

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 ZHI QIANG CAO, P.ENG., a member of the Association of Professional Engineers of Ontario, and DBI GROUP LTD., a holder of a certificate of authorization.

The matter came on for a hearing before a panel of the Discipline Committee on November 11, 2020. The panel heard this matter by means of an online video conference platform that was simultaneously broadcast in a publicly accessible format over the internet. All participants in the proceedings, including the member and holder (combined herein as respondents) self-represented; counsel for the association, Leah Price; the panel and their independent legal counsel, David Jacobs, attended via videoconference.

AGREED STATEMENT OF FACTS AND ALLEGATIONS

Counsel Leah Price for the association advised the panel that the association and the respondents had reached agreement on the facts and introduced an Agreed Statement of Facts and the contained allegations as follows:

1. At all material times, the respondent, Zhi Qiang Cao, P.Eng. (aka Johnson Cao) (Cao), was a professional engineer licensed pursuant to the *Professional Engineers Act*. According to PEO's records, Cao's training and practice are primarily in the fields of civil and structural engineering. Cao has had no material training or experience in mechanical or electrical engineering.
2. The respondent, DBI Group Ltd. (DBI), is an Ontario corporation headquartered in Mississauga, Ontario. Cao is one of two corporate directors for DBI. At all material times, DBI held a certificate of authorization (C of A) and Cao was the individual accepting professional responsibility for engineering services provided under the C of A.
3. In or about August 2018, Cao and DBI were retained by Leilei Cheng (Cheng) to act as the lead consultant and obtain a building permit for converting an industrial building into a private school (the Project) at 55 Franklin St. E. (South), Kitchener, Ontario. Cheng was acting on behalf of Waterloo Independent Secondary School and Cheng's Group Corp.
4. On February 20, 2019, Cheng signed a Commitment to General Review form for the Project as the owner and/or authorized agent. Cao also signed the form and checked a box indicating that he and DBI had been retained for structural engineering works. Further, Cao signed the name of Ashraf Nana, P.Eng. (Nana), the complainant in this matter, without Nana's knowledge or consent. Cao checked boxes indicating that Nana had been retained for electrical and mechanical engineering works, also without Nana's knowledge or consent. Attached hereto as Schedule "A" is a true copy of the Commitment to General Review form.
5. On or about February 22, 2019, DBI provided Cheng with a package of signed and sealed architectural, mechanical, electrical and structural drawings for the Project. The package included nine (9) mechanical and electrical drawings on DBI title block, with related calculations (the Drawings). Cao applied a signature and seal purporting to be Nana's, to each of the Drawings. Nana did not have any knowledge that Cao had done so, nor did he consent to Cao's use of his signature and seal. Cao dated Nana's seal for February 22, 2019; however, the Drawings also contained the following versions and descriptions in the revisions section: on January 15, 2019, issued "for Client Review"; on February 1, 2019, issued "for Permit"; and, on February 20, 2019, "Revised per Client for Permit."
6. The Drawings and the Commitment to General Review were submitted by Cheng to the City of Kitchener in support of the building permit application for the Project.
7. Cao and DBI were removed from the project sometime before March 30, 2019.
8. Cheng contacted Victor Lan (Lan) and FDL Design and Construction in hopes of retaining their services for the Project. On March 30, 2019, Lan forwarded the Drawings to Nana. Upon review, Nana did not recognize the Project and determined that he had not prepared or sealed the Drawings.

9. On March 30, 2019, Nana emailed Cheng, advising that the Drawings were not his and therefore should not be used. On April 1, 2019, Nana emailed the city, advising that the Drawings were not his, and that “the engineer the client hired photoshopped and/or used my stamp illegally.”
10. On April 1, 2019, Nana submitted a complaint to PEO regarding Cao and DBI’s conduct.
11. On July 17, 2019, Cao wrote to the PEO investigator and admitted that he prepared and sealed the Drawings:

“...I have no dispute about this complain. and I feel deeply sorry and shame on my unprofessional behavior. the reason this happened is because the following reason:

 1. this is just a beginning of this project, all the design concept has been not settled and I originally think to provide the client a concept design as client’s request to have a construction quote. and I had plan to contact ‘Ashraf Nana’ to finalize the design and submission.
 2. I was under a extremely work load a tight schedule pressure, could not contact ‘Ashraf Nana’ for this project on time.”
[sic]

A copy of the email chain, ending July 17, 2019, is attached hereto as Schedule “F.”
12. PEO retained NORR Architects & Engineers Limited to review the Drawings and prepare an independent expert report. Balazs Farkas, P.Eng., and Salil Ranadive, P.Eng., prepared a report dated December 17, 2019, a copy of which is attached hereto as Schedule “G” (the Expert Report).
13. The Expert Report found that the Drawings lacked design information and did not satisfy good engineering practices and applicable code requirements.
14. Among other things, the Expert Report noted the following deficiencies with the mechanical design:
 - a. a plumbing fixture schedule was not included and plumbing fixtures were not identified (see item 3.1);
 - b. no fire suppression design was submitted (see item 3.2);
 - c. the total ventilation air volume supplied is only 5,100 cfm, while the applicable standard required 6,452 cfm (as per ASHRAE 62.1, “Ventilation for Acceptable Indoor Air Quality” Table 6.2.2.2) (see item 3.6);
 - d. each rooftop unit supplies conditioned air to multiple spaces with different uses and different exposures but appears to be controlled by a single space temperature thermostat (see item 3.7); and
 - e. the domestic hot water system supply piping in generally is in generally under-sized at ½” while ¾” is required as per Table 7.6.3.1A and 7.6.3.2A of the Ontario Building Code (see item 3.11).
15. Among other things, the Expert Report noted the following deficiencies with the electrical design:
 - a. the load summary confirming the adequacy of the existing electrical services was missing and/or lacking (see item 4.1);
 - b. fire alarm riser diagram and fire alarm schedule service was missing and/or lacking (see item 4.3);
 - c. product specifications were missing and/or lacking (see item 4.4);
 - d. the spacing of smoke detectors beyond 60 feet apart within a corridor is beyond the limits rated coverage of a typical smoke detector (see item 4.5);
 - e. the spacing of visual alarms and audible alarm devices 60 feet apart within the corridors is beyond the guidelines of typical vendors and does not meet the spacing criteria detailed within ULC S524-14 “Standard for the Installation of Fire Alarm” (see item 4.6);
 - f. locating audible alarms only in the hall ways will result in either horns being too loud near the device or too soft at the farthest ends of the classrooms, which violated OBC fire alarm audibility requirements (OBS item 3.2.4.20 (4a) and 3.2.4.20 (6)) (see item 4.7);

- g. pull station and exit sign between the basketball/gym to storage rm#2 is not located at the required exit, and this directs people to an incorrect location during evacuation (see item 4.9);
 - h. directional exit signs are needed in main lobby to correctly describe the path of travel (see item 4.13);
 - i. directional exit signs are required in the corridor between the computer and chemistry lab (see item 4.16);
 - j. no lighting controls are shown, and there are numerous lighting control criteria that must be met to satisfy the energy efficiency requirement of the Ontario Building Code (see item 4.17);
 - k. normal lighting in the washrooms is provided by two 500 lumen downlights, and a lighting evaluation shows that this will not satisfy the minimum requirement in section 3.2.7.1 of the OBC and referenced table 9.34.2.7 Column (2) (see item 4.18); and
 - l. there is no indication if HVAC units shown on mechanical drawings require shutdown fire alarm per OBC section 3.2.4.13(d) (see item 4.19).
16. The Expert Report concluded as follows:
- “1. In the matter relative to whether or not Mr. Cao and DBI failed to be aware of, consider or comply with any standards or codes applicable to the design, review and sign-off drawings and construction details, it is our opinion that the design drawings submitted for Building Permit submission were missing some relevant information for a comprehensive Building Permit submission. In addition, the submitted design did not meet all the requirements of applicable codes and standards, nor did they include all relevant construction details.
 2. In the matter relative to errors, omissions or identified deficiencies, it is our opinion that the referenced drawings in general show the design intent with the exception of the fire suppression systems and the lighting control system. There were only a limited number of other mechanical errors identified in the documents; however, we have documented numerous fire alarm and emergency lighting device location[s] that are in contravention of the applicable codes and standards.
3. In the matter of whether or not Mr. Cao and DBI failed to meet the standard expected of a reasonable and prudent practitioner given the circumstances, it is our opinion that the documentation submitted for Building Permit application did not meet the expected standard as defined by common industry practices.
- Based upon the aforementioned observations, we are of the opinion that the submitted mechanical and electrical design document did not meet the minimum expected standard for a Building Permit application. It should be also noted that a Building Permit is an authorization to proceed with construction. In our opinion, the mechanical and electrical design package provided is not suitable for this intent.”
17. For the purposes of this proceeding, the respondents accept as correct the findings, opinions and conclusions contained in the Expert Report. The respondents admit that they failed to meet the minimum acceptable standard for engineering work of this type and that they failed to make responsible provision for complying with applicable statutes, regulations, standards and codes. The respondents further admit that their conduct, including their conduct in issuing the Drawings and fraudulently applying Nana’s signature and seal to the Drawings was disgraceful, dishonourable and unprofessional.
18. By reason of the aforesaid, the parties agree that the respondents are guilty of professional misconduct as follows:
- a. Preparing, signing, sealing and issuing mechanical and electrical drawings that failed to meet the standard of a reasonable and prudent practitioner, amounting to negligence and to professional misconduct as defined in section 72(2)(a) of Regulation 941;
 - b. Preparing, signing, sealing and issuing mechanical and electrical drawings that failed to responsibly provide for compliance with applicable standards and codes, amounting to professional misconduct as defined in section 72(2)(d) of Regulation 941; and
 - c. Providing engineering services in a disgraceful, dishonourable and unprofessional manner, amounting to professional misconduct as defined in section 72(2)(h) of Regulation 941.

19. It is further agreed that Cao is guilty of professional misconduct by offering and providing engineering services that he is not competent to perform by virtue of his training and experience, amounting to professional misconduct as defined in section 72(2)(h) of Regulation 941.

PLEA

The respondents admitted the allegations set out in paragraph 18 (a) to (c) and 19 of the Agreed Statement of Facts.

DECISION

The panel found the respondents guilty of professional misconduct for conduct as follows:

- a. Preparing, signing, sealing and issuing mechanical and electrical drawings that failed to meet the standard of a reasonable and prudent practitioner, amounting to negligence and to professional misconduct as defined in section 72(2)(a) of Regulation 941;
- b. Preparing, signing, sealing and issuing mechanical and electrical drawings that failed to responsibly provide for compliance with applicable standards and codes, amounting to professional misconduct as defined in section 72(2)(d) of Regulation 941; and
- c. Providing engineering services in a disgraceful, dishonourable and unprofessional manner, amounting to professional misconduct as defined in section 72(2)(h) of Regulation 941.

The panel further found the member guilty of professional misconduct by offering and providing engineering services that he is not competent to perform by virtue of his training and experience, amounting to professional misconduct as defined in section 72(2)(h) of Regulation 941.

REASONS FOR DECISION

The panel agreed that the acts of professional misconduct alleged in the Agreed Statement of Facts (ASF) herein were amply supported in the ASF and agreed to by the respondents and the association and thus accepted by the panel as making out acts of professional misconduct under the legislation.

The panel considered and accepted the findings of NORR Architects & Engineers Limited, the expert retained to review the respondents' mechani-

cal and electrical drawings referred to in the allegations and the pleas. The expert found, among other deficiencies, that the mechanical and electrical drawings at issue were lacking in mechanical and electrical areas, did not satisfy good engineering practices and applicable code requirements and did not meet the minimum expected standard for a building permit application. On review of the drawings and the expert opinion, the panel agreed.

It is noted that some of these deficiencies are related to the fire suppression systems, fire and smoke detection and alarm warnings, as well as inadequate guidance for exiting personnel from the building under alarm conditions. Also, the design as proposed would not provide sufficient ventilation to maintain acceptable air quality. Implementing these designs could affect the health and safety of the occupants.

The panel thereby found that the respondents prepared, signed, sealed and issued mechanical and electrical drawings that failed to meet the standard of a reasonable and prudent practitioner. Further, the panel found that the respondents prepared, signed, sealed and issued mechanical and electrical drawings that failed to responsibly provide for compliance with applicable standards and codes and, in fact, provided engineering services that the member was not competent to perform by virtue of his training and experience.

In addition, the member applied a signature and seal to each of the impugned drawings purporting to be signed by Ashraf Nana, P.Eng. The agreed facts show that Ashraf Nana, P.Eng., did not have any knowledge that the member had done so, nor did he consent to the member's use of his signature and seal. The member applied the signature and seal of another engineer without that engineer's knowledge or approval, which conduct the panel found to be disgraceful, dishonourable and unprofessional.

PENALTY DECISION

The panel carefully considered the Joint Submission as to Penalty and Costs. In the circumstances of this case, the panel is of the view that suspension of the member's and holder's licences and publication of the panel's findings and order, including the reprimand with reference to the respondents' names, a reasonable outcome in this matter; a lesser penalty would fail to appropriately serve the aims of general deterrence, protecting the public and maintenance of the public's confidence in the regulation of the profession.

The panel acknowledges the respondents' co-operation with the association through the Agreed Statement of Facts and their statement of remorse. These considerations, combined with the respondents' lack of prior disciplinary histories, are mitigating factors in determining an appropriate penalty.

Members of the public must have confidence that professionals are held to high standards of conduct and that serious breaches of those standards are dealt with appropriately. Failing to take a proportionate response to protect the public in the face of professional miscon-

duct undermines that trust and harms both the reputation of the profession and the legitimacy of professional regulation.

In the circumstances of this case, the panel was of the view that an outcome short of some period of suspension would undermine public confidence in the regulation of the profession and would fail to adequately provide for protection of the public and general deterrence to the profession at large. Additionally, the panel notes that publication of its findings and reasons with the names serves to promote general deterrence in the profession and reinforce the public confidence in the regulation of the profession.

Accordingly, the panel accepted the Joint Submission as to Penalty and Costs for the respondents and ordered as follows:

- a) Pursuant to s. 28(4)(f) of the act, the respondents shall be reprimanded, and the fact of the reprimand shall be recorded on the register for an unlimited period of time;
- b) Pursuant to s. 28(4)(b) of the act, the member's licence and the holder's certificate of authorization shall be suspended for a period of four (4) months, commencing on the day the penalty decision is pronounced by the Discipline Committee;
- c) Pursuant to s. 28(4)(d) of the act, a term and condition shall be imposed on the member's licence, requiring him to successfully complete the Professional Practice Examination within twelve (12) months after the day the penalty decision is pronounced by the Discipline Committee;
- d) Pursuant to s. 28(4)(e) of the act, a restriction shall be imposed on the member's licence and on the holder's certificate of authorization prohibiting them from practising electrical or mechanical engineering;
- e) The findings and orders of the Discipline Committee shall be published in summary form under s. 28(4)(i) and 28(5) of the act, with reference to names, and with reasons therefore; and
- f) There shall be no order as to costs.

The panel pronounced its determinations as to convictions and penalty at the conclusion of the hearing on November 11, 2020. At the hearing after the pronouncement of the penalty the respondents waived their rights to appeal and thus the effective date of the suspension of the member's licence and the holder's certificate of authorization is November 11, 2020, and it was and is so ordered.

The Decision and Reasons was signed by Paul Ballantyne, P.Eng., as chair of this discipline panel and on behalf of the members of the discipline panel: Qadira Jackson, LLB, and Jag Mohan, P.Eng.