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Is the building industry broken?

Communication barely exists, and the design-bid-build system is delivering failure

CONSTRUCTIVE ADVICE

Kenneth P. Childs

Is the construction industry broken? Yes. And its problems are serious.

Many projects suffer from significant cost overruns and delays. Construction industry productivity has declined over the last 40 years. Construction defect litigation is exploding. Insurance premiums for contractors and architects are skyrocketing. Industry labor shortages are growing, and the number of skilled workers entering the work force is declining.

Two significant examples of these problems are the aerial tram project here in Portland and the Big Dig project in Boston. The tram ended up costing more than six times its original $8 million estimate and over $40 million more than the original $15.5 million budget.

The Big Dig had cost overruns of more than $1 billion. It experienced major water leaks, which no one has been able to plug. A portion of its ceiling collapsed on a car and killed a passenger. And several contractors, suppliers and design professionals on the project are now the subject of criminal investigations. Litigation involving the project is likely to go on for years.

And the tram and the Big Dig aren't isolated incidents. The problems that plagued these projects are widespread.

"Broken Buildings, Busted Budgets," a new book by New York attorney Barry LePatner, paints a bleak picture of the industry. "This is the industry that time has forgotten," LePartner said recently. "Mom-and-pop shops, composed of 20 people or less, make up 92 percent of the industry. They are hugely inefficient, and they have no money to spend on improving performance and technology."

Delivery system deserves brunt of blame

The problems have several sources, but most of them can be traced back to the primary method the industry has embraced for financing and executing construction projects. An architect designs the plans, which are then put out for bidding, and the contract is awarded to the lowest bidder. It's the design-bid-build (DBB) delivery system.

Although the DBB system may result in the lowest price for the owner, it comes with numerous problems. Rather than integrating the design and construction portions of a project, it isolates them. The architect normally designs the project with no input from the contractor, and thus contractors often get plans with major constructability issues. And if, as is often the case, the architect has a limited budget for contract administration, communication between the architect and the contractor during construction can be particularly difficult.

Construction industry wages are depressed, and a high percentage of workers are unskilled and poorly trained. The industry has been slow to embrace technology to the extent that other industries have. And both the industry and government have failed to invest in anymeaningful way in research and development.

Rather than fostering teamwork, the DBB system isolates the various participants. The architect works independent of the general contractor. The general contractor retains subcontractors to perform most of the work. Each subcontractor works independently of the other, and usually there is no direct communication between the subcontractors that are doing the work and the architect that designed the project.

Under the DBB system, responsibility for contract administration is often seriously fragmented. On most commercial jobs, the architect has little responsibility to observe the project to confirm it's constructed in accordance with the plans; however, these contract administration duties often require only one or two visits to the job site per month, and the architect doesn't have to seriously inspect the work. On residential projects, the architect sometimes has no project administration responsibility at all.

Subs have no incentive to supervise

Although the general contractor normally bears a greater responsibility for contract administration, the contractor often simply relies on the subcontractors to work properly. On many residential projects, where virtually all of the work is subcontracted, many general contractors spend only a couple of hours each week at the job site.

The subcontractors performing most of the work, even on

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commercial projects, have no responsibility for overall oversight. They're paid only for their limited scope of work, and they have no financial incentive to even observe other portions of the job.

Although construction managers, who represent the owner's interests, are becoming more common, and although they're responsible for ensuring the owner gets what it pays for, they have no management responsibilities and no ability to supervise others.

Nearly every construction project is built by a new construction team that has never worked together. Although the architect may have worked with the general contractor on one or two prior projects, they oftentimes are new to each other. Likewise, the owner and the architect are often new to each other, as are the owner and the general contractor. Although many general contractors have a list of subcontractors and suppliers with whom they prefer to work, most commercial projects involve subcontractors, suppliers and generals that have never previously worked together. Residential construction is sometimes an exception, because quality residential contractors typically have a stable set of subcontractors they use on every project.

Often, bids aren't realistic

Under the DBB system, the fixed-bid contract ties the contractor to a budget that may be unrealistic and that can be affected by numerous unexpected problems. Often the low bidder was low because it made mistakes in preparing its bid, or it assumed it could cut costs in ways it couldn't. Even a properly calculated bid can be problematic if unexpected events result in an escalation in labor or material costs. Inevitably, the low bidder has every incentive to cut costs, and usually that means cutting quality.

In addition to the problems inherent in the DBB system, other factors contribute to the industry's problems. The industry is composed of a transient and unstable work force. Construction industry wages are depressed, and a high percentage of workers are unskilled and poorly trained. The industry has been slow to embrace technology to the extent that other industries have. And both the industry and government have failed to invest in any meaningful way in research and development.

Turning the construction industry around will require significant changes and take a long time. A major step will be to move away from the DBB delivery system. Although the construction industry has for some time embraced other models, such as the design-build delivery system, the DBB system continues to dominate. New delivery systems that more appropriately spread risks and that contain appropriate incentives are needed.

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