engineerscanada
ingénieurscanada

QUALIFICATIONS-BASED SELECTION

THE ENGINEERING PROFESSION'S POSITION

- In the interest of public safety and to maximize the value of capital investments, companies and governments should adopt policies requiring that qualifications-based selection be used for the procurement of services for engineering works.
- Qualifications-based selection policies and processes for procuring engineering works maximize the value of the engineer's contribution to a project while reducing the project's life cycle costs. It emphasizes quality, fosters innovation, and generates real savings in construction, operations, and maintenance, saving money for Canadians while optimizing public safety and a high quality of life through reliable and effective service.

The challenge(s)

The procurement of services related to engineering works in the public sector is most often obtained through public tendering. Government purchases are driven by policies designed to ensure transparency and value. The service is described in detail in a tender document and sealed bids are invited. In many cases, the lowest bid receives the contract. The appeal for the initial-price design solution appears to override the value that can be gained from considering life cycle costs. Life cycle costs is an approach that assesses the total cost of an asset over its life cycle including initial capital costs, maintenance costs, operating costs, and the asset's residual value at the end of its service[1]. Positive impacts that are associated with considering life cycle costs include reduced maintenance and operations costs and increased life of an asset thereby reducing replacement costs.

A selection method that attaches an overriding significance to infrastructure costs, can result in a situation where design-time limitations restrict the licensed engineer's professional autonomy to find the best solution to improve infrastructure and protect public safety. Value is achieved when design alternatives are evaluated based on their life cycle costs. It is during the design phase that both construction and operations cost savings are most easily achieved.

Life cycle costing is critical since public infrastructure projects are long-term investments that are paid for with public funds. It is imperative that the most qualified firm is chosen for important projects that impact Canadian communities and the natural environment.

An engineer's ability to devise the most appropriate solution depends on experience and training. A selection process, as outlined by the National Guide to Sustainable Municipal Infrastructure (InfraGuide), should include:

- The selection of an individual or team that is best qualified to undertake a particular assignment.
- The selection of an experienced team to develop the scope of services to ensure all opportunities for adding client value through the whole life cycle are provided for within the project.

Qualifications-based selection is a transparent procurement process used for the selection of architectural and engineering services for public infrastructure and construction projects. Under this system, the infrastructure owner considers a variety of competing engineering professionals and selects a qualified firm, and then negotiates the project scope of work, schedule, budget, and fees. This approach does not preclude the consideration of price in the process. Rather, it encourages consideration of price within a more meaningful context by bringing the fee into the equation after the scope of work has been jointly established and agreement reached with the top-ranked firm. Public investments should be transparent and return the greatest possible value for money. Qualifications based selection encourages innovation and provides better value to taxpayers and ratepayers on capital

investments and provides accountability by ensuring that fees will directly correspond to the level of service and the value of deliverables to be provided.

Recommendations to the federal government

The federal government should adopt policies that require that qualifications-based selection be used for the procurement of all engineering services and ensure sustainable infrastructure across Canada. The federal government must:

- Ensure that only qualified and experienced engineering professionals across Canada are selected for public infrastructure and construction projects.
- Inform and educate infrastructure owners to understand the importance of selecting qualified and experienced engineering professionals for public infrastructure and construction projects.
- Ensure that qualifications-based selection is used in any legislation or regulations that refer to engineering work and the procurement of all engineering services across Canada.
- Work with provinces, territories, and municipalities to develop and adopt a national standard for qualifications-based selection for procurement or incorporate such principles into existing documents and provincial and territorial equivalents.
- Adopt a qualifications-based selection approach for the procurement of engineering services as a post-COVID-19 economic recovery tool.

lIn addition, a national framework should include the implementation of policies that require qualifications-based selection to be used for the procurement of all infrastructure-related projects and services and include climate resilience as a requirement. This will benefit Canadian taxpayers through improved reliability, climate resiliency, safety, and long-term savings through the entire life cycle of infrastructure.

How Engineers Canada will contribute

Engineers Canada will continue to:

- Collaborate with the Association of Consulting Engineering Companies – Canada to promote and educate the federal government and other levels of government on the benefits of qualifications-based selection processes.
- Call for the federal government to adopt a competitive qualifications-based selection process, such as that described in the 2006 National Guide to Sustainable Municipal Infrastructure's document *Selecting a Professional Consultant*, to be used by infrastructure owners and investors.

[1] Whole Building Design Guide (2016). "Life-Cycle Cost Analysis (LCCA)." Retrieved September 23, 2021 from: https://www.wbdg.org/resources/life-cycle-cost-analysis-lcca.