

Assessing the Environmental Impact of Fires

*International Builders' Show, Las Vegas
January 19, 2010*



Protect the Earth
One Home at a Time



U.S. residential fire problem*

- A fire every 82 seconds
- 84% of fire deaths
- 82% of fire injuries
- 69% of structure fire property damage
- 62% of fireground firefighter deaths

*2008 NFPA







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Fire death and injuries in one- & two-family dwellings*

(Percentage of Residential)

| | |
|--|-----|
|  Fire deaths: | 85% |
|  Fire injuries: | 68% |
|  Fire property damage: | 81% |
|  Fireground firefighter deaths: | 92% |

*2008 NFPA



 Protect the Earth
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 **Home Fire Sprinkler**
COALITION
Protect What You Value Most
HomeFireSprinkler.org

HFSC & FM Global: Environmental testing partnership

- A Need for Hard Data
- Prove Previous Assumptions
- Dispel Standing Myths
- Educational Input for Public Policy



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Environmental Impact of Sprinklers

Dr. Christopher J. Wieczorek
FM Global



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FM Global

- One of world's largest business property insurers
- Clients: 1 of every 3 FORTUNE 1000 companies
- 175 years in business; Owned by clients
- Employ 1,700 engineers



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FM Global

- Scientifically focused.
Believe losses are preventable, not inevitable.
- Does not manufacture or sell fire sprinklers
- Pioneered every major development in sprinkler technology since the 1950s



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FM Global Research Campus



FM Global Research Campus





Unprecedented research

**Fire sprinklers are
now proven to
protect the environment**

Sprinklers now proven to reduce...



Pollution



Water usage



Fire damage

Why now?

- Communities grappling with green legislation
- Water use restrictions
- Growing global concerns around sustainability
- Many sprinkler myths

Two living room fire tests

Fire Service
Response
Only

vs.

Residential Sprinkler
+
Fire Service Response

Exterior walls



Interior walls









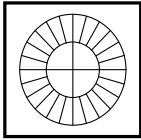
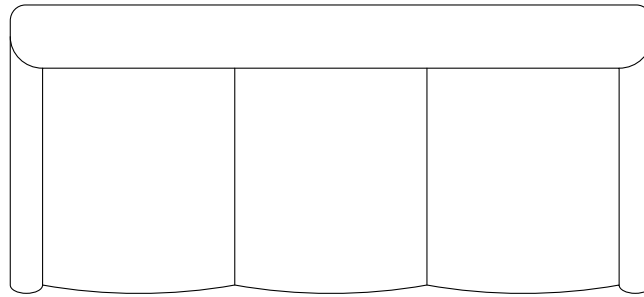
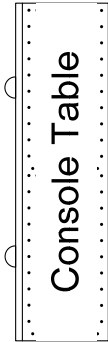


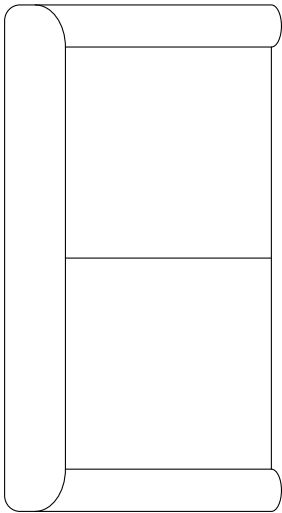
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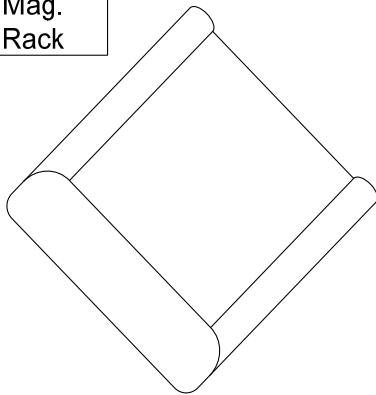
Coffee Table



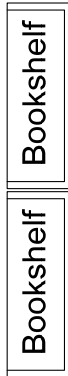
Console Table



Mag.
Rack



TV Stand



Bookshelf

Bookshelf

Ignition source



Sprinkler system

- Residential Sprinkler
- Sprinkler Install & Design
- Per FM Global engineering standards

www.fmglobalsdatasheets.com



Fire service response



- Response initiated via smoke detector activation

- 10 minutes

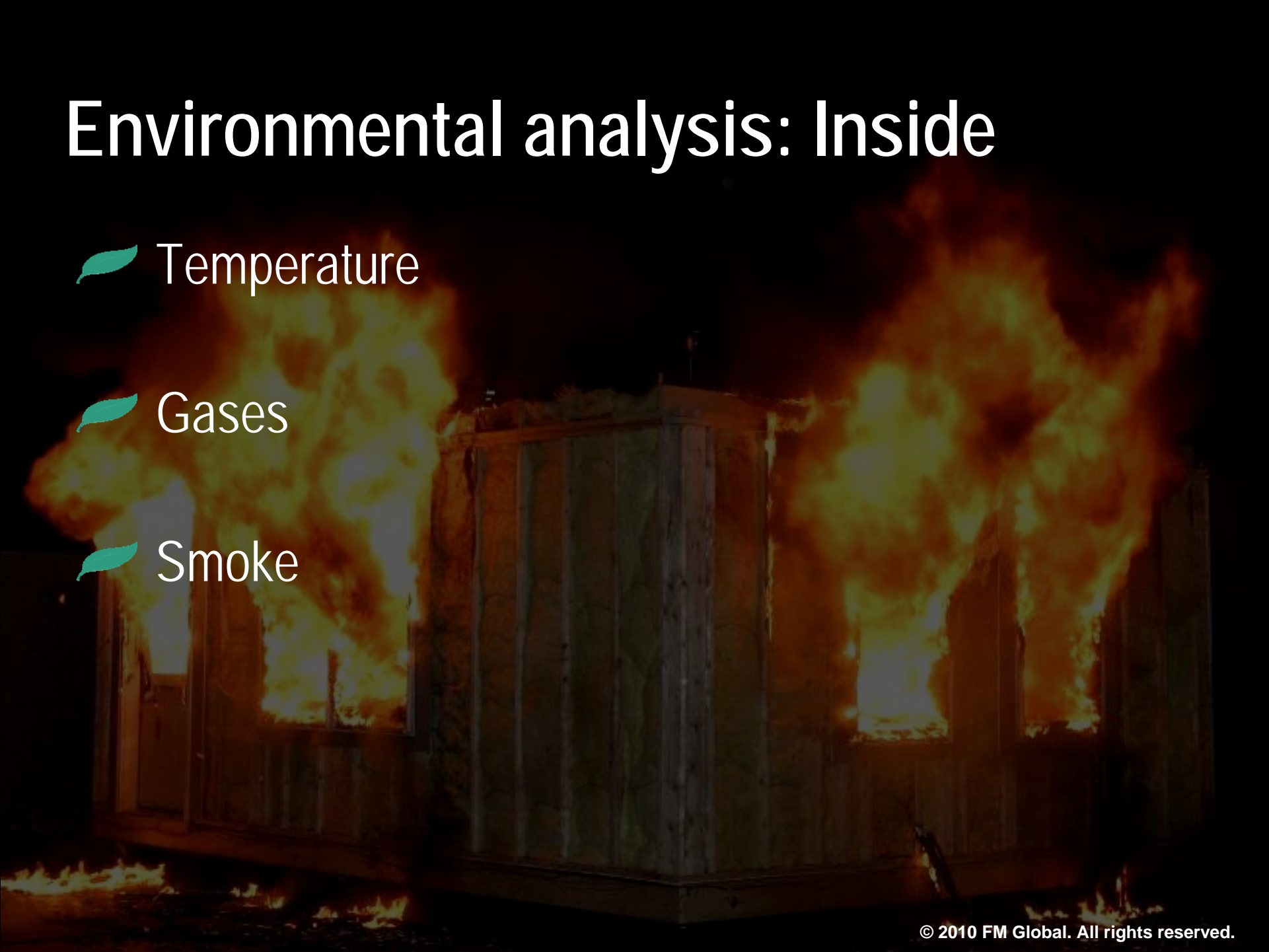
- Alarm notification, arrival and setup time

Environmental analysis: Inside

Temperature

Gases

Smoke



Environmental analysis: Outside



➤ Pollution (air and water)

➤ Water usage

➤ Fire damage

➤ Landfill waste

➤ Reconstruction



Finding: Reduced greenhouse gases

99%

Finding: Reduced fire damage to room

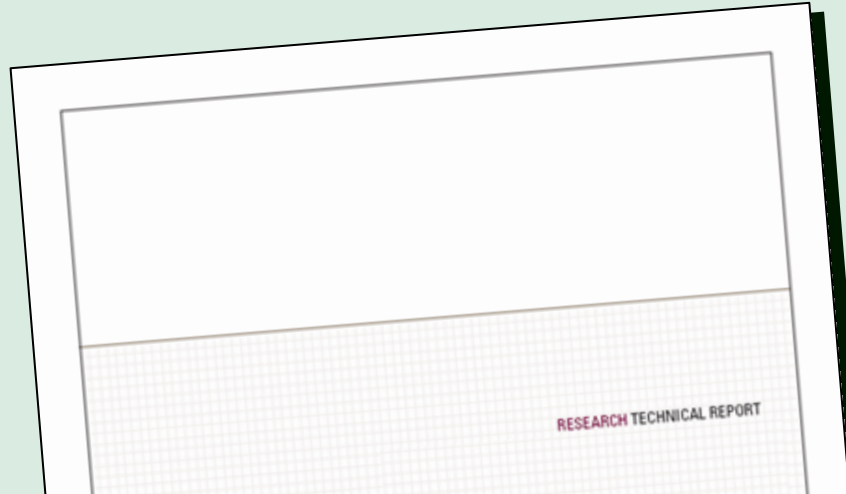
Unsprinklered = 100%

Sprinklered < 3%

Finding: Reduced water usage

50%

More data to come...



www.fmglobal.com/researchreports



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Unprecedented scientific proof

**Fire sprinklers are
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protect the environment**

Supplemental Data



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South Wall (non sprinklered)



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