

THE STAR

How a big renovation in a Toronto neighbourhood unfolded on a small footprint



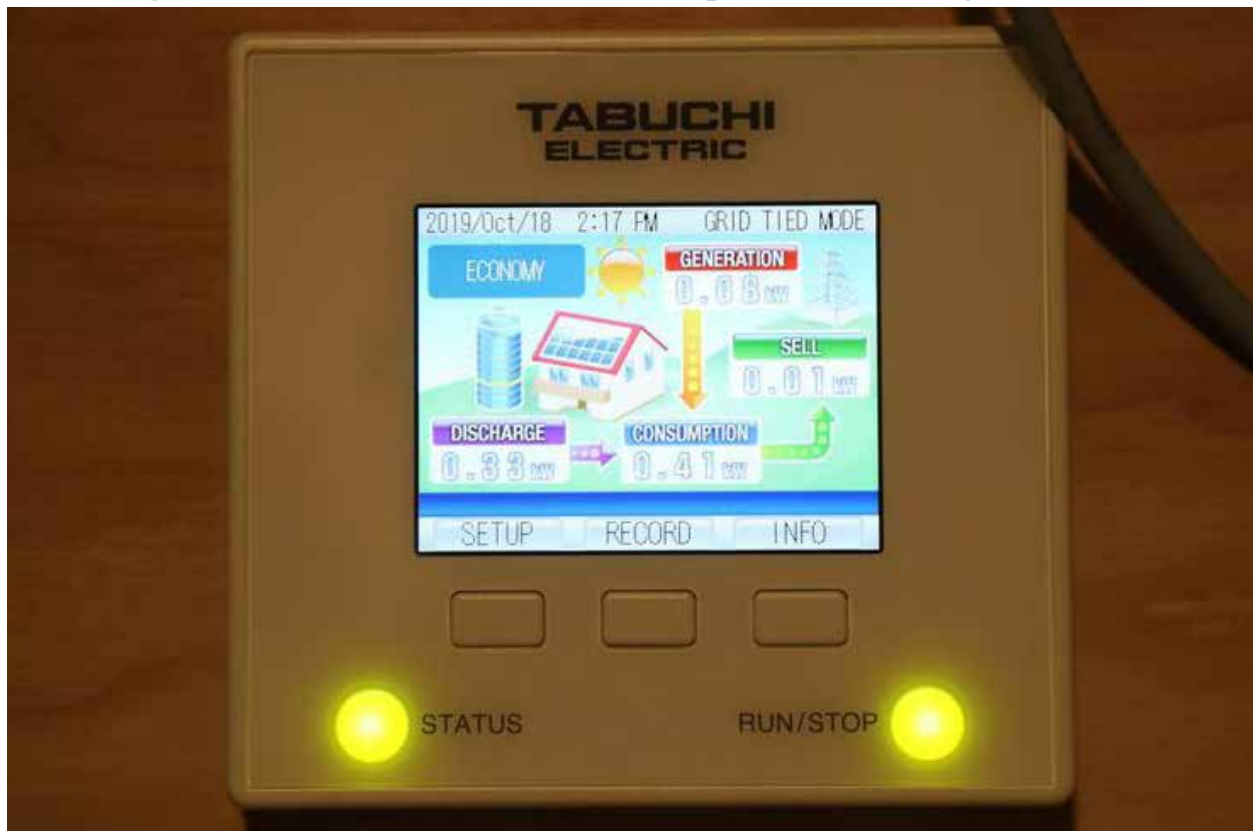
It isn't easy being green. It's not cheap either. But climate-change concerns are prompting homeowners to increasingly factor sustainability into their renovations.

“Not everybody's looking at making a change in their carbon footprint, but more people are considering it,” said Brendan Charters, development manager with [Eurodale Design + Build](#).

“And when they do, they see instant and residual benefits,” he added about



high initial costs resulting in long-term savings and benefits. One homeowner who didn't need convincing is Trish McMaster, a massage therapist who hired Eurodale to do a green renovation of her 965-square-foot bungalow in midtown's Toronto's Chaplin Estates neighbourhood.



As a board member of advocacy group Environmental Defence, she considers it a moral responsibility to do her part for the future of the planet. At the same time, she was pragmatic about making a smart financial investment in her home.

The solution was to double her square footage by adding a top floor to the original footprint. She also reclaimed an unfinished basement. Throughout it all, the priority was to employ as many sustainable and environmentally responsible building and mechanical options as possible.



The result is a stunning restoration that actually stops traffic. “People reference the ‘white house’ we did in Chaplin Estates all the time,” said Charters.

Environmental responsibility began with the basics. By working with the original structure, they avoided adding tonnes of material to the landfill and were able to save the main floor masonry walls, foundation and floor joists.

Eurodale’s production manager, Jim Cunningham, and his team created a fully-insulated envelope, including the basement floor and existing walls,

with Roxul stone wool batt insulation — an alternative to ozone-depleting spray foam.

The installation of new Energy Star-rated windows and doors ensured a tight building seal while respecting the original Georgian styling that faced the street.



A mid-efficient boiler and hot water tank were replaced by a high-efficiency combo-boiler to handle in-floor hydronics throughout the home. “The condensing rates immediately changed from 80 per cent to 98 per cent, which means all but two per cent of energy used to create heat is used versus the 20 per cent that used to fly out the chimney previously,” said Charters.

The new rooftop is metal, and “puts a stop to the typical cycle of asphalt, or fibreglass, shingles being ripped off and tossed in the landfill every 15-20 years,” said Charters.

And atop the new lifetime roof is a full array of solar panels that tie into the grid via a net metre. The [Panasonic home energy storage system](#) provides homeowner McMaster with an easy snapshot of real-time energy

consumption throughout her house, which she can access on a screen in the mechanical room in her basement or on an app on her phone.



During summer months, cooling and fresh-air ventilation come from the attic down through the second and main floors. “Purposely, no cooling was run to the basement. Instead, the ventilation system cycles air through natural convection currents and eliminates the temperature stratification so common in conventional forced air homes,” said Charters.

“The system is so efficient that after the summer, even with Hydro’s standard delivery fees, Trish already has a \$200 account credit. And the emergency backup power stored in batteries in the basement makes her ready for the next storm that attacks our fragile electricity grid,” added Charters.

When it came to materials, Forest Stewardship Council-certified lumber was used to frame the revised interior layouts, second-floor addition and roof. The engineered hardwood floors came from [Nadurra Wood Corporation](#), an eco-wood source. For finishings, McMaster chose formaldehyde-free MDF millwork cabinetry in the kitchen, bedrooms, bathroom and laundry areas. Canadian-mined quartz kitchen counters saved the emissions associated with a freight-liner shipment.

Despite a complete overhaul of the house, McMaster kept her original furniture — including a 30-year-old couch and an enormous tub that’s been in her family for generations. She added new throw pillows made from her former drapes.



On the exterior, existing double-wide brick walls were preserved and new brick was stained — which allows the masonry to breath, and creates a unified white appearance. The house overlooks a hand-dug garden, designed by local landscaping legend [Marjorie Harris](#), with native plants to attract pollinators and birds.

Charters said the project just snuck in under Ontario’s now-defunct GreenON Rebate Program. The initial outlay for the heating and cooling system alone was 50 per cent more expensive than conventional forced air.

“Without those programs that have direct impacts on ROIs and budgets, many of these important upgrades would not be possible, and this house would have a much different carbon footprint in the end.

“If there’s \$5,000 or \$15,000 on the table to make other energy-efficient improvements, it’s an opportunity for everyone to do things like what Trish has done,” Charters said.



THE NUMBERS

1994: Year the house was purchased

\$255,000: Cost of house

\$975,000+: Cost of green renovation

12 months: Length of the reno



Heather Hudson is a Toronto-based writer and a freelance contributor for the Star. Reach her at heather@heatherhudson.ca