

Protecting Historic Centres During Emergencies

Mass Notification Systems in Historical Buildings



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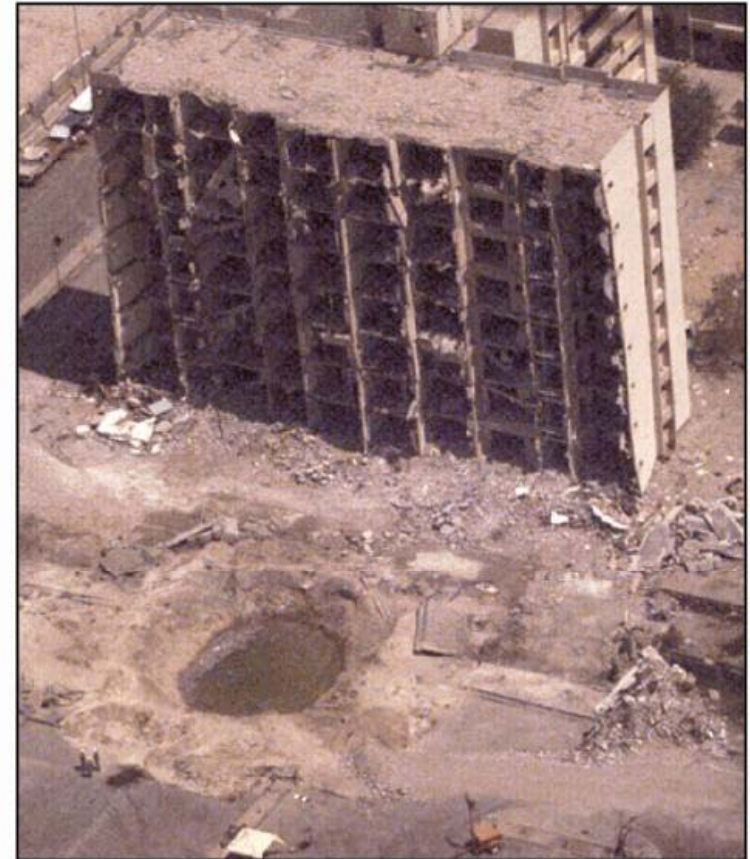


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On June 25, 1996, a terrorist truck bomb exploded outside the northern perimeter of the U.S. portion of the Khobar Towers housing complex in Dhahran, Saudi Arabia.

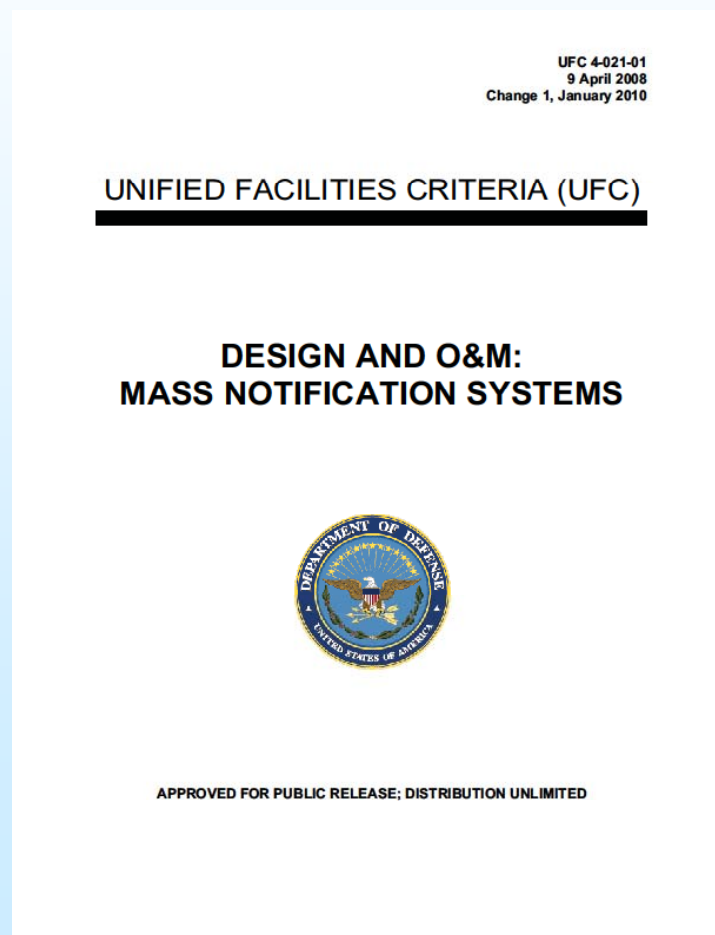
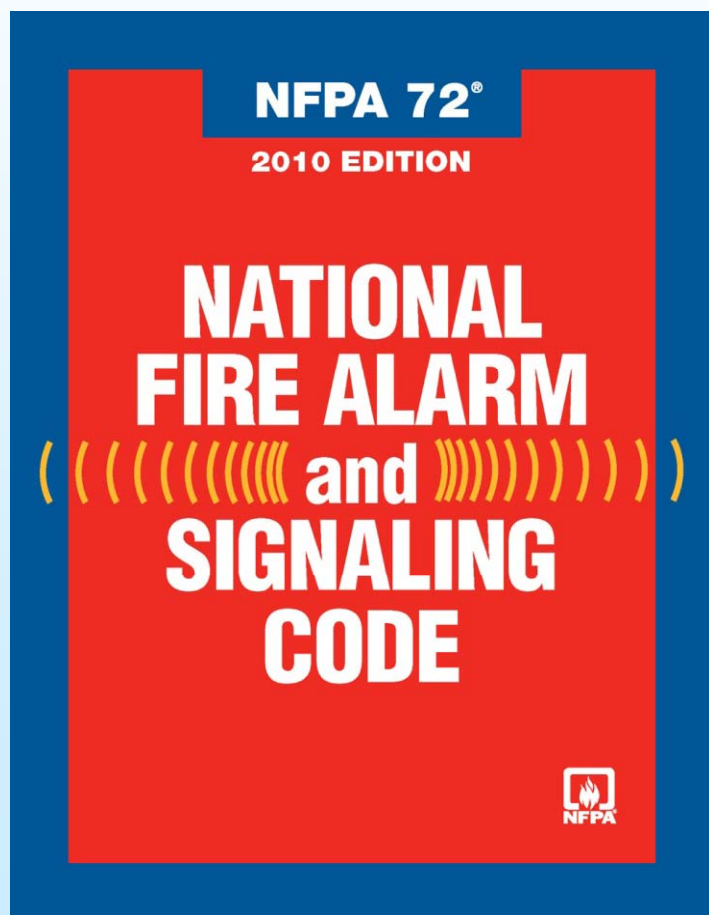


Nineteen US citizens were killed and some 500 other persons were wounded in the truck bombing of the US military's Khobar Towers housing facility near Dhahran, Saudi Arabia, in June 1996.



What is Mass Notification?

How Does NFPA 72-2010 Compare with the UFC?



What is Mass Notification?

DoD: UFC 4-021-01 (9 Apr 2008 + 1 Jan 2010)

“Mass Notification provides **real-time** information and instructions to people in a building, area, site, or installation using intelligible voice communications along with visible signals, text, and graphics, ...”



MNS Role in Emergency Planning

- Emergency Planning Requires a detailed Risk Analysis (Vulnerability Analysis, Failure Analysis)
 - Risk to the Asset
 - Probability and Frequency of Loss
 - Loss Effect
- Risk Mitigation
 - Dissemination of Information (MNS Comes In Here)
 - Personnel
 - Back Up Systems
 - Back Up (Fallback) Procedures
- Before, During, After



MNS Technical Solutions

Two Levels of Communication Most Commonly Used:

- First Level of MNS is independent of the devices carried by an individual or activities performed;
 - This MNS is the primary means to inform the population
- Other MNS require that an individual is carrying a device or is engaged in a specific action.
 - These solutions provide an extra layer of notification (a safety net).



What Are The Challenges?

- Message Generation
- Intelligibility
- Reliability
- Robustness
- Survivability



What Are The Challenges?

- Integrating existing PA Systems
- What safeguards are in place?
- Design & Installation Technical Expertise
- Maintenance of non-fire systems vs. fire systems



What are the challenges for Historical Sites?



Doge's Palace Courtyard
by Barbara Molini



Ahwahnee Hotel
Yosemite National Park
California, USA



Overview of Key Design Issues

- System Design
 - Audibility
 - Intelligibility
 - Survivability
 - Relevance
 - Risk Analysis
 - Threat Assessment
 - Emergency planning
- Historic Structures
Provide Safety & Communications
Reduce Impact to Historic Fabric





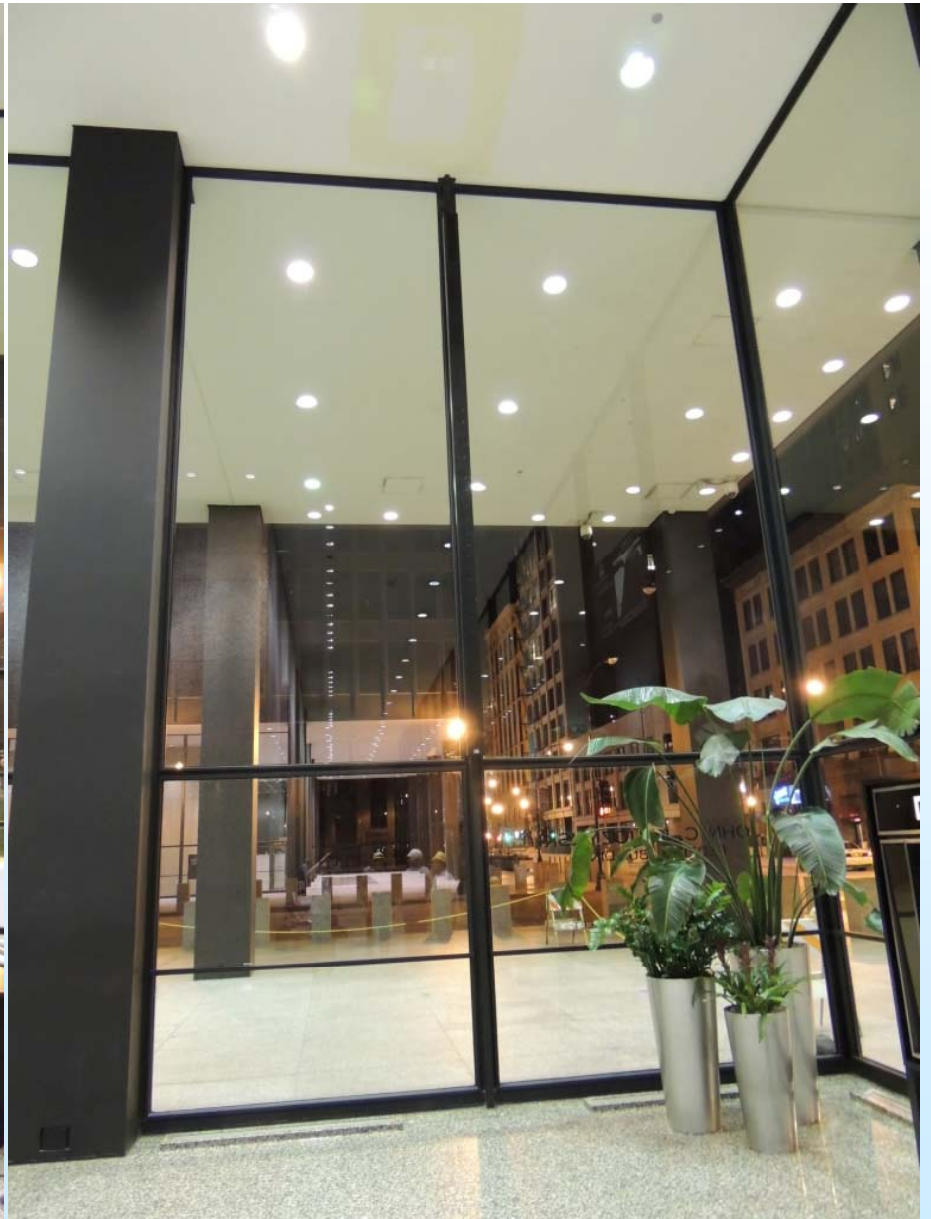
John C. Kluczynski Federal Building & U.S. Post Office, Loop Station

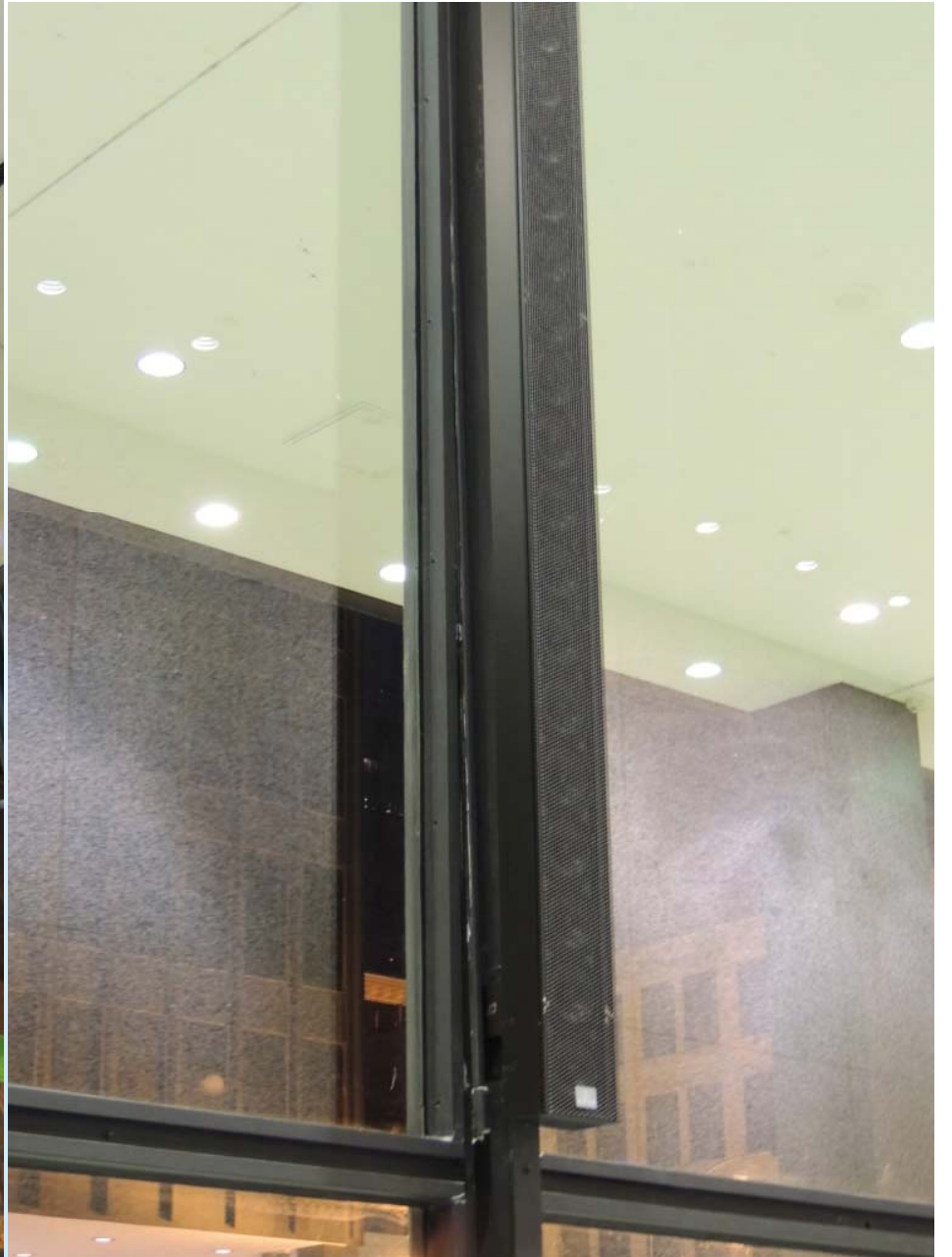
Dearborn Street
Chicago, IL USA

Designed by Chicago architect Mies van der Rohe

Lobby granite and glass – Highly Reverberant
Intelligibility not possible with
standard Fire Alarm Voice Systems







The Message

“The problem with communication ... is the illusion that it has been accomplished.”

- George Bernard Shaw



CONCLUSIONS

- ❑ Effective Mass Communication is NOT a singular system
- ❑ Process involves leveraging and Integrating Systems
 - ❑ Monitoring
 - ❑ Communications
 - ❑ Control
- ❑ Must Have Someone IN CHARGE who knows what is happening & what directions to give [Situational Awareness & Training]



Questions??

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