

THE FACILITY MANAGEMENT HANDBOOK

FOURTH
EDITION

REVISED AND UPDATED:
Includes New Information on
BIM, Contracting and Project
Management Methods, FASB
and IASB Requirements, and
Sustainability Reporting



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**The Facility
Management
Handbook**

Fourth Edition

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AMACOM

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Preface to the Fourth Edition

This fourth edition of *The Facility Management Handbook* has evolved into the best compendium of facility management information and practices for facility managers. The purpose of the book is to centralize information for all facility managers, both in the private and public sectors, and serve as a quick reference for issues every facility manager faces. The original purpose of each handbook edition remains the same, but with each revision, the book expands to cover new technologies, trends, challenges, and management strategies within facility management.

Facility managers make things happen. They do it by planning, organizing, budgeting, and controlling. To be successful in this profession facility managers have to be good leaders and managers. Up-to-date information in facility management is a necessity, not a luxury. Management requires skills that have to be studied and cultivated. The cultivation may require a change in thinking, and this is where facility managers have to be open-minded and armed with current best practices, procedures, technology, and information.

One exciting new change is the expanding recognition of the value that well-managed facilities bring to the occupants and users of these spaces. Throughout the book, updates have been provided to reflect this new thinking and the facility manager's new roles in supporting organizations' new ways of working. Technological advances continue more and more rapidly, causing shifts from manual to electronic to automated work in many areas. This impacts not only the technology, but also the facility service provision skills, as well as changes in how users interact with their facilities. Many new developments in this area are found throughout this fourth edition.

As changes and adaptations are made in the areas of building materials, construction technology, energy management, and conservation, there is a need for change as

it applies to the awareness of security, emergency preparedness, and overall management practices. The more diverse labor force today, the increased use and expansion of technology, and the aging of buildings and infrastructure require well-trained and skilled facility professionals. Managers guide, evaluate, measure, demand accountability, and have to be business-oriented. At the opposite extreme, leaders influence and inspire people to action. There is a time to manage and a time to lead. This book offers suggestions for facility managers on how to accomplish each.

This fourth edition brings together and capitalizes on over one hundred years of experience of several facility management professionals. This edition updates and expands information throughout the book by utilizing experience, knowledge, proven techniques, and best practices to guide you through daily facility management challenges and emergency situations. This new information focuses on building commissioning, building information modeling (BIM), contracting and project management and methods, Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) requirements, new knowledge-age ways of working and office design, and sustainability requirements. At the end of each chapter there are review questions. These questions are intended for instructional purposes, to promote discussion, and reinforce facility management concepts. At several places in the book we comment that facility management is big business and should be integrated into graduate school business courses. This is especially true today with the emphasis on business processes and the expectation that facility managers must contribute to the organization's bottom line by reducing costs, improving productivity, and in some cases generate revenue. Finally, we retained the "pulse points" at the beginning of each chapter because they continue to serve as a quick overview of the chapter. As in previous editions, we use FM as the abbreviation for *facility management*. The word *organization* is used to represent company, corporation, or agency.

We want to recognize two individuals who were the impetus behind beginning and then continuing to expand *The Facility Management Handbook*. Michael Lee and Dave Cotts coauthored the first edition of the book. These two individuals understood the need and sought to collect and assemble information into one source. Over the next twenty years Dave Cotts continued to refine the information in the second edition and invited us to participate in the third edition. We consider Dave the dean of facility management. We also want to recognize Bob Nirkind, our AMACOM senior acquisitions editor. Bob convinced us to write this fourth edition to provide the updates needed to keep facility managers abreast of current issues.

It is our hope that this book will enhance your professional skills and stimulate your thinking about facility management. We hope it provides you with ideas on how to "sell" your program to organization leaders and that it helps to advance your career in this ever-evolving field.

SECTION

I

Background and Organization

This opening section deals with the nature of facility management, particularly its relationship to the business environment it supports. We emphasize the need for the facility manager to be a business leader and describe just what that means. We discuss what organizations and executives expect of facility managers and present a profile of success for facility managers. Finally, we look at facility organizations that can be adapted to meet the requirements of various organizations, and discuss the increasingly difficult staffing issues to fill those organizations.

The Nature of Facility Management

Pulse Points

- *Both the organization and the facility manager should have a specific philosophy about facilities.*
- *Facility management (FM) is an essential business function; the facility manager is a business manager and should be placed at the same level as the managers of human resources and information technology.*
- *There are a limited number of ways to organize FM departments, depending on the mission of the organization supported.*
- *Every FM organization has some element contracted out, so contract negotiation and administration skills are essential for every facility manager. Facility managers need to be innovative in their contracting. Low-bid contracts are seldom appropriate, and partnering with our contractors and consultants while insisting that they perform if they are to continue working for our organization is a best practice.*
- *Good FM is based on good leadership of a proper organization.*
- *Facility managers need to have the same level of business skills as their management colleagues.*
- *Facility managers must know their business—both the FM business and the business they support.*
- *Although it is improving, FM continues to need better basic research and better application of both existing research and best practices.*
- *Every facility manager should have a facility master plan as a priority. Included should be a recapitalization plan covering at least ten years. These two efforts not only will be key to your management, but will show that you know the language of business and are participating in the business planning of an organization.*
- *Facility managers are in a position to influence how substantial organizational resources are spent. Conduct your business with the highest degree of ethics and a sense of stewardship.*

- *Sustainability, security, and emergency management are functions with great management and customer interest, which every FM must accommodate.*
- *Never before has there been the emphasis on cost that there is now, and facility managers, to be successful, must realize that fact.*
- *The FM professional associations as well as individual facility professionals should demonstrate and publicize that effective and efficient FM has a payoff for organizations.*

Facility management, commonly abbreviated as FM, is still a fairly new business and management discipline in the private sector. In the public sector, however, it has been practiced as post engineering, public works, or plant administration for many years. In leased property, the profession is called property management or building operating management, although most of the required skills are the same as those needed in owned property. Outside of North America, until recently, FM functions were often subsumed deep in the administrative structure of both private and public sector organizations, if practiced at all. Growth around the globe has heightened the awareness that sustainment of facilities is required for longevity and efficient use.

The most recent definition of facility management is “a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process, and technology.”¹ It is interesting to note that this newest definition highlights the importance of technology, which was lacking previously. Similar definitions from the European Union and other areas point to the need for standardization of the industry. An International Standards Organization (ISO) project is currently underway at this writing, to establish FM standards for use around the world. This attempt should help not only to standardize the definitions and meaning of facility management, but also to bring broader awareness of the field and its value. Exhibit 1-1 defines facility management in terms of commonly performed functions and subfunctions. This is more understandable to someone new to the profession. Every facility manager will be involved in managing the first fifteen of those functions either as the principal manager or as a major supporting manager. General administrative services (listed below) tend to be managed by facility managers in very small organizations and by FMs, often vice presidents of facilities or administration, in very large organizations.

In North America, security and emergency management has become much more important to both the public and private sector since the terrorist attacks of September 11, 2001. Companies and governments anywhere ignore these functions at their own peril.

Sustainability, security, and emergency management have also edged to the front of the facility manager’s priorities. A recent International Facility Management Association (IFMA) Foundation–funded study showed that finance dominated facility manager’s concerns.

Exhibit 1-1. Common functions of facility management.

<p>Management of the Organization</p> <ul style="list-style-type: none"> • Planning • Organizing <ul style="list-style-type: none"> — By function, organization, or location — Centralized versus user driven • Staffing <ul style="list-style-type: none"> — Personnel management — Evaluation of mix of staff, consultants, and contractors — Training • Directing <ul style="list-style-type: none"> — Work scheduling — Work coordination — Policy and procedure development • Controlling <ul style="list-style-type: none"> — Work reception — Standards establishment (dollar range, quality, quantity, time to deliver) — Scheduling — Use of management information systems and information technologies — Contract administration — Policy and procedure execution • Evaluating <ul style="list-style-type: none"> — Design — Program analysis — Contractor evaluation 	<ul style="list-style-type: none"> • Strategic facility planning (three- to ten-year plans) • Facility operational planning (twelve months to three years) • Space forecasting (macro-level, organization-wide) • Macro-level programming (organization-wide) • Financial forecasting and macro-level estimating (organization-wide) • Capital program development
	<p>Lease Administration</p> <ul style="list-style-type: none"> • Outleasing (as owner) • Lease administration/audit (as owner or lessee) • Property management (as owner)
	<p>Space Planning, Allocation, and Management</p> <ul style="list-style-type: none"> • Space allocation • Space inventory • Space forecasting (micro-level, one location) • Space management
	<p>Architectural/Engineering Planning and Design</p> <ul style="list-style-type: none"> • Macro-level programming (one location) • Building planning • Architectural design • Engineering design of major systems • Macro-level estimating (one location) • “As built” maintenance
<p>Facility Planning and Forecasting</p> <ul style="list-style-type: none"> • Business unit knowledge gathering 	

(continued)

Exhibit 1-1. (continued)

<ul style="list-style-type: none"> • Disaster recovery planning • Design document preparation and updating • Code compliance • Traffic engineering • Zoning compliance 	<ul style="list-style-type: none"> • unless otherwise specified by the company) • Work plan preparation • Budget preparation (one to two years) <ul style="list-style-type: none"> — Administrative — Capital — Operations and maintenance — Chargeback • Economic justification • Financial forecasting (one to two years) • Budget formulation • Budget execution
<p>Workplace Planning, Allocation, and Management</p> <ul style="list-style-type: none"> • Workplace planning • Workplace design • Furniture specification • Furnishings specification • Estimating • “As built” maintenance • Code compliance • Move, add, change (MAC) management and record keeping <ul style="list-style-type: none"> — Alteration management — Renovation management — Furniture installation — Information & Communication Technologies (ICT) installation — Provision of furnishings — Art program management — Equipping — Relocations — Procurement (to move, alter, change) — Preparation of “as built” and updates — Project management 	<p>Real Estate Acquisition and Disposal</p> <ul style="list-style-type: none"> • Site selection and acquisition <ul style="list-style-type: none"> — Environmental due diligence — Legal due diligence • Building purchase • Building lease • Real estate disposal
<p>Budgeting, Accounting, and Economic Justification (done concurrently with planning and design)</p> <ul style="list-style-type: none"> • Programming (same period covered as for space planning 	<p>Sustainability (these functions normally done concurrently with other functions)</p> <ul style="list-style-type: none"> • Site selection decisions to minimize environmental impacts • Environmental policies to minimize waste and reduce resource usage <ul style="list-style-type: none"> — Recycling program management — Transportation management — Energy audits and retrofits — Building commissioning and recommissioning

- Building systems audits and retrofits
- Purchasing policies for reduced environmental impacts
- Vendor relationship management for sustainability
- Indoor air quality management
- Project management in compliance with environmental regulation
 - Federal, state, and local requirements
 - Sustainable guidelines adoption (Leadership in Energy and Environmental Design [LEED], Green Globes, Energy Star, etc.)
- Workplace improvements for productivity
 - Daylighting
 - Indoor air quality
 - Thermal comfort
- Aligning design with business functions
 - Sustainable maintenance and operations practices
 - Social responsibility reporting

Construction Project Management

- Project management
- Construction management
- Procurement management
- Preparation of “as built”
- Punch-list preparation and execution
- Postoccupancy evaluation

- Project evaluation

Operations, Maintenance and Repair

- Exterior maintenance (roofs, shell, and window systems)
- Preventive maintenance
- Breakdown maintenance
- Cyclic maintenance
- Grounds maintenance
- Road maintenance
- Custodial maintenance
- Pest control
- Trash removal
- Hazardous waste management
- Energy management
- Inventory of systems and equipment
- Maintenance projects
- Repair projects
- Correction of hazards (asbestos, bad air quality, radon, underground leaks, PCBs, etc.)
- Disaster recovery
- Procurement (operations, maintenance, and repair supplies and services)

Technology Management

- Operations
- Maintenance
- Voice and data system operations and reconfiguration
- Network management
- “As built” maintenance
- Integrated workplace management system (IWMS)
 - Selection
 - Installation
 - Operation

(continued)

Exhibit 1-1. (continued)

<p>Facility Emergency Management</p> <ul style="list-style-type: none"> • Emergency preparedness planning • Threat assessment • Command, control, and communications • Mitigation strategies • Training, drill, and exercise • Disaster recovery planning 	<p>General Administrative Services</p> <ul style="list-style-type: none"> • Food services, refreshments, and vending • Reprographics • Mail and messenger management • Fleet management • Property tracking and disposal • Moving services • Procurement (as a function) • Health and fitness program management • Day care center management • Concierge services and on-site vendors • Records management and storage • Assembly management support and security
<hr/> <p>Security and Life-Safety Management</p> <ul style="list-style-type: none"> • Code compliance • Operations • Crime prevention through environmental design • Access control • Physical deterrents • Electronic security • Vulnerability assessment 	

Calling facility management “asset management,” the National Research Council (NRC), in its 2008 report, *Core Competencies for Federal Facilities Asset Management Through 2020*, lists competencies for future managers that are highly coincident with those we list in Exhibit 1-1.² We recommend that yet another change of terminology, from facility management to asset management, will only serve to confuse our employers and the business community. We suggest that in addition to the NRC revisiting and changing terminology, the use of “asset management” should be reserved for major infrastructure assets such as federal, state, and local assets such as bridges, highways, electrical grid systems, water systems, and similar major infrastructure.

Defining the many FM functions becomes very important because they form the framework for maturity in the industry and its professional development, research, and professional competency testing. For example, IFMA has organized the functions into “competencies” around which it designs all of its professional programs. These eleven competencies form the basis of standardization and encapsulate all of the many functions required in FM. These competencies are:

1. Communication
2. Emergency preparedness and business
3. Environmental stewardship and sustainability
4. Finance and business
5. Human factors
6. Leadership and strategy
7. Operations and maintenance
8. Project management
9. Quality
10. Real estate and property management
11. Technology³

International standardization is one step that may help to bridge understanding and business opportunity. Facility management embraces the concepts of cost-effectiveness, productivity improvement, efficiency, and employee quality of life. In practice, these concepts often seem to be in conflict. For example, many facility managers find themselves sinking in the quicksand of diminishing knowledge worker productivity, placed at the precipice of office air-quality problems, or embroiled in waste management issues that predate their employments. Providing customer responsive services balanced with unrelenting cost cuts is a monumental challenge. Employee expectations and concerns almost always come before clear-cut technical or financial solutions. Often there are no set answers—only management decisions that must be made. It is this constant *yin* and *yang* of FM: to balance the needs of the organization against the financial restrictions required to allow the operational units of the business to expand and grow.

Some say that Edward A. Murphy (of Murphy's law: "If something can go wrong, it will go wrong") must have been a facility manager. Every good facility manager is a good *reactive* manager because reaction is a fact of life in delivering services. However, facility managers cannot allow themselves to be totally reactive managers. That approach can downplay planning, even though planning is the key to cost-effectiveness.

A facility manager who does not have a philosophy regarding the position, the FM department, and the facilities managed cannot provide the leadership needed by the company.

The Development of Facility Management

Many managers of large and complex facilities, including municipal public works directors, facility managers of national or international corporations, and collegiate plant administrators, learned how to manage large facilities in the military. The Asso-

ciation of Facilities Engineering (AFE) and the Association of Higher Education Facilities Officers (formerly the Association of Physical Plant Administrators [APPA]) were among the first to organize disparate professionals with diverse backgrounds into professional associations. Early in the 1980s the Facility Management Institute spun off the National Facility Management Association (NFMA). Then Canadian facility managers became interested, so the NFMA was converted to the International Facility Management Association (IFMA).

Currently, the Building Owners and Managers Association (BOMA) and the *Building Owners and Managers Institute (BOMI)* in the United States have similarly organized and served property and building managers. Professionals devoted to real estate acquisition, management, and disposal have similarly organized. In general, the goal of all these organizations is to inform and educate their membership, provide professional designation(s), research their areas of expertise, and hold networking events that bring together their members and the vendors who service them. Some lobby politically, and some do not.

Within the U.S. federal government there have been sporadic attempts to organize its facility managers. Uniformed services and their retirees have come together as part of the Society of American Military Engineers (SAME). The Federal Facilities Council, part of the U.S. National Research Council, is not truly a professional membership association, but serves as a focal point for federal facility managers.

Other associations in many parts of the world have come together to assemble facility professionals to gain networking and education, and to share opportunities. Many of these organizations collaborate with neighbors in larger networks such as the EuroFM Network or European and Scandinavian country associations. A growing awareness of the shared interests of facility professionals is being seen around the globe.

Perceptions of the Profession and Its Professionals

Often facility managers, in both the public and private sectors, either do not realize or fail to understand how they are perceived within their organizations, which is a major problem for the profession and for individual facility managers. Historically, facility managers and their departments have been viewed as:

- Caretakers
- Naysayers
- Advocates for employee welfare
- Controllers
- Employee efficiency multipliers
- Heavily reliant on the purchasing
- Service providers
- Producers of voluminous policies and regulations
- Project handlers
- Major consumers of the administrative budget department

Not all of these attributes are bad, but the business and government worlds are changing and so must we. Here are important business and cultural trends that have radically changed the private and public sectors:

Business Trends

- Focus on cost reduction and shareholder value
- Internationalization
- Rise of the chief financial officer
- Outsourcing
- Rising cost, particularly in the construction area
- The growth of E-commerce
- The integration of facility resource information into corporate business data
- Emphasis on speed of delivery
- Improved information technology particularly in the areas of architecture/engineering planning and work management
- Increased use of public/private partnerships
- The importance of the knowledge economy
- New ways of working collaboratively and remotely, enabled by mobile technology
- New sustainability initiatives and targets
- Concern about security and emergency preparedness

Cultural Trends

- Aging of the population
- Lack of skilled tradesmen
- An increasingly diverse workforce
- Environmental concerns
- Lack of loyalty and trust in institutions
- Generational perceptions of the value/use/importance of the workplace
- Concern for better ethics and stewardship

A new facility manager profile has emerged based on these trends. The facility manager is no longer focused on a narrow technical field where the language is “FM speak,” but now has the expanded viewpoint of a business leader who helps the organization take a strategic view of its facilities and their impact on productivity. Here are the characteristics of a successful facility manager in today’s business environment:

- Business leader
- Strategic business planner and implementer
- Resource obtainer

- Financial manager
- Spokesperson and advocate
- Agile purchaser, lessor, and contractor with a major regard for ethics
- Information manager
- Environmentalist
- Networker
- Mentor
- Innovator
- Risk taker
- Survivor

Having said this, an Aberdeen Group study of the industry states, “Although real estate and facilities life-cycle management has been viewed as playing a more strategic role within enterprises, the ultimate impact of these groups (facility and building management) is in question.”⁴ This should give us all pause. Are we really projecting the management image that we want? Why isn’t FM viewed as being as strategic as human resources and information technology, for instance?

Facility managers who thrive in the current environment have shed the role of technician and have adopted the characteristics shown in the above list. Unfortunately, not everyone agrees (or has “gotten the word”), and some facility managers think they can survive purely on their technical expertise. The professional organizations are trying to train their members to be better business-people and communicators. Clinging to the comfort zone of the boiler room and the work management center will relegate facility managers to a lesser role and reaction mode—if they are able to retain their positions at all. The evolution of FM provides important clues to the education needed for those in professional organizations and university FM degrees.

The Development of a Facility Management Philosophy

Considering both the trends and the expectations of facility managers, we have developed the following philosophy for the professional practice of FM, and we recommend it to every facility manager:

- Facility management is a business function, and the actions of facility managers have financial and organizational impacts.
- Safety is always the first concern followed by legality, cost, and customer service.

- An FM staff member should be directly responsible for every physical asset and function.
- There is a cost of ownership of facilities; it is the facility manager's task to ensure that management understands that cost.
- Facility managers should be cost-conscious in everything they do, and should capture all costs in this analysis.
- If something looks like a good idea, investigate whether anyone else has tried it. If it works in one place, it can be adapted to another—this is the essence of benchmarking.
- A good, commonsense decision beats “paralysis by analysis.”
- The budget should be the chief management information tool. Put effort into its preparation and format, and then monitor its execution carefully.
- Every physical asset should be under appropriate life-cycle management.
- When an outside consultant is used, take care and time in defining expectations.
- Clarify life-cycle and sustainable design and operational intents before launching new projects.
- As the design-construct cycle proceeds, changes become costlier and less effective. The facility manager must retain control of the design-construct cycle.
- In the planning of major projects, engineering requirements are nearly always understated.
- Plan for flexibility and redundancy in building systems if FM expects to use them permanently.
- Plan with care, and always retain the capability to react.
- Cultivate long-term relationships. Remember that the successful FM organization is a team (staff, suppliers, contractors, consultants).
- Remember that the customer—and the customer alone—defines service. The facility manager's responsibility is to find out how the customer rates the service.
- The facility manager must regularly measure both the effectiveness and the efficiency of the department.
- The facility manager must be active in public relations outside the department. If the facility manager doesn't promote the department, who will?
- The best way to save money is to participate in facility business planning. A facility business plan should support the company business plan. Business plans should be the result of long-range facility master plans.
- The facility manager should prioritize the development of an FM information system with the budget as the base document.
- Conduct oneself with a high regard for ethics.

When all facility managers adopt these elements of philosophy, or if they adopt their own, the practice of FM will improve immensely. Too often, facility managers are so bogged down in their day-to-day work that they fail to grasp the truly important aspects of success. Not every item in the list is equally applicable to every organization, but facility managers who have a specific philosophy of leadership are those who lead best.

There are twelve major actions that every facility manager should take in managing facilities and the department successfully. We call them the Big Twelve and they appear as Exhibit 1-2. When put into action, the facility manager has the tools to demonstrate leadership. Without them, there will be gaps in funding, staff, service assessment, or information. Some of the Big Twelve are duplicates of items in the philosophy we have already stated; actually, all of them are an outgrowth of it. If you have accomplished all of these tasks or are working on them, you probably have a good handle on your position and department. Your success will then depend on your ability as a leader because the basic building blocks of success are in place.

The Big Twelve is a roadmap for success within the organization, especially for a new facility manager!

We do a good job of training the technical aspects of our jobs (operations and maintenance [O&M], project management, etc.), but need more education and research on the management aspects of being a success in the modern organization.

Facility Management as a Business Function

Although there has been improvement, the under-management of facilities found in Harvard and Massachusetts Institute of Technology studies more than twenty-five years ago⁵ remains a problem, often due to the fact that the chief executive officer and chief financial officer have been totally focused on current operating costs. This total concentration on annual costs with no view of long-term impacts, the necessity to uphold stock value quarterly, and the inability to raise taxes, have caused both the private and public sectors to be slow to realize the serious financial impact of FM on long-term business health. For too long they have viewed their facilities with blinders on. For example:

- Facilities management is big business. The U.S. Department of Defense buildings account for over 2.3 billion square feet in their last base structure report.⁶
- After payroll, facilities are usually the greatest component of an organization's administrative expense.

- Some facility departments have saved or avoided costs in the 30 to 35 percent range with no diminution of services. They've done this by applying sound principles of planning, lease management, and energy management.

Yet most facility managers are viewed narrowly as technical managers, not business managers. Most students in MBA programs are not even exposed to the subject. In

Exhibit 1-2. The Big Twelve: twelve major actions that every facility manager should take.

1. Conduct and regularly update an assessment of both physical facilities and operations.
 2. Measure! Measure! Measure!
 3. Develop a facilities master plan from which all midyear and annual planning derives. As part of the master plan, include a recapitalization plan covering at least ten years.
 4. Get your organizational structure right. Don't confuse staffing with organization.
 5. Recognize that in all but a few special cases, staffing is a blend of staff, contractors, and consultants, in order to minimize cost and maximize flexibility.
 6. Institute a customer-based quality program that uses multiple means to obtain customer input.
 7. Determine the information you need in order to manage, and then develop automation to produce it for you. Your FM information system should be budget-based.
 8. Institute facility business planning that can feed into company business planning even if you are initially rebuffed by company planners. Use the company's criteria and systems for making financial decisions.
 9. Show results! Companies don't pay for good intentions and plans—only for results. View your department as a business within your company.
 10. Use innovative contracting. For other than simple contracting situations, low-bid contracting will result in unsatisfactory results. Partner with your contractors and consultants but demand that they perform if they are to continue to work with you.
 11. Have a public relations plan each year that targets each of the constituencies that you have identified.
 12. Get management commitment to good FM. You, and you alone, can obtain it. It is worth the effort.
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fact, FM courses, other than real estate, are not even available to students in most business schools. No wonder facility managers first have to “sell” their program to executives who are the product of these institutes.

Facility management is the quintessential business function, affecting not only revenues and costs but also production, quality of life for employees, health and safety, the work environment, and, increasingly, areas such as recruitment and employee retention. When FM is practiced properly, the following benefits accrue to the organization:

- Facility plans match the organization’s plans.
- Properly outfitted space is available when and where it is needed.
- Capital expenditures are planned and controlled.
- Employee productivity is maximized.
- Costs are minimized, sometimes avoided, and always predicted.

All experienced facility managers have horror stories of being kept out of the loop on some organizational strategic initiative. They then either have to make an unwise real estate decision at the last minute or spend premium construction dollars to ensure that facilities are ready to support the initiative.

In the most recent *Facilities Industry Study*, all major FM organizations, FMLink, and *Building Operating Management* magazine asked their members and readers to list the skill sets they most needed to be successful.⁷ Not only was it encouraging to see the cooperation among the professional organizations, but the results also showed some progress toward a philosophy of FM in the selected skill sets. Those skills considered most important are:

- Customer service—40 percent
- Operations and maintenance—31 percent
- Communications—29 percent
- Project management—21 percent
- General management—19 percent
- Financial—17 percent
- Strategic planning—15 percent
- All other topics—under 10 percent

Only two of those topics are technical in nature, demonstrating that FMs have “gotten the word”: they need business skills!

When facility managers are asked what they envision to be the issues of the future, we are encouraged to see that they recognize and envision the following as being challenges for themselves in the future:

- Outsourcing—43 percent
- Changing demographics of the workforce—38 percent
- Increased globalization—30 percent
- Mergers/acquisitions and their effect on facilities—30 percent
- Labor shortages—25 percent
- Resource scarcity (and its effect on prices)—23 percent
- Distributed work arrangements (like telework) and their impact on facilities—22 percent
- Shared services—21 percent
- The existence of FM as a profession—20 percent

Except for the last item which is shocking in its insight, it is apparent that facility managers are becoming business oriented. They understand that their world extends beyond the boiler room and the work reception center. So, we need to prepare for the future by having better education programs for facility managers, by conducting more and better research, and by providing better literature and educational offerings for them from scholarly and professional organizations. The bottom line of all of this is that the profession is changing and that facility managers realize this (perhaps better than those of us who serve them do).

Profile of a Current Facility Manager

While it is difficult to define the typical facility manager, it is interesting to note that, in the *Facilities Industry Study* cited above, the majority of those studied have the job title *manager*, with 7 percent listed as *vice president*. Twenty-two percent of FMs now have a master's degree. More than half have sought and gained professional designation in the profession; 23 percent have an additional professional designation outside the profession. By far, the individuals surveyed were traditional facility managers, with the majority of their responsibilities being those normally associated with the profession. Not surprisingly, the responsibilities most frequently added to the FM portfolio are disaster planning/recovery (18 percent), managing more facilities (18 percent), and computer-aided FM (16 percent). While the data are not exactly comparable to the old study mentioned, it would appear that facility managers are, in general, managing more space than they did then. Interestingly, there is a substantial group managing under 500,000 square feet, and an equally large group managing over 1,000,000 square feet. Disturbingly, 58 percent of the respondents are managing with the same budget or less from the previous year. The same perceived major challenge of the facility manager position from three to five years ago, doing more with less, remains a challenge and has intensified.

As we look both at this profile of facility managers and at the other results of the survey, we return to the Big Twelve actions. These actions are critical to the practice of better FM, the better acceptance of the critical alignment of FM with organizational success, and for better education, literature, and research in our profession.

Major Themes of Facility Management

Certain FM themes run through this book. We return to them again and again because they are derived from our philosophy, our reading of research and best practices, and our own experience:

- *The cost of ownership.* There are initial and ongoing costs to the ownership of facilities. These have been documented repeatedly by the National Academy of Sciences. Management must understand and provide for those costs, from planning through disposal.
- *Life-cycle costs.* As a general rule, all economic analyses and comparisons should be based on life-cycle costs. Bad decisions are often made when only capital or initial costs are considered.
- *Integration of services.* Good management means integrating different facility services (e.g., design and operations).
- *Design for operations, maintenance, and sustainability.* Operators and maintainers, even if they are contractors, must be actively involved in the design review process.
- *Delegated responsibility.* In large organizations, FM functions should be grouped into budget programs, with a manager responsible and accountable for each.
- *Cost-effectiveness.* The key is to identify and compare costs with meaningful benchmarking partners, and make those comparisons regularly over time.
- *Efficiency improvement.* Efficiency should be judged constantly through comparators, user feedback, and management-by-walking-around.
- *Quality of life.* The facility manager must actively promote and protect the employees' quality of life. A safe workplace is the minimum; a workplace where the facility promotes individual and group productivity should be the goal.
- *Integration of elements.* The facility manager is the company's expert on facilities (the place), on those factors that determine the success of work (the process), on the analysis and documentation of those factors and systems (the technology), on the employees (the people), and on how they all come together.
- *Redundancy and flexibility.* Because the nature of this work is always partly reactive, the facility manager must build flexibility into the facilities, the organization, and departmental procedures.

- *Facilities as assets.* The facilities should be viewed as a valued asset (not just on the organization's books) that contributes in numerous ways to the company mission. *If this concept is sold to management, then the rest of the mission automatically becomes easier.* There is growing evidence that employees are judging employers on the quality of the facilities; this may make this argument easier.⁸
- *Facility management as a business function.* The facilities deserve to be managed in a businesslike manner. Facilities must be developed in parallel with the organization's business and aligned and planned to the same degree.
- *Facility management as a continuum,* from planning through disposal. It is not a series of discrete projects.
- *Service.* Facility management provides only one product—service support. The nature of FM is likely to emphasize control and compliance, whereas it should demonstrate flexibility and service. This is particularly true in the public sector. A quality program is based on how service is perceived by the customer, and this perception must be sought in multiple ways. A successful service program depends on long-term relationships and commitment at all levels.
- *Contracting.* A facility manager must be an agile procurer of services. Traditional contracting methods are often subject to poor service, unsatisfactory performance, higher costs through change orders, and poor contractor–facility manager cooperation. Contracting should be ethical and performance-based, and emphasize partnership and equity for all parties.

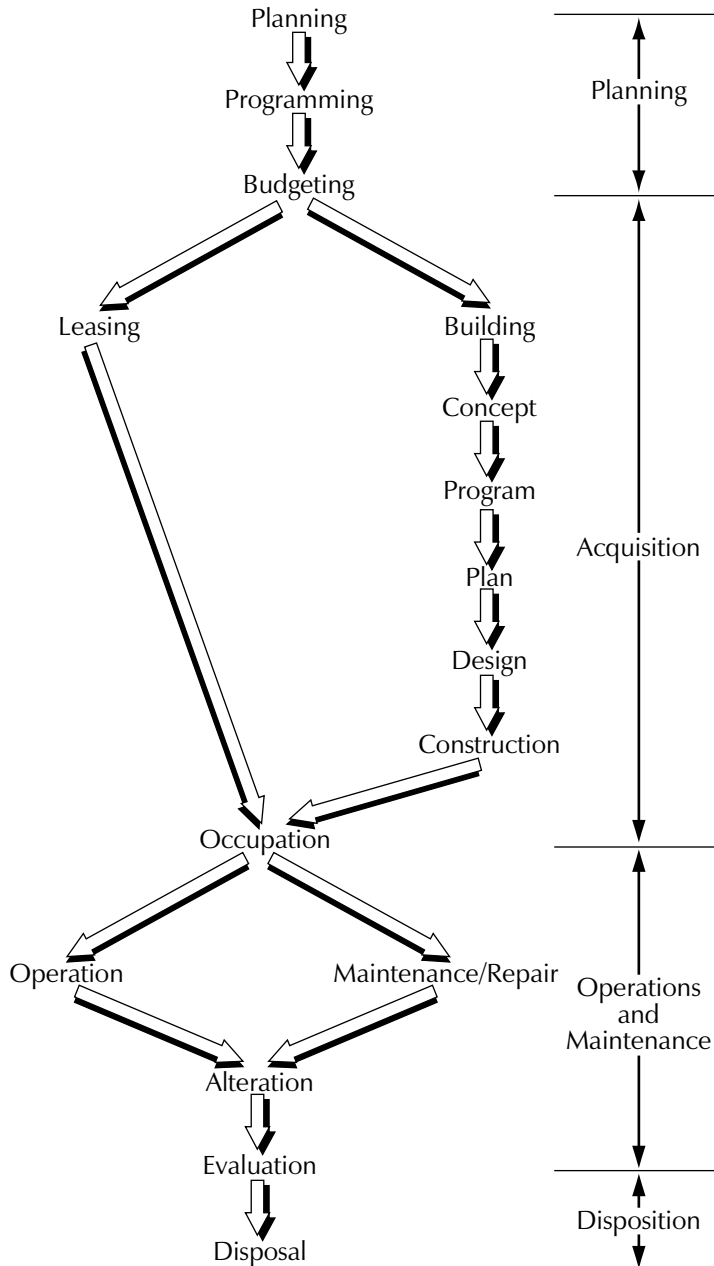
The Facility Management Life Cycle

Exhibit 1-3 depicts the life cycle of any facility requirement. The only variables are space and complexity. For smaller facility departments, the landlord meets all or most of its space, build-out, operations, maintenance, and repair needs through terms agreed on in the lease. In owned facilities (normally associated with larger facility departments), functions like design, construction, or alterations may be done by outsiders, but control resides with the facility manager.

Eventually a facility is occupied, operated, maintained, and repaired. Sometimes it is altered for use beyond its original intent. (Adaptive reuse has been popular in the revitalization of urban areas where, for example, old warehouses have been converted into trendy condos or apartments.)

A facility is probably evaluated several times during its lifetime. Does it fit its original intent? Is it worth renovating? Is an upgrade economical? Such evaluations may lead to renewed life through alteration or to a decision to dispose of the facility through sale or demolition. Gerald Davis at the International Centre for Facilities has

Exhibit 1-3. Facility management life cycle.



Note:

Operations and Maintenance is the longest phase, often 15–25 times longer than all other phases for normal building use.

been a pioneer in developing a rating scheme for comparing the serviceability of buildings. Serviceability is a system for rating the suitability of a facility for a particular organization.

Types of Organizations

Every organization has its unique personality, and the facility department will reflect that personality. All facility managers share some common characteristics in management style; however, the emphasis varies with the type of organization.

There is an almost infinite number of organizational cultures that we could examine. In the total universe of facility managers, there is also a great deal of diversity (too much, in our opinion) of organization, policy, and procedures. Here we will discuss only the major cultures in which most facility managers operate. The technical environment in which the facility manager and the department must operate, together with its corporate climate, dictate the envelope in which the facility manager functions.

Before pointing out cultural differences among organizations, we want to advocate for clearer, more standardized principles for FM worldwide. In the rapid evolution of FM, there has been little planning regarding how a facility department should be structured. Cultural differences and technical environments will dictate some decision making, but as a maturing profession, FM should adhere to principles stated above, as well as follow basic standards of organization. These standards will be presented here and in further topic areas where they apply.

Facility Management in the Public Sector

In general, no facility manager in the private sector handles facilities that are as diverse as those handled by a municipal, state, or federal manager—and with consistently inadequate resources.⁹ The public sector has a culture overwhelmingly shaped by bureaucracy. That is not a derogatory assertion; it is a fact. Nearly every action is governed by a regulation. Also, except for capital construction, public-sector programs are subject to the vagaries of short-term budgets. Change is difficult, particularly if it depends on another department, because there is little incentive for cooperation.

Two particularly difficult areas are procurement and personnel. Public-sector procurement policies are thick with detail and regulation. Thus, the facility manager often is at the mercy of a purchasing or contracting officer, whose priorities are not necessarily coincident with those of the facility manager. Other seemingly inevitable conflicts involve sole-sourcing vendors and products (often the most economical way

to contract in terms of time and money from the procurement standpoint) and contract negotiations. Though directed (sole-source) procurements are at the heart of standardization programs, they are generally opposed or made bureaucratically difficult by public-sector purchasing departments. Similarly, many public-sector procurements, particularly extensions of existing contracts, are made more difficult because the purchasing department views negotiations as procurement with very limited applicability. They also think it should be avoided. Both of these situations arise because most public-sector purchasing departments (1) are overregulated by their legislative body, (2) are overworked and the staff is truly underpaid, and (3) have a low-bid mentality. (As explained later in this book, competitive bidding has its place, but its effectiveness is generally overstated. Also, it almost inevitably ratchets down the quality of service provided with each rebid.¹⁰) These inflexible procurement approaches greatly influence the climate in which the public sector facility manager must function.

There never seems to be enough money to accomplish the annual work plan in the public sector.¹¹ Managing shortages of resources is a fact of life for the public-sector facility manager.

Maintaining a quality workforce is a particular problem in public life. The lack of managers and trained technical people could, in fact, be described as a human resource crisis.¹² Despite what people say, it is generally difficult to eliminate an unneeded position, especially if the position is filled, or to create a new position, particularly in a union environment. For this reason, public sector facility managers have increasingly contracted out many functions or turned to consultants to achieve management flexibility. Unfortunately, most public sector facility managers' actions are bound by the rigid human resources system endemic in government.

The public-sector facility manager must also be a particularly good reactor, since a backlog of proactive programs may have been sacrificed to eliminate crises. And the public-sector facility manager must be cost conscious, since funds tend to come in specified "pipelines." It means knowing the system so that funds can be shifted from one account to another at the right time—legally. Also, it is a challenge to ensure that all funds are used on meaningful work items, even though some might not be top departmental priorities. Additionally, the facility manager must have do-able work that can soak up funds from other departments' excess funds in the last thirty days of a fiscal year.

Public-sector FM is framed in regulation. No one will remember who upgraded the electrical system, but everyone will remember who misallocated funds, even if done unwittingly. A public-sector facility manager needs to be legally smart and conscious of the do's and don'ts of the bureaucracy.

Finally, the public-sector facility manager needs to maintain a special relationship with the mayor, county manager, governor, or other appropriate elected official. The

facility department's budget is usually the second largest administrative cost in the government (only personnel costs are larger), so the chief executive needs to know that the facility manager is doing the best job possible with limited resources. For effectiveness, the facility manager needs to know that he's on the administration's wavelength. If such a climate does not exist, it's time to do some active job searching.

Legislators have so overregulated the public sector that change is difficult. If this description sounds bleak, it is not intended to be. A public-sector FM department can be stable and dedicated with a great sense of mission. On the plus side, public-sector facility managers often have better organized departments, more effective standards, excellent written procedures, and a more philosophical approach to their jobs than do private-sector facility managers.

Educational Facilities

Whether public or private, educational institutions tend to follow the public-sector model due mostly to the size and diversity of their facilities. This is particularly true of resources. In fact, annual funding for college facilities in the United States has reached crisis proportions.¹³

The facility manager at a college or a university must not only be technically competent but might want to consider an advanced academic degree for credibility. This is because university staff members expect decisions to be made in a collegial fashion, which is not always conducive to efficient allocation and use of resources. Even such decisions as setting back thermostats for energy management can become the subject of extended discussion. It can take years to get a policy approved. That is particularly true of decisions regarding aesthetics, the workplace, and historic preservation. And because there is so much consensus decision making in educational institutions, it is important that the facility manager be somewhat politically savvy in order to sell the FM programs.

The facility manager faces other problems, too. There are no more diverse facilities than those found on a large university campus. Many institutions cannot effectively maintain and operate their existing facilities even while building more.¹⁴ One facility manager of a heavily endowed university when quoted on this situation said, "Yeah, but no one ever endowed an operations and maintenance contract." Also, a university's management climate has all the problems of large bureaucracies, plus the oversight of a board of regents or trustees. There will be more help than desired from the academic department heads of architecture, engineering, and design. On the positive side, FM of collegiate facilities allows a facility manager to develop a unique experience in supporting the full spectrum of types of spaces and buildings. In short, this is not a job for a novice. A large educational facility needs someone who is experienced.

Private Sector

Although no two private companies are alike, and corporate cultures vary widely, it is still possible to draw some conclusions regarding FM in the private sector. For example, private-sector organizations are much more flexible (and are flatter) than those in the public sector and can be changed relatively easily. All administrative functions and personnel tend to be tied closely to the product or service they support. Because facilities costs tend to be the second highest administrative cost, there is often pressure on the facility manager to reduce staff and costs.

Also, since most of the facility department's managers tend to be middle management, they are susceptible to downsizing or outsourcing. Thus, although the private sector offers greater flexibility, the manager is subject to more staffing instability.

Because organizations are driven by the need to provide service or product at a profit, private-sector managers are expected to make those changes necessary to manage their organization effectively and efficiently. Thus, procurement is less bureaucratic, with more emphasis on long-term relationships, negotiations, and rapid response, and leasing is done quickly. Private-sector facility departments place great emphasis on design, perhaps because their managers understand that they can increase productivity through better facility design. Perhaps economic justification for such changes has more influence in an environment controlled by profitability than by budget.

Costs are yet another difference. For example, the private-sector facility manager is less likely to expend funds on end-of-the-year, suboptimal projects. The emphasis here is on reducing costs rather than on staying within budget, yet it is still critical to avoid budget surprises. Costs not spent on facilities can be reallocated to marketing, research and development, or new products, if returned to the corporate pool.

A private-sector facility manager must be a particularly good communicator. Often FM's very existence depends on an ability to sell the value of the department to upper management; this is particularly true if FM charges back the cost of services.

Private-sector facility managers are ultimately judged on how service-oriented and cost-conscious they are. If they do not measure up, someone else will be found who will. They must be comfortable with quantitative measurements and evaluation, since they will be measured frequently as managers, and they must be capable of evaluating leases, capital project justifications, life-cycle analyses, and financial ratios.

Finally, they must have a business sense and an ability to speak in terms other managers in the company will understand. While it is an overstatement to say that private-sector facility managers should run their departments like "a company within a company," that certainly is not a bad approach.