

HOW LOW ~~can you go?~~ Price-based bidding in the consulting industry

by Dwight Hamilton

"It only makes sense, you do the job you get the money for."

Peter Needra, P.Eng., vice president and general manager, DPIC's Canadian operations

The Canadian consulting engineering industry is worth close to \$6 billion a year, but fees range from about \$80 to \$165 an hour—much lower than other professions. International competition, an abundance of consulting engineers and the impact of the last recession have all contributed to form an intensely competitive market where the lowest price is, more often than not, the law.

In the early 1990s, "with construction dropping drastically in the province, engineering firms were doing whatever they thought they had to in order to survive," says Don Ingram, P.Eng., president of Consulting Engineers of Ontario (CEO), the business association for consulting engineering firms. In this arena of intense competition, low bidding has driven prices, profits and often quality into the ground, he says.

In purely price-based bidding, clients usually formulate the scope of work themselves, which can result in bids (and even completed projects) that fail to meet the client's objectives, says Ingram, who can cite a job where the bids ranged from under \$30,000 to over \$200,000. "What that has to mean is that there were misunderstandings as to the scope of work or the requirements of the client," he says. To keep a bid low, a consulting firm must interpret work in its narrowest (and hence, cheapest) sense, he adds, which often requires that the firm charge clients for extras during the assignment.

Paul Sandori, an architect with Toronto-based consultants Revay and Associates Ltd., says he's seen a range of consequences when consulting firms are willing to accept inadequate fees for construction assignments. They include:

- ◆ much of the design work being completed as construction progresses, because bid documents were incomplete and/or deficient. This was aggravated by the fact that the owner had not done his or her homework before the consultant's design phase began;
- ◆ a lack of coordination of subconsultant work, resulting in ceilings and other spaces that could not accommodate all the services that were supposed to fit;

- ◆ many field inquiries and changes throughout the project, which often overwhelmed the consultant's resources;
- ◆ a defensive attitude on the part of the consultant in responding to field inquiries and requests for change orders, because the owner made it more or less clear that extra costs would be recovered from the consultant. In one instance, every change order was listed in a file entitled "Architect's Errors and Omissions";
- ◆ an inexperienced site representative who was unable to deal adequately with the owner or the contractor.

Peter Needra, P.Eng., vice president and general manager of Canadian operations for DPIC, a major liability insurer of engineers, says engineering firms selected on the basis of a low bid may also have limited resources to provide clients with alternative and innovative solutions, which can lead to conservative designs that increase capital costs: "But it just makes sense that an engineering firm is going to do the job it gets the money for," he says.

He says that it's because of this environment that DPIC inserted a clause into its professional liability insurance policies for consulting engineers working in British Columbia's building envelope sector. To be insured, consultants' billings must be in line with the minimum fee schedules published by the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC). The company took this step because of its concern over recently built condominiums in the Vancouver area that are plagued with widespread leakage of their exteriors, and its belief that low bidding played a part.

According to Ross Rettie, P.Eng., director, professional practice and ethics for APEGBC, the leaky condo crisis was caused by a variety of factors, including that engineers inexperienced with build-

ing envelopes were selected for the original construction of most of these buildings. And if owners intend to flip a property quickly before problems may surface, "they don't really want to pay a consultant who would recommend a more expensive wall system," he says. Even if low bidding wasn't a direct cause, if you follow the money, it's still a quality issue, he says.

B.C.'s leaky condos surfaced not long after APEGBC considered recommendations from the Station Square Commission of Enquiry. Formed as a result of a supermarket roof collapse, the commission found that the bids for the job ranged from 260 to 460 hours of consulting time. It concluded that it is "inescapable that all companies did not intend to provide the services...with the same degree of diligence," and that "some solution must be found to make certain that the professional engineers can and will devote the necessary man-hours to a project...."

Many feel that qualification-based selection (QBS) gives the best value to a client purchasing engineering services. Since the Brooks Act came into effect in the United States in 1972, using price-based selection for engineering services has been prohibited for federal government agencies. The law mandates the use of QBS, and more than half of U.S. state governments follow the federal lead.

Jack Doran, a program director for DPIC in Monterey, California, examined 905 insurance claims involving design profes-

The QBS advantage

Potential benefits of the qualifications-based selection process include:

- ◆ enabling the client and engineer to work together to define and deliver a project;
- ◆ a focus on providing value to the client;
- ◆ the opportunity to optimize the life-cycle costs of projects by using improved designs;
- ◆ enabling the engineer to better determine resource requirements, cost estimates and fees with a detailed agreement and understanding on the required project scope;
- ◆ reasonable profits that enable the consulting firm to invest in the latest technologies, and hire and train the best qualified staff.

sionals and found that although low-bid projects made up only 35 per cent of total construction dollars spent, they represented 42 per cent of the claims filed. In contrast, QBS projects accounted for 28 per cent of total construction dollars, yet generated only 19 per cent of the claims. (Other delivery methods made up the difference.)

The QBS process involves selecting the consultant on a set of qualitative criteria

first, and negotiating price afterward. The firm's technical competence, managerial skills, experience on similar projects and ability to have dedicated personnel on hand for the project's duration are considered to be key factors. Each firm's track record, location, knowledge of local matters and general professionalism are also considered.

Among the potential benefits cited for QBS are more time at the onset for identifying a client's needs, and circumstances that enable an engineering firm to give the job higher priority. If these factors lead to improved designs, clients may enjoy lower life cycle costs and systems that are operator-friendly and flexible enough to be upgraded to meet future requirements.

Engineering firms find that QBS helps avoid ongoing debates on extra charges and helps develop a more professional relationship between consultant and client.

"The consulting engineering sector supports QBS because consultants believe that it offers value to the client, and a fair return to engineers. However, in public works, there's great demand from the political side to emphasize price. In Ontario at least, the public sector has been very reluctant to move to QBS," says Ingram.

But some purchasers of engineering services are, in fact, more concerned with getting good value for their consulting dollars. At the federal level, the Association of Consulting Engineers of Canada was successful in getting Public Works and Government Services Canada to adopt on a trial basis a system similar to a value-based selection (VBS) method for the projects it puts out to tender.

While QBS enables engineer and client to develop the project's scope before fee and contract negotiations, with VBS, the client retains the sole responsibility for defining the scope that is provided with the request for proposals. VBS therefore includes price in the initial proposal, while trying to ensure it is not the dominant factor. With QBS, price becomes a matter of negotiation between buyer and seller after the selection is made based on qualifications.

A Guideline for Selecting Engineering Services is available on PEO's website (www.peo.on.ca/EngPractice/select_eng_services), along with a *Schedule of Fees for Engineering Services* (www.peo.on.ca/feeguide/fees.htm). ◆

With files from Gayle Aitken and Bernard Ennis, P. Eng.