

**NIST World Trade Center Conference**

**Session 5: Analysis of Active Fire  
Protection Systems**

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# Building Fire Safety Systems

Egress systems:

stairs, elevators, doors, protected corridors

Passive fire protection systems:

partitions, gypsum board, sprayed fire-resistive material (SFRM), intumescent materials

**Active fire protection systems:**

**fire sensors and alarms**

**notification systems**

**sprinklers and water supplies**

**non-aqueous fire suppression systems**

**smoke management systems**

# Recommendations for Improved Active Fire Protection Systems (1/4)

Enhance sprinklers, standpipes/hoses, fire alarms, and smoke management systems to accommodate

- greater risks associated with increasing building height and/or population,
- increased use of open spaces,
- high-risk building activities,
- fire department response limits,
- transient fuel loads, and
- higher threat profile.

# Recommendations for Improved Active Fire Protection Systems (2/4)

Develop fire alarm and communications systems, and standards for their performance, to provide continuous, reliable, and accurate information on status of life safety conditions at a level of detail sufficient to manage the building evacuation process in fire emergencies.

# Recommendations for Improved Active Fire Protection Systems (3/4)

Adapt control panels at fire/emergency command stations in buildings (with standards of performance) to accept and interpret larger quantity of more reliable information from systems that provide tactical decision-aids to fire-ground commanders, including water flow rates from pressure/flow measurement devices.

# Recommendations for Improved Active Fire Protection Systems (4/4)

Develop and implement systems for:

- real-time off-site transmission of information from monitored building systems for use by emergency responders to enhance situational awareness and response decisions; and
- preservation of information (off-site or in black box) for purposes of subsequent investigations and analysis.

# Session V. Presentations

Fire Alarm Systems -

Robert Keough, Rolf Jensen Assoc.  
Raymond Grill, Arup Engineering

Fire Suppression Systems -

Mark Hopkins, Hughes Assoc., Inc.

Smoke Management Systems -

Michael Ferreira, Hughes Assoc., Inc.

# Submitted Public Comments

Bill Allen, Leigh's Paints

John P. Couch, Kori Technology Group

Richard Schulte, Schulte & Assoc.