



**Greater Orlando IFMA Chapter
CFM Roundtable Webinar
May 11, 2010**



presented by

**The Greater Orlando IFMA Chapter
and**

**Our major sponsors Cubix, OR&L, and
Workplace Resource of Central Florida**





Today's Presenter

Geoff Allen, CFM LEED AP
Office Manager
AECOM
Achieved CFM 1995, 2005



Geoff is a career facility manager. Starting as a systems furniture installer, Geoff has won awards in organizations large and small over the last 31 years in all manner of facility and operations management.



Progress toward the CFM goal

- I. Self – assessment (25%)
- II. Study (50%)
- III. Comprehensive exam review (75%)
- IV. PMA (Positive Mental Attitude)
- V. Exam (100%)





Today's Competency

Human and Environmental Factors

A competent FM should have a general understanding and working knowledge of the following:

- **Healthy, safe, secure and attractive workplaces**
- **Business continuity, Emergency planning and Disaster recovery**
- **Sustainability**



Factoring in Human and Environmental Factors

- **The physical environment is not neutral. It either supports or hampers the efforts of office occupants to be productive.**
- **Worker productivity, morale, and satisfaction are often at odds with corporate budget, existing inventory, and the desire to minimize expenses.**



The 6 principal human and environmental factors



- 1) Temperature and relative humidity
- 2) Air quality (composition, speed, direction)
- 3) Light
- 4) Sound
- 5) Spatial layout and ergonomics
- 6) Aesthetics and psychosocial dynamics



The 6 principal human and environmental factors



1) Temperature and relative humidity

- Thermal comfort components
 - Air temperature - dry or wet bulb thermometer
 - Relative Humidity (amount of water vapor in the air as a percentage of maximum possible)
 - Mean radiant temperature (see definition)
 - Air velocity, measured by speed and direction



The 6 principal human and environmental factors (cont)

2) Air quality

- The measured level of pollutants in the air from various sources (human activity, building materials, outdoor conditions)
- The amount of outdoor air brought into the building to dilute pollutants



The 6 principal human and environmental factors (cont)

3) Light

- Vision provides us with more information than all other senses combined
- Natural light
- Skylight
- Artificial lighting



The 6 principal human and environmental factors (cont)

4) Sound

- Acoustical characteristics vary
- Success of acoustic setting depends on how the space is used and occupants expectations

quiet for concentration (offices, libraries)

minimizing noise (production, construction)

enhancing clarity of voice and music (auditoriums)



The 6 principal human and environmental factors (cont)

5) Ergonomics and Spatial layout

- Ergonomics is the study of work
- Physical conditions prevent comfortable and efficient completion of tasks (too low desks, uncomfortable chairs)
- Back, neck, and shoulder pain most common in office workers (80%)
- Workstation assessments



The 6 principal human and environmental factors (cont)

6) Aesthetics and psychosocial dynamics

- Peoples impression and perception of spaces are the ultimate test of a settings' success
- A beautifully furnished, formal conference room may inhibit people and restrict open & frank discussion
- Uncomfortable seating may prevent people from lingering to discuss additional details



Emergency preparedness and Risk Assessment



Why is this important?

Being prepared for emergencies is one aspect of responsible facility management. It is also essential to increasing the likelihood that a business will survive an incident.



Emergency preparedness and Risk Assessment (cont)



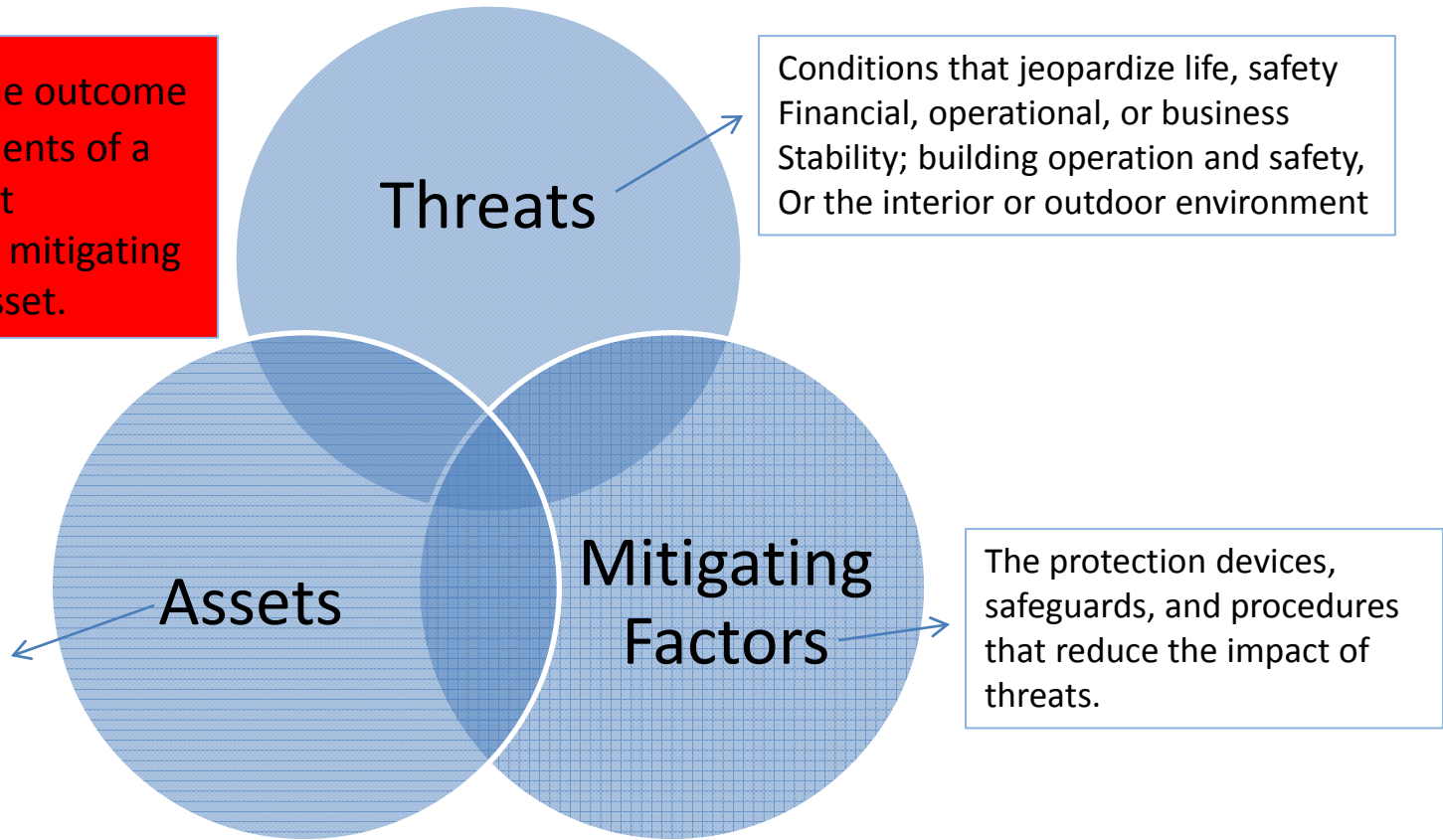
Emergencies are any unplanned events that can cause death or significant injury to building users or the public; that can shut down a business or disrupt operations; that can cause physical or environmental damage; or can threaten the facility's or enterprises' financial standing or public image.



Risk Assessment

There are 3 major elements in the risk equation that sum up the event and vulnerabilities that must be identified

EVENT= The outcome when the elements of a potential threat overpower the mitigating factors of an asset.



Conditions that jeopardize life, safety
Financial, operational, or business
Stability; building operation and safety,
Or the interior or outdoor environment

The physical, financial, human, and intellectual holdings of an organization.

The protection devices, safeguards, and procedures that reduce the impact of threats.



Risk Assessment (cont)



Common methodologies for assessing risk include:

- Process/system checklists
- System design models
- Safety reviews
- Relative ranking
- Analyses – fault-tree, event-tree, cause-consequence, human error
- What-if analysis



Risk Assessment (cont)



How a facility manager can help identify potential emergencies:

- 1) Identify events that could cause an emergency for your facility or organization (risk and exposure).**
- 2) Prioritize potential emergencies so that resources can be assigned for the preparation of policies, procedures, and personnel to be ready if the event happens.**
- 3) Analyze risks and exposure.**
- 4) Conduct a vulnerability analysis for your facility.**



Disaster recovery and business continuity



Why is it important?

90% of businesses without an emergency response/business continuity plan go bankrupt within 2 years following an out of course event.

FEMA reports 80% of businesses damaged by Hurricane Andrew, without an ER/BC plan, failed within 2 years.

The best emergency plan is one that is comprehensive and understandable. It should involve personnel of the company at all levels, and be easily understood by all employees.



Disaster recovery and business continuity



Events causing business disruption

Rank the 4 events which cause 60% of all business disruptions

28%, 12%, 10%, 8% (bombing 7%, hurricane 6%, fire 6%)

1. Hardware error
2. Flood
3. Storm Damage
4. Power outage



Disaster recovery and business continuity



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Disaster recovery and business continuity



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Disaster recovery and business continuity



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Disaster recovery and business continuity



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1. Hardware error – 8%
2. Flood – 10%
3. Storm Damage - 12%
4. Power outage – 28%



Disaster recovery and business continuity (cont)



5 main steps to establish a viable EP/BC plan

1. Establish an emergency development team
2. Analyze risks, vulnerabilities and response capabilities.
3. Develop the plan
4. Provide training and exercise the plan.
5. Test, evaluate, and modify the plan.



Disaster recovery and business continuity (cont)



5 good reasons to have a plan

1. Life safety of employees
2. Survival of the business
3. Saves money (avoidance usually costs less than restoration)
4. Contractual obligation
5. Legal requirements



The Role of Sustainability in FM



Continues to grow and become more complex

Sustainability will become a core competency in 2011/2012

New tools for FMs to evaluate and improve facilities:

- Site selection and management
- Water management
- Procurement and use of materials and resources
- Energy management
- Indoor air quality
- Sustainable operations



Sustainability in FM



The Triple Bottom Line – Social, environmental, and economic aspects of sustainability

The FM should be intimately involved in initiatives to:

- **Develop sustainable goals**
- **Sustainable strategy development and implementation**
- **Monitor, measure, and manage sustainable practices**
- **Employee education and training in sustainable practices**



Human and Environmental Factors Recap



Human and environmental factors under the control or influence of the FM represent the single largest influence of the workplace on its occupants.

90% of an organizations costs are in salaries of the workforce.

Productivity is tied to efficiency and comfort of the workplace.

The organization that provides a safe, happy work environment will increase retention, reduce absenteeism, and maximize productivity.



Human and Environmental Factors - Other



Codes, guidelines, regulations: OSHA, Environmental, ADA,
local regulations.

Safety training, reports, and record keeping.

Hazardous materials, risk, use, storage, and disposal, chain of
custody documentation.

Ergonomics, assessment, reporting



Sample question 1

**What provisions of a disaster plan are most important?
(choose 3)**

- A. Designation of back-up work sites**
- B. Procedures for communication with external agencies**
- C. Emergency internal communication procedures**
- D. Procedures to minimize business losses**
- E. Procedures to minimize harm and injury to staff and building occupants.**



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Sample question 2

Ergonomic solutions related to office lighting include which of the following? (choose 3)

- A. Use of overhead fluorescents at workstations**
- B. Reduction of glare on computer screens**
- C. Improvement of contrast on work surface**
- D. Use of incandescent lighting for visual comfort**



Sample question 2

Ergonomic solutions related to office lighting include which of the following? (choose 3)

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Sample question 3

What are the most important reasons to have a minimum width in corridors? (choose 2)

- A. To conform to fire codes
- B. To facilitate access to disabled occupants
- C. To provide clearance for furniture and equipment moves
- D. To separate stairs, restrooms, and aisles from common space



Sample question 3

What are the most important reasons to have a minimum width in corridors? (choose 2)

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Competency summary



Human and Environmental Factors

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Questions ???

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**Evaluations will be emailed to you,
please fill them out promptly**

**The next CFM Roundtable is Tuesday June 8,
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