Institute for Catastrophic Loss Reduction

CATtales

e-newsletter of the Institute for Catastrophic Loss Reduction

Volume 9, Issue 5
September/October 2015

IRDR ICoE
Integrated Research on Disaster Risk International Centre of Excellence

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ICLR stresses importance of establishing a science foundation for action at forum in Japan

Dr. Gordon McBean, the Institute for Catastrophic Loss Reduction's (ICLR) director of policy, is stressing the importance of establishing a "science foundation for action" that addresses both energy and environmental issues.

Dr. McBean participated in the opening panel discussion at the Science and Technology for Society forum meeting in Kyoto, Japan October 4. ICLR's executive director, Paul Kovacs, also spoke at the session on adapting to climate change.

The forum is an annual conference for the discussion of emerging scientific research. Information from the forum's website said that the forum "aims to provide a new mechanism for open discussions on an informal basis, and to build a human network that would, in time, resolve the new types of problems stemming ►

Japanese Prime Minister Shinzo Abe opens the STS Forum in Kyoto October 4.

from the application of science and technology." The forum community also explores the opportunities arising from science and technology, and addresses how to remove the barriers to using science and technology to solve the problems facing humankind.

In attendance were the Prime Minister of Japan, the Deputy Prime Minister of Russia, the Prime Minister of France, the Prime Minister of Sri Lanka, ministers from more than a dozen countries, half a dozen Nobel prize winners, the chairman of Toyota and more than 1,000 others.

During the forum, Dr. McBean focused on the importance of integrated research to bring together knowledge from the natural sciences with behavioural studies. Kovacs highlighted the growing consensus that action is needed to build resilience to loss and damage from severe weather. "Efforts to adapt building practices, modify choices about where new buildings are located, invest in resilient infrastructure and better educate the public need to have a strong base in science if they are to be effective.

In June, ICLR was designated as an International Centre of Excellence by unanimous approval from the Integrated Research on Disaster Risk (IRDR)'s Scientific Committee. The institute's International Centre of Excellence focuses on disaster resilient homes, buildings and public infrastructure and will consider issues related to the construction of disaster resilient new homes and public infrastructure, as well as actions to retrofit existing structures.

There are just seven other International Centres of Excellence worldwide. **CT**

ICLR`s Gordon McBean receives UBC Alumni Award

ICLR`s Director of Policy Dr. Gordon McBean was awarded University of British Columbia`s Alumni Award of Distinction at a ceremony held on October 27 in Vancouver.

A leader in climate science, Dr. Gordon McBean has led global efforts to raise awareness about climate change impacts and played a key role in the development of the Intergovernmental Panel on Climate Change (IPCC), which in 2007, along with Al Gore, was awarded the Nobel Peace Prize. He is now President of the International Council for Science (ICSU).

McBean was Professor and Chair of the Atmospheric Science Program in the UBC Department of Geography from 1988-1992 and had previously completed his BSc ('64) in Physics and PhD ('70) in Oceanography and Physics at the University.

Professor McBean, CM, OOnt, PhD, FRSC is Adjunct Professor of Geography at Western University, London, Canada, Director of Policy Studies of the Institute for Catastrophic Loss Reduction and President of the International Council for Science and Co-Chair of the Governing Council for Future Earth: Research for Global Sustainability. He was Professor of Geography at Western (2000-2015) with a joint appointment in Political Science. From 2012-2015, he was Director of Research and External Relations, Western Centre for Environment and Sustainability.

He has been appointed a Member of the Order of Canada (2008) for "contributions to the advancement of climate and atmospheric sciences in Canada and for leadership in national and international scientific organizations", Order of Ontario (2010) as "a leading scientist and authority on climate change and natural disasters" and awarded the American Geophysical Union Ambassador Award for 2015. He is a Fellow of the: Royal Society of Canada; American Geophysical Union; Canadian Meteorological and Oceanographic Society; International Union of Geodesy and Geophysics; Royal Canadian Geographical Society; and American Meteorological Society. As a lead author for the Intergovernmental Panel on Climate Change, he shared in the award of the 2007 Nobel Peace Prize.

He was Chair of the Canadian Foundation for Climate and Atmospheric Sciences (2000 -11) (which provided $120M in research grants to Canadian universities for climate and atmospheric sciences) and of the Canadian Climate Forum (2011-14). He was Chair of the World Climate Research Programme (1988-94), START International (2009-15) (environmental capacity enhancement in Africa and Asia) and the Scoping Group, Planning Committee and then Science Committee for the Integrated Research on Disaster Risk Program (2005-2011). From 1994 to 2000, he was the ►

Closing Canada`s protection gap

By Veronica Scotti, President & CEO, Swiss Re Canada

What does a prepaid debit card have to do with Canada's flood insurance shortfall? Those prepaid debit cards issued by the Ottawa government to flood victims can offer a false sense of security, that homeowners will receive emergency funds that preclude the need for insurance. While the Disaster Financial Assistance program is undoubtedly laudable and an important element of post-disaster recovery, it's only part of the solution. It will take a collaborative effort to ensure every citizen has the means to adequately recover from a flood — or any disaster, for that matter.

To understand the problem it helps to understand what we call the "protection gap," the difference between total economic losses and insured losses. Much of this gap is due to uninsured natural catastrophe risk, which has been rising steadily over the past several decades. Swiss Re's latest sigma report, *Underinsurance of property risks: closing the gap*, reveals that total economic losses from natural disasters have averaged around USD 180 billion annually in the last decade, with a staggering 70% of that amount (USD127 billion) uninsured. Earthquakes, floods and windstorms are the typical culprits, particularly in densely populated areas with a high concentration of property value. The US, Japan and China are the top three, accounting for USD 81 billion out of a USD 153 billion gap worldwide.

Canada sits at #11, with an expected annual gap of USD 2.1 billion, and we too have felt the force of nature in recent years. Rebuilding continues from the 2013 flooding, the largest insurance event in Canadian history. About one-third of Alberta's more than CAD 6 billion of economic losses were covered by insurance (CAD 2 billion) and CAD 1 billion of Toronto's nearly CAD 1.5 billion in economic losses were covered.

Although flooding is the most frequent natural disaster, awareness of the risk it carries is typically low; Canada is one of few economies that doesn't have a mature insurance market for flood and the majority of flood risk is uninsured. Overland flood exclusions and very low sub-limits on sewer back-up coverage of residential property policies often leave most property owners without the money to adequately recover and rebuild.

Let's take an historical perspective: since 1975, on average, 86% of global flood losses have not been covered by the insurance industry.

To be clear, it's not bad will on the side of the industry. Inadequate mapping and modeling have made flood difficult to insure. For years, insurers couldn't underwrite to profitability and most exposed homeowners found premiums unaffordable. Alarmingly, even after hurricane Sandy hit the US East coast and caused physical and non-physical damages in excess of USD 70 billion, only about half of the residents who live less than a block from the water have flood insurance.

There is reason to be moderately optimistic, though. It's two years since the waters receded in Alberta and Ontario, and there is good news to report: risk awareness and assessment capabilities have greatly improved. Canadian underwriters are using flood zones widely and flood-modeling tools are being rolled out to better assess the accumulation risk. These advancements are laying the foundation of a private market for residential flood insurance in Canada, and a couple of carriers are already offering overland water endorsements in selected areas.

We're also seeing substantive steps taken in the stewardship of our resilience. In November, Public Safety Canada will host the 6th annual National Roundtable meeting of Canada's Platform for Disaster Risk Reduction, where in a multi-disciplinary setting, we will examine how governments, the insurance industry and other key stakeholders, can cooperate and share information to support the creation of appropriate conditions to better manage risk. Flood will be prominently featured.

Canada is not dissimilar from other mature markets such as the US, Japan and Australia, where risk prevention measures, such as implementing or revamping building codes that reduce risk and improve insurability, are being introduced according to the sigma report.

However, much work remains. Governments need to respond swiftly in the wake of a disaster, when infrastructure is compromised and roads and bridges are washed out. Pre-disaster financing is a viable solution, because it makes funds immediately available to not only rebuild but to activate emergency responders such as firefighters and paramedics. Without this type of financing, the cost of recovery is inevitably borne by the taxpayer to make up revenue shortfalls and other critical services are often reduced or eliminated.

Ultimately, public/private collaboration is key to closing the property protection gap. Insurers can't act alone. We need supportive regulatory environments, risk information and in some cases, government involvement to extend coverage capacity.

After all, that prepaid debit card will only go so far. **CT**

Focus on reducing losses associated with sump pumps

By Glenn McGillivray, Managing Director, ICLR

Hundreds of thousands of homes across Canada have sump pump systems, designed to collect water from the weeping tiles and safely eject it away from the foundation. These systems are a major source of property damage claims for Canadian personal lines writers because when there is a failure, a basement *will* flood, often extensively.

Many of the problems associated with sump pump system failure can easily be addressed through two avenues, and ICLR strongly recommends that homeowners with sump pump systems address both in order to prevent a catastrophic basement flooding event.

The first avenue is ensuring that a back up pump is plumbed into the system and the second is to ensure that the sump system has an alternative source of power to run it should the main power source be unavailable for any length of time. (I'm reminded of the story of an independent claims adjuster who had to hand-bail his sump pit for 36 straight hours during a power failure to prevent his basement from flooding.)

If a home's sump pump only occasionally runs, perhaps only in spring or only during a heavy rainfall event, it is recommended that redundancy be installed via a second, backup pump. The second pump can be raised on a block or some other form of riser to ensure that it does not turn on simultaneously with the primary pump. Ideally, the backup pump should be plugged directly (i.e. no extension cord) into a wall outlet that is on a circuit that is separate from the primary pump.

If a home's sump pump runs often – or all the time – it is recommended that double-redundancy be installed via a second, backup pump and a third emergency pump. Again, it is recommended to raise the second pump off the floor of the sump pit so it will only turn on when needed and won't always run simultaneously with the primary pump. It is also recommended that the backup pump be plugged directly into an outlet that is on its own circuit. As for the emergency (third) pump, one may consider installing a pump that operates off the home's potable water supply. When considering such a product, it is imperative that the home have the proper, minimum water pressure (PSI) as recommended in the manufacturer's instructions. These pumps will likely not work properly in some rural areas or where a home is on a well system, due to low PSI. ►

Sump pump alarm system.

Pedestal Pump

Submersible pump with 2-pole mechanical switch (float)

Submersible pump with tether float

Various types of sump pumps.

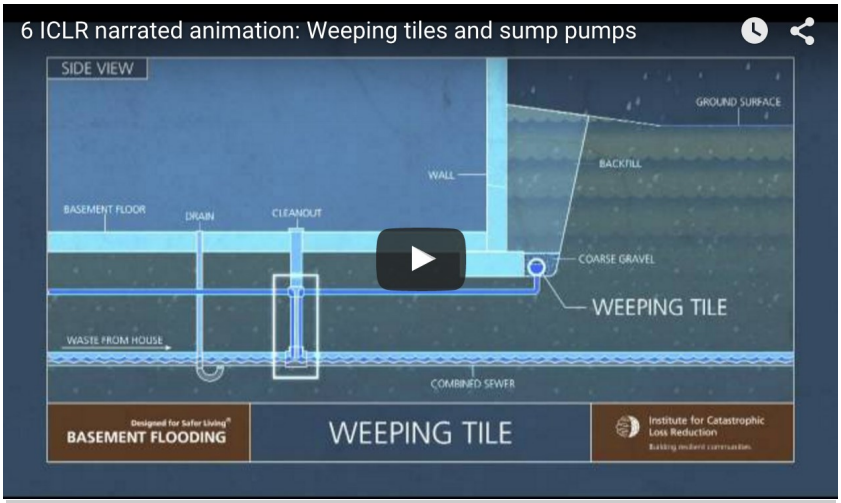
Battery backup pedestal sump pump.

Focus on reducing losses associated with sump pumps *cont...*

As for backup power, the first option is to install an emergency generator that runs on gasoline, diesel, natural gas or some other fuel. Generators can, however, be noisy, dirty and dangerous, and require a steady supply of fuel (something that may be difficult during a prolonged power outage or large civic emergency). A second option is to install a battery backup power system that uses a deep cycle marine battery. These systems, widely available at hardware and home renovation stores, will run a sump system for several hours, though batteries do have to be replaced every few years. A third option is the potable water-driven pump noted above, with caveats pertaining to the home's ability to run such a pump (as noted).

Along with these two main ways of preventing sump pump failure, it is also recommended that the homeowner use a sump pump alarm system to be alerted should water in the sump pit rise to a higher-than-usual level. An alternative to an audible alarm, which is only helpful if the homeowner is home when it goes off, is a wireless Internet alarm system that will send a text message to a number of wireless devices advising of an impending problem with water levels in the sump pit. These devices are helpful, as the homeowner needn't be home to receive a warning.

Being reasonably complicated, mechanical/ electrical devices, sump pump systems can fail, particularly when they aren't inspected and maintained on a regular basis. Following some fairly straightforward recommendations, like installing backup pumps and backup power, can prevent much of the damage caused by failed sump systems.



ICLR has developed a series of videos and narrated animations centring around various issues related to basement flood risk reduction. The resources are available in both English and French and are available on ICLR`s YouTube channel.

Videos

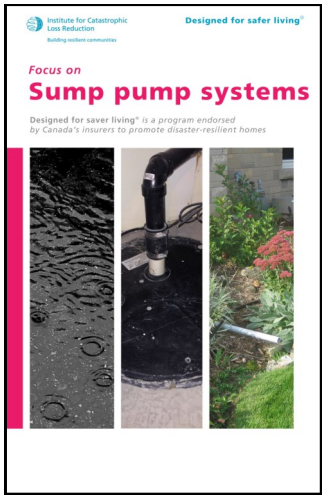
1) Information to reduce basement flooding
2) Why basements flood
3) Lot drainage issues
4) The ABCs of infiltration flooding
5) Plumbing measures to reduce basement flooding
6) Taking action to reduce basement flooding

Narrated animations

1) Proper lot grading to reduce basement flooding
2) Water from roof during a storm
3) Infiltration flooding
4) Backwater valves
5) Backwater valves and disconnecting foundation drains
6) Weeping tiles and sump pumps

Many of these recommendations and maintenance tips can be found in the ICLR booklet 'Focus on: Sump pump systems', a publication that explains what sump pump systems are, what they do, how they can fail, and how they should be tested and maintained. The booklet also provides advice on what to consider when having a sump pump system installed, or when replacing an old pump.

In the meantime, ICLR will continue to work to have Canadian building codes changed so they require the use of backup sump pumps and backup power in all new builds with sump systems. **CT**



Available at www.iclr.org (English and French).

ICLR`s Gordon McBean receives UBC Alumni Award *cont*...

Assistant Deputy Minister in Environment Canada with responsibilities for climate, weather and air quality sciences and services and advising the government on related issues. From 1988 to 1994, he was a Professor of Atmospheric-Oceanic Sciences at the University of British Columbia, being Professor of Geography and Chair of the Atmospheric Sciences Program (1988-92) and then Professor of Oceanography and Head of the Department of Oceanography (1992-94). From 1970 to 1988, he was a scientist with Environment Canada. He received his PhD in Physics and Oceanography from the University of British Columbia.

He is Principal Investigator of the Coastal Cities at Risk: Building Adaptive Capacity for Managing Climate Change in Coastal Megacities (Vancouver, Bangkok, Manila and Lagos), SSHRC Insight Grant on Integrated Strategies for Risk Reduction Research Project and an investigator with Marine Environmental Observations Prediction and Response (MEOPAR-NCE). He was previously a co-PI for the ArcticNet NCE and leader of the integrating theme.

A summary of his publications includes: Books and chapters in books – 40; Papers in refereed journals – 71; and other publications – 65. He makes many presentations to international and national scientific congresses and scientific and professional audiences. For the period 2008-2015, he made 160 presentations, mostly as invited plenary presentations, averaging 20 per year. **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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