The Case for QBS

Study determines Qualifications-Based Selection offers better cost and higher-quality construction than 'lowest bid'

By Gerry Donohue

Takeaways

- National survey indicates QBS often results in lower construction costs, higher-quality construction and better overall results than other procurement methods.
- The industry average for construction cost growth is about 10 percent. On projects employing QBS for design procurement, construction cost growth averaged just 3 percent, the study says.
- Study results demonstrated that 94 percent of design firms and 93 percent of project owners had a high or very high perception of the success of QBS-based projects.

Qualifications-Based Selection (QBS) and procurement procedures that stress technical acumen over simple project costs (as in lowest-bid procurement) often result in lower construction costs, better overall results and higher customer satisfaction, says a new nationwide survey.

The landmark QBS survey, dubbed "An Analysis of Issues Pertaining to Qualifications-Based Selection," lends statistical relevance to a long-standing industry view that QBS procurement, though typically more involved upfront, actually can save firms money, boost their reputations in the business community and make clients happier in the long run. >>

"From a scientific perspective, the comprehensive and quantitative research found that QBS procurement has substantive advantages on projects," says Paul Chinowsky, associate professor in the Department of Civil, Environmental and Architectural Engineering at the University of Colorado and one of the authors of the report. "Engineering firms can use this data to bolster their case to owners that QBS is the appropriate method for contracting design."

MARTIN BARRAUD/GETTY IMAGES

"On critical measures, such as construction cost and schedule growth, QBS-based projects consistently have results that are superior to national averages."
GORDON KINGSLEY, *GEORGIA TECH*

The research was conducted by Chinowsky and Gordon Kingsley, associate professor at Georgia Tech's School of Public Policy, both noted experts in the construction field, and was sponsored by ACEC and the American Public Works Association (APWA).

Under QBS, A/E firms compete for design contracts on the basis of experience and technical expertise, not simply on cost. After evaluating and short-listing firms as a result of their qualifications, project owners negotiate a fair and reasonable price with the top-ranked firm. If the parties cannot agree on a price—which researchers say rarely happens—the owner begins negotiations with the second-ranked firm. The end result: the selection of the most technically qualified firm for a given project, at a price that fits the owner's budget.

"QBS incorporates multiple criteria developed by the owner for the selection of professional services, with particular importance placed on the experience of a firm in addressing similar projects," explains Kingsley. "A single variable, such as cost, would not automatically eliminate a firm from consideration, as in low-bid procurement. This multiple-variable outlook is the basis of the argument that QBS ensures a well-rounded competitive process."

Brooks Act Placed Value on Experience

ACEC was a major force behind the 1972 passage of the Brooks Act, which mandated that federal agencies must use QBS in procuring engineering and architectural services for public projects. Since then, most states and many municipalities have adopted procurement laws based on the federal statute.

Though design services make up only a small fraction of the total cost of a project, the Brooks Act holds that design has a disproportionately large impact on safety, function, performance, constructability and lifecycle costs—all of which contribute to final product performance.

Says Chinowsky, "while the benefits of QBS have been an abstract belief for a long time, there was never any quantitative confirmation."

This study was commissioned to fill that void. Chinowsky and Kingsley solicited information on nearly 200 public and

private construction projects throughout the nation. Projects included transportation, water, commercial and industrial efforts in a range of prices and sizes.

The study compared various procurement methods, including QBS, best value, lowest bid and sole source, and a range of other factors, such as total project cost, projected lifecycle cost, construction schedule and project quality outcome.

In-depth interviews were conducted with select firms and owners addressing 10 key areas: project demographics, cost, schedule, project risk, design complexity, project complexity, social factors, trust, transaction costs and performance.

Lower Cost, Superior Performance

Eighteen months of research yielded clear and consistent results.

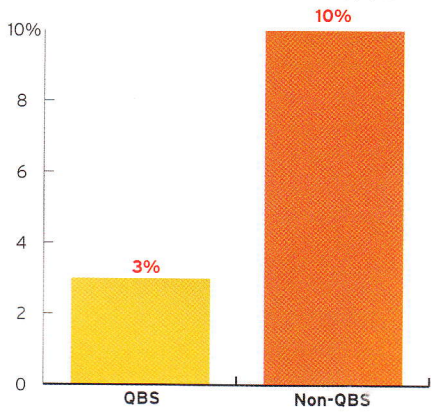
"QBS has a positive correlation with successful projects," says Kingsley. "On critical measures, such as construction cost and schedule growth, QBS-based projects consistently have results that are superior to national averages."

That superiority was evident in the area where QBS is most often criticized: cost.

Researchers identified a remarkable consistency among QBS projects: most demonstrated fewer change orders and stayed on budget during construction. The industry average for construction cost growth, which the study defines as the total cost of change orders as a percentage of the final construction cost, is about 10 percent. On projects employing QBS for design procurement, construction cost growth averaged just 3 percent. (See *Figure 1.*)

Figure 1

Construction Cost Growth



Source: *An Analysis of Issues Pertaining to Qualifications-Based Selection, 2009*

Among the projects in the study, those employing QBS had a median design fee of 10 percent, while the median fee for non-QBS projects was 8 percent. "Projects wherein QBS is used to procure design tend to be marginally more expensive," says Chinowsky, who adds, "But you more than make up for it in terms of real cost savings."

"Since the design component of a project is just a small fraction of the overall project cost, the use of low-bid procurement at this critical early stage would undercut the effort to obtain the most successful design solution," says ACEC President Dave Raymond, "especially as projects become more advanced and apply a higher degree of importance for public safety or economic return."

Results show that QBS-based projects also better limit construction schedule growth. The national average is 10 percent; QBS projects in the study demonstrated average construction schedule growth of 8.7 percent. Sixty percent of the QBS projects in the study reported construction schedule growth of 3 percent or less.

These numbers are especially relevant, given that study participants identified cost and schedule growth as the two highest-risk elements within a project, researchers say.

Study results demonstrated that 94 percent of design firms and 93 percent of project owners had a high or very high perception of the success of QBS-based projects.

Respondents indicated that QBS has led to stronger relationships between owners and designers than non-QBS projects. "The owners have built a bond with the firms because of their qualifications," adds Chinowsky.

Another key finding: the ability of QBS procurement to protect a design firm's intellectual property rights. When providing a statement of qualifications in response to the QBS application process, competing firms are not required to disclose proposed solutions to demonstrate their relevant expertise and experience.

"Engineering firms can use this data to bolster their case to owners that QBS is the appropriate method for contracting design."

PAUL CHINOWSKY
UNIVERSITY OF COLORADO

"Because the process uses a 'Request for Qualifications' model and not a 'Request for Proposals' model, engineering firms that responded to the study were not worried about giving up their good ideas until the choice of the most qualified firm for the project had been made," says Chinowsky.

Dispelling Myths

This study effectively rebuffs criticisms of QBS procurement by opponents of QBS who assert that low-bid procurement should be the key determinant in contracting. The study also takes exception to the view that engineering services have become little more than a commodity with the use of standardized designs for vertical structures, such as schools, and horizontal projects, such as roads and pipelines.

The research found it was not "low-bid" designed projects, but rather projects procured by QBS that produced lower overall costs. On the topic of the commoditization of engineering, researchers say that the opposite actually is the case.

"The deteriorating infrastructure within the United States, together with the changing requirements for new infrastructure, establishes an even greater demand on contracting officers than previously encountered," says Kingsley. "The increasing number of factors that design firms must address—on behalf of beleaguered owners striving for sustainable infrastructure solutions—reinforces the need for Qualifications-Based Selection." ■

Gerry Donohue is ACEC's senior communications writer.

To obtain a digital download or hard copy of "An Analysis of Issues Pertaining to Qualifications-Based Selection," go to www.acec.org/publications.