



The "Perfect Project" Preconstruction Resource Guide

A Practitioner's Handbook for Preventing & Mitigating Avoidable Change Orders and Delays in Commercial Construction Projects



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Presented to
Confidential Client

Producing Achievable Estimates

The key to a successful project is a budget that includes enough money to complete all of the work required. In a perfect world, a general contractor would have at least three competitive bids from credible, local subs to compete every scope of work. In today's environment, competitive bids are hard to come by, and more than likely, there will be one or more scopes that don't attract any bids at all.

But the show must go on right? When the contract needs to get signed, you need to know you have enough money in there to get the job done - but not too much or the whole project could be postponed or even cancelled. Setting an allowance or agreeing to a fixed price is empowered by an estimate that is reasonable and most of all, achievable. This resource is about how to generate an achievable estimate on a scope when you have no bids, expertise or historical information available.

First do some basic research. You Tube, industry or manufacturer websites offer unique insights into almost any subject including installation guides and instructional videos. Taking a little time to watch and read through these materials will help you understand the basic scope of install, sequencing of the tasks, materials and equipment involved along with insight into important topics such as quality control, curing and testing.

Next, we need some meaningful metrics to appreciate and describe the magnitude of the task and complexity of the application. These factors will affect material prices, production rates, cost of accessories, waste factors, and may help you determine which subcontractors you should eventually solicit for the work. Start with square foot calculations of each plane of the work, lineal feet of corners (inside and outside), lineal feet of bottom and top terminations as appropriate. Quantify any special conditions such as curved surfaces or areas with significant detailing. The goal is to be able to calculate the surface area and volume of materials involved for each section of the work.

Now is a good time to reach out to an expert. Depending on the scope this could be a distributor or manufacturer's representative. Unions and industry associations can help or point you in the right direction.

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Ultimately you are looking for an introduction to a recommended or certified installer so that you can confirm:

- The number of workers in a production crew
- Production rates per day
- Any work required but usually done by others
- Unit prices

At the end of the day, you are probably going to hire a company to actually do the work so you might as well figure out who you should be soliciting for pricing as early as possible.

Milestone: We now understand the magnitude, complexity and nature of the work required, have communicated with at least one industry expert and secured referrals for approved or recommended installers.

Then, we are ready to put together a draft production schedule. This will be the basis of at least 60% of the budget and 90% of the risk so we want to really think this through.

Step 1: Decide when you want / need to start the work. This could be the earliest start date based on when any underlying and / or overhead work will be complete, and the site conditions and weather will be appropriate for the install. If weather is a factor, consider the cost of weather protection and heat versus the schedule impact of deferring the work until the weather is more compatible with the install. Keep in mind that even you protect and heat the area, you need time to set up and tear down and production will still be slower than in "peak season".

Step 2: Calculate the number of crew days to substantially complete the work. Best practice is to mark up a site plan and elevation(s) with the approximate quantity of work in each section. Then divide the total quantity of units by the production rates you were given. Always round up to the next production day.

Milestone: We now know the ideal start and finish dates, total duration of the work and are able to deduce the number of manhours required.

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Step 3: The next major task is preparing a materials quantities estimate. Use the "meaningful metrics" you generated in the prior phase and apply them to the coverage and waste factors as appropriate. Then apply a contingency to any net measurements you generate. At the end of this exercise, you should be able to convert the gross material quantities into a number of bags, pallets, yards, sticks, etc. Call the distributor or subcontractor to confirm how much you should estimate for material unit price(s) and any minimum orders that could apply. Always round up to the next full unit.

Before we finalize the estimate by applying markups and overall contingencies, we need consider and estimate potential miscellaneous costs. This is where you are going to add costs for protection, heat, storage, extended warranties and work by others not already included in another subcontractor's scope.

Step 4: Finally, we are going to want to build a spreadsheet to organize our meaningful metrics, calculate labor, material and equipment costs and then apply contingencies and markups. Best practice is to isolate your quantities from rates, markups and contingencies to make it easy to explain the basis of your estimate and adjust factors and rates as you get new / more information.

Things to consider as you finalize your estimates and contingency amounts:

- 1. Adjacent conditions.** Look at the details to see how the work you are estimating terminates into the adjacent surface, assembly, finishes, etc. Talk with the contractors of adjacent work to find out where they stop and where the work you are estimating ends. Is there anything that needs to be imbedded below or protected? They may also have some lessons learned about how this went well or poorly on other projects.
- 2. Logistics.** Consider how delays or weather could change how you will access the work, stockpile materials, stage equipment and protect adjacent work. Is there a backup plan? If so, could it significantly change the cost?
- 3. Escalation.** How long will it be until you can order / receive materials on site? Are there wage increases or material cost increases between now and when you will order materials or install? Do you need to consider pre-buying and storing materials to avoid increases?

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4. Cost versus schedule. If you have liquidated damages in your owner contract, compare the damage cost per day versus the production cost per day and balance the risks appropriately.

5. Pricing, contracting, submittals & lead times. Make sure your schedule includes milestone dates for the preconstruction activities required and put them in your schedule with time to generate submittals and secure approvals.

Milestone: Detailed estimate is produced with full transparency of scope, costs, mark-ups and contingencies.



Producing achievable estimates is an important risk management function that doubles as good preconstruction practice. Even if you have a price from a contractor that you trust, many of the tasks listed above generate the information necessary to write and negotiate a contract, prepare a site logistics and safety plan, secure submittal approvals, anticipate missing information and scope by others, and to coordinate and schedule the work. With the uncertainties common in today's subcontracting and supply chain environment, performing this level of due diligence can prevent serious risks to your schedule, profits and company.

Most of all, you have the information you need to sign that contract and get the work (and revenue) started.

I would love to hear about the techniques you are using to establish allowances and achievable estimates. If you want to see an example of an estimating template like I described above - please reach out.



2R **Achievable Estimate Resources:**

At the early stages of a project, plans and specifications are not usually available, and if they are, they are probably missing as much information as they include. The key to producing reasonable budgets is to prepare pricing documents that include the design intent, an appropriate context for when and how the work will occur and work and/or materials provided by others. These resources are designed to assist the project team in preparing reasonable and reliable pricing expectations to assist owners and designers to make incremental design decisions consistent with the project goals and budget.

- **Preliminary Budget Best Practices** - An outline and approach to prepare estimates without complete drawings and specifications. [Click here](#)
- **Technical Support** - Get 3cd to help you identify strategies and procedures to target achievable estimates and budgets. [Click here](#)