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BlackBirch

Canadian cottage owner achieves year-long comfort when pairing uPVC windows and doors, with radiant heating. na.rehau.com/projects



Dramatic lake views with year round comfort



The Haliburton Highlands area in Central Ontario is a rolling tourist region of lakes, waterfalls and granite cliffs where 50-year-old family cottages share the shoreline with much newer models. BlackBirch, a “modified split-level” home built on a cliff 46 m (180 ft) above Drag Lake, is clad entirely in black corrugated steel and prefinished black wood siding.

To make full use of the views from the cliff-side home, owners Chris and Susan Meiorin incorporated large windows, including an entire wall of glass in a porch area that is a focal point of the main living space.

As architect Bradley Netkin of STAMP Architecture explains, the concept was to strategically use windows and timber to eliminate the divide between inside and outside. This was in part accomplished by applying a black polyurethane finish on both the interior and exterior of the uPVC windows and doors.

The “wall of windows” facing the lake is 21 by 6.4 m (7 by 21 ft), and is three windows stacked on top of each other, Chris Meiorin says. It was fabricated as such due to site conditions and logistics. Three 4.3 by 1.8 m (14 by 6 ft) banks of windows facing the forest are individual frames, each with four large tilt-turn windows, joined to create a 13.7 m (45 ft) wall that can be tilted-in almost its entire length.

It may seem that the use of so much glass in a location that features the extremes of all four seasons is risky. But as owner of Euro Vinyl Windows and Doors Inc. near Toronto, Chris Meiorin knows a high-quality window when he sees one. He selected REHAU System 4500 tilt-turn and fixed windows for the entire house.

“The robust construction of this window system, combined with extensive steel reinforcing, allowed the size limitations to be pushed to the maximum,” Chris Meiorin says. “Ventilation was also a crucial feature since the home has no air conditioning. The tilt-turn windows have multiple locking positions, allowing for easy venting of the whole living space.” During colder months, the high-performance system is energy efficient, earning stringent commercial ratings.

REHAU radiant heating provides four-season comfort

Speaking of those colder months, Chris Meiorin says he was pleased when the budget for BlackBirch allowed for radiant heating, which typically has a higher upfront cost than forced air but is also significantly more efficient. The decision presented more design options for Netkin, who was able to maintain the clean, open feel of the living area by incorporating a birch plywood ceiling without air ducts.

To avoid adding the weight of a concrete overpour to the timber structure, REHAU recommended RAUPANEL, a low-profile, in-floor system with 3/8 in. RAUPEX crosslinked polyethylene (PEXa) pipe inset in aluminum panels. In addition to reducing the challenges of bringing concrete to the site, the Meiorin’s were especially interested in the panel system’s efficiency and ability to heat up quickly.

The high-output system quietly and uniformly heats the floor from within and gently radiates heat upward. Thermostats can be set several degrees lower than they would be with traditional hot air systems without sacrificing comfort.

“We feel a nice consistent heat everywhere, even near the windows,” says Susan Meiorin. “We’ve used engineered wood throughout and porcelain tile that looks like wood planks in the entrance and kitchen. Because the tile feels so warm, people can’t believe it isn’t real wood.”





Another advantage of the system is the ability to heat separate zones independently – seven zones, to be exact. The three bathrooms each have their own zone, with the remaining zones for the master bedroom, guest bedrooms, main living area and unfinished basement.

If Chris and Susan are up for a winter weekend without their grown children, they don't heat the guest bedrooms or bathroom, and when the cottage is vacant, they set all the thermostats back. "We turn them down to about 13°C (55°F) when we leave and when we arrive, we turn them up to about 20°C (68°F)," says Susan Meiorin. "We're feeling quite comfortable within an hour-and-a-half, which is much quicker than in a traditional cottage."

"We love radiant so much that it's going to be our only heat source in the new house we're building in Toronto," says Susan Meiorin. "A lot of people are afraid of the cost, but it's really worth it," says Susan Meiorin.

REHAU PEXa plumbing pipe is a quiet hero

If the REHAU windows provide the home's sex appeal, and the REHAU radiant heating system is a workhorse behind (or more aptly beneath) the scenes, the REHAU PEXa plumbing pipe is a quiet hero. RAUPEX UV Shield pipe provides extended system life and optimum performance under rugged conditions. It maintains its structural integrity even after repeated bending during installation. In addition to reduced operating and maintenance costs, the pipe's high resistance to freezing and bursting is a welcomed comfort to the homeowners during Ontario's frigid winters.

REHAU edgebanding enhances décor

In a home that is anything but conventional, one other REHAU product was used in an extremely creative fashion. Black REHAU edgebanding, normally used in thin strips on the edges of laminate counter tops, was applied behind the main living space's birch plywood paneling. This black detailing not only finished the 5/8 in. spaces between the panels, but also added definition to the paneling that complements the interior design. It's a subtle yet fitting example of the flexibility and functionality of REHAU products.

© photography: Bradley Netkin, STAMP architecture and Christopher Meiorin, Euro Vinyl Windows

Project: BlackBirch, Haliburton, Ontario

Construction type: Private residence, completed in 2012

Project scope: 2,400 ft² (222 m²) living area

General contractor: Level Design Build

Architect: STAMP architecture

Window manufacturer: Euro Vinyl Windows and Doors Inc.

REHAU systems used: System 4500 tilt-turn window, RAUPANEL™ radiant heating (RAUPEX® pipe, compression-sleeve fitting system, PRO-BALANCE® manifolds), PEXa plumbing pipe, REHAU edgebanding

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