IFMA's Real Estate Course

Student Guide

IFMA™

Acknowledgments

IFMA's professional development courses – including our world-class credential programs, the FMP®, SFP® and CFM® – are the cornerstone of our industry-leading offerings for career advancement. The contribution of IFMA volunteer members is critical to the relevance and value of our educational programs. The result of their global input is learning for facility managers, by facility managers. We would like to acknowledge the cumulative hours and expertise our members have contributed to educational content development and review, from design through delivery, with special acknowledgement to Edmond Rondeau as a lead contributor, ensuring that IFMA's Real Estate Course accurately reflects the body of knowledge and skills required of FMs in today's global business environment.

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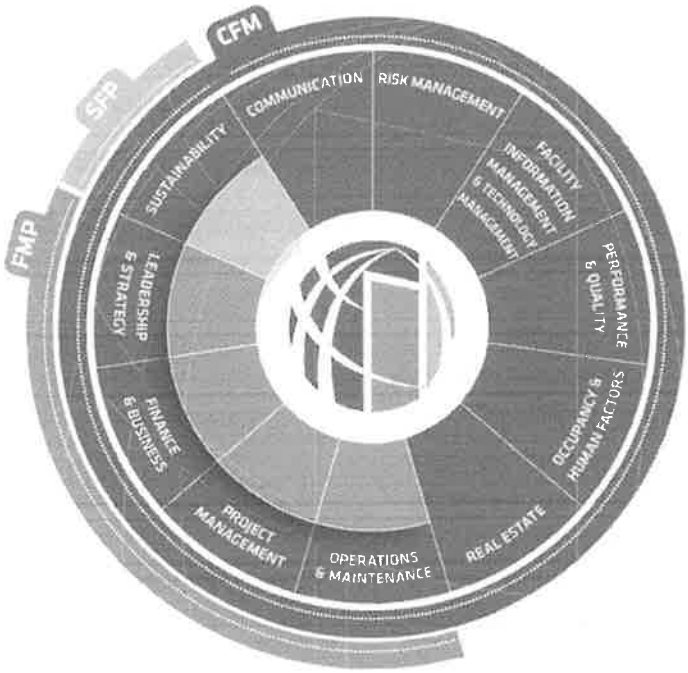
IFMA Credentials

About IFMA Credentials

After analyzing the work performed by facility managers, we have defined 11 competency areas. Our three world class FM credentials, — Facility Management Professional™ (FMP®), Sustainability Facility Professional® (SFP®), and Certified Facility Manager® (CFM®) — are based on these competencies.



1. The FMP® is the foundational credential for FM professionals and industry suppliers looking to increase their depth-of-knowledge on the core FM topics deemed critical by employers.
2. The SFP® is the leading credential for all FM and like-minded professionals with an interest in the development of sustainable FM strategies.
3. The CFM® is the premier certification for experienced FM professionals. A comprehensive exam assesses knowledge, skills, and proficiency across all FM competency areas.

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IFMA's Core Competency Courses

IFMA's 11 core competency courses, developed from IFMA's Global Job Analysis (GJTA), comprise the body of knowledge for facility managers. IFMA continuously refreshes the courses to align with global industry standards for FM knowledge, skills, and tasks. The courses provide practical knowledge and examples to help you improve your performance.

IFMA's Core Competency Courses include the following:

Communication: develop the skills you need to be an effective liaison between external and internal stakeholders.

Participants will be able to:

- Create and deliver the right message for the intended result.
- Develop an FM communication plan.
- Identify and share relevant information to the appropriate audience.

Risk Management: address the role of the facility manager in supporting or leading risk management planning; emergency preparedness, response and recovery; facility resilience and business continuity.

Participants will understand how to:

- Respond appropriately to emergencies affecting the facility.
- Meet the organization's business continuity goals.

Facility Information Management and Technology Management: understand how to leverage modern tools and techniques for today's workplaces and occupants.

Participants will be able to:

- Understand secure, efficient data collection supports decision-making processes to meet core business objectives.
- Conduct technology needs assessments and anticipate the impact of new technologies.
- Understand decisions are made to keep, update, augment, or replace technology.

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Occupancy and Human Factors: grow your ability to support organizational and individual occupant performance, while leading the FM team to develop and implement practices necessary to achieve success.

Participants will be able to:

- Create an environment where motivation, productivity, and retention are the norm.
- Blend safety and security with innovation.
- Negotiate service level agreements.

Real Estate: understand real estate principles and practices and how they contribute to achieving the core business strategy.

Participants will be able to:

- Develop and implement a real estate strategy to support the core business including assessing, acquiring, and disposing of real estate, and space management.
- Understand project management principles for managing new construction and other major projects.

Performance and Quality: define and make relevant what it means to capture fitness for the intended purpose, embrace a continuous improvement mindset, and satisfy stakeholders' needs.

Participants will be able to:

- Determine the needs and expectations of stakeholders for the facility and related service requirements.
- Understand and describe what comprises a comprehensive quality management system for FM.
- Measure the FM organization's performance to make continual improvements.

Sustainability: define the basics of five areas of sustainability and make relevant what it means to embrace sustainability.

Participants will be able to:

- Understand the management basics of:
  - Energy
  - Water
  - Materials and Consumables
  - Waste
  - Workplace and Site

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Welcome

Course Introduction

Welcome to IFMA's Real Estate Course!

Participant Introductions

- → Your name
- → Company name and/or job responsibilities
- → Reason(s) for taking this course — expected outcome(s)
- → Your experience in FM — years and work responsibilities over your career

Expectations

Learner responsibilities:

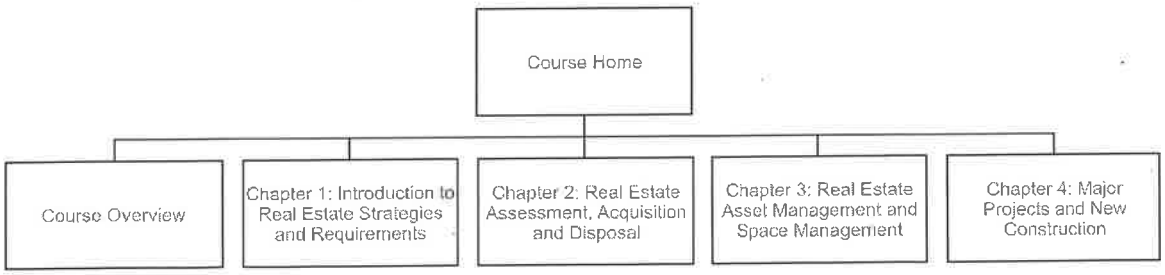
- → Be prepared – complete class pre-work
- → Take part in class discussions and activities
- → Follow the rules of common courtesy
- → Provide feedback to the instructor and IFMA

Course Audience

Welcome to IFMA's Real Estate Course! This course is designed for persons interested in developing knowledge and skills in IFMA's FM Core Competencies and who wish to gain practical knowledge to enhance FM industry professional development.

Course Chapters

There are four chapters in the Real Estate course.



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Course Goals

The goals for this course are as follows:

- Develop and implement a real estate strategy
- Assess, acquire and dispose of real estate
- Manage space for building occupants
- Manage new construction and projects

Course Overview

Facilities represent a large part of any organization's assets – whether small or large, incorporated or unincorporated, public or private, profit or not-for-profit, domestic or international. There are many significant costs, risks and opportunities associated with owning and leasing facilities. Facility Managers need to understand the principles and practices of real estate and how these contribute to achieving the core business strategies of the demand organization.

Real Estate facility manager must examine the interface between real estate decisions, facility management functions and the ability of the demand organization to achieve its goals. Facility managers must develop and implement a real estate strategy that includes methods to access, acquire, manage and dispose of physical assets.

Real Estate Competencies in FM

Outlined below are the competencies and the performance standards that a facility manager should know regarding real estate strategies, real estate assessment, acquisition and disposal, asset management, space management and major projects and new construction.

Given real estate requirements, a competent facility manager develops and implements a real estate strategy in a manner that:

- The value of real estate is optimized
- Organizational effectiveness is increased
- The work environment supports and stimulates employee productivity, creativity and professional growth
- The organization is in compliance with regulations
- The process used to develop the plan meets standards

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- The format, organization and level of detail satisfy the purposes of plan users and include options to allow the demand organization to respond to changes
- The recommendations support the organization's goals and objectives
- The plan recognizes and presents alternatives, such as ownership vs. leasing
- The resources needed to implement the plan are reasonable and within organizational guidelines

Given a real estate strategy, a competent facility manager assesses, acquires and disposes of real estate in a manner that:

- Site selection and disposal criteria are established, documented and followed
- The site selection and disposal process follows sound project planning principles and is carried out in the best interests of the demand organization
- Financial objectives are met
- Legal and regulatory requirements are met
- Due diligence is addressed
- Liability is identified and addressed
- Relocations and refurbishments are planned to minimize business interruptions

Given real estate assets, a competent facility manage manages real estate in a manner that:

- Decisions about what to sell, when to sell, purchase, lease, sublease, or contract manage support the real estate master plan and the demand organization's goals
- The economic performance of the real estate can be determined
- Decisions can be made about how to improve performance
- Aspects of managing leased properties as owner/occupant, tenant, and/or landlord are managed effectively and efficiently for the corporation

Given that real estate assets are utilized by occupants, a competent facility manager manages space in a manner that:

- Space forecasting is conduced and space requirements are identified
- Decisions about highest and best use can be made
- Space allocations support stakeholder requirements and workplace strategy
- Prepare and administer the service charge budget and allocate among co-owners or tenants

Given the need for a major project or new construction a competent facility manager manages a major project and new construction in a manner that:

- Project tasks are coordinated
- Schedules are communicated and maintained

- Tasks are performed when scheduled by the people assigned
- Work interruptions are avoided or minimized
- Work is performed by people with the appropriate qualifications
- Rework and downtime are avoided
- Onsite inspections occur as needed
- Project team meetings occur as needed
- Project documents such as shop drawings are reviewed for accuracy and completeness and modified as needed
- Work in progress and work completed are compared to project documents and specifications
- Testing and commissioning are properly conducted
- Steps needed to assure rights under warranty are maintained and taken

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Chapter 1: Introduction to Real Estate Strategies and Requirements

Lessons

- Objectives
- Lesson 1: Real Estate and Property Management Fundamentals
- Lesson 2: Business Life-Cycle
- Lesson 3: Life-Cycle Costing
- Lesson 4: Baseline Financial Concepts and Terms
- Lesson 5: Investment Analysis Tools
- Lesson 6: Intended Use
- Lesson 7: Government Regulations and Standards

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Objectives

Chapter 1: Objectives

On completion of this chapter, you will be able to:

- Compare the terminology of real estate and property management
- Recognize where an organization is in its business life cycle and the impact of that stage in real estate and property management decision making
- Understand life-cycle costing and how it relates to investments in real estate
- Describe the basic steps to do a life-cycle costing analysis
- Understand the basic real estate financial concepts and terms
- Define three common analysis tools used in Facility Management
- Understand the concept of intended use
- Explain how regulations differ across borders and the regulations and standards that protect the consumer

Real estate portfolio management can be a significant part of a facility manager's role. Some organizations keep a stable facility portfolio for many years. Others constantly change facility real estate plans because of environmental conditions, staffing changes, changed technologies, or for other organizational purposes.

A facility manager's role in real estate strategy may include:

- Acting as real estate and property manager for the demand organization and for the customer.
- Working with an in-house or contract real estate or property manager.
- Providing advice and relevant financial, asset and legal data on real estate and property to senior management, finance, legal and risk management, or an owner's representative.
- Contracting with real estate and property management professionals to assist the demand organization.

That role may start small, but it can grow as the demand organization's needs evolve and the skills and knowledge of the facility manager advance.

A strong relationship exists between real estate activities and decisions, FM functions and the achievement of organizational goals. Therefore, the FM group must focus on delivering high-quality, cost-effective services that are aligned with the demand organization's

strategic objectives. A facility manager needs to stay well-informed on trends and opportunities in the rapidly evolving field of real estate.

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Lesson 1: Real Estate and Property Management Fundamentals

Objective

On completion of this lesson, you will be able to:

- Compare the terminology of real estate and property management

Real Estate

Real estate is immovable property including structures, grounds and undeveloped land (ISO 41011:2017). A demand organization's portfolio may include property and/or facilities that are owned, co-owned, leased, subleased or contract managed. This will generally include all facilities in which the demand organization operates.

Alternative workspace options may be exceptions:

- Co-working is the use of an office or other working environment by people who are self-employed or working for different employers, typically as to share equipment, ideas, and knowledge. Organizations and individuals may reserve the space for an hour, a day, or months at a time. As needs change, the facility manager may still have a role in acquiring and releasing those spaces, and in some cases may be responsible for managing the property.
- Virtual work locations, such as home offices, are not included in the demand organization's real estate portfolio. In some organizations, the facility manager may be asked to confirm the set-up of such spaces to ensure a safe, ergonomic arrangement.

Property Management

Property management is generally described as operating property primarily for business use. The term typically infers the effective operation and management of owned, leased or subleased real property including land, buildings, assets, equipment and legal commitments for an owner, developer or landlord. As an example, in a leased space, the demand organization may be responsible for internal maintenance while the facility owner maintains common areas and exterior spaces.

Organizational drivers that impact real estate decisions include:

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- Need to preserve or enhance the visual image of the organization. This may be done by acquiring or maintaining space in a desirable location, or by relocating from a geographic area that is experiencing adverse development changes.
- Need to enhance the organization's image. This may be done by operating from a facility that supports the demand organization's core values and strategic objectives, such as sustainability.
- Need to enlarge operations or expand into new markets, or to downsize as operational efficiencies or organizational factors dictate.
- Changes in the ability to operate in a global environment due to funding changes or adverse government regulations or standards.
- Modified demand due to employee life and work style choices, such as willingness to commute.
- Technology and the expansion of global markets. For some organizations, the ability to work virtually can lessen the importance of the physical facilities.
- Other internal or external factors, such as business life cycle, life-cycle costing and investment analysis.

To manage corporate real estate properly, facility managers need to understand many factors. These include the core business requirements, the financial and political environment (internal and external), stakeholder/occupant/user requirements, and business cycles.

The point of owning or operating real estate is to provide the right environment for conducting core business operations in a cost-effective way that provides the best value.

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Lesson 2: Business Life-Cycle

Objective

On completion of this lesson, you will be able to:

- Recognize where an organization is in its business life cycle and the impact of that stage in real estate and property management decision making

Business Life Cycle Model

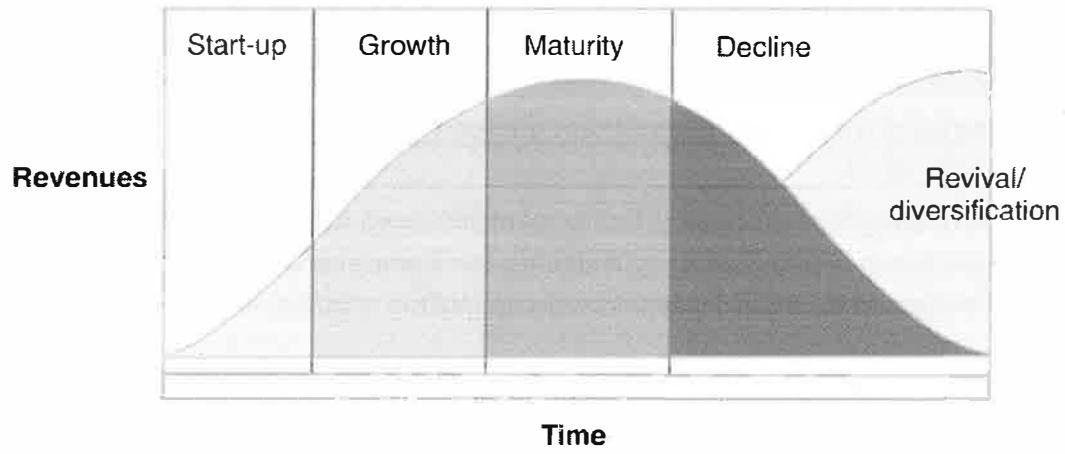

Figure 1 Business Life-Cycle Model

An organization goes through specific stages in creating and developing a business. These stages are known as the business life cycle. Where an organization is in this business life cycle determines its real estate needs. The organization must ensure that it has the facilities and equipment needed for the growth stage while having the flexibility in its portfolio to anticipate the maturity and decline stages. A facility manager must understand the business life cycle to be a strategic partner in decisions that strongly impact the FM organization.

- **Start-Up.** In the start-up phase, an organization tends to have limited resources. It needs to build resources while determining what it needs for growth. At this point, the organization is not likely to purchase property and may opt for a short-term real estate lease arrangement. To free up resources for the core business functions, the organization may look for creative approaches, such as co-working arrangements.

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This gives the organization the flexibility to quickly reduce or increase its physical space as needed while developing its master plan.

- **Growth.** Growth represents a higher level of certainty for the organization and brings increasing profits. The organization may look to acquire real estate to meet its growth and expected maturity needs. At this stage, the organization may shift from leasing to owning a facility for core operations. Those same internal and external factors described in earlier sections of this guide will impact those decisions. Organizations in this stage are still focused on keeping the business agile and diversified.
- **Maturity.** Once an organization reaches maturity, real estate has a higher priority. Real estate provides some financial benefits which can allow an organization to maintain profits even while growth declines. At the same time, if the organization does not anticipate new growth, it must remain flexible for the coming decline stage. It must not invest more in the facility for the business than the activities of that business require. Many organizations will own strategic real estate for core requirements and lease real estate for tactical requirements.
- **Decline.** As an organization begins its decline phase, it must assess how its real estate is serving the goals and objectives of the organization. If the facilities meet the need of new products or services coming to market, the real estate may be appropriate. But if the decline is more long term or the organization has no new products or services coming to market, the organization may need to consolidate its operations. That means consolidating real estate where possible to reduce costs.
- **Revival/Diversification/Disposal.** An organization engaged in revival and diversification has effectively planned for the need to re-invigorate the organization, to innovate or to find new markets. Re-evaluation of real estate ensures alignment with new organizational needs and goals. In this stage, FM may have new opportunities to realign existing properties to new needs by converting existing spaces. If the organization no longer has a use for an owned property/facility, it may choose to dispose of the property through sale, lease, or as a gift to a non-profit or government entity. If leased, consider sub-leasing or buying out the lease from the landlord.

The Leadership and Strategy competency discusses product life cycle phases and how they impact organizational and FM strategy development.

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Lesson 3: Life-Cycle Costing

Objectives

On completion of this lesson, you will be able to:

- Understand life-cycle costing and how it relates to investments in real estate
- Describe the basic steps to do a life-cycle costing analysis

Life-Cycle Costing Model and Analysis

Most facility managers are familiar with life-cycle costing (LCC) or whole life costing as it relates to repair or replacement of equipment. The concept describes the analysis of costs at today's value, from acquisition through final disposal. Because LCC considers all the costs incurred during the life of a facility, it helps in making economically sound long- and short-term decisions by comparing alternatives. This is particularly important since failure to consider all related costs may result in a lost opportunity before and after real estate acquisition.

It is helpful to understand the relationship between LCC and Total Cost of Ownership (TCO).

- LCC is the technique that establishes the TCO.
- TCO is a way for leadership of an organization to strategically evaluate competing options for procuring an asset. For example, they might consider the lower TCO between two similar assets, or lease-versus-buy alternatives. TCO for real estate is typically expressed as currency per square meter/foot associated with a facility.

The calculated LCC includes all costs for planning, design, construction, restoration or preservation, operation, maintenance, and disposal of a structure over time divided by the estimated lifespan of the asset. Furnishings or equipment not specific to the facility are not included in a TCO calculation, and land values are excluded from this discussion.

Since it involves one of the demand organization's most significant investments, the information provided for the LCC calculation must be accurate and thorough. This planning helps ensure the appropriate cash flows to properly maintain an investment over its life. LCC may be used to prepare the reserve fund study, which would determine the financial provisions needed to maintain and replace the essential assets in the jointly owned properties during its life cycle, such as elevators, roofs, chillers, etc.

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Consider:

- Expected life of the facility itself as well as that of building systems and components
  - For example: In addition to the cost of the facility itself, how many times and at what cost would you expect to replace the facility's assets (e.g., the air handling unit, the elevators, chilled water pumps, etc.) over the life of the facility?
- Anticipated costs for utilities, operations and renovations.
  - In addition to utilities, custodial costs and consumables, anticipate costs associated with maintaining visual and aesthetic appeal. Consider the organization's standards for refreshing spaces as well as the pace at which the organization typically remodels, changes space and implements tenant finish projects, and the average costs associated.
- Ongoing maintenance costs that may change as the facility ages and realizes its full value.
  - Consider costs of maintaining parking areas and drive aisles, managing landscape through its life cycle, and maintaining the building envelope.

Calculating Life-Cycle Cost

By definition, life-cycle costing (LCC) is the process of determining (in present value terms) all costs incident to the planning, design, construction, operation and maintenance, and disposition of a structure over time. LCC involves the analysis of the costs of a system or a component over its entire life span. The term "whole-life costing" is synonymous with LCC.

The formula to calculate LCC is as follows:

$$LCC = I + Repl - Res + E + W + OM\&R + O$$

Where:

- LCC= Total LCC in present value (PV) dollars of a given alternative
- I= PV investment costs (if incurred at the base date, they do not need to be discounted)
- Repl= PV capital replacement costs
- RES= PV residual value (resale value, salvage value) less the disposal costs
- E= PV of energy costs
- W = PV of water costs
- OM&R= PV of non-fuel operating, maintenance and repair costs

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- O= PV of other costs (e.g. contract costs for energy savings performance contracts (ESPCs) or utility energy service contracts (UESCs)

Ways to Reduce Life-Cycle Cost

There are ways that FM can reduce life-cycle costs in real estate. As illustrated in Figure 2 below, the cost reduction opportunities are greatest at the start and decrease as planning progresses. For example, a facility manager who is involved in early design discussions can ensure that all operable parts of installed building equipment are accessible for maintenance. If that discussion does not occur until construction or maintenance, the cost to implement changes will be greater.

Example: A light fixture is to be installed fifty feet above a staircase. In planning, FM can negotiate the installation of a method to lower that light fixture for cleaning and maintenance. The alternative of leaving the light fixture fifty feet above the staircase would be costly and hazardous for maintenance.

Facility managers understand operational efficiencies that can be designed into construction or tenant improvements. Making the same changes late in the process or after occupancy is quite costly.

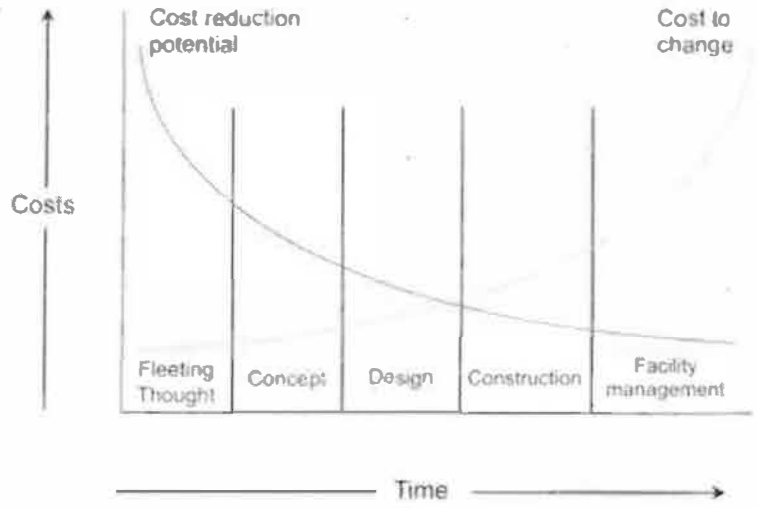

Figure 2 Ways to reduce life-cycle costs

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Basic Steps to do an LCC analysis

The basic steps in conducting an LCC analysis:

- Estimate costs.
- Compute life-cycle costs using Net Present Value (NPV) and Internal Rate of Return (IRR) calculations:
  - Make cash flows time-equivalent by converting them to present values.
  - Total all costs.
- Conduct appropriate risk and uncertainty assessments.
- Identify alternatives.

Costs Need to be Accurate

Since it involves one of the demand organization's most significant investments, the information provided for the LCC calculation must be accurate and thorough. This planning helps ensure the appropriate cash flows to properly maintain an investment over its life. LCC may be used to prepare the reserve fund study, which would determine the financial provisions needed to maintain and replace the essential assets in the jointly owned properties during its life-cycle, such as elevators, roofs, chillers, etc.

Consider:

- The expected life of the facility itself as well as elements that are part of the building envelope (e.g. roof or exterior surfaces).
- Associated costs related to increased commitment to community involvement such as hosting health fairs and antique auto shows.
- Ongoing maintenance costs such as managing the landscape through its life cycle.

Considerations for Doing the Analysis

When conducting the analysis, test assumptions. For instance, if maintenance costs are x percent higher or lower than planned, were the original assumptions correct? You may also include in the analysis supplemental measures for evaluation such as payback methods, net present value and internal rate of return.

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For the analysis, it is important that:

- Points of comparison are equivalent among the options. For instance:
  - Price is more than just purchase cost. Consider any recurring charges such as Common Area Maintenance (CAM) charges (a tenant's proportionate share of the cost of maintaining common areas of a leased facility).
  - Do the alternatives have the same amenities? Will the organization or the occupants incur added costs for transportation or parking at one facility that they would not in another?
  - Compare infrastructure and utility availability and costs. In some locations, the cost of bringing high speed data or a higher electrical capacity to the site may be significant.
  - Are there other factors that differentiate one option from the other, such as added costs for one that would not be represented by another?

More information about LCC can be found in both the Finance and Business Course and the Operations and Maintenance Course.

LCC is valuable in helping an organization to rank alternatives, but the organization must make its decisions based on a long-term outlook. Ownership of a real property asset may have the lowest life-cycle cost, but leasing may be a better financial decision for other reasons.

Later in this section, we will review sensitivity analysis, scenario analysis and other ways of assessing and mitigating investment risks. If the same parameters and study period length are used throughout, all are valid in LCC.

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Lesson 4: Baseline Financial Concepts and Terms

Objective

On completion of this lesson, you will be able to:

- Understand the basic real estate financial concepts and terms

Basic Financial Terms and Concepts

While we have given you some mathematical formulas, we have assumed that you are able to use the variety of financial tools and technology available to help you with the calculations. Even with that technology, a facility manager still needs a basic understanding of finance concepts and terms.

These include:

- Time value of money.
- Independent versus mutually exclusive.
- Cash flow pattern and duration, lump sum, or annuity.
- Discounted and non-discounted analysis methods.

Time Value of Money

Future Value

Let's try a real-life example on investing Swedish Kronor (SEK). If you have SEK 6.000.000, should you have it in property, or should you consider the same amount in an investment with a constant rate of return? Given the rate at which the value will change and the risk, which will have the higher value at the time you intend to surrender or use it?

Example "X"

Period	Beginning Value	Interest Earned	Ending Value
1	SEK 6.000.000	+ SEK 600.000	SEK 6.600.000

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2	SEK 6.600.000	+ SEK 660.000	SEK 7.260.000

Assume that the SEK 6.000.000 investment is made and earns an annual rate of return of 10 percent for two years. The investment would grow as shown below:

The formula is:

(Present value) x (future value interest factor) = future value

Where does the future value interest factor come from? Finance has interest factor tables. Financial textbooks include these tables to explain the time value of money and investments. For years it was necessary to locate the appropriate interest multiplier in a table (in this case, for 10% over two years, the factor is 1,210) and then do the calculation. This is where calculators and electronic spreadsheets are helpful as they have the interest factors and formulas preprogrammed. If you know the variables, the time values are easy to determine.

The concept is straightforward. You invest money at a specific rate of return for a specific period and can predict what the future value will be. Understanding future value is fairly intuitive. You invest money and you collect interest. If the investment is secure, you can expect the future value to increase

Present value x future value interest factor = future value (FV). SEK 6.000.000 x 1,210 = SEK 7.260.000

Also, Future Value Interest Factor is a simple calculation that can be done using a calculator and that it's calculated using this formula (highlighted in yellow):
FV = PV (1+r)n
FV = future value
PV = present value
r = annual interest rate
n = number of periods

Present Value

Present Value (PV) is the monetary value today of a future payment that is discounted at some appropriate interest rate.

If you knew that an investment would be worth SEK 7.260.000 two years from now, how would you evaluate the value of that investment today?

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Understanding present value is more future value but not overly complex. Present value is the monetary value today of a future payment that is discounted at some appropriate interest rate. The present value of SEK 7.260.000 is SEK 6.000.000. In finance jargon, the 10% interest rate is called the discount rate. As with future value, there are present value interest tables for calculating the present value of money received in the future.

The present value interest factor for 10% over two years is 0,826.

The mathematical formula for the present value interest factor = $(1 / (1 + r)^n)$, so in our example with 10 percent per year and two periods, $1 / (1.10)^2 = 0{,}8264$.

The formula for present value (PV) is:

(Future value) x (Present value interest factor) = PV

In many organizations, the finance department will handle time value calculations. Facility managers may have little to do with calculating the numbers but must understand the concepts to be a valued participant in discussions regarding real estate investments. We have shown the calculations here for explanatory purposes.

Two final points about future and present value:

- The operation of converting a present value into a future value is called capitalization or compounding. In our example it shows how much SEK 6.000.000 today will be worth in two years.
- The reverse operation, evaluating the present value of a future amount of money, is called discounting. This explains how much SEK 7.260.000 received in two years, at the same interest rate is worth today.

Independent vs. Mutually Exclusive Options

Based on their experience with projects and capital budget analysis, facility managers understand the importance of weighing opportunities against potential alternatives. They regularly weigh one project against another or evaluate how much can be invested in a maintenance activity.

Independent

Given multiple options, choosing one option will not impact decision or ability to choose one or more other options. There is no opportunity cost associated with either option.

Mutually Exclusive

Given multiple options, choosing one will limit or eliminate decision or ability to choose another due to limitations of resources. There is an opportunity cost associated with choosing one option over another.

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When considering real estate alternatives, consider whether the options are independent or mutually exclusive. If the occurrence of one event does not influence (and is not influenced by) the occurrence of the other(s), those events are independent. If the occurrence of one event excludes the occurrence of the other(s), then those events are mutually exclusive. ***Mutually exclusive events cannot happen at the same time.***

For mutually exclusive options, evaluate the opportunity cost – what you would be giving up by pursuing each option. Tools for this analysis are the same as those shown above regarding the time value of money, combined with two other formulas: Net Present Value (NPV) and Internal Rate of Return (IRR), both explained in detail below and in the Finance and Business competency.

Example: Young (2019) provides an example of a company with a budget of US$50,000 for projects and a choice of three projects. Projects A and B each cost US$40,000. Project C costs US$10,000.

This means that:

- Projects A and B are mutually exclusive because you can do only one of the two with a US$50,000 budget.
- Project C is independent because you can do that project without regard to your choice of A or B.

In the same example, if Project A has a potential return of US$100,000 and Project B will only return US$80,000, the opportunity cost of choosing Project B is US$20,000 (the higher profit opportunity less the lower profit opportunity).

Cash Flow Pattern and Duration, Lump Sum or Annuity

When considering a sizeable investment in real estate, the pattern, duration and form of payment are important.

- Pattern of payment is concerned with managing cash flow.
- Duration refers to how long those payments will continue.
- Form of payment relates how cost will be paid.

Each is described below.

When considering construction of a new facility or the acquisition of a capital asset, the organization needs to have the funding available when needed for the project. This means it needs to plan for when the expenditures are to be made. This describes cash flow – how

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much cash needs to be available at a given time. Cash flow includes the inflow of cash into cash receipts and savings, and the outflow of cash payments during a given period.

To decrease opportunity costs or minimize debt, the organization will need to plan funding so that it is available when needed but is not being pulled from investments (or debt issued) before it is needed.

Form of Payment

Lump Sum or Annuity

The form of payment, whether lump sum or annuity, relates directly to opportunity cost or to amount of debt required.

Consider our example in the section on the time value of money and the approximately 21 percent difference between the SEK 6.000.000 on day one and the SEK 7.260.000 two years later. The impact of making funds available when needed versus all the funds being available at the beginning of the project is significant.

As a knowledgeable partner involved in real estate, the facility manager may be able to assist with discussions or recommendations about these finance factors.

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Lesson 5: Investment Analysis Tools

Objective

On completion of this lesson, you will be able to:

- Define three different analysis tools used in Facility Management

Introduction

Because real estate decisions require committing significant long-term capital resources, organizations must carefully evaluate the options available to them. Few organizations have the financial flexibility to withstand making a bad real estate investment. But the loss of a positive real estate investment cannot be recovered.

Investment analysis can help an organization make an informed decision about real estate investment options based on risk, cash flows and resale value. Not all risk can be calculated or anticipated. The goal of investment analysis is to make the best-informed decision possible given the information available.

In this section, we will define and discuss three investment analysis tools that are most common in FM:

- Payback period
- Discounted Cash Flow Analysis (i.e., Net Present Value (NPV) and Internal Rate of Return (IRR))
- Risk Analysis Models

Payback Period

Payback period is a non-discounted analysis tool that calculates the length of time it takes to recoup an investment. The shorter the payback period, the sooner those funds are recouped and available for other purposes. The analysis answers the question, "How quickly will the initial investment be recovered?"

Payback period = initial investment divided by annual net cash flow

For example, an initial investment of Japanese yen (¥) ¥42,000,000 is made. Annual net cash flow is ¥7,000,000. The payback period is 6 years. (¥42,000,000 / ¥7,000,000 = 6).

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For some investments, the organization may set a target payback period. Investments with a payback period longer than the target are rejected or deferred. Those with a shorter payback period are accepted. For mutually exclusive projects, the project with the shortest payback period below that target would be selected.

Since it does not consider the time value of money, payback period is a good screening method but should not be the sole type of analysis. You should always use it in conjunction with net present value and internal rate of return – two discounting methods that will be discussed next.

Discounted Cash Flow Analysis

Introduction

To evaluate investments at present value, Discounted Cash Flow analysis adjusts cash flows over time for the time value of money. Two popular methods are net present value and internal rate of return.

Net Present Value

Net present value is the monetary value today that an investment project earns after yielding the desired rate of return for each period during the life of that investment. To bring all cash flows after the initial investment to their present values at the time of the initial investment, the calculation uses a specified discount rate. In other words, all future cash flows are considered at today's value. NPV emphasizes the dollar amount at the time of the investment.

NPV = (Present value of future cash flows) - (Present value of cash outflows)

The full math surrounding the calculation (for instance, the present value of future cash flows) is beyond our current scope. The important thing to understand about NPV is how to interpret the outcome. Typically, if an independent project has an NPV of zero or greater, the investment project is acceptable. For mutually exclusive projects, the investment with the highest positive NPV should be accepted. In other words, a higher NPV is better.

The typical finance decision rule for NPV for accepting or rejecting projects is zero. For independent projects if the NPV is zero or greater than zero, an investment project is acceptable. For mutually exclusive projects, the investment with the highest positive NPV should be accepted.

In practice, facility managers must compete for capital investment financing. Many FM projects do not generate revenue. As a result, they often have a negative NPV. Chances are

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that other colleagues will have projects with positive NPVs. A facility manager needs to correctly frame any NPV discussion with senior executives, the board, the finance department, and others. The least negative NPV for an FM project is typically the best choice.

Internal Rate of Return

Internal rate of return (IRR) is the return on investment that a company typically realizes (or expects to realize) based on its past record with asset investments. It is the interest rate at which lifetime monetary savings equals lifetime monetary cost after the time value of money is considered. IRR estimates the discount rate that will make the NPV of an investment zero.

The result of an IRR calculation is a percentage which represents the return on each monetary unit invested, so a target or cutoff IRR is set. Projects below that cutoff rate are rejected. For independent projects, if IRR is equal or greater to the criterion rate, the project is accepted. For mutually exclusive projects, the investment with the highest positive IRR that exceeds the cutoff rate should be accepted.

Risk Analysis Models

All investments are subject to some element of risk. Capital investments represent a high risk for all organizations. For that reason, no financial analysis is complete until that risk has been evaluated and recognized.

Risk may be represented in the portfolio (all projects in a group) or at the project level. In real estate, this relates to whether a specific risk will impact a single investment or multiple investments.

For example:

- Risk related to an economic downturn is likely to impact the portfolio, though perhaps not equally in all locations.
- Risk related to a weather event is more likely to impact one specific geographic region.
- Risk related to selecting the wrong location would impact that single investment.

Several risk models are available to attempt to replace subjective assessments, judgment and intuition with more objective methods. These models help assess and potentially reduce risks and to maximize returns. To determine relative risk impact, they use probability ranges rather than single values.

Two models are described next.

Sensitivity Analysis

Sensitivity analysis looks at the change in one variable because of a change in another variable.

For example:

Think of it as "if this, then that". To show which of the variables or options have the greatest impact on the outcome, the analysis compares options:

- NPV and IRR calculations show how the project would change if the discount rate changed.
- Other calculations show the impact of increases or decreases in labor costs, sales or other factors.

The math involved in the analysis calculates each potential outcome.

For example:

- Comparing the NPV of project B at a discount rate of eight percent to the NPV of project B at a discount rate of nine percent.
- Calculating the amount of time, it will take to make a profit on production of 100,000 units of product F based on different potential volumes of sales.

Scenario Analysis

A scenario analysis looks at what happens to profitability estimates (such as NPV) if a certain scenario occurs. It then tests those estimates against different sets of assumptions or conditions. In other words, assuming specific scenarios, it produces an expected value of a property or portfolio at a point in time. Those scenarios could relate to interest rate, to profitability, to cost of operations or to any number of factors.

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Lesson 6: Intended Use

Objective

On completion of this lesson, you will be able to:

- Understand the concept of intended use

Implications

Intended use has important implications in real estate considerations. Restaurants and office complexes are not easily interchangeable. A motel would not efficiently be used as a warehouse.

When considering real estate, the principle of intended use means that you evaluate to ensure that the property can reasonably be made to comply with your intended use.

Consider for instance:

- **Zoning of the property and other land use regulations** determine the types of uses and construction of buildings allowable at a specific site. These laws vary by location but exist nearly everywhere in the world. The process of changing the zoning or permissible use of a site can be complex, time-consuming, expensive and may require the approval of multiple parties, including neighboring owners.
- **Grade of the property and area, environmental issues and its suitability** for your facility and amenities. It would perhaps not be the best fit under intended use to build a first-class apartment structure in an area that is economically depressed.
- **Infrastructure available to the facility.** Can you get the technological infrastructure installed, and at what cost?
- **Access and accessibility.** If you are highly reliant on customers, clients or other visitors, how hard is it for them to get into your parking lot and into your building? Can you reasonably refit an existing facility for accessibility at a reasonable cost?
- **Size**. Can the property accommodate the required parking, commuter volume, etc?

Your understanding of intended use will help you support or inform your demand organization's decisions regarding location, facility attributes, safety and security and, in particular, how feasible it may be to convert a proposed site or building to meet the organization's core business needs.

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Lesson 7: Government Regulations and Standards

Objectives

On completion of this lesson, you will be able to:

- Explain how regulations differ across borders and the regulations and standards that protect the consumer

Responsibility to Know

Real estate laws differ from country to country, within a country, and even within individual states or other subdivisions of a country and municipality. In each case, the goal is the same. These regulations, standards, and laws are all intended to protect the consumer.

Facility managers need to understand the real estate laws and practices wherever their demand organization operates.

Regulations may control:

- Ownership rights and limits. In many countries, there are restrictions on acquisitions by foreign nationals. These restrictions can limit or require special accommodations, permits or approvals.
  - Example: Bermuda restricts foreign ownership of shares in a company. This does not mean that other countries cannot own companies. It does mean that a foreign entity will need a special license to take control of a local limited liability company (LLC) and conduct business in Bermuda.
  - Example: In some places, property may be too expensive for purchase. A long-term ground lease may be the best way to acquire the use of the property.
- The use of residential and commercial property. In much of the world, this is referred to as zoning.
- Tax, nondisclosure and confidentiality agreements.
- Labor law issues.
- Building codes (including accessibility), which vary by country and even by municipality. Many countries follow the International Building Code standards, although the specifics will differ from one jurisdiction to another.
- Health, fire, life and safety, sustainability, and environmental regulations.

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In addition to government regulations, certain standards will shape real estate decisions. Those standards include ASTM, BOMA and IFMA, each described below.

ASTM Standard

ASTM International was formerly known as the American Society for Testing and Materials. Its standards focus on making offices and other facilities functional and usable. Stakeholders participate in developing the standards (over 12,000 of them) which are used globally. The purpose of ASTM standards is to "enhance performance and help everyone have confidence in the things they buy and use."

Standards cover a broad range of technical and management areas including:

- Steel
- Paint
- Medical Devices
- Water and Environmental Technology
- Sustainability
- Automatic Guided Vehicles
- Construction

The "ASTM Standards for Whole Building Functionality and Serviceability" is one of the primary ASTM publications for FM professionals.

ANSI/BOMA/IFMA

Rising from a need to standardize the measuring of facility spaces worldwide, Building Owners and Managers Association International (BOMA) published its first office standard, "Standard Method of Floor Measurement" in 1915.

Over time, updates to that standard have expanded the information into two documents:

- "Standard practice for Building Floor Area Measurements for Facility Management" (ASTM E1836/E1836M-09e1), also known as ASTM, ASTM/IFMA or the IFMA standard. This standard is utilized to determine floor area available for chargeback or tenant finish.
- The 2010 publication "Office Buildings: Standard Methods of Measurement" (ANSI/BOMA Z65.1 - 2010), also known as ANSI/BOMA or the BOMA standard, used primarily to determine the amount of rentable and useable area available for lease.

From your FM studies, you may recall the graphic below, excerpted from the IFMA/ASTM space measurement standard. This graphic shows the relationships between floor area

measurements, from facility gross area down through assignable and secondary circulation. It represents a standard that is used worldwide to ensure consistency in measuring facility space use.

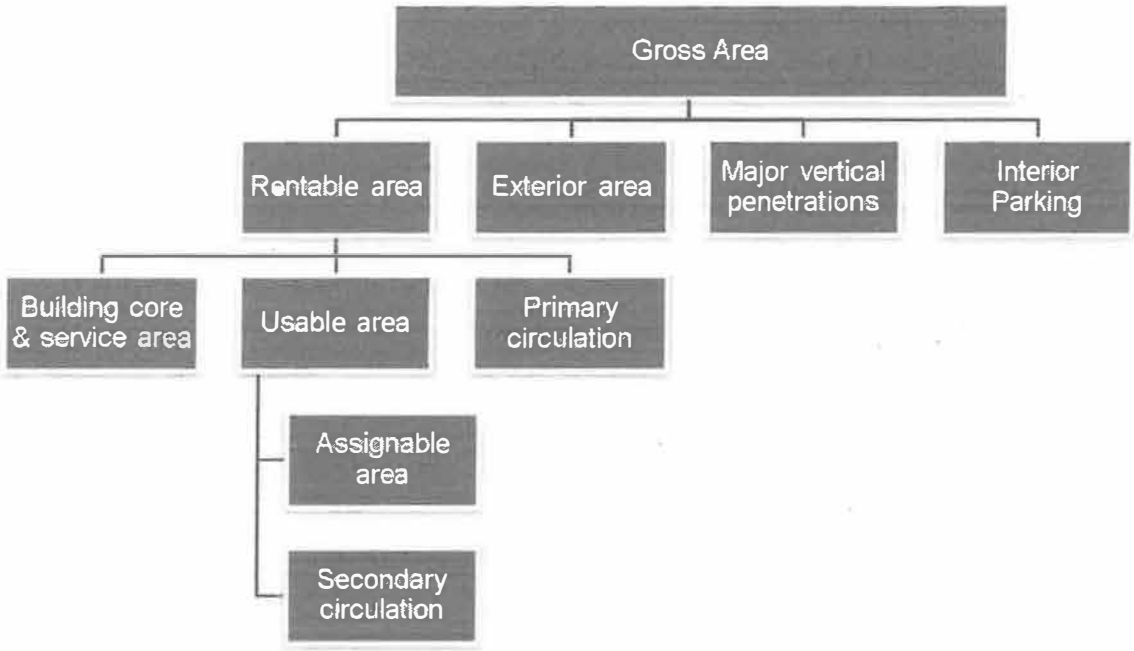

Figure 3 IFMA/ASTM Space Measurement Standard

Other Applicable Standards

Other resources for real estate standards include:

- OSCRE (Open Standards Consortium for Real Estate) International provides global industry standards related to real estate information exchange.
- NAR (National Association of Realtors) publishes a code of ethics as a standard.

Standards on workable space, accessibility, energy, quality and more vary by jurisdiction and even by type of organization.

Facility managers and the consultants they hire must understand the regulations and standards that apply to their situation. Ignorance of a standard or regulation will not make that requirement easier to fulfill. In fact, if discovered late in the process, it could be quite costly.

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Chapter 1: Progress Check

1. What does owning or operating corporate real estate in the right environment mean for core business operations?

   a. It is a cost-effective way to provide the lowest cost.
   b. It is a cost-effective way to provide the best value.
   c. It is a cost-effective way to provide the best service.
   d. It is a cost-effective way to provide the highest return.

2. The first three phases of a business life cycle are startup, growth, and maturity. What is the next phase?

   a. Decline is the next phase
   b. Time is the next phase.
   c. Diversification is the next phase.
   d. Revival is the next phase.

3. What is an organization likely to do in the startup phase of a business cycle?

   a. It is likely to purchase real estate to get a better tax advantage.
   b. It is likely to invest in real estate to prove its stability.
   c. It is likely to enter a long-term lease to limit future costs.
   d. It is likely to limit long-term investments to preserve resources on growth.

4. Zoning and property size are two elements to evaluate when considering intended use of real estate. What is the third element to consider?

   a. The interior of the building.
   b. The access and accessibility of the building.
   c. The current and past use of the property.
   d. The exterior of the building.

5. What four standards apply to real estate?

   a. OSCRE, NAR, BOMA, ANSI.
   b. ISO, BOMA, OSCRE, NAR.
   c. ANSI, OSCRE, NAR, ASTM.
   d. ASTM, BOMA, OSCRE, ASTD.

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6. How do discounted and non-discounted investment analysis models differ?
    a. Discounted models recognize the time value of money; non-discounted models do not.
    b. Non-discounted models recognize the time value of money; discounted models do not.
    c. Both models recognize the time value of money; discounted models estimate a more conservative, outcome.
    d. Unlike non-discounted models, discounted models assume that all dollars earned in the future have the same value as today's dollars.

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Chapter 2: Real Estate Assessment, Acquisition and Disposal

Lessons

- Objectives
- Lesson 1: External Factors that Influence Real Estate Decisions
- Lesson 2: Financing
- Lesson 3: Develop and Implement a Real Estate Master Plan
- Lesson 4: Acquisition and Divestiture of Real Estate
- Lesson 5: Portfolio Management

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Objectives

Chapter 2: Objectives

On completion of this chapter, you will be able to:

- Identify the economic factors that influence making real estate decisions
- Understand the basic real estate financial concepts and terms
- Identify the process of creating a real estate master plan
- Explain the importance of due diligence, the advantages of purchasing and leasing, and the negotiation process
- Compare the different strategies for portfolio management and the portfolio management tools

In Chapter One, we learned about real estate strategies and requirements. These strategies and requirements included basic terms and concepts for real estate such as life-cycle costing and its relationship to TCO. We reviewed finance concepts, investment tools and intended use and its implications. Finally, we moved on to get a better understanding of the standards and regulations that govern real estate.

In this chapter, we will look at the economic factors that influence making real estate decisions. We will discuss the process of buying or leasing real estate and look at the process from acquisition to divestiture of the property. Part of this process is creating a real estate master plan.

Lesson 1: External Factors that Influence Real Estate Decisions

Objective

On completion of this lesson, you will be able to:

- Identify the economic factors that influence making real estate decisions

Introduction

A facility manager needs a special set of skills to provide good advice on the demand organization's real estate. In the last chapter, we addressed several concepts that are internal to the demand organization, such as its business life cycle and some baseline financial concepts. In this section, we will address the external factors that influence real estate decisions.

These include:

- Cyclical Market Conditions
- Highest and Best Use
- Economic Cycle
- Age of Property

Economic Cycle

The economic cycle refers to fluctuations in production or economic activity over an extended period across the economy. These changes are categorized as either expansion or contraction. They tend to be more global in nature, but they may have an impact on the organization.

When the economy is contracting:

- Organizations may choose to consolidate operations. They may not renew leases or may look to sublease or buy out the leased spaces where they have contractual obligations.
- The organization may defer maintenance.

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- The organization may divest itself of some owned real estate or look for ways to convert those properties into new profit centers.

When the economy is expanding:

- Organizations may look for additional real estate through purchase, lease or new construction.
- The organization may pursue capital improvements, such as renovations, additions or other new construction.

Economic predictions can be difficult, but signs and triggers often signal change for the better or the worse. Facility managers should understand and remain aware of economic trends and indicators. Facility managers will seldom be the primary advisors on real estate purchases, but they should be prepared for the organizational conversation.

Age of Property Development

Age of property development is worth considering. In general, new properties tend to hold more value than older real estate. Exceptions do exist. For instance, historically restored properties in well-maintained neighborhoods may outpace the value of some new properties.

Neighborhoods are areas that share geographic characteristics, transportation routes and similar amenities. They typically go through a four-phase cycle that lasts 40 to 50 years, the same life as an average building structure.

This same cycle tends to hold true of commercial property developments and offers something to consider in real estate decisions. The cycle is predictable, and careful investigation is likely to reveal the phase of a specific neighborhood.

There are four phases to aging.

New

Phase 1
A **new neighborhood** is developed. For commercial properties, this may consist of a new industrial park or retail development.

Peak Value/Performance

Phase 2
Considered the **Peak Value/Performance** period. The neighborhood is mature and fully developed, and real estate value is maximized.

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Value/Decline

Phase 3

Value/Decline, occurs when the real estate begins to age, and facilities begin to look outdated. The location may not be considered a "hot spot" any longer, and industry migrates to new developments.

Least Value/Renewal

Phase 4

Is called **Least Value/Renewal**. In this phase, real estate is at its lowest value, and buildings are likely to be demolished or remodeled. Remodeling or refurbishing an existing property in a neighborhood in its final stage may not be sufficient to reinvigorate the business. Before remodeling a single property, the owners need to evaluate whether the area itself will revitalize and direct their efforts toward those improvements that will bring tenants back to the area.

Cyclical Market Conditions

Just as the economy cycles, the real estate market experiences cycles. When demand increases, available properties are scarce. When demand decreases, available properties are easy to find. In general, when:

- Demand for real estate is high and exceeds supply, values increase, and vacancy rates decrease. New building developments may occur during this phase.
- Demand for real estate is low and supply exceeds demand, values decrease and vacancy rates increase. Differentiating factors, such as green buildings or desired amenities, may be needed to attract tenants.
- Demand and supply are roughly equal, real estate prices are at their maximum and vacancy rates at their lowest. A high level of new building construction may tip the cycle very quickly back to low demand.

Real estate market trends are highly publicized, and many real estate broker resources are available to assist in monitoring the cycles.

Highest and Best Use Criteria

When a property is appraised, it is evaluated for Highest and Best Use. Highest and best use describes the probable and legal use for a parcel of real estate that is physically possible, appropriately supported, financially feasible and that results in the highest value. The current use of the property may not be relevant in this measure.

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Four criteria are evaluated.

Physically Possible. Is the proposed possible on a site given the location, size, shape, topography, transportation, accessibility and other characteristics of the property? Example: A retail mall could not physically be constructed on a three-acre site.

Legally Allowable. What is allowable about building codes, zoning ordinances, environmental laws and other regulations? Government regulations, deed restrictions and existing leases are other considerations. Example: In many jurisdictions, a marijuana retailer will face restrictions regarding where they may legally operate.

After the first two criteria are satisfied, remaining uses are evaluated further.

Financially Feasible. Can the intended use support the financial obligations related to that property? Example: An executive suite of offices constructed in a depressed area is not likely to be financially feasible. Low rents in that area will not offset the high cost of constructing the executive suite.

Maximally productive or profitable. Will the use generate the highest return or value consistent with the rate of return indicated by the market? Example: Given multiple offers, the offer that will maximize profitability or give highest value for the property regardless of its current use should be selected.

Highest and Best Use Factors

In evaluating highest and best use, several factors are considered:

- **Financially feasible.** Can the intended use support the financial obligations related to that property? Example: A mega movie complex constructed in the downtown area of an old established bedroom community may not be financially feasible if there is insufficient parking and no restaurants.
- **Maximally productive or profitable.** Will the use generate the highest return or value consistent with the rate of return indicated by the market? Example: Given multiple offers, the offer that will maximize profitability or give the highest value for the property regardless of its current use should be selected.
- **Geographic location, or neighborhood; access to infrastructure and transportation; visibility; proximity to population centers.** For retail locations,

your marketing department can help identify the location requirements to best promote the organization's brand.

- **Property type and quality.** Categories may be commercial, industrial, agricultural or residential. Quality may be rated as Class A, B or C. Any environmental issues must be considered. (Note that operating a sustainable or a technologically enabled facility can potentially elevate the class.)
- **Level of income.** Quality of property relates closely to level of income. It can create a demand for goods and services and drive the market up. It can also have the reverse effect.
- **Use type.** Due to economic demands or neighborhood factors, one type of business may succeed in the same location in which another failed.
- **Degree of competition.** This relates to supply and demand for properties and the impact on occupancy and vacancy rates and values. The same applies to local land supply.
- **Employment levels and shifts in population.** Both factors drive the demand for goods and services in a specific region.
- **Price-distance relationship.** In general, the closer a property is to the center of the community, the greater the value.

Highest and Best Use Case Study

Case Study Introduction

The purpose of occupancy is to meet the demand organization's needs. The facility manager is given the assignment to evaluate the current and future market value of a property owned by the organization. The questions that are being asked are:

- Should the organization hold on to or sell the property?
- What is the approximate value of the property right now?
- What will be the approximate value of the property five years from now?

Highest and Best Use Case Study: Information

After some investigation and the help of a local real estate broker, the facility manager gathers the following information.

Acreage	The amount of acreage is 1.3 acres or 56,628 square feet (ft2)/~5,260.91 square meters (m2).

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	Note: An acre is equal to 43,560 ft2/~4,046.86 m2.
Market Value of the Land	Market value may be calculated using different methods (e.g., sales comparison, market comps or an income method). Using the sales comparison approach, several local brokers tell the facility manager that similar acreage in the area has sold for approximately US$300,000 per acre or US$6.89 per ft2 in the last six months.
Building Information	This is a Class B building, used as office space; it is 100 percent occupied by the owner, 4,500 ft2/~418.06 m2, five years old and has a brick veneer. The building has a favorable energy efficiency rating (e.g., ENERGY STAR® score).
Replacement Value	After speaking to several building contractors, the facility manager learns that the cost to replace the building or to build a new one similar to the existing building would be US$110 per SF. Improvements for parking and landscaping would cost US$4 per ft2.
Purchase Price	The property was purchased for US$620,000 five years ago. The property has been on a 10-year amortized loan. The balance to be paid on the loan is US$278,000 over the next five years.

Highest and Best Use Case Study: Facility Manager's Summary

The facility manager then summarizes the information gathered.

Land value	56,628 ft2 x US$6.89 = US$390,167
Building replacement value	4,500 SF x US$110 = US$495,000 (less wear and tear and other depreciation)
Acreage improvements	56,628 ft2 – 4,500 ft2= 52,128 ft2 x US$4 = US$208,512
Approximate market value	US$1,093,679 (less wear and tear and other depreciation). No equipment, furniture or other personal property is included in the

Appreciation	estimation of value. Over the last five years, the value of the property has appreciated from US$620,000 to approximately US$810,000. This is a six percent per year appreciation. It is expected that the same appreciation rate will continue for the next five years.

Responses to the Highest and Best Use Case Study

The correct responses are: geographical location, property type, use type, degree of competition, and local land supply.

If some of the teams come up with different factors discuss why the team chose that response.

Here is an evaluation of the highest and best use elements:

- **Geographic location.** It is in an excellent location where the business growth is still on the upswing of the neighborhood value.
- **Degree of competition.** The area is in a well-established neighborhood built out five years ago. It has only a five percent vacancy rate and very few properties for sale.
- **Property type.** The zoning for the area controls the use, which is retail and low-density office space. It is a typical suburban office neighborhood.
- **Use type.** The subject property is of equal make and style to other buildings and property in the area, and it has a favorable energy efficiency rating.
- **Local land supply.** No local land is currently available. Any available land is more than 10 miles away.

Highest and best use studies are critical when evaluating and making recommendations on real estate. The analysis is complex, so to maximize returns, a facility manager may need to secure the services of real estate professionals.

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Lesson 2: Financing

Objective

On completion of this lesson, you will be able to:

- Understand the basics of real estate financing

Key Concepts of Real Estate Finance

As stated earlier in this guide, a facility manager is not, generally, solely responsible for commercial real estate. This is particularly true of real estate financing, which can be a specialty unto itself. But as a facility manager, you will work with others on financing options, so you need to understand key concepts of real estate finance.

In this section, we will discuss the following key concepts:

- Capitalization rates
- Mortgage payments
- Sinking fund
- Impact of currency fluctuations
- Interest rate risks

Capitalization Rates

Since it relates to the future value and earnings of a property, the topic of capitalization may seem familiar to you. We've already discussed the discount rate, and the capitalization rate is the opposite of that. The capitalization rate is a way to project the income value of a property – or risk and reward. In other words, the annual rate of return you would expect to receive on an all-cash investment.

The most basic formula for capitalization rate is:

$$CAP\ Rate = (NOI \div Sales\ Price) \times (100)$$

Where:

- CAP = Capitalization rate
- NOI = Net Operating Income

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- Sales Price = Actual sales price of the property

What is the cap rate for with a NOI of US$1,000,000.00 and a property sales price of US$10,000,000.00?

This number represents the projected return for one year as if the property were purchased with cash. If the property is financed, the calculation is more involved.

If you are buying a property, a higher cap rate will reduce your initial investment. If you are selling, a lower cap rate will bring you a higher return.

If you are selling, a lower cap rate means the value of your property will be higher.

If using a cap rate for comparison between options, the properties considered should be roughly similar. If comparing cap rates for different markets, allowances will need to be made for the difference.

For example, if comparing a property close to a busy downtown area and another in an industrial complex, the results will be quite different. "Green" and technologically enabled buildings represent a lower risk and so have a lower cap rate.

Other Factors to Consider

Other factors can influence the value of a property. The factors listed here all relate to the relative risk and effort involved in the continuance of the income stream:

- Deferred maintenance
- Security of the income stream from tenants and the length of leases
- Comparable sales in the area
- Property taxes, insurance costs and utility costs
- General economic and market conditions
- Local market conditions

Mortgage Payments

With your personal finances, you may be familiar with the concept of mortgage payments. A mortgage is a contract by which real property is pledged as security for a loan. A mortgage can be placed on a new property purchase or one that is already owned.

A mortgage can be a powerful financing tool for several reasons:

- Payments are fixed for a known period.

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- A mortgage may have lower interest rates than other instruments since the property acts as security to the lender.
- There are fewer financing restrictions on a mortgage than on some other instruments.
- Mortgage maturity periods can be set at the time of finance. An organization may choose a shorter period when it needs to make a large investment but is positioned to pay off the debt quickly. It may choose a longer maturity period when the organization wants to minimize the outflow of cash.

A mortgage payment is typically made up of:

Principal

Principal is the amount paid against the amount loaned

Interest

Interest is the rate charged by the lending institution expressed as the amount per period or per payment

Taxes & Insurance

Taxes and insurance, include property taxes, mortgage insurance if required, and property insurance.

For a fixed-rate mortgage, the payment for principal and interest is fixed over the term of the loan, giving the organization control over its mortgage cost. The organization makes installment payments, gradually paying down the mortgage loan until the mortgage is "retired". This process is called "mortgage amortization".

The interest is a percentage of the principal. A portion of each payment goes to the interest on the mortgage, and a portion goes to the principal. In the early periods of the loan, the larger portion of the periodic payment covers the cost of interest, and the principal is reduced very slowly. Over time, the installment payments gradually reduce the principal. As this happens, the portion of each installment that applies to interest decreases, and the amount that goes to principal increases. For every mortgage, an amortization schedule is prepared to show the rate at which the debt is retired.

When you consider accelerating payments on the principal to retire the debt early, you may find it helpful to use a financial calculator. Always remember to notify Accounting of the amount, term and date for each reoccurring mortgage payment sent by check or electronic transfer.

The mortgage payment may be expressed as PITI (payment including interest, taxes and insurance). If the organization finances the taxes and insurance as a part of the mortgage,

the portion for taxes and insurance are paid into an escrow account until disbursed to meet that obligation.

Two More Terms to Clarify Mortgage

- **Escrow** is a process where a neutral third party holds money and property until the two negotiating parties agree on and meet conditions to close the sale of the property.
- The lender sets up an **escrow account** to collect funds in advance of required property tax and insurance payments. The escrow portion of a PITI loan is typically adjusted annually based on the costs it covers, and it can affect the mortgage payment amount.
- The organization may choose to meet these commitments through its mortgage rather than paying directly as an annual lump sum. In this case, the escrow requirement to make those payments is calculated at a rate that funds the full obligation by its due date, and the lender makes the payment directly to the tax authority and insurer.

Personal and corporate mortgages vary in one key factor. Many business loans are shorter than the typical 30-year personal mortgage. Some commercial real estate loans are amortized over a full 20 to 25 years but are made with renewal periods every three to five years. The periodic renewal represents a risk that we will discuss in the interest rate risk section below.

For some leases, the landlord may agree to provide the organization with a mortgage loan for capital improvement funds. These loans may exceed the typical amount of capital improvement that are part of the lease.

Sinking Fund

A sinking fund is money that is set aside for periodic payments to cover future capital expenses and to reduce the financial obligation to buy or expand real estate. This fund is internal to the organization – that is, it is up to the organization to budget for, collect and manage the funds. The sinking fund should be managed so that investment earnings, such as interest, are proportionately applied to those funds.

The sinking fund's specific uses are designated, and controls are enabled to ensure that the funds remain available for those purposes.

Sinking funds may be created for:

- Planned real estate expansion projects.

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- Planned future capital construction projects.
- Major equipment replacements or facility upgrades based on life of an asset. These may include HVAC equipment, specialized processing equipment used in the core business, parking lot refurbishment, roof replacement, and periodic interior upgrades (carpet, paint, upholstery and furniture).

The amount dedicated to the sinking fund is based on the time until the projected need for that use and the anticipated cost of replacement. For instance, given proper maintenance of an asphalt parking lot, its useful life may be 10 to 15 years. An organization may dedicate one-tenth of the cost of that anticipated future replacement per year to a sinking fund (adjusted for interest) so that when the parking lot needs to be replaced, the funds are available.

In some regions and countries, sinking funds are required by law. In others, the creation of a sinking fund is strictly voluntary. In some organizations, departments making capital purchases must include sinking funds for each capital asset in their annual budget.

Because the larger share of capital assets often relates to items under the direct or indirect charge of FM, facility managers should have a good understanding of the organization's policies regarding such funds.

Impact of Currency Fluctuations

Currency fluctuations are ongoing changes between the relative value of one country's currency as compared with another. A rising domestic currency (the currency of the demand organization's base country) means that foreign investments will result in lower returns when converted back to the domestic currency. The opposite is true for a declining domestic currency. Your financial institution may charge a fee for sending the real estate payment to another country, and the financial institution in the receiving country may also charge a fee. The total payment should account for these fees.

International real estate investments are complicated by currency fluctuations and conversion between countries. For example, a high-quality property investment in another country may prove worthless should the domestic currency weaken. In fact, foreign-dominated debt used to purchase property can result in bankruptcy if the currency tumbles in a fast decline or there is a rapid rise in the currency of the foreign-denominated debt.

Facility managers are not likely to be in a position to make these investment and funding decisions, but an understanding of the concept is important.

Interest Rate Risks

Interest rates can also impact real estate values. In low interest rate periods, organizations expand when they might not otherwise have made an investment. If the organization secures a long-term financing instrument, the result will be a longer commitment to higher fixed operating costs. As the organization matures, demand may not support those costs.

An added risk factor in business financing is that most business loans are not long-term loans. They may be amortized over 20 to 25 years but may include a renewal period every three to five years. While the business may be in a positive financial position at the time of the initial loan, conditions may change before the renewal period. A drop in real estate value or unfavorable economic factors may cause lenders to reconsider renewing the loan. If the loan is not renewed, the borrowing organization must find a new lender or source of funds to pay the mortgage, perhaps at a high interest rate, or risk losing the property.

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Lesson 3: Develop and Implement a Real Estate Master Plan

Objective

On completion of this lesson, you will be able to:

- Identify the process in creating a real estate master plan

Introduction

Developing and implementing a real estate master plan is typically done in partnership with organizational leadership. Depending on the backgrounds of the organizational leadership, the facility manager may either lead this process or may simply contribute to the discussion. The plan may be developed in-house, or the organization may contract consultants, such as architects, finance specialists, engineers or property specialists.

Master Plan Terminology

Let's review the key terminology related to master plans, taken from the Leadership and Strategy course:

Strategic Plan

A **strategic plan** outlines the direction of an organization. It includes broad, long-term, significant plans, and the methods and actions by which the organization will operate. The goal of strategic planning is to develop long-range, business-driven plans. Those plans will be used to create tactical action plans.

Facility Strategic Plan

A **facility strategic plan** is a long-term plan for an entire real estate portfolio of owned and/or leased space that sets goals based on the organization's strategic objectives. In addition to real estate strategy, strategic facility plans include owned and/or leased real estate; planned FM services; remote, mobile and on-site support and delivery methods; and plans to develop needed FM capabilities. The strategic facility goals are used to create short-term tactical plans, including prioritizing and funding of annual facility-related projects.

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Real Estate Master Plan

A **real estate master plan** (facility master plan, campus plan) documents the organization's goals and the type of real estate and space required to support those goals. In the Leadership and Strategy course, facility master plans, real estate master plans and campus plans were discussed as site-specific frameworks. When the strategy/site is complex enough to mandate more detailed plans, facility master plans contain specific schedules for implementing a facility strategic plan. Facility master plans look at the use of space. Facility master plan scenarios may present various organizational or space models and space analysis reports. These models and reports are backed by the opinions of experts and stakeholders, who help ensure that plans are both feasible and flexible enough to accommodate change. The real estate master plan traces the history of the entire organization, with an overview of how today's practices, goals and mission came about. It describes where the organization is going, where that location is going, and what kind of real estate and space (size, capabilities) will be needed in the future. Real estate master plans may include projections for community services (such as the need for transportation, housing and communication), for power or utilities, or to build, acquire or dispose of facilities.

Tactical Plan

A **tactical plan** is a detailed set of steps needed to accomplish a goal in the strategic plan or master plan. It is where FM moves from general to specific plans. Tactical plans are short-range, timed to the goal. They typically require separate approval and funding, through a business case, project plan or other method. Though terminology may differ (annual facility plan, project plan, service plan, delivery plan, maintenance schedule, operational plan, approved budget), the general term tactical plan is applied throughout this guide.

The real estate master plan is the subject of this discussion. Because these assets and requirements require long lead times, and because of the importance of linking the real estate plan with the strategic business plan, the real estate master plan directly impacts facilities and FM. The facility manager should consider involving the senior members of the FM team in discussions about the real estate master plan.

You will note that the Real Estate Master Plan is listed under the heading Facility Management Organization Strategic Facility Plan. There is often confusion between the two.

A **facility strategic plan**:

- Identifies which organizational strategies and business goals require a facility response.

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- Considers existing conditions and the gap between where the organization is and where it needs to be regarding facilities.
- Describes the types of facilities needed, where, how much they are expected to cost and when they are needed to meet business plan goals.

A **facility or real estate master plan:**

- Is a detailed long- or mid-term set of specifications and a schedule for implementing elements of the strategic facility plan.
- Includes a site-specific physical plan for buildings, infrastructure and systems within the site.
- May contain scenarios such as site-specific options (lease or own) or recommendations proposed to enable business-driven decision-making.
- May include plans for existing and proposed real estate, site systems and infrastructure, building and grounds aesthetics, building plan phases, construction estimates and value engineering assessments.

Because the master plan provides a strategically aligned view of all real estate decisions that need to be made, it gives leadership time to make important capital decisions. It is a road map for scenario planning and ranking of real estate needs that fit within organizational resources, so that real estate decisions are well-informed.

The real estate master plan is a living document that adapts to the changing needs and priorities of the organization, so regular review and updating is important.

Aligning the Real Estate Plan with Organizational Need

Figure 4 below demonstrates these relationships. You will see the Real Estate Master Plan at the Business Unit Strategic Planning Level, tying tactical (operations) to corporate strategy.

You will note that the Real Estate Master Plan is listed under the heading Facility Management Organization Strategic Facility Plan. There is often confusion between the two.

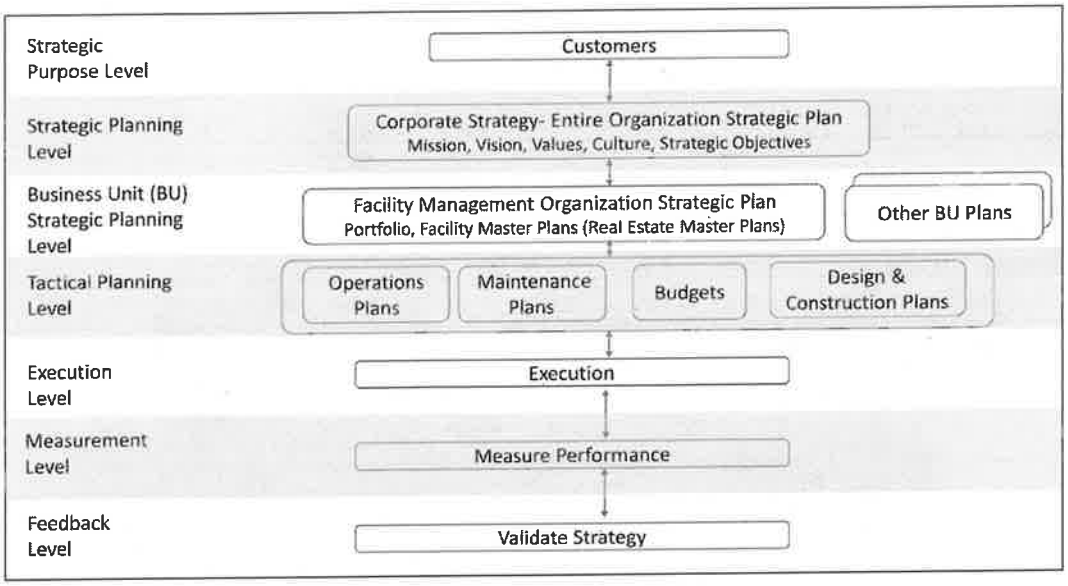

Figure 4 Strategic Plan Flow Diagram

Real Estate Master Planning Process

To ensure it is aligned with the organizational strategic plan, the real estate master planning process usually takes place once an organization's annual strategic planning process is complete.

- Engages stakeholders in a collaborative process.
- Includes scenarios to enable business-driven decision-making.
- Facilitates modifications in response to changes that impact the organization.

Creating the Real Estate Master Plan

Steps to Create the Master Plan

The processes outlined in this guide are generic and are intended as overall guidance. It is important for learners to understand that each organization's process for developing the facility strategic plan and the real estate master plan will be specific to that organization and the environment in which it operates. All processes will share some basic steps and concepts.

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Common steps in creating the plan include the following:

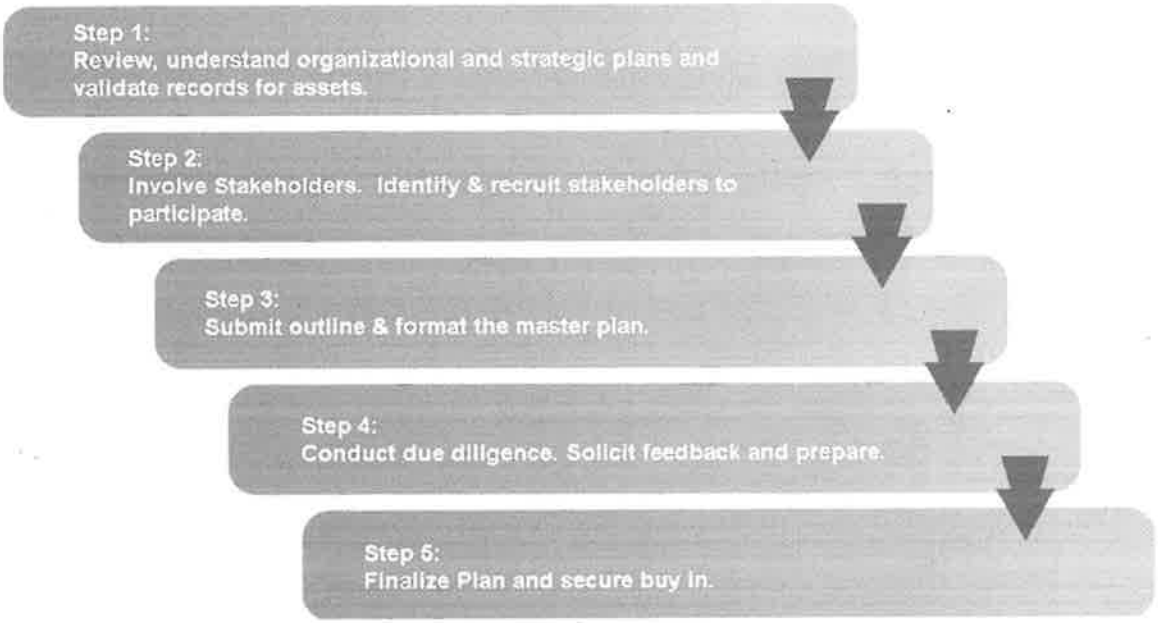

Figure 5 Steps to create the Master Plan

Step 1: Review, understand organizational and strategic plans, and validate records for assets.

Review and understand the strategic plan for the entire organization and the facility's strategic plan. Identify how those two plans will drive the real estate master plan in terms of general geographic locations where a site or space is required and determine the kind of space required.

To ensure that they accurately document the owned or leased properties that the organization currently has, validate or create records in the real estate control file database. Verify size, type, age and lease options, terms and expirations, as well as possible use of vacant space.

Step 2: Involve Stakeholders.

Identify and recruit stakeholders to participate in the real estate master planning process. Seek out those subject matter experts who can lend special expertise and whose opinions will be valued. Secure commitment from executive management and other stakeholders to participate, or for the participation of their representatives.

To understand their requirements and to gather feedback about real estate services, meet with stakeholders, such as executive management, employees, local authorities, etc. Learn about the plans of individual business units, including any planned changes to staffing or

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location, means of doing business, expansion or contraction of business, and any new capital equipment needs.

Step 3: Submit outline and format of the real estate master plan.

Submit an outline for the general organization and format of the real estate master plan (for example, a high-level outline of the sections) to executive management for review and approval.

Step 4: Conduct due diligence. Solicit feedback and prepare.

Conduct due diligence, as appropriate, on the type of real estate investment needed.

Prepare a draft and solicit feedback from key stakeholders.

Step 5: Finalize plan and secure buy in.

Finalize the plan and secure buy-in from executive management.

Five R's

Beyond developing the real estate master plan, the organization will have to implement the plan, monitor implementation, revisit assumptions and re-evaluate the plan as needed, along with maintaining records and data.

A model described as the Five Rs can be used to synchronize real estate planning and business planning. The goal of this model is to ensure that:

- The **Right** amount of real estate and space is provided
- At the **Right** time
- To the **Right** business groups
- At the **Right** costs
- With the **Right** workplace tools

Since this process is used to accommodate modification as needs change, it should provide an economically sound and achievable road map for the organization without creating problems for future development.

Inputs to the Real Estate Master Plan

A facility condition assessment (FCA) is also known as property condition assessment, facilities assessment, facilities survey, conditions survey, facilities audit or condition audit. This assessment, including an environmental audit, can provide information on overall facility conditions for the master plan.

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This assessment is updated on a regular basis. It is a detailed approach to understanding current conditions of the facility, including:

- Environmental and Life Safety
- Architectural/aesthetic
- Structural
- Roof
- Civil/site
- Electrical
- Information Technology (IT)
- Mechanical
- Plumbing
- Accessibility and building code compliance
- Landscaping

Output of the Real Estate Plan

The output of the FCA process is an index number, often expressed as a percentage, and is the industry-accepted standard method for comparing building conditions. The facility condition index (FCI) is based on a comparison of the cost of repairing the deficiencies to the current replacement value of the facility.

FCI = (Cost of deficiencies / Current replacement value) x 100

FCI = (€650,000 / €25,000,000) x 100 = 2.6%

The FCI percentages may be rated against a scale, such as 0% to 100%, with a lower percentage considered better than a higher percentage.

The purpose of the FCA is to guide maintenance and repair programs for the facility. It helps the planner identify those maintenance and upgrade items that are more long-term in nature and should be considered in the real estate master plan. The assessment will also include an inventory of assets (including facility components, warranties and Operations and Maintenance Manuals) and information on the deficiencies and emerging priorities of the facilities that should be considered in a long-term plan.

Deficiencies

The deficiencies may be categorized as building, programming or policy deficiencies. This helps identify those items that should be included in the real estate master plan:

- **Building deficiencies** are any flaws, defects or imperfections related to the building's components or systems. These may include substructure, foundation, support structure, building envelope, building interiors, building mechanical systems (mechanical, electrical or plumbing) and the grounds (paving and landscaping). Identify those items that can be corrected through general maintenance. Include those that may be deferred into your real estate master plan.
- **Programming deficiencies** means that the building and/or grounds do not adequately support the mission of the demand organization or needs of the occupants. This deficiency refers to the amount of space available or how that space is utilized. The Program Adequacy Index (PAI) is complementary to the FCI, but is the cost to meet current program needs divided by the property value. In developing the real estate master plan, discuss whether these deficiencies can be corrected within existing assets or if additional assets are needed to resolve the issue. Those that cannot be corrected with existing assets are likely to have a place in your real estate master plan.
- **Policy deficiencies** means that the building has problems or inadequate systems, so it cannot support organizational standards or practices. For example, if an organization requires redundant energy generation for continuity of operations, and it either lacks such systems or they are not adequate, a policy deficiency would be noted. That item would be evaluated for inclusion in the facility master plan.

Partnering to Develop the Real Estate Master Plan

When developing a real estate master plan, be sure to include all stakeholders, both internal and external, who can affect or are affected by the organization's decisions regarding its real estate strategy. Involving stakeholders engages them as active partners rather than passive bystanders. This approach gives them a sense of ownership and encourages consideration of a broader view beyond their immediate interests. Including stakeholders encourages the adoption of any necessary change.

When identifying partners or stakeholders, consider any of the following that apply to your specific situation:

- Business owners, board members or other members of governing bodies
- Organizational executives and senior leadership
- Functional department heads (finance, accounting, FM, IT, security, fire and life safety, human resources)
- FM Staff
- Representatives from impacted business units (the Customer)

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- Occupants
- Unions or work councils
- Service providers, contractors and suppliers
- Stockholders
- Regulatory agencies
- Utility providers
- Cities and municipalities, ministries, or local agencies
- Community representatives, particularly those representing users of your facility (disability advocates, senior associations, neighborhood associations)
- Financial institutions and other financial partners
- Consulting firms (legal or payroll, for instance)
- Tenant associations
- Visitors

The process requires the participation of some of these stakeholders. Other stakeholders assist your planning by:

- Sharing new and differing ideas and viewpoints.
- Identifying a shared vision.
- Assisting with identification of workable options.
- Defining requirements, constraints and risks.
- Identifying and helping forge relationships that encourage collaboration.
- Helping come up with creative solutions.
- Providing information and education.
- Testing how well recommendations and solutions will be accepted.
- Championing the cause, enlisting support, and promoting buy-in for the plan.

More on Stakeholders

Stakeholder communication is covered in detail in the Communication and Occupancy and Human Factors sections of this study series. A few key concepts apply more specifically to this subject.

In their importance to planning, not all stakeholders are equal, so their participation should reflect that. Some stakeholder groups will have more detailed and frequent

communication, and they may be asked to provide more feedback. Others may be brought in only for specific topics.

The scope of the real estate master plan and other organizational specifics will determine how best to engage stakeholders. However, involvement and interactions are generally based on considerations, which may include:

- Authorization
- Compliance
- Consultation
- Cooperation
- Education
- Empowerment
- Feedback
- Influence
- Information sharing
- Joint planning
- Negotiation
- Participation
- Partnership
- Persuasion
- Team building

Three General Categories for Stakeholders

Stakeholders can influence outcomes and generate or impose constraints, so their involvement in planning is necessary. But not all stakeholders are important to all parts of the plan. The stakeholders can be broken into three general categories:

- Key stakeholders are critical to the overall success of the plan. These may include business owners, board members, leadership and executives, and some customer groups. The involvement of these stakeholders will change over the duration of the project.
- Primary stakeholders are those who are experts on an aspect or phase of the master plan or asset life cycle. Their expertise may be specific to a function, so their participation is likely to change based on the phase of the planning. For instance, when working on finance aspects of the plan, primary stakeholders might include some key stakeholders as well as the finance and accounting department. When

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addressing project constraints and standards, the primary stakeholders might include regulators, designers and consultants as well as FM representatives.

- Secondary stakeholders are generally individuals and interest groups with indirect connections to the matter being addressed. These can include advocacy groups, neighborhood associations or trade representatives. During design and new construction, visitors are secondary stakeholders.

In practice, there may be considerable overlap between stakeholders depending on the master planning issues under consideration or the phase of the master plan or asset life-cycle.

Managing the involvement of these stakeholders requires planning and structure by the team leader or project manager (the person responsible for the overall success of the requirement). The stakeholders must understand their role in the planning process and buy-in to the process to ensure that:

- Stakeholders are involved in the planning process at the appropriate time.
- Stakeholders understand and participate as appropriate.
  - Example: FM staff may be asked for their input into operations and maintenance processes, security and supporting productivity. They will bring considerable knowledge and experience on these topics, including lessons learned from challenges they have faced in the past. They may participate in the development of standards through meetings or by reviewing drafts and responding with suggestions. They may then step away from the process until a later phase.
- Stakeholders provide and receive reliable information that applies to their role in the project in a form that they can understand. Stakeholders should be provided with the appropriate level of information that matches their involvement or decision-making responsibility. You must understand what to communicate to whom and when.
  - Example: Not all stakeholders will have experience in reading building plans or specifications. Others may or may not understand complex financial analyses and concepts.
  - Example: Executives are not likely to want to see review drafts of construction plans, submittals, ASIs (Architects Supplemental Instructions), etc.
- An atmosphere of trust, respect and cooperation is established. Procedures are established to resolve conflict and, equally, to show appreciation for participation of stakeholders.

Components of the Real Estate Master Plan

Master Plan Components

Much as the steps for developing a real estate master plan differ by organization, the plans themselves differ based on the organization's unique real estate and facility needs. Organizations with few real estate assets will have simpler plans than those with campuses across the world. Where they exist, organizational standards should be followed for structure, length and level of detail in the real estate master plan.

Before beginning, even when a standard exists, create an outline for your proposed real estate master plan. If a standard does not exist, you may look to the master plans of the organization for suggestions on sections, content and format. Though most real estate master plans are confidential or classified, you will also find some generic examples through online searches.

Use these guidelines as a reference as you move forward with your plan. In general, a real estate master plan may contain all the following sections:

Executive Summary

The executive summary should provide a high-level overview of the real estate master plan. Consider this the thirty-second elevator speech for the plan. Because you have a limited time to gain and hold the interest of executive management, the summary must be clear, concise and compelling. Consider doing a dry run of your presentation with staff or your management before the executive presentation. It should summarize the issues and

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recommended solutions in a way that makes readers and listeners want more detail. Including a brief paragraph summarizing your process and sources of data lends credibility.

Abbreviations & Terms

Near the front or the back of the report, include a glossary of terms and abbreviations. Your stakeholders come from diverse backgrounds and may not have common understanding of all terms and acronyms.

Methodology & Contributors

This section should provide information about how the recommendations were made and who contributed. Provide details on the resources used, stakeholders and their roles, and the processes used. Consider including a space where the contributors sign to indicate their approval of the final plan. Such an area shows leadership that the stakeholders support the plan.

Statements of Core Organizational Standards

How does the plan meet the organizational mission and stakeholder needs? Include details that will support the recommendations, such as:

- Price and service to customers/end users, as well as customer attraction and retention – Describes the organization's approach to the market, such as whether the organization is a low-cost, no-frills service provider or a high-cost, value-added provider. It supports the recommendation in terms of the type of facility that will attract and retain the customer.
- Financial profitability – Expected rate of return on any recommended investments, along with the cost of capital for proposed financing and any other financial metrics that support the recommendation or inform the decision.
- Employee satisfaction and how the recommendations support the organization's goals of attracting and retaining employees. The section describes the level of service and benefits provided in terms of facilities and their amenities, such as dining, fitness facilities, work environment, access to nature, etc. It may also address the impact on employee transportation and parking availability.
- Environmental focus describes how the recommendation supports the organization's stance on sustainability and environmental responsibility. Even if the organization does not have a formal sustainability policy, any sustainability enhancements brought by the new recommendations should be highlighted.

Functionality, Design and Space Usage

This section highlights how the proposed recommendations address the needs of management and the organizational culture regarding functionality, design and space usage.

- Functionality deals with operational performance and efficiency, so it may include workspace arrangement (offices and cubicles versus open office with assigned or unassigned workstations, types of spaces provided, etc.). Functionality may also address the availability of required infrastructure, such as high-speed data transmission lines or availability of power or water utilities needed.
- Design relates to the aesthetic features of the space – the look and feel of the facility. This section may include furniture and other décor standards.
- Space usage describes the allocation of space by type of employee.

Life Safety & Regulatory Compliance

This section is also a part of the risk management section in the organization's strategic plan, describing life safety and environmental regulations. It establishes the standards that will be applied to the portfolio of properties. Details provided may include:

- Applicable regulatory codes.
- Standard for disability access.
- Environmental and regulatory matters and air quality.
- Risk analysis for catastrophic events, such as floods, wind, tornados, hurricanes, civil unrest or other non-controlled events.

Objectives & Timeline

This is where you will identify which properties are impacted, when the changes need to occur and what the potential cost or savings would be. An effective format is to start with the most immediate needs and move to the longer-term objectives. Also provide similar information for real estate to be acquired. The data for this section comes from the real estate control file database, which contains the specific details of every property. Those details should include:

- A list of changes to be made.
- The timeline for when the change must be completed.
- The resources needed to complete the change and the estimated savings, and
- The requirements/quality that should be met in completing the change.

Potential Risks

This section lists risks and uncertainties not already indicated in life safety and regulatory compliance. Potential risks to owned property might include issues if maintenance or replacement is deferred, along with contingency plans and triggers for immediate action or consideration of an alternate plan. Potential risks for leased property might include escalations in operating expenses paid to the landlord for non-controllable, large increases in property taxes, insurance, utilities, etc.

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Real Estate Profitability

Since FM is typically viewed as a cost center, highlight any profit opportunities due to recommended real estate changes. Include specific plans and opportunities to contribute to revenue and savings.

Support Services

The impact of any modifications on the organization's support services such as distribution management, security, IT, mail, food or janitorial services must be clearly identified, planned and communicated.

Value & Business Effectiveness

For any recommendation, highlight the positive impacts on the value of that real estate and business effectiveness. This will relate to the proposed work environment and its ability to support employee recruitment and retention, employee productivity and creativity, positive morale and job satisfaction, health and welfare, as well as the safety of all occupants. These are subjective measurements and are difficult to quantify in dollars. Be sure to use real examples of how a specific facility-related project can improve these subjective factors. Improvements to thermal comfort, lighting, acoustics and organizational image should be highlighted. This section may also include an assessment of the efficiency of utilities at the site. Any efficiencies that generate sustained cost reductions are worthy of special mention.

External Factors

This section will identify external factors that may affect the plan, for example:

- Global or regional conditions (macro-economic conditions)
- Community and neighborhood impacts (micro-economic conditions)
- Opportunities that affect employment or business through automation

Failing to cover these issues may signal a concern to leadership that, perhaps, some factors were not evaluated. Even if there were no significant findings, it is wise to include some discussion of the potential for these issues.

- **Updates and Revisions**. Because this is a living document that is updated on a regular basis, include a section that outlines how FM will support organizational changes and strategies through reviews and updates of the plan.
  - It is useful to include an index citing revisions to the plans, such as date, issue noted, or section changed and individual making the changes.
- **Appendix**. One or more appendices may include referenced documents, such as lengthy reports and sources of data.

This is a professional document that is worthy of a professional appearance. That appearance should align with the organization's image and that which you wish to present

to leadership. Include supporting graphics, photos, maps, figures and tables that add value to the text.

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Lesson 4: Acquisition and Divestiture of Real Estate

Objectives

On completion of this lesson, you will be able to:

- Explain the importance of due diligence, the advantages of purchasing and leasing, and the negotiation process

Due Diligence

In real estate, due diligence refers to the inspection and investigation over time of a property and the surrounding area before making a commitment to the purchase, lease or other acquisition. An example of due diligence is conducting at least a Phase I Environmental Analysis on a proposed construction site to determine whether any use of that site might be a cause for concern or require costly clean-up or other efforts before developing the land. Items included in due diligence vary by property, and not all items listed here are required or apply. This list may not include everything needed for all situations, but it is a good place to start.

Employee and customer needs

Property characteristics that will support employee productivity, creativity and professional growth and increase customer business effectiveness, including (but not limited to) the following:

- Image
- Ambience
- Aesthetics
- Safe and secure location
- Easy and convenient access
- Employee commute study
- Reasonable area traffic
- Public transportation access
- Parking
- Open space
- Facility amenities
- Cultural activities
- Proximity to colleges and universities
- Local weather and climate
- Excellent facility customer support and service
- State-of-the-art technology
- Functional design
- Floor plate layout/column spacing
- Expansion capabilities
- Adaptable to sustainable operations
- Level of property management provided

- Recreational opportunities
- Close to shopping and services
- Access to food and dining

by the landlord and how it is requested

Table 1 Employee and customer needs

Organizational and financial

Conditions that support business goals and objectives, including (but not limited to) the following:

- Access for employees and customers
- Access to transportation (trucking, rail, air)
- Acreage of land
- Pleasing and inspiring architecture
- Sustainability
- Utility usage and energy efficiency
- Budget – monthly/annual debt service
- Business plan profit/loss alignment
- Buy versus lease options
- Total cost of ownership
- Capitalization rate
- Area business and property taxes
- Tax incentives and concessions
- Unemployment and workers' compensation premiums
- Proximity to special economic zones
- Reporting tools (such as enterprise resource planning software or an integrated work management system)

Table 2 Organizational and financial

Economic conditions

Economic conditions that will optimize the value of the real estate, including (but not limited to) the following:

- Age of development – area growth or decline
- Market conditions – supply and demand cycle and vacancy rates
- Diversity of the economic base
- Price-distance relationship
- Population demographics
- Education level
- Income levels
- Workforce availability
- Employment rates
- Population migration and growth statistics
- Local leadership
- Traffic patterns and routes
- Area crime statistics

Table 3 Economic conditions

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Finance & value

Basic investment analysis that will facilitate the comparison of alternative real estate profiles, including such items as (but not limited to) the following:

- Financial analysis –payback, net present value, internal rate of return
- Latest appraisal
- Current leases and contracts – copies of all leases, licenses and contracts that affect the property
- Historic operation costs – such as taxes, insurance and utilities
- Current financing in place –term, rate and amount
- Property selling or lease price
- Value of surrounding real estate
- Value of comparable properties in the neighborhood and community
- Risk analysis

Table 4 Finance & value

Environmental factors

Environmental regulations that may affect the property, including (but not limited to) the following:

- Phase I Environmental Assessment – environmental condition and environmental history of a particular property, focusing on the possible presence of hazardous materials
- Phase II Environmental Assessment – done, if necessary, as follow-up to Phase I report; involves physical inspections and testing of property, such as core samples, groundwater testing and specific issues of concern identified in Phase I report
- Asbestos survey and report
- Underground storage tanks and above-ground storage tanks located on the property
- Lead paint

Phase I or Phase II may uncover a deal-breaker. Major problems in clean-up procedures and costs may be found through sampling results. Potential liability is not acceptable.

- Mold levels that could adversely affect health or occupancy
- Environmental operating permits – whether the existing use of the property requires any environmental operating permits or triggers any reporting obligations related to air or water quality
- Wetlands
- Shorelines and watersheds
- Flood zones
- Endangered species
- Seismic safety zones
- Water and sewer rights
- Oil, gas, mineral and timber rights
- Aviation restrictions – restrictions within certain distance of airport
- Noise restrictions

Table 5 Environmental factors

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Land details

Land details of the property to be acquired are often found in a survey document, including (but not limited to) the following:

- General topography
- Legal address – metes, bounds
- Southern exposure, northern shade
- Pictures – still, video and aerial
- Property location
- Street address
- Water source
- Sewer
- Comprehensive survey results – details of existing, as-built state of the property, which locates the parcel boundaries, existing improvements, adjacent infrastructure and recorded and apparent unrecorded easements and interests
- Secondary water/irrigation
- Business continuity considerations

Table 6 Land details

Code compliance & physical condition

The specific physical condition of the property to be acquired, including (but not limited to) the following:

- Code compliance – confirmation that the existing use of the property complies with applicable zoning, building and life safety codes
- Condition assessment – rigorous inspection of the property (e.g., heating ventilation, air conditioning, electrical, fiber optics, plumbing, roofing and building façade), existing conditions and the condition of earlier improvements and identification of any potential problem areas such as deferred maintenance and necessary repairs
- Facility condition index
- Site improvements and drainage
- Roads – confirmation of adequate access from public streets, whether new or additional access is required and whether there are planned road improvements that may affect the property
- Railroads
- Circulation/parking/loading determination whether the property has sufficient parking for the intended use and sufficient truck loading facilities as may be required
- Utility systems – overhead and underground
- Natural gas supply
- Wells – water, oil, gas or monitoring wells located on the property

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(FCI). FCI is used in facilities management to provide a benchmark to compare the relative condition of a group of facilities. FCI is primarily used to support asset management initiatives of federal, state, and local government facilities organizations.

- Accessibility
- Stop or caution light at entry road to the property

Table 7 Code compliance & physical condition

Ownership documents

Conditions of the title to be transferred at closing as well as potential title problems, including (but not limited to) the following:

- Title insurance commitment or preliminary title report – documentation of the current state of title for the property, including the precise legal description of the property in total acreage and square feet or square meters to 3 decimal places.
- Easements; reciprocal easement agreements (REA); and covenants conditions (CC&R) – documentation of any easements, REAs, CC&Rs or similar obstacles that may affect use of the property
- Taxes and assessments – determination of the real property taxes and assessments that will apply to the property after closing, including any special assessments

Entitlement & approvals

Determination in advance of which land use entitlements and approvals will be necessary if intended use includes developing the property, changing the use of the property or making other significant changes, including (but not limited to) the following:

- Subdivision/platting
- Historic or open space preservation
- Required approvals and permits – use permits, variances, encroachments, occupancy permits, business or operation-related permits or license and signage permits

International

International real estate acquisitions are subject to different due diligence requirements based on cultures, politics, currency considerations, differences in labor and trade norms,

and the right to own and operate in a foreign country. A few of the more common requirements for evaluation include:

- Requirements to have a local development partner
- Tax and insurance considerations
- Differences in legal transactions between countries
- Currency exchange rates
- Ownership rights
- Political requirements
- Financial norms and practices
- Availability of infrastructure
- Environmental issues and requirements
- Licensing and permits
- Labor relations
- Tariffs
- Quotas
- Customs regulations
- Trade zones

Table 8 International

Purchase vs Lease Decisions

Organizations make purchase-versus-lease decisions based on corporate strategy and the stage of organizational development. In this guide, the topic on the time value of money offers one way to evaluate alternatives. Other considerations also impact that analysis, as discussed on the next page.

Advantages of Purchasing or Leasing

Common advantages of purchasing vs leasing are described in the table below.

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Common Advantages to Purchasing

- Strategic properties are often purchased as they are core to the business, such as a manufacturing plant site.
- Purchasing offers more opportunity to meet organizational standards and convey a unique image due to ability to fully alter or expand a purchased property
- Property is an asset that can appreciate over time
- Owned property may provide needed resources or a buffer during times of inflation. For example, an owner can leverage owned property to get funding for new equipment or operations. To ease the cost of owning a property, the owner may offer all or a portion of that property to other users.
- Owned property life-cycle costs are generally less than leasing because property has a disposal value at the end of its use which can provide a source of future financing.
- Annual depreciation costs can be written off to provide a tax benefit.

Common Advantages of Leasing

- Tactical properties are often leased as they provide flexibility to non-core requirements, such as a sales office.
- A large up-front investment is not required to occupy a leased space, so leasing preserves capital
- Lease payments are often tax-deductible as an operating expense and are not shown as debt, so leasing improves the organization's financial statements.
- Leasing makes it easier for organizations to respond to changes in their needs. For example, it allows the use of swing space when improving a tenant's space.
- Leasing may open the door to state-of-the-art facilities that include desirable features such as high-tech capabilities or sustainability features, without the capital investment.
- Leasing allows an organization to negotiate terms as its needs change.

Table 9 Advantages of Purchasing or Leasing

Purchase vs. Lease Analysis

Even with doing thorough due diligence, the purchase versus lease decision is complex.

One might think of it as merely comparing the net present value of the cash outflows associated with the buy option with those of the lease option, however there are other considerations, questions to be answered, comparisons and analysis that go into the decision.

In this discussion, we examine purchase or lease options, the advantages of purchasing or leasing and the purchase versus lease value. Altogether, the content provides a basic understanding and prepares a facility manager to make a purchase or lease decision. Even

a tenured facility manager with real estate experience would say that a purchase versus lease decision is an area that needs additional expertise and support along the way.

An organization has a need for space. The purchase or lease choices may be broadly categorized in the following way.

Purchase Options

Options	Outcome
Purchase of real estate for the organization to own	Provide control of real estate, site improvements and related facilities
Purchase of real estate with development partner	Shares capital investment with partner

A purchase option may result in a:

- Purchase of existing space and a remodel
- Purchase of land and building, demolition and new building construction
- Purchase of land and new building construction

Lease Options

Options	Outcomes
Lease with no capital funds for upfit (remodel or tenant finish).	Results in higher rental but allows the organization to forgo cash investment or tying up its capital. This often will not include the fixtures, furniture, and equipment (FF&E) that the organization requires at the location.
Lease to obtain lowest possible rent	Requires the organization to provide some or all of upfit funds to minimize rent. If conditions allow, the lessee may choose to occupy the space as-is and make tenant-finish upgrades as funds allow.
Lease for short term (less than 3 years)	Results in higher rental but fulfills an organizational need to use real estate for a specific purpose over lease term. In periods of high uncertainty, an organization may choose a short-term lease, allowing it to extend the lease term or relocate to a more permanent spot as it matures.
Lease for long term	Fulfills an organizational need to use real estate for specific purpose over the lease term.
Lease with purchase option	Allows an organization to defer capital purchase to

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	some future date for a specific price. An organization may choose this option if it is not yet able to purchase but would find relocation difficult, perhaps due to specialized installed equipment.
Ground lease	Long-term lease (10-25 years or longer) of land only; allows the organization to own capital improvements made to the property and amortize capital investments over the term. At the end of the lease, the land and all improvements are generally retained by the property owner.
Build to suit	An organization desires not to own property but pays property owner rent to cover investment and then leases property (usually five to 15 years or more).
Sales-leaseback	This is a hybrid, where at the end of the lease, the land and all improvements are generally retained by the property owner.

More About Lease Options

Lease options include:

To acquire property in the desired location, a specific arrangement may be necessary. For example, in many countries and regions, special economic zones (SEZ) have been established to increase trade, employment and investment. Laws and business practices in the SEZs may differ from those of the country in which they reside, and lease or purchase options may be quite different from those found in the home country of an organization.

You may also want to review the impact of the lease on the organization's financial statements. There are two general types of lease accounting methods that are included in GAAP (Generally Acceptable Accounting Principles).

In an operating lease, the lease payments are reported as a rental expense on the income statement. Historically, this is the most common type of lease accounting by far and is valid for leases under 12 months in duration.

The second analysis is the capital lease. In 2016, the Financial Accounting Standards Board (FASB) issued new accounting rules that require leases of more than 12 months to be capitalized or shown on the balance sheet as both an asset and a liability. (Murray, 2019). Current capital leases will maintain the same accounting treatment and are being renamed finance leases.

Current operating leases will maintain the same name, but will follow a much more different accounting treatment, being reflected on the balance sheet as assets and liabilities under the new standards.

Finance leases will create a "right of use" (ROU) asset that will be amortized, and the lease liability will result in interest expense; both of these treatments are consistent with today's GAAP. Operating leases will create a ROU assessment that will be amortized, on a straight-line basis, reflecting a single lease cost on the income statement, over the shorter of the asset's useful life or term of the lease.

Because the interest expense decreases over the period that a liability is decreased, finance leases reflect greater expense than operating leases in the early years and less expense in the later years. They could potentially create a significant timing difference in expense recognition, depending on the number and size of the leases.

Since the FASB rules have changed regarding lease accounting treatment, you should contact your accounting and legal service professionals to review your portfolio. Your accounting department or legal service professionals can provide their recommendations on how finance (capital) leases and operating leases should now be treated and reported.

Service Charge Allocations

A service charge arrangement is established in the tenant's lease. It is how tenants pay for the upkeep of the common areas of a facility. The service charge may cover insurance for buildings, grounds and common systems as well as property taxes. Other items and services may also be included. Facility managers must be sure to budget enough to cover these costs.

Terminology varies, but these service charges may be referred to as transfer prices, activity-based budgets, cost accounts, cost allocations, cost assignment, service chargebacks, operational expenses or second leases. In the United States, a typical lease may call for CAM (common area maintenance) charges, which include all hard costs associated with maintaining the common areas of the facility, including roofs, grounds, parking, structure, common spaces and infrastructure elements plus insurance.

The cost allocations may be based on one of several methods of accounting:

- **Base rent method**. An allocated cost for common facility services and space is included in the base rent. This is calculated using gross square meters/feet occupied. Services that exceed the base package are charged at actual cost plus a markup for overhead.

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- **Cost model**. In this method, the FM department develops a detailed model for all space and services and costs are allocated by space, by headcount, by workstation, or by some other predetermined means.
- **Facility cost allocation (FCA).** This method is often used when an internal FM organization services a demand organization. (Michel Theriault describes FCA in Managing Facilities and Real Estate.) The goal is the efficient and effective use of real estate resources. To achieve this goal, two components are used – costing and management. The costing component facilitates accurate and effective cost calculations on a unit basis (per service call, per modified workstation, per service provided). The management component provides FM with the influence to drive effective behaviors that benefit the entire organization, such as efficient use of resources.

Regardless of which service charge costing system is used, it must be:

- Equitable – Fair to all users so that one tenant does not subsidize the cost of another.
- Accurate – The costs must be correct.
- Transparent – A tenant must understand the chargeback process and methodology (what is being charged and how).
- Predictable – A tenant must be able to predict or control the costs and understand overages that result in additional costs. Any opportunity to reduce costs must be clear.
- Economical – The system must be relatively inexpensive to administer.

A service charge is not about profit or loss. It should offset FM costs incurred in connection with the maintenance and repair of common areas and other items or services according to the terms of tenant leases. It should always serve as a management tool. If the intent is clearly communicated and the practices are uniform, fair and transparent, there is less likelihood of conflict with tenants.

Leasing

Different Lease Types

Once the decision has been made to lease a property, the work begins to determine the most favorable lease terms based on the organization's requirements.

There are many types of commercial leases. The most common types are highlighted below. The terms "landlord" and "tenant" are synonymous with "lessor" and "lessee". Note

the differences in where specific costs related to the lease are carried. Those are key factors that may affect your decision on the type of lease to engage in.

The table below identifies the different type of leases and their characteristics.

Type	Characteristics
Gross lease (full-service lease)	• Landlord pays all the usual operating costs associated with owning and maintaining the rented space. • All costs are included in the base rent figure stated in the lease. • Tenant pays only base rent, no additional rent. • Landlord may cover utilities, water and sewer, repairs, insurance and/or taxes.
Modified gross lease (modified lease)	• Landlord and tenant both pay some mix of operating costs. • The most common tenant responsibilities are electricity, maintenance and janitorial services. • Usually requires separate metering for tenant's electrical usage.
Net lease (single net lease or N)	• Tenant pays for their space as well as some or all the usual operating costs associated with maintenance and use of the property. • Expenses passed through on to the tenant may include utilities, janitorial services, property management fees, sewer, water and trash collection. • Specific meaning of a net lease varies from market to market. Each lease agreement must be analyzed carefully to determine which expenses are paid by whom. • Tends to favor the landlord, so negotiated caps (the maximum amount a landlord can increase fees each year) are advisable.
Double net lease (net net lease or NN)	• Tenant pays property taxes, repairs, site maintenance, building upgrades, routine maintenance and all operating expenses. • Excludes insurance. • Insurance is paid on top of the tenant's regular monthly rent.
Triple net lease (net net net lease or NNN)	• Tenant pays property taxes, insurance, repairs, site maintenance, building upgrades, routine maintenance and

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	all operating expenses. • Additions are paid on top of the tenant's regular monthly rent.
Revenue-based lease (percentage lease)	• Landlord receives some percentage of the tenant's monthly sales above a predetermined breakpoint (sometimes called overage rent). • Percentage is paid in addition to base rent. • Commonly executed in retail mall outlets and other commercial retail leases.
Index lease	• Tenant's base rent changes over the term of the lease. • Amounts to be paid are calculated using an established index (e.g., the consumer price index). • Increases in the index generate a corresponding increase in the lease payment.
Step lease	• Tenant's base rent changes over the term of the lease by pre-specified amounts. • Amounts to be paid are fully determined and known with certainty at the time the lease is signed.
Green lease	• Integrates sustainability elements into lease negotiations (e.g., building design, energy and water efficiencies, equipment, appliances, waste minimization and other sustainability objectives). • Structured in such a way that both parties receive incentives for sustainable choices.

Table 10 Different lease types & characteristics

In leasing, it is important to remember that you are in a negotiation. In most circumstances, you will be able to participate in discussions on the type of lease and the specific terms, such as:

- Rentable square feet (rsf) or square meters being leased
- Rent in dollars/rsf
- Tenant upfit allowance in dollars/rsf provided by the landlord
- Free rent provided generally in months
- Parking
- Start date of the lease payments

- Operating expense (capped if possible)
- Amenities provided by the landlord
- Exterior signage

If in doubt about what conditions should apply for your area, consult with a local commercial real estate broker. In a few circumstances, lease terms and conditions are regulated. For example, commercial properties in some areas may be subject to rent control, and the real estate broker may be entitled to a commission base with a minimum charge. This is another area to evaluate in your due diligence process.

Basic Components in Lease Agreements

For those with no experience in reading legal documents, the terms in a lease agreement can seem complicated. Facility managers who recommend or approve a lease agreement must carefully read and fully understand everything in it. The terms of the agreement spell out the various factors that affect the tenant's use of the space, including costs, who is responsible for specific maintenance, what is required if the tenant wishes to modify the space, conduct on the site and many others.

Since verbal contracts are difficult to validate and may not stand up in court, the contract must be in writing. Be especially aware of referenced laws and waiver provisions. What may seem like harmless language at initial reading could set you up for unexpected costs later. It is usually best to have your legal counsel review the terms of the agreement and to specifically ask for clarification of any items you do not understand.

Many terms and their meanings are standard, but when conducting business globally, it is important to understand any differences in meaning or context. Common lease components in the U.S. include:

- **Bankruptcy.** Many leases contain a bankruptcy clause or the jurisdiction for the lease may have bankruptcy laws that protect the lessor or the lessee in the event of a bankruptcy. While no one enters into a lease anticipating bankruptcy, it is important to understand these provisions.
- **Code Compliance.** A lease clause called "Compliance" or "Compliance with Laws" covers the landlord's expectations that a tenant will keep the building "up to code" and the tenant expectation of the landlord to do the same.
- **Common Area Maintenance (CAM).** This clause describes the basis of cost sharing for CAM charges, a common component of lease rates. This may include upgrades and maintenance to grounds (including landscape and snow removal), pavement, common restrooms, hallways, lobbies, stairways and walkways as well as roof,

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structure and infrastructure such as electrical systems. It may also include a share of the maintenance of common amenity areas.

- **Demised property** is the term used in leasing to describe the transfer of an interest in real property to someone for several years. Terms may give the landlord a reasonable degree of control over the property while the tenant may want to minimize restraints.
- **Floor area measurements** are tied to lease rates. Common floor area measurements should be based on facility standards, such as the BOMA Standard Method for Measuring Floor Area in Office Buildings. Key terms include the following:
  - **Primary circulation** is the portion of the building that is a public corridor or lobby or is required for access by all occupants on a floor to stairs, elevators, restrooms or building entrances.
  - **Secondary circulation** is the portion of a building required for access to some subdivision of space, whether bound by walls or not, that is not defined as primary circulation. This may include aisles, corridors and hallways.
  - **Assignable area** refers to the portion of a floor or building used to house personnel, furniture and equipment. Assignable area = Usable area – Secondary Circulation
- **Rentable area** represents the facility gross area minus exterior walls, major vertical penetrations and interior parking space. Rentable area is the basis of the lease payment.
- **Gross leasable area** is the total floor area of a building designed for a tenant's use.
- **Useable area** is the portion of the building or floor available for occupants.
- **Improvements and alterations**. The lease should specify the agreement between the landlord and tenant regarding any tenant improvements. It should also specify terms for any future alternations. These terms may require the space to be restored to original condition when the lease is terminated unless negotiated otherwise.
  - The agreement should specify who does the design, the actual work, any requirements for when the work is done as well as who will pay for it.
  - It is common for a lease to specify a landlord's right to review and approve tenant alterations without committing to extra costs or to reserve the landlord's right to maintain control of any structural alterations, modifications to entrances, stairways or other common features. This reserved right can be beneficial to the tenant since the tenant has limited information about the original construction, structure and condition of the facility.
  - It may be easy to skip over the terms on how the space is to be returned at the termination of the lease. Pay attention to phrases such as "space shall comply

with all applicable codes in force at the time" which could require the lessee to make facility upgrades to comply with changed codes prior to surrender.

- **Insurance**. In an insurance clause, the landlord may require a tenant to carry property and liability insurance for the tenant, including Furniture, Fixtures & Equipment (FF&E). The tenant should require the landlord to carry property and liability insurance for the building and the property improvements. The tenant may elect to negotiate for rental interruption insurance to protect against business disruption due to a natural disaster or loss of use due to actions by another. The tenant may also negotiate for leasehold insurance, which protects against lease cancellation for reasons beyond the tenant's control.
- **Lease abstract**. A lease abstract is a summary of key information in a commercial real estate lease. Think of it as the executive summary and table of contents of the document. It summarizes and documents commonly referenced information from the lease and any lease modifications. Lease abstracts provide a quick reference to information. For example, to help in managing a portfolio of leases, you would find the lease expiration and notice and/or option dates. Abstracts should be kept simple. They should cut through the legal language and summarize the important information that is referenced more fully in the lease. This abstract information is often the basis for data in your real estate portfolio data base.
- **Lease audit rights**. Most leases require a tenant to pay for a share of building operating expenses, CAM charges, real estate taxes, utilities and other costs. This lease provision grants the tenants the right to review the books and records of the landlord to ensure that the charges billed are correct and in accordance with lease terms. A lease audit (also known as rent audit, CAM audit, escalation expense audit or lease review) can be a useful tool if the charges seem excessive. These clauses will typically include procedures for resolving any disagreements as well as how to handle any erroneous overcharges.
- **Maintenance**. A maintenance clause specifies which maintenance items the tenant is responsible for and which ones the landlord is responsible for. A clear understanding of this is critical to ensure that the lessee is prepared to fund the required maintenance. It also ensures that the lessee does not unwittingly perform maintenance that was the responsibility of the landlord.
- **Parties**. The "parties" clause specifies the legal names of the parties to the agreement and identifies landlord/lessor and tenant/lessee. The use of business names on the lease places responsibility for the lease obligations on the organization versus the individual executing the agreement.
- **Premises** describes in precise terms the space that the tenant may occupy. The description should include access to storage rooms, conference spaces, parking and any common amenities that are included.

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- **Rent** is the amount of the monthly obligation, exclusive of shared maintenance charges. It may be possible to negotiate certain terms regarding rent, such as:
  - **Automatic rent increases.** When, how much and what they are based on throughout the term of the lease. This helps the lessee to anticipate rising cost for the full term of the lease.
  - **Tenant improvement deductions.** Which approved improvements to the building by tenant does the landlord agree will result in rental decreases?
  - **Operating costs.** How much of the landlord's operating costs will be passed on to the tenant? Shared building costs (such as CAM charges) can be unpredictable, but you can usually estimate them based on historical information and known planned improvements. These charges should be listed in the lease and are likely to be qualified as estimates.
  - **Unanticipated expenses** may be listed as a clause to determine the methods that will be used for dealing with unanticipated rent issues and increases.
- **Security deposit**. A security deposit is the amount required by a landlord before a tenant occupies a facility. It is money set aside as security against potential damages caused by the tenant. As an alternative, the landlord may ask for a letter of credit from the tenant's bank. In that case, the bank sets aside an agreed-upon amount of funds for use by the landlord should the tenant default on financial obligations. The landlord maintains control of the security deposit or credit for the full term of the lease. A deposit does carry some risk, and your organization may be large enough to negotiate to eliminate it. If your organization does pay a deposit, request the return of the deposit at the end of the lease.
- **Term**. This clause describes the length of the lease including start and end dates. The term of a lease will generally impact the monthly cost for that real estate. A tenant is likely to receive a rent discount for a longer term.
- **Use and exclusive**. The use and exclusive clauses define how a tenant can and cannot use the property being leased. As the legal status of formerly prohibited substances has changed, this clause has become increasingly important. The use clause may prevent a tenant from expanding business into new areas. It may also place limitations to protect other tenants. For instance, a lessee engaged in applying noxious industrial coatings to scientific equipment may be required to provide specialized exhaust systems to protect other lessees from the fumes. Other use terms may include:
  - Specifications or restrictions on signs and advertising on premises.
  - Concerns about liability or impacts based on type of business.
  - Personal biases about certain kinds of business activities.

The exclusive clause is a landlord's promise that only the named tenant may engage in that business. This clause would, for instance, ensure that the lessee would not lease an adjacent space within a shopping mall to a direct competitor of a tenant.

- **Utilities** clause describes how the utilities will be billed and paid for. A part of due diligence for a lease may include checking that separate utility meters exist to ensure that one tenant practicing energy efficiency does not pay for another's use of power-heavy equipment.
- **General provisions.** These provisions cover basic operations of the lease, including:
  - **Parties to the lease**. This clause ensures that the proper authorities recognize both sides entering into the contractual relationship, and that the individual signing the lease has the legal right to do so. The legal right to contract is generally set in the organization's formal organizational documents (such as bylaws) and is often limited to one or two corporate officials.
  - **Payments to be withheld** specifies that in the event of a conflict, the tenant should continue paying as specified in the lease until the conflict is resolved. At that time any, any refunds should be made.
  - **Broker's commission** should be specified in writing, stating who (landlord or tenant) will be responsible for paying the commission.
  - **Quiet enjoyment** defines what "quiet enjoyment" means for that lease and includes remedies for resolution if needed. In the previous example about the industrial coating company, failure to properly vent odors that impact other lessees could be considered failure to provide quiet enjoyment.
  - **Attachment of premises/liens**. Any lien placed on the property without the landlord's consent is considered a default. This means that the lessee may not use the property to secure debt or another obligation.
  - **Attorney's fees**. This clause may state that the loser of any legal proceedings will be required to pay the legal fees of both parties.
  - **Notices** gives the address of the person(s) to whom any notices related to the lease should be directed.
  - **Landlord's processing costs** specifies that any documentation can be provided at a price. This may include documentation such as drawings or specifications requested by the tenant.
  - **Arbitration**. If this clause is included, both parties agree to go to third-party neutral arbitration rather than through the court system to resolve a conflict. Make sure that you understand your corporate legal requirements. Many corporations do not accept arbitration in any legal documents.
  - **Demolition**. The landlord may reserve the right to demolish and rebuild for a stated cause during the term of the lease.

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- **Encumbrance**. The landlord must consent to any encumbrances. An encumbrance is a claim made against a property by a third party who has no title in the property.
- **Time** states the fixed time periods applicable to the lease.
- **Guaranty of lease**. All signers of the guaranty are liable for the full amount of the lease.
- **Notice of mortgage intent to cancel** requires tenants to notify the landlord's lender before taking any action that will jeopardize the loan payment. This may include landlord failure to cure (remedy) a default or eviction. For example, if a landlord does not fix a leaky roof as required, the lessee may serve that landlord with a notice of failure to cure, and the landlord's lender must be notified.
- **Financial disclosure** states that the landlord has the right to review any available financial statements or credit reports on the tenant before or during lease negotiations. The tenant should also require the same rights from the landlord.
- **Waiver of jury trial and counterclaim**. Should any legal proceedings begin concerning the lease, both parties waive the right to a jury trial. If both sides agree to an arbitration clause, this provision may be removed.
- **Recordation** is the process by which the transfer of property rights from landlord to tenant can be made part of public record. This may be necessary for the tenant to get leaseholder's insurance.
- **Covenants and conditions** clauses explain what actions may be taken for violation of a covenant or a condition.
- **Successors and assigns**. This states that lease covenants apply to all succeeding tenants.
- **No prior agreements** clause indicates that only the most recently signed draft of the lease is binding.
- **No oral modifications** clause specifies that the entire agreement must be in writing to be enforceable.
- **Lawful money** states what monies may be used as payment.
- **Invalid provisions** clause indicates that if one aspect of the lease is found invalid, the rest of the lease is not affected.
- **Gender captions** clause clarifies that "his" refers to both "his" and "hers" and that the words beneath a paragraph heading define the agreement, not the captions themselves.
- **Examination of lease**. The tenant has the right to have some time to examine the lease. If the landlord gets another offer, the tenant may request notice so

that he can decide before the landlord offers the property to another. This is like a right of first refusal.

Also note that some cities may have general provisions that are unique to that city and or country.

Exit strategies

Leases should be negotiated and structured to be agreeable to both parties and allow for changes in business situations, such as moves, expansions, contractions, facility closings, business closings, etc. Even with the best possible real estate master planning, situations sometimes require organizations to alter their plans, in positive or negative ways.

Facility managers and financial advisors need to be aware of options that allow them to exit a lease before it expires, and the financial and legal impacts of the various consequences. Understanding this from the start will help the organization avoid surprises.

Common exit strategies may include subletting and assignment, and termination and lease buyout, as described below.

- **Subletting and assignment**. If allowed under the terms of the lease, and with the landlord's approval, subletting and assignment provisions allow a tenant to get out of a lease or permit someone else to use it. The tenant generally remains liable for the lease obligations, but some of their financial liability may be transferred to the subtenant or assignee. Consider the following:
  - In a sublease, the property is partially transferred, and the agreement is only between the tenant and the subtenant, not between the subtenant and the landlord. Subleases do not affect privity (contractual relationship) between the landlord and the tenant, and they do not create privity between the landlord and the subtenant (explained in the next bullet).
  - An assignment is a transfer for all or part of the leased premises for the remainder of the term. Proper documentation is required between the landlord and assignee to ensure that the assignee properly assumes liability for the premises. Privity of estate (liability for certain covenants in the lease) ends between the landlord and the original tenant when the lease is assigned. This means that the assignee replaces the tenant and assumes responsibilities under the lease.

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  - When subletting and assignment terms are being negotiated, you must understand the conditions under which you will be allowed to sublease or assign. The landlord may include provisions that allow them to refuse a subleasing or assignment or allow only specific permitted uses.
  - Under a subletting and assignment provision, the landlord may choose to recapture the space. In that event, the tenant no longer has the right to sublease or assign the space but is still obligated to the terms of the lease.
- The original negotiated terms of the lease may include conditions under which the lease may be ended. Here are a few examples of conditions that might allow for **termination** of a lease:
  - If the premises are made unfit for intended use for a length of time.
  - If a substantial part of the premises is made unavailable, or if needed facilities are made unavailable. This may be due to major fire damage, structural failure, tornado or wind damage, etc.

On termination of a lease under these terms, a landlord may recover unpaid rent up to the termination point but not beyond it.

- **Lease buyout** refers to an agreement where the tenant's lease is given up for the rest of its term. Either the landlord or the tenant may buy out the lease. A third party may also buy it out. No matter who buys it out, the existing lease is no longer in effect.
  - The landlord may not agree to a buyout.
  - A tenant may choose to buy out the remaining term of a lease to relocate the business to a different location. The buyout may be for the full amount owed for the remaining term of the lease. When a lease buyout is expected, many landlords will try to lease the property to someone else and release the tenant from liability for payments after the new lessee is secured. The organization may still be responsible for the full amount for the remaining term of the lease.
  - A landlord may choose to buy out a lease to replace an existing tenant with a new one who will pay a higher rent. In that case, the landlord pays the tenant an agreed amount to terminate the lease. A tenant who has an excellent payment and maintenance history is less likely to face a lease buyout by the landlord, but even with an ideal tenant, this can occur.

Here are some guidelines for negotiating and implementing assignment and subletting exit strategies:

- Do carefully assess organizational needs in terms of expansions and contractions.
- Do get legal counsel involved early.
- Do require assignment and subletting flexibility and sharing rights.
- Do review frequently existing agreements on your tenant rights.
- Do limit extent of guarantees and amount of security deposit.
- Do limit the initial out-of-pocket costs (such as the landlord doing improvements or providing allowances to preserve lines of credit and savings for possible downturns.
- Do get terms in writing. Provide the sub-tenant a redacted copy of your lease as an exhibit in the sub-lease.
- Do be cooperative and forthcoming in trying to work out an exit solution.
- Do not rush; always negotiate terms.
- Do not consider a location based only on the rental terms; remember, due diligence is key.
- Do not sign a lease without negotiating or addressing important terms to preserve exit strategies.
- Do not hesitate to talk to the landlord about concessions.
- Do not overlook necessary permits or approvals and their impact on the timing.

Decommissioning

When moving out of a leased space, you must take all administrative and technical steps needed to restore the property to the conditions specified in the lease. This is called "decommissioning". To ensure that your organization receives its complete security deposit and is not charged penalties or fines, you must meet all requirements for that space that were included in the lease.

If the term of the lease was long, the landlord may decide to refurbish the space prior to a new tenant moving in. In this case, not as much restoration will be needed. If the term of the lease was short, the lessee may have to fully restore the space to its original state.

Decommissioning may include any of the following:

- Returning the space to a predefined or documented condition. This includes eliminating any modifications or add-ons that would result in penalties, cleaning up the space, replacing flooring and painting. To ensure that the right activities are included but no unnecessary work is done, facility managers should work with the landlord to determine specific requirements at the time of decommissioning. If a landlord has a new tenant lined up, full restoration may not be necessary, and a written exception may be provided.

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- Disposing of assets includes liquidating, relocating, recycling and removing office furniture, racking and technology equipment.
- Removing voice and data cabling to ensure compliance with codes.

Decommissioning may involve building codes such as plumbing, environmental conditions and regulatory requirements. The extent of decommissioning will vary by the type of facility. For example, decommissioning a large plant with heavy equipment will be a major project and may require third-party expertise and coordination.

Corporate Real Estate Contracts (Agreements) for Leased Property

The FM professional who is responsible for corporate real estate leases must be able to manage the financial and business information included in the leased property that their organization has chosen to financially, and legally take charge to support its mission. A FM can't manage what he or she doesn't know. This unit covers important aspects of abstracting data from a corporate real estate lease contract so it can be utilized by the organization for short and long-range planning and management.

The main objectives of developing an abstract are to understand each of the business and financial terms of the lease, ensure that all terms are being addressed and acted upon by the organization and the landlord and that all business and financial obligations are current through the end of the lease term. Your corporate in-house or outside legal counsel should advise on any legal terms that may pose legal obligations to the organization that will require continued review.

Required Tools & Materials

You need the following tools and materials to complete a real estate lease contract.

1. A signed copy of all current real estate leases and related documents including e-mails (could be PDFs), a listing of the addresses of all leased properties, and the business unit that is/will be using the property.
2. A real estate data base computer system that is user friendly and can develop/print necessary reports of abstracted lease property information. (If the FM professional has less than 50 properties, a spreadsheet data base could be used).
3. Have staff who are trained to abstract lease financial and business information and associated documents into the database system, keep abstract data of each leased property up to date, and develop/print reports as/if/when required.

Leased Property Definitions

Before we look at the elements of an abstract of the business and financial terms of a lease, let's review common leased property definitions and terms used to describe data within a real estate management system.

Term	Definition
Lessor	The legal name of the landlord.
Lessee	The name of the business unit/tenant.
Real Estate File Number	Real Estate ID number for each individual leased location consists of a Business Unit Letter, Company Number, State Number, Account or Responsibility Number, Building Number and a Parcel Number.
Location Manager	The name of the Business Unit or Corporation person/facility manager responsible for the day-to-day management of the property.
Type of Facility	A brief explanation of the intended use for the leased space. (Office/Warehouse, etc.)
Legal Review By, Date	If a legal review was made, who within the business unit did the review and the date of completion.
Property Owners Representative	The person, broker or organization who represents the property owner.
Property Leasing Agent	The person, broker or organization who represents the property owner as its leasing agent.
Occupancy Date (MMDDYY)	The date in which the tenant (lessee) will or did occupy the leased space.
Rent Payment Payable to	Name of the person or organization to which the rent check is made payable.
Lease Effective Date (MMDDYY)	The date in which the lease becomes effective (also known as the lease commencement date).
Total Term	The complete time the tenant occupies the space in years, months, and days.

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Termination Date (MMDDYY)	The date the lease expires.
Options	Whether or not the tenant has an option to renew the lease.
Holdover (monthly, daily, none)	Basis for rent applied for occupying leased space after the lease has expired.
Escalation Clause (Yes/No)	Yes, if the rent/operating expenses, etc. escalates during the initial term or option periods of the lease.
Common Area Factor	A computed ratio (often the BOMA definition) which is usually expressed in a percentage of usable to rentable sq. feet.
Total Lease commitment ($)	The total amount due under the contract for the initial term of the lease. This amount is calculated on the base rent plus any planned escalations, if determinable.
Escalation Terms	Brief, general or specific comments which describe the terms in the lease which cause the base rental and/or other costs to increase during the term of the lease.
Common Area Maintenance/Month	Monthly charge for common areas (i.e. site maintenance, snow removal, lawn care, insurance, etc.)
Operating Expense/Month ($)	Monthly operating expenses charged to the tenant by the landlord (i.e. janitorial, maintenance, taxes, insurance, electrical, water, natural gas, property management fee, etc.)
Rate per Sq. Ft. per year ($/R.S.F.)	How much the tenant pays per rentable square foot per year. This could be an automatically calculated amount.
Base Rent Payment per Month ($)	The base rent due to be paid by the tenant each month (R.S.F. x $/R.S.F./12 months).

Purpose of Abstracting Agreements

To proactively manage a corporate real estate lease contract, the FM must have a signed copy of the lease, amendments, and correspondence, and then abstract the agreement into a computerized facility management application or database.

Developing an Abstract

Let's look at developing an abstract utilizing a Leased Property System Input Sheet. For ease of reference, a hard copy file of all lease documents is recommended.

Prior to getting started you'll need the following:

- Signed copy of all current real estate leases
- Related documents including e-mails and other correspondence (could be pdf's)
- Listings of the addresses of all leased properties
- Name of the business unit that is/will be using the property.

LEASED PROPERTY SYSTEM INPUT SHEET

REAL ESTATE FILE NO.: PAGE 1 OF 4

BUSINESS UNIT
COMPANY NO.
STATE NO.
ACCOUNT NO.
BLDG. NO.
PARCEL NO.

GROUND LEASE OR EASEMENT (G/E)

DATE SUBMITTED:

DATE OF LAST CHANGE:

SUBLEASESOR? (Y/N)

NEW LEASE/ EXTENSION RENEWAL: (L/E/R)

VACANCY APPROV.: (Y/N)

PROPERTY INFORMATION

LOCATION NAME:

LESSEE: (UNIT/ DIVISION)

PROPERTY ADDRESS: NUMBER OF FLOORS:

(COUNTRY DEFAULT IS "USA")

COUNTY: COUNTRY: USA

CITY: STATE: ZIP:

LOCATION MANAGER:

AREA CODE: TELEPHONE: EXTENSION: E-MAIL: @

LESSOR: (LANDLORD)

ADDRESS:

CITY: STATE: ZIP:

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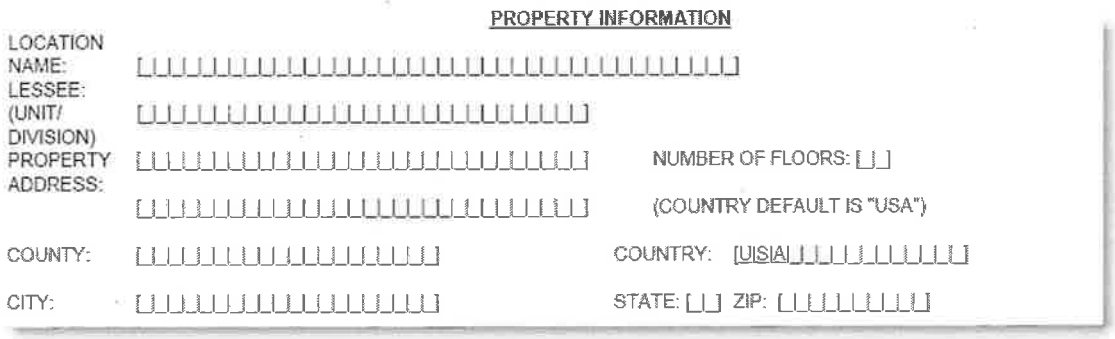
Property Information

Start your lease abstract process by looking at the contract/agreement for the following business property information (Note: Some lease documents may not include all the information requested in the Leased Property System Input Sheet).

Property Information

Required Fields

LOCATION NAME:
LESSEE (UNIT/DIVISION) PROPERTY:
NUMBER OF FLOORS:
LOCATION STREET ADDRESS:
COUNTY:
(COUNTRY DEFAULT IS "USA") COUNTRY:
CITY:
STATE:
ZIP:



Lessor Information

Required Fields

LESSOR (LANDLORD COMPANY NAME):
LANDLORD REPRESENTATIVE NAME:
ADDRESS:
CITY:
STATE:
ZIP:
AREA CODE:
TELEPHONE:
EXTENSION:
E-MAIL:

LESSOR: (LANDLORD) [ ]

ADDRESS: [ ]

CITY: [ ] STATE: [ ] ZIP: [ ]

AREA CODE: [ ] TELEPHONE: [ ] - [ ] EXTENSION: [ ] E-MAIL: [ ]@[ ]

Type of Facility & Leasing Agent

Required Fields

TYPE OF FACILITY:
LEGAL REVIEW BY:
DATE:
FINANCIAL REVIEW BY:
DATE:
PROPERTY LEASING AGENT COMPANY NAME:
PROPERTY LEASING AGENT'S REPRESENTATIVE NAME:
AREA CODE:

TYPE OF FACILITY: [ ]

LEGAL REVIEW BY: [ ] DATE: [ ]/[ ]/[ ]

FINANCIAL REVIEW BY: [ ] DATE: [ ]/[ ]/[ ]

A/R REQUIRED (Y/N) [ ]; A/R APPROVED (Y/N) [ ]; IL ONLY (Y/N) [ ] IF Y, DATE: [ ]/[ ]/[ ]
PROPERTY
OWNERS REPRESENTATIVE: [ ]

AREA CODE: [ ] TELEPHONE: [ ] - [ ] EXTENSION: [ ] E-MAIL: [ ]@[ ]

PROPERTY LEASING AGENT: [ ]
PROPERTY
LEASING AGENT'S REPRESENTATIVE: [ ]

AREA CODE: [ ] TELEPHONE: [ ] - [ ] EXTENSION: [ ] E-MAIL: [ ]@[ ]

Rent Payment

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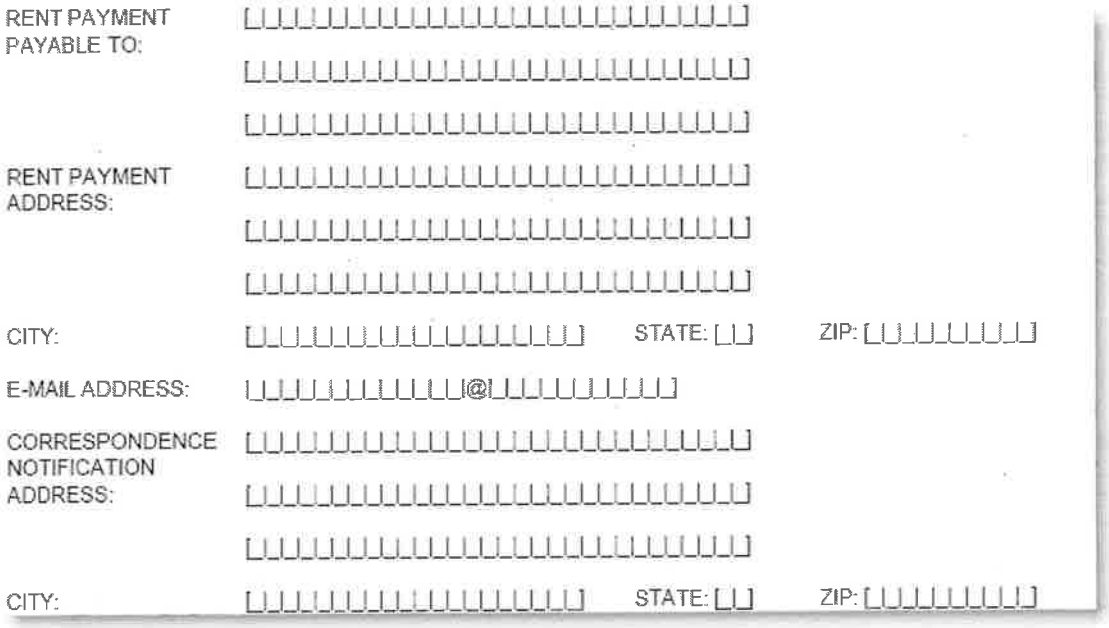
Required Fields	RENT PAYMENT PAYABLE TO: RENT PAYMENT ADDRESS: CITY: STATE: ZIP: E-MAIL ADDRESS: CORRESPONDENCE NOTIFICATION ADDRESS TO LANDLORD: CITY: STATE: ZIP:



Terms of Lease

Terms of Lease generally include business terms of the lease agreement being abstracted.

Effective Date of Lease

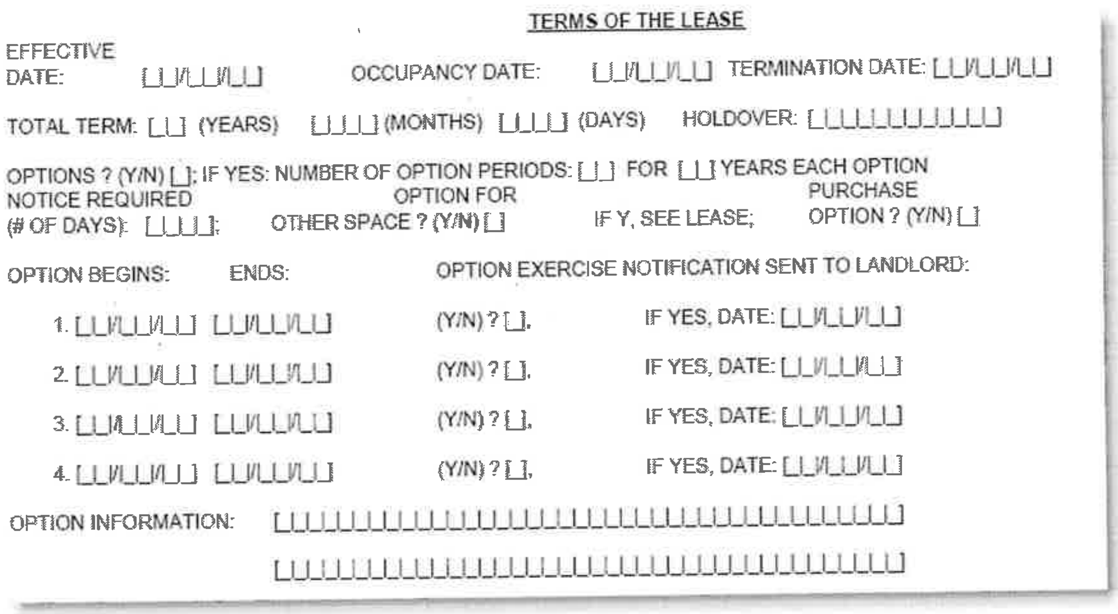
Required Fields

OCCUPANCY DATE:
TERMINATION DATE:

TOTAL TERM YEARS:
MONTHS:
DAYS:
HOLDOVER:

OPTIONS? (Y/N)
IF YES:
NUMBER OF OPTION PERIODS:
FOR NUMBER OF YEARS EACH OPTION:
NOTICE REQUIRED # OF DAYS:
OF DAYSOPTION FOR PURCHASE? (Y/N):
OTHER SPACE? (Y/NIF Y, SEE LEASE)

OPTION BEGINS (DATE):
ENDS (DATE):
OPTION EXERCISE NOTIFICATION DATE SENT TO LANDLORD:
OPTION INFORMATION (Enter body text)


TERMS OF THE LEASE

EFFECTIVE DATE: [_ _/_ _/_ _] OCCUPANCY DATE: [_ _/_ _/_ _] TERMINATION DATE: [_ _/_ _/_ _]

TOTAL TERM: [_ _] (YEARS) [_ _ _ _] (MONTHS) [_ _ _ _] (DAYS) HOLDOVER: [_ _ _ _ _ _ _ _ _ _ _ _ _ _ _]

OPTIONS ? (Y/N) [_]; IF YES: NUMBER OF OPTION PERIODS: [_ _] FOR [_ _] YEARS EACH OPTION
NOTICE REQUIRED (# OF DAYS): [_ _ _ _]; OPTION FOR OTHER SPACE ? (Y/N) [_] IF Y, SEE LEASE; PURCHASE OPTION ? (Y/N) [_]

OPTION BEGINS: ENDS: OPTION EXERCISE NOTIFICATION SENT TO LANDLORD:

1. [_ _/_ _/_ _] [_ _/_ _/_ _] (Y/N) ? [_]. IF YES, DATE: [_ _/_ _/_ _]
2. [_ _/_ _/_ _] [_ _/_ _/_ _] (Y/N) ? [_]. IF YES, DATE: [_ _/_ _/_ _]
3. [_ _/_ _/_ _] [_ _/_ _/_ _] (Y/N) ? [_]. IF YES, DATE: [_ _/_ _/_ _]
4. [_ _/_ _/_ _] [_ _/_ _/_ _] (Y/N) ? [_]. IF YES, DATE: [_ _/_ _/_ _]

OPTION INFORMATION: [_ _]
[_ _]

Rent /Penalty

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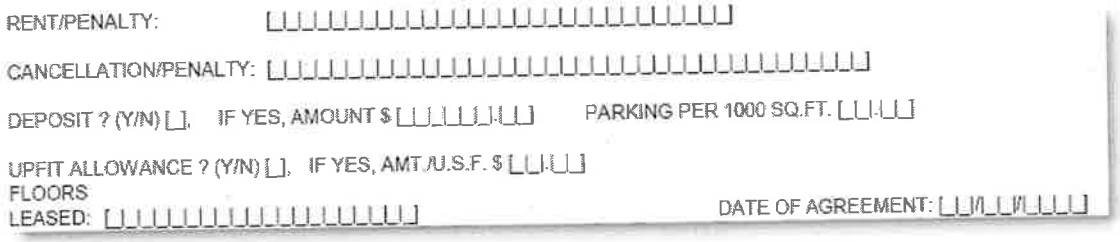
Required Fields

RENT/PENALTY:
CANCELLATION/PENALTY:
DEPOSIT ? (Y/N):
IF YES, AMOUNT $:
PARKING PER 1000 SQ.FT.:

UPFIT ALLOWANCE ? (Y/N):
IF YES, AMT./U.S.F. $:FLOORS LEASED:

DATE OF AGREEMENT:



Rental Information

Rental information includes financial, business and space information from the Lease Agreement being abstracted.

Lease Commitment

Required Fields

TOTAL LEASE COMMITMENT $:
RATE PER RENTABLE SQ.FT./YR:$
BASE RENT PAYMENT PER MO.:$
OPERATING EXPENSE PER MO.:$
COMMON AREA MAINT. PER MO.:$
OPTION PERIOD COST:$

Option Period Cost

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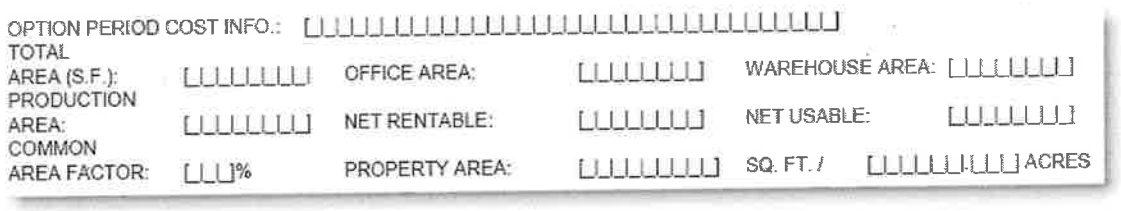
Required Fields

OPTION PERIOD COST INFO.:
TOTAL AREA (S.F.):
OFFICE AREAWAREHOUSE AREA:
PRODUCTION AREA:
NET RENTABLE AREA:
NET USABLE AREA:
COMMON AREA FACTOR (%):
PROPERTY AREA (SQ. FT.):
PROPERTY AREA (ACRES):



Additional Area & Escalation

Required Fields

ADDITIONAL AREA AFFECTED:
BY OPTION (SQ. FT.):
LAND (ACRES):

ESCALATION CLAUSE? (Y/N):
ESCALATION TERMS (IN TEXT):
ESCALATION PERIODS:
BEGINNING DATES:
ENDING DATES:
RENT BY ESCALATION PERIODS:

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ADDITIONAL AREA AFFECTED:

BY OPTION: [_____] SQ. FT. LAND: [_____] ACRES

ESCALATION CLAUSE ? (Y/N) [_]

ESCALATION TERMS: [_____]
[_____]
[_____]

[_____]
[_____]

ESCALATION PERIODS:

	BEGINS	ENDS	RENT
1.	[__/__/__]	[__/__/__]	$ [_____] PER MONTH
2.	[__/__/__]	[__/__/__]	$ [_____]
3.	[__/__/__]	[__/__/__]	$ [_____]

Lessor/Lessee Responsibilities

Lessor/Lessee Responsibilities contains items that the Lessor (Landlord)/Lessee (Tenant) are responsible to either provide or pay for during the lease term being abstracted.

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Required Fields

PROPERTY TAXES BY LESSEE? (YN)
PROPERTY TAX I.D. NO.
IF YES, LAST YEAR TAX DATE:
TAX AMOUNT $:
THIS YEAR TAX DATE
TAX AMONT$:
NEXT YEAR TAX DATE:TAX AMOUNT $:

INSURANCE BY LESSEE? (Y/N):
IF YES, COVERAGE:

UTILITIES PAID BY LESSEE? (Y/N):

SERVICES INCLUDED BY LANDLORD INCLUDED IN LEASE?: (Y/N)

Service Codes: (See codes below)

LESSOR/LESSEE RESPONSIBILITIES

PROPERTY TAXES BY LESSEE ? (Y/N) [ ]
IF YES:
LAST YEAR [ ][ ]/[ ][ ]/[ ][ ] $[ ][ ][ ][ ][ ][ ].[ ][ ]
THIS YEAR [ ][ ]/[ ][ ]/[ ][ ] $[ ][ ][ ][ ][ ][ ].[ ][ ]
NEXT YEAR [ ][ ]/[ ][ ]/[ ][ ] $[ ][ ][ ][ ][ ][ ].[ ][ ]
SERVICES INCLUDED IN LEASE: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
SERVICE CODES : [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

PROPERTY TAX I.D. NO. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]
INSURANCE BY LESSEE ? (Y/N) [ ] IF YES, COVERAGE:
[ ]
UTILITIES BY LESSEE ? (Y/N) [ ]
IF YES: [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

0 - NO SERVICES INCLUDED
1 - JANITORIAL
2 - HVAC
3 - ELECTRICAL
4 - PLUMBING
5 - GROUNDS/C.A.M.
6 - ROOFING
7 - SIGNAGE
8 - LIGHTING
9 - EXTERIOR

General Information & Lease Comments

General information is particular to the lease, but is not included in the above fields and/or is general to the agreement between the Lessor/Lessee such as amenities, security, card key system, cameras, building hours of operation, lease/purchase, early termination of the lease by tenant, etc.

Lease comments include brief, general or specific comments describing anything in the lease which is unique or special information (text fields).

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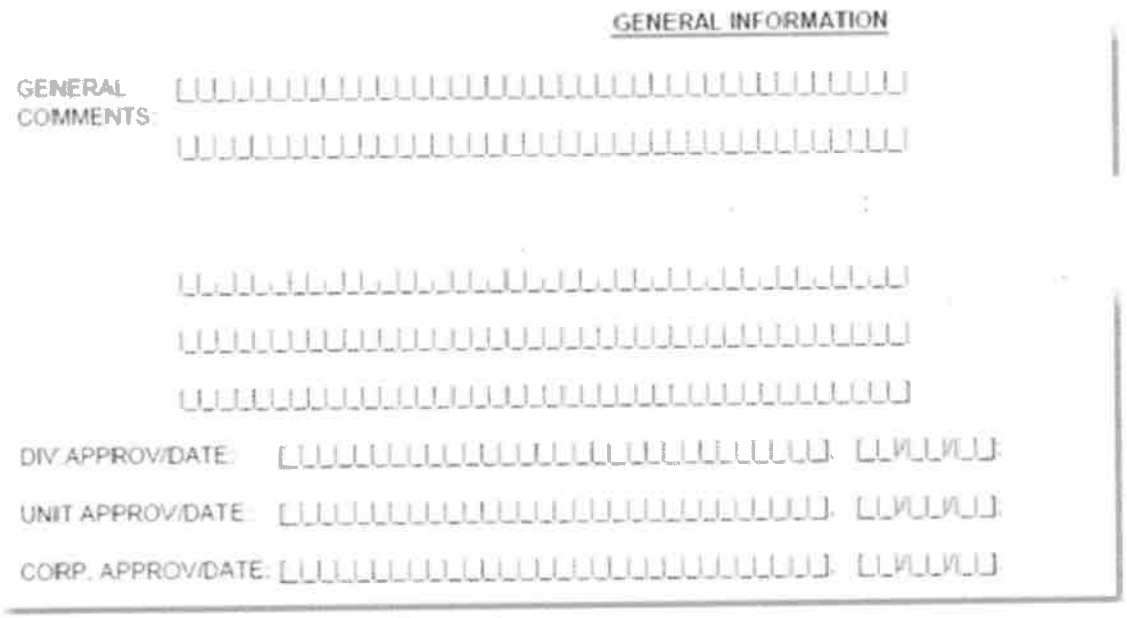
Required Fields

TENANT DIVISION APPROV/DATE:
SIGNED BY:
TENANT UNIT APPROV/DATE:
SIGNED BY:
TENANT CORP. APPROV/DATE:
SIGNED BY:



Database Abstract Lease Information

The FM will forward the completed **Leased Property System Input Sheet** to staff who will abstract lease information and associated documents into a computerized facility management system or database. The abstract data for each property must be kept up to date so that reports can be developed and generated for the FM, lessor, and/or executive management (See: Figure 6 and Figure 7 below.)

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PROPERTY INFORMATION

LOCATION NAME:	TEST PROP. FOR ABC CO. REAL ESTATE		
LESSEE: (UNIT/ DIVISION)	ABC DIVISION		
PROPERTY ADDRESS:	235 EAST WACKER DRIVE	NUMBER OF FLOORS:	10
	SUITE 1700	(COUNTRY DEFAULT IS "USA")	
COUNTY:	COOK	COUNTRY:	USA
CITY:	CHICAGO	STATE: IL ZIP:	60634-6578

Figure 6 Abstracted Property Information

LEASED PROPERTY MASTER LISTING REPORT

MASTER LISTING BY LOCATION
AS OF: 06/18/___

PROPERTY SELECTION: BISU X COMP 100 STAT 01 ACCT 1000 BLDG 1000 PRCL 01

PAGE 1
REAL ESTATE FILE NUMBER: X-100-01-1000-1000-01

Property Information

Lease/Ground lease/Easement:	L	Dates:	
New lease/Extension/Renewal:	L	Submitted	04/07/
Vacancy Approval:	Y	Changed	06/17/
Sublease:	Y		

Location Name	TEST PROP. FOR ABC CO. REAL ESTATE
Business Unit...:	ABC DIVISION
Property Address:	235 EAST WACKER DRIVE
	SUITE 1700
City/State/Zip .:	CHICAGO IL 60634-6578
County .....:	COOK
Country.....:	USA

Landlord:	RAYSON DEVELOPMENT COMPANY
	C/O UNIVERSAL FINANCIAL LIFE
Address .....:	550 SOUTH MADISON AVENUE
	SUITE 000
	MAIL CODE 007
City/State/Zip.:	NEW YORK NY 21246-1234

Figure 7 Leased Property Master Listing Report

Successful Negotiating

In today's economy, sellers and landlords look for corporate purchasers and tenants who can commit to long-term leases. If you and the demand organization are knowledgeable about your position and power in the market and can commit to a long-term lease, you have a considerable advantage (Rondeau, 2019). Real estate transactions can be complex. Each purchase or lease is unique, and negotiation priorities vary from one transaction to the next.

A successful negotiator should be able to:

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- Identify and define the customer's requirements and business objectives.
- Evaluate the seller's or landlord's position to determine strengths and weaknesses.
- Find compromises that benefit both sides and justify your team's position in reasonable terms.
- Manage the compromises and concessions that are necessary to reach an agreement and close the purchase or the lease for your customer.

Negotiation is as much as an art as it is a skill. The facility manager needs to be familiar with the five components of negotiation:

1. Psychology
2. Process
3. Time
4. Power & Information
5. Closing

Psychology

In negotiating, the party with leverage, strength or power over the other party has an advantage. For example, in a buyer's market, a corporate user looking to lease space is in a better negotiating position. Negotiation does not have to be emotionally charged. When choosing who to bring to the bargaining table, a facility manager must keep human nature in mind and carefully consider the physical factors of the negotiation. These points can help you with the psychological aspect of negotiation.

- When negotiating, know what each party seeks:
  - Who are you trying to satisfy? Who is your customer?
  - Who is the seller or landlord trying to satisfy?
  - During this process, to whom are you, your stakeholder(s), the seller or the landlord accountable?
- Know the roles of each of the negotiating parties.
- Know your and your customer's negotiation style:
  - Do not try to control others.
  - Do not act overly confident or trusting, or overly suspicious.
  - Do not manipulate or take unfair advantage of others.
  - Keep in mind that all parties – the facility manager, seller, landlord, stakeholders, etc. – need to win, succeed and close.

- Watch out for flashy, steamroller or rigid types of negotiators who convey:
  - "Trust me - I'm honest."
  - "Trust me - I only want what's right."
  - "Don't trust me. I'm out to get you."
- Carefully consider and plan the physical factors that can affect negotiations:
  - The location – Yours, your customer's, the seller's or landlord's, or a neutral place?
  - The facility – Types of table and chairs, who sits where, colors, breaks and refreshments, meals, HVAC, and other comfort or distress factors.
  - Are there time limits to each session and to complete the process?
  - Where appropriate, use professionals ("who care but not that much") to represent you in negotiations. Experience has shown that your customer should not negotiate with the landlord but should be part of the negotiating team.
- During negotiations, make sure that all parties know:
  - Who the spokesperson is for each party.
  - The limits of the spokesperson's authority and flexibility.

Process

As the corporate FM professional, you should put together a negotiating team of in-house specialists. This team should include the corporate customer (purchaser or tenant), legal counsel, finance, and other departments who have direct knowledge of the corporate culture and the details which the purchased or leased facility must address. This team may also include outside specialists, such as a real estate broker or tenant representative, a design and/or engineering consultant, outside legal counsel, and others as required to cover all business and legal issues that affect the organization.

The team should review negotiation strategy, real estate, facility and business issues before producing a request for proposal (RFP). The team should agree on the expected purchase price, building costs, rental rates, free rent, upfit, operating expenses, cash incentives and other tangible values for your customer.

After reviewing the initial responses to the RFP, develop a short list of prospective sites or buildings. Then using the agreed upon negotiation strategy, the corporate real estate manager and his/her broker will go back to the short-listed sellers or landlords to negotiate the terms as agreed upon by the team.

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The negotiating process often involves give and take by both sides, so the team members must understand the strengths and weaknesses of their position and that of the seller or landlord. Within reason, your customer can achieve their goals if the team is aware of their options, if they test their assumptions, if they take shrewdly calculated risks based on solid information, and if they believe they have power in the market (Cain, 1980). Rushing into a solution without addressing all legal and business items could have a negative impact on the bottom line and business plans for the seller, the landlord, your customer, or the corporation.

The process should meet the corporate objectives. Consider these important points.

- Use cooperative bargaining rather than confrontation.
  - Try to achieve a satisfactory and sound solution.
  - The goal is a basic meeting of the minds.
- Use your negotiating strategy and model to control the process.
  - Use a negotiating model that you are comfortable with.
  - Determine the essential facts of the business and negotiating issues.
  - Identify the underlying assumptions.
  - Determine the strengths and weaknesses of both sides.
  - Be prepared for reciprocal provision, the "hold harmless" clause.

If, after reasonable time and effort, your team cannot negotiate a lease that meets the organization's/customer's requirements, be prepared to stop the session or the negotiation.

Time

Time is valuable and should be considered when reviewing a real estate deal. You should spend enough time to realistically review the market and negotiate the terms to give your customer the real estate required at or below market price. If you don't, your customer may have only a few sites to choose from, and you may not have enough time to negotiate a good deal for your customer.

Power and Information

Information is power. In his book, "You Can Negotiate Anything", Herb Cohen, a noted negotiator, states that "...in order to influence an outcome...you must realistically analyze the other side's position, as well as your own, in light of three ever present tightly interrelated variables: 1. Time 2. Power 3. Information". He continues, "Within reason, you

can get whatever you want if you're aware of your options, if you test your assumptions, if you take shrewdly calculated risks based on solid information, and if you believe you have the power."

As the facility manager, it is your responsibility to get the information you need. This includes information on reaching acceptable terms for both parties. Before negotiating, you should know the following:

- Determine real estate market activity.
  - Is it a seller's or landlord's market?
  - Is it a purchaser's or tenant's market?
  - Is it a normal or balanced market?
- Understand local real estate and business terminology, cap rates, square foot prices, etc.
- Determine your customer's unique issues and those of the sellers and landlords.
  - Use financial concepts such as market value, most probable purchase price, lease costs, return on investment (ROI), return on equity (ROE), investment value, etc.
- In advance, evaluate the range of the seller's or landlord's offers, and your and their counter offers.
- Think about the subjective factors that may affect your customer's selection process.

Facility managers also need information about the market, the economy, the area, the available workforce, where your customer lives, where his or her staff live, the immediate and long-range plans for transportation, utilities, taxes, political and community events. You also need to consider natural resources, such as clean air, water, and soil. Consider lease or purchase costs, operating expenses, typical area maintenance costs, special assessments, hazardous waste, and pollutants. Consider the neighborhood of the building, including schools, colleges, airports, parking, and construction activity. Are there any allowances for leasing, subleasing, free rent, work letter, or upfit? Are there moving expenses, single and multi-family housing, shopping and recreation? Are there medical services (including hospitals and doctors), legal and banking services, religious activities, garbage disposal, daycare centers? Is the local economy depressed or expanding? You need to know a lot of information before you negotiate. This is just some of the information you may need to help your customer make the best real estate decision.

Spend the time necessary to understand the power that your company and customer have in the marketplace. Once you have this information, you and your team can begin to negotiate a favorable real estate solution to your customer's requirements.

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Closing

The outcome of the negotiating process is a final agreement.

- Be ready to concede appropriate items or issues
- Be gracious, civil and professional
- If you are purchasing, consider using a closing attorney with local experience.
  - Require the right to assign the purchase or lease without unreasonable restraint.
  - Do not waive essential contingencies, warranties and representations that must survive the closing.
  - Require an inspection, as appropriate.
  - When rights and duties are indisputably clear in the real estate lease or purchase contract, take a firm position.
  - Support your leasing or closing attorney while keeping in mind your business objectives.
  - If required business terms and issues have not been met, you can stop the lease process or reschedule a closing.
- If it is a good deal, close the transaction. Don't try to squeeze the last buck out of the deal if doing so will harm one or both parties.

Dr. Chester Karrass, a noted negotiator, author, and speaker, says that "In business, you don't get what you deserve, you get what you negotiate." This is a fundamental of business, and something for you and your customer to remember as you develop your negotiating strategy. Keep it in mind along with the negotiating principles of time, power and information.

Property Divestiture

Introduction to Property Divestiture

An organization sometimes finds itself with more real estate than it needs and decides to give it up. This typically happens due to:

- Workforce reduction/downsizing or the need to grow the facility beyond its current capacity.
- Merger or acquisition, which may require the disposal of certain properties.
- Changes in products or services, making them obsolete.

- Market or economic changes, or changes in demographics that force relocation.

The cost of keeping an excess property is significant. Even vacant land carries costs for land management, risk, taxes and interest rates. When an organization no longer needs a property, the owners or board of directors may choose to divest itself of the property.

Options for divesting commercial real estate include:

- Sale.
- Sale and partial lease-back.
- Subdivision.
- Demolition and redevelopment.
- Tax-free exchange.
- Donation.
- Adaptive reuse.
- Abandonment. This is generally a last resort. The owner may remain liable for various terms and conditions.

Facility managers should be as knowledgeable about and engaged in this process as they were in the acquisition of properties.

Key Steps in Divestiture

Key steps in the divestiture of surplus property include:

- Conducting due diligence.
- Researching options to maximize profit or minimize loss.
- Preparing information required by buyers.
- Addressing any hazards or liability issues.
- Selling the property.

Before divesting a property, FM should work with the organization to make sure the excess property cannot be used for anything else. Sometimes it is less expensive to convert an owned property to another use than it is to sell one property and then buy another.

The next step is to work with the finance department to determine how to maximize the profit or minimize the loss. Finance will review the equity the organization has in the property, the impact of any tax deductions or allowances, and the property tax implications.

Gather information for prospective buyers to address their concerns about:

- How much depreciation to expect and at what rate.

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- Any special exemptions and tax breaks that can be passed on.
- Building operational costs, particularly energy and water.
- Any facility issues that must be disclosed.

Buyers will also want to compare property valuations and assessments with similar properties in the surrounding area. They will also want to know the amortization rate.

- Because property valuation and assessment information vary so rapidly, buyers should work with their brokers to gather that information during their search. However, you will want to know this information for your own negotiation.
- The purchasing organization's finance options will determine the amortization rate, so that information should also be available through the purchaser's resources.

You must address any potential liability before divestiture or prepare an alternate legal strategy. If an environmental assessment has uncovered the presence of hazardous materials, the organization holding the property at the time of discovery is generally liable for the solution. Laws about transferring liability for environmental hazards is complex and varies by authority. In the U.S., the issue is addressed in Section 107(e)(1) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, also known as Superfund). (Martin, 2016). Facility managers divesting property with known hazards should seek expert legal advice since even a written agreement to transfer liability between the parties may not be acceptable.

Some organizations, including some governmental agencies, may have formal policies and procedures for divesting property. In the absence of those policies, the facility manager, finance manager and executives from the demand organization will work together with a broker to list and sell the property.

Lesson 5: Portfolio Management

Objectives

On completion of this lesson, you will be able to:

- Compare the different strategies for portfolio management and the portfolio management tools

Portfolio Management

"You can't manage what you don't know." As a facility manager, you must know what your organization owns and leases, and that is found in the real estate portfolio. A real estate portfolio is a collection of property or other investments held by an individual or organization. Portfolio management is the unified management of a group of properties. The goal of portfolio management is to achieve the maximum benefit for the owner by managing the entire portfolio rather than individual properties.

For a facility manager, portfolio management is both a strategic and operational activity. Portfolio management links organizational strategies with real estate and facility operations to help control expenses and operate as efficiently as possible across all properties. Strategic activities apply to portfolios of any size – even a single property.

Portfolio management strategic activities may include:

- Strategies to reduce overhead and improve operations and productivity through alternate space usage.
- Strategies to provide alternate revenue sources even in properties currently being used. An example would be generating roof rents for wireless technology.
- Building operations and capital improvements to ensure effective and efficient operations.
- Strategic asset planning and management to unlock the value of surplus or underutilized space.
- Property tax strategies to ensure that the organization pays no more than required.
- Lease administration to phase the termination dates of multiple leases, and to provide options and opportunities for expansions or contractions.
- Lease auditing to ensure that pass-through expenses for operating and common areas are appropriate.

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- Life-cycle cost analysis to evaluate capital expenditures by comparing the total costs of owning new or replacing assets over their lifetime.
- Portfolio risk management to mitigate risk and distribute that risk across the portfolio.
- Address property or related damage in a timely manner to restore property value
- Environmental stance to support and promote environmental programs and sustainability efforts.
- Bottom-line-driven business cases to add FM value to financing decisions.

Operational activities provide services that support the needs of occupant groups. These activities include the day-to-day functional tasks and managing the specifics of all properties.

Portfolio Management Tools

Tools that may help in managing operational activities include:

- **ASTM Standards for Whole Building Functionality and Serviceability** provides measures of quality, functionality and capability. These standards allow facility managers to determine functional requirements, measure the levels of quality and service, and verify that those abilities match stated requirements of the facilities. In portfolio management, these standards ensure a better fit between a facility and the needs of users. They can lead to substantial savings and productivity increases across the portfolio.
- **ISSA CIMS, The Cleaning Industry Management Standard** outlines how to manage a successful cleaning organization, whether it be a building service contractor or an in-house custodial/cleaning department that is focused on ensuring quality, efficiency and overall customer satisfaction.
- Portfolio management records and data base provide accurate, timely and complete information about the inventory of assets, their use and performance. Whether manual and simple, or digital and complex, these tools are designed to:
  - Identify asset items as owned, leased or subleased.
  - Define property categories (buildings, structures or land).
  - Track cost performance data.
  - Enable the analysis of a wide variety of portfolio performance data.
  - Use graphics to display real estate portfolio data as a whole or by specific criteria.
  - Provide timely reporting.

To ensure the best value for the organization, portfolio management enables comprehensive tracking and analysis of portfolio properties. In addition, it:

- Enables robust root-cause analysis to ensure appropriate service levels.
- Reduces departmental administrative costs.
- Enables better management and rapid fact-based decisions.
- Improves alignment with organizational needs.

Real estate portfolio management gives the portfolio manager an opportunity to interact with senior leadership (i.e., the "C-suite"). You may have skills and detailed knowledge of facilities that the executives do not. You will need to prepare business cases to present that information in the language of those executives. Provide only the information needed, when and where needed, in the language of the audience. (The **Communication** competency course provides information about the importance of knowing the audience, providing information in the way they want to receive it and maintaining an open exchange of feedback.)

With an understanding of the organization's strategies and business plans, the facility manager can propose projects that align with those strategies.

The table below contains advice on the elements to include in an effective business plan.

#1: Options – Do-nothing scenario vs. A, B or C options

Do-nothing scenario	The "do-nothing scenario" should answer questions, such as but not limited to: • What will happen if the organization does not fix it, buy it, improve it? • What expenses would be incurred – when and where? • How much business would be lost? • What other liabilities might be incurred? • What is the total risk?
Options A, B, C	The options offered as solutions must show how they will either make money, save money or help meet compliance requirements. Impact analysis should describe key points such as (but not limited to): • What is the money or compliance impact? How so? How much? • How are the competitors meeting this challenge? • What do the top vendors recommend?

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- What does the web research show?
- What has been the historical approach and outcome?

#2: Impact analysis – for A, B or C options

Detail of each option's positive impact on the business	Impact analysis should describe key points such as (but not limited to): • Tangible business impact – Performance, service delivery, savings, compliance, warranty and repair, administration, errors, resources. • Intangible business impact – Sustainability, time savings, recognition, business showcase, brand Improvement. • How long it will take to recognize the benefits. • What do your top vendors recommend. • The pros and cons of outsourcing. • What the web research shows. • What the historical approach has been and the outcome.

#3: Cost Analysis

Projected initial costs	A discussion of initial costs, such as assets, people, training, support, legal and others.
Projected future costs	A discussion of projected future costs, such as licenses, maintenance and other costs.
Quantifying costs	Capital investment analysis results, such as cost-benefit analysis, payback period and return on investment.

In Chapter 2, we discussed the financial aspects of real estate. We covered capitalization rates, types of mortgage payments, sinking funds and the impact of currency fluctuation. We also looked at risks associated with interest rates. In Chapter 3, we will look at Real Estate Asset Management and Space Management.

Chapter 2: Progress Check

1. There are four factors that influence real estate decisions. Three factors are the economic cycle, the age of the property development, and market conditions. What is the fourth factor?

   a. Highest and best use.
   b. Condition of surrounding properties.
   c. Financial position of the organization.
   d. Surrounding grounds of property.

2. You are buying a property with a higher capitalization rate. What action do you take with this investment?

   a. Reduce the first investment.
   b. Do nothing with the investment.
   c. Increase the investment.
   d. Depreciate the investment.

3. How is a key stakeholder different from a primary stakeholder?

   a. A key stakeholder is a critical stakeholder in the success of the overall plan. The primary stakeholder is closely linked to a phase of the master plan or asset life cycle.
   b. A key stakeholder is closely linked to one aspect or phase of the master plan or asset life cycle. A primary stakeholder is an individual and interest group with indirect connections to the matter being addressed.
   c. A key stakeholder is closely linked to an aspect or phase of the master plan or asset life cycle. A primary stakeholder is a critical stakeholder in the success of the overall plan.
   d. They are essentially the same as they both have a stake in the success of the plan and the life cycle of the investment.

4. Ground lease and short-term lease are two leasing options. What is the third leasing option?

   a. Sales-leaseback.
   b. Long-term lease.
   c. Build to suit.
   d. Lease with purchase possibility.

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5. What is the **best** explanation of portfolio management?

   a. Enables robust root-cause analysis to ensure proper service levels.
   b. Enables the reduction of departmental administrative costs.
   c. Enables better management and rapid fact-based decisions.
   d. Enables comprehensive tracking and analysis of properties to ensure the best value for the organization.

Chapter 3: Real Estate Asset Management and Space Management

Lessons

- Objectives
- Lesson 1: Managing Real Estate Assets

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Objectives

Chapter 3: Objectives

On completion of this chapter, you will be able to:

- Understand site and space leveraging and forecasting in alignment with organizational needs

An organization's real estate is a tremendous investment that must be carefully managed. The goal of real estate management is to ensure the maximum value and return on those investments in both the short and the long-term. That means acting on behalf of the owner to streamline operations to reduce expenses, increase income, and improve property value. (Karani, 2018).

Some organizations with many properties have a separate division or in-house specialist to manage that real estate while others use contractors. For some, FM handles all property management. Site and space management includes a wide range of responsibilities, and organizations rely on FM to manage that investment well.

Lesson 1: Managing Real Estate Assets

Objective

On completion of this lesson, you will be able to:

- Understand site and space leveraging and forecasting in alignment with organizational needs

Site and Space Management Overview

Site and space management has two components:

Site

Site refers to real property and related rights, the structures, and beyond. The site includes parking lots, grounds, open natural areas, and more.

Space

Space describes an enclosed area. It may be a building, a floor, or any defined area in a building interior.

Site Management

The site of any real estate asset is the first impression that any stakeholder, customer or occupant has of an organization's physical location. That impression may be the only opportunity the organization has in owned or leased facilities to tell the story of its values and the care that it affords its customers.

Not only is it essential for the site to be aesthetically appealing, but it must be maintained by FM or the landlord to be safe and to preserve the value of that asset in the most efficient way possible. Scroll below to discover the critical aspects of site management that facility managers and landlords must adhere to.

- Aesthetic appeal of the site, including grounds and landscape. Site signage and exterior of the facility should be maintained to reflect the image that the organization wishes its public to see. Grounds and landscape should reflect the values of the organization, such as a commitment to sustainability and participation in shared community values.
- The site must be safe and secure to minimize risk. That includes ensuring the physical safety of occupants and visitors. Items to consider include:

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Considerations for that safety include:

- Adequate lighting for security and safety of occupants and visitors. Note that facility managers must ensure that exterior lighting does not create a nuisance for neighboring spaces or night pollution
- Clear signage directing visitors to enter and exit points
- Well maintained roads and sidewalks
- Eliminating hazards, such as uneven surfaces on walking paths

- Maintenance of CPTED (Crime Prevention Through Environmental Design) principles (Deutsch 2019)
  - **Natural Surveillance** – eliminating accessible places for those intent on harming to hide or easily escape by trimming hedges, providing adequate lighting without shadow spots, and utilizing Closed Circuit Television (CCTV) to enable visibility into areas that are not readily observable. The principle is that if a person knows that they can be observed easily, they are less likely to harm that location
  - **Natural Access Control** – channeling vehicular and foot traffic directly to where you want it through the use of signage and pathways
  - **Territorial Reinforcement** delineates what is public versus what is private for both staff and visitors. Natural access control relates not only to security signage but also to ensuring that lobby staff at facilities has clear sightlines to all entrances and the ability to call for help discreetly if needed. Implementing a secure entry or visitor badging system to ensure that unauthorized visitors do not enter secure areas of a facility
  - **Maintenance** is the fourth principle of CPTED and relates to maintaining the space in such a way that it will not attract vandals. Graffiti that remains on a facility will quickly draw new graffiti. Visible weeds in a landscaped area quickly collect trash
- **Landscape Maintenance** - Maintaining the site to prevent the growth of invasive species in the landscape or invasion by pests.

Facility managers need to manage the organization's investment in site amenities in a way that extends the useful life of the asset and defers the need for a costly replacement. Consider these examples:

- Example 1: A study by the Regional Municipality in Ottawa, Canada, showed that investing CAD$1.00 at the appropriate time in pavement maintenance can save CAD$4 to CAD$10 in future costs for a public entity. The study further indicated that user operating costs are, on average, four to ten times the out-of-pocket costs of agencies. (Hudson, 2015). Translated, that can mean tens of thousands of dollars in cost avoidance by investing a relatively annual small sum in maintenance.

- Example 2: A poorly maintained parking structure can lead to costly repairs from the constant exposure to environmental stressors and wear and tear. It can also lead to disruption to building occupants and cause unexpected costs and safety concerns. Oil, water, and dirt from cars can corrode the structure's concrete and steel support system. Leaking water is a clear sign that a parking garage is in need of repairs. The longer the condition is left unattended, the more expensive the consequences can become.

Space Management

For many facility managers, real estate is not a constant. Most organizations are in a continual state of transition due to mergers, acquisitions, restructuring, expansions or reductions, budgetary constraints, and/or changes in organizational strategies. Today, more than ever, organizations are evaluating new ways to use space, new types of spaces, and new technologies to be integrated into workplaces. Each of these impacts space management. Review each for more information.

Space Management Goal

The goal of space management is to make effective use of an organization's space. The practice aligns user needs with space, based on the organization's business plan and culture. It also strives to make the most of existing space tied to organizational standards, cost efficiencies, and allocations.

Space Management Needs

Facility managers need only be in the business for a short time to know that space needs are continually changing. These changes may be due to financial drivers, changes to corporate image or branding, mergers and acquisitions, demographic shifts, modifications to individual tasks and preferences, mobility, flexibility, technology, agility, location and even transportation convenience.

Some examples of change are:

- Refitting former warehouses as open offices
- Refitting the traditional offices for new high technology applications
- Co-working and virtual work arrangements are redefining the conventional view of space. Even in traditional office arrangements, the needs of the occupants are constantly shifting, so office spaces are created and moved or relocated

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Space Outcomes

As with many other facets of FM, space management has both tactical and bottom-line organizational aspects. Outcomes from effective and efficient space management processes can be seen below.

- **Tactical**
  - Maximizes flexibility to meet ongoing facility needs and changes
  - Affects employee working conditions and productivity
  - Reduces the need to acquire or procure additional space
- **Bottom-line**
  - Controls expenses and provides measurable financial benefits to an organization
  - Increases the market value of real estate

The better the use of the space, including furniture, fixtures and equipment (FF&E), the greater the impact on the organization's bottom-line. This enables the organization to improve productivity and manage costs. Better use of space is the number-one driver for building performance and a primary factor in corporate profitability.

An Organizational Asset

Space is an organizational asset that brings unique challenges associated with real estate management. In the text, Facility Design and Management Handbook, Bill Tracy addresses asset management from the standpoint of a facility manager and makes the following points:

- FM assets are a subset on the corporate balance sheet and are physical rather than purely financial or legal. That is, buildings and improvements or fixtures and equipment are usually classified as non-current assets and are not readily liquid
- They are used and deployed in space throughout various parts of an organization. In other words, most financial assets reside in an account, but FM assets live in physical locations.

Unlike real estate acquisition and divestiture in which FM may have a minor role, space management is a fundamental responsibility of a facility manager. With the rapid shift in use, space management is a challenge. It can leave a formerly well-utilized space ineffective and inefficient. A facility manager's control over the disposition of assets is typically limited. However, space and FM assets can be managed.

Effective space management can increase staff productivity, minimize operating and ownership costs of FF&E, improve the life and performance of that FF&E, and provide

valuable information toward the organizational and strategic facility plans. With effective space management, the corporate assets help the demand organization fulfill strategies, goals and objectives.

Identification of Space Requirements

Identification of Space

Effective space management is grounded in forecasting and planning. A review and feedback loop follows the forecasting and planning process. In FM, space forecasting and planning can be characterized in the following ways.

Forecasting

- Forecasting relates to predictions based on data assessment and analysis
- Involves identifying new space requirements and projecting the need for reallocation, disposal of unneeded space, or the re-purposing of space

Forecasting is necessary because that expansion and contraction may occur in tandem and can be complicated. For instance, an organization may be expanding operations in one area while contracting in another. Forecasting bridges planning and programming (discussed later in this topic) to aid in planning the space.

In the **Real Estate Master Plan** section, we discussed the need to understand the strategic goals of the organization and of individual business units. The process of understanding those needs is related to forecasting.

Space forecasting and planning get input from corporate plans and the organizational management/stakeholder approval process. Stakeholder review and feedback help secure their buy-in and ensure that decisions on the use of space are aligned to the functional work environment and meet budgetary restrictions.

Planning

- Relates to meeting forecasted needs
- Planning encompasses expansion or contraction in an industry or field, the organization and/or the workforce

Space forecasting and planning should fulfill organizational requirements by achieving the best match of functional space available with ever-changing business demands and budgetary constraints. Input from corporate plans and organizational management/stakeholder approval provides a basis for understanding. Eliciting review and feedback from stakeholders helps to secure their buy-in and ensure that decisions

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concerning the use of space are aligned to the functional work environment and meet budgetary restrictions.

Space Programming

Space programming is the process of determining user needs for the amount and configuration of physical space based on user role and business unit needs. Space planning may, at the project level, vary in its complexity. In a larger organization, the process is comprehensive.

Space programming requires three steps:

1. Goal Setting
2. Data mining
3. Needs analysis

In **The Facility Manager's Field Guide**, authors Cornel Rosario and Mark Sekula lay out three steps to space programming:

1. **Goal Setting**. This step identifies what needs to be accomplished and describes the process. This makes sure that the goal is accurate and matches user needs.
    - **Example**: The purpose of this programming effort is to reallocate the xx,xxx square meters of space on the ground floor of corporate facility B at 1234 Express Parkway to meet the needs of the current occupants plus a ten percent growth factor per division. Additional requirements include two training rooms that seat at least 15 individuals, classroom-style each, one 40-person conference room, eight four-person huddle rooms and a break room that can accommodate a minimum of 20 concurrent users. These additional needs are to be accessible to all occupants on the ground floor.
2. **Data Mining**. The data gathering process includes verification of existing conditions, interviews with two key stakeholders per division, and a data verification meeting with the leader of each division. The outcome of the programming effort is to include programming documents that contrast existing versus new space allocations, including all furniture and equipment, by division.

    The data gathering process leads to precise requirements and answers the following questions:

    - What is needed? When?
    - What are the requirements for expansion or contraction?
    - Which individuals, groups and functions must be accommodated?
    - What is the desired image and marketplace perception?
    - When will the space be available for implementation?

- When should occupancy be available?
- What will be the cost of the space?

3. **Needs analysis.** A needs analysis provides information about how an organization wants to operate at a given location. These are the qualitative or functional aspects. This may include instruction about maximizing occupancy versus creating wide aisles. It may also include needs for open unassigned spaces as well as details about whether areas are to be enclosed or more open. This process considers cost constraints and space quality required. It can also address how much space is needed, the location, and the time frame.

The result of space programming produces a report that converts space forecasts into the following specific requirements:

- Defined space requirements
- Available resources
- Costs associated with the space
- The time to obtain the space
- The quality of the space

Remember, space programming is NOT space planning. Space programming may very well produce a conceptual drawing with adjacencies or even a very rough conceptual diagram (varies by project), but space planning is needed to fine-tune this result. In the next section, you will see how they differ.

Due Diligence

As with any real estate management practice, due diligence should be practiced in space forecasting and planning. The list is not exhaustive, and not every item will apply in every scenario. Consideration should be given to items that may be beyond the control of the facility manager but should still be a part of the process. Organizational and situational specifics will determine where a facility manager needs to focus. Review the table below for examples of different scenarios then move on to the next topic.

The table below shows some examples of due diligence.

Item	Examples of FM Due Diligence Considerations
Organizational space management policy and procedures	• Where decision making and acquisition and approval authority resides • Organizational culture and norms • Organizational image

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Current space	• Space guidelines for optimal use • Space standards • Space allocation/space utilization
Future space projections (short- and long-term)	• Plans for repurposing • Plans for expansion or contraction
Highest and best use analysis	• Evaluation of effective use of space (which often requires the help and analysis of external parties such as architects and consultants)
Occupant profiles	• Number of employees and number of seats required • Demographics • Types (e.g., service, design, production and so forth)
Employee efficiency considerations	• Activities that take place and in which areas • Adjacency planning and requirements to enhance workflow and productivity (Who to place where) • Adjacencies and ties to customers • Ergonomics
Alternative workplace strategies	• Evaluation of telecommuting, hoteling, workstation-sharing and similar approaches to support employee productivity • Assessment of potential cost reductions, operational impacts and benefits
Technology used in operations	• Review of facility technologies and whether they meet current and future organizational needs
Churn rate	• How often people move • How often space is reconfigured
Land and building costs	• Occupancy costs - Square meters/feet per person - Gross revenue per total square meters/feet - Occupancy cost per employee - Net useable space compared with total space available - Occupancy cost per square meter/foot

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	- Total occupancy cost compared with revenue • Operations and maintenance costs • Energy utilization and management • Renovation and construction costs • Environmental impact
Timing with real estate climate	• Leasing activity • Availability rates • Taking rent index - The initial taking rent (initial base rent less all concessions and tenant electric) as a percentage of asking rent • Swing space availability
Legal considerations	• Real estate legislation and regulations • Environmental compliance • Workplace environment regulations • Safety legislation • Tenancy contracts • Discretion and confidentiality regarding how much can be discussed with brokers

Table 11 Examples of Due Diligence

Space Forecasting

Owning and leasing are two different ways to handle the need for space. Owning space has the advantage of organizational control, while renting provides maximum flexibility. That own/lease decision is an outcome of the organizational strategic plan and the strategic facility plan. If an organization anticipates changing facility needs early, it will have enough time to implement lease-or-buy decisions in line with that space strategy.

Organizational Planning - Even with excellent organizational planning, some situations may trigger an abrupt change in space needs. At the time of the drafting of this guide, a pandemic was just beginning to change the shape of the economy worldwide. Because this caused restrictions and societal changes not ever imagined, many organizations, even those that participated in careful planning and risk mitigation, may suffer.

Resources - Much information is available to assist a facility manager in space forecasting. For example, benchmarking studies provide standard space allocations for many types of workers and businesses. Data is also available through peer networks, online research, and

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local consultants. Data can also be gathered with surveys or other short-timeline data-collection methods.

Knowledge of Occupant - Naturally, the more the facility manager knows about the occupants and how they conduct their work, the better. Your customer can sometimes provide incorrect information because they do not understand the space planning process. The facility manager should verify and validate the customer's data, which may need revision. FM can use job titles, job functions, or best practices in conjunction with observation, questioning and organizational standards to expedite forecasting needs.

Benchmark Validation - Validation of the required benchmarks and standards as well as data gathered against business knowledge helps support forecasting. For example, designing a space forecast based solely on the number of full-time equivalent positions when the organization utilizes an unassigned office space environment goes against the general business knowledge of the space.

Gray Matter - Additional subtleties exist in space forecasting including:

- The distinction between the need for growth and the drive for flexibility. Growth implies a need for extra space, while flexibility suggests that the space supports multiple activities without compromising the productivity of any specific action.
- There are policies and procedures regarding swing space and growth space and their impact on forecasting. Swing space is available to temporarily house functions during renovation, alterations, and realignments. An organization may have a policy allocating a percentage of its interior space for swing space. Growth space is space adjacent to or near an existing function to allow for its planned growth. Organizational conditions and the market can regulate swing space and growth space. However, consider both when preparing forecasts.

Now that we have a thorough understanding of the forecast, let's proceed with space planning.

Space Planning

Overview

Space planning transforms the output of space programming into a to-scale, graphic floor plan. This plan can be used to develop furniture specifications, drawings, and estimate data and electrical needs. The space plan still is not a floor plan but provides the final information that contributes to that design element.

What can space planning help determine?

Amount of Space: The amount of space needed and when; whether the existing space suffices (if not identified as a part of programming).

Type of Space: The type of space needed based on the available space. This includes:

- Demolition, alterations, construction and renovations to form the basis for the design and create the necessary space types.

How to Best Accommodate: The activity further evaluates how to best accommodate the location of different activities for connectivity and maximum productivity, the circulation, and flow from one space to another.

The configuration of space: This process confirms whether individual spaces are more appropriate for specific uses or business unit/department needs.

Space-related cost analysis:

- It considers rent and operational costs
- It establishes energy and technology requirements and associated costs
- It determines costs associated with support services and amenities

Utilization of space:

- Examines how effectively and efficiently a specific action may be accomplished in each area
- Employs a variety of methods ranging from qualitative interviews of users to computer analysis of measures of frequency and intensity of usage
- Measures how much space exists, what type and how the space is currently being used. In addition, how effectively it used and how utilization compares with that of other organizations

Space Planning Tools

Some of the tools used in space planning are the same as the tools utilized in space programming. There is quite often overlap between these processes, and the placement of the elements in one or the other phase will vary by the design team and by project.

Space planners, architects or interior designers are responsible for space planning. That does not relieve the facility manager of the need to understand the language of space planning or to evaluate the outcomes of the process carefully.

Facility managers are typically the primary communication conduit between this process and the organization/the customer, so they must be familiar with and understand the following tools:

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Adjacency diagram: An adjacency diagram documents the critical physical proximities of organizational groups, equipment, or support functions. For example, a warehouse used to store inventory that is frequently moved into and out of the facility must be adjacent to the shipping dock. The finance department may require proximity to purchasing and C-suite executives because of the frequency of their interactions. The nature of a particular function may require a secure area of a facility, while another may need to be open to the public.

Bubble diagram: A bubble diagram is a type of adjacency diagram. It uses bubbles to represent the space needs of adjacent primary and secondary major workgroups or departments.

One to One assessment diagram: A one-to-one assignment diagram places individual activities or people into different spaces. This diagram may make it easier for occupants and other stakeholders to view the emerging plan and to evaluate fit for the need.

Block diagram or **blocking plan:** Illustrates how multiple groups or departments will fit onto a given floor of a building. Block diagrams are preliminary floor plans that begin to define horizontal arrangements within the structure. They are roughly proportional in size and shape to the need.

Stack diagram: A Stack diagram also called stack plan is a vertical section drawn through a building showing which organizational groups occupy which floors. The vertical relationships between workgroups in a multi-story building are shown, and primary circulation patterns are established.

Once space planning is complete and the customer has approved the plan and estimated cost, the final floor plan can be developed. If construction is required, an architectural team is likely to be engaged to produce construction drawings that include not only space change requirements but also the necessary infrastructure to support those space changes. For example, if an office is constructed or demolished, changes to HVAC and electrical will be required.

A floor plan can also be populated (by FM, the furniture vendor, or another consultant) with graphic images representing to-scale furniture and equipment needs as defined in programming, as well as information about data and electrical needs. Estimating the cost of furniture and data can be determined from the floor plan. This cost might be separate from the construction costs.

Standards and Benchmarks for Space Measurement

In the previous module of this course, we discussed some of the many standards that apply to organization real estate decisions. Within those are the specific standards and benchmarks that apply to space measurement. Some of these may be industry-specific, such as health-care institution standards, government agency standards, or industrial standards. Your organization may have its own space standards that designate the types, sizes and general locations of specific spaces.

Because space planning is a universal activity, specific standards have been developed and made available to facility managers worldwide. Each has unique advantages and disadvantages for the appropriate goals, such as:

- Promote uniformity in leased space measurements
- Ensure that new construction is planned realistically, efficiently, carefully and conservatively.
- Promote optimum use and conservation of space in existing and renovated buildings
- Increase sustainability
- Reduce or minimize initial costs and those of future remodeling
- Increase flexibility and agility to adapt to organizational needs
- Contribute to employee productivity
- Provide a measure of equity among employees
- Improve the quality and effectiveness of the work environment
- Establish uniformity in standard space distribution, utility cost allocation, and internal chargebacks.

FM and organizational leadership will determine which standards to use. However, in a few instances, space standards are regulated by law or code. Here are few examples:

- The size of an electrical room is determined by the size of the equipment it must hold combined with code-required clearances.
- The size of a small office space may be dictated by disability accessibility requirements, such as the Americans with Disabilities Act.

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Chapter 3: Progress Check

1. What is space programming?
   a. Determining needs for the amount and configuration of a known physical space based on user roles and business unit needs.
   b. Planning for a type and quantity of space needed to support organizational flexibility.
   c. Organizing known workgroup functions and requirements to make the best use of available space.
   d. Managing real estate property and related rights, the structures, and beyond.

2. What is the **most important** driver of building performance for profitability?
   a. Efficient use of space.
   b. Effective business forecasting.
   c. Effective organizational leadership.
   d. Location, location, location.

3. What **best** supports Crime Prevention Through Environmental Design (CPTED) site maintenance?
   a. Setting requirements visitors and occupants must follow.
   b. Making building and site impenetrable to criminals.
   c. Deterring intentional bad acts from occurring.
   d. Recognizing and prosecuting harmful acts.

4. What are the 3 steps to the space programming process?
   a. Input gathering, processing, and output creation.
   b. Goal setting, data gathering, and needs identification.
   c. Forecasting, space planning, and floor plan creation.
   d. Input gathering, space planning, and forecasting.

Chapter 4: Major Projects and New Construction

Lessons

- Objectives
- Lesson 1: Project Management
- Lesson 2: Project Teams
- Lesson 3: Inspections
- Lesson 4: Operation and Maintenance Manuals, As-Built Drawings and Warranties

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Objectives

Chapter 4: Objectives

On completion of this chapter, you will be able to:

- Identify the project management elements that are relevant to managing the facility post-construction
- Understand the stakeholder roles for both the project and new construction
- Determine the funding, budget, and expenses managed in a project, the time impact, and the importance of inspections related to new construction
- Utilize the manuals, warranties, and the required contents of each that contribute to effective management of the facility post-construction

The elements required to manage a small tenant improvement project and those needed to maintain a significant project are very much the same. Both require attention to the same phases of project management (initiate, plan, execute, monitor/control, and close). Both require analysis and management of communications, risks, scope, time, budget – and more.

The primary role of FM is to support the core business of the organization. That takes time and resources. When managing major construction projects, FM must fulfill that mission while also dedicating appropriate resources to the project.

The Project Management competency in this series provides a much deeper dive into the management of major projects and construction. It identifies differences in the roles and activities of the facility manager acting as a project manager or collaborating with a contractor or in-house project manager who has the lead on the project. The intent of this section is not to be a guide to project management, but to highlight some of the areas of new construction project management in which a facility manager is most likely to have the highest impact in his/her role as facility manager.

Lesson 1: Project Management

Objective

On completion of this lesson, you will be able to:

- Identify the project management elements that are relevant to managing the facility post-construction

Facility Managers Role in Project Management

The facility manager may be responsible for any or a combination of the following activities:

- Managing the entire project with customer support from initiation to requirements through scope development and budgeting
- Managing bidding and award of the construction contract execution, final payment, close-out and receiving the certificate of occupancy
- Managing installation of furniture, furnishings, equipment, system testing and move-in
- Acting as a liaison between an in-house project manager or a contractor and the demand organization's stakeholders as a whole or as liaison to the FM organization
- Coordinating or advising on specific aspects of a project, such as serviceability of proposed assets or facility standards to uphold in the project and acceptance of work.

Facility Manager Acting as an Advisor in Project Management

In the following examples, the facility manager is acting as a coordinator or advisor on a project that is managed by others. These examples will give you a basic understanding of project management as it applies to new construction and those areas where FM may most efficiently collaborate.

In the **initial phase**, the requirements, purpose and success criteria of the project are determined. FM may provide the means of sharing information about the organization's business needs or input into requirements for building systems. FM may also be aware of existing constraints that exist, environmental issues that must be considered, or safety

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concerns that must be integrated. At this point, the facility manager will be most involved in determining the minimum standards for a facility that FM can efficiently support, and then getting funding.

The **planning phase** focuses on acquiring space, contracting with design firms, and performing programming and design. Consider the following: In the planning phase, the tasks of acquiring space, contracting with design firms and performing programming and design occur. FM will likely advise the team regarding many aspects of site selection. If possible, FM should be a partner in reviewing design documents before they are issued for construction to ensure that the equipment that it will be responsible for servicing is accessible. For instance:

- All serviceable parts of an HVAC system should be available. This may mean specifying access hatches and ensuring that those hatches can reach levers, knobs, and controls for adjustment.
- To ensure that facility maintenance staff can reach lamps with tools, lighting should be specified, or the fixtures should have mechanisms to raise and lower them for servicing.
- Equipment installed on rooftops or in crawl spaces must be designed to provide safe access for maintenance.
- Any facility design or construction standards used consistently across the organization should be provided to the design team

During the **execution phase** of the project, the facility manager will want to become familiar with the facility. One way to do it is to observe construction before walls and ceilings are finished. Although others are responsible for ensuring quality, the facility manager can also be involved:

- The facility manager will likely help coordinate specific items defined in earlier stages, including facilitating work with network/telecom, planning and implementation of furniture or acquisition, and installation of specialty equipment.
- Weekly construction meetings are an excellent way to keep track of the developing facility, budget, and payments, and to discuss any issues that arise. These meetings also provide an opportunity to ensure that the contractor is maintaining an accurate set of redline drawings to indicate all changes/deviations from the plan.
- This phase will also include a punch walk, which is the last opportunity for the facility manager and customer to have the general contractor correct any problems or unfinished tasks as outlined in the construction documents. FM participation here will depend on the relationship between FM and PM, but the project manager is likely to value the additional point of view for that walk. Items that the facility manager may be particularly interested in might include confirming switches, boxes

and pieces of equipment are correctly labeled, and that all equipment is operational, etc.

Monitoring is an essential element of construction. It has become a somewhat common practice to photograph various stages in development during this phase to serve as a later reference. This can provide the facility manager with useful information for future maintenance of the facility. Monitoring is part of the project manager's role. The project manager will take responsibility for most of the control of the budget, schedule, etc.

Project **close-out** ensures that all approved project costs have been paid, all deliverables are verified and transferred to the correct parties, and all punch list items have been completed. Of importance to FM are Operation and Maintenance Manuals, project records, electronic drawings, and warranty records.

Lesson 2: Project Teams

Objective

On completion of this lesson, you will be able to:

- Understand the stakeholder roles for both the project and new construction

Stakeholders

In this lesson, we will discuss stakeholders. For most new construction projects, project teams consist of a complex array of stakeholders that enter and exit throughout the project as needs change. This may include external and internal stakeholders. Let's discover who to find in each respective group.

External contributors:

- Designers and engineers
- Surveyors and constructing testing services
- Construction estimators
- Code officials
- Contractors and subcontractors
- Providers of specialized equipment
- Others involved in the actual construction

External non-contributors

- Advocacy groups and community agencies
- Neighbours
- Customer/clients

Internal contributors

- Project sponsor/owner/customer
- Organizational leadership
- Functional representatives (Finance, IT, Facilities, Communications, HR, Risk, etc.)
- Subject matter experts (SMEs)
- Internal departmental representatives

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It is the project manager's role to bring the team together with the necessary players at the right time and to choreograph the discussions, decisions and actions to ensure the successful completion of the project.

Whether the facility manager is acting as a project manager or in coordination with the project manager, his/her role will be one of collaboration with all stakeholders. Because FM overlaps with and has direct relationships with so many of the stakeholders, the facility manager may be in an advantageous position to provide input, build and share knowledge, and forge even stronger relationships.

Effective communication is essential in a project, and the project manager is the single official point of contact for communications. Any communication from the project outward should be released only under the direction of the project manager or following a formal communication plan.

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Lesson 3: Inspections

Objective

On completion of this lesson, you will be able to:

- Determine the funding, budget, and expenses managed in a project, the time impact, and the importance of inspections related to new construction

The Purpose of Doing an Inspection

Inspections are an essential and sometimes challenging aspect of new construction projects. The number and type of inspections will vary with the kind of construction and the authority or authorities having jurisdiction (AHJ).

Notice of Corrections and Tests

Depending on the contractors and the AHJ, these could be simple walk-through, or they could be complicated, comprehensive inspections that generate notices of correction even for high-quality work. The reality is that the interpretation of code is at the discretion of the building official. Each has his or her priorities, preferences, and understandings. The project timeline must account for all required inspections. The next step in that process is on hold until the inspection is completed and passed. A notice of correction can cause delays while the rework is completed. This may require a re-inspection or second interpretation of the code.

A facility manager needs to understand that passing an inspection does not mean that the work was properly performed. Conducting the review is to ensure conformance to building, equipment, and life safety codes.

During construction, other inspections and tests may be done by independent contractors hired by the project manager on behalf of the owner. These tests may include:

- Site grading/GESC (Grading, erosion, and sediment control)
- Footing/Foundation
- Flooring
- Plumbing rough-in
- Mechanical rough-in

- Electrical rough-in
- Framing
- Insulation
- Screw inspection
- Electrical pre-final
- Data pre-final
- Plumbing final
- Mechanical final
- Roofing inspection
- Test and Balance of HVAC system including the building automation system (BAS)
- Life safety inspection
- Building final

The facility manager will want to retain testing results with the permanent documents for the facility management records.

A final site inspection and fire code inspection are both required (the order of the two varies by jurisdiction) to obtain a Certificate of Occupancy – the document that allows occupation of the facility. In some limited circumstances, where no life safety issues require correction, the general contractor can be given a Temporary Certificate of Occupancy while minor corrections are being made.

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Lesson 4: Operation and Maintenance Manuals, As-Built Drawings and Warranties

Objective

On completion of this lesson you will be able to:

- Utilize the manuals, warranties, and the required contents of each that contribute to effective management of the facility post-construction

Records Documentation

Once the project is accepted, the project manager gathers the record documents for the facility. These include:

- **Operation and Maintenance (O&M) Manuals** including an electronic copy that is tabbed by division and contains the cut sheets, installation manuals, product documentation, and all operating and maintenance instructions for nearly every element of the facility.
- **As-Built Drawings**. The project manager will be responsible for ensuring that the as-built drawings are correct, complete and are provided to the owner, generally through the facility manager. Architect and project manager will have monitored maintenance of the drawings throughout construction to ensure that accurate records are kept of all changes from plan. Those marked up drawings are sent to the architect, who coordinates the final as-built versions of all drawings with the various engineers. The as-built drawings should be provided to the owner in CAD format (whether or not the owner has a CAD license), and in .pdf format. The .pdf format should include a separate print of each page and one bound copy with all pages in a single file. The owner may also require one or more hard copy sets of drawings. The provision of this set of as-built drawings is what enables the facility manager to evaluate and contract future modifications or service corrections to the facility, so the accuracy of the documents is essential. Having the CAD version of the drawings enables the facility manager to provide the scalable plan to future designers.
- **Warranty Documents** include not only the warranties for each component of a facility but also the documentation of the process to follow with the general contractor to submit a warranty service request. That documentation should include contact information for the general contractor's warranty representatives as well as

direct contact information for each subcontractor that participated in the project along with expectations for response and escalation procedures if needed. As with O&M manuals, the lead architect is generally responsible for checking the warranty documents to ensure that they are complete and accurate. These documents should be provided electronically and, if desired by the owner, in hard copy as well.

There is much more involved in closing out the project, but these are the key items that will have the most significance on FM in an organization. Reference the **Project Management Competency** course for complete information on project management.

Chapter 4: Progress Check

1. Why is project close-out important to the facility manager?

   a. It is when the facility manager gets most involved in a new facility.
   b. It is when the facility manager gets the documentation required to maintain the facility over time.
   c. It is when the facility manager evaluates the amount of effort involved in the new facility.
   d. It is when the facility manager can start a new project.

2. Who are the best people to participate as real estate project team members?

   a. Someone from an advocacy group, a neighbor, and customers or clients.
   b. A code official, an executive stakeholder, and an occupant.
   c. A facility management representative, an executive stakeholder, and an occupant representative.
   d. A building official, neighbor, and a functional representative.

3. What is the best warranty documentation to include for a construction project?

   a. Contact information for contractor and future occupants.
   b. Design documents containing model numbers of each component installed in the facility.
   c. Space planning documents and cut sheets for each part installed in the facility.
   d. Contact information and response and escalation procedures for warranty representatives and subcontractors.

Progress Check Question Answer Key

Chapter 1: Introduction to Real Estate Strategies and Requirements

Objectives

1. b
2. a
3. d
4. b
5. a
6. a

Chapter 2: Real Estate Assessment, Acquisition and Disposal

Objectives

1. a
2. a
3. a
4. b
5. d

Chapter 3: Real Estate Asset Management and Space Management

Objectives

1. a
2. a
3. c
4. b

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Chapter 4: Major Projects and New Construction

Objectives

1. b
2. c
3. c

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Appendix

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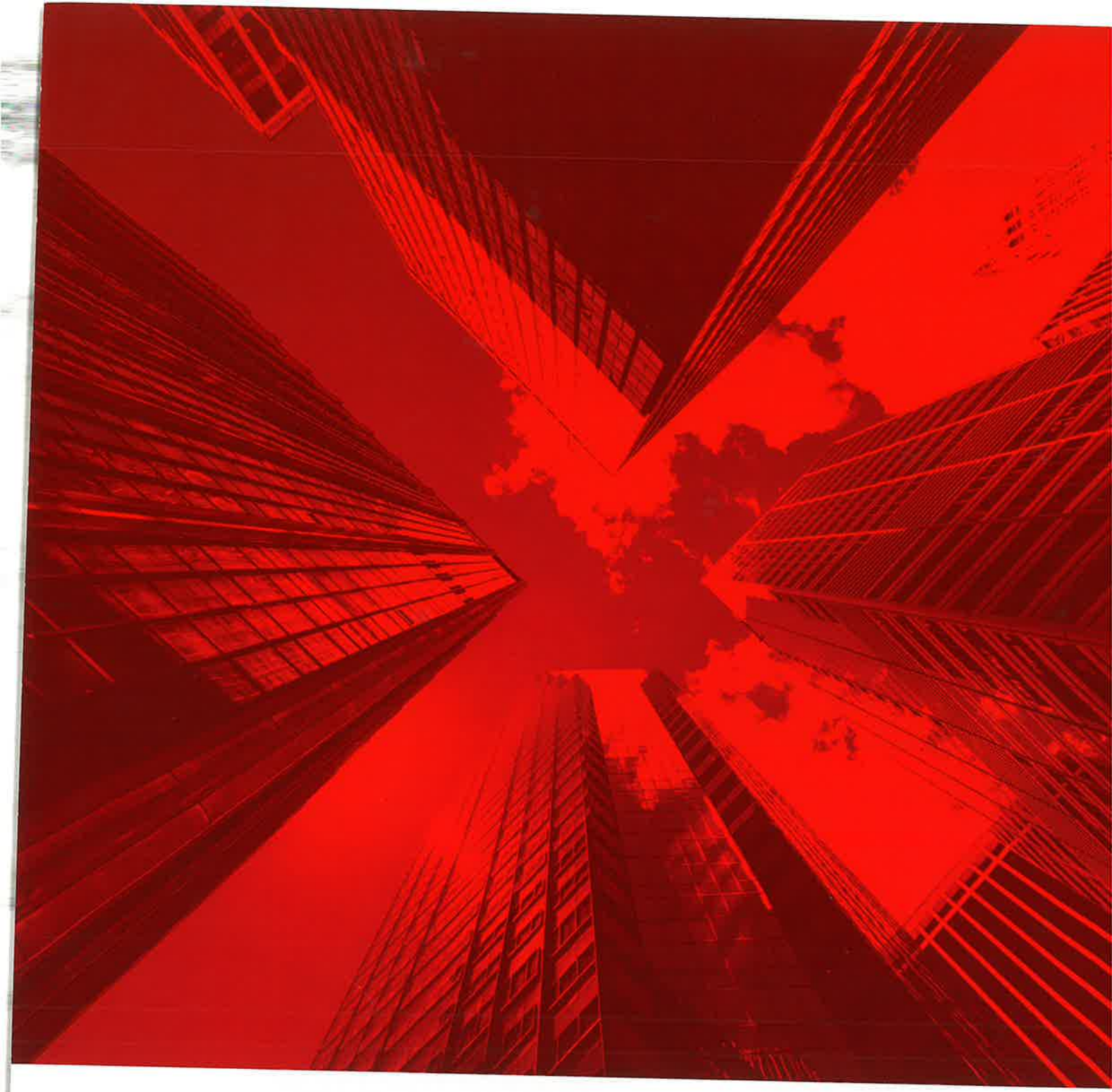

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