



## DESIGNING TO A HIGHER STANDARD

The Intergovernmental Panel on Climate Change has issued a series of reports outlining how global warming will impact society. This has led to much discussion regarding the need for both mitigation and adaptation measures. Converting discussion to action, however, requires leadership, a role that I believe the engineering profession is ethically bound to fill.

The engineering profession is responding to the need for adaptation measures with initiatives such as Engineers Canada's Public Infrastructure Engineering Vulnerability Committee and ICLEI Canada's Building Adaptive and Resilient Communities. From a practising engineer's perspective, designing projects that exceed current regulations is difficult and often meets with resistance from clients due to economic concerns.

The disconnect between current design standards and those required to address climate change is further magnified in the area of mitigation. In order to meet GHG emission targets being set by some governments and municipalities, designs must significantly exceed current standards, often bringing the engineer in conflict with the existing economic-based decision-making process.

Designing to existing standards and meeting current economic measures may meet legal obligations but does it meet our profession's ethical standard? PEO takes the position that "Through the Code of Ethics, professional engineers have a clearly defined duty to society, which is to regard the duty to public welfare as paramount, above their duties to clients or employers." Given the impact of climate change on society, are we not ethically required to ensure our designs address both mitigation and adaptation requirements regardless of the position of our clients and employers?

Rather than waiting for our institutions and regulatory bodies to update their design standards, the engineering profession should lead the way and design solutions to the higher standards we know to be necessary.

George Sweetman, P.Eng., Hamilton, ON

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## QUALITY vs EFFICIENCY

In "Sharpening the PEA" (*Engineering Dimensions*, November/December 2014, p. 71), Michael McCartney says consulting engineering firms shouldn't

be owned by non-engineers, implying this leads to cut-throat competition. I think he's ignoring the elephant in the room. For a firm that provides a design service, there is an intrinsic incompatibility between being a business person (i.e. maximizing profit) and looking after the interests of one's clients (i.e. giving them the best advice). We are, of course, as professional engineers, mandated to perform the latter function. Like Mr. McCartney, I, too, have seen first-hand the results of quality in design sacrificed for profit.

I understand the request for proposals process adopted by many clients has become a farce, because just about everyone now gets 100 per cent for the rather spurious "quality" aspects, bringing the competition down to that of the lowest price for design. It's also often the case that requests for proposals are responded to by over 10 firms, all vying for the same project. The amount of total effort involved in tendering must come



# [ LETTERS ]

close to that of actually designing the project, so there is a huge waste of time involved.

True quality in design is achieved by an experienced and dedicated designer who has flair for choosing the correct approach in balancing the conflicting requirements of safety, economy, robustness, serviceability, etc.—oh yes, and the staff who take the time to carefully consider all the myriad options inherent in any engineering design, who prepare drawings and contract documents that are comprehensive and devoid of contradictions or ambiguity, and who employ checking procedures to ensure mistakes are rectified on the drawings, rather than on site.

There are limits to how far a firm can go in improving efficiency (without sacrificing quality in design) and reducing labour costs. Those are the major variables in determining fees. As for the conflict between maximizing profits and looking after the interests of clients, unfortunately, I do not have any practical suggestions for resolving this, other than PEO, etc., recognizing the conflict and taking appropriate action. Unfortunately, I think this would be unlikely, because such action would probably be seen by the public as special pleading.

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## CORRECTION

In the article "PEO looks to persuade manufacturers of need for repeal" (November/December 2014, p. 9), we incorrectly reported that PEO was still awaiting a response from the Canadian Manufacturers and Exporters (CME) to its meeting with them on September 12. In fact, PEO received a response on September 22, in which CME reiterated its intention to continue to advocate against repeal of the industrial exception and that, accordingly, no further meetings with PEO on this issue are necessary.

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