The LowDown
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Chelsea Highlands home not massive, it's passive

Couple reducing footprint with modest eco home

by Trevor Greenway

When Susan Young lost power for three days earlier this year at her Chelsea home, she wasn't worried about a thing — her passive home in the Chelsea Highlands development kept her warm and comfortable.

"[My husband] Eric was away fishing, and we lost power – I think from the Saturday to the Monday – and it did pretty well," said Young. "It stayed pretty warm...."

Young and Audet's passive home might not be what you'd expect for a new build in the Chelsea Highlands development in Larrimac. It's not a monster mansion pushing the 300-square-metre limit; it doesn't have spectacular views of the Hills or a giant balcony overlooking Gatineau Park. But it is nestled into nature and takes advantage of the south-facing lot with triple-pane, floor-to-ceiling windows, double-framed walls for added insulation and sealed doors and windows for an "air-tight" home.

This passive home in Chelsea was designed by EkoBuilt and constructed by Wakefield builder Marilyse Bisson of Mavie Construction. The modest, 1,700 square-foot home, including a garage, boasts triple-pane floor-to-ceiling windows, 15-foot ceilings and a high-efficiency wood stove. Trevor Greenway photo

The house was designed by Ottawa passive home company EkoBuilt, which designs passive home kits that local contractors then build. Wakefield contractor Marilyse Bisson of Mavie Construction has built four EkoBuilt homes in the Hills and explained that, while Young's house is not a certified passive home, its features go beyond

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Wakefield builder Marilyse Bisson of Mavie Construction has built four EkoBuilt homes in the Gatineau Hills and is looking to bring more eco-friendly, passive buildings to the region to reduce our environmental impact.
Trevor Greenway photo

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even Nova Climat or LEED standards — certification programs that encourage high standards of sustainable practices for home construction.

The double-framed construction of the Young-Audet home brings the walls to a thick 14 inches, and the windows flush to the outside of the house create deep window sills inside. The home also boasts a 15-inch insulated foam form surrounding the concrete slab foundation and 15-foot ceilings inside.

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The passive house or "Passivhaus" concept is a German building approach in which a building or home must adhere to a specific design standard and use 90 per cent less energy than conventional buildings. According to Gary Martin, former builder and sustainable business professor at the Sprott School of Business at Carleton University, many homes in the Hills may not adhere to the strict German standards but are still considered "passive construction."

"Passive construction is a term used more generally to indicate any measures that will reduce energy consumption for heating and cooling," he explained. "A tight building envelope, orientation for solar gain, windows designed to allow the sun in during the winter or keep it out in the summer, and lots of insulation...can be considered passive construction."

The three-bedroom, two-bathroom modest home is part of Young's big-picture thinking in reducing her carbon footprint and her desire to consume less. Young isn't only thinking about what she can do personally to help the climate emergency, but how her actions can help encourage others to do the same.

It's also about resiliency, said the civil servant, referring to warnings by climate experts that rising temperatures will bring more severe storms to the region, like May's Derecho storm. The couple also switched to a hybrid-electric car this fall and will soon have a solar battery installed in their home as an alternative to a diesel generator.

"I think I'm turning into one of those people who is climate-stressed or climate-anxious," she said. "This house not only will reduce our electricity consumption – even though electricity in Quebec is pretty clean – [but], it means that Quebec overall can be selling its clean energy elsewhere. So anything that we can do to conserve energy in our own province is going to help other people use cleaner energy."

The 1,200-square-foot home is heated primarily with electricity, but they also have a high-efficiency Osburn 75,000 BTU per hour wood stove, which complies with the most stringent North American requirements — BTU or British thermal unit is a measure of the heat content of fuels or energy sources.

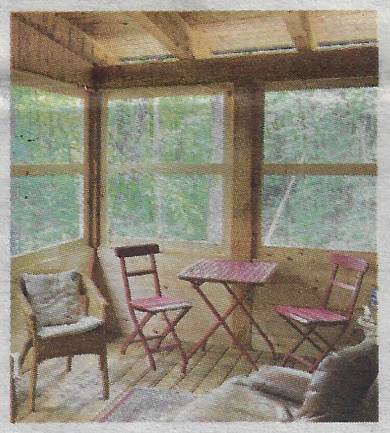
Young said it was vital for her and her husband to choose the right wood stove for their home; they used a BTU-sizing calculator to ensure they were going as environmentally-friendly as possible.

"You always feel a bit bad because you have to cut down some trees to build a house," added Young. "But we kept those resources on the site to use them in our very, very efficient wood stove...."

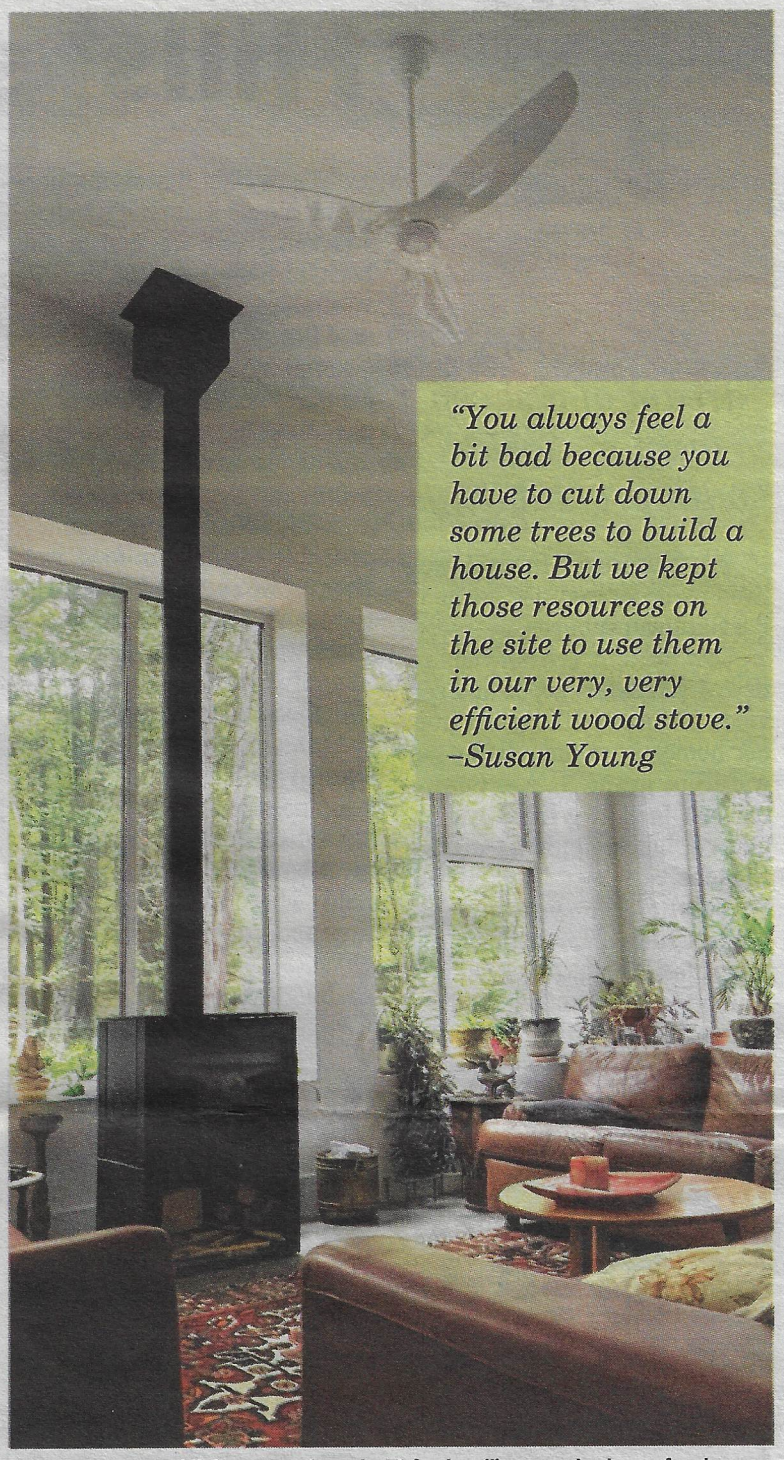
Martin told the Low Down that homeowners can quickly blow their budget on passive home projects because they go "overboard" with features that can negate your home's carbon footprint reduction.

"Although the extra labour pays back if you apply a longer timeframe to the economics of a house, not everyone can afford passive house technology or labour, especially when labour and material costs are both ballooning," cautioned Martin.

Nevertheless, Bisson said she is excited to bring more Eko-Built homes to the area so she can contribute to help slow the climate emergency. For more information on Mavie Construction, go to: mavieconstruction.com/.



This screened-in solarium is nestled amongst the trees and provides a cool hangout spot on hot summer days, which is helpful since the passive home has no air conditioning. Trevor Greenway photo



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The open-conept living room boasts 15-foot ceilings and a large fan to help circulate air throughout the home. The centrepiece Osburn woodstove radiates heat from the middle of the room, making heating efficient in winter. Photo courtesy EkoBuilt