

issues affecting the structural engineering profession

Regardless of your familiarity with Quality Based Selection (QBS), there are certain basics of business that all engineers should understand, even if you are not in management. Structural engineering is a professional service business. The overwhelming majority of structural engineers are compensated based on the amount of time spent on a client's project. If you are a business owner, you know that each and every proposal starts out with the question "How much time will the project take?" Complex projects involve project managers, design engineers, and CAD operators, plus others. To develop a proposal, hours are estimated and multiplied by billing rates and a total fee is computed. The more definitive the scope of services, the greater the accuracy of the fee estimate.

Unfortunately, engineering businesses are being asked, more and more, to furnish lump-sum fees based on very little information. This in and of itself can lead to problems, but combine it with the practice of clients requesting proposals from multiple firms for price comparison, and it is easy to see that the more uninformed or unscrupulous can often be the more successful. Besides the fact that qualified firms that offer fair fees are often the immediate victims of the process, the long-term ramifications of poor structural engineering can result in jeopardizing the health, safety, and welfare of the public, not to mention the grief and headaches that accompany poor construction documents during the construction phase.

Engineering is a thinking profession. The client is purchasing the engineer's ability to solve the problem using the brain. Drawings, specifications, and even calculations are tools of conveyance of what the engineer thinks and how a solution was developed. Selecting the best brains with the most experience will result in the best solution. Does it really make sense for clients to select their engineers based on whether the fee for the project is 1% of the construction cost, 0.9%, or even 0.5%? Unfortunately, the answer is often "no" if your client is the owner, but "yes" if the client is an architect or an intermediary who sees the structural engineer's fee coming out of his or her pocket. Money can be a powerful motivator that obscures reality and blurs the vision.

Engineers historically have enjoyed a high level of trustworthiness, as polled by Gallup, fourth behind doctors and one position in front of dentists. The fundamental canon of every set of ethics rules for engineers is truth. Engineers

have to guard against losing the high ground and make sure they always hold the truth paramount, which means walking away from situations where deception is rewarded. The procurement of our services based on a comparison of prices alone, rather than in combination with qualifications and a defined scope of work, fosters a climate where dishonest behavior can flourish.

Dishonesty in the form of excessive self-promotion, deceptive staffing of the project, both in number and skill of personnel, the exclusionary language in proposals such as overly-limiting site visits, excessive use of performance specifications, and reducing QA/QC are examples of what can occur in competitive bid procurement systems. The owner is best served when the structural engineer provides all of the services necessary to design the structure and observe its construction to the extent the engineer can attest that the intent of contract documents was generally followed.

Alabama's Board of Licensure for Professional Engineers requires that its licensees respond only to solicitations that employ QBS, regardless of whether the client is a public agency or a private party.

Engineers are forbidden from participating in a bidding process. Radical as it may seem to some, the Federal Government requires the use of QBS through the application of the Brooks

The Ethics of Procurement

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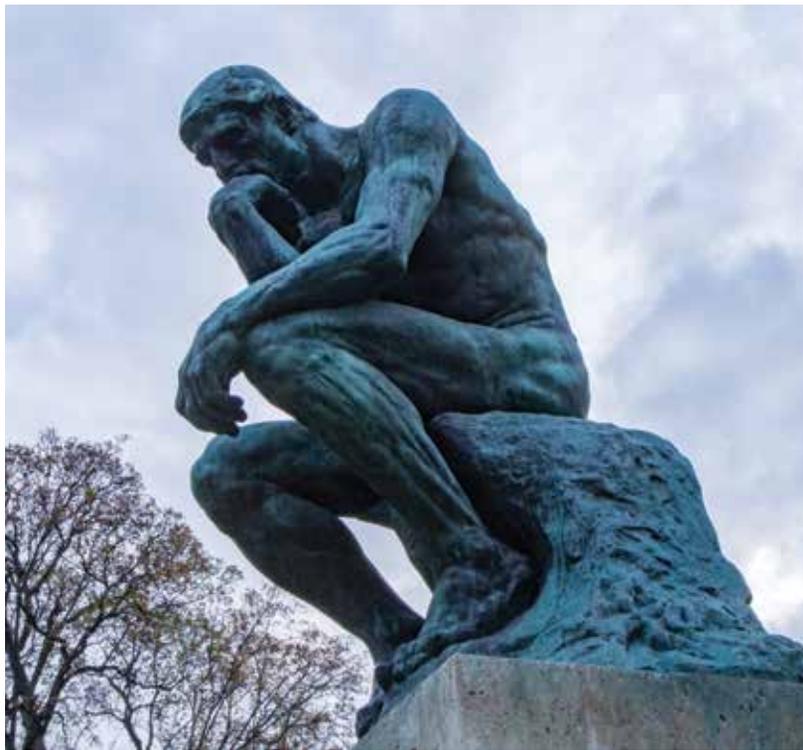
Act, realizing that the best overall value for the public is the selection of the most qualified firm paid a fair and reasonable fee. The Alabama Board, together with the Federal Government, believes that services that directly deal with life and death should not be subject to the same procurement rules that apply to the purchase of pencils or butter.

If the public selected their medical professionals through bidding for services, health care might be a few dollars cheaper, but mortuaries would prosper. Imagine you are on trial for a serious crime. Of course, you are innocent, and your significant other brings in your attorney, the low bidder. What kind of chance do you think you have to be home at Christmas? No society would want its health or freedom jeopardized by such an absurd procurement system as applied to these professions. Well, how much sense does it make for the low bidder to be the designer of an arena that seats 10,000 people, a high-rise building, a long span bridge, or even a child daycare facility or nursing home?

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With the exception of Alabama, licensing boards have been largely mute on the subject of procurement in the private sector. Many boards reinforce the mini-Brooks laws that their states have adopted, but are very cautious in their posture on procurement as it relates to private transactions, for a good reason. In 1978, the United States Supreme Court struck down the NSPE ethics rule that prohibited engineers from bidding their services. According to the United States, the NSPE rule violated the Sherman Antitrust Act. NSPE, through its attorneys, unsuccessfully argued that the practice of engineering correlated closely with the health and safety of the public and, therefore, its apparent violation of the Act should be permitted under the *Rule of Reason* argument. In a split decision, the court stated,



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“Exceptions to the Sherman Antitrust Act for potentially dangerous goods and services would be tantamount to repeal of the statute. In our complex economy, the number of items that may cause serious harm is endless – automobiles, drugs...” and ruled against NSPE. The Court stated that bidding was not required, but that it was unlawful to reduce competition.

When viewing QBS through the licensing lens, an important distinction should be understood. NSPE does not enjoy the same legal rights as a State. According to the Cornell University Law School, Legal Information Institute, “Under the state-action doctrine elucidated in *Parker v. Brown*, 317 U.S. 341 (1943), state and municipal authorities are immune from federal antitrust lawsuits for actions taken pursuant to a clearly expressed state policy that, when legislated, had foreseeable anticompetitive effects. When a state approves and regulates certain conduct, even if it is anticompetitive under FTC or DOJ standards, the federal government must respect the decision of the state.” Given the litigious nature of society, the current attitudes regarding regulation, and the difficulty in demonstrating

to legislators the benefit of QBS, as a rule, state licensing boards, with one exception, do not opine on the application of QBS in private transactions. Alabama’s licensing board is alone in that regard.

In states without specific ethics rules addressing procurement, is the practicing structural engineer bound by any ethical duty not to bid engineering services? Why should it be unethical in some jurisdictions to bid engineering, but not others? What possible good can come from engineers offering competitive prices without a defined scope of work? In exercises where structural engineers were asked to provide a fee for a project where the only information provided is the location of the building, the size of the building, and cost of the building, the proposed fees varied by over 200%. Is the owner’s interest served in this system; if so, how? The client is purchasing a service he/she does not understand, in a quantity they did not specify, furnished by individuals they do not know anything about. The only metric that seems to matter is cost. Would anyone enter a grocery store and bid their grocery needs with the only instructions being to feed my family for a week?

If so, the family better like beans and rice. Isn’t that how the structural engineer is selected on a large number of projects, some rather complex? Given that the client may know the engineer, understands what the deliverables are, and hopes the services provided keep everyone out of court, are the services provided really appropriate or just minimal?

Ethical practice should not have to be mandated by licensing boards or professional societies. Any engineer should understand that prior to providing a fee, someone has to develop a scope of services, and if fees from multiple firms are to be compared, then every participating firm should be basing their fee on the same scope of services and assigning similarly qualified personnel. Procurement procedures that result in price comparisons without measuring qualifications

and defining the scope of service invite unethical behavior. Even if the licensing law does not prohibit participation, the instinct for self-preservation should dictate caution. Too many times, in these situations, the low fee is the wrong fee provided by the wrong firm.

It is very difficult in some segments of the structural engineering business community to adhere to QBS without the cover of a legal mandate. In fact, an engineering firm’s refusal to participate in price comparisons will likely end any chance of working with certain clients. The ethical engineer looking to play on a level playing field has a difficult time but must attempt to shape the process such that all participants are treated fairly, including the owner. This may mean walking away from a project. Ethical behavior can be expensive and good feelings cannot be deposited, but there is an indisputable benefit from practicing an honorable profession, and an obligation to protect that profession so that future practitioners are not viewed as a commodity. Therefore, the next time you are asked to compete for a project based on price, decide if you are offering engineering or just butter. ■