Master Your Budget, Protect Your Profit Margins

The Hidden Hazards of Budgeting Your Construction Project

PROCORE

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Errors in construction budgeting have been around as long as people have been putting up buildings, and as the built environment continues to grow, so does the difficulty of accurately forecasting costs.

In 1914, the Panama Canal came in ahead of schedule and some $23 million under budget; an owner's daydream. But more often, the error goes the other way. It's not uncommon for an imaginative architect's high-flying vision to wow the stakeholders so much so, that all common sense is set aside.

The Scottish parliament building may be the most striking example of a grand-scale architectural miscalculation. Holyrood, as the building is known, was projected to cost $58 million in 1997 when it was approved. By 2007 it had come in at $608 million. In that case, poor and hurried planning were to blame. Client tinkering and self-deluding optimism, however, are also common reasons large-scale projects run off the budget rails.

There are many reasons for budget overruns in construction. Here are some of the least predictable.

I. Lowball Recoil

Doomed from the start.

What may at first look like a budget shortfall is often the result of someone making an overly optimistic bid in order to land the job. The phenomenon has the dark industry nickname “suicide bidding”, but you can also call it “optimism bias” where it stems from the bidder’s positive outlook.

In the CIOB’s 2010 survey, “Procurement in the Construction Industry,” 82% of respondents reported to believing there are contractors who engage in “suicide bidding” within the industry.

In other words, if the bid sounds a wee bit too good to be true – well, you know the rest.

And speaking of the Panama Canal; in 2014 a large-scale expansion of the iconic waterway was found to be running about $1 billion over the bid figure of $3.12 billion. The contractor, Spanish consortium Grupo Unidos por El Canal (GUPC), quickly blamed “flawed geologic studies” done by the semi-government office Panama Canal Authority (PCA), an accusation that was immediately rebuffed by the PCA. A Panamanian government source, meanwhile, said that immediately upon winning the hard-fought bid, GUPC had been openly saying the figure couldn’t possibly be met, a bold confession that didn’t trouble the Panamanian government, who felt they were protected by the bid contract. It also developed that the financially ailing GUPC had internally assured stakeholders that they would be able to raise the pricing in later negotiations with PCA-head Jorge Quijano. Mr. Quijano, in the event, could not be budged.

In the intervening two years, the Dispute Adjudication Board (DAB) has found in favor of GUPC over the Panamanian PCA, as clauses in the original contract placed the burden of maintaining "financial equilibrium" with the Panamanian government; something they have been reluctant to do given the scale of the overruns. Cost overruns are fairly routine in grand scale engineering projects of this kind, and contracts typically codify that understanding in the contract language.

Be wary of the surprisingly low bid. The technical approach to a subcontracted job follows professionally agreed-upon norms in the industry. A bid that comes in substantially lower than the nearest competitive bid for the same job is either deceptive, is genuinely uninformed about what the job elements are, or comes from an unlicensed contractor who is passing along payroll savings to you through a sweetheart bid. Your attempt to leverage promised savings from an attractively low bid may in fact be locking in a contract with an opportunist who will blow out your budget.

II. Fickle Owner Input

The building is your owner's baby, and we all know how parents can be.

An owner's obligation to allow the contractor to "carry out the work" is explicit in most contracts, and goes to legally preventing an owner from worrying a project right over the budget line. Owner indecision and fidgeting over materials and features (even as a project is moving forward) can play absolute hell with the budget.

The lesson here? If at all possible, get the client/owner to commit to finishes, ornamental flourishes, and cosmetic options early on, as these aesthetic considerations are what most often drive an owner to step in and meddle.

Consider providing a photographic range of options so that even if the owner begins to drift, you have a sense of where the design is going, and can estimate against a known range of possibilities.

The two explicit contractual principles that fundamentally govern the owner/contractor relationship are:

1. The owner directing the work of the contractor
2. The contractor's right to control the work (i.e. perform contracted duties without interference from the owner)

When these two principles are found by a judge to be competing principles in a dispute, often the court will limit the owner's right to direct the work where that direction takes the form of nuisance interfering.

In Arcadis' 2015 Global Construction Disputes Report, "errors and/or omissions in the contract document" was the number one cause of disputes in U.S. construction industry projects. In addition to "differing site conditions" coming in at number two, "failure to comply with contractual obligations," "failure to properly administer the contract," and "poorly drafted or incomplete and unsubstantiated claims" rounded out the top five causes of disputes. It's always recommended that discussions and agreements between owner and contractor work these issues through before setting pen to contract.

III. The Materials Price Roller Coaster

Not your typical Disneyland adventure.

Steel, concrete, and copper; these familiar materials are central to most building projects, and are often subject to price fluctuations that can really beat up a budget. According to the 2016 Global Occupier Survey from CBRE Group, Inc., after a 1.8% year-over-year increase in 2016, average total construction costs in the U.S. have risen at an average rate of 2.3% since January 2011, accounting for a 11.8% cumulative rise in costs during that time period. The main factor in the rise of construction costs? The prices of materials.

Much of the price volatility of these basic building ingredients can be linked to the impact on raw construction materials of China's massive construction boom, as well as the construction that is accompanying the emergence of developing countries around the world. A sound estimate needs to anticipate some fluctuation in the cost of construction materials and build those margins in, where possible.

IV. Unrealistic or Incomplete Plans

When "shoot for the moon" doesn't quite work.

When the design of a project is not as easily achievable as the drawings and plans would indicate, or when the plans themselves are not fully and satisfactorily fleshed out, the nature of the problem often doesn't become evident until it's too late. At that point, extra costs have been spent on the project to make the design work and you have exceeded your budget, sometimes substantially.

The more the builder is involved to some degree in the design phase, the less likely the design will cause problems.

Research in the Project Delivery Systems SmartMarket Report by McGraw Hill indicates that the highest percentage of owners, (60%), who are highly satisfied with their projects are those using the CM-at-risk delivery method (as opposed to design-bid-build or design-build).

This is where the owner hires a construction manager who will work with the engineer/architect throughout the design phase and then present a guaranteed project price to the owner.

Whatever method you choose, early-stage planning of the drawings and design will establish the budget-viability of what the designer intends. At the least, the estimator should responsibly pad the relevant numbers to cover possible unknowns related to each questionable element in the plan.

V. Contractual Ambiguity

AKA project deadlock.

Before the first brick is laid, a flurry of contracts circulates among the players. Since any ambiguity in these contracts will almost certainly compel a dispute later on, it's important that these agreements unambiguously detail everyone's role and responsibility in the project. A contractual disagreement when the project is well underway leads to impasse, and at a time in the project life where time is literally money.

Owners should consider implementing a biddability/constructability review, ideally performed by experienced construction personnel not involved in the design, thereby eliminating self-review.

Owners can also appoint a single representative to handle all bidding negotiations and mandate that they attend both a pre-bid conference and a post-bid conference to ensure all estimates are accurate.

Although many statutes, regulations, and internal policies require owners to accept the lowest bid offered, firms should consider adopting a formal written policy that allows them to request a review and clarification for any bid that is 10% or more below the second-lowest bid to ensure there were no bid errors.

It's critically important that contracts be thoroughly reviewed for ambiguities in language or intent. Any clause of a contract that could conceivably engender a disagreement down the line, likely will. Contractual disagreements are expensive, and avoidable.

VI. Approximate Approximations

You can only know so much.

A budget is also, in a sense, just a snapshot of a moment in the constantly-evolving cost matrix of a project. Budgeting is accurate to the degree the trained estimator is able to fold the "unknowns" into the mix. Knowing where the hidden pitfalls are in the budgeting process can help meet the goal of building a budget that will keep the project on track with minimum surprises.

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