Protecting Historic Centres During Emergencies

Mass Notification Systems in Historical Buildings

Wayne D. Moore, P.E., CFPS, SET
Hughes Associates, Inc.
117 Metro Center Boulevard, Suite 1002
Warwick, RI 02886
401-736-8992
wmoore@haifire.com

Thomas Norton, LCMDR USN-Ret.
President
Norel Services Corp.
230 2nd Avenue
Waltham, MA 02451-1123
781-768-5500
tnorton@norelservice.com
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.
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 + 1Jan 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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