

Trends in Climate Change and Residential Development in the Ottawa Region

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A riddle:

Will climate change be good for Ottawa?

Topics

- ▶ Clarifying terms
- ▶ Global and local climate change
- ▶ Potential impacts on housing, infrastructure and the building industry

Some climate terms...

- ▶ climate and weather
- ▶ global warming and climate change
- ▶ climate change and climate disruption
- ▶ the “hundred year event”
- ▶ climate modelling vs weather prediction
- ▶ why is 2 degrees a big deal?
- ▶ Why do we get record setting cold weather if there's global warming?

Global climate change impacts

- ▶ weather event frequency, duration and intensity
- ▶ More damaging storms
- ▶ damage to property, buildings, infrastructure, economic impacts
- ▶ Rising sea levels and flooding
- ▶ **Disruption of jobs, services, manufacturing, agriculture, supply/transportation networks, emergency services, governments and international security**
- ▶ **Most vulnerable: Central Africa, Middle East, China, SE Asia, Arctic regions, island states, and coastal areas**
- ▶ **MIGRATION of climate refugees from these regions**

Climate change in Ottawa

- ▶ winter temperatures rising
- ▶ more freeze-thaw events
- ▶ more freezing rain
- ▶ more ice storms
- ▶ more rain in winter
- ▶ more rain on snow, snow on ice

Climate change in Ottawa

- ▶ higher summer temperatures
- ▶ higher night-time temperatures especially in urban areas
- ▶ more periods of drought
- ▶ earlier spring thaw
- ▶ more intense rain in fall
- ▶ more rainfall in shorter, more intense events
- ▶ more flooding

Potential impacts on buildings

1. less heating in winter, more cooling in summer
2. faster deterioration of cladding
3. faster deterioration of expansion joints
4. more water infiltration and mold
5. drought and wildfires
6. Clay soils, drought and subsidence

Potential impacts on house building

1. damage to materials stored outside?
2. damage to housing under construction?
3. risks to workers?
4. insurance implications?
5. weather delays?
6. interruptions of material supplies from overseas?
7. longer shoulder seasons, more production?

...and impacts on infrastructure

1. Electricity grid is vulnerable from wind storms, ice storms
2. flooding and droughts impact hydro production
3. impacts on flood- and drought-sensitive landscaping like turfgrass (lawns), and trees, parks, agriculture/local food production
4. aging infrastructure in Ottawa and across Canada

Other related trends...

1. electricity costs up 5% per year in Ottawa
2. Growing concerns about health and IEQ
3. global migration patterns
4. demographic shift
5. existing buildings vs new buildings
6. COP21 (Nils)
7. carbon pricing

Opportunities...?

On the plus side...

Markets are growing for...

- ▶ efficient heating, cooling, ventilation, dehumidification technology
- ▶ “smart homes” technology
- ▶ designing for building efficiencies
- ▶ prefabs
- ▶ renewable energy (Bullfrog Power, Ottawa Renewable Energy Coop), esp solar, wind and storage (batteries)
- ▶ emergency power (generators and storage)

On the plus side...

Markets are growing for...

- ▶ durable building for a changing climate
- ▶ local building materials and products
- ▶ Recycled materials and products
- ▶ Earth-friendly materials and products
- ▶ Higher density development

More opportunities...

1. pending infrastructure renewal \$
2. density bonuses, density zoning
3. transit-oriented development, work/live/play
4. The existing building market
5. Global migration patterns – who is the new market for housing in Ottawa?

**Will climate change be
good for Ottawa?**

Thanks for thinking innovation!

