

# CLIMATE CHANGE RISK: IS LIABILITY LURKING FOR PROFESSIONAL ENGINEERS?

By Patricia Koval, LLP



KNOWLEDGE ABOUT CLIMATE change has led, and is continuing to lead, to a significant understanding of its current and potential future effects across Canada. It is becoming widely understood, for example, that in northern Canada, roads and air landing strips are buckling because their foundations no longer rest on permanently frozen ground. Similarly, it is accepted that Arctic sea ice is shrinking, subjecting coastal communities to rising sea levels and battering storms. Further south, most Canadian provinces can expect, among other things, increasing precipitation; increased intensity of storm events, such as flooding, ice storms, heavy winds and tor-

nados; more frequent and severe freezing and thawing cycles; and a growing number of summer heat wave days. Along with this knowledge comes the understanding that if infrastructure is not adapted to these changes and events, property damage and/or personal injury is almost certain to occur. This has potentially serious ramifications for design professionals, including engineers.

A parallel development to the growing scientific knowledge on climate change is that this issue is increasingly preoccupying governments, which have the power to implement legislation to deal with it, and the courts, which have the power to apply and develop the common law in this context. A variety of legal actions charging different types of actors for alleged actions or omissions have occurred or are now underway—all related in some way to climate change. Our law is, therefore, evolving as our knowledge of climate change and its effects evolves.

The issue of potential legal liability for failing to adapt infrastructure to climate change-related risk has become a key issue over the past year. Laws, building codes and standards are beginning to be amended to take into account the potential impact of climate change on infrastructure assets, but significant changes are still some time away.

There is a real risk that infrastructure stakeholders, i.e. those integrally connected with infrastructure ownership, planning, design, development and operation, could be liable to people who suffer personal injury or property damage caused by infrastructure that has been adversely affected by climate change. In fact, the legal framework in Canada currently permits a court, in the right circumstances, to find infrastructure stakeholders legally liable for personal injury and property damage suffered by third parties, including, in the case of design professionals, on the basis of negligence.

## NEGLIGENCE

The law of negligence provides a means by which a person may seek compensation for damages he or she suffered because of another's failure to take reasonable care. For example, if the quantity of snow on the roof of a building causes the building's roof to collapse resulting in personal injury, those injured may seek compensation. If the degradation of permafrost causes the foundation of an above-ground water system to be compromised resulting in water contamination and cleanup costs, people injured or who own property that has been damaged may seek compensation.

The following types of infrastructure stakeholders could be liable in the circumstances described:

- design professionals for injury or property damage suffered by owners and third parties as a result of negligent designs, failure to warn, and negligent supervision and inspections;
- infrastructure owners for injury or property damage suffered by contractual entrants, licensees, invitees and trespassers resulting from the owners' failure to make their property safe;
- contractors for injury or property damage suffered by project owners and third parties for failing to construct according to design specifications, in a well-executed manner, and using proper construction methods and materials

## PROFESSIONAL PRACTICE

reasonably fit for the project; and

- governmental authorities for injury or property damage suffered by property owners and third parties as a result of negligent inspections.

On the basis of Canadian case law, there are clear circumstances in which liability could be extended to design professionals, including engineers. There is an established duty of care between a design professional and an owner. In addition, there may be a contractual duty owing by a design professional to an owner under the terms of its contract. (This contract may, however, modify or limit the duty of care on the part of the professional, or wholly or partly limit an owner's right to sue under it.) Design professionals also owe a duty to third parties who suffer damage as a result of negligent design.

The standard of care that a design professional owes is to take reasonable care to ensure that a design complies with the standard of a reasonable professional in the same circumstances. The same standard of care is owed to a third party who might suffer damages or injury as a result of a negligent design. Whether a design professional took reasonable care will usually be measured against the professional standard at the time the design was prepared.

Following the standard practice of one's peers can be strong evidence of reasonable and diligent conduct but, importantly, it is not determinative. Rather, it is possible that the standard practice may itself be judged deficient in certain circumstances and, accordingly, adhering to such practice

would be considered negligence. For example, given knowledge of climate change effects in a geographic area as a result of the proliferation of climate-related information and projection models, if the "standard practice" at the time of designing a specific type of infrastructure project is to ignore potential climate-change effects (despite widely available evidence), the standard practice itself may be negligent. Adhering to a deficient standard would be a breach of a design professional's standard of care to an injured person.

In other words, liability might arise where a design professional complies with the minimum standards set out in laws, codes and standards, but these standards fall below those of "a reasonable person" in the legal sense. If a design professional is concerned that applicable laws, building codes or standards lack consideration for the impacts of climate change on an infrastructure asset, a design professional should consider whether it is even reasonable to rely on those laws, building codes or standards in the circumstances. In other words, would a "reasonable person" simply rely on them in designing the infrastructure asset or would a reasonable person in these circumstances design an infrastructure asset to a standard greater than the minimum standard set forth?

In making his or her determination, the design professional should try to determine whether others are designing to a standard greater than required by these existing standards. For example, if some design professionals are making the necessary modifications, others could well be liable to third parties if the infrastruc-

ture they are designing failed to take into account such considerations, even if the infrastructure were constructed according to applicable laws, building codes and other standards.

In addition to the general duty of care, a design professional may, in certain circumstances, owe a duty of care when making, or failing to make, representations or statements to those people who are relying on the design professional's expertise in matters relating to design; this duty of care includes a duty to warn of danger. If a design professional negligently fails to warn those people who are relying on his or her expertise of matters relating to the design of a particular risk or danger (i.e. climate change-related risk), that individual may be liable for breaching his or her common law duty to warn.

### PROTECTING AGAINST LIABILITY

A finding of legal liability against a design professional may be challenged in relevant circumstances on the basis of, for example, statutory or contractual limitation periods, or depending upon available evidence, whether climate change-related event risk in the relevant geographic area to the relevant type of infrastructure can be foreseen. Contributory negligence on the part of others, i.e. owners or contractors, may also be a factor in assessing the dollar amount of liability.

To minimize the risk of liability for failing to adapt infrastructure to climate change-related risk, all infrastructure stakeholders, i.e. governmental entities, design professionals, contractors, owners and occupiers, should consider whether climate change-related events or effects could affect an infrastructure asset during its lifecycle. If the answer is yes, they must consider whether the technology exists to design and construct projects in a manner that can sustain climate change events and how other projects, in similar conditions, have been designed and constructed. In addition, design professionals, contractors and governmental authorities providing permits and conducting inspections will, in certain circumstances, have a duty to warn of climate change risk and adaptation methods. Ultimately, the heightened costs involved in considering and taking these enhanced actions must be weighed against, among other factors, the prospect of liability for failing to do so.  $\Sigma$

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