

# VICTORIAVILLE

Incentivizing sustainable and safer homes

*By Sophie Guilbault*

## THE SCIENCE

Researchers have long been studying the behaviour of homes under extreme weather conditions, with the objective of strengthening building codes and improving construction practices. There are many ways homes can be built or renovated in a manner that will make them perform better under extreme weather conditions. While it is often easier to include recommended mitigation measures in the construction of new buildings, retrofitting is also an option when trying to improve the resilience of homes.

Several construction practices have the potential to reduce the risk of damage from various climate hazards. For instance, the installation of engineered connectors (commonly referred to as 'hurricane ties') between a house's walls and its roof can enhance the resistance of a roof during extreme wind events such as tornadoes and hurricanes. On the plumbing side, the inclusion of backwater valves on a house's sewer lateral can reduce the risk of sewer backup, particularly under extreme rainfall conditions when municipal sewer systems can become overwhelmed.

## THE TRIGGER

The City of Victoriaville is well known in the Province of Quebec for its leadership in sustainable development. The municipality was recognized on several occasions for the implementation of forward-thinking approaches to municipal governance. Initiatives that have taken place include the development of sustainable waste and drinking water management plans. In an effort to continue on the same path and pursue the City's vision, Victoriaville's Department of the Environment decided to design and implement a program that would incentivize the introduction of sustainability measures into the construction of new homes and the renovation of existing homes. In September 2010, a multidisciplinary committee composed of developers, architects, builders, and environment professionals came together and organized a meeting with the City of Victoriaville during which they discussed options to promote a sustainable housing stock in the municipality. The committee held a few subsequent meetings that resulted in the establishment of the Sustainable Housing Grant Certification Program (Habitation Durable) in 2011.

## THE APPROACH

The program offers financial incentives to both homeowners and builders for measures that increase the sustainability and climate resilience of homes. In addition to the inclusion of sustainability measures into the grid, the City also integrated climate adaptation measures. For instance, some measures are related to water and energy consumption, while others aim to provide improved thermal comfort. The City worked collaboratively with local architects to create an evaluation grid based on scientific evidence that would contribute to the development of a more sustainable housing stock. Each provision presented in the grid is associated with a specific number of points that can be applied toward a new construction project. Subsidy levels depend on the number of prescriptive provisions achieved and can lead to three different levels of certification: 3 stars (300-395 points), 4 stars



**Figure 20:** As part of the program, the City promotes the inclusion of window shutters to protect windows during severe wind events (Source: Adobe Stock Photo)

(400-495 points), and 5 stars (more than 500 points). Bonus points are awarded to homeowners who also obtain additional certifications for their projects, such as LEED and Novoclimat 2.0. In Victoriaville, each level of certification is associated with a financial assistance grant provided by the City, which ranges between \$3,000 for a 3-star certification to \$8,000 for a 5-star certification. Once a project is completed, supporting documents detailing each measure included in the home construction or renovation must be presented to the City to prove compliance. When a financial assistance grant is approved, 10 percent of the amount is given to the builder or contractor who helped prepare the compliance file for the City. While the program counts 144 optional requirements, 13 requirements have recently been made mandatory by City Council and must be included in all new construction.

The program is composed of various categories of intervention, each of which provides different options to the homeowners and builders that are associated with a specific number of points. Several building components are accounted for in the Habitation Durable program. These components include insulation levels, airtightness, and reflective roofs. Each category of intervention (e.g. heating, ventilation, foundation, roofing, etc.) provides different options to the homeowners and builders, each associated with a specific number of points. While most of the measures are implemented in an effort to promote sustainability and reduce the carbon footprint of the City, the program includes several climate adaptation measures that make homes more resilient to climate hazards. For instance, the inclusion of hurricane ties to increase the resilience of roof structures during extreme wind events is awarded 15 points under the program. The City also promotes the inclusion of window shutters to protect windows during severe wind events and provide shade during extremely hot days. The program in place in Victoriaville also promotes several passive design measures that enhance the resilience of homes during heat waves. These measures include strong envelope performance, the inclusion of shading devices for windows, and incentives to install high performance windows.

## THE OUTCOME

The program was initially developed by committees of technical experts and has been expanded to eight other municipalities in Quebec. In Victoriaville alone, the program has resulted in the construction of 376 certified new homes and 838 certified renovation projects. In 2017, one out of four new houses received the Habitation Durable certification.

An important aspect that contributes to make this program unique is the close collaboration that the city maintains with homeowners interested in participating in the Sustainable Housing Grant Certification Program. Throughout the design process, building and sustainability experts from the City of Victoriaville remain available to answer homeowners' questions and assist them by recommending specific measures that are aligned with the scope of their projects.

## A WORD FROM VICTORIANVILLE

When asked what contributed to the success of the Sustainable Housing Grant Certification Program in Victoriaville, Suzanne Bérubé, Sustainable Building Technician for the City of Victoriaville, mentioned that strong internal collaborations between various municipal services were key to the implementation of this initiative. "Making sure builders and contractors are compensated for the additional work they have to do to help their clients obtain the subsidy following the completion of the project is also very important and contributed to bring the industry on board quickly," said Ms Bérubé. She also mentioned that homeowners frequently choose to reach higher levels of certification because of the payback, which allows them to include additional features in their projects that they might have not included within their initial budget.