Before we begin:

- Turn on the sound on your computer.
  There is audio to accompany this presentation.

Week 1
Background and Organization
Reading: Text Chapters 1-2

PULSE POINTS – Chapter 1
Nature of Facility Management:
  - Organizations and facility managers should have a specific philosophy about facilities.
  - FM an essential business function.
  - Limited number of ways to organize an FM departments based on mission of organization.
  - Every FM organization contracts out services.
  - Good FM is based on good leadership.
  - Facility managers must have business skills.
  - Facility managers must know their business.
PULSE POINTS – Chapter 1 (continued)

Nature of Facility Management:
- FM needs better research and application of best practices.
- Every facility manager should have a master plan.
- Facility managers need to conduct business with the highest degree of ethics and sense of stewardship.
- FM must accommodate security and emergency management functions.
- Cost is an element emphasized by most organizations.
- Facility managers must demonstrate and publicize the FM has a payoff.

BASIC CONCEPTS of FACILITIES PLANNING

Definition of Facility:
- Commonly used to refer to commercial buildings and the physical environments.
- Term Plant or Physical Plant sometimes used interchangeably. Generally a plant is thought of as a manufacturing facility.
- Facilities includes all type of structures including office, manufacturing, health care, retail, government, transportation, education, etc.

Definitions of the Built Environment:
- Describes the interdisciplinary field that addresses the design, construction, management, and use of man-made surroundings as an interrelated whole as well as their relationship to human activities. (Wikipedia).
- Includes all structures created by people and infrastructure elements like driveways, parking areas, sidewalks, water and sewer lines, and electric and other utilities. Commercial building designs are constantly changing layouts to better accommodate the business that takes place within the walls, their sustainability and impact on the environment.
Definitions of Facilities Design:
- Determining how the design components of a facility support achieving the facilities objectives.
- Design of the most effective arrangement of physical elements in a service or production environment.

Definition of Plant Layout:
- Facilities design of a manufacturing facility including the design and integration of material handling methods.

Definition of Facilities Planning:
- Process involving the planning and management of a facility.
- Involves determining how an activity's tangible fixed assets best support achieving the activity's objective.
- Involves translating an organization's immediate and long-term goals into a physical environment.

An example of the facilities planning process.
Facilities Planning process can be broken down into three classes of activities:

Facilities Planning = Programming + Space Planning + Facility Management

Programming is defining a problem.
Programming = Strategic Planning
+ Organization Structure
+ Physical Space & Equipment
+ Relationships
+ Project Management

Space Planning = Building Geometry
+ Measurement Standards
+ Interior Environment
+ Ergonomics
+ Office Layout
+ Building Codes
+ Accessibility
+ Sustainability
Facility Management = Data Management + Integration with BIM/CAFM + Operations + Systems

We will explore the programming, space planning and facility management activities throughout this course.

BASIC CONCEPTS of FACILITIES PLANNING

Facilities Planning = Programming + Space Planning + Facility Management

IMPORTANCE of FACILITIES PLANNING

- New facilities have represented approximately 8% of U.S. Gross National Product (GNP) since 1955. Therefore new facilities ≈ $250B of GNP annually.
- Material handling is directly affected by facilities planning and can represent 20% - 50% of total manufacturing cost.
- Introducing new equipment and/or technology is disruptive to existing system which affects productivity.
- OSHA, EPA and ADA impact.
- Community citizenship.

OBJECTIVES of FACILITIES PLANNING

- Respond to customer needs.
- Quick customer response.
- Increase return on assets.
- Reduce costs = increase profitability.
- Maximize return on investment on capital expenditures.
- Integrate facility into the supply chain.
- Provide adaptability.
- Support the company's vision.
- Effectively utilize people, equipment, space and energy.
- Employee safety and satisfaction.
FACILITIES PLANNING and SUPPLY CHAIN MANAGEMENT

Definition of Supply Chain:
- A supply chain, logistics network, or supply network is a coordinated system of organizations, people, activities, information and resources involved in moving a product or service in physical or virtual manner from supplier to customer. Supply chain activities (aka value chains or life cycle processes) transform raw materials and components into a finished product that is delivered to the end customer. Supply chains link value chains.
- Today, the ever increasing technical complexity of standard consumer goods, combined with the ever increasing size and depth of the global market has meant that the link between consumer and vendor is usually only the final link in a long and complex chain or network of exchanges.


FACILITIES PLANNING and SUPPLY CHAIN MANAGEMENT (continued):
- This supply chain begins with the extraction of raw material and includes several production links, for instance; component construction, assembly and merging before moving onto several layers of storage facilities of ever decreasing size and ever more remote geographical locations, and finally reaching the consumer.
- There are a variety of supply chain models, which address both the upstream and downstream sides.

FACILITIES as a SUPPLY CHAIN COMPONENT
- All facilities are critical components of the supply chain. Facilities represent where the product or service is produced in response to customer demand.
- All facilities in the supply chain should have the following characteristics:
  1. Flexibility: can handle a variety of requirements without alteration.
  2. Modularity: can perform efficiently over a range of operating rates.

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FACILITIES as a SUPPLY CHAIN COMPONENT

All facilities in the supply chain should have the following characteristics (continued):

3. Upgrade Ability can incorporate changes in technology.
4. Adaptability can accommodate variations, peaks and cycles.
5. Selective operability understanding how each facility component operates. Allows contingency planning.

FACILITIES as a SUPPLY CHAIN COMPONENT

Creating facilities that support the supply chain requires:

1. Total Integration material and information flow beginning from customer.
2. Blurred Boundaries eliminate traditional business/operational relationships.
3. Consolidation merge similar and disparate business functions including physical relocation of functions.
4. Reliability robust, redundant and fault-tolerant systems.
5. Maintenance preventative and predictive.
6. Economic Progressiveness innovative fiscal practices for decision making.

FACILITIES MANAGEMENT

Definition of Facilities Management:

Facilities Management as defined by the International Facility Management Association (IFMA) as

“A profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process and technology.”

Barrett and Baldry in their book Facilities Management: Toward Best Practice (2003) define Facilities Management as:

“An integrated approach to operating, maintaining, improving and adapting the buildings and infrastructure of an organization in order to create an environment that strongly support the primary objectives of that organization.”
FACILITIES MANAGEMENT

Background of Facilities Management

Facilities Management is a relatively recent profession. The National Facility Management Association was founded in October, 1980 at Ann Arbor, Michigan, United States of America, by a group of forty (40) professional facility managers. Its professional growth in 1982 led to changing the name to the International Facility Management Association (IFMA) to reflect the International make-up, scope and membership of the Association. Today membership is ~23,850.

FACILITIES MANAGEMENT

U.S. FM Related Organizations

ACGIH
American Institute of Architects (AIA)
American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
APPA: Leadership in Educational Facilities
AEC International
Association of Energy Engineers (AEE)
Building Owners and Managers Association (BOMA) International
BOMI International
Carpet and Rug Institute (CRI)
Cleaning Management Institute (CMI)
CoreNet Global
Counselors of Real Estate (CRE)
Institute of Real Estate Management (IREM)
ISSA, The Worldwide Cleaning Industry Association
Society for College and University Planning (SCUP)
Society of Industrial and Office Realtors (SIOR)
U.S. Green Building Council (USGBC)

FACILITIES MANAGEMENT

International FM Related Organizations

Associação Brasileira de Facilities (ABRFAC)—Brazil
Association des Directeurs et Responsables de Services Généraux (ARSEG)—France
Association of Property and Facility Managers (APFM)—Singapore
British Institute of Facilities Management (BIFM)—United Kingdom
European Facility Management Network (EuroFM)—Europe/The Netherlands
Facilities Management Association of New Zealand (FMANZ)—New Zealand
Facility Management Association of Australia (FMA Australia)—Australia
FMPro - Swiss Association for Facility Management and Maintenance—Switzerland
German Facility Management Association (GEFMA)—Germany
Global Facilities Management Association (Global FM)—International/Belgium
Hong Kong Institute of Facility Management (HKIFM)—Hong Kong
Hungarian Facility Management Society (HFMS)—Hungary
Japan Facility Management Association (JFMA)—Japan
Middle East Facility Management Association (METFMA)—Dubai, UAE
Property Institute of New Zealand (PINZ)—New Zealand
South African Facilities Management Association (SAFMA)—South Africa
FACILITIES MANAGEMENT

Background of Facilities Management

The alternative to Facilities Management is Property Management. While Property Management is the more traditional philosophy, Facilities Management is a more powerful concept since it is a more holistic approach to the real needs of the workplace. This holistic approach includes concentration on both the core business of the organization along with the non-core or supporting activities required for the organization. While no one set of solutions to Facilities Management problems will fit all business types, locations or business strategies, common approaches and techniques can be utilized.
FACILITIES MANAGEMENT FUNCTIONS

FACILITIES MANAGEMENT FUNCTIONS (continued)

SKILL SETS SURVEY

Skills Needed to be Successful Rated by Importance (page 16)

40% Customer Service
31% Operations and Maintenance
29% Communications
21% Project Management
19% General Management
17% Financial
15% Strategic Planning
10% All Other Topics

SKILL SETS SURVEY – FUTURE

Future Issues Rated by Importance (page 17)

43% Outsourcing
38% Changing Demographics of Workforce
30% Increased Globalization
30% Mergers / Acquisitions and Their Effect
25% Labor Shortages
23% Resource Scarcity
22% Distributed Work Arrangements
21% Shared Services
20% Existence of FM as a Profession
THEMES of FACILITIES MANAGEMENT

Best Practices (page 18-19)
- Cost of ownership
- Life-cycle costs
- Integration of services
- Design for operation, maintenance and sustainability
- Delegated responsibility
- Cost-effectiveness
- Efficiency improvement
- Quality of life

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THEMES of FACILITIES MANAGEMENT

Best Practices - continued (page 18-19)
- Integration of elements
- Redundancy and flexibility
- Facilities as assets
- Facility management as a business function
- Facility management as a continuum
- Service
- Contracting

FACILITIES MANAGEMENT LIFE CYCLE

TYPES of ORGANIZATIONS

- Public sector / government
- Educational facilities
- Private sector
- Healthcare
- International organizations
- Nonprofit and not-for-profit

PULSE POINTS – Chapter 2

Organizing the Department:
- Outsourcing is a staffing issue, not an organizational one.
- When contracting, retain control of all functions.
- Someone should be responsible for every asset and function.
- The facility manager organizes for 90-95% of FM problems.
- The facility manager is most effective when ranked no lower than two levels below the CEO.
- Facility managers should be at the same level as IT and HR managers.
Organizing the Department:
   - FM organizations should have separate functions for (1) planning and design, and (2) operations and maintenance.
   - Communications, planning, design, engineering, operations and maintenance are facilities functions to the extent they must be physically accommodated in the facility.
   - Engineering should be given the same level of attention as architectural and interior design.
   - Hiring will become increasing critical.
   - The optimal organization is a mixture of staff, consultants and contractors.

Considerations
- Size of the organization / department
- Single or multiple locations
- FM customs at international locations
- Standardized vs. user-driven
- In-house vs. outsourcing of services
- Placement in organization structure (text)
  - No more than two managerial levels below the CEO
  - Same level as IT and HR managers

Models in order of increased staffing
- Office manager model
- One-location, one-site model
- One-location, multiple-site model
- Public works model
- Multiple-locations, strong regional or divisional headquarters
- Fully international model
OFFICE MANAGER MODEL

- Typical of organizations that reside in one-leased building.
- Dependent on landlord and contractors
  - Services purchased
  - Organization does not employ FM staff
- Facilities management functions include:
  - Lease management
  - Budgeting / accounting / economic justification
  - Security / staff emergency planning
  - Control through leases and outsourcing

OFFICE MANAGER MODEL

- Alternative placement of functions in office manager model

<table>
<thead>
<tr>
<th>Function</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lease administration</td>
<td>Office manager</td>
<td>Purchasing agent</td>
</tr>
<tr>
<td>Space allocation and management</td>
<td>Office manager</td>
<td>Administrative/ engineering/ legal</td>
</tr>
<tr>
<td>Environmental sustainability</td>
<td>Office manager</td>
<td>Controls</td>
</tr>
<tr>
<td>Transportation and operations</td>
<td>Purchasing agent</td>
<td>Administrative/ engineering/ legal</td>
</tr>
<tr>
<td>Food service</td>
<td>Food service company</td>
<td>Building manager/ landlord</td>
</tr>
<tr>
<td>Security and site safety management</td>
<td>Security company</td>
<td>Building manager/ landlord</td>
</tr>
<tr>
<td>Real estate acquisition and Disposal</td>
<td>Real estate consultant</td>
<td>Office manager/ landlord</td>
</tr>
<tr>
<td>Facility planning and monitoring</td>
<td>Facility consultant</td>
<td>Office manager</td>
</tr>
<tr>
<td>Alterations, renovation, and workplace improvement</td>
<td>Alterations company</td>
<td>Building manager</td>
</tr>
</tbody>
</table>
ONE-LOCATION, ONE-SITE MODEL

- Typical of organizations that reside in one major site with building(s) that are owned by the organization.
- Full-Service Facilities Management unit:
  - Integrated in the organizational structure.
  - Coordinates ongoing FM activities and project work.
  - Integrated into organization communication structure.
  - Adequate engineering support.
  - Balance between planning and design, and operations and maintenance.

ONE-LOCATION, MULTIPLE-SITES MODEL

- Typical of organizations with one headquarters with centralized FM and multiple operational units located in same:
  - Metropolitan or geographic area
  - State
  - Country
- May have decentralized operational elements.
- May have an administrator at each location.
ONE-LOCATION, MULTIPLE-SITES MODEL

PUBLIC-WORKS MODEL
- Adopted from Department of Defense.
- Typical of organizations such as departments of public works in small to medium-sized cities.
- Responsible for complex programs requiring coordination.
- Functions may include:
  - Processing work requirements, maintaining databases and tracking of work
  - Contracting capability
  - Environmental management
  - Maintaining roads, grounds, utilities and structures.
  - Conducting condition assessments.
MULTIPLE-LOCATIONS, STRONG REGIONAL / DIVISIONAL HEADQUARTERS MODEL

- Typical of large organizations that operate in widely separated geographic regions: e.g. national organizations such as retail chains
- Central headquarters sets policy and provides oversight
  - Headquarters FM office mostly staff
- Regional / divisional headquarters functions:
  - Allocating resources
  - Tactical and strategic planning
  - Real estate management
  - Policy and standards setting
  - Technical assistance
- Individual site responsible for operation and maintenance

FULLY INTERNATIONAL MODEL

- Interchangeable with multiple-locations, strong regional or divisional headquarters model.
  - Central headquarters sets policy and allocates resources
  - Divisional or regional headquarters (e.g. organized by country) allocate resources and provide:
    - Tactical and strategic planning
    - Real estate management
    - Technical assistance
  - Site FM departments had daily functions related to the facility
- International organizations such as manufacturing and petroleum firms may use this model.
FACILITY MANAGER FUNCTIONS
Recent Facilities Industry Survey identified the following functions by facility managers (page 45):

<table>
<thead>
<tr>
<th>Current Functions</th>
<th>Added in Past Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>72% Contract administration</td>
<td>18% Disaster planning/recovery</td>
</tr>
<tr>
<td>71% Construction management</td>
<td>18% Managing additional facilities</td>
</tr>
<tr>
<td>68% Energy management</td>
<td>16% Managing CAFM</td>
</tr>
<tr>
<td>63% Moves/relocations</td>
<td>12% Records management</td>
</tr>
<tr>
<td>61% Disaster planning/recovery</td>
<td>11% Strategic planning</td>
</tr>
<tr>
<td>61% Space planning</td>
<td>10% Lease management</td>
</tr>
<tr>
<td></td>
<td>10% Food service</td>
</tr>
</tbody>
</table>

STAFFING CONSIDERATIONS
- Skill sets / positions:
  - Supervision
  - Engineers – facility, power plant, construction
  - Technicians – HVAC, electricians, pipe fitters, mechanics
  - Unskilled – janitorial, grounds
- Sources:
  - Internal hires
  - Contracting
  - Outsourcing
FACILITY MANAGER RELATIONSHIPS

- Key relationships for the facility manager:
  - Information Technology manager
  - Purchasing / Procurement manager
  - Legal counsel
  - Human Resources manager
  - General Services managers
    - Security
    - Food services
    - Contracting
    - Accounting

FACILITY MANAGER FUNCTIONS

Customers’ Top Ten Complaints to Facility Managers

- Numbers in parentheses are ratings on the 1-5 survey, 1 means not rated
1. It’s too cold (2)
2. It’s too hot (3)
3. janitorial service is poor (4)
4. Not enough conference rooms (3)
5. Not enough storage/filing space in my workstation (5)
6. Poor indoor air quality (7)
7. No privacy in workstation office (9)
8. Inadequate parking (8)
9. Computer problems (6)
10. Noise level/door noisy (4)


Week 1 Deliverable: None