

SUMMARY OF DECISION AND REASONS

In the matter of a hearing under the *Professional Engineers Act, R.S.O. 1990, c. P.28*; and in the matter of a complaint regarding the conduct of a member of the Association of Professional Engineers of Ontario and a holder of a certificate of authorization.

The panel of the Discipline Committee met to hear this matter on March 26, 2018, at the offices of the Association of Professional Engineers of Ontario (the association) in Toronto.

The hearing proceeded by way of an Agreed Statement of Facts and a Joint Submission as to Penalty and Costs.

AGREED STATEMENT OF FACTS

This Agreed Statement of Facts is made between the Association of Professional Engineers and the holder and the member.

1. The member is a professional engineer who has been licensed pursuant to the *Professional Engineers Act* (the act) since 1992. He has held the designation of consulting engineer since 1998.
2. The holder has, at all material times, held a certificate of authorization issued pursuant to the act. The member is designated under section 47 of Regulation 941 under the act as assuming responsibility for the professional engineering services provided by the holder.
3. The complainant (the owner) purchased a post and beam house in Ontario in late 2007. She purchased the house from the owner/contractor (contractor) who had previously constructed the house. She moved into the house in January 2008.
4. The contractor builds post and beam houses using timber reclaimed from barns and had worked with the member on post and beam residence projects. He retained the holder, under an oral contract, to prepare structural drawings to accompany his request for a building permit for the house in 2005.
5. The holder prepared two drawings, namely: Drawing S-1, entitled "Specification & Plans"; and S-2, entitled "Roof Framing Plan & Specifications" (the structural drawings). The structural drawings are dated July 25, 2005, and are stamped with the member's seal. The structural drawings specify 10"x10" main beams in Douglas fir, and spruce-pine-fir no. 1 for the floor joists.
6. Clause 9.4.1.2 of the Ontario Building Code 1997 requires that post, beam and plank constructions with loadbearing members shall be designed in conformance with subsection 4.3.1, which requires conformance with CAN/CSA-086 Engineering Design in Wood. CAN/CSA-086 Engineering Design in Wood requires standard grading of wood used in building projects.
7. The structural drawings failed to:
 - a. specify the minimum grade of timbers to be used in the house;
 - b. specify the connection details for all Douglas fir elements;
 - c. specify an assumed founding elevation for various interior spread footings for the foundation and first floor framing;
 - d. ensure that wood members were separated from direct contact with concrete, contrary to Ontario Building Code clauses 9.17.4.3 (posts), 9.23.2.2 and 9.23.2.3 (timber joists) and 9.15.5.2 (ground floor beams); and
 - e. specify a continuous pocket with an anchored sill plate in the design of the ground floor timber joists to ensure adequate lateral support as required by s. 9.15.4.2 of the Ontario Building Code.
8. The building permit was issued in September 2005, and construction of the house was completed in the fall of 2006. The municipality requested a review of the post and beam construction by an engineer. The contractor requested that the member conduct a site visit, and that he provide a review letter to the municipality.

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He agreed to do so. As a result, in or about October or November 2006, the member attended at the house for the purpose of reviewing the post and beam construction.

9. The member had not signed any Commitment to General Review in connection with the project. He did, however, prepare, sign, seal and send to the municipality a letter dated November 1, 2006. It reads in full as follows:

During the course of construction of the above project, personnel from our firm carried out periodic site reviews of structural work in accordance with the requirements of section 2.3.2 of the Ontario Building Code and requirements of section 78 of Ontario Regulation 941/90, as amended, made under the *Professional Engineers Act* 1990, as amended. These reviews were conducted following the procedures described in the Professional Engineers Ontario guideline for *Professional Engineers Providing General Review of Construction as Required by the Ontario Building Code*.

On the basis of these, it is our opinion that the work is in general conformity with the drawings and specifications prepared by the holder, under the professional seal of the member which formed the basis for issuance of the building permit and any changes thereto authorized by the chief building official.

This opinion is based on the above parameters and should not be construed as a guarantee of work.

10. In fact, neither the member nor anyone from his firm had carried out periodic site reviews during the course of construction. In addition, the work was not in general conformity with the drawings and specifications prepared by the holder under the member's professional seal. There were in fact a number of deficiencies and variances, which were known or ought to have been known by the member. These included:
- a. the use of reclaimed material for the heavy timber members, not new material, with-

out independent testing as to their species, grade, design value or structural integrity;

- b. the use of "TJI" joists that were installed at the ground floor and "TJI" rafters at the roof, where sawn timber was specified, without any additional calculations to ensure this substitution was acceptable and without submission of engineered shop drawings for the "TJI" elements;
 - c. missing connection brackets between ground and second floor column lifts;
 - d. missing and inadequately fastened knee bracing at the second floor;
 - e. exterior stud wall framing being located beyond the face of heavy timber columns with no connection between the two elements;
 - f. roof rafters being supported on exterior stud wall framing instead of on the heavy timber beams; and
 - g. columns not being continuous across the ground floor with a lack of blocking being in place to transfer loads across the floor plate.
11. On the basis of the November 1, 2006, letter, the municipality's chief building official granted occupancy.
12. After the owner moved in, she noted numerous problems. As a result:
- the house was inspected on numerous occasions by the municipality, which found deficiencies in several areas of construction and design;
 - the municipality eventually issued an Unsafe Building Order, and the owner had to move out of the house to a trailer;
 - the house was inspected by numerous independent structural engineers and pest control experts, who observed evidence of structural failure and pest infestation; and
 - litigation ensued; it was ultimately settled.
13. The structural drawings of the house failed to comply with the Ontario Building Code and failed to specify sufficient information, including as set out above in paragraph 7. In the circumstances, the holder and the member failed to maintain the minimum standards that a reasonable and prudent practitioner would maintain in the circumstances.
14. The November 1, 2006, letter was not accurate in that the holder and the member had not completed periodic site reviews of the house during the construction, and in that there were numerous variances and deficiencies in the construction of the house from the structural drawings such that the construction of the house was not in general conformity with the structural drawings.

15. By reason of the aforesaid, the parties agree that the holder and the member are guilty of professional misconduct as follows:
- a. The holder and the member were negligent amounting to professional misconduct under section 72(2)(a) of Regulation 941. In particular, in preparing structural drawings and providing post-construction review to the owner in respect of the house, they knew or ought reasonably to have known the letter would be relied on by the township, the CBO, the owner and subsequent owners. They therefore failed to maintain the minimum standards that a reasonable and prudent practitioner would maintain in the circumstances.
 - b. The holder and the member failed to comply with applicable statutes, regulations, standards, codes, bylaws and rules amounting to professional misconduct under section 72(2)(d) of Regulation 941. In particular, in preparing structural drawings and providing post-construction review to the owner in respect of the house, they knew or ought reasonably to have known the review would be relied on by the township, the CBO, the owner and subsequent owners. They therefore failed to comply with sections 4.3.1, 9.4.1.2, 9.15.5.2, 9.17.4.3, 9.23.2.2 and 9.23.2.3, and/or 9.15.4.2 of the Ontario Building Code and/or the Canadian Standards Association Standards (CAN/CSA-086 Engineering Design in Wood).
 - c. The holder and the member engaged in conduct or an act relevant to the practice of professional engineering that, having regard to all the circumstances, would reasonably be regarded by the engineering profession as unprofessional, amounting to professional misconduct under section 72(2)(j) of Regulation 941. In particular, in preparing structural drawings and providing post-construction review to the owner in respect of the house, they knew or ought reasonably to have known the review would be relied on by the township, the CBO, the owner and subsequent owners. They therefore failed to meet the standard of professionalism expected of practitioners.

The respondents have had independent legal advice with respect to their agreement as to the facts, as set out above.

PLEA BY MEMBER AND/OR HOLDER

The panel conducted a plea inquiry and was satisfied that the member's admission was voluntary, informed and unequivocal. The panel accepted the explanations, accepted that the penalties were not contrary to the public interest and would not bring the administration of justice into disrepute, and followed the law and accepted the Joint Submission as to Penalty and Costs.

THE PANEL ORDERS

The panel concluded that the penalties and costs set out in the joint submission were appropriate and the panel orders:

- a. Pursuant to s.28(4)(f) of the act, the holder and the member shall be reprimanded, and the fact of the reprimand shall be recorded on the register for a period of six (6) months;
- b. Pursuant to s.28(4)(i) of the act, the finding and order of the Discipline Committee shall be published in summary form in PEO's official publication without reference to names;
- c. Pursuant to s.28(4)(d) of the act, a term or condition shall be placed on the member's licence that he shall, within 14 months of the date of pronouncement of the decision of the Discipline Committee, successfully complete the association's professional practice examination (PPE);
- d. Pursuant to s.28(4)(b) and (k) of the act, in the event that the member does not successfully complete the PPE with the time set out in (c) above, his licence shall be suspended for a period of ten (10) months thereafter, or until he successfully completes the PPE, whichever comes first; and
- e. There shall be no order as to costs.

PENALTIES AND COSTS DECISION

The panel concluded that the penalties and costs set out in the joint submission were appropriate as they fell within a reasonable range of acceptability, taking into account the following items:

- a. protection of the public interest;
- b. remediation of the holder and the member;
- c. maintenance of the reputation of the profession in the eyes of the public;
- d. general deterrence; and
- e. specific deterrence.

The holder and the member have co-operated with the association and by agreeing to the facts and proposed penalties have taken responsibility for their actions and have avoided unnecessary expense to the association.

Additional Note:

The panel administered a verbal reprimand at the conclusion of the hearing.

The Decision and Reasons was signed on May 3, 2018, by the panel chair, Patrick Quinn, P.Eng., on behalf of the panel, which included James Amson, P.Eng., Rishi Kumar, P.Eng., Lew Lederman, QC, and Leslie Mitelman, P.Eng.

COMPLAINTS COMMITTEE: VOLUNTARY UNDERTAKING UNDER SUBSECTION 24(2)(C) OF THE *PROFESSIONAL ENGINEERS ACT*

In the matter of a complaint regarding the actions and conduct of a member of the Association of Professional Engineers of Ontario, and a holder of a certificate of authorization.

BACKGROUND

1. The complaint relates to the work done by the member and holder in relation to the design and construction of five separate structures comprising part of a greenhouse facility.
2. The holder was retained by the manufacturer/builder of the facility to provide structural design services and general review of construction. The manufacturer/builder prepared structural drawings for the facility and the holder was to ensure the adequacy of the drawings for five of the structures and seal them.
3. The structural drawings, signed and sealed by the member, included a greenhouse, boiler room with in-floor water storage, cooler area structure, packaging area structure and circular high-water storage tank.
4. From the beginning of construction, to the final termination of the holder's services approximately seven months later, the member and holder conducted only three site visits/inspections. At the time that the holder ceased providing services, the majority of the construction of the facility was complete.
5. The owner of the facility retained another construction contractor to complete the facility, and the member and holder were no longer involved with the project. Subsequently, there were reported issues with construction not having been completed as per the approved drawings, issues with construction elements being missing, loose and damaged; and the design of some construction elements was questioned.

THE COMPLAINTS

6. The complaint raised issues concerning the work of the member and holder with regards to the adequacy of general reviews of construction, the adequacy of General Review Reports prepared and the sufficiency of information included on the sealed structural drawings.
7. The Complaints Committee (committee) received a candid and fulsome response to the complaint from the member and holder including a number of clarifications and explanations relating to the member and holder's scope of work on the project.

THE CONSIDERATION OF THE COMPLAINTS COMMITTEE

8. The committee considered the complaint on April 4, 2018, and June 27, 2018. The committee considered the response received and carefully considered the issues raised in this matter. The committee considered whether a referral to the Discipline Committee was warranted in all the circumstances, and whether it was in the interest of the public and the profession to proceed with the matter. The committee decided that if the issues raised in the complaint were addressed through certain proactive remedial efforts on the part of the member and holder, as well as publication of a summary of this

matter, that the public interest issues raised by the complaint would be addressed.

VOLUNTARY UNDERTAKING

9. The member and holder voluntarily undertook to:
 - a. Execute detailed written contracts for all projects;
 - b. When reviewing and sealing drawings prepared by others, clearly indicate the limitations of the member's professional seal on the sealed drawings;
 - c. Ensure that there is engineering accountability for any final engineering content provided by others for the member's review;
 - d. Inform non-engineer client firms (such as manufacturers) that they must have all, not just some, engineering content sealed by a professional engineer;
 - e. Ensure that their drawings and reviews contain all design assumptions regarding loads and material properties;
 - f. Ensure that the components to be designed by others are clearly identified as such and all necessary loads and forces to be considered by others are clearly indicated on the drawings;
 - g. Follow diligently PEO's practice guidelines related to General Review and Provision of Structural Engineering Services in Buildings;
 - h. For general review, not rely on the contractor to inform when a review is warranted but work this out in advance and have a plan, ensuring that frequency of site visits will be sufficient to provide a rational and defensible sampling of the work;
 - i. Provide comprehensive General Review Reports of the actual structural conditions reviewed, noting any deficiencies including incomplete items and work in progress, and corrective action required; and
 - j. Retain an independent structural engineer to review the member's projects, for a period of one year. The independent engineer will provide a report of his or her review, which will be provided to the registrar of PEO.
10. The member and holder acknowledge that when serving as the engineer for a fabricator who has no engineer of their own, the requirements are different; and as the only engineer, they may be exposed to a higher level of expectation and responsibility. They undertook to make sure that clients understand this.
11. The member and holder voluntarily agreed that a summary of this matter and the voluntary undertaking would be published in PEO's Gazette without their names.
12. The voluntary undertakings described above were accepted by the committee as a dispositive measure, and pursuant to its powers under section 24(2)(c) of the act, the committee decided that this matter would not be referred to the Discipline Committee.