

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 SAAD AL-DABBAGH, P.ENG., a member of the Association of Professional Engineers of Ontario, and A & A ENVIRONMENTAL CONSULTANTS INC., a holder of a certificate of authorization.

The hearing took place electronically on March 1, 2022.

The parties introduced an Agreed Statement of Facts (ASF). The panel was satisfied that the Member's and Holder's admissions were voluntary, informed and unequivocal. The ASF provides as follows:

1. Saad Al-Dabbagh, P.Eng. (Al-Dabbagh), graduated from the University of Baghdad in 1980 with a bachelor of science in civil engineering. He has been licensed with PEO since 2014.
2. A & A Environmental Consultants Inc. (A & A) has been the holder of a certificate of authorization (C of A) since November 22, 2010. At the material times, Al-Dabbagh was an employee of A & A and was listed as a responsible engineer under its C of A for the purposes of section 17 of the *Professional Engineers Act*.
3. On January 3, 2017, A & A was engaged by Landmark Capital Ltd. (the Developer) to conduct, among other things, a geotechnical investigation for a proposed development at 416 Dundas Street East, Whitby, Ontario (Site).
4. In February of 2017, A & A arranged for the drilling of four boreholes at the Site using a stainless-steel hollow stemmed auger for the purposes of the geotechnical investigation.
5. In or about March 2017, A & A delivered a report entitled *Geotechnical Engineering Report Proposed Stacked Townhouses and Underground Parking, 416 Dundas St East, Whitby*, dated March 20, 2017 (Geotechnical Report #1). This report was signed and sealed by Al-Dabbagh, and was also signed by Thomas Demers, environmental consultant.
6. The proposed development at this time was a three-storey townhouse block with 19 units, a basement and one underground parking level. Geotechnical Report #1 indicated that it appears that the load of the proposed development will be transferred to a very loose silty clay layer, which is extended to a depth lower than the end of sand layer level and will cause an excessive settlement in the foundation. The text of Geotechnical Report #1 erroneously stated that boreholes were advanced using solid stem augers when, in fact, as indicated in the borehole logs, hollow stem augers were used.
7. The Developer subsequently revised the proposed development to a seven-storey residential building with three underground parking levels.
8. As a result of the change in the proposed development, A & A prepared a second Geotechnical Report entitled *Geotechnical Engineering Report Proposed Residential Building and Underground Parking, 416 Dundas St East, Whitby* (Geotechnical Report #2). This report was also dated March 20, 2017. It was signed and sealed by Al-Dabbagh. The date shown on the signature page is March 25, 2017. However, Geotechnical Report #2 was actually prepared on June 12, 2018. Attached as Schedule "A" is a copy of Geotechnical Report #2.
9. The text of Geotechnical Report #2 maintained the error that boreholes were advanced using solid stem augers when, in fact, as indicated in the borehole logs, hollow stem augers were used.
10. Geotechnical Report #2 was submitted by the Developer to the Town of Whitby (Town). The Town retained Golder Associates Ltd. (Golder) to review Geotechnical Report #2.
11. Golder prepared 58 comments concerning the Geotechnical Report #2, which were sent to the Developer under cover of a letter dated July 30, 2018 (Comment Letter #1), from the Town to the Developer's planner. This letter was conveyed to A & A for response. Attached as Schedule "B" is Comment Letter #1.
12. In response, A & A delivered, among other things, the following, dated October 10, 2018:
 - a. A letter enclosing a response to Comment Letter #1 (Response Letter #1), signed and sealed by Al-Dabbagh on October 11, 2018, a copy of which is attached as Schedule "C";

- b. An updated Geotechnical Engineering Report entitled *Proposed Residential Building and Underground Parking, 416 Dundas St. East, Whitby, ON* dated October 10, 2018 (Geotechnical Report #3), signed by Thomas Demers and signed and sealed by Al-Dabbagh, a copy of which is attached as Schedule “D.”
13. Geotechnical Report #3 maintained the error that the boreholes were advanced using solid stem augers.
14. Golder reviewed and provided comments on Response Letter #1 and on Geotechnical Report #3. These were provided to the Developer under cover of a letter dated November 13, 2018, from the Town to the Developer’s planner (Comment Letter #2), a copy of which is attached as Schedule “E.” Golder identified that A & A had not resolved approximately 30 of the 58 comments in Comment Letter #1. Golder determined that approximately 22 of its comments were “moot” (in that their resolution was preferable but not necessary).
15. Golder noted deficiencies in the drilling and sampling methods in the Geotechnical Reports, which remained unresolved, as further detailed in Comment Letter #2. Golder also noted that:
 - a. A & A used both WSD (working stress design) and LSD (limit state design) foundation design standards, which was confusing and could have significant implications on the recommendations (including but not limited to Comments #9, 12 and 18);
 - b. A & A omitted relevant information in its Report that was not resolved in Geotechnical Report #2 and/or could result in design or construction implications (including but not limited to Comments #2, 3, 23, 25, 27, 30, 31, 32, 33, 35, 36, 37, 38, 40, 42 and 45);
 - c. A & A’s Geotechnical Reports contained other deficiencies, including describing groundwater levels to a precision of 1mm, inconsistent with industry practice (Comment #8), and referencing unconfined compressive strength tests being carried out without providing any UCS test data, and instead relying on the N value of the standard penetration test (Comment #33); and
 - d. A & A’s Geotechnical Reports contain internal inconsistencies and/or inconsistent or conflicting statements between the Geotechnical Report #1 and A & A’s response, and other confusing or unnecessary information or descriptions (including but not limited to Comments #5, 6, 11, 19, 21, 22, 24, 29, 34, 44 and 50–58).
16. A & A prepared a further updated *Geotechnical Engineering Report Proposed Residential Building and Underground Parking 416 Dundas Street East, Whitby, ON* dated November 23, 2018 (Geotechnical Report #4) and provided it to the Developer. Geotechnical Report #4 was now for a proposed development consisting of a five-storey residential building with 1.5 underground parking levels and corrected the reference from solid stem to hollow stem augers in the text and addressed various of Golder’s comments. Attached as Schedule “F” is a copy of Geotechnical Report #4.
17. By email dated November 29, 2018, the Developer advised A & A that it had reviewed Geotechnical Report #4 and contacted the Town. The Developer advised that the Town “re-confirmed that due to the nature of the attention to detail and responses in the report, they will not allow [the Developer] to use A & A on this file.” The Developer retained a different consultant who prepared a fresh report.
18. On January 25, 2019, Dave Martino, on behalf of the Developer, filed a complaint to PEO.
19. PEO retained Sarafinchin Associates Ltd. as independent experts to review the work done by Al-Dabbagh and A & A. Murray Sarafinchin, P.Eng., provided an expert report dated December 31, 2019 (the Expert Report), a copy of which is attached as Schedule “G.” The Expert Report included a chart that commented on Comment Letter #1 and A & A’s responses thereto.
20. Sarafinchin concluded that Al-Dabbagh and A & A failed to observe the requirements of the ASTM 1586 and the *Canadian Foundation Engineering Manual, 4th ed, 2006* (CFEM), in respect of the manner in which the SPT procedure was conducted, including by using solid stem augers, obtaining results that indicated a failure to ensure a clean borehole for sampling, obtaining results that indicated a failure to supervise the field drilling, taking and reporting an improper number of sample intervals and providing inadequate information and confusing explanations for the necessary geotechnical bearing resistance and settlement values in their reports.

21. Sarafinchin concluded that A & A and Al-Dabbagh failed to meet the standard of care expected of a reasonably prudent geotechnical engineer practitioner in the circumstances by:
 - a. Failing to be aware of certain significant site investigation problems (i.e., certain loose wet sand and silt deposits to be anticipated in this Whitby area) as expected of a reasonable and prudent practitioner in the specialist geotechnical engineer role;
 - b. Failing to carry out representative in situ drilling and sampling of native undisturbed soil (without likely problematic cave or blowback conditions in wet sands below the water table caused during the auger drilling of open boreholes and/or within hollow stem augers, which Sarafinchin concluded had occurred), by using cased and water-filled augers to prevent yielding repetitive SPT N=0 of very loose sand compactness results, in the manner set out in the CFEM 2006, section 4.5.2, and the ASTM D1586;
 - c. Failing to select and carefully manage geotechnical field drilling and sampling equipment methods to carry out representative soil sampling of native undisturbed soils and procedural standards of a reasonable and prudent practitioner in the geotechnical engineer's role and the given circumstances, including complying with ASTM D1586-99, sections 5.1, 6.2, 6.3 and 6.4 that the geotechnical drilling equipment supervised by the geotechnical engineer must provide a clean borehole before sampling and testing using hollow stem augers or casing with balanced drilling fluid levels to ensure that the SPT test is required to be performed on native undisturbed soil; and
 - d. Failing to use the separate WSD (working stress design) and LSD (limit state design) foundation design standards (as opposed to using both WSD and LSD at various places in the reports), which did not meet the standards expected of a reasonable and prudent practitioner in the circumstances.
22. Sarafinchin further opined that Al-Dabbagh and A & A's errors, omissions and deficiencies in the Geotechnical Reports caused inconsistent information and confusion in a manner that would not be expected of a reasonably prudent geotechnical engineer practitioner in the circumstances and that Al-Dabbagh failed to meet the standard of care expected of a reasonably prudent geotechnical engineer practitioner in the circumstances.
23. For the purposes of this proceeding, Al-Dabbagh and A & A accept the correctness of the findings, opinions and conclusions in the Expert Report. Al-Dabbagh and A & A admit that they failed to maintain the standards that a reasonable and prudent practitioner would maintain in the circumstances, and that they failed to make responsible provision for complying with applicable standards and codes.
24. By reason of the aforesaid, the parties agree that Al-Dabbagh and A & A are guilty of professional misconduct as follows:
 - a) They were negligent, amounting to professional misconduct under section 72(2)(a) of Regulation 941, by failing to maintain the standards that a reasonable and prudent practitioner would maintain in the circumstances, including by:
 - i. Failing to carry out representative in situ drilling and sampling of native undisturbed soil (without likely problematic cave or blowback conditions in wet sands below the water table caused during the auger drilling of open boreholes and/or within hollow stem augers, which had occurred), by using cased and water-filled augers to prevent yielding repetitive SPT N=0 of very loose sand compactness results, in the manner set out in the CFEM 2006, section 4.5.2, and the ASTM D1586, as expected of a reasonable and prudent practitioner in the specialist geotechnical engineer role. Instead, based on SPT N=0, it was recommended that this layer be replaced with engineered fill material.
 - ii. Failing to use the separate WSD (working stress design) and LSD (limit state design) foundation design standards (as opposed to using both WSD and LSD at various places in the reports), which did not meet the standards expected of a reasonable and prudent practitioner in the circumstances; and
 - iii. Preparing Geotechnical Reports #1, #2 and #3 that contained confusing information related to N=0 in a manner that would not be expected of a reasonably prudent geotechnical engineer practitioner in the circumstances.
 - b) They failed to make responsible provision for complying with applicable statutes, regulations, standards, codes, bylaws and rules in connection with work being undertaken by or under the responsibility of the practitioner,

amounting to professional misconduct under section 72(2)(d) of Regulation 941, including by:

- i. Providing inadequate information and confusing explanations for the necessary geotechnical bearing resistance and settlement values, contrary to CFEM 2006 Section 4.5.2 and Tables 4.1 and 4.2, and ASTM D1586-99 Section 4.1, 4.2, 5.1, 6.2, 6.3 and 6.4 which was not corrected until Geotechnical Report #4.
- c) They 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, including by:
 - i. Failing to make responsible provision for complying with the CFEM and ASTM 1586 including by providing inadequate information and confusing explanations for the necessary geotechnical bearing resistance and settlement values, contrary to CFEM 2006 Section 4.5.2 and Tables 4.1 and 4.2, and ASTM D1586-99 Section 4.1, 4.2, 5.1, 6.2, 6.3 and 6.4 which was not corrected until Geotechnical Report #4.
 - ii. Failing to use the separate WSD (working stress design) and LSD (limit state design) foundation design standards (as opposed to using both WSD and LSD at various places in the reports), which did not meet the standards expected of a reasonable and prudent practitioner in the circumstances; and
 - iii. Preparing Geotechnical Reports #1, #2 and #3 that contained confusing information related to N=0 in a manner that would not be expected of a reasonably prudent geotechnical engineer practitioner in the circumstances.

The panel found the Member and Holder guilty of professional misconduct under section 28(2)(b) of the *Professional Engineers Act* and s. 72(2)(a), (d) and (j) of Regulation 941 under that act.

The panel accepted a Joint Submission on Penalty (JSP) and ordered:

- a) Pursuant to s. 28(4)(f) of the *Professional Engineers Act*, Al-Dabbagh and A & A shall be reprimanded, and the fact of the reprimand shall be recorded on the Register permanently;
- b) The finding and order of the Discipline Committee shall be published in summary form under s. 28(4)(i) of the *Professional Engineers Act*, together with the names of the Member and Holder;
- c) Pursuant to s. 28(4)(d) of the *Professional Engineers Act*, there shall be a term and condition on Al-Dabbagh's licence requiring him to successfully complete the 16-Civ-B3 – Geotechnical Design examination administered by PEO (the Examination), within 14 months from the date of pronouncement of the decision of the Discipline Committee (the Date);
- d) Pursuant to s. 28(4)(e) and (k) of the *Professional Engineers Act*, a restriction shall be imposed upon Al-Dabbagh's licence prohibiting him from practising professional engineering except under the direct supervision of another professional engineer who shall take professional responsibility for the work by affixing his or her signature and seal on every final drawing, report or other document prepared by Al-Dabbagh, which restriction shall be suspended for a period of 14 months from the Date. If Al-Dabbagh successfully completes the Examination at any time before or after the 14-month period referred to above, this restriction shall be suspended indefinitely; and
- e) Pursuant to s. 28(4)(j) of the *Professional Engineers Act*, there shall be an order requiring payment of costs to PEO in the amount of \$5,000, within 12 months of the Date. Al-Dabbagh and A & A shall be jointly and severally liable to pay this amount to PEO.

At the conclusion of the hearing, a reprimand was given. After the pronouncement of the penalty, the Member and Holder waived their rights to appeal. Thus, the effective date of the Decision is March 1, 2022.