



Fire Safety Challenges of 'Green' Buildings and Attributes

In 2012, the Foundation published the report, [Fire Safety Challenges of Green Buildings](#), the objectives of which were to a) document a set of green building design elements that may increase fire safety hazards, and, b) share best practices identified via the search with respect to fire hazard risk mitigation associated with green building design elements.

This effort identified more some 80 'green' building features and technologies, identified a set of 22 potential sources of increased hazard or risk associated with the 'green' features and technologies, identified several fire and other safety events associated with the 'green' features and technologies, and presented a relative risk matrix as a qualitative representation of the 'additional' hazard or risk presented by 'green' buildings and features.

Since 2012, there have been several major fire events, which involved 'green' building features or technologies, notably the Grenfell Tower fire in London (combustible insulation), the Dietz & Watson cold storage warehouse in Delanco, New Jersey (photovoltaic panels, combustible insulation), as well as new research and regulatory change.

Project Goal & Approach

Conduct a global information search into fire events involving green / sustainable building materials, features and technologies, and into research, regulatory changes, engineering approaches, risk mitigation strategies, and firefighting tactics associated with fire challenges with green / sustainable building materials, features and technologies, emerged since 2012.

The final report is available [here](#).

Research by:



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Summary Observations

While significant work has been undertaken since 2012, and advancement has been made towards more fire safe implementation of 'green' (sustainable) attributes into buildings, gaps exist, and research, development and technology transfer is still needed in a number of areas (below). Gaps in understanding and assessment tools mean that in some cases there has been insufficient development of design guidance, standards and regulations.

- Integration of 'green' (sustainable) building attributes into fire incident reporting systems
- More robust and appropriate test methods, which yield engineering data, for assessment of material, component and systems performance
- Integration of the need for fire performance consideration into 'green' (sustainable) materials, technologies and features research and development
- Robust risk and performance assessment methods and tools, which are founded on broad expert stakeholder knowledge and experience, available data, and expert judgment where data are lacking
- Better tools for holistic design and performance assessment, taking advantage of BIM and other technologies that are defining the future of the construction market
- Transition to more holistic, socio-technical systems approaches for building regulatory systems, which consider the diversity of societal and market objectives for building design, construction and lifetime operation
- Further development and articulation of the sustainable and fire resilient (SAFR) buildings concepts and its societal and economic benefits