



# Toronto Laneway LEED Home

## Zero Energy-Ready Award

A state-of-the-art, LEED Platinum home on a tiny 25-foot by 25-foot laneway property in the downtown Toronto neighbourhood of Leslieville has won a Zero Energy-Ready award in the Annual Cross Border Builder Challenge, achieving an impressive HERS (Home Energy Rating System) score of 35.

The project, built by Toronto builder Barbini Design Build in partnership with leading high-performance home product manufacturers, features the very latest in energy efficiency, indoor air quality and water conservation. “We are very honoured to receive this award. It’s been a fascinating project with lots of support from a number of valuable partners,” says Amedeo Barbini. “When it’s complete, the home will be a real showpiece, demonstrating the best in energy efficiency and design.”

The laneway project is not Barbini’s first foray into sustainable building. “Always doing our best to achieve low carbon in the homes we build, we got into a LEED approach to better indoor air quality (IAQ) 20 years ago with the help of John Godden at ClearSphere,” he explains. “Building green and better IAQ is really a parallel path. It’s always been a modelling process with checkpoints throughout the project. With LEED Platinum certification, there are a lot more boxes to check – with more things, like radon mitigation, in the basket.”

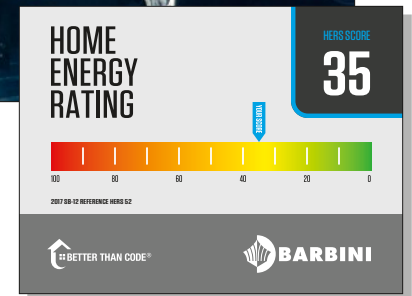
High on the LEED list for indoor environmental quality (IEQ), the



Sonny Pirrotta, Jesse Davidson, Chris Barbini and Amedeo Barbini.

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mitigation of radon gas (prevalent in most of southern Ontario) was achieved in the home with an integrated radiant floor radon mitigation system from building partner Amvic Building System, including Amrad R-12 in-slab vapour mitigation and insulation and



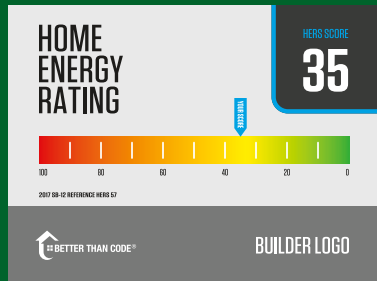
SilverBoard reflective insulation on the inside of the foundation wall.

“We’ve integrated radon mitigation and the latest in IAQ technology into the house so that it works better,” says Barbini. “When you walk into a home like this, you really feel the difference. It’s not just glam and fancy finishes or boasting that the house has A, B and C features. It’s an experiential attribute. The LEED program lets you do this.”

Another key partner in the project’s quest for better IAQ and energy efficiency was Panasonic Canada, who helped with the design of the mechanical system to make the home fossil fuel-free. “They were a top-shelf

# Better Than Code

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company to work with,” says Barbini. “All of their divisions were tremendously helpful, designing and contributing Panasonic Breathe Well products such as zoned heat pumps, ERV, NanoeX air purification, Whisper Air Repair air purifiers and Swidget air quality monitoring smart controls for monitoring, management and automation throughout the home to bring the whole system to life. On top of this, Panasonic gave workshops on their products to our trades at their location and on-site.”

In order for the Leslieville home to meet LEED standards – and win the Zero Energy-Ready award – Panasonic also contributed as many solar panels that could fit on the home’s limited 600-square-foot roof space (due to its small footprint). In addition, the company connected two batteries to the 4 kWh system for energy storage, to be used both as a backup in case of power outages and for “peak shaving” – economizing electricity rates by charging during off-peak times and using the batteries during on-peak periods.

Water conservation was another key component of LEED building. Coming to the aid of the project was a name that is synonymous with quality home water fixtures and management: Moen Canada. The company generously contributed all of the plumbing fixtures (low flow, of course); a smart shower water temperature system with the ability to remotely preheat the water from a smartphone; and its FLO water conservation system, installed where municipal water enters the home, which detects leaks in the home’s plumbing. The home includes a Greyter greywater recycling system,



which recycles shower water and uses it for the toilets.

Accounting for a significant percentage of global CO<sub>2</sub> emissions, embodied carbon refers to the greenhouse gas emissions from the manufacturing, transportation, installation, maintenance and disposal of building materials. In order to address this concern, the home’s construction involved the use of low- carbon building materials as much as possible. Project partner ROCKWOOL contributed its stone wool insulation and Building Products of Canada supplied R-5 XP wood fiber structural insulation panels.

“The Leslieville LEED home has been an exciting project with amazing partners and trades enthusiastically on board, resulting in a sustainable, well-designed, healthy and resilient home,” says Barbini. “Showcasing the latest in high-performance green building technology, such as the Swidget system – I’m really excited to see how it works – the home will demonstrate what a low-carbon home can look like and how simple it is to operate. And the owners of the property, Skye Mainstreet Properties Ltd., are really on board. They have a website devoted to the home [[leedhomes.ca](http://leedhomes.ca)], and they’re planning to host public events to show off its award-winning attributes.” **BB**



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such, he brings first-hand experience to his writing on technology and residential housing and has published numerous articles on the subject.