



## Cases and code of ethics

The National Society of Professional Engineers' Board of Ethical Review provides impartial help to engineers facing tough ethical questions. Following are two cases it recently reviewed.



### Case #1 Design changes

Dee Sine, P.E., prepares a set of drawings for a client for the design and construction of a building. The client, N.A. Fixx, contracts with Strongwill Contracting, who is not an engineer, for construction. Fixx does not retain Sine for construction phase services. Sine is paid in full for his work. Sine's drawings are filed with town code officials and a building permit is issued. Strongwill builds the building, but does not follow Sine's design, relying upon Strongwill's own experience in construction. Following construction, Strongwill, with the assistance of Tractor, prepares a set of record "as built" drawings, based upon the actual construction of the building as reported by Strongwill. Because the design and the construction drawings are not reconciled, the building official refuses to issue an occupancy permit to the client. Fixx asks Sine to "reconcile" the original design and the record drawings. Sine, not wanting to conduct an in-depth study of the work, agrees to perform the "reconciliation."

### What do you think?

Was it ethical for Sine to perform the design reconciliation?

Was it appropriate for Tractor to prepare a set of record drawings based on the construction without notifying Sine?

### What the NSPE board said

The facts and circumstances go beyond anything that would be permitted under the letter or the spirit of the NSPE Code of Ethics. The board interprets the facts to suggest that Sine is being asked to adopt a design that was not prepared by Sine, was not under Sine's direct control or supervision, and does not reflect the professional judgment and intent of Sine. Instead, it appears that Fixx is seeking to have Sine seal the drawings in question merely to satisfy the requirements of the building official, without regard to actual responsibility for the contents of the drawings. The work to be "reconciled" was clearly not performed under the responsible charge (direct control or personal supervision) of Sine. In fact, the work that was prepared by Sine was essentially ignored or rejected by Strongwill, in favour of another solution

chosen by the contractor. Since Sine was not retained for construction-phase services, Sine never had the opportunity to observe the work, nor did he provide guidance to Fixx or Strongwill on the relationship of the work to the original design and construction documents she prepared.

It is critically important that an engineer actually prepares the work or is in responsible charge of the work that he or she ultimately seals. By contrast, the facts in this case illustrate an example where an engineer is being asked to sign and seal work for which he was neither in responsible charge, nor which he was involved in preparing. In essence, it can be argued that the facts present the appearance that Sine's services were used by Fixx merely to gain approval for the project, with no intent on the part of the client or Strongwill to follow Sine's design intent.

It is not entirely clear under the facts whether Fixx knew or chose to accept Strongwill's decision to ignore Sine's designs. In unilaterally altering Sine's design, Strongwill may have engaged in the unlicensed practice of engineering. However, since Sine's design was approved

by the building official, and Strongwill's approach was at variance with the approved design, Fixx may now find that Strongwill's approach will result in additional design and/or construction costs to obtain the building official's approval. Clearly, there is a lesson here for clients who fail to appreciate the importance of publicly approved design drawings.

It was not ethical for Sine to reconcile his original design documents without an extensive investigation to ensure that all original design intent was followed. It was not appropriate for Tractor to prepare a set of record drawings based on the construction without notifying Sine. Moreover, there is a possibility that Tractor was aiding and abetting the unlicensed practice of engineering.

### The Ontario situation

Though the conclusions to the situation given in the accompanying article are valid in Ontario, there are additional factors that should be considered. Both the *Ontario Building Code* and the *Professional Engineers Act* state that a professional engineer shall undertake general review of construction of all buildings that are designed in whole or in part by a professional engineer. The practice standards for General Review, which are given in *Regulation 941*, stipulate that the reviewing engineer make periodic visits to the site to determine "whether the work is in general conformance with the plans and specifications." In other words, the engineer should attend the site often enough to ensure that the contractor follows the design consistently. If the contractor feels changes are necessary, these must be authorized by the review engineer. If the contractor makes unauthorized changes to a design prepared by a P. Eng., the contractor is not only violating the contract but is also practising professional engineering. If the contractor is not a licenced professional engineer, making these changes would be a violation of the *Professional Engineers Act*. A contractor who wishes to act as Strongwill does should be reminded of these facts.

### Case #2 The situation

Acton Haste, P.E., is employed by SPQ Engineering, an engineering firm in private practice involved in the design of bridges and other structures. As part of its services, SPQ Engineering uses a CAD software design product under a licensing agreement with a vendor. Under the terms of the licensing agreement, SPQ Engineering is not permitted to use the software at more than one workstation without paying a higher licensing fee. SPQ Engineering ignores this restriction and uses the software at a number of employee workstations. Haste becomes aware of this practice and calls a hotline publicized in a technical publication and reports his employer's activities.

### What do you think?

Was it ethical for Haste to report his employer's apparent violation of the licensing agreement on the hotline without first discussing his concerns with his employer?

### What the board said

Haste has an obligation to pursue this matter with SPQ Engineering. If a satisfactory ethical resolution cannot be reached, he is obligated to report the violation to the vendor. In addition, Haste should reconsider his further association with a firm that has shown itself engaged in fraudulent and dishonest enterprise. The board recognizes the right and the obligation of the engineer to report such violations as appropriate. At the same time, the board believes that as a professional, an engineer should always exercise judgment and discretion when confronting a situation such as the one presented under the facts. Depending on all of the facts and circumstances, an engineer should take reasonable steps to exhaust all appropriate alternatives before taking an extreme action, such as reporting an employer or a client for their actions, harm or danger to the public health or safety. At the same time, engineering managers acting for an employer who knowingly act in an unlawful manner or who take retaliatory actions against another engineer who

brings such matters to their attention are ignoring the basic principles contained in the NSPE Code of Ethics and are acting unethically.

It was not ethical for Haste to report his employer's apparent violation of the licensing agreement on the hotline without first discussing his concerns with his employer. Engineering firms acting through engineering managers who willfully ignore licensing agreement restrictions are in violation of the NSPE Code of Ethics. ♦

### The Ontario situation

Professional engineers working in Ontario also have an obligation, where conflict occurs, to inform the client/employer of the situation. In most cases in which concerns are raised internally with employers, the case can be resolved by the employer and employee engineer, who will jointly determine an alternative and acceptable course of action. Only where a "stand-off" is reached with the client/employer, should engineers attempt to resolve the problem themselves. The reporting process is outlined in PEO's guide line *A Professional Engineer's Duty to Report*, which can be accessed under "Publications" at: <http://www.peo.on.ca>

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