

Introduction – Building project management

Construction management 2.

(BMEEPEKT601-BMEEPEKK601)

10-02-2011

Introduction

- Lecturers:
 - Adrienn Lepel PhD
 - István Vidovszky PhD
 - Guest lecturers
- Requirements
 - Two mid-semester tests (30-30 min.)
 - Exam
 - Assignment (for students of BMEEPEKK601)

Introduction

- Main topics
 - Introduction - Basic information on the semester. Phases of the project.
 - Participants - The participants of the construction project.
 - Project phases I. – Preparation and planning. Starting of construction projects, preparation and planning. Selecting architect (competition).
 - Project phases II. – Construction and operation. Selecting contractor.
 - Project Management – basics
 - PM in construction industry
 - Scheduling I. – Basics and theory of time planning.
 - Scheduling II. – The methods of scheduling. Network time planning.
 - Scheduling III. – Computer aided scheduling
 - Budget, cost estimation
 - Cost calculation methods

Building project management

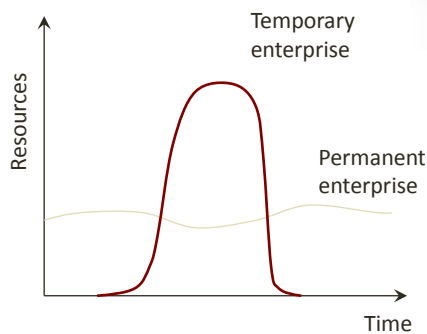
- Idea → Hand-over and use
 - Find out
 - Plan/Prepare
 - Perform
 } an investment
- PROJECT
 - Single, complex, unique task, that is limited in costs and time, and has predefined goals, and assigned sources.
 - GOAL – have to be achieved
 - Fixed cost / time / quality
- MANAGEMENT
 - Skills and techniques
 - Plan / organise / direct / lead / command / control

Building project management

- Someone
 - Wants a building (has the idea / plot / money)
 - Have to determine how the building will look (programme, design)
 - Have to produce required materials, products, equipment for the construction of building
 - Have to build it – control and direct
- Someone has to coordinate and harmonise the participants and the processes

Building project management

- Temporary enterprise
- 3-5 to 4-7 years
- High intensity of human and material resources
- Unique aims
- Unique participants
- Unique tools



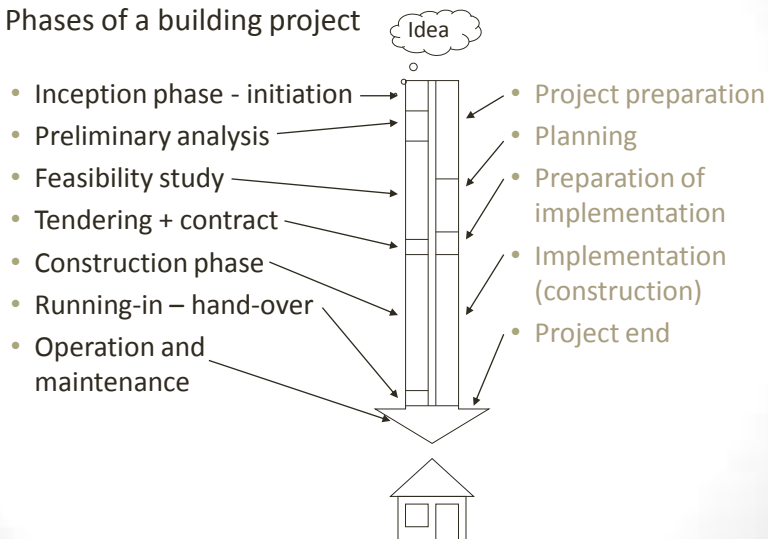
Building project management

Participants

- Direct
 - Client
 - Designer
 - Architect
 - Structural engineer
 - Civil engineer
 - Mechanical engineer
 - Electrical engineer
 - Contractor
 - General contractor
 - Sub-contractors
- Indirect
 - Authorities
 - Public services
 - Financing organisations
 - Insurance companies
 - Etc.
 - External
 - Public
 - Media

Building project management

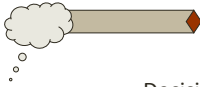
Phases of a building project



Building project management

Phases of a building project

Time →



Decision
Planning

- Idea
- R. E. development
- Project development
- Formulating the AIM
- Finding the participants
- Project organisation
- Examining feasibility

Project preparation

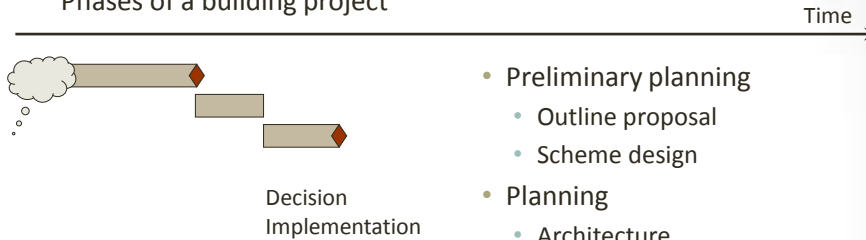
Building project management

Phases of a building project: project preparation

- | | |
|---|---|
| <ul style="list-style-type: none"> • Initiation • Preliminary brief <ul style="list-style-type: none"> • List the client's wishes and ideas about the building • Based on his findings from the prefeasibility study • Programme of the building (rooms/functions) • Preliminary analysis <ul style="list-style-type: none"> • Detailed brief • Feasibility study | <p>Information required</p> <ul style="list-style-type: none"> • General limiting conditions <ul style="list-style-type: none"> • Budget • Code requirements • Community values • General building costs <ul style="list-style-type: none"> • by occupancy type • by location, etc. • General forms of construction <ul style="list-style-type: none"> • that are appropriate to the construction |
|---|---|

Building project management

Phases of a building project



- Preliminary planning
 - Outline proposal
 - Scheme design
- Planning
 - Architecture
 - Structure
 - Building engineering
 - Etc.

Planning

Building project management

Phases of a building project: planning

- Preliminary drawings and models
 - Proposed design
 - ↓
 - Detailed drawings
 - Written specifications
 - GOAL: to completely describe the desired construction
 - Rough/preliminary cost estimate
- Architect
 - Other specialists
 - Structural engineers
 - Civil engineers
 - Landscape designers
 - Mechanical engineers
 - Electrical engineers
 - Interior design
 - Etc.
 - Outside consultants or employees

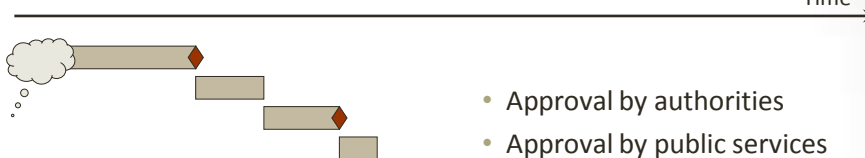
Building project management

Phases of a building project: planning

- Preliminary design
 - General building size and form
 - Selected basic construction and type of structural system
 - General use of materials
- Definitive design
 - Layouts of plans and elevations
 - Selection of essential control dimensions and modules
 - Description of basic materials and products
- Information required
 - Reasonable alternatives for the basic construction
 - General planning requirements
 - Unit costs (selected systems and materials)
 - ↓
 - Construction details appropriate to design goals and choices for materials and products
 - Dimensions and planning modules
 - General design data

Building project management

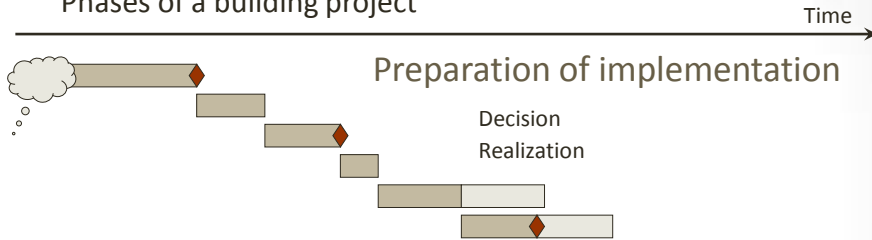
Phases of a building project



- Approval by authorities
- Approval by public services
- Building permit

Building project management

Phases of a building project



- Detail design
 - Documentation for tendering (tender set of drawings)
 - Documentation for construction (working drawings)
- Tendering
 - Getting a quotation (bid/price) from the contractor
 - Choosing from several possible contractors
- Signing the contract

Building project management

Phases of a building project: preparation of implementation

- Set of contract documents
 - Complete construction details
 - Complete specifications (precise descriptions of quality, performance requirements)
- Final cost estimate
- Typical questions for final design
 - What specific material or product is to be used for a given item of the construction?
 - What specific data must be recorded to completely identify a chosen material or product for design purposes?
 - What are appropriate details for the construction of various elements of the building?

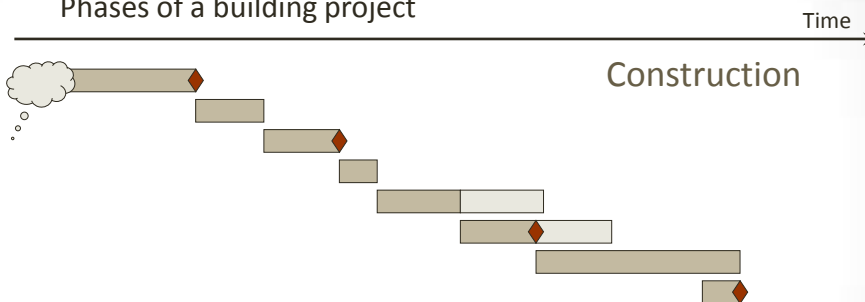
Building project management

Phases of a building project: preparation of implementation

- Qualification/prequalification
 - Tendering
 - Open tender
 - Restricted tender
 - Negotiated tender
- } depends on the number of contractors invited
- Bills of quantities to be priced
 - Standard bid proposal forms
 - The successful tenderer is usually the contractor with the lowest contract sum or the aspects of rating are given

Building project management

Phases of a building project



- Planning/designing the plot/time/costs
- Erecting the building according to the plans
- Supervision of construction
- Running-in; Hand-over – take-over of the building – reviewing the constructions (quality and quantity) and the plans

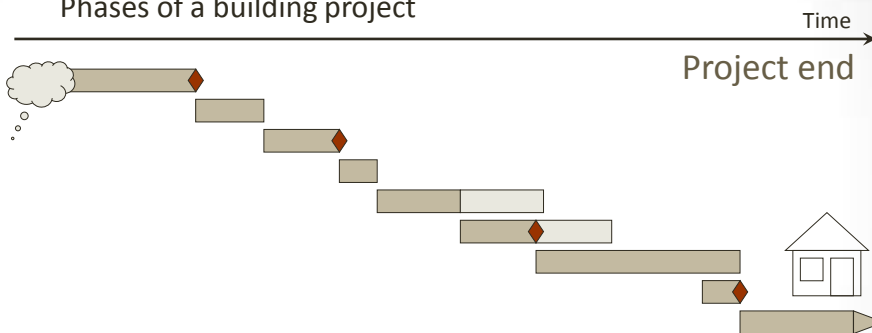
Building project management

Phases of a building project: construction

- Managing resources
 - Labour
 - Materials
 - Machinery
 - Money
- Managing changes
 - Acceptable range for performance and alternatives
- Managing time
 - Verification of time schedules
- Managing quality
 - Procedures for inspections, tests, certifications, etc.

Building project management

Phases of a building project



- Operation and maintenance of the building
- Setting up (and operating) a Facility Management System

Building project management

Phases of a building project: project end

- Operation and maintenance of the building
- Setting up (and operating) a Facility Management System
- Selling/renting the building
- Evaluation of the project / Benchmarking (comparing with other closed projects)
- Feed-back for future projects

Building project management

Quality – quantity – time - costs

