



Institute for Catastrophic
Loss Reduction

Building resilient communities

Institut de Prévention
des Sinistres Catastrophiques

Construction de resilient communities

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Burlington home retrofitted to reduce the risk of basement flooding

TORONTO: The Institute for Catastrophic Loss Reduction (ICLR) has retrofitted a Burlington, Ontario home to reduce the risk of basement flooding. More than 3,000 Burlington homeowners reported basement flooding to the city after a heavy rainfall event on August 4, 2014. However, Burlington is not alone in experiencing basement flooding, as many cities across Canada have been impacted by significant urban flooding events over the past few years. Indeed, in just the last year and a half alone, local governments in Canada experienced severe rainfall leading to urban flooding in southern Alberta and Toronto/Mississauga, as well as Burlington, leading to almost \$3 billion in insured damage.

Several basement flood mitigation measures were put into the Burlington home, which is located in an area of the city that was particularly hard-hit during the August 4 event. These measures include:

- Disconnection of the foundation drain from the sanitary sewer connection
- Installation of a sump, sump pump, and battery backup system
- Installation of a backwater valve on the sanitary sewer connection
- Alteration of lot-grading, including installation of a swale to better facilitate surface drainage
- Installation of window wells and window well covers to facilitate the change in lot grading
- Cleaning of foundation drain system

Other measures already completed:

- Disconnected downspouts

"Basement flooding caused by extreme rainfall is a major concern for many urban municipalities and, consequently, homeowners and homeowner insurers in Canada," says ICLR Executive Director Paul Kovacs. "With an increase in the frequency and intensity of rainfall events, along with urbanization and aging infrastructure, more homeowners are experiencing basement flooding and no urban area in Canada is immune. What's more, the proliferation of finely appointed basements means that individual damage figures can be quite high, often running in the tens of thousands and sometimes exceeding \$100,000.

Effective management of flood risks requires investment and upgrading of municipal sewer infrastructure, but it also must include actions taken by educated homeowners to reduce the risk. Protecting private properties from flooding is a shared responsibility and this retrofit demonstrates a number of ways that property owners can help guard against basement flooding."

Among its many resources, ICLR has produced a 'Handbook for Reducing Basement Flooding', a publication that addresses the concerns of homeowners, local governments and insurance companies of

the increasing instances of basement flooding. The booklet provides comprehensive information on how to mitigate flood risk for individuals and communities. It contains 20 measures that homeowners can take to reduce their risks and their neighbourhoods' risk of basement flooding. ICLR has also produced a smaller, more readable version of the handbook that is more manageable for the average homeowner. Both the handbook and the booklet can be downloaded for free at www.iclr.org.

The Institute has also produced a series of five 'how to' videos and six narrated animations on reducing the risk of basement flooding. These videos can be viewed on ICLR's YouTube channel at <http://www.youtube.com/ICLRinfo>

ICLR has also just released a new book outlining how Canadian communities large and small are taking action to reduce the risk of basement flooding and damage to property from sewer back-up. 'Cities adapt to extreme rainfall: Celebrating local leadership' describes 20 of the many successful local projects currently under way or already completed in communities working to address the risks associated with extreme rainfall. The book can be downloaded for free at www.iclr.org

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Established in 1998 by Canada's property and casualty insurers, ICLR is an independent, not-for-profit research institute based in Toronto and at the University of Western Ontario in London, Canada. ICLR is a centre of excellence for disaster loss prevention research and education. ICLR's research staff is internationally recognized for pioneering work in a number of fields including wind and seismic engineering, atmospheric sciences, water resources engineering and economics. Multi-disciplined research is a foundation for ICLR's work to build communities more resilient to disasters.

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