



ACEC
BRITISH COLUMBIA

Position Paper

Climate Change and the Standard of Care

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ACEC-BC Position Paper

Position Papers are articles developed by ACEC-BC Committees and published for use by consulting engineering companies as a general resource. The information provided highlights relevant issues and practices for the industry and should not be construed as legal advice.

1.0 INTRODUCTION

The standard of care for engineers in British Columbia, including work related to climate resiliency and adaptation, requires that we work to the level of an “ordinary professional’s competence”. Where applicable, engineers are expected to include consideration of climate change in their work. For example, in the Engineers and Geoscientists British Columbia (EGBC) Climate Change Action Plan¹, it is noted that *“registrants are expected to keep themselves informed about the changing climate and consider potential impacts on their professional activities”*.

Driven by a rapidly changing climate and its impact on the built environment, the considerations relevant for the ordinary level of professional competence may, in certain instances, be evolving faster than governing codes and standards can be updated. This raises the issue as to whether relying exclusively on governing codes and standards is sufficient to meet the standard of care. Where applicable, engineers should make an effort to be aware of current research relating to how climate change impacts their area of practice. Where such research has become part of “ordinary professional competence”, the engineer should consider it in their work.

Engineering consulting companies should be aware of commercial and legal risks associated with climate change considerations. It is likely that the number of claims relating to climate change impacts will increase over time, and the consulting engineer may increasingly become the subject of many of these claims. Some of the potential risks to consulting engineers and ways to mitigate them are further described herein.

While the paper is specific to engineering practice, the discussion and strategies may be applicable to other regulated professionals working in consulting engineering companies, with appropriate adaptation to suit their area of practice.

¹ Engineers and Geoscientists British Columbia. (2023) [Climate Change Action Plan](#). Version 1.1.

2.0 COMMERCIAL RISKS

Consulting engineering companies face substantial commercial risk relating to climate change.

For example:

Project Scope: A client may not agree with, nor have enough budget for, the level of effort that the engineer believes is required to adequately address climate change. When the relevant code or standard is not up to date with evolving climate projections, it may be difficult to convince the client of the change in project scope required to adequately address climate change.

In this scenario, if the engineer and client are unable to reach agreement on the appropriate scope and budget, the engineer could decline to undertake work, which comes with a degree of commercial risk. Alternatively, the engineer could undertake the work based on the relevant code or standard on the understanding that the client adopts other mitigation strategies (e.g., how the constructed project will be operated and maintained to mitigate the risks of climate change impacts).

Client awareness: A client may not be educated on climate change science sufficiently to understand the implications of inadequately addressing climate change for a project. The client may not value additional scope necessary for mitigating climate change risk and could opt to work with an engineer who is willing to apply a less stringent approach and (likely) has a lower cost estimate for the work.

3.0 LEGAL AND INSURANCE RISKS

The rapidly changing state of knowledge relating to climate change also puts consulting engineering companies at legal and insurance risk. Certain professional liability insurers have identified climate change as a leading emerging risk for engineers as the impacts of climate change become more frequent and severe. As our climate continues to change, the approach to addressing climate change in engineering remains governed by the *standard of care* and generally accepted practices that are implemented by the “ordinary” engineer.

At the time of publication, there is limited jurisprudence on the engineer’s potential liability in respect of climate change, which increases the level of uncertainty. Complex issues relating to causation, probabilistic analyses of highly variable natural systems, and difficulties related to forecasting future climate events may be misunderstood, leading to uncertainty in legal outcomes. Even within the engineering and scientific communities, the judgment of expert witnesses relied upon in climate-related cases may vary widely.

Ultimately, whether an engineer has liability is determined by the *standard of care*. While climate science and engineering attempt to account for future climate conditions, our decisions are often judged in hindsight; in the event of legal action, a court will decide whether the engineer met the test of “ordinary professional competence”. It should be taken into consideration that we are working with incomplete information to account for changing climate and we will need to use professional judgement to balance climate resilience with cost, feasibility, and other project considerations established by the client.

4.0 GENERAL RISK MITIGATION STRATEGIES

Consulting engineers can mitigate against some of the commercial, legal, and insurance risks noted above in a similar manner to which they already mitigate risks relating to innovative or emerging design / analysis practices.

An emerging tool to mitigate this risk is to inform the client of the potential for increased risk of adverse impacts on their project due to climate change and advise that this risk may not be factored into governing codes. This may include a discussion as to whether the client wishes to undertake a project-specific risk assessment or whether the client opts to implement other strategies (e.g., through operations and maintenance) to mitigate the risk of climate change impacts. This discussion and the client's decision should be documented by the engineer.

Other mitigation strategies for consulting engineers include (but are not limited to):

- Inform clients on climate change science and the benefits of addressing climate change in their projects. Where part of the engineer's scope of services, assist the client to undertake a climate change risk assessment as appropriate (level of detail may vary from logical argument to quantitative risk assessment).
- Seek professional development opportunities relating to advances in climate change science.
- Engage with industry at conferences and professional associations to share knowledge relating to climate change and enable more engineers to agree on a level of "ordinary professional competence" in this area.
- When / where prudent, consider designing beyond current code requirements, through discussion with the client:
 - Discuss options with your client to design for climate change resilience (e.g., robustness, ability to repair / recovery post-event and the associated timelines, redundancy, using operations / maintenance activities to mitigate safety risks).
 - Design prospectively, using available and scientifically accepted projections, and using historic data only as a starting point.
 - Phrase probabilities in terms of percent likelihood rather than return period.
- Where part of the engineer's scope of services, hire specialists when their project team does not have appropriate level of climate change-related expertise.
- Avoid use of language that elevates work above the standard of an average professional (e.g., "cutting edge", or "highest standards").
- Talk to their insurer / legal team about standard wording to use in contracts and scope definition relating to topics such as indemnities, standard of care, etc.
- Clearly document climate change related scope, design criteria, governing codes, assumptions, exclusions, information relied upon, client decisions, and project requirements.

Note that the mitigation strategies included here may not be appropriate for all situations and are not intended to be the only mitigation strategies. Engineers should identify strategies to suit the needs of a particular project, based on the generally accepted practices applicable to the engineer's profession under similar circumstances.

It bears emphasizing that the consulting engineer does not control a project's scope, schedule, or budget, nor whether the client engages a climate specialist to perform a project-specific risk assessment to inform the design criteria. It is also important to highlight that, unless contemplated in the consulting engineer's scope of services, they are not expected to be an expert in climatology or to project frequency or severity of climate conditions and should not be expected to interpret such data. The engineer's responsibility is to exercise reasonable care with respect to project matters within their sphere of control and document all relevant discussions.

5.0 ADDITIONAL NOTE

The ACEC-BC Guidance for Incorporating Climate Change Considerations for Project Scoping and Procurement² provides information for clients. By providing information to both consulting engineers and their clients relating to climate change, we hope to facilitate consistent inclusion of climate change considerations into engineering projects in BC.

² Association of Consulting Engineering Companies – BC. [Guidance for Incorporating Climate Change Considerations for Project Scoping and Procurement](#). December 2024.