



ENGINEERS &
GEOSCIENTISTS
BRITISH COLUMBIA

IN THE MATTER OF THE *PROFESSIONAL GOVERNANCE ACT*
S.B.C. 2018, CHAPTER 47

and

IN THE MATTER OF BRIAN MCCLURE, P.ENG., STRUCT.ENG.
ENGINEERS AND GEOSCIENTISTS BC FILE NO. T19-054

CONSENT ORDER

Background

1. On February 5, 2021, the *Engineers and Geoscientists Act*, R.S.B.C. 1996, c. 116 (the “*EGA*”) was repealed and replaced by the *Professional Governance Act*, S.B.C. 2018, c. 47 (the “*PGA*”).
2. On December 10, 2021, the Association of Professional Engineers and Geoscientists of the Province of British Columbia, doing business as Engineers and Geoscientists BC, issued a Citation to Brian McClure, P.Eng., Struct.Eng. pursuant to section 66(1) of the *PGA*.
3. Engineers and Geoscientists BC and Mr. McClure now wish to resolve this matter by way of a Consent Order pursuant to section 73(2) of the *PGA*.

Admissions

4. Mr. McClure admits the allegations as set out in the Citation, namely that in connection with an 11-storey concrete building originally known as the Danbrook One located at 2766 Claude Road, Langford, British Columbia (the “Building”) for which Mr. McClure was the registered professional responsible for the structural design of the Building, Mr. McClure acted contrary to the *EGA* as follows:
 - 1) Mr. McClure demonstrated unprofessional conduct as the structural design for the Building (the “Structural Design for the Building”), as depicted in

design drawings dated June 11, 2019 (the “Structural Drawings”), is deficient, in particular:

- a. certain aspects of the seismic design of the Building do not comply with the 2012 British Columbia Building Code (“2012 BCBC”) and CAN/CSA A23.3-04 Design of Concrete Structures (“CAN/CSA A23.3-04”),¹ which Mr. McClure purported to meet in the Structural Design for the Building, including that:
 - i. the Structural Drawings contain incorrect and incomplete information regarding the seismic force resisting system used for the Structural Design for the Building;
 - ii. the flexural resistance of the core in the cantilever (North-South) direction of the Building is too high and therefore offers inadequate protection from failure to the less ductile sections of the Building;
 - iii. the coupled wall system in the East-West direction does not comply with the in-plane factored shear and flexural resistance requirements of the 2012 BCBC;
 - iv. the embedment length for the header diagonal reinforcing in the Building’s core is inadequate;
 - v. the critical shear resistance design of the core does not meet the requirements of the 2012 BCBC;
 - vi. the core footing is under-designed as its load and shear capacities do not meet the requirements of the 2012 BCBC;
 - vii. the overall foundation design scheme is inadequate to resist seismic forces;
 - viii. the long, thin gravity load walls on Level 1 and the gravity load columns on Levels 1-4 do not contain required buckling prevention ties; and
 - ix. the long, thin gravity load walls on Level 1 do not have the required curvature capacity.
- b. certain aspects of the design of the gravity load resisting system of the Building do not comply with the 2012 BCBC, including that:

¹ Including updates No. 1 (December 2005), No. 2 (July 2007), and No. 3 (August 2009).

- i. there is no adequate load path for the gravity loads to be transmitted to the foundation;
 - ii. the strip footings supporting gravity load walls that in turn support tower columns are grossly undersized;
 - iii. some Level 2 transfer beams rest on thin, load bearing walls that are supported on the Level 1 slab with no beams, and the strength of the slab is not adequate to transfer the applicable loads;
 - iv. in some locations, the thin concrete walls supporting slab bands have no integral column cages and only a single layer of reinforcement and are at risk of failure due to spalling;
 - v. several column footings, including footings F1 and F2, have inadequate flexural reinforcing, and footing F1 has inadequate punching shear capacity;
 - vi. several concrete columns on different levels of the Building, including basement column CC1, tower column CC5, have inadequate reinforcing or are under-designed and do not meet the load capacities required by the 2012 BCBC;
 - vii. several steel columns are undersized, including the 3 x 3 x .25 steel column at the southeast corner of level 3, and the 127 x 127 x 6 columns that extend from level 1 slab to the underside of the level 3 slab;
 - viii. the basement wall adjacent to the slab-on-grade ramp has inadequate reinforcing; and
 - ix. there are no details for continuity at the large step between the lobby and the higher residential slab.
- 2) The existence of the defects identified in paragraph 1 demonstrates incompetence on Mr. McClure's part.
- 3) Mr. McClure demonstrated unprofessional conduct by failing to undertake an adequate design process, in particular:
- a. Mr. McClure improperly relied on the design of the Building's core that was performed by his colleague, Mr. Ted Sorensen, as he:
 - i. failed to review Mr. Sorensen's design; and
 - ii. failed to identify major deficiencies in Mr. Sorensen's design of the Building's seismic elements.

- b. dimensions on the Structural Drawings materially differ from the Building's architectural record drawings and many concrete elements from the Building's architectural record drawings are missing from the Structural Drawings;
 - c. design loads listed on the Structural Drawings do not account for all required loading conditions, in particular, loading conditions for balconies, corridors, and exterior decks;
 - d. in breach of Bylaw 14(b)(1) of the Bylaws of Engineers and Geoscientists BC in force at the time (the "Applicable Bylaws"), Mr. McClure failed to maintain complete project documentation, including records of changes to the Structural Design of the Building that were made verbally on site;
 - e. in breach of Bylaw 14(b)(2) of the Applicable Bylaws, Mr. McClure failed during the design process to ensure that regular, documented checks of the Structural Design for the Building occurred; and
 - f. in breach of Bylaw 14(b)(4) of the Applicable Bylaws, Mr. McClure failed to ensure that an independent review of the Structural Design for the Building was completed and properly documented prior to construction.
- 4) Mr. McClure demonstrated unprofessional conduct with respect to the performance of field reviews, and in particular, having regarding to the size and complexity of the Building:
- a. Mr. McClure failed to perform a sufficient number of field reviews, including in particular in respect of key structural components such as the vertical elements in the tower portion and the core of the Building; and
 - b. in breach of Bylaw 14(b)(3) of the Applicable Bylaws, Mr. McClure failed to properly document field reviews, including by failing to properly document instances where the as-built conditions of the Building differed from the Structural Design for the Building.
- 5) Mr. McClure demonstrated unprofessional conduct when he signed and sealed Schedule B and Schedule C-B Letters of Assurance, confirming that the Structural Design for the Building substantially complied with the 2012 BCBC in circumstances where the design did not comply.
- 6) Mr. McClure demonstrated unprofessional conduct when he failed to take adequate steps to address serious concerns about the Building's structural design that were brought to his attention by Skyline Engineering in November 2017 while the Building was under construction.

- 7) Mr. McClure demonstrated unprofessional conduct when, in his July 26, 2019 response to a May 27, 2019 letter from Engineers and Geoscientists BC requesting that Mr. McClure respond to the allegations made against him, Mr. McClure represented to Engineers and Geoscientists BC that Sorensen Trilogy Engineering had asked Skyline Engineering to perform an independent review and that Skyline Engineering had declined, when in fact, it had been Skyline Engineering that had reached out to Sorensen Trilogy Engineering to communicate serious concerns with the Building's structural design as a professional courtesy after one of its principals reviewed structural drawings for the Building.

Disposition

5. Mr. McClure's registration in Engineers and Geoscientists BC is cancelled effective of the date of this Order (the "Cancellation Date").
6. Mr. McClure agrees not to apply for reinstatement of practicing status for a period of two years after the Cancellation Date.
7. If Mr. McClure wishes to apply for reinstatement of practicing status with Engineers and Geoscientists BC, in addition to complying with all requirements mandated by the Bylaws of Engineers and Geoscientists BC and as deemed required by the Engineers and Geoscientists BC Credentials Committee, he must provide:
 - a. a letter of explanation as to why he wishes to reinstate status as a practicing Professional Registrant;
 - b. a declaration that he has read and is familiar with applicable standards, policies, plans, and practices established by the government or by Engineers and Geoscientists BC, including applicable professional practice guidelines and advisories that are relevant to his intended practice;
 - c. a letter of explanation as to how he has maintained practice competency, including through the completion of continuing education;
 - d. professional references, in a number satisfactory to the Credentials Committee and who are able to attest to his good character, good repute, and practice competency;
 - e. a current professional record of his work experience;
 - f. evidence of the successful completion of the Engineers and Geoscientists BC Professional Practice Examination, at his own expense;
 - g. evidence of completion of the Professional Engineering and Geoscience Practice in BC Online Seminar, at his own expense; and

- h. evidence that he has completed continuing education instruction in the following subject areas:
 - i. structural engineering requirements under the most recent edition of the British Columbia Building Code;
 - ii. Canadian Standard A23.3 for the design of concrete structures; and
 - iii. Canadian Standard S16:19 for the design of steel structures.
- 8. If Mr. McClure's practicing status is reinstated with Engineers and Geoscientists BC at any time in the future, he agrees to undergo a practice review conducted by the Audit and Practice Review Committee, and pay the costs associated with the practice review, within six months of his reinstatement with Engineers and Geoscientists BC. The precise timing and process of which will be determined by the Audit and Practice Review Committee.
- 9. Mr. McClure will pay a fine in the amount of \$25,000.
- 10. Mr. McClure will pay \$32,000 to Engineers and Geoscientists BC as a contribution towards the legal and investigative costs incurred in this matter.
- 11. The amounts required to be paid by Mr. McClure as a fine and towards costs must be paid in six equal installments, with the first payment to be made contemporaneous with the execution of this Consent Order, and all subsequent payments made every 30 days thereafter until the total is paid.

Consequences of the Consent Order

- 12. The full text of this Consent Order will be published on the website of Engineers and Geoscientists BC, and a summary will be published in print and electronic publications, including in public communications.
- 13. This Consent Order has the same force and effect as an Order made under section 75(6) of the *PGA*.
- 14. Mr. McClure has received independent legal advice regarding the content of this Consent Order.

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15. Mr. McClure and Engineers and Geoscientists BC agree that this Consent Order may be executed in counterparts and delivered as an electronic document.

This Consent Order is approved and accepted by Mr. McClure and the members of the Discipline Resolution Panel this 9 day of May, 2022.

<original signed by>
Brian McClure, P.Eng.,Struct.Eng.

Shelley McClure
Name of Witness

<original signed by>
Signature of Witness

<original signed by>
Emily Cheung, P.Eng.
Member, Discipline Resolution Panel

<original signed by>
Chris Arthur, P.Eng.
Member, Discipline Resolution Panel

<original signed by>
Pierre Gallant, Retired Architect AIBC
Member, Discipline Resolution Panel