Fire & Life Safety at the University of Kansas

Bob Rombach
Quality Compliance Group
University Fire Marshal, State Fire Inspector and Staff Architect
What is the rest of the Story?
FIRE......

- FROM THE INSIDE

- Station Nightclub Fire in 2003
  - 100 deaths; 230 injured; 130 escaped
  - Issues:
    - 170 occupants over occupancy limit
    - EXITS not clearly identified
    - NO Sprinkler SYSTEM
    - Obstructions in path of travel
    - Modern materials
    - Unsafe practices (pyrotechnics)
    - Toxic fast-moving smoke
    - Confusion & panic


Video

- **Warning, difficult to watch**

  - **Station Nightclub Fire in 2003**
    - **100** deaths; **230** injured; **130** escaped
    - Issues:
      - **170** occupants over occupancy limit
      - EXITS not clearly identified
      - NO Sprinkler SYSTEM
      - Obstructions in path of travel
      - Modern materials
      - Unsafe practices (pyrotechnics)
      - Toxic fast-moving smoke
      - Confusion & panic
CAMPUS FIRES

ON Campus
- Univ of Wisconsin La Crosse
- Arizona State University
- Portland State University
- Hampden-Sydney College

Labs
- University of Maryland
- SUNY Canton

Off campus
- Boston University
- Suffolk University
- Marist College, Poughkeepsie, New York
  - 3 Died………

What did she do wrong?
- CAMPUS FIRES
  - ON Campus Video
CAMPUS FIRES

ON Campus
- Univ of Wisconsin La Crosse
- Arizona State University
- Portland State University
- Hampden-Sydney College

Labs
- University of Maryland
- SUNY Canton

Off campus
- Boston University
- Suffolk University
- Marist College, Poughkeepsie, New York
  - 3 Died……….

What did she do wrong?
CAMPUS FIRES

ON Campus
- Univ of Wisconsin La Crosse
- Arizona State University
- Portland State University
- Hampden-Sydney College

Labs
- University of Maryland
- SUNY Canton

Off campus Video
- What did she do wrong?
Lessons Learned

- E N D S  PRIORITIES #1
  - EXIT
    - Stair to get down and out - “Protected”
    - Corridors to get to the stairs
    - NO obstructions to slow exiting
    - Robust Fire Alarm systems
    - To Sense trouble
    - To Warn effectively
Priority 2

- **ENDS**
  - **EXIT**
    - Stair to get down and out - “Protected”
    - Corridors to get to the stairs
  - **NOTIFICATION**
    - Clear and Loud
    - Visual and Audible
    - Dispatch Resources
    - Informative - voice!
    - Intelligibility!
    - High Fidelity Speakers

![Fire Alarm Image]
Priority 3

- **ENDS PRIORITIES**
  - **EXIT**
    - Stair to get down and out - “Protected”
    - Corridors to get to the stairs
  - **NOTIFICATION**
    - Clear and Loud
    - Visual and Audible
    - Dispatch Resources
  - **DETECTION**
    - Automatic or Manual FA
    - Strategic beyond minimum
    - Full corridor protection
    - Special areas
Priority 4

- E N D S   PRIORITIES
  - EXIT
    - Corridors to Stairs to get down and out- “Protected”
    - Robust Fire Alarm systems to sense and warn
  - NOTIFICATION
    - Clear and Loud
    - Visual and Audible
    - Dispatch Resources
  - DETECTION
    - Automatic or Manual
    - Strategic beyond minimum
  - SUPPRESSION
    - Sprinkler systems, Wet, Dry & Clean Agent
    - Testing and maintenance partnerships
    - Oversite- Documentation and Verification
Fire Alarms - Mass Notification at KU

- **98 Voice Networked FA Systems** (20 years)
  - **Tier one Coverage** (supplements text and e-mail)
    - Interior- every room @ 65 dB min, 75 average
    - Exterior- 85% of open populated areas- 600 acres- utilizes FA exterior speakers (separate)
    - Unique pre-tone, ALERT strobes
  - **Control**
    - Activate individual buildings, groups or ALL
    - Activate at Central Location, KU 911 Dispatch
    - Connected via FA fiber/copper network
  - **Message**
    - **Live Voice** - microphone or headset for adaptable information and updates
    - Recorded Messages for standard ALERTS
Life Safety Systems Management

- **Fire Alarms**
  - **Design and Installation** -
    - Managed approach- Proprietary systems
    - Integrated Oversite- University design to AHJ
    - Verify Everything- only approved installers
  - **Testing and Maintenance – 18,000 devices**
    - Smart Systems- Smart Testing
    - Auto test weekly instead of annually
    - Smart speakers- control messages
  - **Oversite Management**
    - Network Monitoring- TSW- Remote Client
    - Are all your systems… “NORMAL” ?
    - Disabled devices- Maintenance vs Construction
    - Troubles- Are all sprinkler valves OPEN?
Remote Client Maintenance & Oversite

- Live Network Status
- Alarm & Device Status
Life Safety Systems Management

- Sprinkler Systems, Fire Pumps, etc.
  - **New Construction** - 900 million in 3+ years
    - Benefits in newer Codes need to be demonstrated to Stake Holders
    - Since IBC codes adopted 100% are protected
  - **Older and Historic Buildings**
    - Evaluating risk and cost of loss to push for retrofitting buildings
    - 16 dorms retrofitted by 2015- (20 year program)
  - **New Technologies**
    - Nitrogen to extend life of pipes
    - Modern Clean Agent to reduce loss
    - Oversite via intelligent FA to monitor every valve 24/7 especially during remodels!
Fire & Life Safety at the University of Kansas

Thank You,... be SAFE

Bob Rombach
Quality Compliance Group
University Fire Marshal, State Fire Inspector and Staff Architect