



ENGINEERS &
GEOSCIENTISTS
BRITISH COLUMBIA

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

and

IN THE MATTER OF MAHMOUD MAHMOUD, P.ENG.

ENGINEERS AND GEOSCIENTISTS BC FILE NO. T19-053

CONSENT ORDER

Background

1. On June 1, 2023, the Association of Professional Engineers and Geoscientists of the Province of British Columbia, doing business as Engineers and Geoscientists BC issued a Citation to Dr. Mahmoud Mahmoud pursuant to section 66(1) of the *Professional Governance Act*, S.B.C. 2018, c.47 (the “PGA”).
2. The Citation sets out allegations against Dr. Mahmoud related to a stormwater management system (the “Greenwood SWMS”) for a project located at [REDACTED], West Vancouver (the “Greenwood Project”) and a stormwater management system for a project located at [REDACTED], West Vancouver (the “Hycroft Project”).
3. Engineers and Geoscientists BC and Dr. Mahmoud now wish to resolve this matter by consent pursuant to section 73(2) of the *PGA* in order to avoid the need for a disciplinary hearing.
4. Dr. Mahmoud consents to the disposition set out below.

Legislation

5. On February 5, 2021, the *Engineers and Geoscientists Act*, R.S.B.C. 1996, c. 116 (the “*EGA*”), the *EGA* was repealed and replaced by the *PGA*.
6. The conduct set out in the Citation took place when the *EGA* was in force. As a result, Engineers and Geoscientists BC has considered Dr. Mahmoud’s conduct pursuant to the *EGA* and the Bylaws and Code of Ethics under the *EGA*, While Dr. Mahmoud’s conduct is considered under the *EGA*, pursuant to sections 35(2) and 36(1)(c) of the *Interpretation Act*, R.S.B.C. 1996, c.238, the procedures established by the *PGA* and the current Bylaws of Engineers and Geoscientists BC will be followed as far as they can be adapted to this proceeding.

Admissions

7. Dr. Mahmoud admits to the following allegations set out in the Citation, namely that in connection with the Greenwood Project he demonstrated unprofessional conduct contrary to the *EGA* and the applicable bylaws by reviewing and signing a report dated November 19, 2013 with subject line “RE: ROCK PIT DESIGN AND RECOMMENDATIONS [REDACTED], WEST VANCOUVER, BC” (the “Rock Pit Design Report”) that was prepared by an Engineer-in-Training under his direct supervision. As set out therein, the primary purpose of the Rock Pit Design Report was to prepare a rock pit design (the “Rock Pit Design”) for use in the Greenwood Project building permit application process. In particular, the Rock Pit Design Report and the Rock Pit Design contain the following defects and deficiencies:
 - a. the methodology and values used to derive the recommended rock pit size are not included in the Rock Pit Design Report and are not otherwise apparent in any document relied on in support of the development of the Rock Pit Design;
 - b. the Rock Pit Design Report includes the following two drawings:
 - i. Figure 1: Stormwater Management Plan – Perimeter Drain and Rock Pit; and
 - ii. Figure 2: Sump to Rock Pit(collectively, the “Greenwood SWMP Design Drawings”).

Read together with the Rock Pit Design Report, the Greenwood SWMP Design Drawings do not contain the information necessary to construct the elements of the Greenwood SWMP depicted therein. More particularly, the Greenwood SWMP Design Drawings omit accurate locations, sizes, elevations, and material specifications.

- c. the methodology and calculations underlying the Rock Pit Design are flawed because the runoff equation used to calculate the rock pit storage volume is not, and was not at the material time, the correct equation to use for the purpose of calculating rock pit storage volumes.
8. Contrary to section 20(9) of the *EGA*, Dr. Mahmoud provided an unsealed copy of the Rock Pit Design Report to his clients.
9. In his capacity as geotechnical professional of record for the Greenwood Project, Dr. Mahmoud demonstrated unprofessional conduct contrary to the *EGA* by failing to conduct a geotechnical investigation that was sufficient to support the development of the Greenwood SWMS, in particular he failed or neglected to conduct any infiltration testing.
10. Dr. Mahmoud admits to the allegations set out in the Citation, namely that in connection with the Hycroft Project he demonstrated unprofessional conduct contrary to the *EGA* by signing and affixing his seal to a stormwater management plan for the Hycroft Project dated April 2, 2019 (the “April 2, 2019 Hycroft SWMP”) that contained the following defects, errors, and deficiencies:
 - a. the April 2, 2019 Hycroft SWMP includes the following note indicating that the “percolation rate is high”, which is a conclusion that was arrived at without having conducted any percolation testing:
 - i. “The water percolation is high and there is no risk due to water table because of the morphology and soil structure of the lot”;
 - b. the stormwater management objective indicated in the April 2, 2019 Hycroft SWMP does not align with the applicable stormwater management targets prescribed by the District of West Vancouver (the “DWV”) in the applicable Stormwater Management Plan Submissions Guidelines (2016) (the “2016 Guidelines”);
 - c. the April 2, 2019 Hycroft SWMP was not developed in compliance with the following requirement of the 2016 Guidelines:
 - i. “all sites shall have a storage facility to assist in attenuating rainwater runoff flows for the 10-year event under six design storm durations from 1 hour to 24 hours”;
 - d. the calculations presented in the April 2, 2019 Hycroft SWMP contain inaccurate, incorrect, and/or misleading information, including:
 - i. the impervious areas shown in the calculation table are incorrect;

- ii. the peak flow calculations for pre-development conditions and post-development conditions are incorrect and inconsistent;
 - iii. the following alternative method for release rate calculation does not comply with the 2016 Guidelines:
 - 1. “Another method [for release rate calculation] is limiting the release rate to 50% of the 2 year peak flow [...]”; and
 - iv. the estimated storage volume presented is improperly derived;
 - e. The pre-development and post-development impervious areas in Drawing No. 3 are inaccurate, and fail to take into account bedrock;
 - f. The design presented in the April 2, 2019 Hycroft SWMP does not meet the engineering standards for the detailed design of an onsite stormwater system, and contains, without limitation, the following defects, errors, and deficiencies:
 - i. Drawing No. 4 and Drawing No. 5 depict different drainage configurations;
 - ii. the active storage of the storage tank is unclear;
 - iii. the notes included on Drawing No. 4 are inconsistent with the notes included on Drawing No. 5 as they relate to minimum drainage/sewage pipe slope; and
 - iv. locations and details of the proposed onsite Best Management Practices are absent from the stormwater system design.
11. Dr. Mahmoud demonstrated unprofessional conduct contrary to the *EGA* by failing to adequately supervise and review the work of the non-registrant (as he was then) primarily responsible for preparing the April 2, 2019 Hycroft SWMP, and by subsequently signing and affixing his seal to the April 2, 2019 Hycroft SWMP, despite the existence and extent of the defects, errors, and deficiencies identified in paragraph 15.
12. Dr. Mahmoud demonstrated unprofessional conduct contrary to the *EGA* by signing and affixing his seal to the April 2, 2019 Hycroft SWMP when he did not possess the requisite training or experience to take responsibility for the professional assignment, in particular:
- a. the 2016 Guidelines require a SWMP submission to include, amongst other things, “storage volume required complete with orifice dimensions

(for discharge rate control) and calculations”, which is an area that was and is outside the knowledge and experience of Dr. Mahmoud, and which Dr. Mahmoud admits lacking the qualifications to have undertaken on his own.

13. Dr. Mahmoud did not comply with the minimum requirements of section 14(b)(2) of the Bylaws of Engineers and Geoscientists BC (as they were then) by failing to implement regular, documented checks of the engineering and geoscience work undertaken by a non-registrant (as he was then) under Dr. Mahmoud’s direct supervision in respect of the April 2, 2019 Hycroft SWMP.
14. Dr. Mahmoud demonstrated unprofessional conduct contrary to the *EGA* by failing to conduct an adequate geotechnical review to support the development of the April 2, 2019 Hycroft SWMP that was signed and sealed by Dr. Mahmoud, in particular:
 - a. no subsurface investigations were conducted to assess soil and groundwater;
 - b. a desktop review of the provincial database was not conducted; and
 - c. infiltration testing was not conducted.
15. Prior to signing and affixing his seal to the April 2, 2019 Hycroft SWMP, Dr. Mahmoud had signed and affixed his seal to the following stormwater management calculation sheets related to the Hycroft Project that were prepared by an Engineer-in-Training under his direct supervision and reviewed by Dr. Mahmoud (together, the “Hycroft SWMP Calculation Sheets”):
 - a. Stormwater Management Calculation Sheet signed and sealed by Dr. Mahmoud on September 11, 2018;
 - b. Stormwater Management Calculation Sheet signed and sealed by Dr. Mahmoud on January 15, 2019;

Each of the Hycroft SWMP Calculation Sheets was rejected by the DWV on the basis that it did not comply with the 2016 Guidelines. At the time of signing and affixing his seal to the Hycroft SWMP Calculation Sheets, Dr. Mahmoud was unaware of the existence of the 2016 Guidelines, which demonstrates incompetence on the part of Dr. Mahmoud.

Disposition

16. By consent, this Consent Order is made pursuant to section 73(2) of the *PGA*.
17. Dr. Mahmoud’s registration with Engineers and Geoscientists BC is suspended for a period of four months commencing on November 12, 2024 (the “Suspension Period”).

18. During the period from the effective date of this Consent Order to November 12, 2024, Dr. Mahmoud will:
 - a. limit his practice to those project files that he is currently engaged on and not take any new project files or other engineering work; and
 - b. make reasonable arrangements for the orderly transfer of his ongoing professional engineering project files to other professional engineers.
19. Prior to the end of the Suspension Period, Dr. Mahmoud will successfully complete the Professional Engineering and Geoscience Practice in BC Online Seminar (the “Seminar”), at his own expense. Upon successful completion of the Seminar, Dr. Mahmoud will promptly provide confirmation to Engineers and Geoscientists BC.
20. Six months after the completion of the Suspension Period, Dr. Mahmoud will undergo a practice review (the “Practice Review”) conducted by the Audit and Practice Review Committee, and pay the costs associated with the Practice Review. The precise timing and process of the Practice Review will be determined by the Audit and Practice Review Committee.
21. Dr. Mahmoud is prohibited from performing any engineering work related to stormwater system design, rock pit design, or the development or implementation of stormwater management (or similar) plans (collectively, “Stormwater System Engineering and Design”) except under the Direct Supervision of a qualified Professional Registrant, as those terms are defined in the *Guide to the Standard for Direct Supervision* of Engineers and Geoscientists BC, as may be amended from time to time (the “Practice Restriction”). If Dr. Mahmoud seeks to lift or modify the Practice Restriction, he must first satisfy the following terms and conditions:
 - a. Provide proof to Engineers and Geoscientists BC that he has completed, at his own expense, and passed one of the listed courses offered by EPIC Educational Program Innovations Center:
 - i. Design and Analysis of Stormwater Management Ponds;
 - ii. Design of Urban Drainage and Stormwater Management Facilities Workshop;
 - iii. Design of Sanitary Sewer and Storm Water Drainage Systems – Workshop;or an equivalent course approved in advance and in writing by Engineers and Geoscientists BC (the “Course”).
 - b. After successful completion of the Course, Dr. Mahmoud may apply for reinstatement of full practice rights and request that Engineers and Geoscientists BC’s Credentials Committee lift the Practice Restriction (the “Competency Application”).

- c. In partial fulfilment of the Competency Application, Dr. Mahmoud must report his updated experience and competencies in the area of Stormwater System Engineering and Design, completed after the effective date of this Consent Order and under Direct Supervision, through Engineers and Geoscientists BC's Competency-Based Assessment system, using the 10 technical competencies with indicators and providing registered professional engineers practicing in the Stormwater System Engineering and Design discipline as Validators, as described in Engineers and Geoscientists BC's *Competency Assessment Guide for Engineering Applicants and Trainees* (the "*Competency Assessment Guide*"), as may be amended from time to time. The validated competency assessment will be assessed by Stormwater System Engineering and Design Assessors, as described in the *Competency Assessment Guide*.
 - d. After Dr. Mahmoud's Competency Application is reviewed by the Validators and the Assessors, Engineers and Geoscientists BC's Credentials Committee will review Dr. Mahmoud's Competency Application. An interview may be required to further assess Dr. Mahmoud's competency to return to full practice rights. If the Credentials Committee is of the opinion that Dr. Mahmoud is competent to practice Stormwater System Engineering and Design, the Credentials Committee may lift the Practice Restriction and reinstate Dr. Mahmoud's full practice rights.
22. Dr. Mahmoud will pay \$13,000 to Engineers and Geoscientists BC as a contribution towards the legal and investigative costs incurred in this matter.
 23. In the event that Dr. Mahmoud fails to comply with any of the terms of this Consent Order, his registration with Engineers and Geoscientists BC will be suspended until every default has been remedied in accordance with the terms of this Consent Order.

Consequences of the Consent Order

24. 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.
25. This Consent Order has the same force and effect as an Order made under section 75 of the *PGA*.
26. Dr. Mahmoud has received independent legal advice regarding the content of this Consent Order.

27. Dr. Mahmoud 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 Dr. Mahmoud and the members of the Discipline Resolution Panel this 11 day of October, 2024.

<original signed by>

Dr. Mahmoud Mahmoud, P.Eng.

Name of Witness

<original signed by>

Signature of Witness

<original signed by>

Roz Nielsen, P.Eng.
Member, Discipline Resolution Panel

<original signed by>

Chris Arthur, P.Eng.
Member, Discipline Resolution Panel

<original signed by>

Gerald Matier
Member, Discipline Resolution Panel