

CATtales

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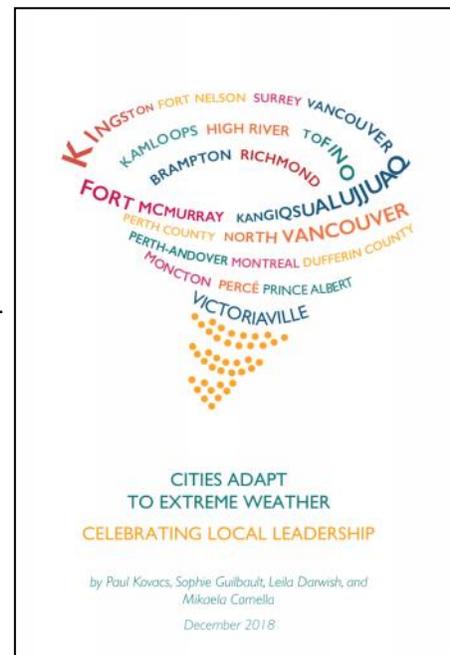
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ICLR releases new book: 'Cities adapt to extreme weather: Celebrating local leadership'

Local governments are taking action to reduce the risk to Canadians from extreme weather. Cities adapt to extreme weather: Celebrating local leadership is the third book by the Institute for Catastrophic Loss Reduction extolling local governments adapting to climate change and building more resilient communities. The three books include a total of 60 case studies describing local action in Canada that is consistent with best practices for climate resilience as identified by the Institute. The Institute is pleased to share these narratives praising successful local action. These communities are demonstrating their commitment to 'get ahead' of the risk of damage from severe weather and climate change by building back better in recovery or through proactive investments in anticipation of future risks.

- Craig Snodgrass, Mayor of High River, reports "We went through hell in 2013. We had a 'build back better' mentality and now we are the most well protected community in Canada for flood risk."
- Linda Hepner, Mayor of Surrey advises "By getting ahead of the issue [coastal flooding] and setting direction now for where we want to be in 100 years, we are positioning Surrey to make smarter investments in the protection of residential neighbourhoods, businesses, significant habitat areas and provincially critical infrastructure."
- Montreal is the first community in Canada to establish a resilience office, appoint a Chief Resilience Officer, and, in 2018, publish a City Resilience Strategy. Mayor Valérie Plante said that "our strategy will enable the population, institutions, businesses and systems to react and resist more effectively and efficiently to unforeseen events." ►



- Josie Osborne, Mayor of Tofino, said "A prepared community is one that can take care of itself, and that starts in our homes and schools by educating children and families about emergency preparedness and response."
- Marianne Tiessen Bell, Mayor of Perth-Andover, reports that following devastating flooding in 2012, homes at risk were relocated or flood-proofed, and "If the flooding cannot be prevented, then all of the businesses need to move away from the river."
- Following a fatal avalanche in 1999, Kangiqsualujjuaq introduced regulations to prohibit new construction with 100 metres of the bottom of any steep slopes, and all homes and businesses in the new exclusion zone were relocated or demolished.
- The District of North Vancouver has won international awards for its disaster risk reduction efforts, including its pioneering use, since 2005, of risk tolerance criteria to guide its landslide, wildfire, flood and earthquake risk reduction strategy.
- Fort Nelson First Nation launched an innovative pilot study in 2017 to use drones to develop a FireSmart wildfire damage reduction plan for every building in the community.
- Victoriaville introduced financial incentives in 2011 for homeowners and builders to promote sustainable homes, including incentives to install hurricane clips, window shutters, high performance windows, and other risk reduction for new and existing homes.

Cities adapt to extreme weather also recognizes actions in

Brampton, Dufferin County, Fort McMurray, Kamloops, Kingston, Moncton, Perth County, Percé, Prince Albert, Richmond and Vancouver.

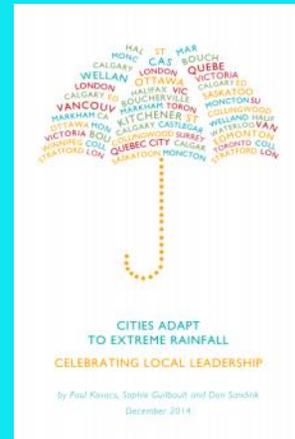
Cities adapt to extreme weather: Celebrating local leadership was written by Paul Kovacs, Sophie Guilbault, Leila Darwish and Mikaela Comella. The report builds on previous Institute reports – Cities adapt to extreme rainfall and Cities adapt to extreme heat. These communities are leading the way in Canada with risk reduction action that other communities should consider.

Paul Kovacs, Executive Director of the Institute for Catastrophic Loss Reduction said "Extreme rainfall, heat and weather will increasingly affect many communities as a result of climate change. The Institute is excited to identify and celebrate actions that have been implemented by community leaders across Canada to successfully adapt to climate risks. The identified actions are consistent with the Institute's views about best practices to reduce the risk of loss and damage from extreme events. We are confident that similar actions will benefit most communities. Damage due to extreme weather is rising across Canada, and most of these losses are preventable through the application of research by the Institute and others. This report puts a spotlight on local officials that demonstrate leadership through their actions to build a more resilience society adapted to cope with extreme weather risks."

Cities adapt to extreme weather: Celebrating local leadership can be downloaded for free in its entirety or by chapter at www.iclr.org/municipality. **CT**

ICLR Cities adapt book series

Cities adapt to extreme weather: Celebrating local leadership is the third installment in the Cities adapt series. The three entries bring to 60 the total number of narratives on cities adapting to climate change in Canada.



Cities adapt to extreme rainfall



Cities adapt to extreme heat

Speaking in code: A brief overview of building code in Canada

By Glenn McGillivray, Managing Director, ICLR

It is somewhat understandable why most Canadians seem to know virtually nothing about how building codes work in this country. After all, a person might only really be exposed to code-related issues if they were having a new home built or were overseeing a major renovation – and even then, they might not get enough exposure to the code process to learn (or care) much about it.

Yet, it is amazing to me just how many people comment on code issues with great confidence...and (of course) get it mostly wrong. I've even read and/or engaged in several online discussions with building industry types who, themselves, often don't know why they're talking about. So why should we expect the average Canadian to know more?

An individual recently commented to me that "Homes in Toronto are bricked because the Toronto Building Code requires it due to Hurricane Hazel."

When I informed the person, an engineer with a PhD, that he was incorrect, he challenged "Then why are most homes in Toronto bricked?" The answer, I replied, is simple: Houses tend to be built with the material that is most common to the area they are built in. Many communities in the Golden Horseshoe, particularly those along the shores of Lake Ontario, have clay soil and, thus, use of clay brick is very common in the region. Indeed, there are significant brick manufacturing operations in such places as Concord, Brampton, Hamilton and Brantford. Where there is no clay (and thus no local brick manufacturing) it is common for builders to bring in lightweight (i.e. cheaper to ship) materials like vinyl siding.

There are two major



errors in the engineer's comment.

First, cities in Canada do not have their own building codes. I hear people comment about the '(insert city name) building code' quite regularly, and it is a falsehood. Only Vancouver has its own building code, due to the namesake charter that gives the city certain powers.

Second, no building code in Canada mandates use of a specific material for cladding. Thus, one is free to use any exterior cladding material they wish, like brick, stone, stucco, shakes, or siding (vinyl, aluminum, cement/fibreboard or wood).

It is funny how such falsehoods grab hold and become 'fact' to many.

Canadian National Building Code (CNBC)

Development and publication of the Canadian National Building Code (CNBC) is the responsibility of the Canadian Commission on Building and Fire Codes, part of the National Research Council of Canada or NRC (not to be confused with Natural Resources

Canada, or NRCan).

The CNBC serves as the code for many federal construction projects. But, perhaps more importantly, it serves as the model code for the provinces and territories.

As explained on NRC's Website: "Under Canada's constitution, provinces and territories regulate the design and construction of new houses and buildings, and the maintenance and operation of fire safety systems in existing buildings. While the national model codes (Building, Fire, Plumbing, Energy Codes) are prepared centrally under the direction of the Canadian Commission on Building and Fire Codes, adoption and enforcement of the Codes are the responsibility of the provincial and territorial authorities having jurisdiction."

Thus, any province or territory in Canada can choose to adopt in full – or adapt some or most of – the national codes. Theoretically, a province or territory could even reject the CNBC completely and go off on its own (or even go without a building code), ►

though none do.

With the first CNBC having been published in 1941, the current code (2015) marks the 14th iteration.

The CNBC (as well as all provincial codes) work on a 'go forward' basis, meaning that old codes are grandfathered in (i.e. implementation of a new code does not mean that structures built under old codes have to be retrofitted unless the structure is undergoing a major alteration/renovation or is being re-purposed into something like a hospital, for example).

Of particular note in the CNBC are Parts 3 and 9.

Part 3 buildings are those classified as Group A, B or F-1, or exceeding 600 m² in building area or exceeding three storeys in building height and have major occupancies. Part 9 buildings include houses and certain other small buildings that are less than three stories high and 600 m². Because Part 3 structures are engineered, undergoing considerably more scrutiny than non-engineered Part 9 structures, it is the latter that drive the majority of the code requirements.

The CNBC is modified and re-published approximately every five years, with the next iteration due out sometime in 2020.

Provincial building codes

In Canada, a building code must be adopted by a 'regulatory authority' in order to come into effect and in this country, that regulatory authority must be a province or territory.

Currently, six provinces (Newfoundland and Labrador, Nova Scotia, Prince Edward Island, New Brunswick, Manitoba and Saskatchewan) and the three territories adopt the CNBC with only minor variations. Adoption of the National Fire Code and the National Plumbing Code varies

more widely among the nine noted here.

British Columbia, Alberta, Ontario and Quebec each publish their own codes that are based on the national model codes (building, fire and plumbing), with modifications and additions.

Prince Edward Island only adopted the NBCC for commercial construction on January 1 of 2018 with the residential portion of the NBCC (Part 9) to come into effect in 2020. This made PEI the last province in the country to fully adopt NBCC standards. Up to the end of 2017, the NBCC was only recognized in Charlottetown, Summerside and Stratford. Buildings in rural areas of the province were not required to meet a building code.

Like the CNBC, the four provinces that have their own code machine update their codes approximately every five years and not necessarily in sync with publication of a new national code. The others update their codes in tandem with changes to the CNBC.

Municipal bylaws

Provinces have chosen to make local governments responsible for the implementation of the respective building, fire and plumbing codes and for related inspections. But contrary to what I think is popular belief, municipalities are not legally required to inspect new or renovated buildings that fall under the code. That said, virtually all local governments and local authorities in Canada, it appears, have chosen to inspect. One caveat is that when a municipality decides to inspect, it must do in a consistent manner.

Another important point to make about municipalities and construction is that local governments are largely barred against requiring construction-related measures that go beyond

– or supersede – the respective provincial building code. This is what is known in construction industry jargon as 'code min/max'. This concept doesn't prevent a builder from building beyond code, but it does prevent a municipality from regulating beyond code.

Conclusion

Canadian building codes, like their counterparts in the U.S. and elsewhere, often get knocked for being nothing more than minimum standards for building construction.

This may be true.

But Canada does have decent building codes and code inspection regimes, with a great degree of homogeneity/standardization across the country.

And, in many ways, this has served Canadians reasonably well. **CT**

Preliminary insured disaster losses for 2018 fourth highest on record: Swiss Re

- Total economic losses from natural and man-made disasters in 2018 are estimated to be USD 155 billion, down from USD 350 billion in 2017
- Global insured losses from catastrophes in 2018 are estimated to be USD 79 billion, the fourth highest on sigma records and higher than the annual average of the previous 10 years
- Disaster events claimed more than 11,000 victims in 2018.

According to preliminary sigma estimates, total economic losses from natural and man-made catastrophes in 2018 declined to USD 155 billion from USD 350 billion in 2017. Global insured losses are estimated to be around USD 79 billion, higher than the annual average of the previous 10 years. There have been a number of smaller and mid-sized loss-generating disaster events across all regions this year, also affecting regions with well-established insurance cover. Together, these have made 2018 the fourth costliest year on sigma records in terms of losses covered by the insurance industry. Globally, more than 11,000 people have died or gone missing in disaster events in 2018, similar to the number of victims in 2017.

Total economic losses from natural catastrophes and man-made disasters are estimated to be USD 155 billion in 2018. Natural catastrophes caused USD 146 billion of the losses, and man-made disasters

USD 9 billion. Of the total economic losses, USD 79 billion have been covered by insurance, down from USD 150 billion in 2017, but more than the previous 10-year annual average (USD 71 billion). Natural catastrophes accounted for USD 71 billion of this year's insured losses, and man-made disasters for the remaining USD 8 billion. This year is projected to be the fourth most expensive year on sigma records for insurance. More than 11,000 people have died or gone missing in catastrophe events in 2018. The earthquake in Sulawesi, Indonesia in September had the highest human toll of the year, with over 3,500 estimated dead or missing.

Extreme weather caused fourth highest number of insured losses

There has not been a singular major natural catastrophe event (such as Hurricanes Harvey, Irma, Maria in 2017) in 2018. Nevertheless, the aggregated losses from a number of smaller and mid-sized events, alongside some major man-made disasters, have caused sizable overall insured losses. Like last year, the losses from the 2018 series of events highlight the increasing vulnerability of the ever-growing concentration of humans and property values on coastlines and in the urban-wildfire interface. The very presence of human and property assets in areas such as these means extreme weather conditions can quickly turn into catastrophe events in terms of losses inflicted.

Examples of this year's devastating natural catastrophe events include Hurricanes Michael and Florence; Typhoons Jebi, Trami and Mangkhut; heat waves, droughts and wildfires in Europe and California; winter and thunderstorms around the world; floods in Japan and India; earthquakes in Japan, Indonesia and Papua New Guinea; and volcano eruptions in Hawaii. Insurance contributed USD 79 billion in paid claims to lessen the hardship for people and businesses affected by this year's disaster events. In other words, more than 50% of all economic losses were insured, demonstrating again the significant contribution of the insurance sector to mitigating catastrophe risk.

The loss estimates in Swiss Re's release are preliminary and may be subject to change, as all loss-generating events have yet to be fully assessed. [CT](#)

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Mission
To reduce the loss of life and property caused by severe weather and earthquakes through the identification and support of sustained actions that improve society's capacity to adapt to, anticipate, mitigate, withstand and recover from natural disasters.

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