

CHAPTER 2 SOLUTIONS

1

CHAPTER 2: OVERVIEW OF THE CONSTRUCTION INDUSTRY

- 2.1** Describe the essential differences between design-bid-build, design-build, job order contracting, construction management at risk, and best value procurement. What are the major advantages and disadvantages of each?

Design-Bid-Build

Advantages:

Low bid regulations are firmly entrenched in most government systems for the purpose of promoting fairness.

It is easy to justify the selection of the low bidder. The fact that the bidder is low is irrefutable.

Contractors understand the system.

Voters understand the system.

Disadvantages:

One of the most expensive forms of construction procurement.

Products are the lowest quality the contract will permit.

The system causes contractors to look for change orders so they can make a profit.

It causes manufacturers to find ever less expensive products to sell to the agencies.

It does not offer the builder the opportunity to contribute the company's construction expertise to the design process.

Design-build

Advantages:

Allows construction expertise to play a role during design.

Gives the designer an opportunity to be involved during construction.

Disadvantages:

A dominant contractor can overrule the designer's recommendations of quality in the interest of cost.

Job order contracting

Advantages:

Eliminates the need to hire a designer to prepare a design for each small item of work..

Accomplishes the work more quickly.

The process provides a continuing incentive for quality work, while reducing time and cost for the owner

Disadvantages:

Suitable only for small jobs.

Construction Management at Risk,

Advantages:

Risk is reduced for the architect and owner.

Produces a more manageable and predictable project cost and schedule outcomes.

Centralizes responsibilities.

The owner benefits from the CM's experience both during design and construction.

Allows for an early start to construction by phasing the work.

Results in better quality construction because the selection of the CM is based on record of performance in the same type work.

Pricing is fair, and there is an atmosphere of trust because the project is "open book."

Disadvantages:

It is difficult to award enforceable contracts using incomplete design documents.

The CM is at risk of having to pay any costs that exceed the GMP which do not result from owner scope changes.

Disputes can arise regarding what was implied, but was not in the contract documents at the time the CM submitted the GMP. As a result, CMs have learned to bid conservatively.

The CM must rely on its own estimate because of the incomplete design documents.

CM @ Risk is not suitable to small projects..

Best value procurement

Advantages:

Poorly performing contractors cannot compete successfully

Reduces the need for construction management staff and allows the contractors to manage their work

Provides an automatic incentive to produce a quality product

Reduces the need for change orders

Reduces the need for detailed specifications by requiring contractors to provide a product.

Disadvantages:

Resistance to change

Need for a trained staff in managing the process

Need for a mind shift away from the low-bid paradigm

Opposition from the design community

Opposition from low performing contractors.

2.2 What are the major types of construction contractors?

Builders of individual homes – residential

Commercial Construction contractors

Industrial Construction contractors

Heavy / Highway Construction contractors

2.3 What are the major differences in contracting with the government and contracting with a private firm or individual?

Government: Such organizations have very bureaucratic rules and procedures. Projects must be awarded to the lowest responsible and responsive bidder. There is only one prescribed way to open bids, and exceptions are not allowed. There are strict rules that govern how projects are advertised. Anyone who can provide a bid bond is allowed to bid unless the project requires contractors to pre-qualify.

Private persons and corporations, on the other hand, are spending their own money. They are not as encumbered by bureaucracy and rules. They may open bids (or simply take proposals) in any way they select. They may decide who they will allow to submit bids. They may choose not to advertise the project at all, but to award it instead to their favorite contractor.

- 2.4 Why is there a growing attitude that construction is a commodity? What does that mean?

Design-Bid-Build treats construction like a commodity.

The theory of this process is that any qualified contractor will produce the same product from the plans and specifications, provided the plans and specifications are complete and written properly. Design the product and assume the results of the process will be identical, no matter who constructs the product.

- 2.5 What are the advantages and disadvantages of Project Labor Agreements (PLAs)? What is causing their increased use?

The advantage of a PLA is that the unions agree not to strike for the duration of the job.

Disadvantage is that non-union contractors experience problems in bidding because even though by law a PLA has no impact on a contractor's existing employees, only on hiring new employees the basic agreement is that contractors agree to hire workers only through the union hiring halls.

Unions are actively pushing for government agencies to require Project Labor Agreements (PLAs) on their projects.

- 2.6 Make a list of the major differences between construction and manufacturing. Which items do you think are the most important?

Contractors build facilities and are producing a product just like manufacturers. But the most significant difference are the size and cost of the product and its custom-designed, one of a kind features.

- 2.7 How large is the construction industry?

CHAPTER 2 SOLUTIONS

5

The sheer size of the construction defies comprehension. It is commonly said that the industry is about 6% of the national Gross Domestic Product, or around \$682 billion annually, and employs 5% of the workers.

Construction accounted for 5.2% of total employment in 2001.

There are 6.4 million craft and management people employed in construction in the United States.

2.8 What are the major services to the industry that are performed by the trade unions?

Unions negotiate labor agreements that are then accepted by the “signatory companies,” meaning those that employ union workers and agree to the terms of the unions contract.

Benefits to the union employers include:

Training programs and

Hiring halls.

2.9 Why do owners prefer the design-build form of contracts?

Design-build provides the means for companies to manage their construction needs without a large internal staff, and still meet their needs for quality and timeliness.