

Differentiating between QA and QC

By Bill Schmalz, FAIA

In casual conversation, we often use terms imprecisely. We assume—usually correctly—that the people we’re talking to understand what we mean, even though we aren’t quite saying what we mean. For example, architects often say “CA” or “construction administration,” even though architects don’t administer the **construction**; they administer the **construction contract**. The correct terms, **construction contract administration** and **CCA**, are slowly gaining traction in the industry (note that the AIA has a **CCA Knowledge Community**). But even those of us who know better often find ourselves saying, out of habit, “construction administration” and “CA,” and that’s not likely to change soon.

Sometimes, however, our imprecise use of terminology can lead to misunderstandings, and even add to our professional risk. For example, it’s not unusual to hear architects ask, “Who is doing QA/QC on this project?” or “Our QA/QC person is our second pair of eyes,” as though “QA/QC” is a thing. But it’s not a thing; it’s two quite different things.

What’s the difference between QA and QC? Most dictionaries offer manufacturing-related definitions, but CSI’s *Project Delivery Practice Guide* gives one that works for design professionals: Quality assurance consists of “procedures for guarding against defects and deficiencies before and during the execution of the work,” while quality control consists of “procedures for evaluating completed activities and elements of the design for conformance with the requirements.” What that means is that QA is what people do, and the tools and processes they use, to ensure that their own work (or the work of their teams) meets established quality standards, while QC is having other people check the work of others to ensure it meets those standards.

Take this article, for example. When I finished what I considered a solid draft, in which the structure and wording were settled, I read it carefully to catch typos, misspellings, inconsistencies, and grammar and punctuation errors. This checking of my own work was quality assurance. The article then went to the CCA KC leadership, who reviewed it for content and sent comments and edits to me. This outside review was quality control. After I revised the article, it was sent to the AIA’s legal team to make sure I hadn’t said anything legally stupid. More quality control. Then it went to the AIA’s copyeditor, who checked spelling, grammar, and punctuation. Still more quality control. Then it was returned to me to make sure I agreed with the copyeditor’s revisions. Even more quality control (yes, I wrote the article, but I was checking someone else’s revisions). Finally, after my own quality assurance and several levels of quality control by the AIA and me, the AIA posted the article.

How does this work for contract documents? A design team is (or should be) provided with checklists or other tools that define what “done” means for each type of drawing for each phase, as well as aiding in systems coordination. The team members use these tools to check their own work. The project architect will review the work of the team against those same checklists and tools. All of this constitutes quality assurance, since it’s the work of the team being checked by the team members. Before project milestones (e.g., the ends of phases), the documents are given for review to a senior architect who is *not* on the team. This is quality control. The QC reviewer spot-checks the documents to verify that the team performed an

adequate level of QA, and then reviews the documents for specific things that might get the firm in trouble during construction, such as code and accessibility compliance and weather tightness of the exterior enclosure. The QC reviewer's comments are given to the team, who must respond to each comment, by either correcting the documents or answering the QC reviewer's questions. After the comments have been responded to, the documents are returned to the QC reviewer to verify that the responses are appropriate.

How do QA and QC work during construction? One example is submittals. Fabricators prepare submittals to demonstrate their understanding of the architect's design intent. Before they submit them to subcontractors, the fabricators check the work of their staff. That's QA. The reviews after this, by the subcontractors, the contractor, and the architect, are QC. Another example is punch lists. As the project nears completion, the contractor reviews the work and prepares a punch list of incomplete and defective work. That's QA. The architect then takes that punch list and inspects the work, also for incomplete and defective work, and adds (and, theoretically, removes, but that never happens) items. That's QC.

Is the distinction between QA and QC now clear? Good, because now I'm going to complicate it. You may have noticed in all these examples that we have one level of QA (with individuals and teams checking the work they produce), followed by two or more levels of QC. Well, the opposite is also true: Everything that precedes a QC review is, from the perspective of that QC reviewer, QA. To use our submittals example, for the architect reviewing a submittal, all the previous reviews, by the contractor, the subcontractor, and the fabricator, are QA. Whether an activity is QA or QC depends on where you happen to be standing in the process.

Two important things to remember: (1) QA is performed by teams and individual team members when they check their own work, while QC is performed by someone outside the team to check that QA has been performed; and (2) QA and QC are different activities, which means that QA can't be skipped on the assumption that the QC reviewer will find all the mistakes. The QC reviewer has far less time to review the documents than the team had to prepare them, and cannot look at everything. Rather, the QC reviewer spot-checks to get a general sense of the documents' quality. QC is not a substitute for badly performed QA. Quality is the responsibility of everyone. It is *not* the sole responsibility of the QC reviewer. Without a distinct and well-performed QA process, quality can never be achieved.

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