Managing the Building Life Cycle with Sustainable Facility Management

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Meet Our Presenters:

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Sustainable Facility Management

• The role of the facility manager in sustainability
• Non-traditional approaches to SFM
• Creating an integrated SFM approach
• The value of integrated SFM
Sustainable Facility Management

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FM Evolution

ESSENTIAL AREAS OF EXPERTISE

INTEGRATING
ALIGNING
INNOVATING

FACILITIES MANAGEMENT FUNCTIONS

Operations and Maintenance of One or a Few Buildings
- Operations
- Construction Coordination
- Utility Management

Operations and Maintenance of Multiple Facilities
- Project Mgmt.
- Construction Management
- Energy Mgmt.
- Space Planning
- Move Mgmt.
- Business Support

Operations and Maintenance of Multiple Facilities
- Capital Program and Project Management
- Energy Management
- Strategic Planning and Portfolio Management
- Corporate Real Estate Finance
- Strategic Outsourcing

EVOLUTION OF FACILITIES MANAGEMENT FUNCTION OVER TIME

Tactical → Strategic

(Adapted from APPA 2002)
Integration of people, place, process, and technology by using a life cycle approach to facilities
Enterprise knowledge – a deep understanding of the facilities portfolio and how to align it with the organization’s mission, culture, policy framework, financial constraints, and workforce capabilities and skills
Innovating across traditional functional lines and processes to address changing requirements and opportunities.
The Role of the FM

The facility manager in the *operational* role

- Differentiating design approaches from operational approaches
- The value of the FM perspective in operating sustainable facilities
- Optimizing facility performance and worker satisfaction through Sustainable Facility Management
Traditional approaches to sustainable buildings

- Energy
- Water
- Materials
- Indoor Environment
- Sustainable Sites
Sustainable Facility Management

- Concentrates on Operational Roles
- Encourages a bridge between Design and Operations
- Building Life Cycle
Sustainable Facility Management

- The role of the facility manager in sustainability
- Non-traditional approaches to SFM
- Creating an integrated SFM approach
- The value of integrated SFM
The Non-traditional Approach

Components of SFM
Life cycle management

Managing Building Life Cycle

**Strategy**
- Extension of Service Life
- Gain in Efficiency
- Reduction in space demand

**Tactics**
- Proper O&M and timing of capital repairs
- Equipment replacement
- Consolidation, space management

**Results**
- Longer service life
- Lower life-cycle cost
- Lower occupancy cost

Quality of Services
Life cycle management

Managing Building Life Cycle

Strategy
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Life cycle management

Graph showing the relationship between condition index and service life (years) with annotations for average service life, extended service life, hidden value, replacement threshold, and benefit. The graph illustrates the concept of life cycle management in quality of services.
Life cycle management

Managing Building Life Cycle

<table>
<thead>
<tr>
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<th>Tactics</th>
<th>Results</th>
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Life cycle management

Life begins

[Image of early life stage]

EUL

Early replacement???

[Image of maintenance]

End of EUL

[Image of new service]

Quality of Services
Efficiency in O&M

Contract Management:
- Service Level approach
- O&M Services
- Food Service
- Leasing
Efficiency in O&M

Contract Management:
- Service Level approach
- O&M Services
- Food Service
- Leasing
Efficiency in O&M

Organizational Policies

Supply Chain

Goods

Purchasing

Consumables
  Durable goods
  Cleaning supplies
  Maint. tools, filters
  Maint. equipment
  Chemical supplies

Services

Procurement

Waste management
  Grounds care
  Cleaning services
  Food service
  O&M services
  Leasing

Life Cycle Management: Design/Construction Services
  Capital Equipment
  Capital Construction
  Purchased goods

Contract Management:

- Service Level approach
- O&M Services
- Food Service
- Leasing
Life cycle management

Managing Building Life Cycle

Strategy
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Tactics
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Results
- Longer service life
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Managing demand for space

Space Management Strategies

Strategy
- Reduce churn
- Create changeable workspace
- Increase utilization
- Promote alternative workplace strategies

Benefit
- Decrease moves, changes
- Reduce build-out requirements
- Avoid new construction, addition of new space
- Reduce demand for space

Results
- Reduced moving cost
- Reduced build-out time & cost
- Avoid new construction cost
- Reduce facility occupancy cost
• Consolidated employees from five different

• Created a whole new alternative workplace

• Able to fit all consolidated employees into less space than they came from with enough growth for the future
Sustainable Facility Management

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An Integrated SFM Approach

Integrating SFM into the DNA of facility management

- Sustainability as a core competency in FM
- Strategy, tactics, and results in managing the building life cycle
An Integrated SFM Approach

... From the Strategic Level

**Organizational Strategy**
- Produce a product or provide a service
- Satisfy stakeholders
- Generate revenue

**Mission Vision Values**

**CSR Strategy**
- Demonstrate commitment to the TBL (people, environment, profit)

**Strategic Facility Plan**
- Supports, aligns with organizational strategy
- Supports CSR strategy

**Design & Construction**

**Capital Budget**

**Facility Management**

**Real Estate**

**Capital Renewal**

**Strategic Level**
Strategic approach

- Align with mission, reduce footprint
- Use systems thinking and life cycle approach
- Use standards to embed sustainability in decision making
- Use community and regional-based approaches
- Use integrated, collaborative processes
An Integrated SFM Approach

... to the Tactical Level

- **Organizational Strategy**
  - Produce a product or provide a service
  - Satisfy stakeholders
  - Generate revenue

- **CSR Strategy**
  - Demonstrate commitment to the TBL (people, environment, profit)

- **Strategic Facility Plan**
  - Supports, aligns with organizational strategy
  - Supports CSR strategy

- **Operational Plan**
  - Facility master plan
  - O&M plan

- **Sustainable Facility Management Plan**
  - Tactical initiatives

- **Mission**
  - Vision
  - Values
  - Inspires

- **SFM Strategy**
  - Understanding
  - Analysis
  - Planning
  - Acting

- **Drives**
  - Influences
  - Supports
An Integrated SFM Approach

Competition for funding:

Strategic Facility Plan

- Planning, Design & Construction
- Facility Management

Capital Budget

- Meet future needs
- Maintain what we have
- Meet operational needs

Operations Budget

- Capital Construction
- Tactical Level
- Capital Renewal
An Integrated SFM Approach

Capital Budget

- Capital Budget: Typically 2-4% Replacement Value
- Future cyclical repair and replacements
- Measures that extend service life or retain the usable condition
- Major activities with a maintenance cycle in excess of one year
- Systems that have reached the end of their useful life

Operating Budget

- Service and routine maintenance
- Utilities
- Custodial services and cleaning
- Pest control
- Waste removal and environmental control
- Grounds care and landscaping
Striking a balance between Capital Costs and Operational Costs

... They are both pieces of the same puzzle
An Integrated SFM Approach

Total Cost of Ownership (TCO)

TCO = total of all expenditures an owner will make over the course of the buildings service life.

Includes:

- Conceptual Planning, Design, Construction
- Normal Operations; heating, cooling, lighting, and Maintenance, Repairs, Replacements, Alterations
- Disposal
From strategy to tools for SFM

Performance Management – Balanced Scorecard

- **Customer**
  (How are we perceived by our customers?)

- **Process**
  (How well do we accomplish our work?)

- **Organizational**
  Mission
  Vision
  Values

- **Learning & Growth**
  (How well prepared is our workforce?)

- **Financial**
  (How well are we performing financially?)
From strategy to tools for SFM

The Stakeholders

- CEO/President
- CFO/Finance
- Board/Trustees
- Workforce
- Operating Divisions
- Human Resources
- Facilities/Real Estate
- Information Tech

Business Viability, Vision/Mission, Strategic Planning

Daily Operations, Vision/Mission Fulfillment, Tactical Planning

Vision/Mission
Communication and Performance Reporting

Customer
(How are we perceived by our customers?)
From strategy to tools for SFM

Creating an SFM Plan

- Organizational Strategy
  - Produce a product or provide a service
  - Satisfy stakeholders
  - Generate revenue

- Mission
  - Vision
  - Values

- CSR Strategy
  - Demonstrate commitment to the TBL (people, environment, profit)

- Strategic Facility Plan
  - Supports, aligns with organizational strategy
  - Supports CSR strategy

- Strategic Level

- Operational Plan
  - Facility master plan
  - O&M plan

- Sustainable Facility Management Plan
  - Tactical initiatives

- Tactical Level

Process
(How well do we accomplish our work?)
From strategy to tools for SFM

The Skills and Competencies of the Facility Manager

- Quality
- Real Estate & Property Management
- Technology
- Communication
- Emergency Preparedness & Business Continuity
- Environmental Stewardship & Sustainability
- Human Factors
- Operations & Maintenance
- Project Management
- Finance & Business
- Leadership & Strategy

Learning & Growth
(How well prepared is our workforce?)

- Indoor Environmental Quality
- Energy
- Water
- Quality of Services
- Materials and Resources
- Workplace Management
- Waste
- Site Impact
From strategy to tools for SFM

Financial and Life Cycle Management

Asset Life Cycle Management

Goal

Total Cost of Ownership (TCO)

Techniques

Life Cycle Costing

Tools & Metrics

- Payback
- Return on Investment (ROI)
- Net Present Value (NPV)
- Internal Rate of Return (IRR)

Financial
(How well are we performing financially?)
From strategy to tools for SFM

Creating an SFM Plan

Phase 1
Evaluate and Align
- Align with Mission, Vision, Values
- Create strategic objectives for sustainable FM

Phase 2
Develop Initiatives
- Measurable actions that support strategic objectives

Phase 3
Implementation
- Develop measures, targets, and status indicators
From strategy to tools for SFM

Evaluate – Develop -- Implement

**Organizational Priorities (Evaluate and Align)**

1. Deliver sustainable workplaces.
2. Maximize productivity in the workplace.
3. Maximize business processes to reduce resource use.
4. Educate the workforce on CSR policies and initiatives.
5. Maximize the use of space to support a mobile workplace.

**SFM initiatives (Develop Initiatives)**

1. Manage indoor environmental air quality to increase productivity.
2. Reduce energy consumption by 5% per year.
3. Reduce water consumption by 15% over three years.
4. Create and manage a recycling campaign.
5. Create a sustainable credentialing goal of 20% of FM workforce.
6. Reduce the cost of space by 10% while maintaining workforce productivity and customer satisfaction.
From strategy to tools for SFM

Evaluate – Develop -- Implement

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<th>Organizational Priorities (Evaluate and Align)</th>
<th>SFM initiatives (Develop Initiatives)</th>
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2. Maximize productivity in the workplace. | 1. Manage indoor environmental air quality to increase productivity. |
| Process | 3. Maximize business processes to reduce resource use. | 2. Reduce energy consumption by 5% per year.  
3. Reduce water consumption by 15% over three years. |
| Learning & Growth | 4. Educate the workforce on CSR policies and initiatives. | 4. Create and manage a recycling campaign.  
5. Create a sustainable credentialing goal of 20% of FM workforce. |
| Financial | 5. Maximize the use of space to support a mobile workplace. | 6. Reduce the cost of space by 10% while maintaining workforce productivity and customer satisfaction. |
From strategy to tools for SFM

Evaluate – Develop -- Implement

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|                          | 2. Reduce energy consumption by 5% per year.  
3. Reduce water consumption by 15% over three years.                                                  | Zero complaints                                                                     |
|                          | 4. Create and manage a recycling campaign.  
5. Create a sustainable credentialing goal of 20% of FM workforce.                                     | 2: Energy: kWh/yr.  
3: Water: gal./yr.                                                                                       | Red/Yellow/Green                                                                   |
|                          | 6. Reduce the cost of space by 10% while maintaining workforce productivity and customer satisfaction.     | 4: # of participants  
5: # credentials achieved                                                                                | Red/Yellow/Green                                                                   |
|                          |                                                                                                              | 6: Reduction in cost of space/sq. ft.                                                   | Red/Yellow/Green                                                                   |
|                            |                                                                                                              | 1: # of IAQ complaints/yr.                                                          |
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The Value of SFM

Strategic Approach - The *focus* is sharper

REDUCE:
- Water, energy and material use
- Negative impact on the environment
- Environmental and energy impacts of transportation

INCREASE:
- Use of environmentally-preferable products
- Reuse and recycling

IMPROVE:
- Indoor environmental quality
- The effects of the building on human health
- Integration of building systems

Operational Approach – Operational Improvement

• Drive efficient operations
• Aggressively implement proven technologies
• Aim for high-performance and low resource use
• Use performance-based approaches to unleash creativity
• Collaborate to drive the market for sustainable products and technologies

Achieving High-Performance Federal Facilities (NRC 2011)
The Value of SFM

Measurement, monitoring, and reporting

- Communicate success and learn from others (benchmarking)
- Measure, verify, and report performance to drive change (sustainability reporting)

Achieving High-Performance Federal Facilities (NRC 2011)
Sustainable Facility Management

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Resources

www.feapc.com
Or
Amazon.com

IFMA Sustainability Community
And How-to Guides
At www.ifma.org
Thank You!

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