

Fire Fighter Safety and Building Sustainability: A Fire Fighter's

Perspective

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Today's Focus:

To understand how the green movement impacts firefighters' work environment, and identify methods to minimize the negative impact on public and firefighter safety through communication and collaboration with the design community.





Green is Affecting The Fireground

- Site Design Issues
- Building Design Issues
- Alternative Power Sources
- Energy Conservation
- Techniques
- Green Roofs
- Urban Villages



Site Design Issues:

- Apparatus Access
 - Limitations on Hardscape
 - Limitations on turfgrass
- Traffic Calming
 - Narrow roadways
 - Speed humps, chicanes, chokers
- Landscaping











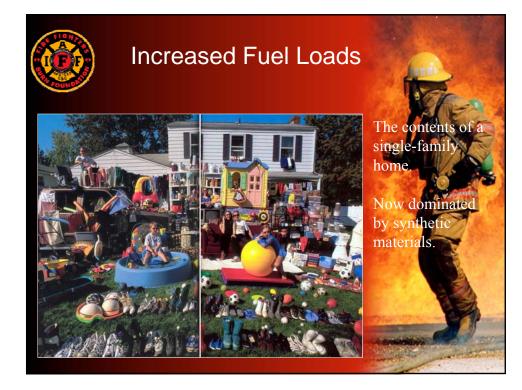










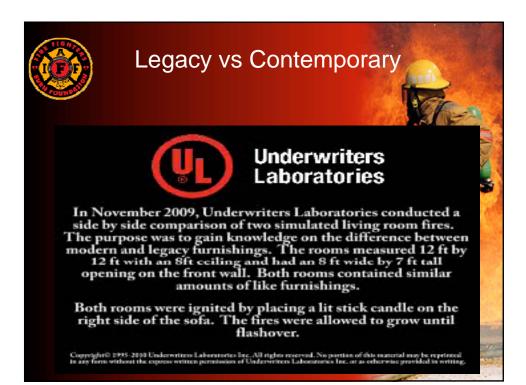


Increased Fuel Loads



- Upholstered furniture such as chairs, recliners, love seats and sofas are common fuel packages in the living room or family room of a residential occupancy.
- A single upholstered chair can provide enough energy to take a 10' x 12' room to flashover.
- A sofa can provide 3X the energy of a single chair.





Dunes I and II: Escape			
Time Differences			
Flaming Fire	Scenarios		Chan .
<u>r ianing r in</u>	Alarm Times	Tenability Times	"Escape" Time
Dunes I	140 ± 94 s	1043 ± 365 s	903 s
Dunes II	43 ± 20 s	169 ± 37 s	126 s
⇒ Shorter escape times in Dunes II study attributed to			
significantly faster fire growth rates.			
<u>Smoldering</u>	Fire Scenarios		
	Alarm Times	Tenability Times	"Escape" Time
Dunes I	1790 ± 1163 s	4146 ± 1961 s	2356 s
Dunes II	1983 ± 894 s	3303 ± 1512 s	1320 s
\Rightarrow Smoldering times are statistically the same.			









Fire Service Challenges

- Budget Cuts
- Reduction of Prevention Priorities
- Still Need to Respond
- Lack of Understanding the Potential Impact on Work Environment
- Politicians Who Don't Understand Fire



Design Community Responsibilities

- Help Create a Collaborative Environment
- Exchange Information
- Involve the Fire Service Early
- Engage the Regulatory Process









