

Building a Worker-Centered Crew

Part 3: Rough-In

The previous articles in this series laid out the foundation for creating a worker-centered company—a company that provides the structure for the full development of its workers and their neck-up and neck-down skills—and the framework (based on an understanding of how the inexperienced worker learns) for how to teach workers the essential skills to be productive tradespeople. These skills, once learned, exist inside the mind and body of the tradesperson in the same way the rough mechanicals of a home exist under the drywall: largely out of view but crucially important. Defining these “rough-in” skills is the focus of this article and the key for unlocking the potential of the “crew member” point of the company structure triangle.

WHAT'S ALREADY ROUGHED-IN?

Anyone who has ever hired a “greenhorn” for construction site labor has a method for determining if the potential hire is worth putting effort into. Very early in my career, I was given an opportunity solely based on having matched the foreman stride for stride as he quickly walked me around a job. I soon realized this was his technique for quickly determining what skills I already had roughed-in.

When I meet a potential hire, I look for signs of rough-in skills that show me an ability to work hard, work safe, stay busy, and stay organized. Being on time for an interview and showing up dressed for and ready to work are good indicators of roughed-in skills. My personal favorite is watching where potential hires park their vehicle when they come to the jobsite for the first time. Most residential jobsites are tight on space, and a good lead always has an efficiency hierarchy in mind when it comes to the jobsite parking lot. Any of these examples will exhibit a level of pre-roughed-in skill that increases the likelihood of the candidate being successful in the long term.

ACTIVE ROUGH-IN

The important rough-in skills that I look to impart onto a new tradesperson fall into both the neck-up and neck-down categories. In Part 2 (“The Framework”) of this series, I discussed how critical these initial skills are in moving new workers past day zero and setting them up to gain confidence. Since we rarely arm a novice immediately with power tools, I will start with a rundown of the neck-up skills that I have found to be the most beneficial to the worker, the job, and the company.

Measuring. The humble tape measure is a tool that is of such importance to the building trades that many of us own dozens of them that we favor for specific uses. But this tool also confounds and confuses even the most experienced tradesperson from time to time. In terms of general use, I have found a common roadblock is around understanding fractions and what they mean. Learning that $\frac{1}{2} = \frac{2}{4} = \frac{4}{8} = \frac{8}{16}$ goes a long way toward making sense of “the little lines” and, most importantly, illustrates the basics of performing math with fractions.

It's also important to understand that a measuring device, be it tape, stick, wheel, or laser, is only a reference. The measured length of something is directly proportional to the tool used to take the measurement. Measure a stud with two tapes and depending on your tolerance, you will likely get two different measurements.

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Seeing. The ability to quantify something through measurement is enhanced by learning how to see. The majority of the work we do in residential construction can be broken down into a series of squares and triangles. Once a young tradesperson can see both a stair stringer and a common rafter as the hypotenuse of a triangle, they can use their measuring skills to apply the simple geometry needed to think through simple layout tasks.

From the all-important 3-4-5 triangle to bisecting angles and lines to finding the center of a circle, the ability to see the underlying geometry of our work as builders is a fundamental skill that can unlock high-level skills early in a novice's career when it is mated with working knowledge of measuring tools and the ability to draw.

Drawing. In the field, we rely on drawings to inform us and

interpret the intent of the designer or architect. Drawing at full scale on the jobsite, usually on a plywood cutoff, is an important skill that is the bridge between seeing and measuring and producing work. Many talented craftspeople believe that they lack the artistic talent to draw. But drawing a detail on the job is less about art and more about harnessing an ability to see and measure. Understanding how to draw at full scale is key to executing complex details. Everything is complex to the beginner. Drawing at full scale works to remove that complexity and sets a novice up to understand a set of plans.

Tool use. As we move to neck-down skills, I want to highlight the principle of “the tool is an extension of you,” as it is one of the most important concepts that I have learned in my career as a tradesman. Neurologists studying tool use in primates and humans have found that, even after short periods of tool use, the tool is incorporated into the brain’s representation of the body (body schema) in the surrounding space (peripersonal space). The ability to swing a hammer and strike your target is possible because of the connection between hand-eye coordination and body schema.

Many of the tools that we use every day can be confusing and dangerous to a novice. Knowing that the majority of tools we use are designed to work within our body’s natural range of motion informs every step taken to execute a task with the tool by the user—if using the tool is physically uncomfortable, you are probably using it wrong. As a novice builds experience in using hand and power tools correctly, the brain begins to add the tool to the body schema.

Tolerances. One of the most challenging things to convey to a novice tradesperson about the carpentry trade is what level of tolerance is appropriate for the task at hand. There are a number of ways to do this, but I begin with how to strike a line by pencil or knife, emphasizing that this line, be it on wood, concrete, or drywall, sets a foundation for tolerance and provides a basis for communication. Lines have width and depth in addition to length. Something as simple as striking a line is an important skill of its own, but it has a more important role: It sets a standard of tolerance.

Building is challenging, but motivating and engaging individuals with a foundation of basic roughed-in skills needed for building is even more challenging. This is a primary goal for a successful building company. In the next article, I will speak to the requirements of the other points of the triangle: the company and the crew members themselves.

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Review: ‘Nail Your Numbers: A Path to Skilled Construction Estimating and Bidding’

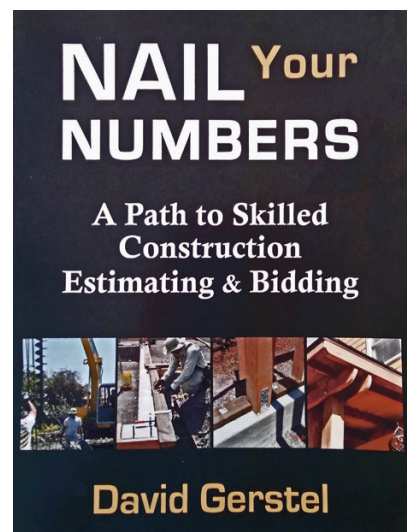
BY DAN KOLBERT

The typical progression of a building contractor is this: You work as a carpenter, start doing work on your own, hire a helper, hire an experienced carpenter, start doing more complicated work, and, before you know it, you’re doing a half million in volume and realize you don’t actually know if you’re making any money or not. At that point, you start looking for resources that can help you move from busy to profitable.

For more than a generation, one of the first books people turned to was David Gerstel’s classic, *Running a Successful Construction Company*. It helped countless contractors navigate the perilous path, and we were lucky that Gerstel was not only so well organized but such a good writer.

Now, Gerstel has come out with a book that, I think, will prove even more essential. In *Nail Your Numbers: A Path to Skilled Construction Estimating and Bidding*, Gerstel has put together a book that is as well-organized and comprehensive as his estimating system. Getting through its almost 400 pages is a serious undertaking, but contractors at any phase of their careers can profit from the book.

The book is divided into five parts comprising 19 chapters. Chapter 1 is titled, appropriately, “The Heart of Our Business” and is a full-throated defense of why estimating is where a company is made or broken. Gerstel has been a careful student of the subject and is



In this review of David Gerstel’s latest book, the author predicts that *Nail Your Numbers* will become “even more essential” to building and renovation contractors than Gerstel’s first book, *Running a Successful Construction Company*, which is widely considered an industry classic.

generous in acknowledging all the other contractors and writers whose work has helped him along the way.

After this, he dives into the nitty gritty. Each chapter is a deep dive into a subject, starting with such easy-to-overlook issues as where are you actually working? Is it comfortable? Quiet? He also takes the time to make sure the reader understands what a complete set of plans includes, points out some common mistakes, danger signs, or complications in plans, and even goes over some basic math estimators need. In fact, he spends the first three chapters solely on making sure the reader is ready to dive into an estimate.

Part 2 is really the heart of the book—creating your estimating system. Over the course of five chapters and almost 100 pages, Gerstel goes through, literally, the nuts and bolts of creating an efficient but comprehensive estimating system—“if you have 100' of foundation and are spacing bolts every two feet, you will need 50 AB's ($100 \div 2 = 50$), plus one more for the end of the run.”

In addition to valuable discussions on things like how to do a comprehensive site visit, how to develop waste factors, and how to create clear and well-organized take-off forms, there are innumerable sidebars in which Gerstel illustrates his points with stories drawn from his own or others' careers. Topics range from how to say no to a job and knowing the level of risk you are comfortable with to various pitfalls he and others have encountered along the way.

As someone who is in mid-career, I found his chapter on General Requirements particularly valuable. He argues convincingly that this phase—comprising all the things that are part of, but don't become a permanent part of, a job—is where many contractors lose untold thousands. Gerstel himself says he found that “General Requirements consistently amounted to close to 10% of direct construction costs.”

What is included in this mysterious category? The book includes a selected list with more than 100 items—everything from preconstruction costs like permitting and plan check, to construction costs like cleaning, getting materials, scaffolding, and snow removal, through post-construction service calls and project management during the job. His compelling argument for why all these costs belong together convinced me to adjust my own bid spreadsheet and move where I entered certain costs. At a minimum, these adjustments will allow me to track all these somewhat amorphous costs as a percentage of job total with more accuracy in the future.

The rest of Part 2 consists of deep dives into various facets of a successful estimate—specific phases like interior and exterior finishes, how to get good estimates from subcontractors, how to write scopes that accurately reflect the work proposed (and, just as important, what is not included), and more. The sections can be dauntingly detailed—this is a book that will require focus and return trips to benefit from it. But anyone wanting to benefit from the accumulated knowledge of a successful and systematic contractor will be well advised to put in the time.

While many people have put together good estimating systems, where Gerstel stands out is in the subject of Part 3—“Capture Your Costs.” His focus is, rightly, on the area most of us struggle the hardest with—our internal labor productivity rates. He takes us

through his steps for setting up, tracking, and using a well-organized, clear set of assemblies based on carefully collected historical data. He also gives examples of adjusting data to account for different conditions (access, first vs. upper floors, fussy details, difficult client, and so forth). His recommendations are a challenge to implement, but will yield a treasure trove of essential information for the remainder of any building contractor's career.

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Several times in the book, Gerstel makes the important point that estimating is an administrative function, while pricing the job is a management function. It is the job of the estimator to figure, as accurately as possible, what it will cost to produce the job. What to actually charge the client, however, is a different question and should be considered separately. This is largely the subject of Part 4, “Take Command.” This section of the book helps you consider questions like how to recoup overhead and make a profit, then moves on to other nettlesome issues like change orders, contract writing, and charging for estimates.

He also returns to a related subject he discussed in *Running a Successful Construction Company*—Capacity Based Markup. He argues that, since total volume may fluctuate significantly from year to year based on how much material we use or how many subs we hire, we should base our markup (and thus our coverage of overhead and profit) on the constants—either the number of project leads we have or the total number of billable hours we expect our crew to produce annually. I have long found this argument compelling and find that the approach helps provide a more accurate sense of risk and reward on both labor-light and labor-heavy jobs. His treatment of the subject is, not surprisingly, thorough and well-reasoned.

The final section is a brief discussion of the pros and cons of various software solutions. Not surprisingly for someone who clearly excels (foreshadowing alert!) at creating his own systems, Gerstel comes down firmly on the side of creating custom spreadsheets that meet your needs, rather than signing up for integrated packages.

Fortunately for us business-challenged contractors, there are an increasing number of valuable books to help with what is, ultimately, a challenging way to make a living. *Nail Your Numbers* is, I'm confident, destined to be a central work for contractors and is one of a small number of those books that I would say are essential.

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