Installation of Flood Barriers

ASFPM – Atlanta (2015)

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All Loss is Preventable

- History – 1835 Zachariah Allen
All Loss is Preventable

Sprinkler System Evolution

- 1874 - Henry S. Parmalee, sprinklered his piano factory
- 1881 - Grinnell patented the automatic sprinkler (K80)
- 1886 - FM Approvals
- 1990 - ESFR
Flood Protection Approach

- Site Selection
- Site & Building Design
- Device Suitability
- Installation
- Training
Site Selection – Avoid Flood Zones!
Site & Building Design

- Keep water out! (wall and floor penetrations & cracks)
- Interior floor drains/sewer connections
- Storm water management (rain)
- Interior sump pumps
Device Suitability

- Flood Scenario
- Staff’s Skillset
Device Suitability

- Flood Scenario

![Graph showing daily mean discharge and period of approved data during a flood scenario. The graph indicates a peak discharge around 6 days.]
Device Suitability

- Flood Scenario
Device Suitability

- **Flood Scenario**
  - Warning time
  - Plan activation point
  - Installation time

- **Staff’s Skillset**
  - Type of Business
  - Hours of Operation
Device Suitability
Activation Point & Authority

- Tropical Storm Allison (2001)
  - Below grade car park
  - Stop-logs ready
  - Outsourced Maintenance
  - Pressure to maintenance to delay closure
  - Storm back tracked
Device Suitability
Design Doesn’t Fit Skillset

Legend
- Personal Door Stop-log
- Main Entrance Stop-log
- Unloading Stop-log
- Stanchion Unit
Installation Issues

- Missing gaskets behind permanently installed brackets
Installation Issues

- Gaps between bottom gasket and floor
Installation Issues

- Gaskets too long or too short
- Gaskets damaged
Installation Issues

- Improper Storage
  - Compressing gaskets
  - Unsecured - missing parts
  - Mixing components
Training

- Missing instructions
- Poorly written instructions
- Never installed by staff
- Not installed annually (drill)
Recommendations

- Use / recommend FM Approved Equipment
- Quick & Easy assembly
- Allow for warning time (>4h)
- Skilled staff (24/7/365 or enough time to reach site)
- Initial installation testing
- Client committed to annual drills
- Client committed to keeping FERP up-to-date
It’s not just the device!

- Eliminate unnecessary openings & seal water intrusion points
- Secure & protect from weather, theft & damage
- Water removal (pumps & emergency power)
  - Expect water leakage
  - Inches of water better than 3 feet
- Annual testing & maintenance
Summary – Flood Protection System

- Selection
- Design
- Suitability
- Installation
- Training
Questions