

By BERNARD ENNIS, P.ENG.

Since the last article of this type, “Some common professional practice issues,” published in the May/June 2006 issue of *Engineering Dimensions*, three more potentially problematic issues have been identified.

Engineers and construction

There are three reasons why an engineer provides services during the construction phase of a building project. Each of these reasons is associated with a different stakeholder—the owner, the contractor, or the public. Each brings its own purpose and rules, and each should be considered independently by the engineer.

Either the owner or the contractor may retain or employ an engineer to provide ongoing engineering services during construction. In this position, an engineer works with the contractor to identify and resolve site problems, to clarify the plans and specifications, and to provide the engineering services needed to prepare change notices. An engineer’s purpose is to assist the contractor in delivering the project as expected by the owner; he or she directly serves the interests of the contractor and indirectly serves the interests of the owner. If the owner believes the contractor is experienced enough or the project simple enough that engineering input is unnecessary, the client might not retain an engineer. Because the work is done at the discretion of the owner or contractor, the client can set the terms of service for an engineer. That is, the owner can decide what work an engineer will provide and how much time an engineer can spend on this work.

The owner may also hire an engineer to provide contract administration services during construction. These services include reviewing shop drawings, verifying progress payment claims, and checking supplied equipment and materials to ensure they are of the expected quality and quantity. The role of an engineer in this position is to protect the owner’s

More common professional practice issues

Many questions handled by PEO deal with the need to clarify the roles and responsibilities of professional engineers providing services for the building construction sector. Some of the problems arise because business practices have confused statutory requirements for engineering services with client preferences.

interests by ensuring the contractor is complying with the terms of the contract.

The contract administration role is optional; the owner does not need to hire an engineer to do this work. In this case, the owner will rely on the contractor to abide by the contract and to provide the building that the owner expected and the engineer designed.

While engineering input is not mandatory for contract administration, this is not the case for general review of construction. According to the *Ontario Building Code*, every permit applicant must retain an engineer to carry out this work. An engineer’s role is to verify that the owner has constructed the building in general conformance with the plans for which the permit was issued. Since the engineer’s duty when providing general review services is to the public, the terms of service for an engineer’s work are not decided by the owner. The engineer must comply with the performance standard given in section 78, O. Reg. 941 and must inform the owner that these legal requirements, not the owner’s wishes, determine the scope of work.

Often, engineers and their clients fail to distinguish amongst these three tasks. This can be seen in the way engineers arrange site visits. The client may wish an engineer to visit the site every other week to monitor construction progress and attend site meetings; this is a contract administration service. However, this schedule may

not be consistent with an engineer’s general review obligation to make visits “to determine on a rational sampling basis, whether the work is in general conformity with the plans and specifications.” The general review visits are driven by the nature of the work at the site, not by prescheduled meetings. Also, the reports to building officials as part of general review are not the same as the deficiency lists or other project reports provided for the owner’s benefit.

Engineers should be careful to tailor the terms of contract to suit both the client’s demands and their own legal responsibility, while carefully distinguishing between the two. An engineer cannot allow the client’s preferences to override the performance standard.

Who can perform electrical work?

Ontario Regulation 570/05, made under Part VIII of the *Electricity Act, 1998*, established a provincial system of licensing for electrical contractors and master electricians administered by the Electrical Safety Authority (ESA). Effective January 1, 2007, this provincial system replaced only the former municipal licensing system; it did not change the regulations governing who may perform electrical work. Regulation 570/05 states that no person shall operate an electrical contracting business without an electrical contractor licence issued by the ESA. In addition, the regulation stipulates that every contractor is required to employ

a licensed master electrician who is responsible for the planning and direct supervision of electrical work carried out on behalf of the contractor, and for ensuring that the electrical work is carried out in accordance with the electrical safety code and other Ontario legislation and regulations.

Provincial licensing of electrical contractors and master electricians is related to licensing of the business and shouldn't be confused with the requirement of electrical workers certification, as set out under O. Reg. 1051 for Electrician, which is made under the *Trades Qualification and Apprenticeship Act, 1990* (TQAA). This regulation sets out the legislative requirements and qualifications required for those who perform electrical work, and is administered by the Ministry of Training, Colleges and Universities (MTCU) and enforced by the Ministry of Labour.

Regulation 570/05 provides a way for professional engineers who meet the requirements to obtain a licence to operate an electrical contracting business; however, unless they have the appropriate Electrician Certificate of Qualification, as issued by the MTCU, they are not permitted to directly perform electrical work.

P.Engs not licensed tradespeople

In Ontario, many occupations, including construction trades, are regulated in a manner similar to the engineering profession. The TQAA sets up a prohibition that prevents anyone other than certified tradespeople from carrying out work of that trade. The activities restricted to these tradespeople are defined in legislation.

Only qualified tradespeople, who have completed both a prescribed academic course and an apprenticeship, can carry out this work. There are no exemptions in the TQAA that enable professional engineers to perform installation or maintenance work. The *Professional Engineers Act* provides only professional engineers the right to design, evaluate, report on or provide advice regarding electrical or plumbing systems; being able to design these systems does not grant a professional engineer the right to install or repair them. ❖

Bernard Ennis, P.Eng., is PEO's manager, standards and practice.