



## **FIRE SUMMIT VII**

RENOVATION: Managing life-safety risk in existing buildings

August 2018

## Introduction

The Fire Summit is a biannual gathering that brings together key stakeholders – fire services, builders, representatives from the municipal and provincial governments, and consumer advocates – to discuss fire-related issues in the province. Past topics have included arson, fire safety in residential care facilities, and the fire rescue needs of the elderly and others who are incapable of self-preservation during an emergency.

On April 26, 2018 stakeholders met for Fire Summit VII. The topic they addressed was fire and life safety as it pertains to renovation of existing buildings. Innovative products and a focus on sustainability are leading us to find new ways to make old buildings new, but without care, important safety aspects will be missed. The summit's purpose, was to identify potential risks and propose solutions.

## Purpose and Context of Fire Summit VII

Cities across the world have faced catastrophic fire safety failures on renovated buildings. The reality of massive loss of life in these instances has prompted Edmonton Fire Rescue Service to bring stakeholders together to address the issues that must be resolved in order to create more sustainable, vibrant, attractive, and inclusive renovated spaces that are ultimately safe. Addressing the failure of planning, the lack of integrated and comprehensive communications across the renovation spectrum, and the problems with accountability of owners/ planners/ safety engineers and inspectors is not a simple matter. A range of competing considerations need to be balanced.

The ultimate goal of Fire Summit VII was to learn from experts and develop a list of items that need to be addressed in order to improve life safety risk in existing buildings.

## The Panelists and Their Presentations

Before turning to the participants for their input and suggestions, five panelists gave presentations that provided necessary context.

**Perspectives from a Renovation Consultant:** Leo Liebel – General Manager, Reconstruction Building Services

Mr. Liebel provided a high-level overview of modern renovation projects, small and large, to provide a sense on typical goals and broad scope of what is considered “renovation”. This presentation described the social and economic importance of renovation projects, and demonstrated the urgency of considering the advantages of both large and small-scale renovations.

**Defining “Renovation”:** David Flanagan – Supervisor, Technical Advisor and Training, City of Edmonton Development Services

Mr. Flanagan provided context from the ‘authority having jurisdiction’ perspective on what specifically is considered a “renovation”, and put some regulatory context to the previous topic of renovation of existing buildings. This presentation described the permitting processes, differentiation of terms such as maintenance, upgrades, retrofit, and renovation.

**Failure in Renovation:** Russell Croome – Deputy Chief Public Safety, Edmonton Fire Rescue Services

This presentation gave context to the impacts renovations can have on life safety. Deputy Chief Croome drew the link between various types of renovation activities, and the potential impacts on life safety. This demonstrated the importance of balancing life-safety aspects in existing buildings, and provided the initial context for the “problem” we face. Four disasters were presented, and included an insightful look at some of the factors of the Grenfell disaster.

**Professional Involvement in Engineering and Design Consultation:** Andrew Coles - *Director, Jensen Hughes Consulting*

Mr. Coles introduced the role of professional involvement and industry best-practices for integration of life safety concepts, in particular the need for early involvement in the concept and design phases of projects. The presentation covered a broad description of the tools and techniques available to design professionals to assess and evaluate changes to existing buildings, including examples of solutions in other jurisdictions (e.g. OBC, NFPA 101A). This presentation outlined how professional involvement can both support the goals presented in renovations, and address the risks or uncertainty which were overlooked in the “disasters” that have befallen renovation projects across the world of late.

**Risk-based Decision-Making Tools:** Birgitte Messerschmidt – *Director of Applied Research, NFPA*

This presentation provided an example of risk-based decision-making tools used to evaluate the level of safety provided by existing buildings undergoing renovation (EFFECT tool). Ms. Messerschmidt discussed the concept of developing a broad understanding of life safety risks.

## Key Points From Presentations

- **Renovation is complex:** There is not a common understanding of what renovation is and is not. Definitional discrepancy creates problems, confusion about the need for permits and potential manipulation of the permitting system to get permits expediently. A successful planning and decision-making route is compromised by a lack of shared understanding of renovation.
- **Early engagement in risk mitigation is essential:** A compliance overlay for a project is not nearly as effective as an early planning-based approach to bringing

all the players together early to determine scope, scale and the need for integrated decision-making.

- **No one player plans for failure:** While individual compliance is typical, the cumulative effect of no-one managing the integrated “big-picture” aspects of a renovation can have catastrophic outcomes.
- **Renovation is a delicate balance:** These factors have to be balanced appropriately in order for life safety risk to be mitigated:
  - ✓ The rate of return on investment in the renovation
  - ✓ The desire to preserve an older building
  - ✓ The need to be environmentally sensitive
  - ✓ The benefits of honouring heritage infrastructure and its contribution to community vibrancy
  - ✓ The desire for density and the consequent benefits to municipal planning

Only when renovation planning is looked at dimensionally and holistically will the important balancing act of all of these factors be achieved.

- **Safety must trump all other factors:** As disasters such as the Grenfell fire illustrated, a disciplined understanding of risk is a key part of safety planning, and safety considerations must always prevail. Any amount of horse-trading over safety must be discouraged.
- **Small compliances matter:** What may seem like a minor non-compliance, when combined with other small non-compliances can have a disastrous cumulative-effect. The case for an integrated, holistic approach to renovation projects is undeniably important. The Grenfell Tower disaster is instructive in that, while no individual rules were broken, the cumulative effect of no big-picture planning, and the clash of numerous incompatible decisions resulted in the loss of 71 lives.
- **Planning approaches and tools are essential:** Proper application of tools can make the complexity of renovations easier and safer. These are counterpoints to renovation confusion and when applied can:
  - ✓ Quantify risk
  - ✓ Expose vulnerabilities
  - ✓ Assist in planning for safety without compromising the balance of other factors

Critical to best practice application of planning processes and tools are: early engagement, integrated problem-solving, relationship-based decision-making, and shared commitment to safety

- **A performance approach can be invaluable:** Too often, renovation projects take a “prescriptive” approach. A rigid adherence to rules as opposed to a thoughtful application of concepts can compromise safety. Shifting to a performance-based approach will require a change in work style and a willingness to think and plan differently on renovation projects.
- **Fire safety is only one aspect of safety:** In a world where atrocities of all kinds continue to take place, building engineering and fire safety engineers need to be thinking about risk engineering across a broad spectrum of potential safety risks.

## Key Recommendations

Participants at Fire Summit VII, having listened to all the presentations and working through several scenarios in groups, talked broadly about the need to make immediate strides in managing life-safety risk in the renovation of existing buildings. Particularly in Alberta, where stock of existing buildings is beginning to look toward renovation as a way to maintain use and be financially relevant, participants were clear that this needed immediate attention. From their input arose five key recommendations:

### **An Immediate Cultural Shift With Owners**

There is a need to ensure that as the volume and complexity of these projects increase, the industry changes its attitude and practices to meet new challenges, and that the common standard of care across the industry is always improving. Concern for life-safety must be the first principle of every project, to the point that it is included in the financial model of any renovation. Moreover, it must be clear to owners that a profit motive can never compromise safety, and that they have an obligation in every instance to build appropriately compliant buildings. Part of addressing this potential issue is to ensure that all owners understand the positive impact that early planning and full permitting compliance will have on their projects.

### **Grow The Collaborative Capacity Of The Sector**

Working independently on projects, both as owners and regulators, introduces risk into the renovation process. Finding ways to work holistically is vitally important. This should include an emphasis on relationship-building and cross-sectoral education to establish greater mutual understanding between the development, engineering, construction and inspection sectors.

### **Modernization of Legislation For Safety and Risk**

Legislation is a critical component of driving change and setting standards, particularly around safety and risk mitigation. It cannot be allowed to fall behind pressures and trends that drive the sector. Participants recommended two specific changes to existing legislation to modernize it. First, with the ongoing revision to the Municipal Government Act, there is an opportunity to create stronger planning and risk mitigation tools – this was identified as a

relatively immediate opportunity. Secondly, there needs to be a more effective alignment between land use legislation and the Safety Codes Act.

### **Recommit to Existing Processes**

There is opportunity to make immediate change simply by recommitting to strong interpretation and enforcement of existing policy and processes. Participants saw these as quick wins. Beginning with an emphasis on providing greater clarity on the existing processes and rules, participants identified areas such as ensuring that building misuse was a consideration in the permitting process; that more detail and attention is paid to the full understanding of a project up front; that safety infractions needed to be followed up with rigour and priority; and that communication between city departments on permitting processes should be bolstered to identify red flags. Finally, there was a suggestion that a “renovation navigator” could be established as a way to direct traffic, streamline processes and help reduce conflicts in the decisions made by owners. Each of these recommended actions are within the existing purview of local regulators and enforcement entities.

### **Ongoing Education Across The Industry**

Participants saw a simple opportunity to reduce risk and encourage safety by providing education on high-priority issues in the renovation process to owners and regulators. Above all, up-to-date guidelines and best practice tools needed to be created and regularly updated for owners and developers – this not only educates the key audience, but ensures that regulators are articulating best practices. Education and information on building use (for both tenants and permitting officers) was also identified as a priority, specifically on renovation issues relating to ensuring tenants understand how the building can be used; the kind of risk that buildings without sprinklers present; and the various issues that vacant space present. Participants also identified performance-based renovation as an emerging area that safety enforcement officers needed to be educated on.

## **Final Reflections**

The word that was used most frequently at Fire Summit VII was “holistic”. Expert presenters and participants from across the developer/ owner/ construction/ engineering/ permitting and compliance sectors agreed that looking at existing building renovation in a more holistic fashion has the opportunity to mitigate risk in a meaningful way. Each discipline working in isolation of one another is a recipe for trouble, as is allowing a financial motivation to trump safety decisions. If our communities are going to commit to preserving heritage, repurposing buildings in order to contribute to density and vibrancy, and serving the environmental sustainability agenda appropriately, then a more sophisticated approach to the continuum of renovation legislation and decisions must be developed.

Fire Summit VII represented another collaboration between fire services, regulatory agencies, and industry representatives in an important first step to deliver the changes required to bring about a cultural shift in the way we think about fire safety in repurposed existing buildings. Together, we can make renovation safer, ensure that Alberta does not experience a Grenfell Tower tragedy and set new standards for integrated planning and implementation that will build resilient, attractive and safe buildings that positively impact our collective quality of life.