



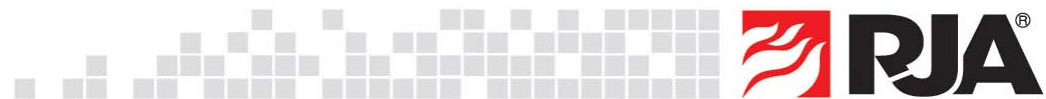
Fire Safety and Sustainable Building Design Symposium

November 7 - 8, 2012

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Goals of Symposium

Bring architectural and fire protection communities together to share ideas and best practices for fire safe design, considering:

- Sustainable design's impact on fire safety
- Fire safety provisions' impact on sustainable design
- Life cycle sustainability of structures, including fire safety features

Progress in Fire Safety

Since 1977:

- Number of fires dropped by 52%
- Number of fatalities dropped by 47%
- Property damage dropped by 25% (as percentage of GDP)

Over the last 55 years:

Five 100-plus fatal fires

Previous 55 years:

Forty-four such events



1970s: Foam Plastic Insulation in Construction



1970s: Foam Plastic Insulation in Construction



“The solution, when found, will be obvious.” - Anonymous

New Challenges



“...it is clear...there is a lack of knowledge about green buildings in the fire safety community... due to the fact that many fire officials have yet to deal with green buildings in their work...”

• Pg. 36 *Fire Safety in Green Buildings Report*, December 19, 2008

New Challenges



NASFM doesn't yet know the answer, according to its own report:

“At this point, NASFM is not sure how best to address this challenge and exactly where these problems and opportunities lie.”

Fire Safety in Green Buildings Report, December 19, 2008

Passive Air Flow



Double-wall Glass Exterior

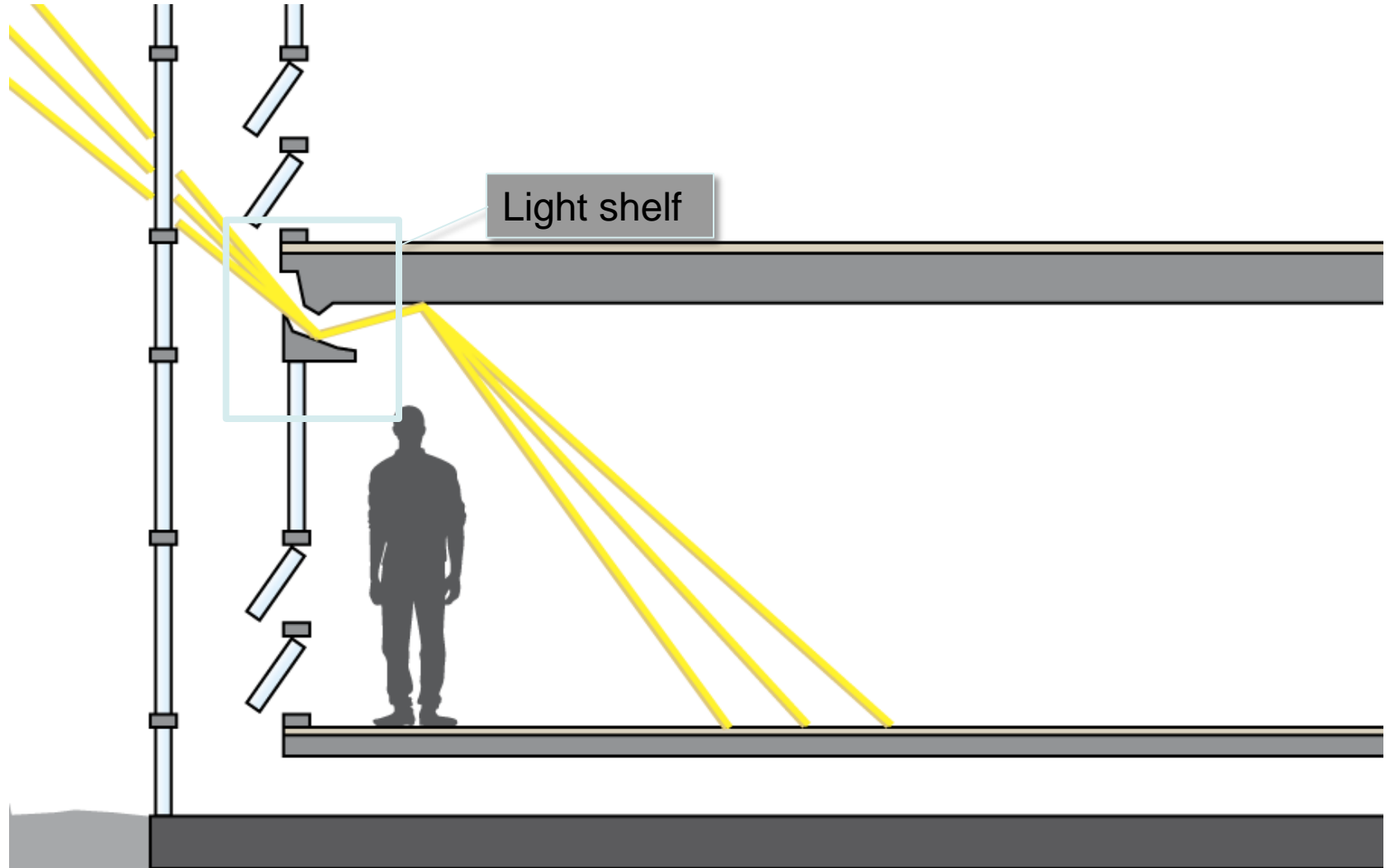
Factors in the design process.

Below The ETFE skin allows ample daylight to enter the facility.

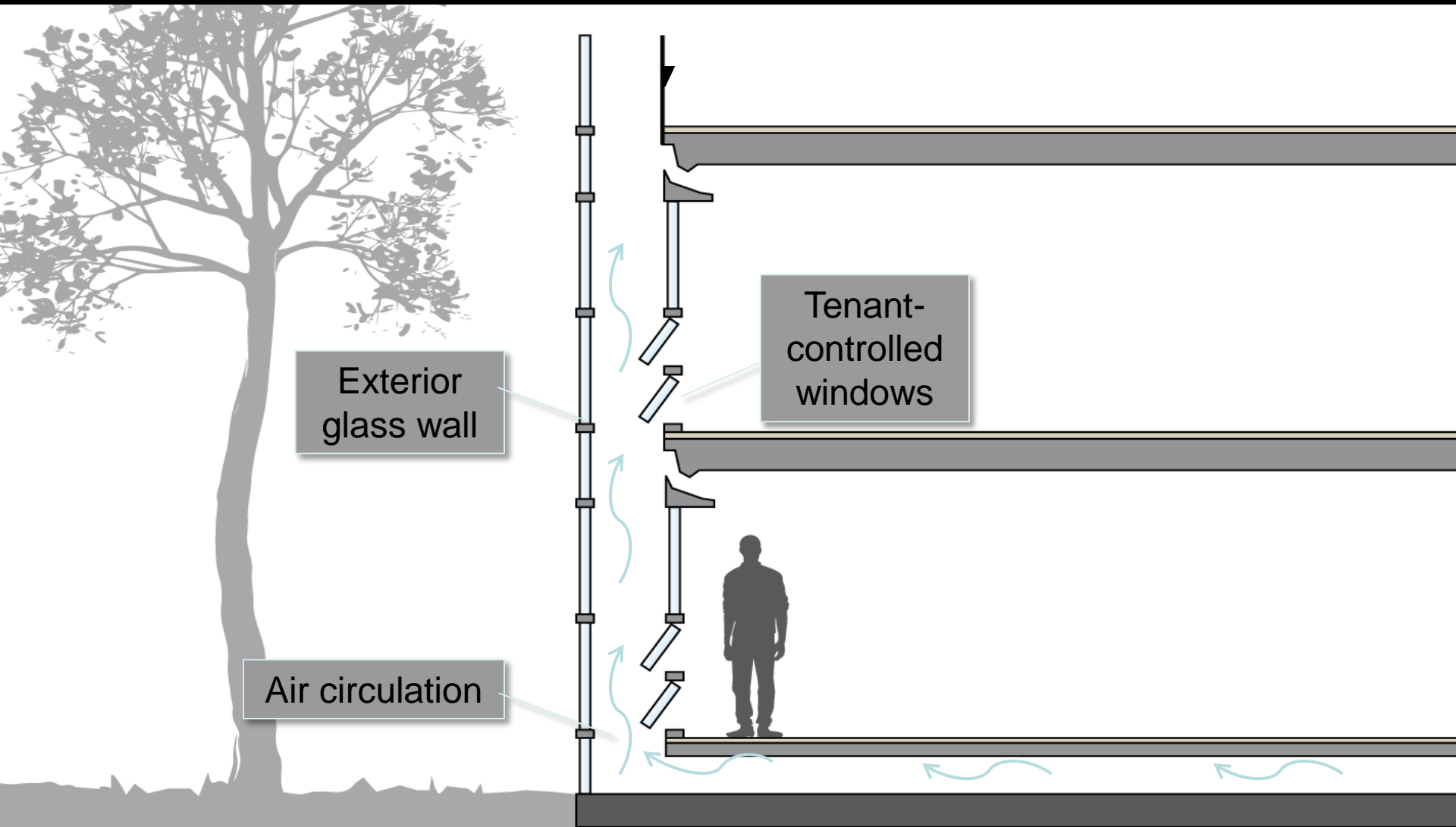
Right Workers can relax outdoors and watch cargo ships passing through the busy harbor.



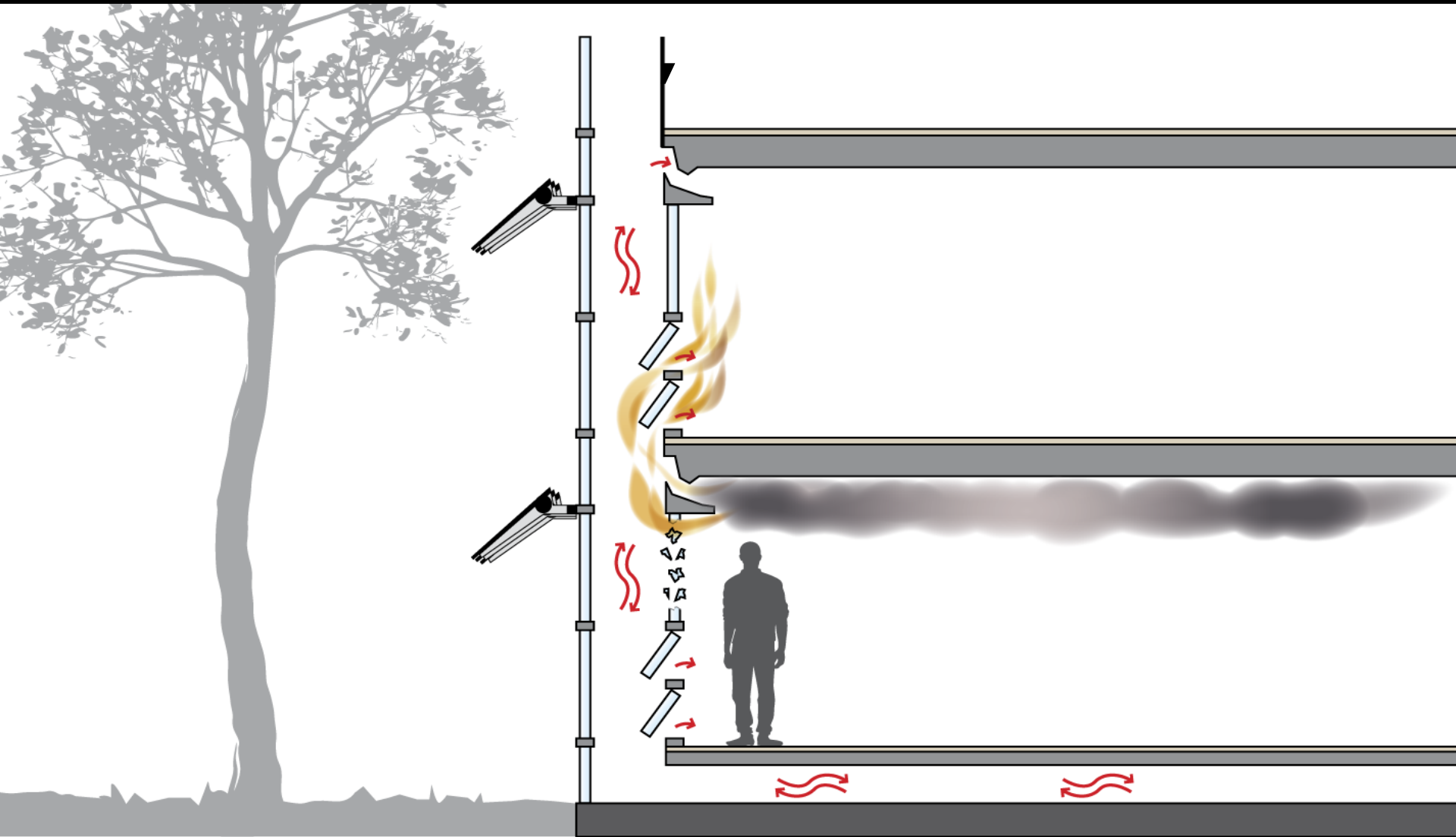
Integrated Radiant System



Integrated Radiant System



Integrated Radiant System



Photovoltaic Cells



“Green” Roof – Chicago, Illinois



Furnishings and Building Materials



Proper consideration of anticipated fuel load:

Removal of fire retardant chemicals in furnishings may affect ignitability and heat release rates;

New “green” recycled materials may not be uniform or carry forward their original properties

Fire Protection Principles

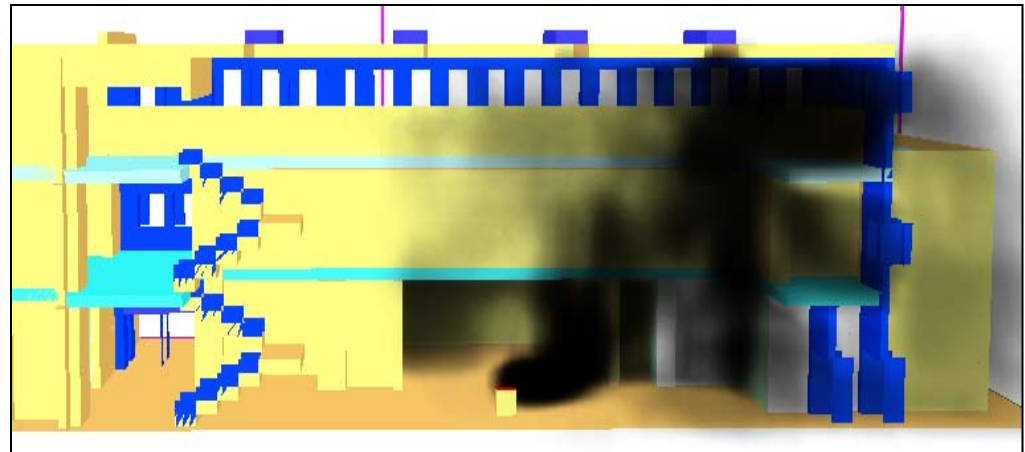
- **Combustibility of “green” materials**
 - Insulation properties vs. combustibility
 - Recycled materials’ properties
 - Full-scale performance
- **Building configurations to limit vertical and horizontal fire spread**
 - Open interior spaces; natural ventilation
 - Lightweight construction and glass
 - Double-façade walls
- **Fire suppression/fire detection**
- **Means of egress**



We are Better Off Today than we Were 40 Years Ago

Good news!

- The laws of physics and nature apply equally to green design and traditional design.
- Better knowledge
- Better tools
- Better training
- More focus on the issue



Issues to be Addressed

- Consider “equivalency” provisions or “performance-based design” options to resolve issues between existing codes and “green” initiatives
- Recognize the developing issues relating to interaction between existing codes and “green” initiatives
- Recognize the value of the early addition of a fire protection professionals as part of the “green” design team



Issues to be Addressed

What is “Green?”

“Green or sustainable building considers the building project and its components on a full life cycle basis, including the total economic and environmental impact and performance....”

Source: USGBC

Issues to be Addressed



Will the “voluntary,” **market-driven** demand for sustainable design fostered by LEED continue, or will it be **mandated** by adoption of “green” codes?

Will either be driven by **tax incentives**?

Issues to be Addressed

Should a bike rack be given more LEED credit than a building's fire sprinkler system?



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