

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 two members of the Association of Professional Engineers of Ontario, and a holder of a Certificate of Authorization (C of A).

BACKGROUND

1. The complaint relates to the structural design of free-standing interior glass balustrades for a commercial office building that had been constructed, but for which an occupancy permit had not yet been granted. The respondents had been retained as the engineering consultants responsible for the engineering design of the balustrades, as per the project architectural drawings.
2. At all material times, the holder held a Certificate of Authorization ("C of A") naming one of the members as the individual accepting professional responsibility for engineering services provided under the C of A. The other member was the professional engineer who signed and sealed the relevant designs and applications to the City.
3. The respondents had designed the balustrades without a continuous top-rail, based on CSA standard A500-16, which had not been adopted by the Ontario Building Code ("OBC"). The relevant OBC standard, CAN/CGSB-12.20-M89, required a continuous top-rail for glass balustrades.
4. The respondents took the position that their design based on the CSA standard was safe, and that the CSA standard was the more relevant standard, having been issued in 2016, while the standard in the OBC was last updated in or about 1989. In liaising with City officials with respect to the design issues raised and the need for a top-rail, some communications sent to the City were issued by an engineer employed by the C of A's Alberta office, who was not licensed in Ontario but licensed in Alberta.
5. An Alternative Solution Application was submitted to the City, signed and sealed by the member. This was followed by the submission of a Revision to the Alternative Solution Application. The Applications included a report signed and sealed by both the member in Ontario and the engineer licensed in Alberta. The Applications attempted to illustrate compliance with the CSA standard and conformance to the performance required by the OBC standard. In the Revision to the Alternative Solution Application, the respondents submitted that their design met the intent of the OBC, and that the required redundancy could be met without the need for the top-rail. Further, the respondents submitted that adoption of an action plan, should one of the balustrades become damaged, involving building occupants and managers notifying responsible persons of a damaged guard, and subsequent remedial steps to cordon off an area and install a temporary top-rail, would mitigate risk.
6. The City rejected the Applications, indicating that the OBC standard was the current standard to be met, and that as such the requirements of reliability and redundancy had not been met, nor had the requirements for heat-strengthened laminated glass been met.
7. The project owner subsequently submitted an Application for Hearing to the Building Code Commission. The Application argued that the Alternative Solution Application demonstrated compliance with the performance requirements of the OBC.
8. The Building Code Commission ruled that the Alternative Solution Application did not meet the requirements of the OBC, and that the top-rail, as required by the OBC, provided a margin of safety for catastrophic failure of a free-standing glass-guard, for which an equivalent degree of safety was not demonstrated in the Alternative Solution.
9. Following the ruling, the building owner agreed to install a top-rail to the balustrades.

THE COMPLAINT

10. The complaint raised concerns regarding safety, compliance to the OBC and appropriate use of seal.
11. The Complaints Committee ("the Committee") received a response to the complaint from the respondents, in which the respondents maintained their view that the CSA standard was the relevant standard, the submitted designs were safe, and once the Alternative Solution Application route had been exhausted, they had immediately taken steps to ensure compliance to the OBC standard by designing a continuous stainless steel top-rail system for the balustrades. The response further informed the Committee that while the respondents had not used a similar glass balustrade design approach on any project before or since, similar designs by others had been approved and installed in other jurisdictions in Ontario.

THE CONSIDERATION OF THE COMPLAINTS COMMITTEE

12. The Committee considered the complaint three times in 2021 and 2022. The Committee considered the response received and carefully considered the issues raised in this matter. The Committee acknowledged that the City granted a building permit allowing the installation of a glass balustrade without a continuous top rail. However, the Committee was concerned that while the respondents had been clear and transparent regarding the fact that their design was not in compliance with the OBC, they had not submitted an Alternative Solution Application to the City at the outset of the project. In addition, the Committee was concerned that certain design load requirements may not have been adequately addressed in the respondents' designs, reports and submissions to the City. The Committee was also concerned with the respondents' suggestion that an action plan that relied on building tenants taking certain steps in the event of any damage to the glass balustrades could adequately address safety concerns. Finally, the Committee had concerns that certain design documents issued by the respondents appeared to not have been sealed by an engineer.
 - c. Confirm that engineering staff involved in the design of glass guards have been made aware of the requirement to apply the load factors and combinations specified in OBC Table 4.1.3.2.A, without reduction, unless such a reduction has been accepted by the authority having jurisdiction as part of the acceptable solution;
 - d. Create a formal policy to ensure clients seeking to have a glass guard designed that will not fully meet the acceptable solutions criteria of the OBC and require approval from the authority having jurisdiction as an alternative solution, are informed in writing of this once the respondents are retained on the project;
 - e. Provide written confirmation that the appropriate engineering staff have read and understood the PEO Guideline *Assuming Responsibility and Supervising Engineering Work Guideline*, paying particular attention to section 5.4 Assuming Responsibility for Work Prepared Out of Province, and to undertake to adhere to the relevant aspects of the guideline going forward;
 - f. Provide written confirmation that engineering staff have read and understood the PEO Guideline *Use of the Professional Engineers Seal* and commit to practitioner seals being applied to all required work product going forward; and
 - g. Provide written confirmation that engineering staff involved in the design of glass guards are fully aware that guards must be shown to be capable of resisting the loads specified in the OBC, Division B, including the vertical loads specified in sentence 4.1.5.14.(6).
13. 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 members and the holder, as well as publication of a summary of this matter, the public-interest issues raised by the complaint would be addressed.

VOLUNTARY UNDERTAKING

14. The respondents undertook, through a Voluntary Undertaking to:
 - a. Create a formal policy and make all engineering staff aware that engineering services and opinions provided in Ontario must be provided by individuals licensed in Ontario;
 - b. Demonstrate that engineering staff involved in the design of glass balustrades are aware that the OBC standard CAN/CGSB-12.20-M89 is the required engineering standard governing design unless acceptance of an alternative solution has been granted by the authority having jurisdiction in which a glass guard rail design is being implemented. Further, engineering staff would be made aware that they must follow the requirements of the OBC or seek approval of an acceptable solution before issuing a design for construction or permitting purposes;
15. Documents as described above and documentation demonstrating completion of the undertaking elements were provided to the Committee.
16. Further, the respondents voluntarily agreed that a summary of this matter and the Voluntary Undertaking would be published in PEO's Gazette.
17. The voluntary undertaking described above was 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.