

Long-Term

A straightforward form, hardy building materials, and custom detailing result in a modern home designed for aging in place

BY KILEY JACQUES

John O'Connor and his partner, Rick Hayward, have spent years boating on Lake Huron in Ontario, Canada. When it came time to build what will be their retirement home, they chose a slice of land on the banks of Georgian Bay. Riddled with massive boulders—pieces of what Ontario Parks calls “the folded roots of ancient mountains”—the site’s preparation was intensive. Sloped topography and an electrical utility right-of-way further complicated the building plans.

The conditions resulted in the house’s long, thin form, which O’Connor, an architect, designed to take full advantage of both the lake view and the surrounding forest. The 22-ft. span, in combination with large-format lift-and-slide windows, also supports natural ventilation. O’Connor’s overall intention was to keep the structure simple and the maintenance requirements to a minimum. He

FOCAL POINT

To capture an uninterrupted lake view, the deck steps down 4 ft. from the main level. The deck's ipe handrail is the only exposed wood on the house; all other materials were chosen for their minimal maintenance requirements. Deep overhangs protect the interiors from excessive heat gain but let in low winter sunlight; they also keep bulk water away from the exteriors while allowing for passive-solar heating.



Lakeside Living

integrated custom detailing to give the home a refined character, and a nautical theme runs throughout.

Making the grade

Once the necessary trees were cleared, the site was graded to allow for gradual transitions from front to back and reduce the need for stairs—an age-in-place strategy. Incorporating a septic system so close to the water required ingenuity. O'Connor decided to elevate the grade around the septic tank using backfill from the excavation. This resulted in a berm that helped establish the desired grade change from the deck down to the waterfront. It also protects the open storage area/workshop beneath the deck from inclement weather. To blend the septic zone more thoroughly into the landscape, they seeded the area with wildflowers



and maneuvered boulders into place for seating. At the front of the house, they built up the grade to create a generous level area.

A year-round outdoor room

After two decades spent designing houses for clients, O'Connor was excited to explore the limits of what could be done in the name of outdoor living. His vision took the shape of an open-air room that serves a number of functions, and is arguably the home's most enjoyable feature. The porcelain-tiled space joins the lakeside deck and forest-side garden, while separating the guest room from the main living area and master suite. In winter it houses stacked firewood and is used as a mudroom (the dogs love it). The original design called for summer screens, but the consistent lake breeze keeps the room insect-free, so they were forfeited. "This would be a hard sell with most clients," O'Connor admits. "They'd want it glassed in and wouldn't have the patience for all of [what] went into constructing it."

As boating enthusiasts accustomed to being outdoors in all kinds of weather, the couple is especially fond of dining in this space during thunderstorms. The prefabricated volcanic-rock fireplace was built on concrete block and raised off the floor and has a cantilevered concrete hearth. The chimney is an insulated stainless-steel assembly; on the exterior, shelving displays the homeowners' rock collection. This detail is a nod to regional chimneys built using on-site stone. O'Connor describes them as "Cocoa Puff chimneys," noting they are not right for a modern house. But because he appreciates the local geology—which includes shale, sandstone, and limestone and is known for its many color variations—he was keen to incorporate it.

Insulated wood structural posts and beams clad in powder-coated stainless steel push the modern aesthetic; the material was chosen because it is not susceptible to corrosion from exposure to moisture. (Less expensive powder-coated metal clads the posts and beams in the conditioned portions of the house.) O'Connor comments on the precision required to fabricate the cladding: "You have to have a strategy for erecting the principal pieces, and then measure to get them made and powder-coated to fit," he says. "It doesn't all work out the first time—there's a lot of back and forth. Working with wood is a lot easier."

Douglas-fir scissor trusses on 12-ft. centers lend warmth to all of the metal and glass. They are intentionally simple; O'Connor notes that they feel modern without the conventional king posts. Tall purlins over the trusses contain the roof's insulation and carry the roof and ceiling fin-



A SHOWCASE FOR CRAFTSMANSHIP

A Renaissance Rumford 1500 fireplace with zero clearance provides an efficient wood-burning system that can heat the main floor. The kitchen features a custom-fabricated stainless-steel island frame fitted with a Caesarstone top and Ikea cabinets with a glossy, reflective finish. The cabinet color was chosen to match the color of the lake in winter.



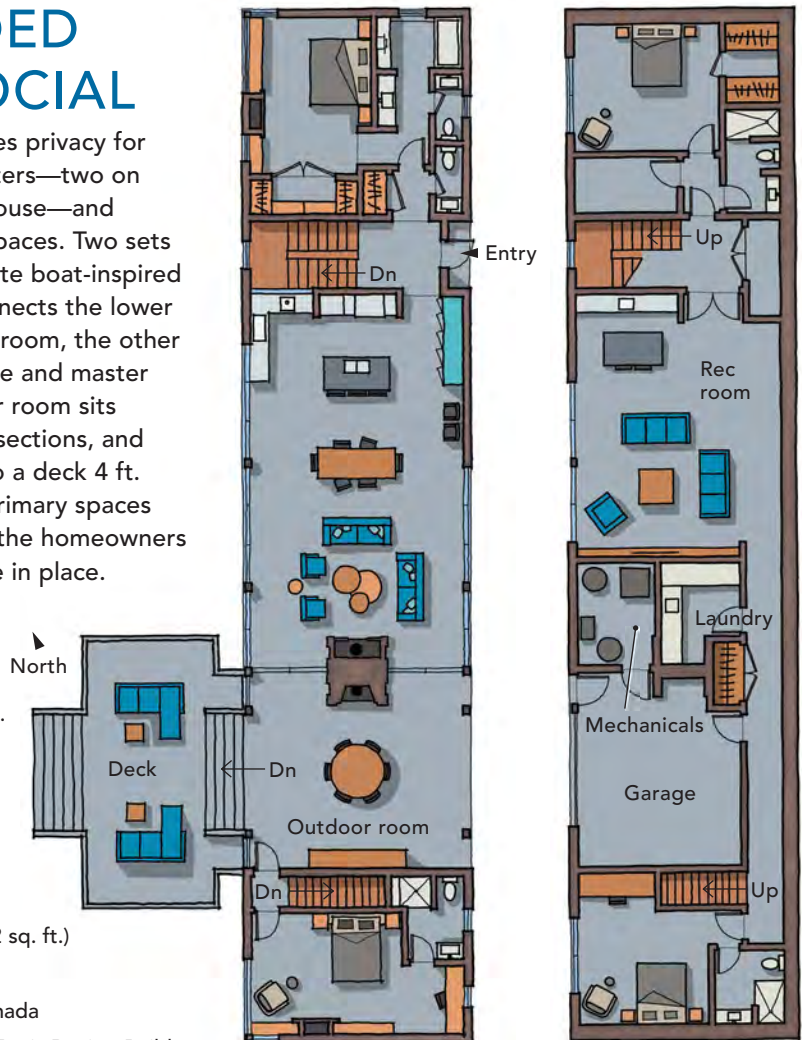
SECLUDED AND SOCIAL

The layout provides privacy for the sleeping quarters—two on each end of the house—and spacious shared spaces. Two sets of stairs incorporate boat-inspired detailing; one connects the lower level to the guest room, the other to the main volume and master suite. The outdoor room sits between the two sections, and stairs connect it to a deck 4 ft. below. With the primary spaces located at grade, the homeowners will be able to age in place.

0 4 8 16 ft.

SPECS

- Bedrooms:** 4
- Bathrooms:** 4½
- Size:** 4462 sq. ft.
(outdoor room, 482 sq. ft.)
- Completed:** 2019
- Location:** Ont., Canada
- Architect/builder:** Basis Design Build,
basisdesignbuild.com



Upper level

Lower level

ishes. For the ceiling boards, O'Connor sourced rough-sawn V-groove white pine from a local mill. Given a light-gray stain, the boards contrast nicely with the fir trusses and fit into a notch designed into them to obviate the need for trim.

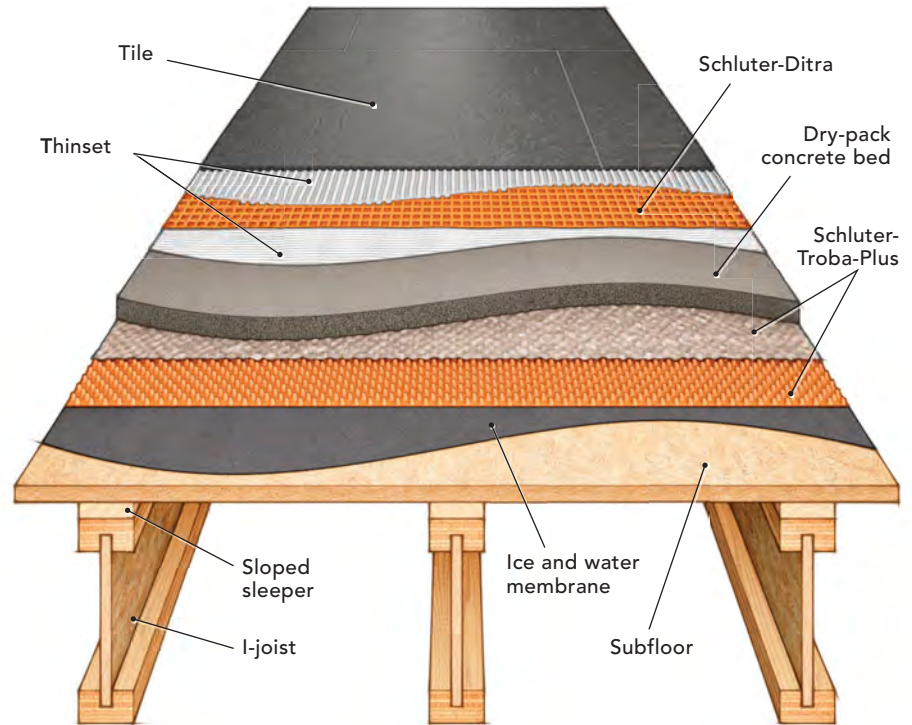
A glass wall between the main conditioned space and the outdoor room enables a continuous sightline, giving the impression of one large volume rather than a series of rooms. Cove lighting was integrated between the trusses using valences to hide LED strip tape. The intent was to direct the light toward the ceiling to avoid reflections in the windows at night. Spot lighting low on the walls illuminates the floors—a boat-inspired detail.

Streamlined siding

Having used the system once before, O'Connor chose Vicwest's 7/8-in. corrugated roofing material with a matte graphite finish for siding. He appreciates its slightly industrial feel and the fact that there are no exposed fasteners. The metal corrugation is oriented horizontally and vertical battens hide the points where the panels overlap. The 26-ga. steel promises a long life; it is not subject to warping or peeling, and it will never need painting. The result is a contemporary take on the log houses and cabins that populate the area.

In his quest for a modern aesthetic, few maintenance requirements, and sophisticated detailing, O'Connor designed a house fit for generations of lakeside living. □

Kiley Jacques is senior editor at Green Building Advisor. Photos by Vinh Le/Level Photo, courtesy of Basis Design Build.

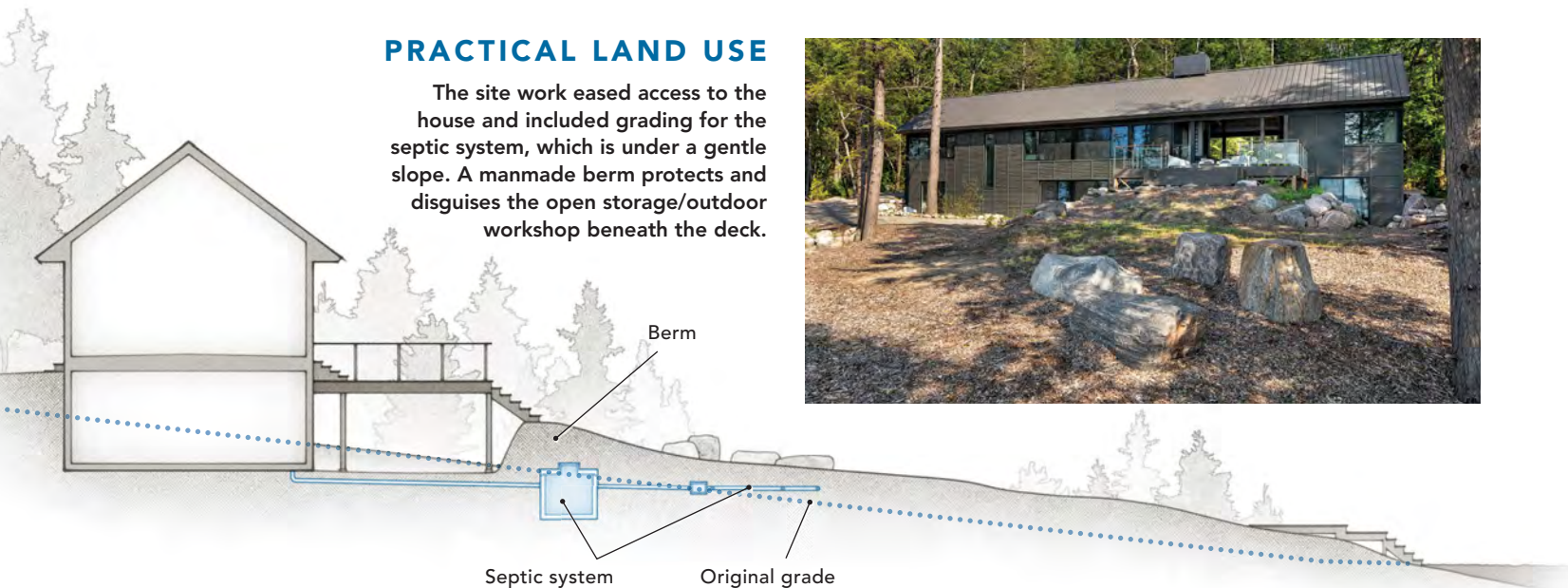


A YEAR-ROUND OUTDOOR FLOOR

Getting the proper drainage to protect an outdoor tile floor with conditioned space below in freezing temperatures is a challenge. Sleepers over the I-joist floor framing create a slope in both directions, and the subfloor above that is waterproofed with Grace Ice & Water Shield. Above that is Schluter's Troba-Plus drainage membrane followed by a dry-pack mud bed. Schluter-Ditra provides both uncoupling for the tile to allow crack-free movement and waterproofing. The 2-ft. by 4-ft. porcelain tiles are arranged in a grid pattern, with color-matched caulk in the joints. This approach is intended to prevent water from penetrating the tile layer, but if it does, the Ditra and Grace add two additional lines of defense, while the Troba provides a path for water to drain.

PRACTICAL LAND USE

The site work eased access to the house and included grading for the septic system, which is under a gentle slope. A manmade berm protects and disguises the open storage/outdoor workshop beneath the deck.



**EXPOSED BUT
COMFORTABLE**

Though the rest of the house has hydronic radiant heat in the floors, the outdoor room is entirely unconditioned; the fireplace is the heat source and natural cross ventilation provides cooling.

