ESTIMATION AND SPECIFICATION TYPES OF ESTIMATION

Dr. Husein Ali Husein

husein.ali@su.edu.krd

dr.arch.huseinali@gmail.com

Design & Estimating Process

Feasibility → Conceptual design → Detailed design → Pre-bid → Construction

Conceptual & Preliminary Estimates → Definitive Estimates → Detailed Estimates

Purpose of An Estimate

To know in advance the expected cost in varying degree of accuracy, at different phases of the project.
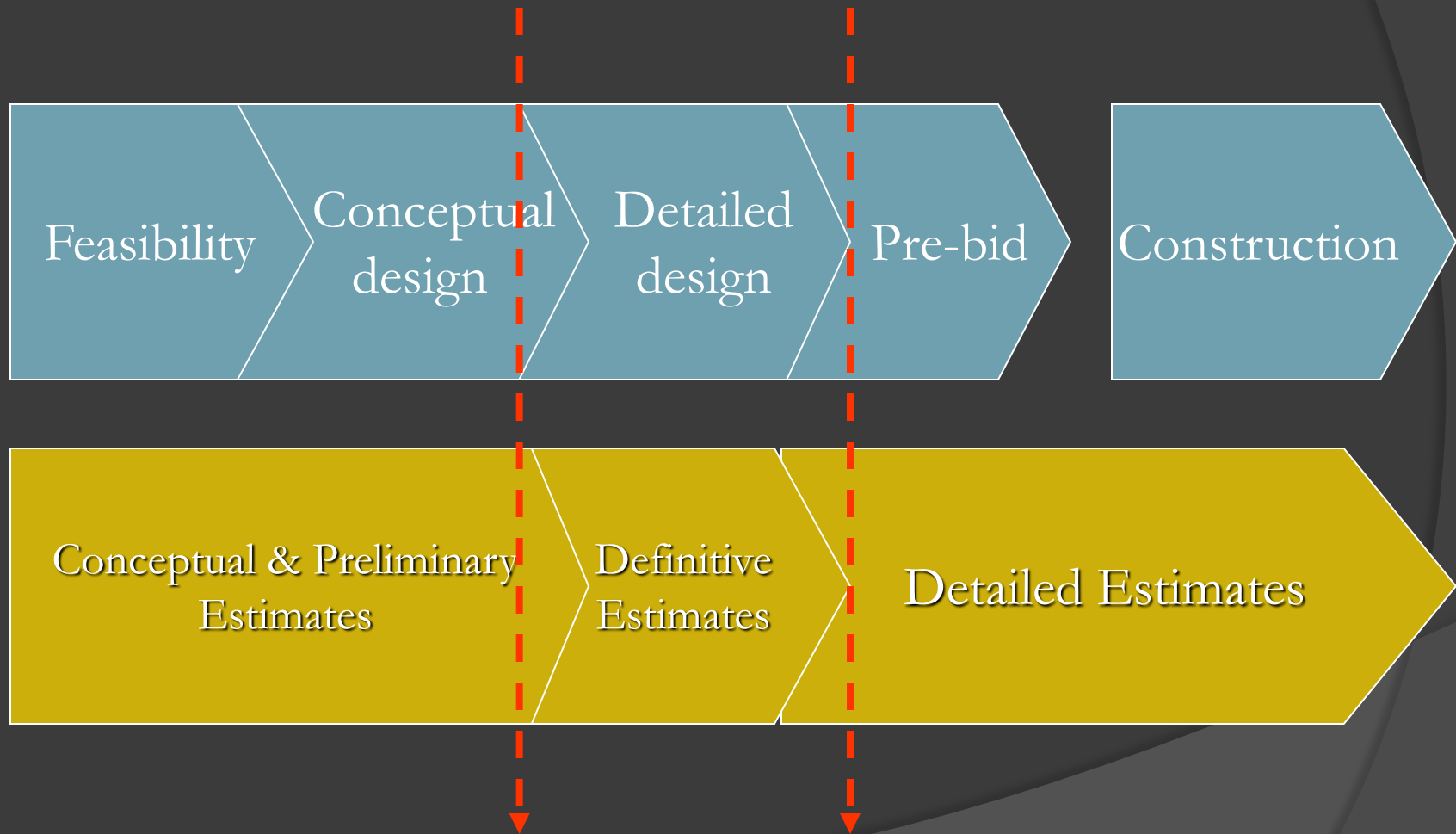
Owner's Purpose of Estimate

1. Making investment decisions in the conceptual stage.

2. Negotiate and finalize the contract at the implementation phase.

3. To implement cost control measures.

Contractor's Purpose of Estimate

1. Determine project cost and profit.

2. To Implement cost control measure.

3. To develop data base for that can be used for future project.

Engineer's Purpose of Estimate

1. Provide the owner with probable estimate.

2. Evaluate alternatives.

Contractor's Estimator

- Determines the actual cost of the project for bidding purposes.
- Has detailed company cost data for labor and equipment.
- Knows which construction methods are to be used.
- Has knowledge of actual materials suppliers to be used and quantity discount prices.

Engineer's Estimator

- Determines expected cost.
- Does not know who will receive award, therefore does not know contractor's exact resource costs. Does not know actual labor rates.
- Must assume probable construction methods to be used.
- Does not know who project supplier will be. Must use local list prices.`

The list price, also known as the manufacturer's suggested retail price (MSRP), or the recommended retail price (RRP), or the suggested retail price (SRP) of a product is the price at which its manufacturer notionally recommends that a retailer sell the product.

1. Preliminary

2. Unit price

3. Assembly or Conceptual Cost

4. Detailed estimate
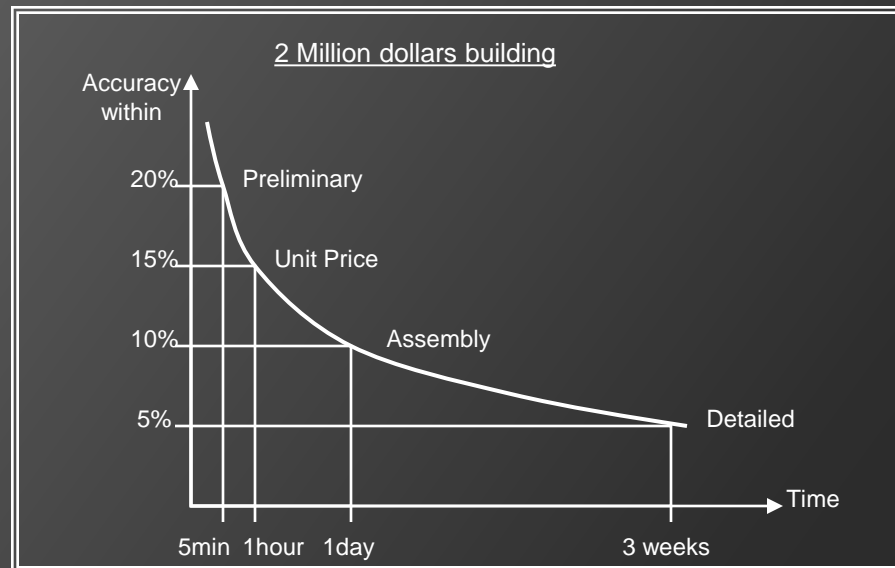
Each phase of a project life cycle requires a different type of estimate--each estimate requires different types of information.

1. PRELIMINARY ESTIMATE "ORDER OF MAGNITUDE"

➢ A cost prediction based solely on a proposed project's size and capacity.

➢ Before any engineering or design is completed.

➢ Rely on broad data from already executed similar project

❖ relate cost in dollars to the main capacity/size parameter

- Number of beds in the hospital
- A square meter of office space
- Number of students in school

Preliminary Estimate

❖ Advantageous

➢ Allows a quick determination of the feasibility of a project

➢ A quick screening on alternatives, etc. (e.g., should it be a concrete building or a steel building !).

❖ Purpose:

1. Ranking alternatives

2. Evaluate economics and financial feasibility

3. As a check on more detailed estimates

1. Example of Preliminary Estimates

➢ **Parking Garage**

$150.0/m² or $3750/parking space

➢ **High School**

$80 to 110/m² or $4,000/ student seat

➢ **Medical Centers**

$90 to 130/m²

2. UNIT PRICE ESTIMATE

➢ Unit prices are obtained from data on projects already performed.

➢ Cost of labor, material, and equipment for all units of work are added together and divided by the number of units involved.

EXAMPLE OF UNIT PRICE ESTIMATING

Work Item	Estimated Quantity	Unit Price	Total
Site Preparation	50,000 m²	$ 7	$ 350,000
Earth Excavation	100,000 m³	$ 12	$ 1,200,000
Paving	50,000 m².	$ 8	$ 400,000
Total bid price			$ 1,950,000

Dr. Husein Ali

3. ASSEMBLY OR CONCEPTUAL ESTIMATE

➢ Performed when conceptual design decisions are being made.

➢ Work package concept can be used to determine the element or assembly to be studied

➢ We need a breakdown of cost of a completed project into its functional elements to:

4.   DETAILED (DEFINITIVE)ESTIMATE

- Prepared after drawings and specification are completed.

- Requires a complete quantity takeoff based on drawing and the complete set of contract documents

- Need information on labor rate "productivity", material cost, cost of renting or purchasing equipment

QUESTIONS?