



دانشگاه علم و صنعت ایران

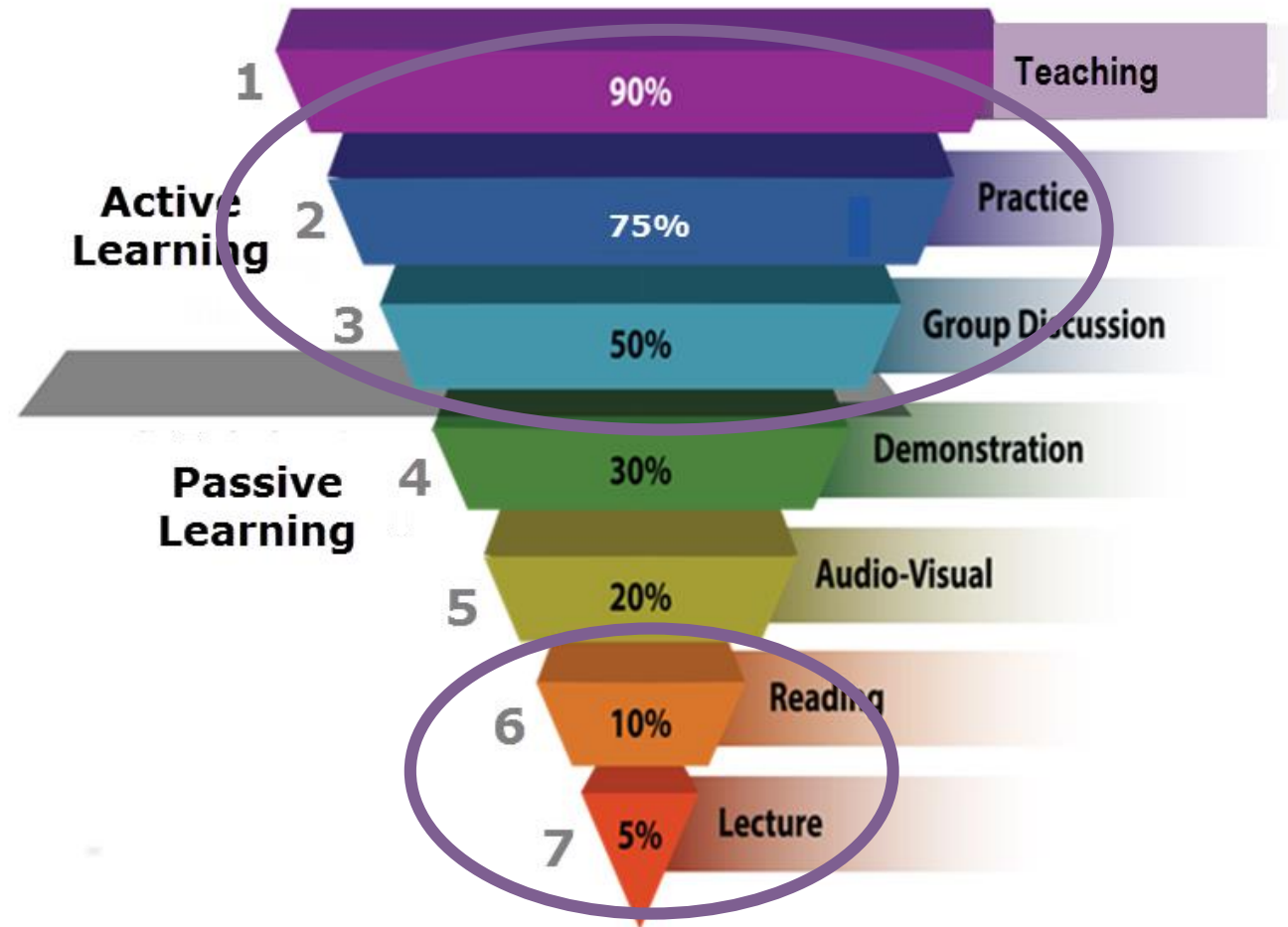
Advanced Design & Construction Management Techniques

بهمن ماه 1397 - مدیریت پروژه

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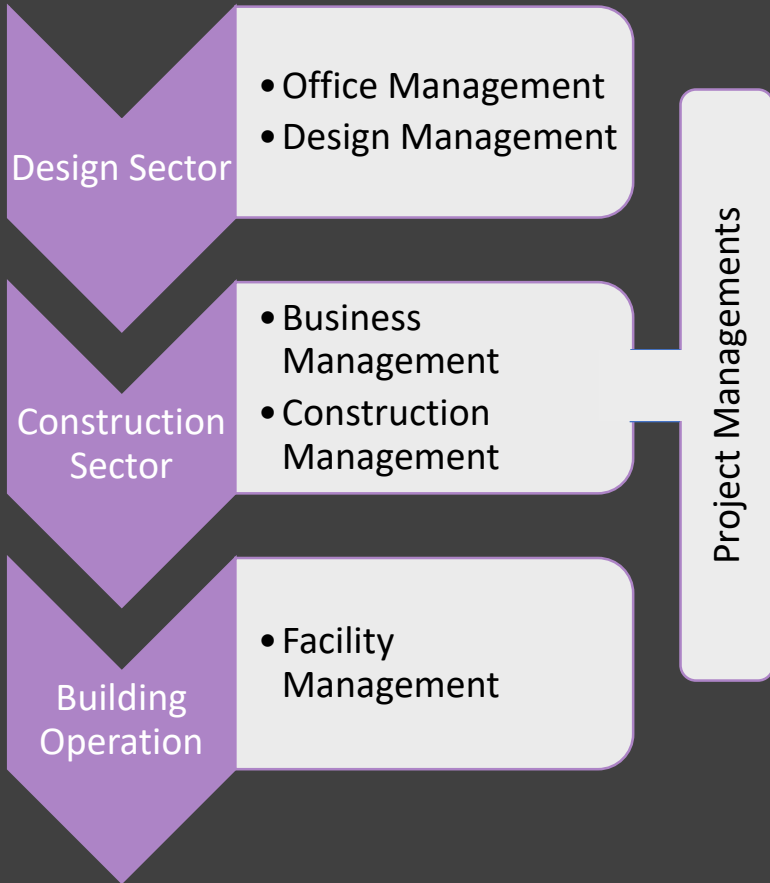
The learning Pyramid

- The flipped classroom idea



Created by Edgar Dale from the National Training Laboratories (NTL) for Applied Behavioral Science in Bethel, Maine in 1946.

Introduction



Management Practices in Architectural Sector



Management Practices in Construction Sector



Facility Management



State-of-the-art techniques in management of integrated projects

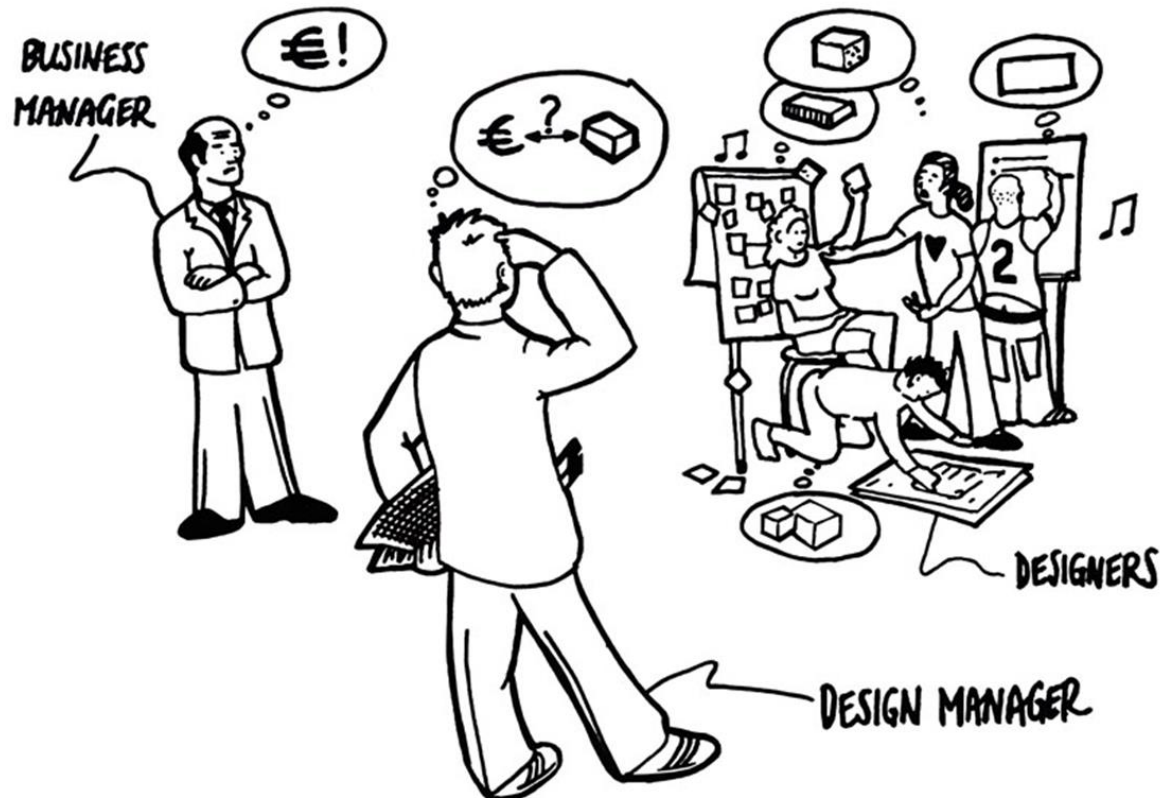


What is Management?

- Management is administration of an organization/project to attain and maintain competitive advantages.

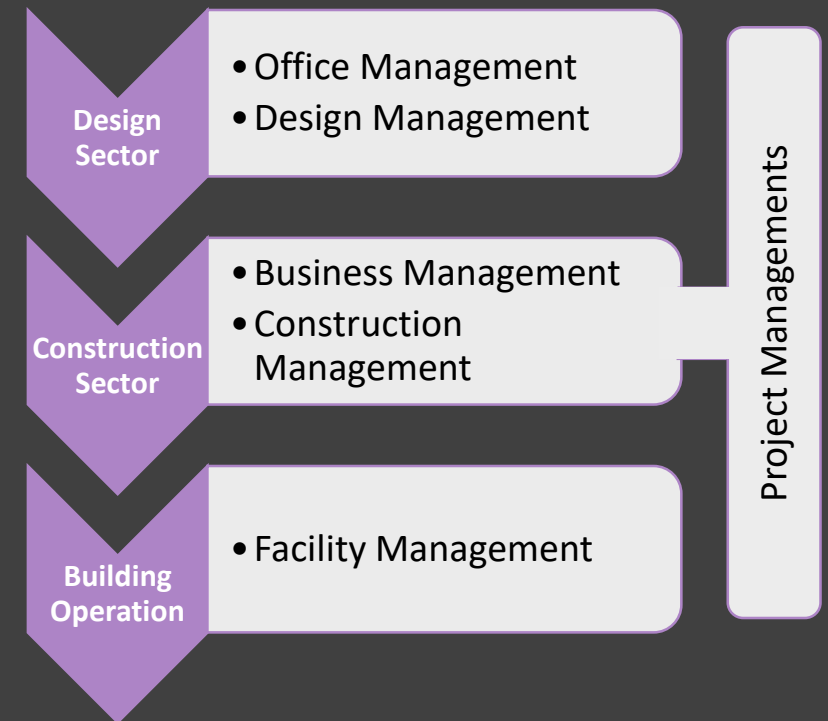
How do managers achieve their organizations objectives?

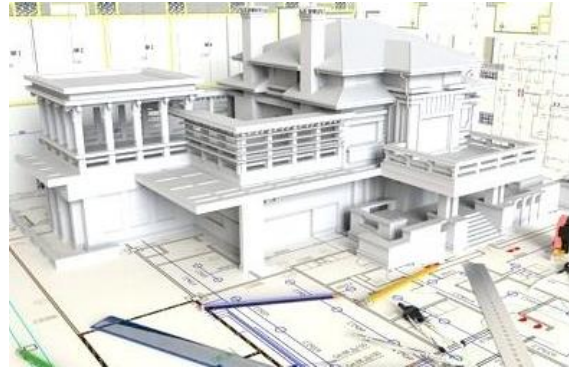
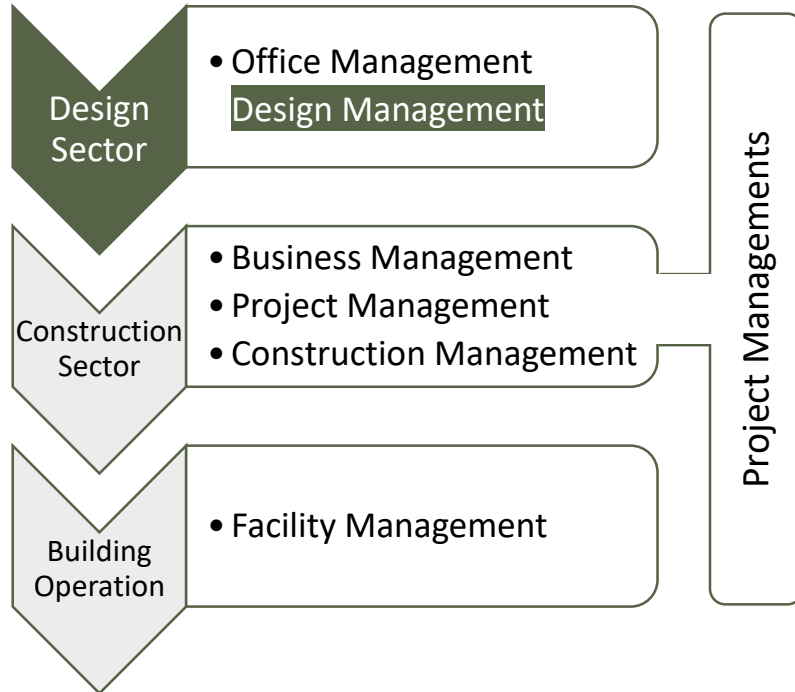
- Through the application of available resources, such as:
 - financial/ time
 - natural
 - technological
 - human resources.



What does management mean in Architectural Design Sector?

- 1- the professional office (office or practice management);
- 2- the management of individual projects (project/ job/ or design management)





What is design management (in Architecture industry)?

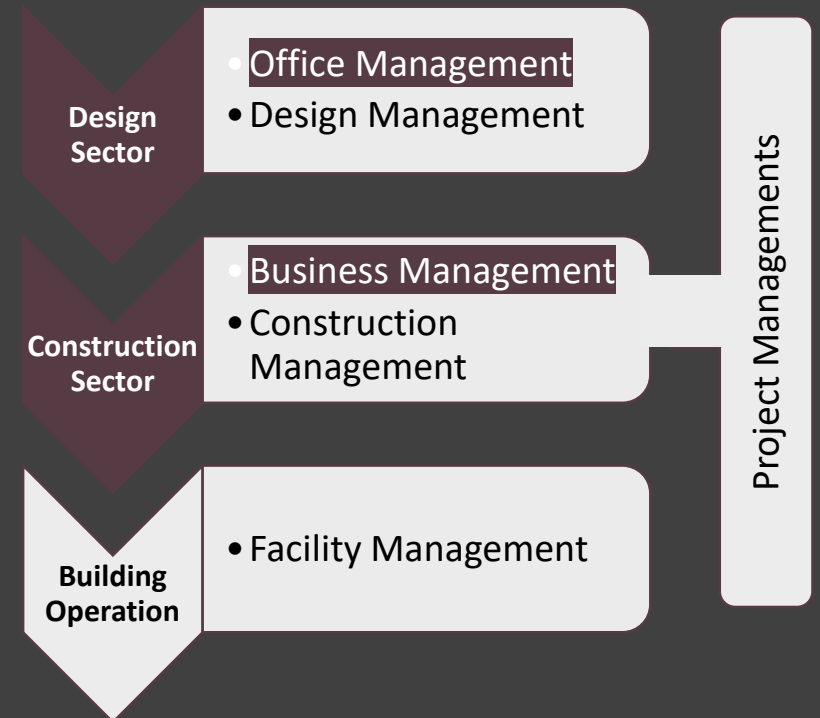
- A Design Manager is someone who manages all the processes in relation to producing a set of drawings that a building can be built from.
- Tasks:
- Managing a design team;
 - Managing the design process;
 - Supporting, understanding and advising the client;
 - Encouraging and inspiring design consultants to produce their best work using their full flair, experience, resources and talents in a cost effective way;
 - Ensuring the design process recognizes current legislation, standards and codes of practice, where appropriate;
 - Ensuring design information is of the right quality and keeps pace with project timescales;
 - Striving to eliminate health and safety risks in the design and financial risks during construction.



What is Design/Construction business management?

1- What is office/business management?

- Organization
- Operating procedures
- Marketing
- Human resource management

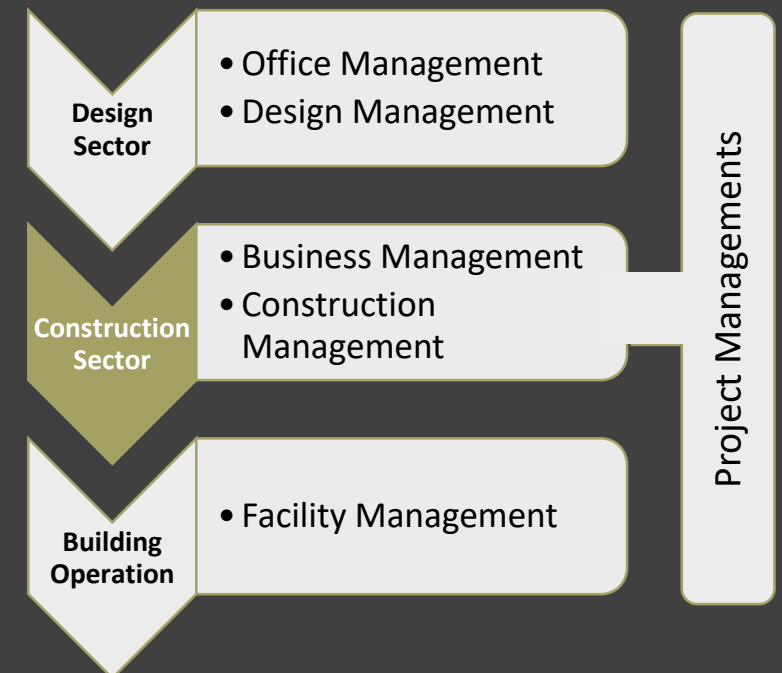


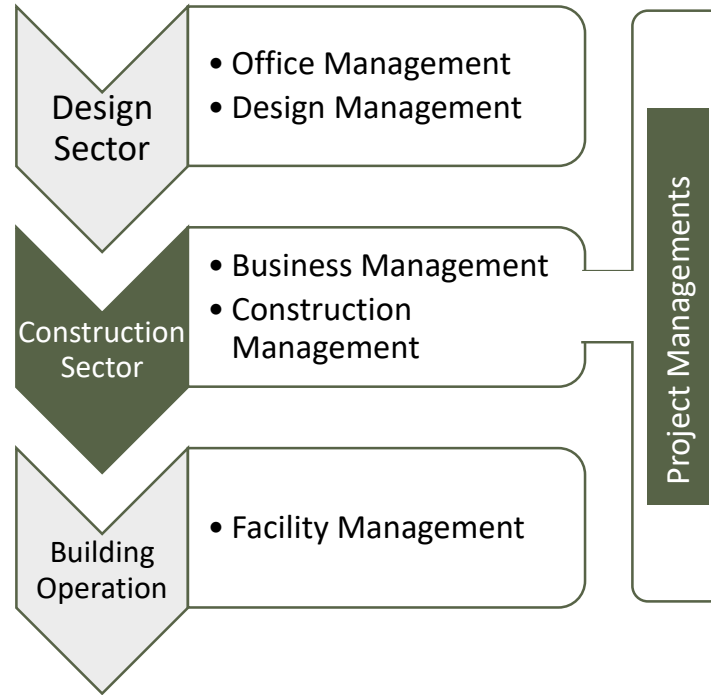


What does management mean in Construction Sector?

There are three related management practices:

- Construction Business Management
- Project Management
- Construction Management





Running/ Supervising all aspects of the project from beginning to end, including:

- initial planning
- coordination
- site selection and analysis
- design
- budgeting & scheduling
- procurement
- construction

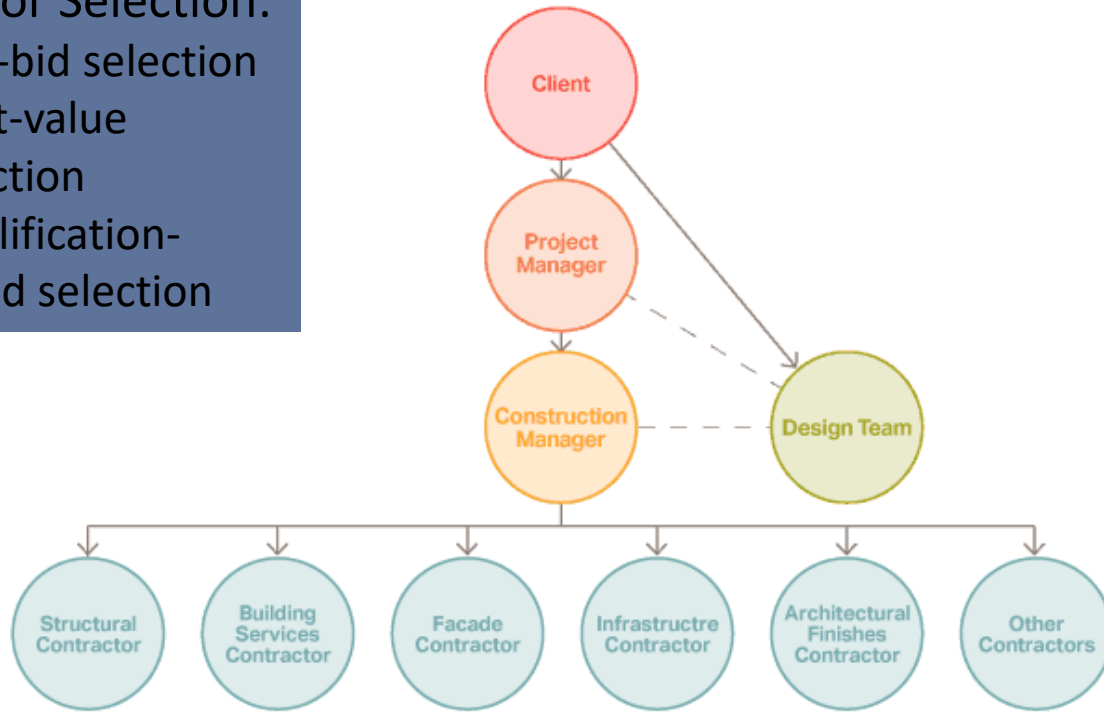
Selection usually based on qualifications.

What is Construction Project Management?



Contractor Selection:

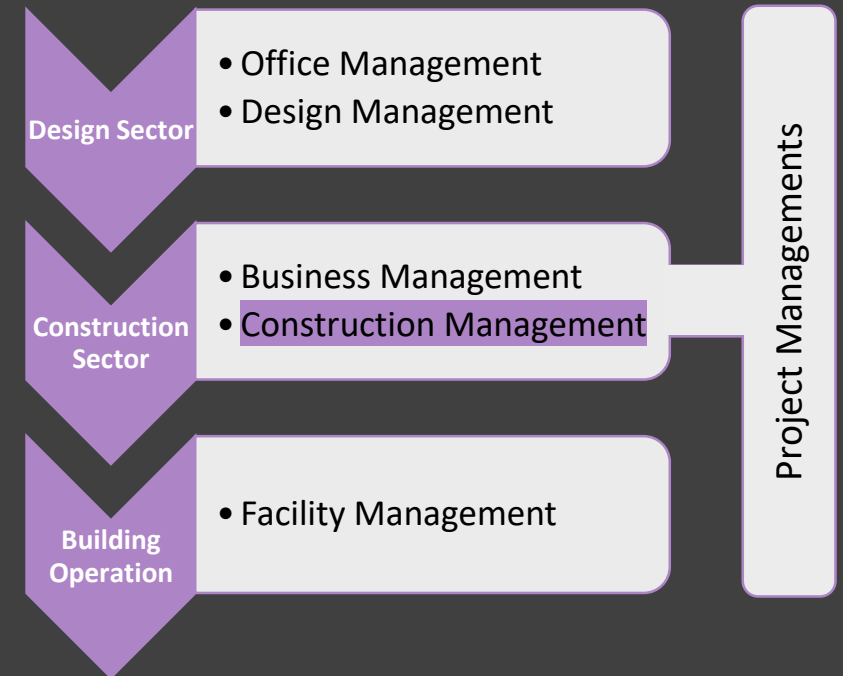
- low-bid selection
- best-value selection
- qualification-based selection

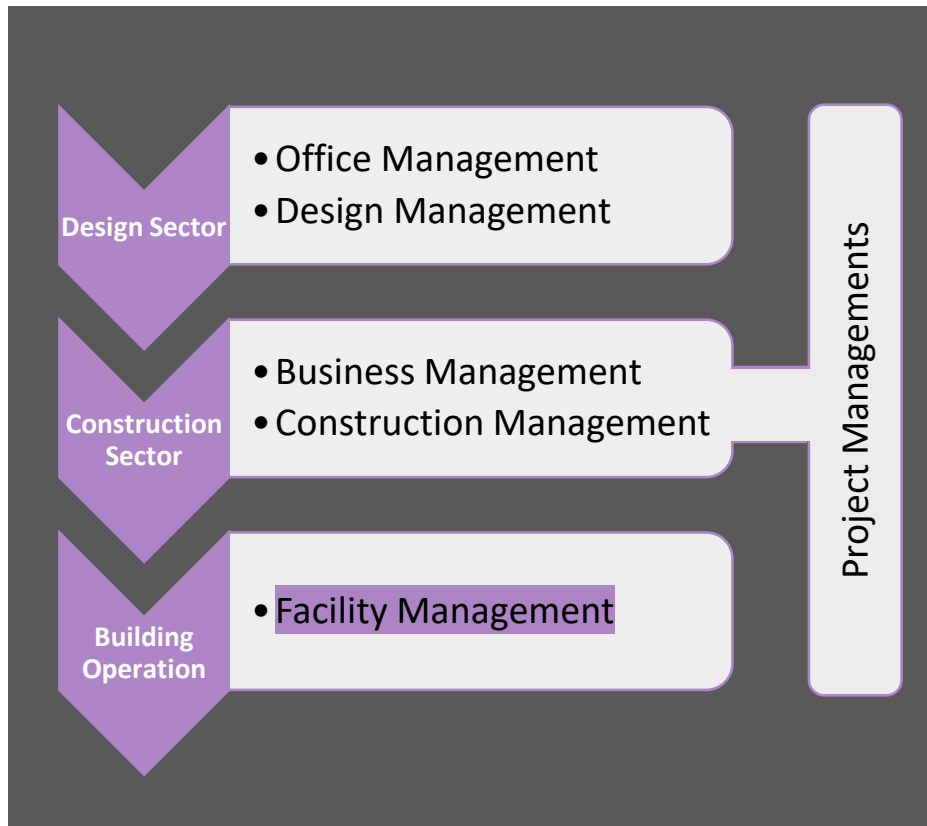


What is Construction Management?

• Tasks:

- Conducting of Operations (and/or management of vendors & trades)
- Communication of information to all involved parties
- Delivery of materials, availability of tools, & proper allocation of resources.

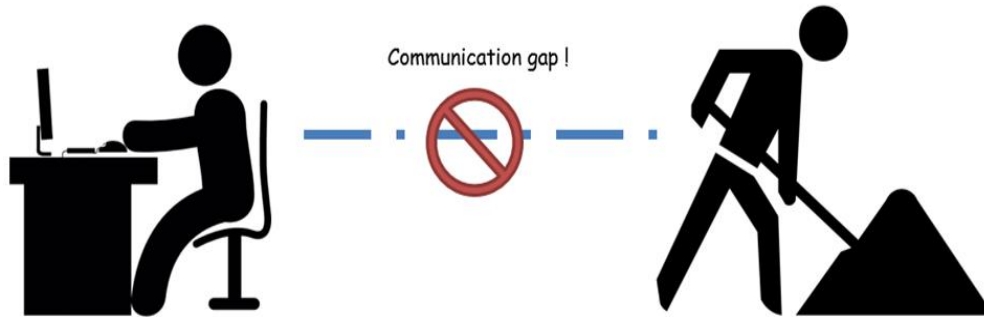
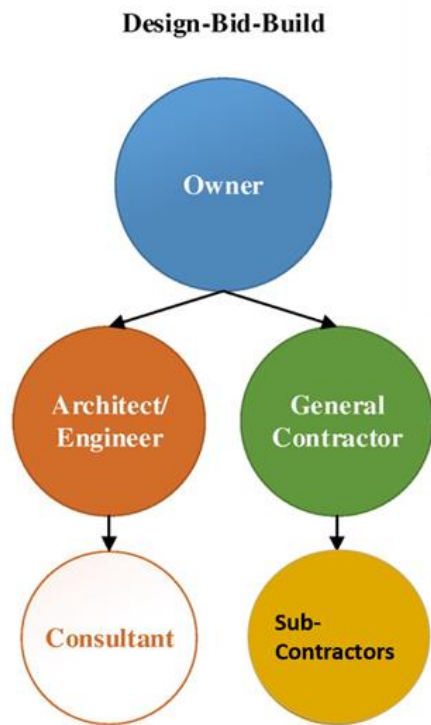




What is Facility Management?

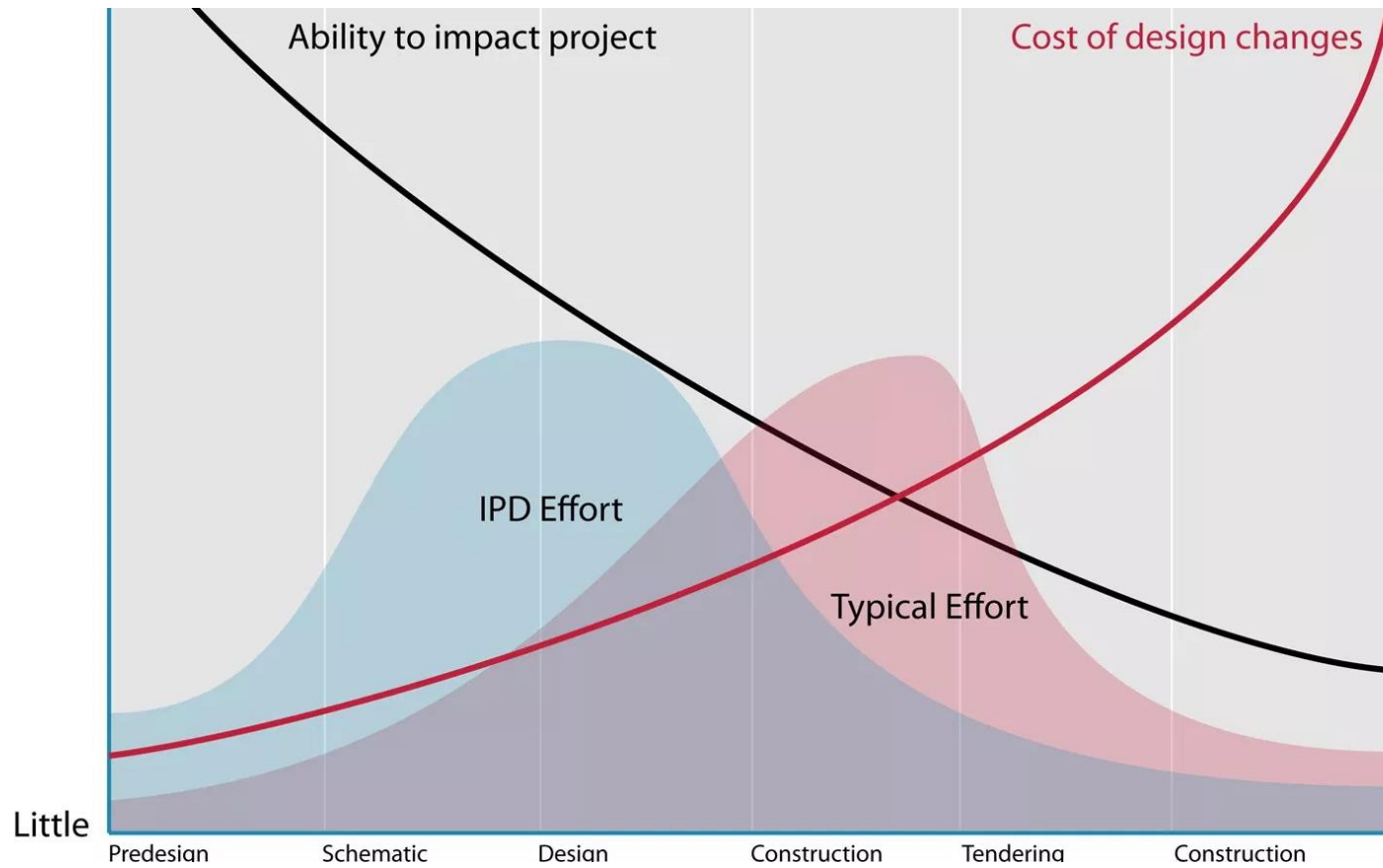
A facility (building) manager supervises the hard and soft services of a built structure.

ISO definition: "organizational function which integrates people, place and process within the built environment with the purpose of improving the quality of life of people and the productivity of the core business."



Major Problems with traditional management of construction projects?

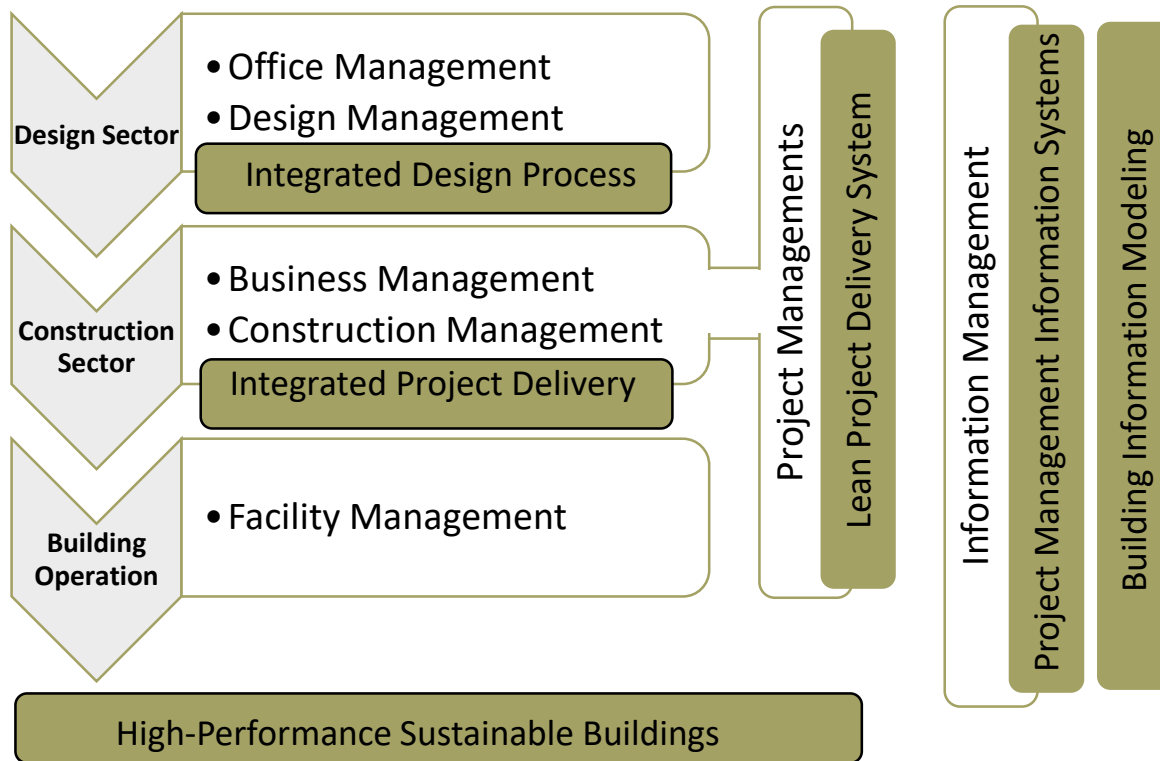
- Separation between the design & Construction teams
 - Rewarding building contracts to the lowest bid
 - Construction contracts leading to adversarial relationships between parties
 - Unique nature of construction projects
 - Low rates of productivity
 - High rates of inefficiency
 - Rework
 - frequent disputes
 - lack of innovation
- => Resulting in over-budget, over schedule projects.



Solution: Integration of all design & construction processes.

- The sooner the integration happens, the more power project teams have to impact project
- The sooner the integration happens, the less costly the design changes are.

The MacLeamy Curve



Managing Integrated Projects

- **BIM** is a process involving the generation and management of digital representations of physical and functional characteristics of places.
- Like BIM, a **PMIS** is a web-based, centralized database created and used by the project team. A PMIS is to the process what BIM is to the product.
- Lean is a holistic, value-based approach to creating the built environment.

Questions to Consider for writing the Reflections:



1- WHAT ARE THE DIFFERENCES BETWEEN GENERAL CONTRACTOR, CONSTRUCTION MANAGER & PROJECT MANAGER?



2- HOW CAN FACILITY MANAGEMENT BE INTEGRATED WITH DESIGN & CONSTRUCTION PROCESS?

Preparation Reading for Next Class:

Integrated Design Process Facilitation
Resource Guide by Sustainability Solutions
Group-Pages 4-17

