Property Sustainability – Protecting Municipal Assets

Ken Wertz, Executive Director
Massachusetts Facilities Administrators Association (MFAA)
Resiliency and Preparedness

• June 2011 Tornados
• Winter 2015 “Snowpocalypse”
• Jan. 2018 Boston Cyclone
• Oct. 2019 Boston King Tide
What we will cover

• Resources
• Building Audits/Assessments
• Building Systems / Climate Impact
• Staffing and Operations
• Funding
Statewide Resilience Master Plan (SRMP)

https://www.mass.gov/service-details/statewide-resilience-master-plan-srmp
You Don’t Know What You Don’t Know!
Risk Assessments - Building Audits

Hazard Identification
- Fire
- Explosion
- Natural hazards
- Hazardous materials spill or release
- Terrorism
- Workplace violence
- Pandemic disease
- Utility outage
- Mechanical breakdown
- Supplier failure
- Cyber attack

Assets at Risk
- People
- Property including buildings, critical infrastructure
- Supply chain
- Systems/equipment
- Information Technology
- Business operations
- Reputation or confidence in entity
- Regulatory and contractual obligations
- Environment

Impacts
- Casualties
- Property damage
- Business interruption
- Loss of customers
- Financial loss
- Environmental contamination
- Loss of confidence in the organization
- Fines and penalties
- Lawsuits

https://www.ready.gov/risk-assessment
Temperature Changes

• Longer Shoulder Months
• Thermal Comfort / IAQ = Work Performance
• Changing Building Codes
  • Green Communities (Stretch Energy Code)
I work harder at getting the office temperature right than I do at my actual job.
How School Buildings Influence Student Health, Thinking and Performance

https://schools.forhealth.org/
Design Standards Are Behind…

Annual Temperature Average

<table>
<thead>
<tr>
<th>Massachusetts</th>
<th>Boston*</th>
<th>Worcester*</th>
<th>Blue Hill</th>
<th>Edgartown</th>
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SOURCE: Northeast Regional Climate Center

http://www.nrcc.cornell.edu/
Building Automation Isn’t Automatic...
Thermal Gain

[Diagram showing the sun's path in the sky and its impact on photovoltaic modules and solar windows in different months and directions.]
Protected Membrane Roof System

Selected Plants
Growing Medium
Bikim Geotextile
Plazzo Deck
Goldfoam XPS Insulation
Heavy Duty Polythene
Nuraphy 3PG Membrane
Nuraphy 3PV Membrane
Substrate: Concrete or engineered plywood
CORPORATE DILEMMA

WHAT IF WE TRAIN THEM AND THEY LEAVE?

WHAT IF WE DON'T... AND THEY STAY?

INVESTING IN EMPLOYEES
M&O Training and Preparedness

• Part of Community Response Team
• Direct work with facility audit group
• Plan Cross Training for Building Systems
  • Where to shovel
  • How to bypass heat
  • Humidity control
• Contracted Services / Controls
Humidity and New Buildings!
Freeze up Loss Prevention

- Routine Building checks
- Reduce/remove HVAC night setbacks
- Interior doors open allow air flow
- Known problem areas remove ceiling tiles
  - Short term solution as impact fire code
- Heating water treatment (glycol)
  - Good and bad....
Capital Planning

• Data driven decision making
• Project budgets
  • Internal estimates
  • Consultants
  • RS Means
• Prioritized 5-Year Plan
  • Built in escalation
  • Include all Departments in forecast
Ken Wertz, MFAA Executive Director
exec@massfacilities.com
Cell: 781-775-6131