



All That Glitters Is Not Gold

An enthusiastic client allowed new ground to be broken with a Leslieville laneway LEED Platinum project.

What happens when your client buys in on sustainability to the degree that they won't settle for anything less but an absolute top tier product?

This very dynamic recently led to a model home that is currently being built under the LEED Platinum 4.1 certification – a first for Barbini

Construction, John Godden of Clear-sphere and client Jesse Davidson, a principal at development firm Skye Mainstreet Properties.

The fact that Davidson's company was working with a residential property was an outlier to begin with, as Skye's portfolio mainly consists of 20-foot main street retail properties

with apartments above each.

But a few years back, the company bought a building on Queen Street East, in Toronto's trendy Leslieville neighbourhood, and it came with a detached garage located in the laneway behind. The 25' x 25' lot actually had a separate title, so Skye wasn't sure what to do with it, ultimately opting to build a house.



Framing stage.



Exterior finishes.



Matthieu Danis of Building Products of Canada – almost complete.

That’s when red tape stalled the project. In fact, it took Skye four years from the time it started working on the concept until it finally got a building permit. The issue? It wasn’t technically a laneway house based on the City definition, and because the plan had them building right to the edge of the lot on all four sides, zoning variances were required for height and all the lot coverage ratios, Davidson explains.

“So as a right, none of this was permitted. All of it had to be done at Committee of Adjustments,” he says.

Planning consultant Louis Tinker of Bousfields Inc. – who apparently knows everyone in the planning department – was brought aboard. And “he worked his magic,” Davidson says.

Our eyes were opened up

After Amedeo Barbini was hired to build the home, he brought Godden

in to consult on the project. With that experience, Davidson says (see “Better Air Quality, from the Ground Up” in the fall 2022 issue, page 27), “our eyes were opened up to the many advantages of LEED building.” Yes, the cost was higher, but Davidson explained that the benefits made it worth it, including a vastly better envelope, marketing opportunities, a radon mitigation system and tremendous support from suppliers (see below for more).

Obtaining LEED Platinum certification is a lofty goal – one that involves following a very detailed scoring system checklist to secure enough points. These points are accrued through categories such as innovation and design process, the home’s location relative to amenities and transportation, water efficiency, energy and atmosphere, materials and resources, and indoor air quality.

Davidson says there are many things being done on this house that wouldn’t normally be considered. “Your typical homebuilder is only looking at what’s the most cost-effective way to get this house built and sold,” he says.

But Davidson and the many contributing suppliers have “all been intrigued by the challenge of trying to see how many amenities and luxuries we can cram into this small shoebox of a house.”

Because this home was being created as a model, Davidson says he didn’t want to miss out on any feature that was possible. In fact, striving for near perfection is one of his personal traits that has very much come into play on this project. “Once you start down that path, you’re very reluctant to say ‘no, it doesn’t need to be that good,’” he explains.



Carbon-smart R-5XP insulated sheathing.



Outlet for sub-slab radon venting system.



ROCKWOOL batts receive 2 LEED points for GREENGUARD Gold certification for low emitting products.

The hurdles continued

Unfortunately, the hurdles this project faced did not finish with the permit issue. Because of how far the house was from the main gas distribution, the quote to attach the line was around \$55,000. Davidson balked at that and instead decided to spend that money on solutions – like solar panels and battery storage – that would enable the home to be powered without any fossil fuels. Necessity is the mother of invention, right?

The best part? Davidson says this decision “made it easier to get the LEED Platinum certification.”

To say that suppliers were jumping at the opportunity to add their products to this model home is an understatement. In fact, many vendors offered up their solutions for free or for vastly reduced cost, given how badly they wanted to be able to leverage this house as a demonstration platform. “Everyone was using this as an opportunity to showcase their latest and greatest,” he says.

Key among these suppliers were Panasonic, Building Products of Canada Corp. (BP) and ROCKWOOL.

Panasonic was a major sponsor of this project, providing zoned heat pumps, solar panels with battery storage, high-efficiency ventilation

and indoor air quality controls to the home. Its Breathe Well campaign (see articles in the fall 2022 issue) was featured front and centre.

Key suppliers

“Panasonic’s been amazing; they’ve given us a number of products, [and] they’ve substantially discounted others,” Davidson says.

BP supplied its R-5 XP wood fibre Insul-Sheathing panels, a solution that does not require additional bracing or let-in bracing, explains product manager – wood fibre Matthieu Danis.

He says that when the panels are installed with the XPS facing the exterior – using proper flashing details – they not only provide an effective weather-resistant barrier, but can also be integrated into the air barrier system.

“The builders appreciated the panels due to their strength and light weight, combined with the fact that the product offered a higher permeance, allowing any trapped humidity to easily escape to the exterior of the wall assembly,” Danis adds.

BP’s sheathing earned a point towards LEED certification because it’s comprised of 98% recycled content.

Both the XP sheathing and ROCKWOOL’s stone wool insulation are

products which reduce CO₂ emissions through their manufacturing processes. “ROCKWOOL is a fantastic product,” Barbini enthuses. “It doesn’t burn.”

Scoring LEED points

The fact that it’s made just outside of Toronto using Canadian materials really helped with the LEED low-carbon impact requirements, he says.

By using ROCKWOOL in the wall cavity and flat roof, the home scored another LEED point for recycled content – but that wasn’t the only way this product helped get the home certified.

“In indoor environmental quality, ROCKWOOL batt insulation makes up 90% of the cavity insulation and receives two LEED points for its GREENGUARD Gold certification for low-emitting products,” says Sarah Southwick, ROCKWOOL’s Ontario regional manager.

Other suppliers include:

- Greyter, which supplied its grey-water recycling system (see “Shades of Grey” in the spring 2020 issue, page 16). This project is being included in the Canadian WaterSense pilot;
- Amvic Building System offered up a sub-slab radon ventilation system that’s integrated with radiant floor heating, Barbini says. Amvic’s

contribution, which includes the Amrad R-12 in-slab vapour mitigation and insulation application (which allows for the building of an insulated concrete slab that meets the radon requirements of the Building Code), helped the project score 18 LEED points for indoor environmental quality;

- Third-party Better Than Code label with a HERS 41 at 45% better than code, garnering 28 LEED points for energy;
- Moen, which contributed all the faucets and low-flow plumbing fixtures for free;
- Scavolini, an FSC-certified company, did all the kitchen cabinetry;
- Gaggenau supplied low-energy appliances;
- An energy-efficient washer/heat-pump dryer came from Miele; and
- InLine high-performance, double-glazed windows from Fiberglass Windows & Doors.

The benefits of LEED Platinum

The benefits of a LEED Platinum home are plentiful, but boil down to four interconnected areas:

Low carbon Davidson says this is “definitely one of the benefits” in a home that is 45% better than code. This is achieved through the envelope, energy efficiency and using less embodied carbon: “That whole program will take the home lower and lower in terms of carbon footprint,” Barbini says. Using locally sourced materials plays a role here, but it’s also the specifications that are employed, he adds. The home uses less energy, aided by solar panning (3.6 kW) for renewable energy, which really reduces the carbon footprint.

LEED also takes into account the home’s location relative to amenities, shopping and local transportation.

High performance Barbini explains that “in one way, these are all parallel paths,” meaning that it’s holistic and “everything feeds into everything else.” But mostly this is focused on the energy side, where there’s lower heating and cooling requirements (which positively affects utility costs). The Swidget controls (see “Behavioural Studies” in the winter 2021 issue, page 16) allow for the use of energy only when required, and the renewables to charge the battery system help fuel the home so you don’t require peak-time electricity. He says the hydronically heated floors in the basement, first floor and the garage concrete floor help maintain the desired temperature, so the heating systems aren’t always turning on and the radiant floor also stores off-peak electricity as heat.

Healthy Panasonic’s Breathe Well products (including an energy recovery ventilator [ERV] and six strategically placed Whisper Air Repair pods) play a big role here, as does Amvic’s radon mitigation solution. Barbini was so impressed with the Breathe Well products that he’s going to put them in his office. “I always like to experience something before I start recommending it.”

Durable Davidson explains that because this home is so well sealed and insulated, its heating and cooling requirements are dramatically reduced, which should allow the equipment to last longer. Barbini says this house is built to stand the test of time, and even the home exterior helps in this regard as no painting or maintenance is required.

As energy continues to become a bigger concern, North American building codes and energy programs are moving towards giving credit for and/or requiring Airtightness testing.

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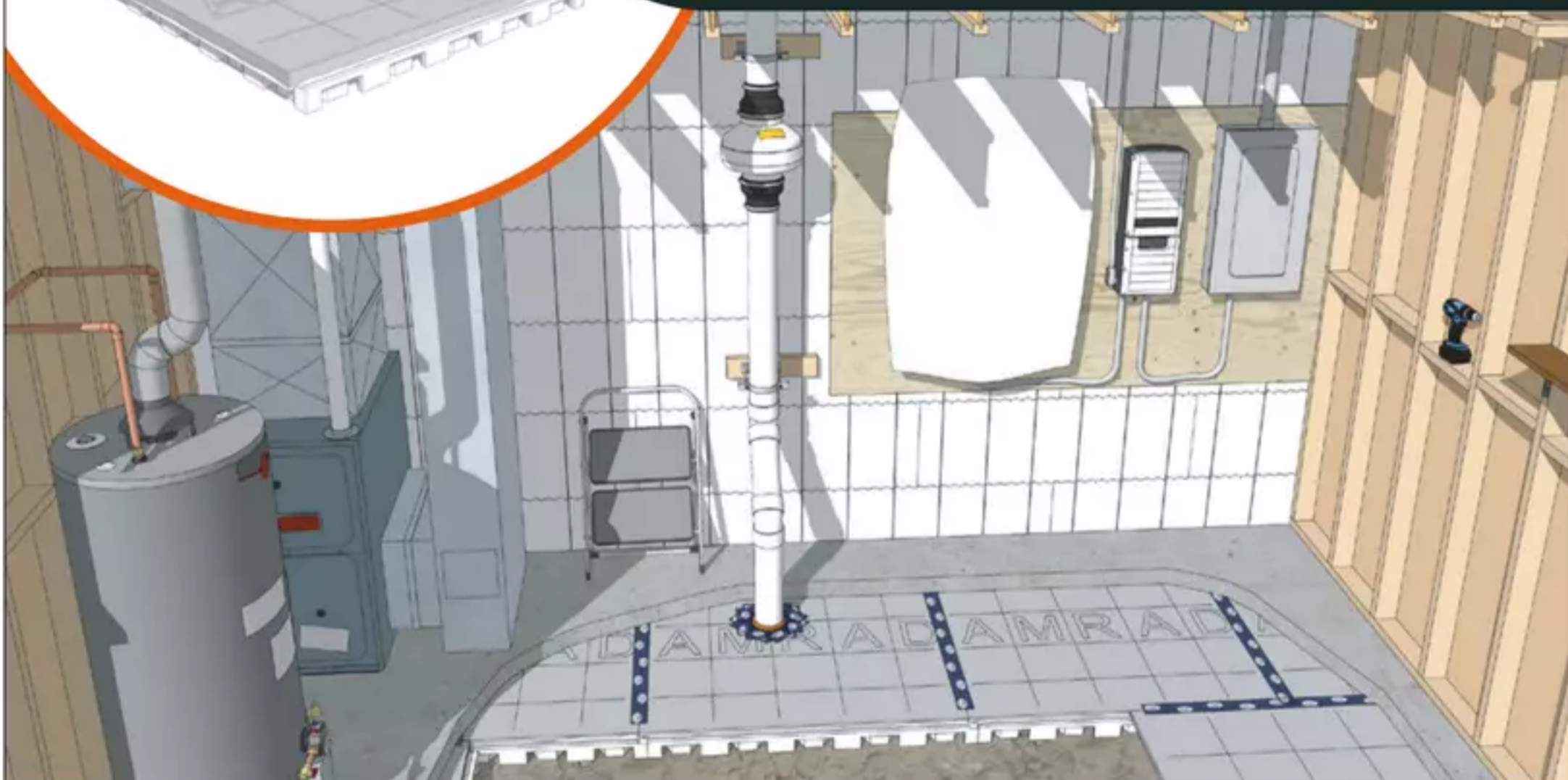
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Davidson is so inspired by this project that he hopes to use it as a template to build several more model homes over time. Of course, that raises the question of how well this will sell.

Barbini has no doubt there will be a demand for this type of product, and he can even see it being done on a production level within a few years. Gone are the days when it was hard to justify a 10% increase in a better built home that features what he always describes as “stealth comfort,” because “nobody saw it.”

The scales have tipped

Prospective homeowners traditionally were wooed by marble and hardwood, not comfort and health. But in the last 10 to 15 years, Barbini says that environmental issues have become a bigger factor – especially for younger people – that the scales have tipped, and it’s now a key consideration.

Having a home with better air quality and a lower carbon footprint are now valued. What could really sway the industry in this direction is having larger developers and politicians latching on, he says.

Barbini is adamant that builders shouldn’t wait until these techniques are mandated. “You don’t have to be told to do better; if you’re actually interested in improving, do it now.”

He maintains that there are too many builders that make beautiful, marble-adorned 7,000-square-foot homes, “but behind the walls, it’s garbage.”

Everyone on this project will come away with valuable experience and know-how that can be applied in the future, but perhaps no one will be more indelibly changed than Davidson. For him, this process will become standard fare.

Every time he works on a commercial construction project, he’s going to incorporate some of the Better Than Code building strategies because “you end up with a way better product,” he says.

“I wouldn’t touch any construction anywhere again without involving John and Amedeo because they’ve introduced me to a whole new world that I didn’t even know about.” **BB**



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