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Designed...for safer living

By Grant Kelly, Director, Climate Change Adaptation Projects
Institute for Catastrophic Loss Reduction

Canada's home insurers are looking to establish a system to recognize home builders who build homes less likely to experience damage from earthquakes and severe weather. Insurers seek to recognize new homes that exceed the requirements of the building code in terms of safety. We are looking for builders to create a system that would allow this to happen.

This is the goal of the Designed...for Safer Living® program. To help builders create a marketplace that allows builders to demonstrate the quality of their construction, design and landscaping for consumers and insurers. ICLR wants to help build a market for builders that design and build solid, resilient homes by creating a clear and understandable signal for consumers and insurers.

Canada's insurers have invested in a long-term, science-based research program that identifies best practices for the design and construction of new homes. ICLR has provided support to dozens of academic researchers who are working to identify these best practices. Our research deals with damage from wind, snow, ice, earthquakes, mould and a range of other hazards. Our largest investment has been to support the *Three Little Pigs Project* at The University of Western Ontario. Coupled with the Boundary Layer Wind Tunnel, Western has established a world-class research

team and facility capable of testing full-scale wood framed houses under extreme loading. This investment is beginning to bear fruit. For example, in 2010 the insurance industry made its first submissions to strengthen the building code in several decades.

ICLR's Designed... for Safer Living® program

Canada's home insurers tasked ICLR to document building practices and materials that are proven to withstand earthquakes and extreme weather. The result of this research is available online at: <http://www.iclr.org/homeowners/newhomes.html>. The most important items on our list are ►



Home builder's guide

Designed for safer living® is a program endorsed by Canada's insurers to promote disaster-resilient homes.

May 2009

adding protection to windows and doors, providing stronger connections between the roof, walls and foundation, and making the roof thicker.

We recognize that just creating a list of good building practices does not by itself make Canadians safer. To date, we have worked with Cooperators General Insurance Company to build three Designed... for Safer Living® homes. Co-operators identified homes that needed to be rebuilt following major fires and agreed to go beyond their contractual obligations to build disaster resilient homes, homes Designed... for Safer Living®. The first of these homes, in Prince Edward Island, survived the remnants of hurricane Noel with no damage.

ICLR is now ready to reach for partners outside of the insurance industry to create a marketplace. We are looking for home builders committed to building excellence. Together, we can provide affordable and independently verified property protection. Consider the following analogy: car manufacturers regularly market safety features like air bags and ABS brakes and consumers are willing to pay for them. Consumers understand that these safety features are worth buying. The insurance industry was instrumental in promoting these road safety improvements and seeks to bring this thinking to our homes. Builders can make new homes more resilient to nature's perils and give homeowners the increased peace of mind they seek.

Our program has some clear advantages for home builders including:

- Giving consumers a clear signal that your company builds premium homes that exceed the Building Code;
- Independent verification to enhance your reputation for

the construction of safer homes;

- Cost effective, as modest changes in design and construction have the potential to significantly enhance loss prevention; and,
- Additional safety elements that buyers want, with a focus on verified improvements in safety.

A similar program operates successfully in the United States. Homebuilders have built several thousand homes across the country and report that they are pleased with program. This provides a solid foundation for success in Canada.

The ICLR program has just two steps.

1) Meeting with ICLR inspectors prior to construction to discuss:

- Architectural drawings showing floor plans and elevations;
- Window/Door schedule;
- Structural drawings (if applicable);
- Base Flood Elevation (if applicable);
- Truss drawings from the truss manufacturer; and,
- Documentation on wall and

roof sheathing, fastening schedules and roof covering materials used.

An ICLR inspector must verify that materials, installation, construction, and building techniques meet program criteria for the location. At the end of phase one, ICLR authorizes the builder to use the Designed...for safer living® logo in its marketing materials.

2) Four on-site inspections.

During the construction process, the program requires that an ICLR inspector visit the building site approximately four times to verify compliance to the *Designed ... for safer living®* standards.

At the end of this process, the homeowner would receive certification from ICLR.

Canada's insurers are looking to work with builders to promote the design and construction of disaster resilient homes. This loss prevention strategy is essential to confront the alarming international trend of rising disaster damage. To learn more about our program please visit our website at iclr.org or contact Grant Kelly at gkelly@iclr.org or 416-364-8677 🐾



ICLR's first Designed...for Safer Living Home located in West Point on the western shore of Prince Edward Island

Natural catastrophes and man-made disasters caused economic losses of USD 218 billion and cost insurers USD 43 billion in 2010: Swiss Re

According to Swiss Re's latest sigma study, worldwide economic losses from natural catastrophes and man-made disasters were USD 218 billion in 2010, more than triple the 2009 figure of USD 68 billion. The cost to the global insurance industry was more than USD 43 billion, an increase of more than 60% over the previous year. Approximately 304,000 people died in these events, the highest number since 1976.

In 2010, severe catastrophes claimed significantly more lives than the previous year: around 304,000 were killed, compared to 15,000 in 2009. The deadliest event in 2010 was the Haiti earthquake in January, which claimed more than 222,000 lives. Nearly 56,000 people died during the summer heatwave in Russia. The summer floods in China and Pakistan also resulted in over 6,200 deaths.

Natural catastrophes cost the global insurance industry roughly USD 40 billion in 2010, while man-made disasters triggered additional claims of more than USD 3 billion. By way of comparison, overall insured losses totalled USD 27 billion in 2009. Lucia Bevere, one of the study's authors, says: "Insured losses were highest in North America in 2010, where they exceeded USD 15 billion. Despite very low hurricane losses due to the absence of hurricanes making direct landfall in the U.S., a series of lesser storms throughout the year resulted in this high figure."

High earthquake losses

Earthquake losses accounted for almost one third of all catastrophe losses in 2010. The February 2010 earthquake in Chile and the September earthquake in New Zealand were

the two costliest events in 2010, and led to insured losses estimated at USD 8 billion and USD 4.4 billion respectively.

Overall natural catastrophe claims in 2010 were in line with the 10-year average due to unusually modest U.S. hurricane losses and in spite of notably high earthquake losses.

Incidentally, earthquake losses for 2011 will also be above average as the total insured claims for the February 22 earthquake in Christchurch, New Zealand, are estimated to be between USD 6 billion and USD 12 billion. The massive Tohoku earthquake that struck Sendai, Japan on March 11 is also expected to trigger significant insured losses.

Balz Grollmund, one of the study's authors, says: "Although no long-term trend of increasing global earthquake activity has emerged, the number of fatalities and insured losses from earthquakes are on the rise. The main reasons are population growth, the higher number of people living in urban areas as well as rising wealth and rapidly increasing exposures. Many of these rapidly growing urban areas are located in seismically active areas."

Ten events each triggered insured losses of at least USD 1 billion


In 2010, ten events triggered insured losses of USD 1 billion or more. The two biggest insured losses were caused by earthquakes – the February earthquake in Chile (USD 8 billion) and the September earthquake in Christchurch, New Zealand (USD 4.4 billion). The third costliest event was winter storm Xynthia in Western Europe, which led to insured losses of

USD 2.8 billion. Three storms in the U.S. and two storms in Australia also generated losses of over USD 1 billion. Property claims from the BP Deepwater Horizon explosion in the Gulf of Mexico are estimated at USD 1 billion. Given the complexity of the claims, the latter figure is still subject to substantial uncertainty.

The overall insurance loss is higher, as liability losses are not included in the *sigma* numbers.

Natural catastrophes and man-made disasters cost society USD 218 billion in 2010

In 2010, worldwide economic losses from natural and man-made catastrophes were estimated at USD 218 billion. This represents a sharp increase over 2009, when economic losses totalled USD 68 billion. Asia was the hardest-hit region with total damages of approximately USD 75 billion. Pakistan and several large regions in China experienced extraordinary rainfall during the summer, resulting in devastating floods.

Thomas Hess, Chief Economist of Swiss Re, comments: "2010 was not only characterized by severe earthquakes that ranked among the deadliest, costliest and most powerful in history, but also by a series of extreme weather events, such as major floods. Some of these flood events sadly affected countries with poor emergency preparedness and underdeveloped insurance markets." 



Mark your calendar...

Basement flooding symposium

Basement flooding is one of the biggest challenges facing homeowners, municipal governments and personal property insurers across the country. Join us as we discuss the issue in depth, including causes, mitigative best practices, homeowner perceptions research, as well as the legal side of the issue - including discussions surrounding government liability and the role of laws and bylaws.

Presenters will include:

- City water and wastewater experts
- Researchers
- Insurance experts

An agenda and registration form can be viewed at www.iclr.org/symposium
Seating is limited—register today!

Thursday May 26, 2011
8:30 a.m. to 6:00 P.M.
Toronto Board of Trade
77 Adelaide Street West
Toronto, Ontario
M5X 1C1

Cost: \$295 per person
including HST

Contact Tracy Waddington at
416 364 8677 or
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New ICLR publication

Climate change information for adaptation: Climate trends and projected values for Canada 2010 to 2050

The 50th study in ICLR's Research Paper Series contains climate tables for 18 climatic (not political) regions in Canada, casting out to the year 2050.

Written by James P. Bruce, the paper also contains information on how to interpret and use the tables. The intent of the paper is to "demystify" climate

change to permit initiation of proactive adaptation measures.

A PDF can be downloaded at www.iclr.org 

Weather changes raise risk of sewer backup

By James Daw

Senior Writer, Insurance Bureau of Canada

The risk of raw sewage flooding basements is rising as the earth's atmosphere gets warmer, and more turbulent.

So homeowners would be wise to compare the cost of preventing damage with the cost of a potential loss. Taking action now could make homes safer, and keep home insurance more comprehensive and affordable.

Toronto, Winnipeg and Edmonton are among the cities that will pay part of the cost of adding safety features to home drainage systems. Neighbours acting together could negotiate group discounts.

Neighbourhoods will have an increased risk of sewer backup if drainage pipes carry both rain water and sewage (i.e. combined systems). But heavy rains can also infiltrate separated sewage lines, and force dirty water back into homes.

Among several storms in the past decade, two during 2005 caused sewers to back up at a cost to insurers of \$247 million in Toronto and \$145 million in Alberta, Insurance Bureau of Canada has estimated.

By 2009 the cost of sewer backup and other insured types of water damage equalled about 34 per cent of home insurance premiums across Canada.

Insurers have reacted to increasing risks by limiting coverage for sewer backup for all

policyholders or just those in districts that have had losses.

Some homes may not even be covered, because many consumers simply do not realize that sewer backup coverage is optional, not automatic, with many insurance policies.

No matter what, homeowners will not be covered for water that floods over land and suddenly enters their home through windows, doors, vents, or garages. Many conditions would have to be met before insurers would consider offering this sort of coverage, which is available in other countries.

Winnipeg and Edmonton have required backwater valves in new homes since 1979 and 1989 respectively. But the risk of sewer backup is not the same everywhere.

So national building and plumbing codes do not require all new homes to have the most effective – and costly – preventive measures, says Raman Chauhan, the technical adviser on codes and standards at the Canadian Institute of Plumbing & Heating in Toronto.

It is possible, however, to add safety items later. If installed properly, then inspected and cleared periodically, the latest generation of mainline sewer backflow valves will permit waste water to flow out of a home, and prevent sewage from flowing back in.

Cities that subsidize basement protection

Brantford
Halton Region
Hamilton
Mississauga/Peel
Niagara Falls
Ottawa
St. Catharines
Sudbury
Toronto
Vaughan
Welland
Edmonton
Saskatoon
Winnipeg

Homeowners may also want to consider adding a sump pit (water reservoir) and sump pump to carry excess ground water away from a home's foundation. Certain cities will also help with this expense. 🐾



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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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