IN THE MATTER OF

THE PROFESSIONAL GOVERNANCE ACT, S.B.C. 2018, c. 47

and

IN THE MATTER OF ALEXANDER DAINOV

DETERMINATION OF THE DISCIPLINE COMMITTEE

Date and Place of Hearing:	July 21-22, 2025; via videoconference Written Submissions concluding August 12, 2025
Discipline Committee Panel:	Neil Cumming, P.Eng., Chair Chris Arthur, P.Eng. Gerry Matier
Counsel for Engineers and Geoscientists BC:	Brendan W. Dawes
On his own behalf:	Alexander Dainov
Counsel for the Panel:	Tonie Beharrell
Date of Decision	October 24, 2025

Background

1. This panel of the Discipline Committee (the "Panel") of the Association of the Professional Engineers and Geoscientists of the Province of British Columbia doing business as Engineers and Geoscientists BC ("EGBC") was convened to hear a citation (the "Amended Citation') issued to Alexander Dainov (the "Respondent") pursuant to section 75 of the *Professional Governance Act*, S.B.C. 2018, c. 47 (the "PGA"). The Respondent was a registrant of EGBC from February 1, 2021 until March 22, 2025.

2. The Amended Citation is dated April 25, 2025, and sets out the allegations against the Respondent. It says he engaged in professional misconduct and incompetence in connection with his design of a geodesic dome (the "Geodesic Dome"). The particulars are as follows:

    1. You demonstrated professional misconduct contrary to the PGA by authenticating structural engineering calculations for the Geodesic Dome dated February 18, 2021 (the "Structural Engineering Calculations") that contained the following incorrect conclusion:

        > "We found that 6m diameter geodesic dome with 26mm x 1.5mm Round Tube Strut Size can withstand wind of 200mph and snow load of 120psf."

    2. You demonstrated professional misconduct contrary to the PGA authenticating a drawing dated March 3, 2021 titled "6m 3V PLATFORM" with drawing number 6m3VPLGD (the "Platform Drawing") that contained the following deficiencies and omissions:

        a. The Platform Drawing lacks dimensions, locations, and sizes of structural members and connections;

        b. The Platform Drawing lacks information regarding the bearing capacity of the supporting soil, details of footings, and any anchor points for the superstructure; and

        c. The Platform Drawing lacks information about the maximum applied load, the applicable codes, and structural standards, contrary to the minimum requirements for structural drawings prescribed by section 2.2.4.3 of Division C of the BC Building Code 2018.

3. You demonstrated professional misconduct contrary to the PGA by authenticating a report dated April 21, 2021 with title “STRUCTURAL DESIGN REPORT FOR 6m 3V 26mm x 1.5mm GEODESIC DOME” (the “Structural Design Report”) that contained the following incorrect conclusions, defects, and omissions:

    a. The Structural Design Report includes the following incorrect conclusion with respect to wind load:

    “Both numbers are well within safety margin and 6m 3V Geodesic Dome, built with 26mm x 1.5mm struts, can withstand both snow and wind load combinations of 80psf/150mph.”

    b. Section “5. Conclusion” and Section “6. Reference” include the following circular reference that refers the reader to the Structural Design Report itself for additional information regarding nodes and anchor mounting hardware:

    “Additional information on nodes, anchor mounting hardware may be found in our comprehensive report as listed below (e)”

    […]

    “e) STRUCTURAL DESIGN REPORT FOR 6m 3V GEODESIC DOME 2020”

    As a result, the Structural Design Report does not include any information regarding anchors or anchoring points.

4. The existence of the defects, deficiencies, and omissions identified in paragraphs 1, 2, and 3 demonstrate incompetence on your part, contrary to the PGA.

5. At the time of authenticating the Structural Engineering Calculations, the Platform Drawing, and the Structural Engineering Report (collectively, the “Geodesic Dome Documents”), you were aware, or ought to have been aware, that the Geodesic Dome Documents, or any of them, would be relied on in support of building permit applications in the province of British Columbia. You demonstrated professional misconduct by authenticating the Geodesic Dome Drawings, which, taken together:

    a. were not complete for their intended purpose and do not contain the information necessary to construct the Geodesic Dome, including the deficiencies and omissions set out at paragraphs 2 and 3(b);

    b. do not substantially comply with the BC Building Code 2018, including sections 2.2.4.3 and 2.2.4.6 of Division C; and

c. lack detail and depict a functionally incomplete structural system, in particular:

i there is no indication as to how the structure will be stabilized against wind uplift forces: (i) the Geodesic Dome Documents do not include details of anchor points for the Geodesic Dome connections to the platform; and (ii) the Geodesic Dome Documents do not include a footing system capable of withstanding the wind uplift forces; and

ii. the cladding system for the Geodesic Dome is not specified: (i) the Geodesic Dome Documents do not indicate the material that is to be used for the cladding system; (ii) the mechanical properties of the cladding system are not indicated; and (iii) and the manner of connecting the cladding system to the Geodesic Dome is absent.

6. You did not comply with Principle 1 of the Code of Ethics, attached as Schedule A to the Bylaws of Engineers and Geoscientists BC (the "Code of Ethics") by authenticating the Structural Engineering Calculations and the Structural Design Report, which incorrectly indicated that the Geodesic Dome could withstand wind velocities of up to 200 mph and up to 150 mph respectively, which is false, and which has the potential to jeopardize the safety, health, and welfare of the public.

7. You did not comply with Principle 2 of the Code of Ethics by authenticating the Structural Engineering Calculations when the opinion contained in the Structural Engineering Calculations was outside the area of your expertise and prepared by a non-registrant who was not under your direction supervision. In particular, you relied on a non-registrant to carry out calculations using Abaqus 2019, which is software you are not proficient with.

3. In this decision, the Structural Engineering Calculations, Platform Drawing and Structural Engineering Report are collectively called the "Design Documents."

4. For the reasons set out below, the Panel finds:

a. the conduct set out in Allegations 1-3 and 5 was professional misconduct; and

b. the conduct set out in Allegation 4 was incompetence;

5. The Panel finds that the conduct outlined in Allegations 6 and 7 is incorporated within the other allegations, and declines to make a separate finding with respect to them.

Regulatory Framework

6. Under the PGA, the Discipline Committee must hold a hearing to make determinations about a respondent's conduct and take action: PGA, ss. 75, 77. After a hearing, the Discipline Committee must do one of the following:

    (a) dismiss the citation;

    (b) determine that the respondent has committed one or more of the following:

        (i) professional misconduct;

        (ii) conduct unbecoming a registrant;

        (iii) incompetent performance of duties undertaken while engaged in the registrant's regulated practice.

Legal Principles

Burden and Standard of Proof

7. EGBC has the burden of proof. The standard of proof is a "balance of probabilities": *F.H. v McDougall*, 2008 SCC 53; *Kaminski v Assn. of Professional Engineers and Geoscientists of British Columbia*, 2010 BCSC 468, at para 52. *R. v Schoenborn*, 2010 BCSC 220, has a helpful explanation of what this means:

> A party who has the burden of proof on an issue, on the balance of probabilities, must convince the court that what they assert is more probable than not, and that the balance is tipped in his or her favour. The evidence must be more convincing than the evidence on the other side. The person with the burden must show that what they assert is more probable than not (*F.H. v. McDougall*, 2008 SCC 53). If the evidence on an issue was evenly balanced so that the court is unable to say where the balance of probabilities lies, then the person who has the burden of proving it would have failed to do so. All of the evidence produced on that issue must be considered, no matter who has produced that evidence. In order to find that something has been proven on the balance of probabilities, it is not

> necessary for the jury or the trier of fact to be sure, but simply to find that the event to be proven is more probable than not or more likely than not.

Professional Misconduct

8. EGBC relies on alleged breaches of the Code of Ethics, British Columbia Building Code 2018, EGBC, *Guide to the Standard for Authentication of Documents* (February 17, 2021) (the "Authentication Guidelines") and EGBC Practice Advisory, "Issued for Building Permit Documents," Version 1.0 (October 29, 2020) (the "Permitting Practice Advisory") to establish professional misconduct in relation to the conduct in Allegations 1 to 3 and 5: Amended Citation, Allegations 1 to 3 and 5 to 7.

9. The PGA defines "professional misconduct" as misconduct by a registrant as a professional, relating to the performance of duties while engaged in a regulated practice, including a failure to comply with, or a breach of, the PGA, regulations or *Bylaws of Engineers and Geoscientists BC* (July 1, 2015) (the "*Bylaws*"): PGA, s. 1(1).

10. Under the previous governing statute, the *Engineers and Geoscientists Act* (the "EGA"), the equivalent to a finding of professional misconduct was "unprofessional conduct." The Panel finds case law and past decisions by discipline committees dealing with unprofessional conduct informative in our consideration of whether there was professional misconduct.

11. Decisions of the Discipline Committee consistently apply the following definition for unprofessional conduct:

> Hence, unprofessional conduct is that which does not meet the standard expected through application of the Code of Ethics. The Panel accepts the submission of the Association, based on *Law Society of British Columbia v. Martin*, 2005 LSBC 16, that professional misconduct is established when there is a marked departure from the standard to be expected of a competent professional, and that minor or inadvertent failure to comply with professional standards does not constitute unprofessional conduct.
>
> *Re: Ian Foreman, P.Geo* (August 25, 2015), at para 94. See also e.g. *Re: Bruce Joseph Gernon, P.Eng.* (October 5, 2023), at para 14; *Re: Eric Chrysanthous, P.Eng.* (May 17, 2017); *Re: Laura Fidel, P.Eng.* (July 12, 2021); *Eloufy (Re)*, 2025 BCEGBC 9.

12. As the threshold for unprofessional conduct is a marked departure from the standard expected of a competent professional, a minor, or inadvertent failure to comply with professional standards will not amount to unprofessional conduct: *Re: Gernon*, at para 16.

13. In assessing whether conduct is unprofessional, the Panel must use its judgment and expertise, be guided by the Code of Ethics and focus on what is expected of a professional person in the circumstances: *Re: Gernon*, at para 16.

14. Also, professional misconduct does not require proof of dishonourable, disgraceful blatant or cavalier conduct: *Salway v Assn. of Professional Engineers and Geoscientists of British Columbia*, 2010 BCCA 94, at para 32.

Incompetence

15. Section 75(1) of the PGA gives the Panel jurisdiction to determine if registrants have been incompetent in the performance of their duties while engaged in their regulated practice.

16. EGBC relies on alleged breaches of the Code of Ethics, the British Columbia Building Code 2018 and the standard of practice for registrants, to establish incompetence in relation to the conduct in Allegation 4: Amended Citation, Allegations 4 to 7.

17. Section1(1) of the PGA defines “incompetent” in relation to the performance of duties undertaken while engaged in a regulated practice. It includes:

    a. a lack of competence or fitness to engage in the regulated practice, or

    b. an incapacity or impairment that prevents a registrant from engaging in the regulated practice with reasonable skill, competence and safety to the public;

18. The Amended Citation does not make any allegations of incapacity or impairment and EGBC led no evidence of either of these circumstances. Thus, for this proceeding, the Panel must assess the evidence in relation to the definition of incompetent in section 1(1)(a).

19. The EGA did not define “competent” or “incompetent,” and there are no previous decisions of Disciplinary Committees dealing with the current definition.

20. EGBC submits, and the Panel agrees, that in the absence of previous decisions, “incompetence/incompetent” should be interpreted in accordance with the modern approach to statutory interpretation, namely that “the words of an Act are to be read in their entire context and in their grammatical and ordinary sense harmoniously with the scheme of the Act, the object of the Act, and the intention of Parliament.”: *Rizzo & Rizzo Shoes Ltd. (Re),* [1998] 1 S.C.R. 27 (S.C.C.), at para. 21.

21. In summary, the Panel concludes that we must assess whether the Respondent’s alleged conduct fell below the expected standard for registrants by looking at the nature and extent of the Respondent’s mistake or mistakes and the circumstances giving rise to it or them. We must determine if the established mistakes are of such significance as to show incompetence.

Standards of conduct and competence

22. Professional misconduct and incompetence must be assessed against expected standards of conduct and competence for registrants.

23. Section 7.3.1(2) of the *Bylaws* gives some direction as to expected standards of conduct and competence. It requires Professional Registrants to have regard for applicable EGBC and government standards, policies, plans and practices.

24. Consistent with this, in *Re: Gernon*, the hearing panel found that guidelines of a professional regulatory body can help establish the expected standard of conduct for that professional: *Re: Gernon* at para 23.

<u>British Columbia Building Code 2018</u>

25. Building Code requirements, as a government standard, can inform a determination of unprofessional conduct if the work done requires compliance with the Building Code: see *Re: Gernon,* at para. 15. EGBC says the British Columbia Building Code 2018 (“Building Code”) is relevant to the Allegations because it applied to the Geodesic Dome.

26. The Building Code applied to the design and construction of new buildings and the occupancy of any building: Building Code, Division A, section 1.1.1.1a) and b). Division A, section 1.4.1.2, defined “building” as “any structure used or intended for supporting or sheltering any use or occupancy.” “Occupancy” means the use or intended use of a building or part thereof for the shelter or support of persons, animals or property.

27. With respect to Allegations 2 and 4 and the Platform Drawing, EGBC specifically relies on sections 2.2.4.3 and 2.2.4.6 of Division C:

2.2.4.3. Information Required on Structural Drawings

1) Structural drawings and related documents submitted with the application to build shall indicate, in addition to those items specified in Article 2.2.4.6. and in Part 4 of Division B applicable to the specific material,

a) the name and address of the person responsible for the structural design,

b) the date of issue of the Code and standards to which the design conforms,

c) the dimensions, location and size of all structural members in sufficient detail to enable the design to be checked,

d) sufficient detail to enable the dead loads to be determined, and

e) all effects and loads, other than dead loads, used for the design of the structural members and exterior cladding.

2.2.4.6. Information Required on Foundation Drawings

1) *Foundation* drawings submitted with the application to build or excavate shall be provided to indicate

a) the type and condition of the soil or rock, as well as the groundwater conditions, as determined by the subsurface investigation,

b) the factored bearing pressures on the soil or rock, the factored loads when applicable and the design loads applied to foundation units, and

c) the earth pressures and other loads applied to the supporting structures of supported excavations.

2) When required, evidence that justifies the information on the drawings shall be submitted with the application to excavate or build.

28. "Foundation" and "foundation unit" are defined in section 1.4.1.2 of Division A as follows:

> *Foundation* means a system or arrangement of *foundation units* through which the loads from a *building* are transferred to supporting *soil* or *rock*.
>
> *Foundation unit* means one of the structural members of the *foundation* of a *building* such as a footing, raft or pile.

29. EGBC also relies on sections 2.2.4.3 and 2.2.4.6 in relation to Allegation 5, which relates to all three of the Design Documents. EGBC says the Design Documents collectively do not comply with section 2.2.4.3 and the Platform Drawing, as part of the Design Documents, does not comply with section 2.2.4.6.

Code of Ethics

30. Under *Bylaws*, section 7.2, registrants must adhere to the Code of Ethics. Many of the Code of Ethics' principles inform expected conduct and competence in the performance of a registrant's duties.

31. For the conduct in Allegations 1 to 5, EGBC relies on Principles 1 and 2 of the Code of Ethics: Amended Citation, Allegations 1 to 7. These say that registrants must:

> 1. hold paramount the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace;
>
> …
>
> 2. practice only in those fields where training and ability make the registrant professionally competent…

Authentication Guidelines

32. EGBC relies on the Authentication Guidelines, sections 3.1.1, 3.1.3 and 3.5.1.2 for Allegation 1. At the time of the conduct alleged in the Amended Citation, these provisions said:

3.1.1 The purpose of the Seal is for properly and appropriately Authenticating Documents that are prepared and delivered by Professional Registrants in their professional capacity or under their Direct Supervision. A Seal is neither a mark of warranty, nor is it a guarantee of accuracy. Instead, it should be considered a "mark of reliance" indicating that others can rely on the fact that the opinions, judgments, or designs in the Authenticated Documents were provided by a Professional Registrant who is held to high standards of knowledge, skill, and ethical conduct.

3.1.3 …When Authenticating a Document, a Professional Registrant is confirming:

- that the professional engineering or professional geoscience work reflected in the Document was prepared by the Professional Registrant, in their professional capacity or under their Direct Supervision;
- that the Professional Registrant is professionally responsible and accountable for the Document…
- the applicable requirements under the Act and the Bylaws have been met, including the quality management Bylaw and the Code of Ethics;
- the Professional Registrant is qualified by training or experience in the professional engineering or professional geoscience discipline(s) related to the Document; and
- the intent of the relevant Engineers and Geoscientists BC professional practice guidelines and practice advisories have been met.

3.5.1.2 When Professional Registrants Authenticate Documents they did not prepare, they are accepting full professional responsibility for the content of that Document in the same manner and extent as if the Document had been prepared in their professional capacity. This can result in a Professional Registrant being exposed to legal and insurance liability, as well as professional discipline, if the contents of the Document do not meet the standards expected of professional practice. In cases where it cannot be avoided, the Professional Registrant being asked to Authenticate the Document should follow the guidance provided in the following examples.

33. Further, EGBC relies on the Authentication Guidelines, section 3.2.9.1, for Allegation 2. It said:

3.2.9.1 - A Professional Registrant may be asked to prepare a design drawing that is intended to be used in more than a single instance. The decision to

> Authenticate such a standard/generic drawing can only be made by the Professional Registrant who prepared the drawing. If it is not possible to sufficiently limit or specify the conditions under which the drawing can be used, the drawing should be left unauthenticated.

Permitting Practice Advisory

34. Finally, EGBC relies on the Permitting Practice Advisory (Version 1.0, issued October 29, 2020) in relation to Allegation 5 and the submission of the Design Documents to permitting authorities. The Permitting Practice Advisory says (at p. 2):

> The standard of practice for the submission of engineering Plans to an AHJ by an EOR in support of an application for a building permit requires that the engineering Plans:
>
> - be complete for their intended purpose;
> - substantially comply with the Codes and other applicable enactments respecting safety (except for construction safety aspects);
> - contain "sufficient detail to enable the design to be checked" by another engineer for conformance to the Codes (as noted expressly for the structural discipline in Section 2.2.4.3(1)(c) of Division C, Part 2 of the BCBC, and as interpreted in the association's *Quality Management Guidelines – Documented Independent Review of Structural Designs*);
> - be appropriately checked, with records of the checks performed retained for a minimum of 10 years; and
> - be authenticated by the EOR by applying their seal complete with signature and date.

Expert evidence

35. The Panel accepted Dr. Ben Daee, P.Eng., as an expert witness. He prepared an expert report and testified at the hearing. His work has focused on issues related to the standard of care of structural engineers and failure analysis and he has provided expert evidence in over 400 construction cases in North America, including Canada. Dr. Daee confirmed that he has some experience with the design of domed structures.

36. The Respondent did not submit an expert report. Although he tried to introduce an expert report, the Panel refused to admit it because the proposed expert was not

called to testify and so could not be cross-examined on her qualifications or the content of her report.

Structural Engineering Calculations and Structural Design Report

37. Dr. Daee said the standards for the Geodesic Dome design include the Building Code, CSA S16 and CSA S367. Dr. Daee described CSA 16 as the “common steel standard in Canada” (it is predominantly for hot-rolled steel, not cold-formed steel) and CSA S367 as the “design standard applicable for the dome structure covered by a membrane.” There is no mention of CSA S367 in the Structural Engineering Calculations or Structural Design Report.

38. Dr. Daee did a finite element analysis by modelling the geometry of the Geodesic Dome and applying material characteristics and components of the structure, along with defined loading conditions (such as snow, wind and dead loads). He used the software SAP2000. Dr. Daee testified that while the Abaqus software is capable of analyzing various structures it is commonly used for solid mechanics; while finite element analysis is typically performed with specialized software like SAP2000.

39. Dr. Daee said that a wind speed of 200 mph is equivalent to the most extreme tornado category, capable of sweeping away a portion of a city and damaging its infrastructure. A snow load of 120 psf is equivalent to over 2 m of snow and would exert a significant lateral pressure on the Geodesic Dome, which was not considered by the Respondent in its design.

40. Dr. Daee’s finite element analysis showed the Geodesic Dome failing under significantly lower wind and snow loads than 200 mph and 120 psf. His analysis showed failure at wind speeds of125 mph and snow loads of 60 psf.

41. In Dr. Daee’s opinion, an engineer familiar with fundamental structural design would not expect an enclosed light steel frame to withstand such extreme load conditions as 200 mph wind speed and 120 psf snow load.

42. Dr. Daee's structural analysis also indicated that the Respondent's design disregarded the weight of the Geodesic Dome's cladding and light fixtures and other items hanging from its ceiling.

43. Importantly, the appropriate uplift wind load combination was ignored. According to CSA S367, the design wind load is applied on a quarter of the dome, which creates an uplift pressure at the top of the dome and a negative wind pressure in the leeward direction. Also, the snow load should be calculated based on the slope of the elements and applied in a trapezoid pattern. However, the Abaqus model used by in the Structural Engineering Calculations and Structural Design Report applied the wind load uniformly on one side of the Geodesic Dome without considering the wind uplift and negative leeward pressure on other portions of the structure, and it used a uniform pattern for the snow load.

44. When Dr. Daee applied the correct load distribution on the Geodesic Dome in the finite element analysis in accordance with CSA S367, he found seven elements of the structure were overstressed by more than 35%.

45. The Respondent criticized Dr. Daee's analysis on the basis that the design for the Geodesic Dome called for cold-formed as opposed to hot-rolled steel struts. However, Dr. Daee explained that the steel specification in the Structural Design Report and the Structural Engineering Calculations was Q235 grade steel, which is commonly hot-rolled, and these documents referred to CSA S16, which applies to hot-rolled steel. As a result, there was no information to suggest that cold-formed steel should be used to construct the Geodesic Dome.

46. In any event, because of the Respondent's criticism, Dr. Daee did the finite element analysis again using cold-formed steel in SAP2000, and the result was not significantly different. The Geodesic Dome still had overstressed components or buckled components with a stress ratio of 1.35 or 1.4 under the lowest wind and snow load conditions found in the Structural Design Report and Structural Engineering Calculations.

47. Dr. Daee also said the safety “ratio of 4-6 for occupied structures,” used in the Structural Engineering Calculations was an arbitrary ratio, which is not found in the Steel Design Handbook or CSA S16. Dr. Daee had not “seen anything like this in [his] career” and it was not derived from any of the applicable specifications.

48. In cross-examination, the Respondent asked Dr. Daee about another dome structure, a “radome” (radar dome). He suggested that because this structure could withstand winds of 200 mph, that Dr. Daee must have made a mistake in his finite element analysis.

49. The Respondent asked Dr. Daee to explain why, if radomes could sustain winds of 200 mph, Dr. Daee’s analysis showed the Geodesic Dome could not. In response, Dr. Daee said he did not investigate radomes and so he could not give his opinion about their structural design. The radomes are different in shape, material and location from the Geodesic Dome, which would require a different analysis.

50. In final submissions, the Respondent suggested Dr. Daee may have fabricated his analysis. This was an assertion without any evidence, which the Panel categorically rejects.

Platform Drawing

51. Dr. Daee said the Platform Drawing did not indicate the applicable building code or Canadian Standards used for the design of wood components. It did not include any information about the metal framing, dome geometry, anchor ties to the platform or the footing system supporting the platform.

52. Also, despite being an authenticated document for construction of the Geodesic Dome, it lacked site location, soil-bearing capacity, depth of footing, frost protection and maximum loads for the platform.

53. According to Dr. Daee, the Platform Drawing was incomplete for construction of a wooden platform and lacked sufficient details to allow a contractor to build it.

54. Dr. Daee testified that if the Platform Drawing was intended as a general drawing that could be used in different locations, the allowable bearing capacity of the soil and

maximum wind and snow loads should have been indicated so the limitation of the design and locations would be known to a contractor or user of the Geodesic Dome.

55. In Dr. Daee's opinion, the Platform Drawing was not compliant with sections 1.3.4.1 and 2.2.4.6 of the Building Code. It did not have details on the how loads were transferred from the Geodesic Dome to the platform or how the platform resisted the uplift forces applied at the connections between the Geodesic Dome and the platform. The Platform Drawing was incomplete and deficient for its intended application.

Findings

The Respondent

56. The Respondent is a mechanical engineer. He was registered as a Professional Engineer with EGBC until March 22, 2025, and is also registered in Ontario, New Brunswick, Nova Scotia, Prince Edward Island and Alberta.

57. The Respondent has no formal training or certification in structural engineering. His training and the bulk of his experience is in mechanical engineering, and his work experience up until 2018 did not include responsibility for design related to structures used for human occupancy. Before his work for [redacted], he had no direct experience with the design of dome structures.

The Geodesic Dome

58. The allegations in the Amended Citation arise out of structural engineering services the Respondent provided to [redacted]. [redacted] sells domes of various sizes across Canada and the United States. Its domes are intended for use in various applications, including yoga studios, greenhouses, restaurants and short-term rentals like "glamping."

59. The specific dome at issue in this matter is a hemispherical prefabricated metal-framed structure that creates an enclosed living space. It is made up of a network of 165 hollow steel tubes bolted together. It has a diameter of 6 m and is approximately

3.5 m tall. It is a freestanding structure, which is typically placed over, and anchored to, a wooden deck or platform.

60. In or about 2020, [redacted] hired the Respondent to prepare and authenticate a structural design report with wind and snow loads and a platform drawing for the Geodesic Dome. As a result, the Respondent prepared and authenticated the Design Documents.

Structural Engineering Calculations and Structural Design Report

61. After his engagement by [redacted], the Respondent contracted an individual (the "Technician") to do structural engineering calculations for the Geodesic Dome. The Respondent retained the Technician through the website "freelancer.com." The Respondent stated that the Technician lived in the Ukraine, and that he was not aware of the Technician having any specific knowledge of the BC Building Code.

62. The Technician prepared the Structural Engineering Calculations dated September 18, 2020. They used Abaqus software for the finite element analysis.

63. On February 18, 2021, the Respondent authenticated the Structural Engineering Calculations by affixing his seal and signature. Neither at the hearing or in his submissions, did the Respondent identify any substantive contribution he made to the Structural Engineering Calculations.

64. The Respondent prepared the Structural Design Report on or about April 21, 2021. He authenticated it with his seal and signature.

65. The Panel finds the standards for the Geodesic Dome included the Building Code, CSA S16 and CSA S367. CSA S367 was the design standard applicable to the Geodesic Dome. There is no mention of CSA S367 in the Structural Engineering Calculations or Structural Design Report.

66. The Structural Engineering Calculations say in part, "We found that 6 m diameter Geodesic dome with 26mm x 1.5mm Round Tube Strut Size can withstand wind of 200 mph and snow load of 120 psf." The Panel accepts Dr. Daee's opinion that this statement is incorrect. Specifically, we find:

a. A wind speed of 200 mph is equivalent to the most extreme tornado category and a snow load of 120 psf is equivalent to over 2 m of snow, which would exert a significant lateral pressure on the Geodesic Dome and was not considered in the design.

b. The finite element analysis shows the Geodesic Dome will fail at wind speeds of 125 mph and 60 psf of snow load.

c. The Respondent's design disregarded the self-weight of the Geodesic Dome elements, including the weight of its cladding and light fixtures and other items hanging from its ceiling and disregarded the appropriate uplift wind and snow load combination.

d. When the correct load distribution was applied, in accordance with CSA S367 to the finite element analysis, seven elements of the structure were overstressed by more than 35%.

e. The finite element analysis with cold-formed steel shows the Geodesic Dome would have overstressed or buckled components with a stress ratio of 1.35 or 1.4 under the lowest wind and snow load conditions found in the Structural Design Report and Structural Engineering Calculations.

f. The Structural Design Report did not have information on nodes or anchor mounting hardware for the Geodesic Dome.

67. The Panel also accepts Dr. Daee's evidence that the safety "ratio of 4-6 for occupied structures," used in the Structural Engineering Calculations was arbitrary. It was not in the Steel Design Handbook or CSA S16 and not derived from any of the applicable specifications.

68. In written submissions, the Respondent said he was familiar with the Abaqus software and that he had confirmed the Technician's calculations by his work on a similar structure. However, he presented no evidence on which the Panel could find he can competently do finite element analysis with Abaqus, that he substantively contributed

to the Structural Engineering Calculations or that he confirmed the Technician's calculations were correct. The Panel notes that in the *curriculum vitae* he entered as evidence, the "Tools of the Trade" section does not reference Abaqus.

Platform Drawing

69. The Respondent prepared and authenticated the Platform Drawing on or about March 8, 2021.

70. The Panel accepts Dr. Daee's opinion, that the Platform Drawing was not compliant with sections 1.3.4.1 and 2.2.4.6 of the Building Code, because It lacked information about how the loads were transferred from the Geodesic Dome to the platform and how the platform resisted the uplift forces applied at the connections between the Geodesic Dome and the platform.

Use of the Design Documents

71. On or about February 4, 2022, [redacted] contacted an employee at the City of Nanaimo to ask about permitting the Geodesic Dome and provided him with copies of the Platform Drawing and the Structural Design Report by email. The owner of [redacted] said, "these are the plans we have ready to go so I'd appreciate your quick feedback on it and if any other things would be required."

72. The Design Documents were general in nature. They were not prepared for a specific project and did not take location into account.

73. The Respondent's evidence was both that he told [redacted] that it or its customers should not use the Design Documents for permitting, and that he knew the Design Documents may be provided to local building authorities in British Columbia as part of a package of documents in a permitting application. Assessing his evidence on a balance of probabilities, the Panel finds the Respondent knew or ought to have known that the Design Documents may be provided to local building authorities as part of permitting processes in British Columbia.

Analysis

Overview

74. For the reasons set out below, the Panel concludes that the Respondent's conduct in relation to the Design Documents was professional misconduct (Allegations 1 to 3 and 5) and incompetent performance of his duties as a Professional Engineer (Allegation 4).

The Parties' Positions in Brief

EGBC

75. With respect to Allegations 1 to 3, EGBC submits that the Design Documents authenticated by the Respondent had incorrect conclusions, defects, deficiencies and omissions. Thus, in authenticating these documents, he conducted himself in a way that was a marked departure from the standard expected of a Professional Engineer in the circumstances and the Panel should make a finding of professional misconduct.

76. EGBC also relies on the conduct cited in Allegations 1 to 3 as evidence of incompetence. EGBC submits that, , the hearing evidence establishes, among other things, that:

    a. The Respondent authenticated the Structural Engineering Calculations despite having no proficiency with the Abaqus software platform used to conduct the analysis set out therein;

    b. The safety ratio used by Mr. Dainov in the Structural Engineering Calculations was an arbitrary ratio, without any foundation in the literature or standards;

    c. Mr. Dainov considered the stamped and signed Platform Drawing and Structural Engineering Report to be "unfinished", and was nevertheless willing to authenticate them;

    d. has little knowledge of the codes, standards and guidelines appliable to the provision of structural engineering services in British Columbia, or the regulation of the profession more generally.

77. For Allegation 5, EGBC says this conduct was professional misconduct because the Respondent was aware that the Design Documents were being relied on to support building permit applications in British Columbia, and that he knew [redacted] was providing them to prospective purchasers, customers and building officials for permitting purposes.

78. EGBC alleges that the Design Documents were not fit for their intended purpose as they were generic (i.e. contained no location specific information), did not contain the information necessary to construct the Geodesic Dome and failed to comply with the applicable Building Code requirements.

79. EGBC also alleges breaches of the Code of Ethics Principle 1 (Allegation 6) and Principle 2 (Allegation 7).

80. In relation to Allegation 6, EGBC submits the Respondent has shown that he did not "hold paramount" the health, safety and welfare of the public. This was clear from his cavalier approach to structural design, his lack of familiarity with (and/or disregard for) the codes, standards and guidelines applicable to structural design work in British Columbia, his over-reliance on non-registrants and his willingness to provide low-cost design services for small businesses that consistently "cut corners."

81. Regarding Allegation 7, EGBC says that the fact the loads in the Structural Engineering Calculations were incorrect show the Respondent did not have the training and ability to produce or review the Structural Engineering Calculations with the Abaqus software used by the Technician.

The Respondent

82. The Respondent says that he did not depart from the standard of conduct for a Professional Engineer because the Design Documents were correct.

83. His position is that the Geodesic Dome is a very strong structure and that multiple evidence points to the incredible strength of geodesic dome structures used in extreme climactic conditions (e.g. radomes, FEMA emergency shelters). He says Dr. Daee's opinion was wrong, false or was not a structural engineering report.

84. The Respondent says that the Design Documents were general in nature as they were intended to show the strength of the Geodesic Dome to potential customers. They contained general information saying that geodesic domes are the most structurally sound building or enclosure for humans known to man. It is only when a customer buys the Geodesic Dome that all necessary details are explored for permitting.

85. The Respondent submits that he told [redacted] that the Design Documents may not be used by it or its customers as part of an application package for permitting by a municipal building department.

86. However, he also, contradictorily, acknowledged in his evidence and his argument that the Design Documents may be provided to local building authorities as part of a package of documents submitted for permitting. His view is that the allegations in Allegation 5 are based on the wrong assumption that the Design Documents were the only documents required for permitting. A permitting application should also include information required by applicable building codes for a location.

87. The Respondent also says he was not involved in, and was unaware of, the permitting process, so he could not ensure compliance with applicable regulations and therefore was not responsible if the Design Documents were used as anything other than generic documents.

88. The Respondent says the Platform Drawing was a complete document for constructing a robust platform.

89. About the Structural Engineering Calculations, he says he regularly does finite element analysis calculations but because of his age, he cannot do all the work on projects himself and he confirmed the Technician's analysis by his work on a similar structure.

Professional Misconduct: Allegations 1 to 3 and 5 to 7

90. The Panel finds that EGBC has established professional misconduct by the Respondent in relation to Allegations 1 to 3 and 5, for the following reasons.

Allegation 1

91. The Panel finds Allegation 1 is established.

92. As noted above, the Panel finds that the statement in the authenticated Structural Engineering Calculations contains an incorrect conclusion. Namely, that the Geodesic Dome could withstand winds of 200 mph and a snow load of 120 psf. He also used an arbitrary safety ratio, which was not derived from any applicable standards or specifications.

93. In providing an incorrect conclusion as to structural integrity and using an arbitrary safety ratio, the Respondent did not adhere to Principle 1 of the Code of Ethics. In authenticating that the Geodesic Dome could withstand winds of 200mph, when this was in fact incorrect; and in relying on an arbitrary safety ratio, he failed to hold paramount the safety, health, and welfare of the public.

94. Further, he did not adhere to Principle 2 of the Code of Ethics. He relied on a non-registrant to do calculations, which proved incorrect. While he submitted that he regularly used Abaqus software and confirmed the Technician's work product through work he did on a similar structure, he provided no evidence to support these statements. Further, using an arbitrary safety ratio indicates a lack of familiarity with the requirements for assessing the structural integrity of the Geodesic Dome. Thus, the Panel concludes in preparing the Structural Engineering Calculations he was practicing outside his area of expertise.

95. By his authentication of the Structural Engineering Calculations, he confirmed that the professional engineering work was prepared by him or under his direct supervision: Authentication Guidelines, section 3.1.3. However, as explained above in relation to Principle 2, this was not the case.

96. The Respondent's failure to comply with the Authentication Guidelines, section 3.1.3, and adhere to Principles 1 and 2, was professional misconduct. It was a marked departure from the standard of conduct expected of a Professional Engineer.

Allegation 2

97. The Panel finds Allegation 2 is established.

98. The Platform Drawing was not compliant with sections 2.2.4.3 and 2.2.4.6 of Division C of the Building Code. Specifically, it lacked:

    a. information about how the loads, including maximum applied load, were transferred from the Geodesic Dome to the platform and how the platform resisted the uplift forces applied at the connections between the Geodesic Dome and the platform

    b. the dimensions, locations and sizes of structural members and connections

    c. information about the bearing capacity of the supporting soil and details of footings and anchor points.

99. Section 2.2.4.3 applied to all structural drawings generally. Section 2.2.4.6 applied to the Platform Drawing, as “foundation” is a system or arrangement of structural members of a building foundation (e.g. a footing or pile) through which loads from a building are transferred to supporting soil or rock.

100. In its noncompliance with the Building Code, the Platform Drawing did not follow section 3.1.3 of the Authentication Guidelines, which said authentication confirms the requirements of relevant legislation have been met.

101. Further, by signing and sealing the Platform Drawing, the Respondent authenticated an incomplete drawing. Section 3.2.9.1 of the Authentication Guidelines directed that if design drawings intended to be used in more than a single instance could not be sufficiently limited or the conditions under which the drawings could be used specified, the drawing should not be authenticated. The Platform Drawing was not sufficiently limited in its purpose and therefore should not have been signed and sealed by the Respondent.

102. The Respondent's failure to comply with the Authentication Guidelines, sections 3.1.3 and 3.2.9.1, was professional misconduct. It was a marked departure from the standard of conduct expected of a Professional Engineer.

Allegation 3

103. The Panel finds Allegation 3 is established.

104. The Structural Design Report said that the Geodesic Dome can withstand snow and wind load combinations of 80 psf and 150 mph. However, this statement was incorrect. Dr. Daee's finite element analysis, which the Panel accepts, shows that the Geodesic Dome will fail at 60 psf and 125 mph.

105. In addition, the Structural Design Report did not have additional information on nodes or anchor mounting hardware for the Geodesic Dome. EGBC does not rely on this allegation by itself but says that this fact and the above incorrect conclusion, together establish professional misconduct.

106. As with Allegation 1, in providing an incorrect conclusion about structural integrity, the Respondent did not adhere to Principle 1 of the Code of Ethics. He did not hold paramount the safety, health and welfare of the public. Further, contrary to Principle 2, he relied on a non-registrant to do calculations, which proved incorrect. He did not establish that he regularly used Abaqus software and had confirmed the Technician's work product by work he did on a similar structure. Thus, the Panel concludes in preparing the Structural Engineering Calculations he was practicing outside his area of expertise.

107. Also, when the Respondent authenticated the Structural Engineering Calculations, he confirmed that the professional engineering work was prepared by him or under his direct supervision: Authentication Guidelines, section 3.1.3. However, this was not the case.

108. The Respondent's failure to comply with the Authentication Guidelines, section 3.1.3, and adhere to Principles 1 and 2 was professional misconduct. It was a marked departure from the standard of conduct expected of a Professional Engineer.

Allegation 5

109. The Panel finds Allegation 5 is established.

110. The Design Documents were deficient as they did not comply with sections 2.2.4.3 and 2.2.4.6 of Division C of the Building Code, did not show how the Geodesic Dome would be stabilized against wind uplift forces, lacked details of anchor points and did not include a footing system capable of withstanding the wind uplift forces.

111. The Respondent acknowledged that the Design Documents were general in nature and that he knew the Design Documents may be provided to municipal building departments as part of a package of documents submitted for permitting.

112. The Permitting Practice Advisory said that the standard of practice for submitting engineering plans to permitting authorities means that plans are complete for their intended purpose, substantially comply with building codes and other applicable enactments about safety, have sufficient detail to enable the design to be checked by another engineer, have been appropriately checked and have been authenticated.

113. Except for authentication, the Respondent failed to comply with the Permitting Practice Advisory with respect to the Design Documents, even though he knew they could be submitted to permitting authorities. Although the Design Documents were not necessarily the only documents that might be submitted for permitting purposes and he was not the one submitting them, he authenticated them and knew that they could be submitted to permitting authorities and that they were incomplete for permitting purposes. The fact that other documents with more details might be submitted with the Design Documents did not justify his signing and sealing incomplete documents.

114. The Respondent's failure to comply with the Permitting Practice Advisory was a marked departure from the standard of conduct expected of a Professional Engineer.

Incompetence: Allegation 4

115. The Panel finds Allegation 4 is established.

116. In coming to this finding, the Panel notes that some of the information relied on by EGBC in its argument arose for the first time at the hearing, and was not outlined in

the Amended Citation. The Panel finds that considering conduct not included in the Amended Citation would be procedurally unfair to the Respondent. In coming to its decision with respect to incompetence the Panel will restrict its consideration to those factors that were noted in the Amended Citation.

117. As described above in relation to Allegations 1 to 3, the Panel finds that the Respondent was practicing outside his area of expertise (Principle 2). He also authenticated the Structural Engineering Calculations which were prepared by a non-registrant who was not under his direct supervision. Further, he disregarded section 3.1.3 of the Authentication Guidelines, and demonstrated little knowledge of Building Code requirements.

118. Considering the nature and extent of the Respondent's mistakes and the circumstances giving rise to it or them, the Panel concludes the Respondent's conduct was significant enough to rise to incompetent performance of his duties as a Professional Engineer.

Summary

119. The Panel finds Allegations 1 to 5 are established. The Panel declines to make a separate ruling in relation to Allegations 6 to 7, as they are encompassed within Allegations 1 to 5.

Penalty and Costs

120. The Panel must next determine the sanctions which should be imposed upon the Respondent and whether, and in what amount, costs are payable: PGA, ss. 75(4)(c), 75(7).

121. We request written submissions on the appropriate sanctions and costs in accordance with the following schedule:

a. EGBC provides submissions to the Respondent and the Panel by no later than **November 7, 2025;**

b. The Respondent provides submissions to EGBC and the Panel by no later than **November 21, 2025;**

c. EGBC provides any reply submissions to the Respondent and the Panel by no later than **November 28, 2025.**

122. All submissions may be delivered by email to counsel for the Panel and the other party.

Dated: October 24, 2025

<original signed by>

Neil Cumming, P.Eng., Chair

<original signed by>

Chris Arthur, P.Eng.

<original signed by>

Gerry Matier