



LUXURY LANEWAY HOUSE

Breathing Well in the Energy-efficient Leslieville Laneway House

In response to the ongoing housing crisis, the City of Toronto initiated a program that would encourage the development of under-utilized laneway properties into mid-market housing units, currently in low supply throughout the region. Building laneway suites can simultaneously intensify housing and revitalize some long-neglected properties near main thoroughfares. Given their small size and location—in neighbourhoods with existing services and infrastructure—laneway suites are particularly attractive because they can be brought to market fairly quickly. The Leslieville Laneway House was developed by EcoLuxury Homes, a subsidiary of Skye Capital Partners, as a model of comfort, energy efficiency and sustainable design that would appeal to a new generation of home buyers.



⌚ CHALLENGE

Devise a complete air quality solution for a 3-bedroom luxury laneway suite featuring the latest green building products and techniques that will become standard in the production homes of the future. The solution must maintain a comfortable, healthy indoor environment with minimal energy consumption.

⊗ SOLUTION

Panasonic determined that heat pumps would be an ideal solution for efficiently heating and cooling the 2,140 ft² of living space in this four-level home. An Intelli-Balance® ERV and WhisperAir Repair® air purifiers with nanoe™ X technology were also installed to keep indoor air fresh and clean.

✓ RESULT

The project was an overwhelming success. With contributions from Panasonic and other industry partners, the home was built to the LEED v4.1 Platinum standard, achieved an impressive score of 35 on the HERS Index, and won an award for outstanding energy efficiency from a respected builders' association.

Bringing Eco-luxury to the Laneway

When Skye Capital Partners and EcoLuxury Homes decided to build a laneway suite on their 25' x 25' property in Toronto's Leslieville neighbourhood, it was never going to be just another house on the block. The challenge they set for themselves and their chosen builder, Barbini Design Build, was to communicate a very positive, forward-looking vision of urban home ownership in terms of comfort, human health, space efficiency, energy efficiency, environmental sustainability, and value. "The idea behind eco-luxury homes is that we build a product that's great for the planet but even better for the homeowner," says Jesse Davidson, Co-founder and Principal of Skye Capital Partners.

To meet Skye Capital's ambitious objectives, Barbini Design Build needed to find a highly energy-efficient HVAC solution capable of delivering exceptional heating/cooling performance and producing the healthiest possible indoor air quality (IAQ), even on the hottest, most humid summer afternoon, the coldest, driest winter evening, and the smoggiest day of the year. In addition, the components of the system would have to be physically compact enough to fit inside a small building envelope without intruding on the living space; similarly, they would have to blend into the luxurious decor without attracting undue attention.

Knowing that the HVAC system would have a huge impact on how well the finished home ultimately measured up against their client's vision, Barbini Design Build partnered with a proven industry leader that supplies best-in-class products.





The Optimal Solution for Home Comfort and Clean Indoor Air

Panasonic stepped up with a complete air quality solution designed to meet the energy-saving and healthy-living objectives of the Leslieville Laneway House. Heat pumps were chosen to deliver efficient heating and cooling, while an Intelli-Balance energy recovery ventilator (ERV) and WhisperAir Repair spot air purifiers were selected to keep the air clean and fresh throughout all four levels of this unique home.

ENERGY-EFFICIENT HEAT PUMPS

“I’ve done thousands of homes over the years. I’ve worked with a ton of clients. I own multi-unit properties. For me, making sure that climate control is efficient and that it works for every individual is all about the heat pumps,” says Scott McGillivray, real estate investor and Home Network personality.

Heat pumps can provide superior heating/cooling performance with lower energy consumption compared to conventional furnaces and air conditioners.

Ductless heat pumps can be even more energy efficient than central HVAC systems because they directly condition indoor air without the kinetic and heat energy losses that inevitably occur when air is forced through a series of ducts. With multiple units installed, occupants can individually control the temperature in each zone, giving them the option of reducing heat pump activity in unoccupied rooms. This flexible temperature control can potentially yield even greater energy savings compared to central HVAC systems, which must work extra hard to uniformly maintain the whole home at a set temperature.





HEALTHY IAQ IN EVERY ROOM

Air exchange is crucial for the comfort and well-being of a building's occupants. A well-sealed home like the Laneway House must be equipped with a mechanical exchange system that brings in fresh, filtered air from outside while exhausting stale indoor air. The Intelli-Balance ERV is a particularly energy-efficient air exchanger because it transfers heat energy and moisture content between the incoming and outgoing streams, minimizing heat pump operation and keeping humidity at optimum levels. "[Running] the Panasonic energy recovery ventilator is like having your window open all the time...without losing the energy efficiency and while cleaning the air as it comes in," says McGillivray. "Every home needs to have an ERV."



An effective IAQ strategy combines efficient ventilation by an ERV with targeted air cleaning in kitchens, bathrooms and other key locations. Installed on every floor of the Laneway House, WhisperAir Repair air purifiers use Panasonic's patented nanoe X technology to neutralize odours, allergens, particulates and other harmful pollutants. These air purifiers are standalone, maintenance-free units, with no filters to change, consuming only 4 watts of power or about as much as an LED light bulb. The ductless heat pump used in this home also features nanoe X, so it simultaneously purifies the air and adjusts the temperature.

Laneway House Achieves Award-winning Energy Efficiency

Thanks in part to Panasonic's Breathe Well indoor air quality solution, the success of the Leslieville Laneway House exceeded everyone's expectations. Upon completion, it became one of the first single-detached homes in Ontario built to the LEED Platinum v4.1 standard, the highest possible rating from the Canada Green Building Council (CAGBC). The Laneway House also earned a remarkably low score of 35 in the Home Energy Rating System (HERS) Index, an industry-standard measure of a home's energy efficiency. The Canadian Residential Energy Services Network (CRESNET) recognized this achievement by presenting Barbini Design Build and EcoLuxury Homes with the 2023 Zero Energy-Ready Award in its 10th Annual Cross Border Home Builder Challenge. Panasonic is proud to have been a partner in this award-winning project.

