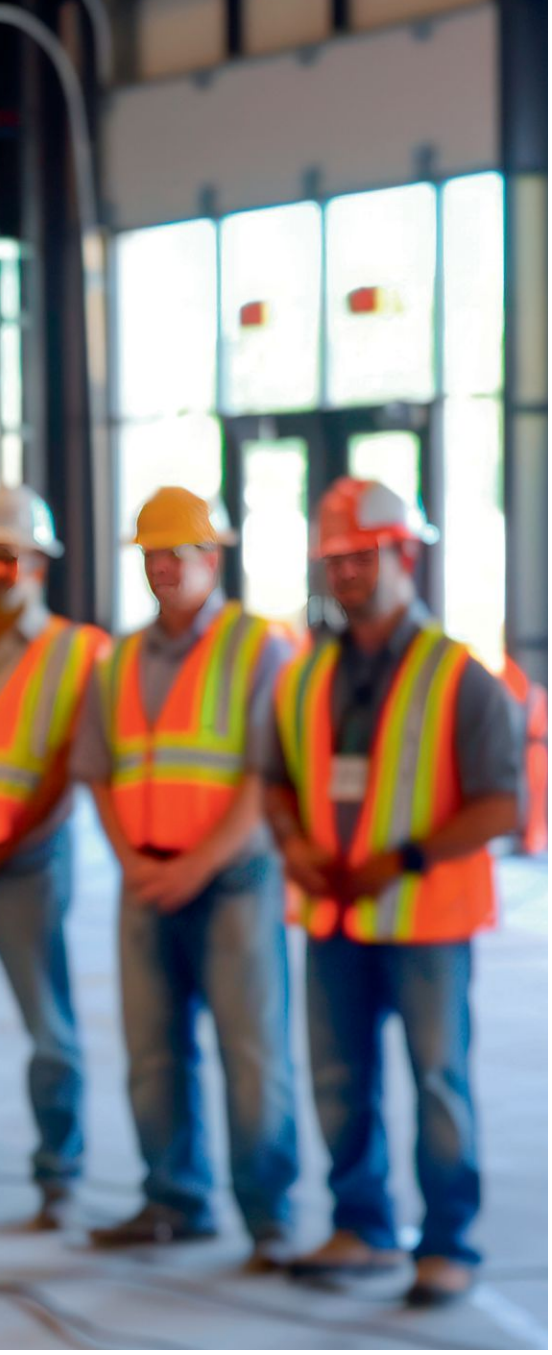
Build it Right the **First Time**

Improving your quality control programs and reducing worker injuries



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BY BRIAN CLARKE, CSP

"Build it right the first time" has been the slogan of commercial construction's quality control efforts for decades. "Not" building it right the first time leads to staggering costs and affects all aspects of a project. However, by involving your trade partners in your quality assurance/quality control QA/QC program, you'll get better results.

Historically, the construction industry measures contractor safety (i.e., injury prevention) excellence through the benchmarking of a construction firm's EMR and OSHA recordable rates. Measuring excellence through the absence of events is a challenge and a poor measuring tool in evaluating a successful safety program. Trade partners' safety pre-qualifications have advanced to evaluations of safety programs, planning, orientations, job hazard analysis, pre-task plans and weekly safety meetings.

The same challenges exist with the evolution of QA/QC programs, which commonly measure the lack of 'rework' (i.e., lack of claims). Best-in-class QA/QC programs mirror safety programs via their processes, policies and implementation. And yet costs of rework continue to rise in commercial construction.

Two main challenges exist for contractors in reducing rework:

1. Prequalification process of evaluating a "paper" QA/QC program.
2. Involvement of craft employees.

Improving the prequalification process, embracing craft involvement and sharing lessons learned have greatly contributed to the reduction of craft worker injuries. To state the obvious, the goal of both the safety and QA/QC programs is to prevent losses in regards to injuries and rework.

The True Financial Costs of Rework

Risk managers know that incidents and injuries have hidden costs, and these hidden costs should be tracked and incorporated into management reporting processes. By providing an in-depth look at incident costs, company leaders can make better, more informed decisions about where to focus prevention efforts and spend limited resources.

Studies have found that like safety, rework has direct and indirect costs. The direct costs can range between 0.05% to 20% of a project's contract value, and the indirect costs can be as high as six times the direct costs ("State of Science: Why Does Rework Occur in Construction? What Are Its Consequences? And What Can be Done to Mitigate Its Occurrence?" *Engineering*, 2022) . If quality events are not measured, the likelihood of repeated errors increases. To advance awareness of the impact on projects, the same financial tracking methodology of injury and accident costs can be used to report and track rework costs.

What Gets Inspected Gets Inspected. What Gets Measured Gets Results

Many safety professionals began tracking and reporting the hidden costs of injury accidents decades ago. Providing the C-suite (and all members of the construction team) with reliable data detailing the direct and indirect costs of incidents first raised the awareness and eventually led to action. Reduction in incident rates and costs soon followed. Just look how the construction industry measured "safety" 30-40 years ago compared to today.

The Parallels Between Injury Prevention and Quality Control

CRAFT INJURY AND REWORK

Recent research has confirmed that there is a symbiotic relationship between poor quality and safety incidents in construction projects. This research discovered a positive linear relationship between the recordable injury rates per 200,000 workers and the number of worker hours related to rework per $1 million scope of project completed *(Relationship between Construction Safety and Quality Performance, Abstract,* J. Wanberg, C. Harper, M. Hallowell, S. Rajendran (2013)).

CONSISTENT AND MEANINGFUL COMMUNICATION AND ITS ROLE IN REWORK PREVENTION

Construction safety procedures have included toolbox talks as a method of communication, training and overall information sharing for many years. These toolbox talks also serve as opportunities for team building, story sharing and proactively driving safety culture. Quality control communications typically occur in leadership meetings and through procedural documentation, excluding craft workers. Most QC programs do not incorporate communication with — nor training of — craft workers in this manner or at this level.

This is like having a great safety program with no weekly safety crew level meetings, no communication to the crews doing the work.

SUBCONTRACTOR DEFAULT

Subcontractors default for three primary reasons:

1. Lack of labor which leads to an inability to maintain the schedule
2. Financial insolvency
3. QA/QC problems

Subcontractor default insurance claims are a low frequency and high severity type exposure according to River Steenson, senior vice president, subcontractor default insurance, NFP, a member of multiple AGC chapters. Quality issues generate about 20% of all the cost to cure a subdefault insurance claim. That represents a massive opportunity to reduce the size of a claim by just focusing on each subcontractor's quality on the project site.

SAFETY AND QUALITY IN CONSTRUCTION CONTRACTS

Safety of persons and property has long been part of the standard American Institute of Architects (AIA) contract. This language requires contractors to take reasonable precautions for safety and to promptly remedy damage and loss. The AIA indicates that quality control is, "an indispensable aspect of construction contracts" (Ensuring Excellence: Quality Control in Construction Contracts, AIA Contract Documents, 2023).

ConsensusDocs uses similar language in its general conditions that are embedded into all of its agreements, which are endorsed by AGC and over 40 other industry organizations. An example would be under the ConsensusDocs 200 Agreement Between the Owner and Constructor and General Terms and Conditions (2023) the following:

3.11 . . . . Constructor shall prevent against injury, loss, or damage to persons or property by taking reasonable steps to protect: (a) its employees and other persons at the Worksite; (b) materials and equipment stored onsite or offsite for use in the Work; and (c) property located at the Worksite and adjacent to work areas.

Training and certification are key components contractors rely on to meet contract requirements. This includes training, certifications and continuous education, generally specific to professional staff. Most trade workers receive on-the-job training, making the sharing of quality information at that level lacking. The question is "How can trade specific, craft level ongoing quality training be completed?"

The challenge is how do contractors implement meaningful (trade-specific) QA/QC training for crews? The answer is simple and proven. Contractually require weekly, trade-specific, quality meetings, immediately following the weekly safety meetings.

WILL THE OWNERS PAY

During a recent presentation at a risk management conference, Silas Nigam, president, S+B James Construction, an AGC of California and San Diego Chapter member, was asked, "Will the owners pay?" (referring to the cost of on-site quality staff and additional related quality programs).

"They are not only paying for it," Nigam said, "they are contractually requiring it," much like every major construction project, requiring on-site safety professionals.

The next step in the evaluation process of a contractor's QA/QC program includes more in-depth prequalifying of trade partners and requiring weekly trade-specific quality craft meetings.

COMMERCIAL UNDERWRITING

As a co-presenter at the above-reference risk management conference, Travis Davis, senior vice president, Alliant Insurance, a member of multiple AGC chapters, stated, "We're all familiar with the rapidly rising costs of construction claims; recently what is getting the most carrier attention are claims related to quality of work. Top construction underwriters often have authority to adjust liability premiums up to 40% based on a subjective evaluation of each company's commitment to risk management. In my experience, the best path for a contractor to maximize this pricing advantage is to demonstrate a top-down commitment to quality AND a bottom-up training program centered around frequent craft training on quality. This proven formula is exactly what has been successful for improving jobsite safety over the past several decades."

Recommendations

1. Starting with responses to requests to proposals, general contractors' QA/QC programs should identify steps to reduce rework with project-specific examples. Embracing the industry problem of rework costs and communicating with the owner what specific action items will be completed to reduce rework will help.
2. During the prequalification process of trade partners, have less emphasis on claims defense and more emphasis on prevention of rework. Require project-specific "pre-qualification" plans identifying specific areas of concern with planned controls, rely less on trade partners being "corporate" or third party "prequalified.
3. Require contract language requiring trade-partners' inclusion of weekly, trade-specific, craft-level quality training (sharing of lessons learned).

As the industry has proven over the last few decades, improved project safety happens when we measure and share results, communicate clear expectations during pre-construction, have enhanced prequalification processes and engage craft employees.

Owners and contractors both benefit from focused efforts on engaging craft employees in injury prevention and will benefit equally when craft employees are asked to engage in trade-specific quality control. Engaging the people doing the work in project safety and quality control reduces both injuries and rework. A contractor's QA/QC program benefits the budget, the schedule and worksite morale because skilled construction professionals strive to build it right the first time.

Brian Clarke, CSP has more than 35 years of experience in the construction safety/risk management industry. Clarke is the managing member of GEWllc, a safety consulting company specializing in the construction industry In addition, he is the founder of Quality Safety Times, a subscription service providing trade-specific quality and safety topics to the construction industry.