Chapter 1 Introduction to Estimating

REVIEW QUESTIONS

1. What information is contained in the working drawings? (p. 11)

   The working drawings are the actual plans, elevations, sections and details from which the project will be constructed. These drawings contain the dimensions, locations of building elements, materials required and delineate how they fit together.

2. What information is contained in the specifications? (p. 11)

   Specifications are written instructions concerning project requirements that describe the quality of materials to be used and their performance.

3. What is the relationship between the working drawings and the specifications? (p. 1)

   The working drawings usually contain information relative to design, location, dimensions, and construction of the project, whilst the specifications are a written supplement to the drawings and include detailed information pertaining to materials and workmanship.

4. How does the work involved in being an estimator for a general contractor differ from that of an estimator who works for a subcontractor? (p. 4 and p. 5)

   The estimator for the general contractor is responsible for a detailed estimate for the whole project. They must compile costs on everything that is integrated into the project and put it together into a bid for the entire project. An estimator for a subcontractor will prepare an estimate only for the part of the project for which they will be involved. For example they may be bidding only on the masonry portion of the project.

5. What is the difference between doing a quantity takeoff and doing a full detailed estimate? (p. 2)

   A quantity takeoff is the process of quantifying the scope of work for the contractor's self-directed work or subcontractor's work by their respective estimators.. A full detailed estimate includes the determination of the quantities and pricing the resources of the contractor's self-directed (own forces) work, obtaining subtrade quotations, general expenses, as well as an estimate of profit required from the project.

6. Why are good math skills important to a person considering a career in construction estimating? (p. 8)

   A construction estimator is a "number cruncher" and must be able to apply mathematics in the estimating process. Most measurements and computations are made using linear, area, and volume concepts. The quantities are usually multiplied by a unit price to calculate costs.

7. What additional skills must the estimator have to be able to take a quantity survey and turn it into a detailed estimate? (p. 8)

   1) Must be able from looking at the drawings to visualize the project through the various phases of construction.

   2) Must have enough construction experience to possess a good knowledge of job conditions including methods of handling materials on the job.

   3) Must have sufficient knowledge of labour operations and productivity in order to convert them

into costs on a project.

4) Must have the ability to keep a database of information on costs of all kinds including those of labour, material, overhead, and equipment, as well as knowledge of the availability of all the required items.

5) Must be computer literate and know how to manipulate and build various databases and use spreadsheet programs.

6) Must be able to meet bid deadlines and still remain calm. Even in the rush of last-minute phone calls and the competitive feeling that seems to electrify the atmosphere just before the bids are due, the estimator must "keep cool."

8. What is the difference between competitive and negotiated bidding? (p. 10)

Competitive bidding involves each contractor submitting a lump sum bid in competition with other contractors to build the project. In most cases the lowest lump-sum bidder is awarded the contract to build the project as long as the bid form and proper procedures have been followed and this bidder is able to attain the required bonds and insurance. Negotiated bidding involves the contractor working with the owner (or through the owner's architect or engineer) to arrive at a mutually acceptable price for the construction of the project. It often involves negotiations back and forth on materials used, sizes, finishes, and other items that affect the price of the project.

9. What are the preliminary methods of estimating? How may they be of help to the general construction estimator? (p. 3)

Preliminary Estimates (Volume & Area). The volume method involves computing the volume of the building and multiplying that volume by an assumed cost per cubic metre (foot). Using *the area method*, you compute the area of the building and multiply that area by an assumed cost per square metre (foot). Both methods require skill and experience in adjusting the unit cost to the varying conditions of each project. The amount of information required to produce these types of estimates is much less than with the detailed estimate. For example, a preliminary set of design drawings would have the dimensions for determining the area or volume. These types of estimates are helpful to check on whether the project as designed is within the owner's budget.

10. What are the contract documents, and why are they so important? (p. 11)

The Contract Documents comprise the Owner-Contractor Agreement, the General Conditions of the Contract, the Supplementary General Conditions, and the Drawings and Specifications, including all Addenda incorporated in the documents before their execution. The combination of all of these documents forms the contract. These documents provide the legal basis for the construction of the project.

11. Why is it important to bid only from a full set of contract documents? (p. 10)

It is important to bid from a full set of contract documents to be certain you have all of the required information to prepare a complete and accurate estimate. If part of the documents were missing that portion of the project would most likely be left out of the bid. Errors of omission can be catastrophic for a contractor.