

CATtales

e-newsletter of the Institute for Catastrophic Loss Reduction

Volume 9, Issue 3
May/June 2015



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ICLR designated an IRDR International Centre of Excellence

The Institute for Catastrophic Loss Reduction (ICLR) has been designated as an International Centre of Excellence (ICoE) by unanimous approval of the Integrated Research on Disaster Risk (IRDR)'s Scientific Committee.

The designation, at a meeting in Qingdao, China on June 3, makes Toronto-based ICLR one of just seven ICoEs located around the world contributing to the IRDR program. The other centres are located in Taiwan, the United States, South Africa, New Zealand, Columbia and Germany.

The institute's ICoE proposal focuses on Disaster Resilient Homes, Buildings and Public Infrastructure (ICoE-DRHBPI) and will consider issues related to the construction of disaster resilient new homes and public infrastructure, as well as actions to retrofit existing structures.

One specific focus of the institute's ICoE-DRHBPI involves trying to improve work centred around lessons learned associated with previous disasters and capturing this knowledge in building codes and standards.

Beyond learning from disasters, there is a growing capacity for research in laboratories - facilities that can simulate extreme wind, catastrophic earthquakes and other hazards. ICLR's ICoE-DRHBPI will focus on the process of transforming this learning into action by those who construct homes, buildings and public infrastructure.

The Institute's ICoE will also work to identify actions to retrofit existing structures to enhance their resilience to local hazards. Available research finds that significant enhancement in resilience can be added to new homes, buildings and public infrastructure at time of construction at little or no cost, but improving the resilience of existing structures can be expensive. Homes, buildings and public infrastructure seek to provide service for a period of several decades, and some ►



emerging research is assessing opportunities to modify construction and maintenance practices to enhance resilience.

Centres of Excellence can be based on existing institutions focusing on disaster risk education, research and technical cooperation and are intended to operate as network mechanisms engaging other similar institutions in their region, country or city. Main roles of Centres of Excellence are to:

- Conduct integrated research on disaster risk at local, regional and global scales, meeting with objectives of four IRDR working groups;
- Provide specifically-designed technical cooperation on disaster risk and reduction management for policy and decision-making;
- Provide technical support for formulating regional, national or local disaster risk reduction programs based on integrated research;
- Promote IRDR research by conducting regular trainings, workshops or other activities for



IRDR ICoE

**Integrated Research on Disaster Risk
International Centre of Excellence**

disaster managers, decision makers, and junior researchers;

- Facilitate and participate in IRDR events; and
- Contribute to disaster risk researchers' network or platform.

In order to be designated as an ICoE, an organization must have: a good track record in, or commitment to, transdisciplinary research on disaster risk, combining social science, natural science, engineering as well as policy, etc.; unhindered access to researchers from participating countries and international visitors; proven multinational experience in research excellence related to disaster risk reduction; internal capabilities to manage multinational research

teams; commitments to provide appropriate support, including funding and in-kind, for the national and international components consistent with IRDR objectives; and, fully-equipped office space and supporting services.

IRDR is a decade-long research program co-sponsored by the International Council for Science, the International Social Science Council and the United Nations International Strategy for Disaster Reduction. It is a global, multi-disciplinary approach to dealing with the challenges brought by natural disasters, mitigating their impacts, and improving related policy-making mechanisms. **CT**

Current IRDR International Centres of Excellence

1. IRDR ICoE-Taipei
Home Institution: Academy of Sciences located in Taipei, China
2. IRDR ICoE in Vulnerability and Resilience Metrics (IRDR ICoE-VaRM)
Home Institution: Hazards and Vulnerability Research Institute (HVRI), Department of Geography, College of Arts and Sciences, University of South Carolina, Columbia, South Carolina, USA
3. IRDR ICoE in Community Resilience (IRDR ICoE-CR)
Home Institution: Joint Centre for Disaster Research (JCDR), Massey University, Wellington, New Zealand
4. IRDR ICoE in Understanding Risk & Safety (IRDR ICoE-UR&S)
Home Institution: Disaster Risk Management Task Force, Instituto de Estudios Ambientales – IDEA, National University of Colombia (Universidad Nacional de Colombia), Manizales City, Colombia
5. IRDR ICoE for Risk Education and Learning (IRDR ICoE-REaL)
Home Institution: Periperi U (Partners Enhancing Resilience for People Exposed to Risks) Consortium, Research Alliance for Disaster and Risk Reduction (RADAR), Department of Geography and Environmental Studies, Stellenbosch University, South Africa
6. IRDR ICoE for Disaster Resilient Homes, Buildings and Public Infrastructure (IRDR ICoE-DRHBPI)
Home Institution: Institute for Catastrophic Loss Reduction (ICLR), Western University, London, Canada
7. IRDR ICoE on Critical Infrastructures and Strategic Planning (IRDR ICoE-CISP)
Home Institution: Institute for Spatial and Regional Planning (IREUS), Department of Civil Engineering and Environmental Management, University of Stuttgart, Germany

ICLR's Windsor basement flood retrofit

On May 8, ICLR unveiled its latest home retrofit project, this time in Windsor, Ontario. The home was retrofitted to reduce (we never say eliminate) the risk of basement flooding. Again, ICLR chose Emergency Preparedness Week (May 3 to 9) to leverage the publicity that that event produces and use it to underscore the importance of homeowners taking action to protect themselves against severe weather.

The retrofit home is located in an area of Windsor that was particularly hard-hit during a pair of heavy rainfall events last year (indeed, the homeowner experienced two basement floods in 2014, one minor and the other more significant. Both were caused by sump pump failure).

The retrofit featured the installation of several basement flood mitigation measures. These measures included:

- Installation of a backwater valve on the sanitary sewer connection
- A sump system to manage foundation drainage water
- Installation of a water-powered backup sump pump system
- Provision of a sump pump alarm system
- Alteration of lot-grading to facilitate surface drainage
- Disconnection of downspouts
- Downspout extensions
- Provision of a 72-hour emergency kit

In order to select a home, an ICLR staffer visited Windsor and hand delivered 200 post cards to homes in the problem neighbourhood. Amazingly, only three homeowners responded, providing a good indication of just how challenging it can be to encourage homeowners to take mitigative action against severe weather. (Basement flooding is particularly difficult as

homeowners tend to blame the local government, regardless of the cause.)

Through the gracious assistance of the local chapter of the Insurance Institute of Ontario, local insurance professionals were invited to stop by before the main media event to be given personal tours of the home and ask questions about backwater valves, sump pumps and the like. Several took us up on the offer, with one individual even coming over from Michigan to attend the event. A large contingent from the City of Windsor also stopped by.

ICLR has been working on basement flood mitigation for a number of years now. 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. 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 also recently released a 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



ICLR's Manager of Resilient Cities and Research Dan Sandink speaks to CTV News at the Windsor event.

many successful local projects currently under way or already completed in communities working to address the risks associated with extreme rainfall. The book can also be downloaded for free at www.iclr.org

Over the years, ICLR has retrofitted a number of houses, daycare centres and one community centre against local perils.

Our retrofit program not only allows us to draw attention to the importance of mitigation of severe weather events at the lot or private property level, it also affords us an opportunity to learn a thing or two that we weren't aware of before. This is particularly true of basement flood retrofits, as the problem and its solution is often very technically complicated and no two retrofits are alike. Some of our learnings are discussed in 'Customizing home retrofits' (Canadian Underwriter, July 2012). **CT**

Incentivizing mitigation

By Glenn McGillivray, Managing Director, ICLR

When it comes to the issue of financially incentivizing homeowners to install mitigation measures to reduce the potential impact of severe weather or an earthquake, it appears that much of the burden is placed squarely on the backs of insurers.

But while insurers certainly have a role to play in incentivizing mitigation, the onus cannot be solely on them, as often the math just doesn't work.

Carrot and the stick

From a carrot and stick perspective, insurers may very well have more leverage using the latter than the former. While carrots are certainly more desirable – for both insurer and insured – offering premium discounts to reward mitigation often only go so far. Awarding, say, a 10 per cent discount for snow tires may be effective because 1) snow tires generally aren't all that expensive and 2) the discount would apply across a large portion of the premium (i.e. on collision and DCPD, though not on comprehensive). However, offering a 10, 15 or even 20 per cent discount for installing a sump system and backwater valve likely won't be all that effective given that 1) it would cost several thousand dollars to install these measures and 2) the discount would only apply to the water damage and sewer backup portion of the premium. Would a \$10 or \$20 discount incent a homeowner to put in, say, \$3,500 in measures? Not likely. (That being said, Aviva Canada recently revised its Sewer Backup Endorsement to include a \$1,000 payment to insureds who have had a covered sewer backup loss, to install mitigation. This is a trail blazing move that may spur other carriers to follow suit.)

The stick, on the other



hand, may involve the use of premium and/or deductible increases, the levying of peril-specific deductibles (eg. separate, higher deductibles for sewer backup or hail over other perils), implementation of caps/sublimits, and partial or total policy cancellation.

There can be no doubt that these hard measures can make an insured sit up and take notice. However the danger is that pushing too hard could spur the insured to move his or her business elsewhere. What's more, insurers can't price themselves out of every corner, an important consideration given the hyper competitive insurance market and the fact that severe weather will only get worse in the years ahead. Mitigation, then, becomes the only sustainable alternative.

The role of government

With their unique ability to set rules, regulations, guidelines and laws; establish and institutionalize building codes, building code enforcement and inspection; and provide incentives and disincentives to

promote good risk-taking behaviour through taxation, governments have at their disposal a wide array of tools needed to ensure that individuals and communities as a whole take the steps that are necessary to protect against the impacts of severe weather and earthquake. As such, government of all levels in many places in Canada, the U.S. and elsewhere have taken part in some forms of financial incentivization of mitigation, though it is clear that such offerings need to be improved and expanded.

In the United States, there exist a multitude of federal laws and programs that offer funds for the installation of mitigation measures. These include the Stafford Disaster Relief and Emergency Assistance Act, which has a mitigation assistance component to it; FEMA's Hazard Mitigation Grant Program and Pre-Disaster Mitigation Grant Program; and the NFIP's Severe Repetitive Loss Program, to name but a few

In Canada, the federal Disaster Financial Assistance Arrangements (DFAAs) were amended in 2008 to include a provision for cost sharing of up to 15 per cent of the estimated cost of mitigative enhancements to private infrastructure.

On the individual state side, several U.S. states that are exposed to hurricanes have programs to incentivize homeowners to install mitigation measures. Each year, for example, the State of Virginia has a Hurricane Preparedness Sales Tax Holiday for a week in May which gives state residents the opportunity to purchase a specified list of goods tax-free prior to the start of hurricane season. A number of other states, such as Florida, Texas and Louisiana also provide for such a tax holiday for hurricane preparedness. Several states ►

also provide for income tax deductions for hurricane mitigation measures, including Louisiana and South Carolina, and the state of Colorado allows a tax deduction of up to US\$2,500 for homeowners who perform wildfire mitigation measures.

Some states, such as Florida, Alabama, Maryland, Mississippi, New York and North Carolina also mandate insurance premium discounts for the installation of mitigation measures.

On the earthquake side, the California Residential Mitigation Program (CRMP) was created in 2011 through a Joint Exercise of Powers Agreement between the California Office of Emergency Services and the California Earthquake Authority. The CRMP's goal is to provide incentives to California homeowners to seismically retrofit wood frame residential structures. The first of these incentives is currently being piloted through the Earthquake Brace + Bolt program, providing up to US\$3,000 to participating homeowners in limited locations in Oakland and Los Angeles.

No such programs exist in Canada, but they easily could. There are several examples of recent government incentive programs that could be modified to contain a property damage mitigation element.

For instance, in a bid to spur economic recovery, the federal government in 2009 offered a temporary 15 per cent tax credit to eligible home renovation expenditures for work performed or goods acquired

during a set period of time. In the recent past, the federal government has also awarded grants to homeowners who retrofitted their homes to make them more energy efficient. Grants were made available to those who completed specified retrofits and had post-retrofit evaluations conducted to ensure compliance with the program. Most provinces and territories at the time put complementary programs into place in order to further encourage energy-minded housing improvements.

On a municipal level, there are several examples in Canada where local governments provide grants and subsidies to homeowners willing to take measures to guard against basement flooding. Subsidy programs have been developed by some municipalities with the goals of increasing homeowner uptake of measures including downspout and foundation drain disconnection, backwater valve installation and sewer lateral repair. (In Manitoba, the provincial government appears to be the only one in Canada that teams up with municipal governments to help finance such subsidy programs.) Many of these municipal basement flood subsidy/grant programs are listed on ICLR's basement flood risk reduction website.

Moving forward

Property damage risk reduction incentives offered by insurers tend to be largely uniform, with premium discounts serving as the anchor for such offerings.

Government-based mitigation incentive programs, on the other hand, tend to be more wide-ranging with some being downright unique, and it is precisely this type of out of the box thinking that is desperately needed to move Canadian homeowners to make changes to their properties to get losses down.

Canadian insurers need to continue to forge good relations with governments at all levels to bring more and more unique mitigation programs to the fore. And wherever possible, insurers should consider establishing incentives that mesh well with government programs.

There is certainly no shortage of good examples to 'borrow'. **CT**

Institute for Catastrophic Loss Reduction

20 Richmond Street East
Suite 210
Toronto, Ontario
M5C 2R9
Tel: (416) 364-8677
Fax: (416) 364-5889
www.iclr.org
www.basementfloodreduction.com

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.

Western University
Boundary Layer Wind Tunnel
1151 Richmond Street
London, Ontario
N6G 5B9
Tel: (519) 661-3338
Fax: (519) 661-3339
www.iclr.org
www.basementfloodreduction.com