people who do attend are the interested ones who already are making themselves educated as opposed to the ones who normally wouldn't attend those sort of forums.

- Do you think it is more important to maintain essential safety measures in larger buildings?

I think larger buildings that have stairways are more so because you have more time and challenges to get people out of there.

- What level of priority do you think building owners place on maintaining essential safety measures?

Probably not enough, but I would qualify that due to their lack of understanding.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

I don't think that it's the factor, but I do think that it is an important factor. Just to qualify, there is some criticism that the industry itself is a driver for maintenance and is a bit self serving because you have the constant ongoing maintenance and are very lucrative for big companies.

- How do you think the cost of this maintenance compares to other costs of owning a building?

I wouldn't think there is a comparison.

- Do you think building owners are aware of the expenses related to fire incidents?

No, I don't think they understand the consequences of a fire. 65% of those businesses don't come back again and I don't think they fully understand. It's an interesting debate, because the building code focuses on life safety, not the businesses damages.

- Do you think the building regulations are well enforced?

No.

- What steps have been taken to ensure they are enforced?

I don't think there is enough taken. When one tenant moves out and one moves in, there are issues for whether the fire protection for the old tenant is significant for the new tenant and you don't realize this until you have a fire.

- How often do Municipal Building Surveyors inspect buildings?

I'm not aware of buildings occurring much after the certificate of occupancy is given. It's stricter in Queensland because they've had more harsh fires.

- What incentives would encourage building owners to comply with Building Regulations?

Regular reporting. Also perhaps a bit more interest from the insurance areas, such as insurance premiums.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

I think it would contribute to it. Years ago the companies did have a bigger interest and did their own inspections. I don't think the insurance industry is that closely engaged. But we are currently trying to get the companies to be drivers for compliance.

Where: Gardner Group: South Melbourne, Australia

When: April 9, 2008 at 4:00pm

Interviewee(s): Business Name: Gardner Group **Title:** Director

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?
Yes.
- What do you perceive to be the current level of building owner compliance with the legislation?
30% involved in actively doing the maintenance and probably 5% get it right.
 - Do you have any statistics to support this?
No statistics, my answer comes from not just our groups' council, but also the MBS.
 - Are there consistent non-compliance issues?
Yes.
 - Are there differences in levels of compliance between Subdivision 1 and 2 buildings?
Yes, I think primarily because those people who have division 2 buildings are more likely to be aware of it and thus more likely to maintain a building because the ESM maintenance schedule is listed on the back of the occupancy permit.
 - What key essential safety measures are most important to be maintained?
They all are. Level of importance, #1 is paths of travel and the exit door. #2 is exit signs and emergency lighting. #3 is the warning system. #4 is the smoke exhaust and those other systems.
 - What effect has the introduction of the legislation in 1994 had on building safety?
This helps people to understand what they need to maintain and that there was a requirement to maintain. I'm not sure if it gets carried out to the detail to make sure the systems work.
 - How has the introduction of the Building Regulations 2006 enhanced this?
It's changed the requirements, but I don't know if it's enhanced it that much.
- Why do you think building owners have a low level compliance with regulations?

Ignorance is the big reasons. They just don't understand their obligations unless you thrust it in their faces. It's just not a priority.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

Larger buildings understand it better. Smaller buildings just put permit in drawer and forget about it.

- Are there specific areas of the regulations which building owners find particularly unclear?

Most of it.

- Do you think the legislation is too complicated?

It is complicated, but it is not more complicated than planning legislation or occupational health and safety. It is necessary for it to be complicated.

- Can you suggest potential changes?

I think potential changes for the ESM stuff would be to review legislation in other states so that it is consistent across Australia. If they made it the same across Australia, then it would be a lot easier for people to learn it.

- What methods do building owners use to educate themselves of their responsibilities?

More often than not, it will either be self education across Australia or a newsletter in the mail when the legislation changes. I think it's easier for them to keep up these days with the internet.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Yes.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

I don't think that would be appropriate at this point in time, to have them be able to sign things off because they don't really understand the legislation to that point.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

Very little, performance stuff has been in since 1994 or earlier. In Victoria, it has always been here as you could go to the building appeals board to get a building approved.

- Do you think service providers should be registered or have a minimum level of training?

Yes, I do. Not sure how they would achieve that, but I know the commission is looking at that. I think they should be registered and held responsible for the work they do.

- Have previous efforts to educate building owners been effective?

No totally, I think its difficult, I think it depends on the level of information and how it is distributed.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

I don't even know how many of those they have sold. I don't think that someone who owns only one building is going to spend a lot of time on it.

- Do you think it is more important to maintain essential safety measures in larger buildings?

I don't think it relates to the size of the building. I think it relates to the usage of the building and the degree of the fire engineering that has been involved in the building.

- What level of priority do you think building owners place on maintaining essential safety measures?

Low.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

Yes.

- How do you think the cost of this maintenance compares to other costs of owning a building?

Not huge, not compared to the rental.

- Do you think building owners are aware of the expenses related to fire incidents?

Some are most aren't. If they do, they probably largely think about the damage to the building rather than the loss of trade or being able to have people in the building. If they understand the impact of not doing it, in terms of dollars, then they might start.

- Do you think the building regulations are well enforced?

No. I don't think the councils have the staff to be able to enforce them. It's a huge resource issue.

- What steps have been taken to ensure they are enforced?

Some councils just aren't doing it and some just aren't doing it in a logical way.

- What incentives would encourage building owners to comply with Building Regulations?

I would say the only incentive is the fire. People react when someone shows up with an enforcement notice or a proactive inspection or when the MFB shows up.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Yes. The guys we deal with are usually triggered to do their maintenance by audits from their insurance companies.



ESM Government and Private Organisations Interview Summary



Where: Civic Center: Knox, Australia

When: April 2, 2008 at 10:00am

Interviewee(s): Business Name: Knox City Council **Title:** Municipal Building Surveyor

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

No more than 5%, from my experience.

- Do you have any statistics to support this?

I probably do have some statistics, from some of the ones that I have done. I have never walked into one that was fully compliant.

- Are there consistent non-compliance issues?

Exit doors is the most, access to fire equipment next then emergency lighting, then everything else.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

No, unless you talk about nursing homes, they were really bad a while ago, but now that we have been through them, they have become pretty good now. For a nursing home to be a nursing home, they have to go through a federal organization that checks everything you can think of and then they get a score and if their score is below a certain level, then they don't get accreditation and don't get funding, which means that they can't afford to be a nursing home.

- What key essential safety measures are most important to be maintained?

I would say paths of travel and exit doors. The fire brigade would say fire fighting equipment, but I think that getting out of the building is the most important thing for people and visitors to the building.

- What effect has the introduction of the legislation in 1994 had on building safety?

If everybody complies, than it would have a big effect. But since they did no advertising, the it literally has no effect, because it wasn't properly done.

- How has the introduction of the Building Regulations 2006 enhanced this?

It's made no difference, because it wasn't properly done, because the building owners have no knowledge of it. They have had no education except for these seminars, which are making a big difference now, but they should have happened in 1994. I believe that these should be held in every single municipality.

- Why do you think building owners have a low level compliance with regulations?

I think they're overpowered with a lot of other things and they have to go out and find the information, rather than just being handed to them. This is why the seminars work so well. We send letters out to every building owner and this is why we are getting such a good response.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

I think they do understand them, once you explain it to them. They accept them, but they don't necessarily agree with them.

- Are there specific areas of the regulations which building owners find particularly unclear?

I think mechanical ventilation and cooling towers are a complex part of the legislation. Their knowledge of it isn't that great, but if you can explain individual items to them, then they are great, but it just doesn't get explained to them.

- Do you think the legislation is too complicated?

I think it's poorly written.

- Can you suggest potential changes?

Not off the top of my head, but I would like it to be simpler. It should be written for people like us, it should be written in plain English, for the people who own buildings.

- What methods do building owners use to educate themselves of their responsibilities?

They wait until we turn up, then they do it.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Yeah, absolutely, they don't have any knowledge of it. There is just nothing out there to even explain to them how it all works.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

They only have to do what they get paid to do. We can't make them responsible for it.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

It's probably set us back about 100 years. On paper it was a great idea. But what people are doing, they are utilizing it to fix mistakes they have made. 90% of the work is reverse engineering now.

- Do you think service providers should be registered or have a minimum level of training?

Absolutely.

- Have previous efforts to educate building owners been effective?

I don't remember any previous efforts, other than what we do as MBS. There just aren't enough people to inspect all the buildings.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

I think it's been really good; you certainly scare a lot of people. The building commission has put together a presentation that really freaks a lot of people out. I think it would be better if the commission presentation was a bit friendlier. We're getting a big response, much bigger than other places. I have a small handout that I give out that has five steps on it. I give them a copy of that and a copy of the report.

- Do you think it is more important to maintain essential safety measures in larger buildings?

I think larger buildings are important if you have a lot of people in there, but I don't see that it is less important to maintain a smaller building. I see people getting hurt more in a smaller building, because there are so many more essential safety measures in a larger building.

- What level of priority do you think building owners place on maintaining essential safety measures?

It depends on how aware they are. On a scale of 1 to 10, 15 if they know or 0 if they don't.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

They say its cost until they lay it out. I don't think that cost is an issue on the smaller buildings. On the bigger ones with sprinklers, I think cost is a huge problem. It costs more to pay for an injury than to pay for the maintenance.

- How do you think the cost of this maintenance compares to other costs of owning a building?

It varies depending on the building as before. I think that larger buildings tend to have a large cost associated with the maintenance comparatively.

- Do you think building owners are aware of the expenses related to fire incidents?

No, I don't think they are.

- Do you think the building regulations are well enforced?

In Knox, yes, everywhere else, no. I think they are well enforced, I Just don't think there are enough people to do it..

- What steps have been taken to ensure they are enforced?

I don't think the council is responsible enough to enforce the legislation, its up to them how many a year they do because it doesn't say how many they have. Some just do one, others do heaps of them.

- How often do Municipal Building Surveyors Inspect buildings?

I can only say in my case. I only have 5 staff, we probably do one / week on average. If had 2-3 more people. Get more done.

- What incentives would encourage building owners to comply with Building Regulations?

I don't know what incentives you could give them. Maybe if you impress the safety of people and the building upon them.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

I don't think so; any recognition they would make would be so minimal, so I don't think they would.



ESM Government and Private Organisations Interview Summary



Where: CFA HQ: East Burwood, Australia

When: April 9, 2008 at 10:00am

Interviewee(s): Business Name: Maintenance Essentials **Title:** Director

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

Low.

- Do you have any statistics to support this?

Yes.

- Are there consistent non-compliance issues?

Yes, generally, I have found that building owners are not educated well enough on their obligations and they take advice from contractors and peers that are based on obsolete experience, as compared to current facts.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

No, not really.

- What key essential safety measures are most important to be maintained?

According to the legislations, all of them. Anecdotally, there are some things that we could probably forget about, but generally they all should be maintained.

- What effect has the introduction of the legislation in 1994 had on building safety?

It certainly has raised the awareness of the essential safety measures and is a step in the right directions. The actions that they building owners take vs. what they should do differ. The best way I can describe this is that our worst habits become our common practice. So people just keep doing the same thing. I see our organization as an educator more than anything else.

- How has the introduction of the Building Regulations 2006 enhanced this?

It's made building owners more responsible and increased their level of responsibility for compliance.

- Why do you think building owners have a low level compliance with regulations?

Their own poor education leads to an inconsistent level of performance. An example of an industry that is highly regulated, places that services engines on jet aircraft. When compared to how they maintain the levels of compliance in a jet engine, there is nothing in common with the fire codes.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

Education is getting better and the internet certainly has helped. As a result the level of awareness is getting better.

- Are there specific areas of the regulations which building owners find particularly unclear?

Yes, the difference between division 1 and division 2 and what is the level of performance that they are required to maintain to.

- Do you think the legislation is too complicated?

In regard to division 1 and 2.

- Can you suggest potential changes?

Have only one set of legislation for all buildings. For example you don't need to inspect and test of an extinguisher as often as a panel.

- What methods do building owners use to educate themselves of their responsibilities?

Their service providers, the internet, seminars and the workbook that the building commission produces.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Yes. I also don't think service providers are sufficiently educated to completely educate a building owner. For example, a service provider may only offer services on only a part of the system and don't know all the legislation.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

They can't be, because ultimately the decision to spend money falls on the building owner. There are even cases where we have advised the building owner to update something and they just have not.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

Performance based design has made compliance more sophisticated and difficult to address. Unfortunately, one of the biggest problems in performance based design is losing the paperwork that the engineers draw up gets lost and it becomes hard to maintain.

- Do you think service providers should be registered or have a minimum level of training?

Both the US and Canada are good examples of minimum levels of training for service providers as well as minimum competency levels. I think there should be a test to prove a minimum competency level. Perhaps an alternative method, other than registration would be more appropriate. Maybe licensing would be better.

- Have previous efforts to educate building owners been effective?

From my perspective, I would say yes, as building owners become more aware of the risks and their responsibilities of the essential safety measures. I think it has been effective for the people who have attended and most importantly, it has been effective at raising the levels of essential safety measures.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

It actually becomes a centerpiece on a shelf, as opposed to an important document.

- Do you think it is more important to maintain essential safety measures in larger buildings?

Its important to maintain in all building.

- What level of priority do you think building owners place on maintaining essential safety measures?

Out of sight and out of mind, as a result, their level of priority is contingent on their awareness of the risk if they don't comply.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

My business does a lot of work for large corporate. The progressive corporate who understand the risks are more likely to comply.

- How do you think the cost of this maintenance compares to other costs of owning a building?

It's nowhere near as expensive as maintaining equipment or electricity.

- Do you think building owners are aware of the expenses related to fire incidents?

I don't think that's their primary concern. Most of them don't think it's going to happen to them.

- Do you think the building regulations are well enforced?

It depends on where you are. The building commission has been pretty clear that there are high risk categories and those places are particularly well enforced. I don't think the enforcement has been comprehensive and well enforced.

- What steps have been taken to ensure they are enforced?

MBS will inspect, then the council will review and write to them if necessary.

- What incentives would encourage building owners to comply with Building Regulations?

Any time that you wave a carrot in front someone, they are more likely to change their behavior. Linking fire brigade levy to insurance, maybe that would get them to comply.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Yes, but I don't know that insurers have sufficient resources to police that.

Where: Metropolitan Fire Brigade Station: Melbourne, Australia

When: April 2, 2008 at 3:00pm

Interviewee(s): Business Name: Metropolitan Fire Brigade **Title:** Commander and Senior Station Officer

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

It varies by class and occupancy; anywhere from 93% success to below 23%.

- Do you have any statistics to support this?

Yes, we have. It depends on the building class and the use. You have to be very specific. Nightclubs are terrible and business buildings are generally better.

- Are there consistent non-compliance issues?

Exits, emergency lighting, exit signs, fire protection systems.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

That's hard to answer because subdivision 1 is required to display an occupancy permit, whereas subdivision two didn't have to do any of this until 2006. If you want better compliance, then you have to flood the market, with TV, magazines and other forms of advertising.

- What key essential safety measures are most important to be maintained?

Exits and pathways are the most important, because above all else, people need to be let out. The other answer would be that all are because the BCA is the minimum standard that everyone is required to follow, and because they all form the minimum standard to perform part of a system that together makes the building safe.

- What effect has the introduction of the legislation in 1994 had on building safety?

For us, it really hasn't had a great effect because people haven't been doing it. Because there has probably been less than 5% compliance with people displaying it. Some people would display only permit part and not display the other pages that contain the list of essential safety measures.

- How has the introduction of the Building Regulations 2006 enhanced this?

In subdivision 3, we can now prosecute occupiers to an extent. This doesn't detract from the owners responsibilities. Subdivision 2, 30th of June 2009, all pre-1994 buildings will now need to have annual reports. Now they will need to engage a building surveyor to tell them what essential services need to be in that building.

- Why do you think building owners have a low level compliance with regulations?

Refusal to spend money that won't be earning them anything in return is a major factor. They don't understand the importance of that equipment. 90% of building owners in subdivision 1 would have no idea that they have to display their occupancy certificate. Part of them knowing that they have to display the certificate is because the fire or building inspector is not doing their job and telling the building owner that they have to have it displayed.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

They don't. Half of them wouldn't even know that the building regulations have changed. They might know that it has changed, but they won't know what the changes are. The bigger places, like massive hotels and hospitals are usually up to date because they have an engineering department which is keeping track of the legislation and knows that it has changed. Places like nightclubs that just are trying to sell alcohol, do not really care about the legislation.

- Are there specific areas of the regulations which building owners find particularly unclear?

All of it. There is one section that they do seem to understand that they need to avoid the 5 yearly fire hydrant test.

- Do you think the legislation is too complicated?

It could be simpler for the laymen. I understand that it is written the way that it is to cover all its bases, to make sure that it is not open to interpretation. I think that better education programs should be put in place and the people who wrote the legislation need to be the ones who are doing the education.

- Can you suggest potential changes?

It's a very broad question, because, for us, as an enforcement agency, its costing us in excess of \$2200 to issue a \$200 fine. The problem is the penalties are too small and too lenient. Not only are the too lenient, but the prosecution is so in favor of the owner, that no one will even bother issuing building infringement notices anymore. The agency that is trying to prosecute is trying to jump through so many hurdles, that its just not worth the time for the agency, so they just don't bother unless it's a safety issue. We find that overall we just are lacking funds, so writing the notices is cost prohibited.

- What methods do building owners use to educate themselves of their responsibilities?

I think they only rely on any associations that they belong to. Electricians and plumbers just rely on the magazines that they are subscribed to.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

No, think they believe that if they hire someone to maintain the building, then it's a problem solved and that they no longer have any responsibility.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

If their job is to maintain something to a standard, then they should be doing so. We have had instances where service providers have been taking on contracts for one levels only, rather than taking on them all because it's cheaper.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

I think it's made it much more difficult for the owners to comply because it's such a complicated system, which makes it much harder for the inspectors to inspect it. Unless you know everything about that building, then you will get lost. As a result, it is very easy to make an accurate decision regarding that building.

- Do you think service providers should be registered or have a minimum level of training?

Yes, definitely. (2nd opinion): Don't know if it is feasible

- Have previous efforts to educate building owners been effective?

No, there's always been room for improvement, but it's extremely difficult to educate everybody about everything. In some cases they just refuse to take it all in because it is just too much. There are those that know exactly what they are doing, so they do everything they can to avoid having to do the maintenance.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

Don't know, haven't been to one. (2nd opinion): I've been to two or three sessions, some of the good ones as Knox have been very large.

- Do you think it is more important to maintain essential safety measures in larger buildings?

I don't think that the size matters. Someone can die in any building, it doesn't matter how big or small it. However, we will do a risk assessment, but the reality is that the bigger building will be checked that the smaller one won't be.

- What level of priority do you think building owners place on maintaining essential safety measures?

Fifty percent priority on it, after we have been there and told them that they have to get on it. I would be surprised if 5% even thought about it. Again, it depends on the type of the buildings, a hospital is audited so many times a year and they know what they are doing. But the building owned by a foreigner who hires so

many other services to manage the building and have never actually been in the building.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

For sure.

- How do you think the cost of this maintenance compares to other costs of owning a building?

I would suggest that it is a very high cost with the other costs associated with running a building.

- Do you think building owners are aware of the expenses related to fire incidents?

No, they are aware there are expenses. They don't appreciate the total overall cost that it will cost their business, such as lost revenue. Less than 3% have a recovery of business plan. Less than 2% of nightclubs that have a fire reopen. Not too many of them would fare too well.

- Do you think the building regulations are well enforced?

I don't believe that any agency that is in the enforcement role has adequate staff to be sure they are.

- What steps have been taken to ensure they are enforced?

I work from 7am to 8pm and my boss drags me out to night clubs on Friday and Saturday night.

- How often do Municipal Building Surveyors Inspect buildings?

Very rarely would an MBS inspect a building. His staff will do that for him. It's not the frequent, but it does occur.

- What incentives would encourage building owners to comply with Building Regulations?

If it was free. If they could see a dollar value in maintaining their systems. All they see is how much it will cost them. If you could find some way of showing them that it is of value to maintain the equipment. My strategy is to tell them that I'm going to give them this fine if they don't fix it and it will cost them less to fix it, so they might as well just fix it.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Yes, we always say that if places protect themselves, then insurance companies should give them some soft of a break for doing so. They would rather pay for a building to burn down than to pay for a reduction in policies.

A question that the interviewees asked themselves:

What are building owners like who have experienced a fire after the building is rebuilt?

They are usually very good, because they have learned the hard way.

Where: Philip Chung and Associates: Jolimont, Australia

When: April 7, 2008 at 3:00pm

Interviewee(s): Business Name: Philip Chung and Associates **Title:** Director and Manager – Essential Safety Measures

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

My perception is that it is currently low. If you look at it from different types of buildings, as you get into the factory warehouses and smaller businesses, it is fairly low. Building owners with a lot of people in their building tend to try to be better about compliance.

- Do you have any statistics to support this?

No, it's basically through our exposure through the market and the feedback we get back. It would appear that the high end of the market is more willing to acknowledge the level of risk they are exposed to.

- Are there consistent non-compliance issues?

There are a few different levels; you get the buildings that are not doing anything. The problem is often in finding where all the documentation is and finding out what actually is not complying.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

It's probably even across the board. It depends on the building and the occupants as well as the services in that building.

- What key essential safety measures are most important to be maintained?

A high occupancy building, you would want to make sure your egresses. A warehouse, you would want to have detection. I don't know if you want to single one out more than the others in terms of safety because I think they all need to be functioning.

What effect has the introduction of the legislation in 1994 had on building safety?

It's a slow wheel that's starting to move, but it still has a long way to go. There are definitely more and more owners and facility owners who know what their requirements are.

- How has the introduction of the Building Regulations 2006 enhanced this?

On the maintenance side, it definitely has had an impact with the requirement for the annual report next year. The pre-1994 buildings have certainly had an impact.

- Why do you think building owners have a low level compliance with regulations?

I don't think they fully appreciate the risk on the lower end of the market. I don't think the insurance companies are pushing them. They don't see a return on the money if they spend it on maintenance until something goes wrong, at which point its too late.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

Unless the council or the building commission makes the drive to make them aware of it, then I don't think they are going to be aware. The ones that already are compiling are aware and have the resources to throw it at. The other ones don't have this level of perception as they run smaller companies and are not concerned with the legislation.

- Are there specific areas of the regulations which building owners find particularly unclear?

Perhaps the frequencies and level of maintenance that is actually required.

- Do you think the legislation is too complicated?

I think it has to be complex, because it's not a black and white issue. It's still evolving in terms of where the responsibilities lie.

- Can you suggest potential changes?

I think the relevant building surveyor should be able to change the maintenance on a building. (2nd Interviewee) I have a different opinion, if the council or municipal can create a standard set or list that people can comply to.

- What methods do building owners use to educate themselves of their responsibilities?

There is an organization called the property council or Australia. They do quite a bit to educate their members of the legislation. I don't think that people often do much to educate themselves.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Yes.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

No, I think the responsibility relies with the building owner as it is their asset to manage.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

I think that if there is a performance based design, then it needs to be clearly differentiated as to what and where it is by the fire engineer. It just needs to have detailed documentation especially about the maintenance so the owner knows any extra steps they may need to take. The fire brigade needs to find some way to manage which building which buildings have performance based designs in them.

- Do you think service providers should be registered or have a minimum level of training?

I think they should have a minimum level of training. Registration maybe at a company level and then they need to ensure that they properly train their guys before they go out into the field.

- Have previous efforts to educate building owners been effective?

I've never been exposed to any specific efforts to train owners. I think they are breaking ground now and starting to turn it around.

- How effective have the Essential Safety Measures Maintenance Manual and seminars been in educating owners?

So far, from what I can tell, it has been effective in raising awareness in the people who have attended those seminars.

- Do you think it is more important to maintain essential safety measures in larger buildings?

More loss in a bigger building.

- What level of priority do you think building owners place on maintaining essential safety measures?

Majority place a low priority. We're in a transition phase now and more are starting to realize that it is a real requirement.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

Yes.

- How do you think the cost of this maintenance compares to other costs of owning a building?

On the one's we've been exposed to, it forms a very small part of their budget.

- Do you think building owners are aware of the expenses related to fire incidents?

No, absolutely not.

- Do you think the building regulations are well enforced?

In general, I would say that they are stretched with resources, so I don't think they can effectively police it, but they do what they can do. I think that when they do enforce them, they see it through and see that it is at a good level.

- What steps have been taken to ensure they are enforced?

If a building notice is issued on a building, then they will see it through. On those ones, there is a conclusion and the matter is resolved to the council's and building owner's satisfaction.

- How often do Municipal Building Surveyors Inspect buildings?

Don't know.

- What incentives would encourage building owners to comply with Building Regulations?

Insurance premiums and fines in place. If they council got to more buildings and there were more building notices threatening to close them down and loss of business was a threat, then they would start to pay attention.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Yes.

Where: Verified: Notting Hill, Australia

When: April 15, 2008 at 11:00am

Interviewee(s): Business Name: Verified **Title:** Director

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you perceive to be the current level of building owner compliance with the legislation?

Very Low.

- Do you have any statistics to support this?

Yes.

- Are there consistent non-compliance issues?

Because the regulations are quite prescriptive, it is very difficult for the building owner to get everything done.

- Are there differences in levels of compliance between Subdivision 1 and 2 buildings?

I don't believe so. The issues are relatively the same with regard to compliance within the two divisions.

- What key essential safety measures are most important to be maintained?

Fire alarms, pumps and things used actively for evacuation. When it comes to the passive items, they go off the planet and some of the maintenance on them is just unreasonable.

- What effect has the introduction of the legislation in 1994 had on building safety?

It's what raised the awareness and formalized what has to be done and where it has to be done by identifying the items. It must of raised the compliance levels, but the question is "to what levels".

- How has the introduction of the Building Regulations 2006 enhanced this?

The delineation between division 1 and division 2 has always been an issue. Has it lead to more compliance and awareness, yes probably, but I cant judge.

- Why do you think building owners have a low level compliance with regulations?

Because they are not enforced. They are very prescriptive and relatively complex. Sometimes a building owner is no where to be seen, like overseas.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

Very poor. They engage the building surveyor a service provider and even a building manager. They think they can just contract out of that responsibility.

- Are there specific areas of the regulations which building owners find particularly unclear?

I think that division 1 and 2 delineation is a problem. I think the responsibilities of the building owners and that they don't realize that if there is a fire that the ultimate responsibility relies with them.

- Do you think the legislation is too complicated?

Yes.

- Can you suggest potential changes?

There are lots of potential changes. It has to do with how the maintenance is delivered in the marketplace. From a contractor point of view, maintenance is delivered a certain way. If a contractor is going to provide maintenance up to a certain standard, they may not be keeping it up to the actual spec.

- What methods do building owners use to educate themselves of their responsibilities?

I think they use associations or councils. Sometimes they don't want to and transfer their responsibility to a third party.

- Do you think building owners rely on service providers to educate them and ensure their building is in compliance?

Without a doubt. That's one of the flaws.

- Should service providers be responsible for ensuring that building owners comply with regulations once engaged?

I think if you allow the service provider to be in charge of the whole process, then it would be fundamentally flawed.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

I think it's made it more complex. Although performance based design requires a specific maintenance process but the maintenance provider will still provide the maintenance up to the normal Australian standard.

- Do you think service providers should be registered or have a minimum level of training?

I would say yes.

- Have previous efforts to educate building owners been effective?

No.



ESM Service Provider Interview Plan



Where: Essential Property Services: Fitzroy, Australia

When: March 25, 2008 at 3:00pm

Interviewee(s): Business Name: Hendry Group

Title: Safety Measures Manager

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you think the current level of building owner compliance with the Building Regulations is?

Only in reference to Victoria. Legislation is pretty proactive; other states don't even have the essential safety measures. Since it is under state legislation, people must adhere. People are becoming more aware. Having deadlines pushes people.

- Why would you say this?

No comment.

- How do you assist building owners in maintaining essential safety measures?

We only maintain a certain amount of safety measures. We look at exit doors and the actual structure of the building... these are known as passive items. The active items are taken care of by other people. Our impact is basically an auditing role.

- How do you educate business owners on their responsibilities according to the building regulations?

We get to the owners through the managers, so it's a manner of educating them and they will approach the owners and tell them what they need to do. Sometimes owners will attend seminars to try to understand what the managers are talking about.

- To what extent should service providers educate building owners to ensure their understanding of their responsibilities?

They don't necessarily know what we do. We don't have contact with direct owners. We have done seminars in the past, but we try to appeal to more of the property market. We probably have to educate them less now, as opposed to 6 months ago.

- Are building owners aware of the recent seminars and the Essential Safety Measures Maintenance Manual?

People do know about the one before it. It is definitely a very good document. It has helped dramatically for people to understand their obligations. It's a tool that building surveyors use. We send out monthly newsletters that inform 60000 building.

- Before you conduct a service for a building, do you check the occupancy permit?

We very rarely get occupancy permits for what we undertake. If you are talking about inspections for essential safety measures, then in just auditing a building, I would say no. We try to get the occupancy permit, but we don't always get it.

- How accurate is the occupancy permit maintenance list?

Apart from the ones we issue... usually they are inaccurate. Sometimes it can be subtle things such as having the wrong year for the maintenance. Sometimes there are workarounds that were created by a fire safety engineer that can make an occupancy permit.

- What are some reasons building owners request your services?

The biggest key is to provide an annual report, however this is a very recent. Prior to that, it would be the way in which we inform the property owners.

- Do you think it's more important to maintain essential safety measures in larger buildings?

No, larger buildings do not usually have reduced fire safety. Sure there are occupancies that have higher degrees of safety. Bigger buildings have more active systems, so size does not matter.

- What incentives motivate building owners to comply with the legislation?

Fines, that's it. If they didn't have to do it, they wouldn't.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

No, because they expect it now anyway. They are expecting buildings are maintained to occupancy permits anyway, especially sprinkler systems. If the insurance company finds out that the building wasn't up to code or doesn't see the records then they won't pay out.

- What are the most common non-compliances with the regulations you see in buildings?

Tenants coming in and out and not having a building permit. Sprinklers. Fire extinguishers are less maintained. Doors aren't maintained because they are educated enough to know what's right or wrong.

- How much do you think building owners consider cost when updating to a new system or maintaining a system?

It's becoming more and more important. They are starting to consider it more and have a budget to maintain it.

- Do you think building owners are aware of the methods of inspection?

Generally they are pretty aware, because of the property managers. If they get a notice, then they are very aware.

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

I wouldn't say it has no impact. Performance design means that you can go outside the BCA. It actually may increase your responsibility to maintain stuff. There are further requirements under the alternative solution, but it doesn't change the requirement.

- What effect has this had on service provider maintenance?

Huge. Basically the industry has expanded greatly.

Where: CFA HQ: East Burwood, Australia

When: March 26, 2008 at 10:00am

Interviewee(s): Business Name: Fire Safety Consulting **Title:** Director

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes.

- What do you think the current level of building owner compliance with the Building Regulations is?

The levels of compliance are certainly very low. Probably on the order of 5 - 10%.

- Why would you say this?

Based on my own experience, industry perception and other provider's experience. I mostly work with high compliance places, such as hospitals and such. There are other places, such as smaller businesses which may not know as much beyond their fire extinguishers.

- How do you assist building owners in maintaining essential safety measures?

Providing advice as to how to respond to the requirement, as to which system to chose. My role is to look at how new legislation can affect and need to be implemented in already finished buildings.

- How do you educate business owners on their responsibilities according to the building regulations?

Interpretation and guidance as to how to follow the regulations.

- To what extent should service providers educate building owners to ensure their understanding of their responsibilities?

The best ones see this as one of the primary roles, but they are in the minority.

- Are building owners aware of the recent seminars and the Essential Safety Measures Maintenance Manual?

Some of them, maybe 1000 people would attend... but there are around 500000 buildings across the state.

- Before you conduct a service for a building, do you check the occupancy permit?

Yes, they should. There may be a whole range of other documents which may be used to "establish the benchmark" for the building.

- How accurate is the occupancy permit maintenance list?

They range from reasonable to bad. Larger the building, the worse they usually are. They often even list the wrong essential safety measures, such as a sprinkler system which isn't there. This can happen by the surveyors not giving enough attention to the permit and copy/paste from the day before. ---Maybe a lack of understanding.

- What are some reasons building owners request your services?

Providing advice as to how to respond to the requirements, as to which system to chose. My role is to look at how new legislation can affect and need to be implemented in already finished buildings.

- Do you think it's more important to maintain essential safety measures in larger buildings?

Yes. We made a test recently and looked at the different types of loss. We identified the the nightclub type buildings, there have been 1000s of people who died in dozens of incidents. Sprinklers were the one type of safety measure we identified as a problem. It needs to be considered on a case by case basis. You can't directly risk and the system in place to the level of compliance. Buildings with sleeping accommodation, high population density are much higher risk.

- What incentives motivate building owners to comply with the legislation?

Motivational presentations, they have now evolved the strategy to people just not coming home from work and the other people just sitting at home and waiting. Scare tactics just no longer work, we need to be more sophisticated and need to provide some basic guidance as to what this is all about. Funding agencies seem to work reasonably well, but you still end up only getting around 65% with those. Insurance companies premiums also are something that works well, voluntarily administered and individually certified. This doesn't address the other longer terms of maintenance, however. I don't think there is an incentive that is practical.

- Do you think recognition by insurance providers in reducing premiums would encourage compliance?

Their view of the world is that this is something that you have to do anyway, and if your not doing it and they have a claim for the building, then they get the chance just back out. So if you are doing it better, than there is no benefit on their part.

- What are the most common non-compliances with the regulations you see in buildings?

Hospitals: compartment issue, penetration, smoke and fire containing, probably doors are the worst though, that do not work properly. They need to keep up the effectiveness of the system. They may turn a little room that was a bathroom into a storeroom and this is how they end up with minor non-compliance issues. Offices: Hard to identify many things in offices, they are usually not aware of the passive measures. Industrial

companies always want to lock the doors for security. The problems usually arise in the smaller suburbs, such as the smaller accommodation facilities and most certainly smaller industrial. For example, the night clubs will put chains and pad locks on the back door to keep people from letting in their friends in the back.

- How much do you think building owners consider cost when updating to a new system or maintaining a system?

It's the consideration they give most regard to. Cost is always going to be an issue. It would be hard to justify to someone that spending the money now will help them save money further down the line. For example, a hotel will wait until they redo the entire building to fix the problems.

- Do you think building owners are aware of the methods of inspection?

I think they have 0 knowledge. I don't even think that they understand that there is someone who is supposed to be inspecting something in the first place..

- What effect do you think the introduction of performance-based design has had on building owner compliance with the regulations?

It has made it harder. The problem is that people both perceive that alternative solutions are a benefit because they have to do less. The best alternative solutions suit how they operate their business. If they don't fit in the way they do business normally, then it becomes a problem. For example, there is a mall that has six big parts all with individual systems. All systems work fine independently, but none of them are able to talk to one another.

- What effect has this had on service provider maintenance?

Basically, it means that they will have trouble finding these alternatives and making sure that they are up to code. On the paperwork it looks fine, but it's a lot harder to follow up on.



ESM Insurance Provider Interview Plan



Where: CFA HQ: East Burwood, Australia

When: April 8, 2008 at 9:30am

Interviewee(s): Business Name: F.M. Global
Technical Specialist

Title: Vice President and Chief Engineering

Interviewers: Jason Hutchins, Matthew Murdy and Morgan Oexner

Interview Plan:

Introduction of Team. Ask for consent to use and record interview information.

- Would you be interested in getting a copy of this final report?

Yes

- What do you perceive to be the current level of building owner compliance with the legislation?

Quite low, from what we see.

- Do you have any statistics to support this?

No, we could have, as a company. It wouldn't be to do with legislation, but it would be what our company requires as a minimum level. We make sure that their properties have minimum risk by visiting their site and ensuring that their level of protection is up to our standards.

- Why do you think building owners have a low level of compliance with regulations?

Two things, they want to save money and the other thing is ignorance. They just don't know or understand what they are responsible for.

- How well do you find building owners understand the new requirements in the Building Regulations 2006?

The question is, how would they find out about it? They aren't going to know about it until someone comes and inspects them. If there aren't enough resources to go out there as policeman, then how are they going to be able to go out there and be informative.

- What level of priority do you think building owners place on maintaining essential safety measures?

It depends on the building owner. If they are left up to their own devices, the daily pressures of running a business are a bigger priority. Repair maintenance is better than proactive maintenance. It also depends on the type of industry, if it is some type of hazardous industry; they tend to throw in the extra fire safety devices. There are also places such as shopping centers where they have the life safety issue and their awareness is also higher.

- Do you think cost is a large factor in whether building owners update or maintain their fire safety systems?

Cost is always a big issue. Maintenance isn't the only issue, they also have to reevaluate and be sure that their building makes the requirements for any kind of changed occupancy.

- How do you think the cost of this maintenance compares to other costs of owning a building?

Updating systems can be very expensive. If you have to change a sprinkler system, it can cost you more than building it from scratch to start with. Then, if the water supply isn't what it needs to be, then you have to put in tanks and pumps, and that can cost \$100,000 or more. Maintenance, on the other side is not a huge expense, most people have maintenance contractors

- Do you think building owners are aware of the expenses related to fire incidents?

No, not until it happens. 90% of the people involved, haven't seen the effects of a fire, such as the building engineers, etc...

- Do you have any statistics relating cost to a fire incident?

We do have statistics, but the way we pull them out, we investigate the big losses ourselves. Every claim we have to process, we have the data with that claim's notice. All that information is collected in a huge database. We can go back up to 10 years and call up how much loss we associated with each incident

- What percentage of businesses return after a fire incident?

Maybe 2 out of 5 that have a huge fire will still be in business 5 years later. The impact dependst on how big of a corporation it is. If it is the only one, then the 2 out of 5 stat applies, if it is just one building out of hundreds, then probably no effect.

- Do you have any statistics that could help us link regulation compliance with fire incident number or severity?

Yes, we can do that, I suppose. At best, we would be talking just about examples of some specific places.

- What incentives would encourage building owners to comply with Building Regulations?

From our perspective, when they comply, they get very favorable insurance premium rates. They also get our engineering services for free as part of their insurance packages. That's just for our company. For other companies, there is very little incentive except for a big stick with a fine on the end of it.

- What are your thoughts on changing premiums considering the level of compliance of a building?

It happens, we do that anyway. If it rates poor, we don't put loss expectancy with the human element, such as maintenance. If there are two or three human elements on the reports, then that drags the quality of the place down to a poor rating because the potential of loss a lot higher

APPENDIX E: METHODOLOGICAL TIMELINE

Task	Week						
	1	2	3	4	5	6	7
Finalize interview plans for service provider, MBS, and Building Commission contacts	█						
Interview service providers, MBS (shadow on inspection), and Building Commission contacts		█	█	█			
Contact NFPA about compliance effectiveness project		█					
Form survey for seminar attendees		█					
Interview contacts in Queensland and nearby jurisdictions			█	█	█		
Finalize forum plan				█			
Attend seminar					█		
Obtain and assess key documents (Notices, statistics from CFA, incident analysis reports)	█	█	█	█	█	█	
Research approaches in jurisdictions	█	█	█	█	█	█	
Review and analyze results					█	█	█

APPENDIX F: SEMINAR SURVEY

How did you hear about this event?

(Tick all that apply)

- From a newsletter / website
- From another building owner / friend
- From an inspector
- From a service provider
- Other: _____

Have you previously sought education regarding the regulations?

(Tick one)

- Yes
- No

Do you employ other people to maintain your fire safety systems?

(Tick one)

- Yes
- No

Do you feel these events are publicised well enough?

(Tick one)

- Yes
- No

On a scale of 1 to 10, how useful did you find the information provided during this event?

(Tick appropriate circle)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Who is legally responsible for maintaining the essential safety measures in your building?

(Tick one)

- Building Owner
- Tennant
- Service Provider

How do you ensure that your service provider is meeting all the obligations according to the building regulations?

(Tick all that apply)

- Personally
- I hire another service provider to ensure that
- I pay the service provider to meet all obligations and don't have to check up on him

Would you be more likely to hire a service provider if they had a certificate from a government organisation?

(Tick one)

- Yes
- No

Had you heard about the Essential Safety Measures Manual before this event?

(Tick one)

- Yes
- No

Where can you find the list of essential safety measures in your building?

(Tick one)

- From my local Fire Brigade
- From the Building Commission website
- On my occupancy permit
- In the Essential Safety Measures Manual

How does the cost of fire system maintenance compare with the other costs of owning a building?

(Tick one)

- Low
- Medium
- High

How many square metres is your building?

(Tick one)

- Under 250
- Between 250 and 500
- Over 500

Do you think your business could survive rebuilding after a large fire?

(Tick one)

- Yes
- No

Please rate the following incentives for compliance based on how much they appeal to you.

(Tick appropriate circle)

Tax Reductions

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Insurance Premium Reductions

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Official Safety Certification from MFB

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Be allowed onto a list of “Safe Buildings”

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

APPENDIX G: SEMINAR RESULTS

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Building owner/Friend	0	1	0	9	Building Owner	Pay	1	1			Low		1	60%	80%	70%	50%
Building owner/Friend	1	1	0	7	Building Owner	Personally	0	1	BC Website		Low	<250	0	100%	100%	100%	50%
Building owner/Friend	0	0	1	10	Building Owner	Personally	1	1	OP/ESMM/BC Website		Low	>500	1	100%	100%	100%	50%
Building owner/Friend	1	1	0	8	Building Owner	Personally	1	1	OP		Medium	>500	0	80%	100%	90%	60%
Building owner/Friend	0	1	0		Building Owner	Personally	0	0	ESMM			>500	1	100%	80%	10%	70%
Building owner/Friend	1	0	1	8	Building Owner	Personally	1	0	OP/ESMM		Medium	<250	1	30%	40%	80%	80%
Building owner/Friend	0	1	1	6	Building Owner		0	1	BC Website		Low	<250	1	100%	100%	100%	100%
Inspector	0	0	1	8	Building Owner	Personally	1	0	ESMM		Low	<250	0	60%	100%	100%	50%
Inspector	0	0	1	8	Building Owner	Personally											
Newsletter/Website	0	1	1	8	Building Owner	Personally	1	0	OP		Low	<250	1	10%	10%	10%	10%
Newsletter/Website		1	1	9	Tenant		0	1	ESMM		Low	250>x<500	1	10%	10%	10%	10%
Newsletter/Website	1	1	0	4	Building Owner	Personally	0	1	ESMM		Low	>500	0	100%	100%	10%	10%
Newsletter/Website	0	1	1	8	Building Owner	Personally/Pay	0	0	Fire Brigade		Low	250>x<500	1	100%	100%	10%	10%
Newsletter/Website	0	1	0	10	Building Owner	Personally/Hire	1	1	OP		Medium	Multiple	1	100%	100%	10%	10%
Newsletter/Website	1	1	1		Building Owner	Hire	1	0	ESMM		Medium	250>x<500	1	50%	80%	40%	20%
Newsletter/Website	0	1	1	10	Building Owner	Personally	0	0	ESMM		Low	250>x<500	1	20%	20%		20%

	Newsletter/Website	0	0	0	7	Building Owner	Personally	1	1		Medium	>500	1	100%	100%	20%	30%
	Newsletter/Website	0	1	1		Building Owner	Pay	1	0		Low	<250	0	50%	50%	30%	30%
	Newsletter/Website	0	0	0	6	Building Owner	Personally	1	0	OP		<250	1	70%	100%	50%	30%
	Newsletter/Website	0	1	1	9	Building Owner	Personally	1	0	OP	Medium	250>x<500	1	100%	100%	50%	30%
	Newsletter/Website	1	0	1		Building Owner	Personally	1	1	OP	Medium	250>x<500	1	70%	80%	40%	50%
	Newsletter/Website	0	1	1	8	Building Owner	Personally	1	0	OP	Low	<250		70%	70%	50%	50%
	Newsletter/Website	0	1	1	8	Building Owner	Personally	1	0	ESMM	High	<250	1	90%	90%	50%	50%
	Newsletter/Website	0	1	0	6	Building Owner	Personally	1	0	OP	Low	250>x<500	1	50%	100%	50%	50%
	Newsletter/Website	0	0	1	7	Building Owner	Personally	1	0	Fire Brigade	Low	<250	0		80%	80%	50%
	Newsletter/Website	1	1	1	8	Building Owner	Personally	1	1	OP	Low	250>x<500	1	50%	70%	60%	60%
	Newsletter/Website	0	0	0	8	Building Owner	Pay	1	0	ESMM	Low	>500	1	50%	80%	60%	60%
	Newsletter/Website	0	1	1	10	Building Owner	Personally	1	0	OP	Medium	250>x<500	1	60%	100%	100%	60%
	Newsletter/Website	0	0	0	9	Building Owner	Personally	1	0	ESMM	Low	<250	1	70%	50%	70%	70%
	Newsletter/Website	1	0	1	8	Building Owner	Personally/Hire	1	1	Fire Brigade	Low	<250	0	50%	50%	80%	70%
	Newsletter/Website	0	1	0		Tenant			0		Low	<250	1	90%	80%	90%	70%
	Newsletter/Website	0	0	1	10	Tenant	Personally	0	0	ESMM	Low	<250	1	100%	100%	10%	80%
	Newsletter/Website	1	1	0	9	Tenant	Pay	1	1	All	Low	>500	0	10%	40%	40%	80%
	Newsletter/Website	1		0	7	Building Owner		1	1	OP				70%	70%	70%	80%

	Newsletter/Website	0	1	1	10	Building Owner	Personally	0	0	OP	Medium	250>x<500	1	60%	90%	70%	80%
	Newsletter/Website	0	1	1	9	Building Owner	Personally/Hire	1	0	ESMM	Medium	>500	0	70%	80%	80%	80%
	Newsletter/Website	0	1	1	9	Building Owner	Personally	1	0	ESMM	Low	<250	1	80%	90%	80%	80%
	Newsletter/Website	0	0	1	9	Building Owner	Personally	1	0	All	Low	250>x<500	0	100%	100%	100%	80%
	Newsletter/Website	0	1	0	9	Building Owner	Pay	1	0		Low	<250	1	10%	10%	10%	90%
	Newsletter/Website	0	1	1	6	Building Owner	Personally	1	0	Fire Brigade	Low	250>x<500	1	100%	30%	30%	90%
	Newsletter/Website	1	1	0	9	Building Owner	Personally	1	0	OP/ESMM	Low	Multiple	1	70%	90%	60%	90%
	Newsletter/Website	0	1	1	9	Service Provider	Hire	1	1	OP	Medium	>500	1	40%	70%	80%	90%
	Newsletter/Website	0	1	0	7	Tenant	Personally	1	0	ESMM	Low	<250	0	50%	50%	90%	90%
	Newsletter/Website	0	1	1	10	Building Owner	Personally	1	0	ESMM	High	<250	1	80%	80%	90%	90%
	Newsletter/Website	0	1	0	10	Building Owner	Personally	1	0	OP	Low	>500	0	90%	90%	90%	90%
	Newsletter/Website	0	1	1	8	Building Owner	Pay	0	0	ESMM	Low		1	100%	100%	90%	90%
	Newsletter/Website	0	0	0	4	Building Owner	Personally	0	0	ESMM	Medium	<250	1	100%	100%	60%	100%
	Newsletter/Website	0	1	0		Building Owner	Personally	1	1	OP	Low	>500	1	80%	90%	90%	100%
	Newsletter/Website	0	0	0	8	Building Owner	Personally	1	0		Low	<250	1	100%	100%	100%	100%
	Newsletter/Website	1		0	8	Building Owner	Personally	0	1	OP	Low	250>x<500	1	100%	100%	100%	100%
	Newsletter/Website	0	1	0	10	Building Owner	Personally	1	0	OP	Low	<250	1	100%	100%	100%	100%
	Newsletter/Website	0	1	0	10	Building Owner	Pay	1	1	OP	Low	250>x<500	1	100%	100%	100%	100%

	Newsletter/Website	0	0	0	5	Building Owner	Personally	0	0	BC Website/ESMM	Low	<250	0	10%	10%	10%	
	Newsletter/Website	0	0	1	8	Building Owner	Personally	1	0	ESMM	Medium	250>x<500	1		20%		
	Newsletter/Website	0	0	1	5	Building Owner	Personally	1	1	BC Website	Low	<250	1				
	Newsletter/Website	0	1	1	7	Building Owner	Personally	0	0	ESMM	Low	<250	0				
	Newsletter/Website	1	0	1	7	Building Owner	Personally										
	Newsletter/Website	0	0	1	8	Building Owner	Personally/Hire										
	Newsletter/Website	0	0	1	9	Building Owner	Personally										
	Newsletter/Website	1	1	1	10	Building Owner	Hire/Pay										
	Newsletter/Website	1	1	1		Building Owner	Personally/Pay	0	1	OP	Low	<250	0				
	Real Estate Agent	1	1	0	6	Building Owner	Personally	1	0	ESMM	High	<250	1	90%	90%	90%	90%
	Service Provider	1	1	0	7	All	Personally/Hire	1	0	Fire Brigade/ESMM	High	<250	0	80%	90%	60%	50%
	Service Provider	0	0	1	7	Tenant	Personally	0	0	Fire Brigade	Low	<250	1	10%	30%	50%	90%
	Service Provider	1	1	1	9	Building Owner	Personally	1	1	OP	Medium	>500	1	90%	90%	90%	90%
	Service Provider	0	1	0	9	Building Owner	Personally	1	1	ESMM	Low	<250	0	70%	80%	100%	90%
	Service Provider	0	0	1	10	Building Owner	Personally	1	0	ESMM	Medium	250>x<500	1	10%	10%	10%	100%
	Service Provider	0	1	0	9	Building Owner	Personally	1	1	ESMM	Medium	Multiple	1	10%	70%	80%	100%
	Service Provider	0	1	0	7	Tenant	Personally	1	0	OP	High	>500	1	100%	100%	100%	100%
	Service Provider	1	1	0		Building Owner	Personally	0	1	ESMM	Medium	>500	1	100%	100%	100%	100%
	Service Provider	1	1	0		Service Provider											
		0	1	0	10	Building Owner	Hire	1	0	ESMM	Low	<250	0	60%	100%	100%	50%
		1	1	1	10	Building Owner	Personally	1	1	OP	Medium	Multiple	0	60%	60%	100%	100%

APPENDIX H: EDUCATION IN OTHER JURISDICTIONS

(continued from other side)



RAIRED ENCLOSURES

A rated enclosure is a type of construction designed to contain a fire for at least an hour. Typically open flames are enclosed. This protective barrier completely seals the room to contain a potential fire. Any size hole in any part of the rated enclosure is an invitation for fire to spread more rapidly than designed. Doors, pipes, wires and ducts through these walls must maintain their seal or else fire will rapidly seek out these "fresh air" holes and escape.



VENT PIPES

All but electric furnaces, boilers and water heaters burn a fuel that leaves behind toxic gases. If these gases are not vented, they can contaminate the air with lethal consequences. Carbon monoxide is a colorless, tasteless, odorless gas that can kill without warning. Pipes and vents are specifically installed to take these harmful gases outside. Care must be taken to inspect them and repair them if cracked or missing. Over time, these pipes and seals fill and maintenance is required. Other devices with vents requiring inspection might be space heaters and incinerators. The area where pipes enter the chimney should also be checked to make sure the important seal is intact. A monthly inspection is warranted if you suspect possible accidental contact with these vent pipes.



EXTENSION CORDS

Any device that is permanently mounted, CANNOT have an extension cord on it. Typically washers, dryers, refrigerators, built-in dishwashers, microwave ovens, wall ventilation fans are considered permanent. Trouble lights strung across a ceiling and nailed in place are illegal. Adding extension cords to a circuit increases resistance and that heats up the wire. The chances of a fire are increased with longer cords. Never use an extension cord with air conditioning or space heaters.



OPEN ELECTRICAL PANELS

When a short occurs in an electrical circuit, the energy is hot enough to melt the wire and send a piece of 2000° molten metal flying across a room. That is a significant fire and injury risk. That is why electrical panels and circuits are confined in grounded metal cases. Bare wires contain the potential energy to release those "fire balls" anytime a face plate is missing or a panel is left open. The potential for an electric shock is even greater in the basement because of the uninsulated concrete floor. Over half of the fatal electrocutions in the U.S. occur in the basement. Grounding wires need to be left in place and circuit panels closed if the electrical system is to function properly and safe operation is expected.

AN OUNCE OF PREVENTION

The cost of preventing fire losses are much less than the potential costs of an actual fire and possible litigation. Owners need to take an active role in fire prevention. There are ONLY minimal standards. Inspections should be a learning experience and a chance to share information. Fighting the game of "gotcha" makes more work for both the owner and inspector. It does not add value to anything. The codes of today are the result of lessons learned from past tragedies involving death or injury of innocent people. Proactive compliance saves the owner hassles from one-offs and liability minded individuals. It minimally protects the property investment and saves precious time in the end.

SAFE BUILDINGS ARE NO ACCIDENT.

For more information contact Department of Building Inspection Public Information 258-3214.



Common Fire Code Violations

A quick reference guide to commonly found fire code violations

- Fire Extinguishers
- Smoke Detectors
- Exiting Situations
- Hazard Identification
- Lock Security



City of Milwaukee Department of Building Inspection

CommonCode Bro 3rd V1.0 4/97



EXIT SIGNS

Exit signs identify the safest routes out of a building. An exit sign that is defective or burned out will not identify the safe routes of travel through dark and smoky conditions. New technology in long lasting bulbs and exit signs is available. Contact a lighting specialist in the yellow pages under "Light Bulbs & Tubes" section.



EXIT DOORS

One of the most important life safety features of a building are the exits. Many fatalities occur when exit routes are blocked. Smoke and fire in exit ways can prevent exiting. That is why doors leading to stairways and hallways should remain closed at all times to isolate smoke from the safe route out.

Widening doors open may be a costly convenience that will cost lives. Common violations are: furniture in hallways and apartments in stairwells. In commercial stores, display racks and access stock should not be in the way of an exit path. There is no time to move these items if a fire breaks out.



EXITING HARDWARE AND SECURITY

While codes require all regulated exit doors to be operable in case of fire, inside locked doors are prohibited from most types of commercial occupancies. Residential occupancies also require security devices. Deadlocks are required on individual doors leading to common hallways and the exterior. Wooden double hung doublet unit windows

with 10 ft of grade meet special security requirements. These windows, in addition to the easy closing latch, must be able to be secured in the opened "vent" position between 4'-6" to 6'-0". A rail in a downward slanted drill hole through the window into the sash is a cheap secure code compliant system.



SMOKE DETECTORS

Smoke detectors properly working are silent guardians. However, without a battery, they are silent killers. Many people disable their smoke detector after a false alarm. A battery is the cheapest life and property "insurance" one can buy. Not ALL 9-volt batteries work in ALL detectors. Follow manufacturer recommendations for placement and maintenance. If the detector immediately activates after installing a new battery, it may have to be replaced. The special detector material in the sensing chamber wears out after about 10 years. Replace the battery annually, BEFORE the low battery "chirping" begins. Never put detectors in kitchens or bathrooms. Moisture and cooking odors may trigger them. Consider "beep" chirping aids used type detectors in areas of high false alarms. Permanently mount detectors to avoid tampering or theft. Deadly fires may occur when preventive is absent. Don't wait to replace defective or missing smoke detectors.



FIRE ALARMS

A fire alarm system alerts building occupants that a fire is present. Milwaukee ordinance requires that all fire alarms be tested weekly and a written report of the test kept (in most cases.) The weekly alarm test record should indicate who tested it, which station was tested, and the date it was tested. Testing covers various stations work and fire system is fully operational. Alarm systems remain the most immediate means to alert occupants of danger.



FIRE EXTINGUISHERS

The primary tool to stop fire is an extinguisher. Before attempting to extinguish any fire, the building occupants and the fire department should be notified. Like all tools, extinguishers need care and maintenance or they won't work. Extinguishers need annual inspections and maintenance by knowledgeable technicians. Their annual inspection assesses the owner of proper operation. Dry units need to be completely refilled every six years. Pressurized water units require hydrostatic testing every five years. Don't wait to replace missing or discharged extinguishers.



STORAGE OF FLAMMABLE MATERIALS

Most people would NOT think of storing dynamite in their homes or businesses. Yet many do something just as dangerous. One evaporated gallon of gasoline has the equivalent energy of 60 lbs. of dynamite. Demolition crews can topple high-rise buildings with as little as 10 lbs. of TNT. In most commercial buildings, no gasoline, alcohol solvents, combustible thinners or flammable liquids are allowed in the basement. Such flammables may be stored in limited quantities on the first floor based on the type of occupancy. Consult your building inspector for specifics. NO GASOLINE is allowed to be stored in any residential or mixed use occupancy. Gasoline fumes sink. Basements typically have furnaces and water heaters with pilot lights. A leaky lawn mower or snow blower can drip fuel causing fumes which could lead to an explosion.



PRESSURIZED CYLINDERS

Many occupancies require the use of compressed gases. Medical, welding, tavern and restaurant use: typically have tanks of various flammable and non-flammable gas. If these cylinders tanks should tip over and break the valve off, the sudden release of gas can turn the tank into a deadly torpedo. Such a force could penetrate a brick wall not to mention the destruction if the gas is combustible. All pressurized cylinders must be secure from falling. L.P. gas grills with tanks attached should never be stored inside a building.



PROPER STORAGE

Space for people needs to come before space for product. The improper placement of goods can block vital exit routes, hide exit signs and harbor spots for spontaneous combustion. PVC combustibles can be stored under stairways. It would be the worst place for fire to start. A fire above stairwells escapes from the above floor. Trash in a common areas or fire and excessive amounts should be kept outside every 96 hours. High stacked stock can block exit lights and interfere with sprinkler systems. For sprinklered buildings a clear space of 18" from every head is required. Non-sprinklered buildings must keep a 2' clearance to the ceiling (in most cases.) These limits ensure minimal function of sprinkler system and safe exit routes for people.

(continued on other side)

Beginners guide to Fire Design

The New Zealand Fire Service Role (NZFS)

The NZFS require, where greater than 5 people are sleeping (commercially), 10 people working or 100 people as a crowd are gathered, for you to have an Evacuation Scheme. This is administered by them, and you should contact your local Fire Safety Officer.

Building Warrants of Fitness (BWOFF)

If a fire alarm (excluding domestic battery smoke alarms) is required to be installed as part of the Building Consent, then it is automatically recorded on a BWOFF (along with other systems and features – emergency lighting, lifts, auto doors etc). The building owner has regular responsibilities to ensure the continued correct operation of these life safety systems. Please refer to our specific BWOFF pamphlet.

Alterations

Under the Building Act 2004, alteration work requires a Building Consent, and, if it fits into the categories as described previously, then the "means of escape from fire" require addressing. This includes looking at all active and passive protection features to protect people from the effects of fire whilst escaping. It includes addressing some cross boundary issues – but your fire designer can advise you on this.

Change of Use

Under the Building Act 2004, where a change of use occurs, two fire related sections require addressing – "means of escape from fire" (as described above) plus protection of other property. (This in essence requires a full fire design summary). Both alterations and change of use can be completed to "as near as is reasonably practicable". (New work on the other hand must comply fully.) Please refer to our pamphlets on "Alterations" and "Change of Use".

Where to go to get more information

- The Approved Documents (C) or Fire Documents) are available at the Wanganui Public Library.
- Contact Council or a Fire Designer
- Department of Building & Housing on www.building.govt.nz
- Fire Designer in Yellow Pages

For more information contact:
Wanganui District Council
PO Box 637
Wanganui 4540
Phone – 06 340 0001
Fax – 06 340 0000
Email – wdc@wanganui.govt.nz
Web – www.wanganui.govt.nz

Brochure 604, Apr 07, V1

Wanganui District Council

Fire Design

The Building Act 2004 puts significant emphasis on public safety and amenity of buildings. This pamphlet specifically outlines a range of fire-related issues only, and can affect virtually all building work. It does not address other building related issues.

What It Covers

Fire issues require addressing in the following areas:
- Carports
- Houses/garages/sleepouts
- Commercial/Industrial
- Tents/Marqueses/miscellaneous

General Requirements

Buildings that are on boundaries are required to have fire rated walls. There are some standard dimensions provided in the NZ Building Code as to when and where fire walls stop and start. Commercially the further a building is from the boundary the less fire rating is required. Cross boundary issues are critical, particularly where there are sleeping type purpose groups involved.

Early warning systems are the focus of fire protection, and means of escape, with appropriate signage are pivotal in getting people to a safe place. Specific fire engineering design information is contained in the Acceptable Solutions of the NZ Building Code 'C' Documents.

Fire Code Requirements for Carports

An open-sided building/carport, which is detached or attached to the house, does not require any fire rating if it complies with the following:

- The roof area is under 40 sq metres
- At least two sides of the perimeter are completely open to the environment
- No part of the roof is closer than 300mm to a relevant boundary.

If your carport does not fit within this criteria it will require additional fire safety requirements. Please refer to our specific carport pamphlet for details.

Fire Code Requirements for Houses and Garages/Sleepouts

Houses, garages or sleepouts within 1m of a defined boundary are required to have a specific designed 30 minute firewall.

There are requirements detailing how this wall is to be constructed, the effect of eaves overhangs and material choices such as exterior linings. Penetrations like windows, through this firewall also have to be rated for approval. (An option is to shift the building further away from the boundary to negate the requirement for a firewall.)

Automatic smoke detection is required in all new detached dwellings and altered dwellings.

The position of these smoke detectors must be shown on all plans supplied for a Building Consent. The smoke detectors differ from the older type in that they require a push facility to enable the alarm to be temporarily switched off.

Mutiturn developments require specific fire engineering design. Please refer to our specific smoke alarm pamphlets for details.

Fire Code Requirements for Commercial/Industrial Buildings

The scale, function and location of your commercial building will determine the extent of fire engineering information required to be submitted with your Building Consent application. Often called a "Fire Design Summary" or "Fire Facts Sheet", this document analyses all of the clauses of the Fire Code of the NZ Building Code. This document is often provided by Fire Engineers, Architects, Engineers or Designers. The document follows a logical process (specific for each building) through each of the clauses to arrive at conclusions as to the extent and range of fire safety precautions required. As an example, calculations are made as to occupant density, the distance to travel for means of escape, what fire rated materials go where, what alarm type is required, where emergency lighting is required, smoke separation, do we need a fire hydrant outside etc. This is a specialty field, and Council has trained officials available to check the information supplied, and to provide you with help to ensure all properties are safe to use.

Fire Code Requirements for Tents / Marqueses etc

These structures are often of a temporary nature and depending on complexity require similar requirements to a complete commercial building, including, but not limited to, fire alarms, emergency lighting, fire extinguishers and exit signage.



PLANNING, PROPERTY
& DEVELOPMENT
DEPARTMENT

Life Safety Tests In Buildings

*General requirements and
responsibilities of consultants,
contractors, city authority, and
building owners*



February 2002

NOTE: Life safety is a very serious concern. This pamphlet is intended as a guide in assisting consultants, contractors and building owners to have a clearer understanding of what Life Safety Tests are all about.

What is a Life Safety Test?

Generally, a Life Safety Test is a process of proving that the intended level of performance of a building's life safety systems has been achieved. These systems are required to function in conformance with adopted measures for life safety in designated buildings and include, but are not limited to, the following:

- Smoke controls systems,
- Fire alarm system,
- Voice communication capability of a fire alarm system,
- Elevators,
- Standpipe and sprinkler systems,
- Fire pump,
- Emergency generator,
- Emergency lighting.

Which buildings require a Life Safety Test?

A Life Safety Test is required for:

- All high-rise buildings,
- Buildings of special design,
- Buildings specified above where alterations affect existing life safety systems, and
- Buildings specified above where upgrading to life safety systems occur.

The degree of testing, especially in the latter two instances, varies depending upon the types of building alterations and the changes to the Life Safety Systems.

Who determines when a Life Safety Test is required?

The City of Winnipeg, through its Planning, Property and Development Department, determines if a Life Safety Test is required. It does so in conjunction with the review of plans relative to issuance of a building permit.

Who gets notification that a Life Safety Test is required and when is this notification given?

The design consultants, during the process of plan review, are notified in writing by the Plan Examination Branch if a Life Safety Test is required. This is done prior to issuance of the building permit. Upon issuance of the building permit, the applicant will receive written notification regarding a required Life Safety Test from the City Enforcement Branch.

Where a designer is unsure if a building requires a Life Safety Test, the designer should consult with the City authorities in the earliest preliminary stages of building permit approval process.

Whose responsibility is it to ensure that a Life Safety Test is performed?

The building owner is responsible to ensure that a Life Safety Test is carried out when required.

Does the owner actually run the Test?

Not necessarily. In most cases the owner or the owner's representative will appoint a Life Safety Test Co-ordinator. This could be the project co-ordinator, general contractor, etc.

What's the first step?

The appointed co-ordinator and design consultants should review the project at various stages with the City well in advance of a Test being requested. This should begin shortly after issuance of the building permit, in order to identify any site problems at an early stage, and to minimize misunderstandings. This is especially important where design changes may be incorporated or specific requirements of the fire protection design must be implemented.

How much notice does the City require to attend a Test?

A minimum notice of five working days is required in order to review submitted certifications and verification reports, and to schedule a pre-test meeting between the City and the Project Life Safety Test Co-ordinator.

What happens at a typical Life Safety Test?

At a pre-determined time the Project Life Safety Test Co-ordinator, along with the City appointed Life Safety Test Co-ordinator, will assign teams consisting of trades, consultants and City inspection personnel together with an agenda outlining how the Test will be conducted. At the conclusion of the Test, the teams report back to both co-ordinators for evaluation.

What is the City's role in a Life Safety Test?

The City inspection personnel attend a Life Safety Test as observers. They do not perform actual tests themselves nor do they witness the Test of every component (i.e. all smoke detectors). They will witness the interaction and performance of the installed life safety systems.

What are the responsibilities of a project appointed Life Safety Test Co-ordinator?

The Co-ordinator normally conducts the Test, but may delegate the task to someone else. In either case, the Co-ordinator is responsible for:

1. Ensuring that all required certifications and verifications are properly submitted and, in the case of verifications and field reports, ensuring that they have been reviewed by the design consultant responsible for them.
2. Ensuring that all consultants (Mechanical/Electrical/Architectural) or their designates are in attendance at the Test.
3. Ensuring that the appropriate trades are in attendance at the Test. This includes but is not limited to Electrical Contractor, Mechanical Contractor, Plumbing Contractor, Elevator Contractor, Sprinkler Contractor, Fire Alarm Supplier and building owner and/or representative.
4. Ensuring that there are appropriate numbers of people and necessary equipment to run the Test.
5. Ensuring that a clear outline of how the Test will be run is established (what systems will be tested, how they will function, and in what sequence).
6. Ensuring that a pre-test is carried out and supported by a report confirming its success.
7. Ensuring that there are no unnecessary interruptions during the Test (i.e. interference by continuing work).
8. Ensuring that, in the case of a Life Safety Test taking place in an occupied building, the building owner has notified the occupants that the test is being conducted.
9. Submitting a letter to the City appointed Life Safety Test Co-ordinator requesting a Test date (allowing five working days from its receipt for proper review by the City) and including in the request:
 - Copies of all appropriate Certifications, Verifications and Test Reports.
 - Confirmation of who will run the Test.
 - Confirmation of all persons to be in attendance at the Test.
 - An outline of how Test will be run.
 - The pre-test Report.

What are the responsibilities of building owners?

The building owner has the ultimate responsibility of ensuring Building Code and Bylaw compliance related to the property. More specifically, the owner is responsible for:

- Ensuring that a Life Safety Test is carried out when required.
- Where a Life Safety Test may take place in an occupied building, notifying the building occupants of the Test and confirming this notification with the Project Life Safety Test Co-ordinator.
- Care should be exercised by the owner to avoid premature occupancy commitments. Arranging for occupancy of a building before Life Safety Test and Occupancy Permit approvals are given can cause hardship and further delays (especially if the Test fails) not only to the prospective occupants but to the designers and trades.
- While not part of the Life Safety Test requirements, the owner is responsible for submitting a FIRE SAFETY PLAN to the Fire Department outlining procedures that are in place to facilitate evacuation. Also pursuant to the FIRE SAFETY PLAN it is the owner's responsibility (by obtaining assistance from the designer) to develop procedures regarding the operation and maintenance of the life safety systems and submitting a copy of these procedures to the Fire Department.

Is there a cost to having a Life Safety Test?

The cost of a Life Safety Test is included in the Building Permit fee provided that the Test is carried out during normal working hours. Any Test requested outside of normal working hours would require additional inspection fees as determined by the Development Fees Bylaw. Information could be obtained by calling the Permits Branch at 986-7007.

Is there any certificate or document issued on successful completion of a Life Safety Test?

Because the Life Safety Test is carried out prior to issuance of an Occupancy Permit, no separate document is issued upon successful completion of a Test.

Can a partial Life Safety Test be considered?

In special projects, the Test can be broken down into specific phases and a partial Life Safety Test may be considered. However, those components required to function in each of the phases must ALL function in order for the Test to be successful.

What comes first — the Occupancy Permit or the Life Safety Test?

Any buildings subject to a Life Safety Test requires the successful completion of the Test before any Occupancy Permit approval will be considered.

What is the difference between a Life Safety Test approval and Occupancy Permit approval?

A Life Safety Test is designed to ensure that the required life safety systems are operational in accordance with the Building Code requirements. This approval does not necessarily mean that the building is completed to the stage where occupancy of the premises is possible.

Approval of an Occupancy Permit requires that all work (building, electrical and plumbing/mechanical installations) is complete in conformity with Building Code and Bylaw requirements to the point where it is safe and ready for occupancy.



Fire Safety - a building owner's responsibilities

What are the building owner's responsibilities?

Under current building laws the building owner must ensure that:

- All fire safety measures that are required to be installed in the building are maintained in good working condition at all times.
- All fire safety measures are inspected by a properly qualified person or persons to ensure the measures are being maintained to appropriate standards.
- Required Fire Safety Notices are maintained in the approved form and displayed in a clearly visible position adjacent to exits.
- All exit doors, hallways to exits or other paths of egress are kept clear of any obstructions, and
- All exit doors are kept in good operating condition free from any obstruction.

What is a fire safety measure?

A fire safety measure is any aspect of construction, a piece of equipment, or emergency evacuation plan, which is required to ensure the safety of people within a building in the event of a fire.

These measures may include fire rated construction, fire hose reels, smoke detection and alarm systems, evacuation plans or many other systems. Fire safety measures vary from building to building.

How do building owners prove to Council & the NSW Fire Brigades that they have met their responsibilities?

The owner of the building must submit to Council and the NSW Fire Brigades an Annual Fire Safety Statement. This is a legal document.

Lodging an Annual Fire Safety Statement is a commitment to fire safety

The Annual Fire Safety Statement must be submitted in the form approved by Council and the law.

The Annual Fire Safety Statement Form is available from Council's offices.

By submitting an Annual Fire Safety Statement the owner is legally stating that all fire safety measures have been maintained to appropriate standards and that exits and exit paths allow for the safe passage of people through the premises in the event of a fire.

The owner must ensure an appropriately qualified person inspects each fire safety measure. It is the owner's responsibility to determine who is appropriately qualified. The owner of the building is accountable under law for the maintenance of all fire safety measures.

Building owners should employ a qualified tradesman to make relevant inspections, carry out work and produce the Annual Fire Safety Statement for the owner to sign. Where a building has more complex Fire Safety systems, an Accredited Fire Services organisation or Building Surveyor should be used.

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How to find an accredited Building Surveyor

Appropriately qualified Building Surveyors are accredited by the Department of Infrastructure Planning & Natural Resources (DIPNR).

DIPNR can provide building owners with advice on the accreditation levels required for fire safety inspections of various building types and sizes.

DIPNR can be contacted by:

Phone: (02) 9762 8000
Fax: (02) 9762 8720

The Australian Institute of Building Surveyors may be able to assist with enquiries.

Phone: (02) 9712 8822
Fax: (02) 9712 8811
Email: aibsnsw@bigpond.com

Do I need to submit to Council a certificate for each fire safety measure?

NO – The owner should organise the inspection, testing and certification of each fire safety measure. The owner should retain proof of every inspection or test of each fire safety measure and keep a copy of each Annual Fire Safety Statement.

The only form that needs to be lodged with Council and the NSW Fire Brigades is the "Annual Fire Safety Statement".

What will happen if the building owner does not submit an Annual Fire Safety Statement?

The outcomes will vary from fines to prosecution, and imprisonment for more serious offences.

Council can issue fines for numerous fire safety offences including:

- Failure to submit an Annual Fire Safety Statement
- Failure to display an Annual Fire Safety Statement in a prominent position in the building
- Failure to maintain the fire safety measures (e.g. exit signs and emergency lighting)
- Obstruction of fire safety measures (i.e. inaccessible fire extinguisher)
- Failure to maintain the required Fire Safety Notice (i.e. warning signs near required exits)
- Obstruction of the fire exit or path to exit or the locking or obstruction of exit doors.

In more serious cases of fire safety law breaches the Court can issue fines exceeding \$1,000,000 or issue sentences for criminal offences.

If you are found to be in breach of fire safety laws, expect a fine to be issued.

An on-the-spot fine exceeding \$1,500 can be issued.

Note

There is no requirement to submit an Annual Fire Safety Statement for single dwelling houses classified 1A under the Building Code of Australia.

Typically Class 1A means – single dwelling houses, terraces or villa houses. Ask Council's Building Surveyor if you are not sure whether this classification applies to you.

Home owners must ensure they maintain their smoke alarms. Failure to do so may lead to prosecution or liability for any death or injury as the result of fire.

Further information

Should you require any further information on fire safety measures, please contact our Building Surveyor on 0924 1277 or visit Council's offices between 9.00 am and 4.00 pm Monday to Friday.

Belmore and Stewart Streets
Junee NSW 2663

Postal PO Box 93
Junee 2663

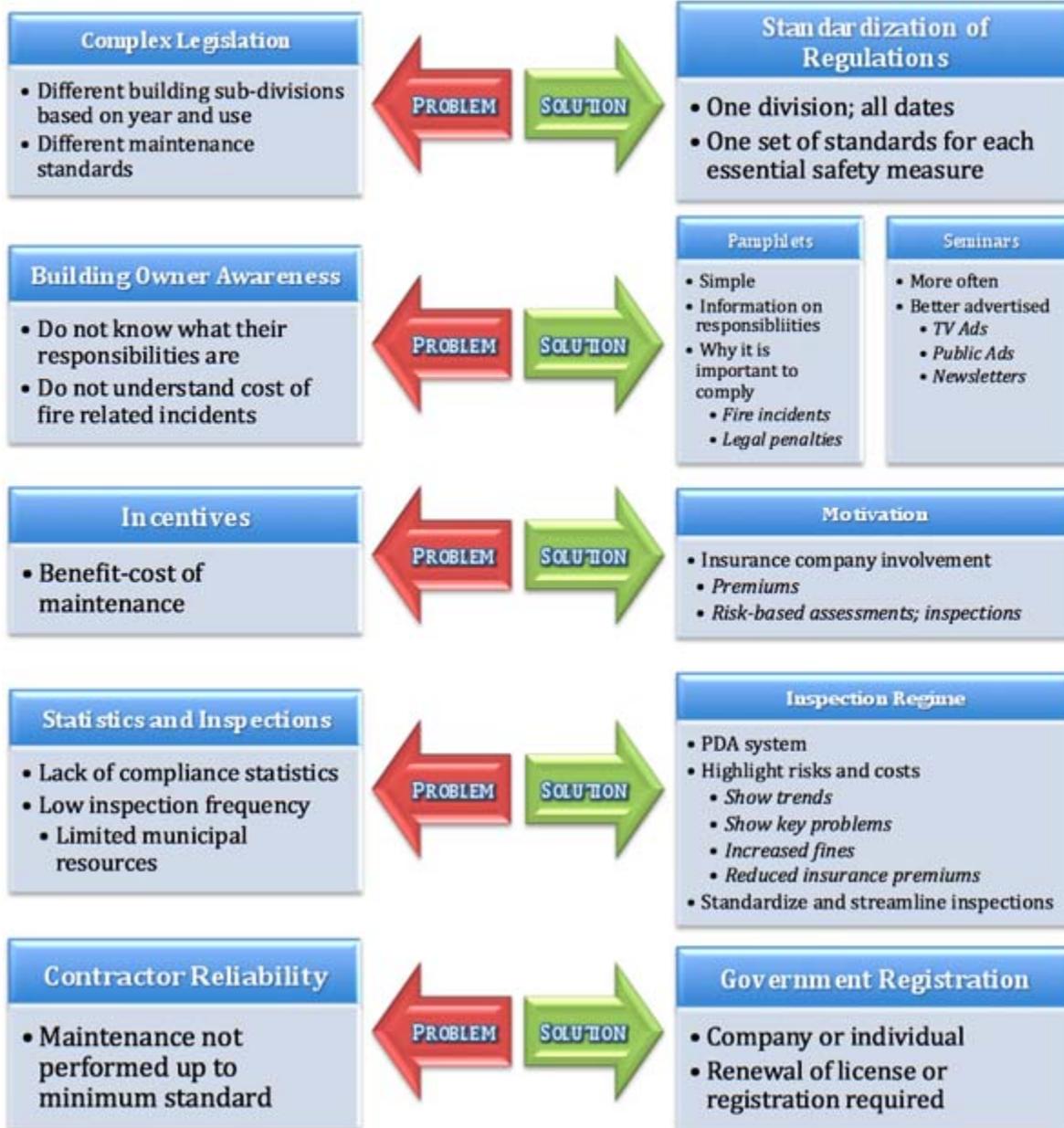
Phone: (02) 6924 8100
Facsimile: (02) 6924 2497
Email: jsc@june.nsw.gov.au
Website: www.june.nsw.gov.au

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Junee, NSW Building Owner Responsibility Brochure

APPENDIX I: DELIVERABLES

CAUSES OF LOW COMPLIANCE & SUGGESTIONS FOR ADDRESSING THEM



Problem: Multiple compliance divisions make it difficult for a building owner to understand exactly how their essential safety measures are supposed to be maintained. There are also several different standards to which the same type of device can be maintained.

Solution: Through the support of new legislation, consolidate building classes regardless of building age. A standard maintenance schedule for each essential safety measure will make the legislation more palpable for the average building owner. The new legislation will dictate that building owners need to maintain all essential safety measures listed on their occupancy permit, all essential safety measures in their building or a standard list of ESM's written into the legislation.

Problem: Building owner motivation to comply with the ESM is minimal because there are inadequate resources to properly enforce the Essential Safety Measures and there is a lack of compliance incentives

Solution: The development and distribution of educational materials such as short pamphlets or brochures. The CFA has resources invested in Fire Ready Victoria and Community Fireguard to produce these types of materials. These short informational materials will highlight the importance of maintaining essential safety measures through information on the cost of fire-related incidents, statistics regarding business survival after a fire incident as well as legal penalties for non-compliance. They will also briefly describe the legal responsibilities of business owners according to the ESM. The team suggests that the CFA includes a framework to deliver these resources in Community Safety's business planning to promote building owner awareness of the Essential Safety Measures. The team also suggests that informational seminars, like those already conducted in certain municipalities in Victoria, be conducted regularly and advertised specifically to local building owners. Advertising for these seminars may include television ads, radio ads, public ads, emails and especially newsletters. The CFA's partnership with ABC Radio and local municipalities can assist in advertising needs.

Problem: Building owners' incentive to comply with the ESM is minimal because they see no correlation between the cost of maintenance and the benefit to maintaining their ESM.

Solution: The CFA should maintain a continuous effort in advising insurance companies of the benefits of promoting building owner compliance with the ESM. A greater insurance provider involvement in adjusting premiums depending on building compliance will give building owners a cost incentive to comply.

Problem: Currently there are no reliable statistics to document compliance levels. There are also a minimal number of inspections due to low resources within the municipality.

Solution: Enforcement issues due to resources in many municipalities could be minimized with the aid of Personal Digital Assistant (PDA) technology through standardized checklists and a connection to a central server. This technology could be used by both municipalities and CFA. By storing evidence in a central database, evidence could be collected to persuade building owners to comply by making them more aware of risks, costs, and business continuity after fire incidents. Data might encourage legislators to increase fines, and streamline the processes for prosecution to encourage compliance. This technology will allow for maintenance logs to be stored centrally and will enable inspection data to be submitted electronically, allowing for faster processing and less paperwork. The device will be able to generate an annual report for the building owner upon request. The central database will also show trends in fire incidents to show insurers the benefits of reduced premiums based on identified risks.

Problem: Service providers are performing maintenance on essential safety measures in a manner that does not meet the requirements set forth by Victorian legislation.

Solution: A government registration or licensing process for individual technicians or companies via mandatory minimum training in Victoria to ensure that service providers are held accountable for their contracts with building owners. The license or registration certificate will expire after a pre-determined period, requiring service providers to renew their license or registration.

Building Fire Safety

The *Building Regulations 2006* of Victoria defines the Essential Safety Measures (ESM) as all life and fire safety systems, passive and active, installed or implemented in a commercial building. Without proper maintenance, these essential safety measures may not operate properly in the event of a fire, increasing the risk of life and property loss.

The cost of replacing a building after a fire-related incident can be millions of dollars. Loss of business during reconstruction can increase overall dollar loss many fold. Many businesses do not survive a large fire and insurance providers will refuse to payout for a fire incident if a building was found to be noncompliant with regulations.

According to the CFA's Annual Report, there were over 3,000 structure fires throughout Victoria in 2007 with damages totaling over \$114,000,000 in total dollar loss. *

Adequate maintenance is the best means of ensuring fire safety system reliability in an emergency situation and increasing overall building safety

*These statistics include residential house fires. Dollar loss does not include profits lost from the inability to conduct business during reconstruction.

Further Information

For more information on the Essential Safety Measures, building owner responsibilities, building types, maintenance schedules, and example annual reports, refer to the Building Commission's *Essential Safety Measures Maintenance Manual*, which can be downloaded from:

http://www.buildingcommission.com.au/resources/documents/3005_BC_Manual_V41.pdf

Or contact the Building Commission at
Tel: +61 3 9285 6400 1300 360 380



**COUNTRY FIRE
AUTHORITY**

8 Lakeside Drive
Burwood East Vic 3151
Australia
Tel: 61 3 9262 8444

What Building Owners
Need to Know...

Maintaining Essential Safety Measures

Building owner responsibilities
according to the *Building Regulations*
2006



**COUNTRY FIRE
AUTHORITY**



Maintenance of the Essential Safety Measures...

Essential Safety Measures (ESM) refers to all fire or life safety devices and items installed into a building to ensure adequate levels of fire safety for the life of the building.

These items include all traditional building fire services such as fire extinguishers, exit signs, fire alarms and other fire prevention devices.

They also include passive fire safety mechanisms such as fire escapes and paths of travel to the exits as well as fire resistant construction.

These essential safety measures are defined by the *Building Regulations 2006* in Division 1, Part 12 of the *Maintenance of Essential Safety Measures*.

For a complete list of essential safety measures, refer to Tables 11.1 to 11.11 of Volume One of the BCA, except the item in Table 11.4 relating to artificial lighting.

Building Owner Responsibilities

After a building is constructed, the building owner is legally responsible for ensuring that the essential safety measures in the building are maintained to an adequate level of operation throughout the life of the building. The building owner is required to prepare an **annual essential safety measures report**.

All buildings other than private residential or out-buildings are affected by this requirement, including buildings of accommodation, commercial buildings, laboratories, warehouses, and public buildings.

Annual ESM Report

Regardless of building age, all building owners must:

- Identify all essential safety measures from the building's occupancy permit or by a report made by the Municipal Building Surveyor
- Over a 12 month period have each measure checked or tested as required
- Keep records of maintenance checks and safety measure work on premises so that a Municipal Building Surveyor or Chief Officer of the Fire Brigade can inspect them within 24 hours of notification
- On or before 13 June each year, complete the annual report
- Keep a copy of the report on site at all times



If the building was constructed or altered since 1 July 1994, the building owner must:

- Display all current occupancy permits in a prominent position as approved by the building surveyor
- Ensure that all essential safety measures listed on the building's occupancy permit are maintained to the specified performance level

Non-compliance

Non-compliance may result in an infringement notice issued by Council or the Fire Brigade up to \$1000 or prosecution in which a fine may be imposed of \$10,000 for an individual or \$50,000 for companies for each breach of the Regulations.



Common non-compliances include:

- Locked exit doors
- Blocked paths of travel
- Blocked fire equipment including hose reels, fire extinguishers, and fire hydrants
- Failed back-up emergency lighting

