

How to Minimize Construction Cost Overruns



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Construction cost overruns seem to be the norm, not the exception. Research by Dodge Data & Analytics has consistently shown that projects are frequently delivered over budget and late. According to a McKinsey & Co. survey, large projects across asset classes typically take 20% longer to finish than scheduled and are up to 80% over budget. Cost overruns may be caused by poor estimates; overly ambitious scopes, schedules or budgets; weather conditions and/or human errors, among other things. Controlling overruns is key to achieving a successful project.

Pre-Construction

Controlling overruns starts at the initial stages of the project by thinking through every detail, planning out every contingency and making sure that all project players know what to do and are coordinated. The Dodge study referred to above concluded that owners who are educated and informed about the construction process, and who demonstrate strong and effective leadership and communication, have greater likelihood of avoiding project overruns.

Some owners become so focused on cost that they do not hire the best contractor for the job, but rather, the cheapest. Careful comparisons of project proposals can protect owners from later overruns by ensuring apples-to-apples cost comparisons. Evaluation of the bids by trained construction management professionals may assist an owner in hiring the contractor who proposes the most thorough and accurate bid. The higher the quality of the bid, the greater the potential for the project to stay on budget.

To reduce the risk of overruns, an owner can establish a firm budget and direct the architect and engineers to design to that budget. An incomplete, inaccurate or poorly coordinated design inevitably will produce a project with conflicts, unanticipated costs, delays, and claims. Conversely, nothing diminishes the risk of

conflict, and provides protection for the owner, more than an accurate and complete design. Peer review, which involves an independent architect or engineer reviewing the plans to uncover errors, omissions and inconsistencies, may help to avoid the extra costs that can occur when design errors are discovered in the field after construction is underway.

Another way to help to limit cost overruns is by obtaining independent cost estimates as the design progresses. This involves checking and double checking the cost estimate for the work with cost estimators whose focus and expertise is in determining the cost of the design, as opposed to leaving this task to the design team.

Cost savings can also be achieved by utilizing “add and delete” alternatives, where the design team preplans certain components of the work which the owner may delete if the bids come in too high, and add if the bids are lower than expected. Alternative design concepts communicate and fix the project scope of work, aid in determining project feasibility, and provide more input for developing realistic estimates, budgets and schedules.

Conducting due diligence on the reputations and past performance of contractors and suppliers of materials and equipment may also help to provide some cost certainty. For example, knowing the capacity of an equipment supplier to provide the equipment required by the job in a timely fashion may provide comfort that the project will not be delayed by any lack of capacity and/or lack of availability of materials or equipment.

The Construction Contract

Aside from the construction work itself, the contract is the most important part of the project, and a well-written contract can avoid costly disputes later. The written contract terms should carefully and clearly define the parties’ agreement, their expectations and their respective risks and obligations. Construction disputes are best avoided through a fair allocation of project risks. One potential approach is to allocate risks first to the party who has direct control over the portion of the construction that creates the risk, and when no party has direct control, to the party who is best able to protect against an unexpected loss. When no party has any control, risk is allocated to the owner, which is the party that initiated the construction project and is the ultimate beneficiary of the results.

It may be beneficial for the contract documents to contain carefully crafted provisions addressing the timing of the performance and the consequences for delay. Including “time of the essence,” “force majeure,” “liquidated damages” and “no damages for delay” provisions in the contract sets up initial protections to the owner for delay and partially shifts the risk of delay away from the owner. Other contractual clauses such as “acceleration” (requiring the contractor to speed up the work by adding manpower), and “waiver of consequential damages” (preventing the contractor from recovering extra costs) may also set the stage for keeping a project on track.

Projects also suffer when contracts require unrealistic deadlines. Establishing contractual milestones throughout the project can lead to success in meeting project schedules.

Finally, including incentives for cost control in the contracts on all sides of the project may result in project participants being invested in avoiding overruns.

Clear Lines of Communication

Poor coordination of the work may lead to budget overruns because project participants do not know when and what they are supposed to be doing. Establishing clear and detailed lines of communication so that everyone working on the project timely receives information may help to prevent overruns. For example, requiring attendance of all project participants at weekly project meetings, and circulating meeting minutes to all stakeholders potentially ensures that project issues that can impact the budget are caught at the earliest stages.

Utilizing Artificial Intelligence (AI)

The construction industry has been late to embrace the use of technology as compared to other fields, according to a survey done by JBKnowledge. However, one type of AI that has been in use for several years is Building Information Modeling (BIM). BIM creates a three-dimensional intelligent representation of the design which provides all architectural, engineering and construction information about the project in one place. That information can then be analyzed to optimize the design, planning and construction phases, resulting in cost savings and certainty.

Instead of the traditional method of performing material “take-offs” to determine project costs, in its updated version, the BIM software has added a cost management tool. This tool manages data collected before and during construction and allows for project costs and projections to be updated on a live basis. This tool can spot costs overruns much earlier in the process than methods previously available and before the budget gets out of whack.

The ability to forecast future project events and spend enabled by using AI such as BIM, can make a difference in sound planning.

Anticipate Problems

As stated above, delays and cost overruns seem to be the norm rather than the exception. Problems leading to cost overruns can range from change orders to address unforeseen field conditions, to weather problems, natural disasters, changes in labor costs, financial issues or delays in obtaining equipment or supplies. Building the unexpected into project budgets with realistic contingency funds and schedules with adequate cushion or “float” between construction operations may help avoid these problems. Typically, project budgets include contingency funds to cover unexpected expenses. While the American Institute of Architects (AIA) suggest a contingency fund at about 5-10% of the total budget, the complexity of the project may require a greater buffer. For example, projects involving technology-rich buildings or complicated designs could need a higher percentage.

Creating defined processes and procedures for handling a problem when it occurs may assist in controlling the resulting delays and overruns. A systematic approach may help to turn the unknown into the known and allow the owner to effectively manage project risks. All project participants should be governed by these processes. For example, immediate communication of a problem from the contractor, to the project manager, to the owner, with tight timeframes for each party’s required notices and responses can help to control the impact of a change.

In the words of Maya Angelou, “Hoping for the best, prepared for the worst, and unsurprised by anything in between.”

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