


SMALL HOMES





The Right Size





Lloyd Kahn

Author of *Shelter* & *Tiny Homes*

Contents

How the book is organized: The only unifying factor here is floor area. The homes are organized in a loose* manner: artistic homes, timber frame, wooden structures, natural materials, recycled materials, off-the-grid, miscellaneous small homes, small homes in towns and cities, and a few "smaller-than-small" homes.

If you're thinking of building, buying, or fixing up a small home: Look through these pages for ideas. There's enough variety here to give you many choices.

**Loose* because many of the homes fit into multiple categories, like an off-the-grid, timber-frame home with natural and recycled materials.

Island Home

On a trip to a British Columbia island in April 2014, I was visiting Lloyd House, one of my favorite builders in the world (see Builders of the Pacific Coast*). He said, "You know, there's a house nearby I think you should see. It might be the most beautiful home I've ever been in."*

Boy, did that get my attention. So I drove over and met Graham and Gloria Herbert, and their home was, as described, exquisite — thoughtfully designed, finely crafted, artistic, colorful, and homey.

Graham and Gloria didn't want any publicity, but they knew our books and said it was OK for me to shoot photos as long as I didn't publish anything without their consent.

So now, a year-and-a-half later, I've told them about this book and they've given us the go-ahead to publish the photos. And you'll notice it's the first home in the book.

The following details are from phone conversations with Gloria.

–LK

It took them 19 months to build the house.

Graham was a second-generation boat builder, hence the curves in design.

Gloria and Graham got together on this small island, and eventually decided they would build a house. "We're going to build a house and then have a party and get married," they told a friend.

The friend replied, "Get married first, then build the house" — which they did. There's a lot of stress in building a home, and being married meant they were committed to working things out.

When I was there, Gloria said they'd had hundreds of arguments while building — "lively discussions." When I asked her what these arguments were about, she laughed and said. "Well, they were the same arguments 100 times over — and we both won."

It felt really good there. Wood and stone, meticulous craftsmanship, vibrant colors, paintings, fabrics, stored food — all the things that make a beautiful home.

"We would row out at night in search of logs, towing them back home."

It took them 19 months to build the house. First, Graham built a model; they wanted a low profile. Graham was a second-generation boat builder, hence the curves in design.

They purchased the framing lumber and got all the posts and beams off the beach. For all the other lumber — floors, walls, counters, ceilings — they milled lumber from trees cut down in clearing the building site: balsam fir and Douglas fir.

They got stones from a gravel pit on another island, and collected logs used for the stairway and window trim from nearby beaches. Graham had built an 18′ wooden rowboat and they would row out at night in search of logs, towing them back home. "We'd need, say, an 8′ log with a bend to the right, and go out looking for it."

Gloria: "Graham and I tackled trimming the first outside window; when we finished, he told me to find a carpenter to help me because I was way too fussy for his style."

They went through four local builders until they found one willing to do the window trim with driftwood logs; it took three weeks. There are 70 panes of glass, including the skylights, and, although surrounded by trees, the house is filled with light.

The house has radiant heating, with pipes in the floors.

Floor Area: 1200 sq. ft. / 111 m²

For all the other lumber — floors, walls, counters, ceilings — they milled lumber from trees cut down in clearing the building site: balsam fir and Douglas fir.

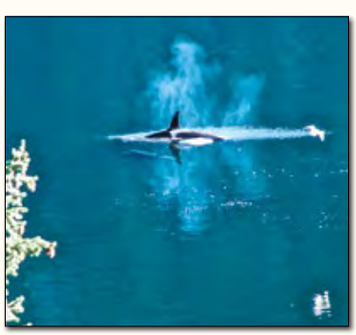
More...

Graham's workshop/studio; he does his painting upstairs and builds boats, etc. downstairs. Photos, top left on opposite page, and above and below on this page, by Graham and Gloria.

Shake Cottage on Vancouver Island

Bruce Winckler

When people see this cottage for the first time…a smile comes to their faces.



While cruising the Internet looking for a cottage design for a special location, I came across the Lindcroft Homes website. They had constructed a whimsical kids' treehouse that spoke to me.

I contacted them to ask if they could build a cottage here on Vancouver Island with similar lines. They had a design that they wanted to show me. We initially met in the summer of 2009.

They liked the location and I felt their design would fit perfectly into the building site. It's at the end of a kilometer-long, gated driveway and is only visible from the water.

Construction started in October 2009. Tim and Daniel* both lived on the mainland near Vancouver at the time, but rented a house here on the island during the construction.

**Builders: Tim Lindberg (left) and Daniel Huscroft (right)*

All materials had to be packed to the difficult site manually. Nothing was easy with this build, but we all felt that the completed project would be well worth the effort. This was a labor of love. Great care went into all aspects of this cottage.

The timbers, floorboards, front door, and windows were all made from wood milled locally from a friend's property. The shakes were sourced from a supplier on this island; the shakes for the top part of the building were steamed to achieve the curves and a curved froe was used for the rounded eaves. Lots of work!

After the timber frame was up, a level was no longer a useful tool. To achieve the right lines, almost each board was custom cut, making for a slow, tedious pace. The boys building it knew it wasn't for the faint of heart!

Local metal artist Jake James made the front-door hardware and mushroom-shaped bathroom vent. The landscape materials are all local.

Tim and Daniel completed the basic structure in March 2010; the interior took another four months to finish.

When people see this cottage for the first time — almost without exception — a smile comes to their faces.

It was a pleasure to work with Tim and Daniel; we are considering doing another project of the same nature with them in the future.

Floor Area: 600 sq. ft. / 56 m²

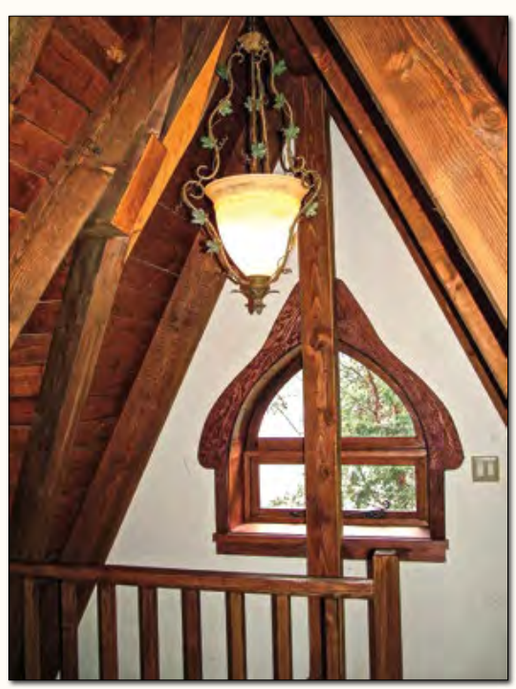
www.lindcroft.com

The Coast Guard came by for a look one day.

The shakes for the top part of the building were steamed to achieve the curves.

This was a labor of love.

It's at the end of a kilometer-long gated driveway and is only visible from the water.



Digger Mountain Cabin

Scott McClure

Second-growth Douglas fir trees were selected and cut from the hill above the building site, milled on the landing, and trucked 35 miles to my shop for fabrication.

Twenty-seven road miles from the Pacific Ocean, my client bought his tree farm in the middle of the Oregon Coast Range in 1971. There was an old cabin (one of the two original homesteads on the property) right next to the present building site, slowly settling into the duff of the three-stemmed redwood tree now growing hard up against its south eave. The house is home to numerous small creatures; we rescued a lethargic bat while removing windows and other salvage before demolition. Some folks hopefully wondered if the demolition of the old cabin meant that many old stories were now safely put to rest, reaching a kind of statute of limitations.

An artist, potter, and teacher of pottery for many years, my client built a wood-fired anagama kiln on the property in 1990, the third wood-fired kiln constructed in the state. Fired twice a year, it is a four-day process and consumes more than four cords of wood to reach temperature.* It takes a fair-sized crew to do this efficiently and about siz or seven years ago a ceramics studio was built, with a full bath, work sink, and a woodstove — the upstairs being used as sleeping quarters. This worked well as a warm, dry place to hang out in during firings and occasional visits, but Jay and his partner wanted a space of their own they could retreat to during firings, as well as a place they could call home after his retirement.

The plans were drawn by my good friend Terry Johnson and we stayed with his basic space plan of just over 1100 sq. ft., though we did squeeze in a half-bath upstairs, thanks to my creative plumber friend Pat and a carefully placed skylight for headroom. We also added a 12′×12′ covered porch on the south end, framed using timber from the site as well as a couple of juniper posts that we scrounged from a pile we stumbled across out in the meadow. A smaller, covered porch shelters the laundry-room door to the north.

Second-growth Douglas fir trees were selected and cut from the hill above the building site, milled on the landing, and trucked 35 miles to my shop for fabrication. The board and batt siding is also Doug fir from the property. Bigleaf maple and Oregon white oak were also milled and eventually turned into siding, flooring, stair parts, mantle, and other trim. Door and window casings were clear, western red cedar salvaged from the old cabin, topped with live edge pieces straight from the slash pile.

The rafters are covered in T&G pine, with 9½″ of EPS rigid foam above as insulation. The timber frame is wrapped with 2′×6′ walls filled with blown-in-place fiberglass. R-38 fiberglass batts insulate the floor. Heat is supplied by the soapstone woodstove, though there are three electric heaters (bath, living, and upstairs) installed to satisfy the building code. The lighting is all LED and really shows off the timber frame. Reports are that it's an easy place to keep comfortable with a minimum of effort; the owners are very pleased with the space.

This project was a joy. The clients are wonderful humans. I am a lucky builder.

Floor area: 1100 sq. ft. / 102 m²

www.confluencebuilds.com

**Info on anagama kilns:*
www.jaywidmer.us

"We stayed with his basic space plan of just over 1100 sq. ft., though we did squeeze in a half-bath upstairs."

More...

"This project was a joy. The clients are wonderful humans. I am a lucky builder."

Small Timber Frame Home in German Forest

Marco Trauth

Photos: Shahab Gabriel Behzumi

While walking along the Way of St. James (a pilgrimage trail from Germany to northwestern Spain), I had an inspiration on the very first day. After quitting school and traveling by bus, sailboat, and by foot, it seemed wrong to start another adventure without having a shelter to return to.

So I changed my direction and thought about where I could build, and what kind of house. My family owned a nice piece of land in the middle of a forest, so I decided to build a tree house there. A week later, I read a book, bought some wood, borrowed the most important tools, and started right away.

It was a nice time and very good example of "learning by doing." I was pretty proud of my accomplishment and for the next five years, the tree house was my home.

Then I started gardening and built a stone oven in a traditional way for baking bread and pizza. I shared my life with some friends, and a lot of visitors and WWOOFers (World Wide Opportunities on Organic Farms).

Two years ago I felt the need for more living space, so I decided to build a timber frame home. I felled trees on my site and had them milled on a portable sawmill. Last year, a friend and I started to prepare the timbers. We did 95 percent of the cutting with Japanese handsaws. Working in the sun with your very own body power and no noisy electrical appliances is a whole different way of building!

The house has power supplied by the sun and running water from a source nearby. Hot water is supplied by a Biomeiler: a specially designed compost heap with pipes inside *(see below)*. The rain gutter is carved out of one piece of larch. The roof is covered with 120-year-old handmade tiles and insulated by a mixture of clay, straw, hemp, and feathers.

Now that the house is finished, I would like to continue my mission of worldwide carpentry.

Floor Area: 250 sq. ft. / 23 m²

Contact: ***ventura@mail.de***

Biomeiler water heating compost piles: ***www.shltr.net/biomeiler***

"The roof is covered with 120-year-old handmade tiles."

"We did 95 percent of the cutting with Japanese handsaws."

"Working in the sun with your very own body power and no noisy electrical appliances is a whole different way of building!"

"For the next five years, the treehouse was my home."

"I saw it more as set design than architecture."

Off-the-Grid Cabin in California Woods

Tony Anderson

When my brother and I bought land in remote coastal Northern California in the '70s, our parents, Bob and Jean Anderson, jumped at the opportunity to build a small home on our place.

Bob was a retired filmmaker, and Jean a travel agent, so they had seen a lot of the world from which to get ideas for building.

"I saw it more as set design than architecture," Bob said about the 665-square-foot house.

Built with standard stud-wall framing and locally milled wood, he added a half-timbered facade on the exterior, complete with stucco peeling away to expose brick. My mom and dad were both meticulous about trying to make the place look instantly old, in a European way.

Interior posts and beams were cut and peeled on-site (by Jean, using a draw knife). In order not to have too boxy a feeling and to add variation, there are several bay windows and entrance nooks.

There are two decks; one reached by a bridge over a small stream and wrapped around a large fir tree, the other shaded by a vine-covered ramada of fir poles.

An 8-foot slab of a tree was split in half to form a three-inch-thick, built-in dining table/bar. All the windows and doors are made of recycled materials.

Upstairs, there is a small, covered porch where you can sit and contemplate the canyon below. A couple of steps away is the bathhouse, with a bottle wall in the shower.

The overall feeling here is off-the-grid contemplative peacefulness; no Internet, no cell reception, just a snug, half-timbered cottage overlooking the ocean and forest.

Floor Area: 665 sq. ft. / 62 m²

Interior posts and beams were cut and peeled on-site.

The below three photos by Sienna Anderson in 2016 (who is center in the photo at above right, taken by me in 2005, at age 12)

"No Internet, no cell reception, just a snug, half-timbered cottage overlooking the ocean and forest."

Sally's Beach Cabin

Michael McNamara

It was winter. Sally and I had been together for a little over a year. After living on neighboring islands for many years, we found each other and decided to live together on one.

At the same time, in an attempt to heal a land partnership gone sideways, Sally had traded houses with her land partner, given up the main house, and taken ownership of the 400-square-foot guest cabin.

The first visit in January with a few inches of wet snow on the ground and rain dripping from the eaves was a bit daunting. Sally wondered what she had taken on.

There was almost no plumbing in the cabin. No septic system. The shower was outside; the outhouse sported a urinal; decks were rotting away; gardens were overrun; a prolific second-growth forest was in the process of reclaiming the place.

I'd worked as a designer/builder long enough to be comfortable with the sow's ear phenomenon. In many ways I'd rather deal with a suffering site that has potential than with a pristine natural setting that is better off without human intervention.

And there were good things: The cabin had good bones, and best of all, it was well-sited, oriented with reverence to a tiny point of land that formed mini-bays on each side, looking out to the southwest over Baynes Sound and the mountains of Vancouver Island. A well-built, two-story workshop had been placed in the forest 40 or so feet behind the cabin.

We started by getting rid of rotting decks, loads of junk, and trimming back the forest so the space could breathe. We installed a decent foundation, rationalized incoming service lines, and scoped out a wastewater disposal system. We stripped the cabin and workshop down to the studs.

Hoping to tie the various parts together and bring things more in line with our needs, we positioned a small storage shed between the cabin and the shop, and connected the buildings with a covered walkway.

In a small home, spaces really need to work together, doing double duty wherever possible. Often it's a good idea to position key elements in corners so that diagonal sightlines extend the feeling of space.

In a counterintuitive move, we made the cabin space seem larger by building a dividing wall, creating an entranceway and an adjacent hallway with a powder room at one end. It's a gallery, a place to leave your shoes, hang up your gear, and adjust the sound system. Open shelves and a pass-through for firewood create a sense of flow.

The built-in bed, a European-style nook, is tucked in against the dividing wall which has softly lit display niches. A generous bay window at the head of the bed lets in the sea breezes and provides space for mementos, books, and morning coffee. The wall at the foot of the bed makes a corner for the woodstove.

In a few places, we bumped out walls at waist height to add space without increasing floor area.

The cabin had good bones, and best of all, it was well-sited.

Photos by Michael McNamara

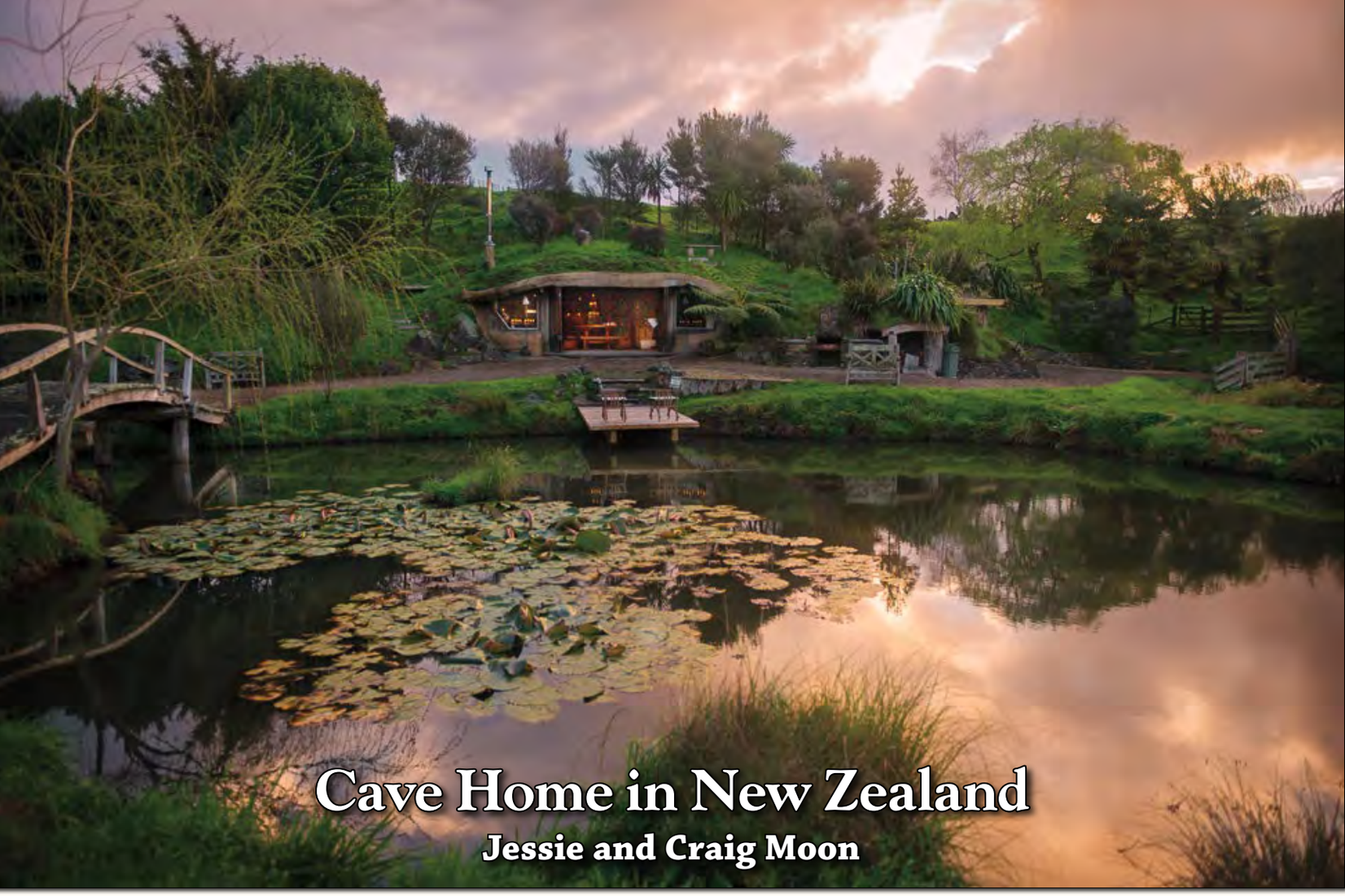
In a small home, spaces really need to work together, doing double duty wherever possible.

A substantial concrete planter supports one end of the deck, creating an outdoor living area, shaded in summer by grape leaves. It's also a buffer against high winter tides.

The converted workshop — connected by a covered walkway — is multifunctional. Used as a studio, it has a bathroom with soaker tub and showers, along with closets, laundry, and open space. Upstairs, accessible by an outside stairway, is more studio space and storage.

Fifteen years later the little place is as sweet as ever, and serves as a much-loved retreat.

Floor Area: 400 sq. ft. / 37 m²



Cave Home in New Zealand

Jessie and Craig Moon

Leaving his English home at the age of 16 to travel the world, Graham Hannah had his heart set on settling down in rural New Zealand. As an intrepid traveler, he had passed through many countries, including Afghanistan, Iran, Istanbul, and Iraq, and had stayed with many locals in their homes, some built into the sides of hills in the desert.

In 1972, he purchased a beautiful, 15-acre homestead in the Waikato agricultural region of New Zealand. Soon after purchasing the property, he decided to create a secluded stream and pond area at the lower end of the property, with an underground retreat in the bank overlooking the pond and countryside.

He dug out an area of about 120 sq. ft. in the bank, leaving the space open to the sky. His aim was to create a cave-type dwelling that was stable, dry, and free of moisture seepage through the clay walls — and to use all natural materials in the process.

Using huge beams of local New Zealand timbers, he framed a structure within the "cave" and filled the entire area with tons of compacted sand, covering both the vertical and horizontal beams. He then laid large river stones from the local mountain stream on top of the sand. To create the roof of the cave, he mixed reinforced concrete, which was poured over the sand and river stones, with the concrete roof being embedded in the existing bank of solid clay walls.

Leaving his English home at the age of 16 to travel the world, Graham Hannah had his heart set on settling down in rural New Zealand.

Creator of the cave house, Graham Hannah with his granddaughters Piper and Frankie

Once the concrete set up, the sand was dug out, leaving the vertical and horizontal beams and the exposed river stones locked into the concrete roof structure.

Drainage paths were formed around the perimeter so no moisture would enter the living space. The clay walls were sealed and plastered to create the effect of a traditional cave.

Windows and doors look out over the pond and rural vista and were crafted by local artists, using hundred-year-old timbers; the windows and doors follow the contours of the cave's structure.

The interior of the cave feels like stepping back in time 150 years. Cooking and hot water are provided by a coal range built in 1890, with hot and cold water running through brass and copper piping. Oil lighting and candles provide a wonderful ambient glow whilst a luxurious double bed with woolen duvet, and possum-fur–covered cushions is molded into the bank of the cave.

In a smaller cave is the bathroom, with a composting toilet and underground shower area. Outside, there is a turn-of-the-century, cast iron, claw-foot bathtub overlooking the countryside.

In 2012, Graham's daughter Jessie and her husband Craig purchased the property and decided to offer guests the opportunity of spending time in this unique environment, which is now referred to as Underhill. The secret location in the heart of the Waikato countryside attracts guests from all over the world.

Floor Area: 260 sq. ft. / 24 m²

www.canopycamping.co.nz/underhill

Aerial shot of Underhill Valley. Photo: Colin Ennor and Sergio Lopez

Note bed, handcrafted table, wooden beams, rock work on ceiling

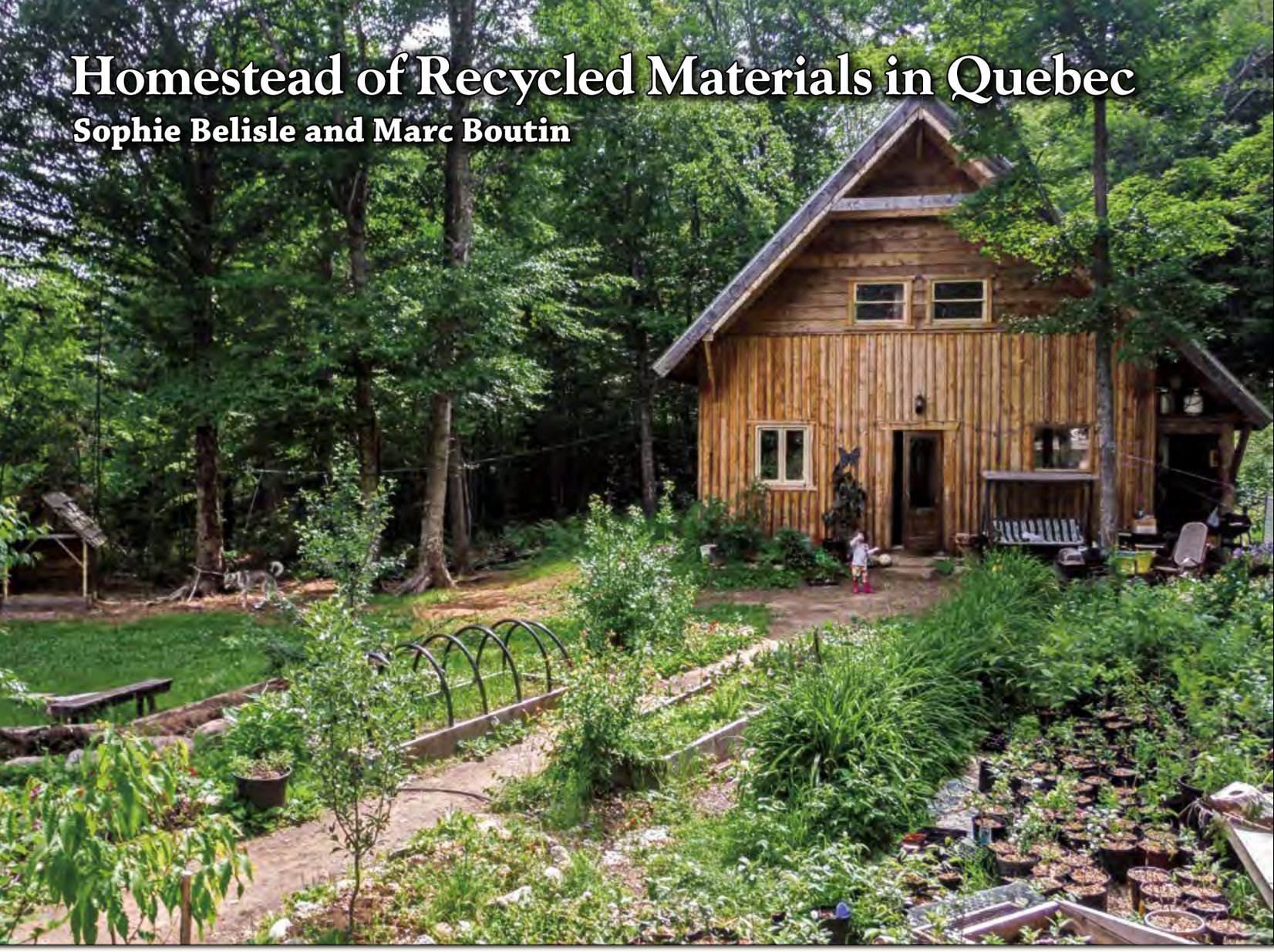
The interior of the cave feels like stepping back in time 150 years.

View of pond from shower

Photo: Sebastian Walter

Homestead of Recycled Materials in Quebec

Sophie Belisle and Marc Boutin



Dear Lloyd & small home lovers,

Marc and I met in 2006. Our immediate goal as a couple was to build our own home. We believe in scavenging and recycling, so we decided to build with as much free stuff as possible.

We began our search for the perfect piece of land as well as drawing up the plans of the new home.

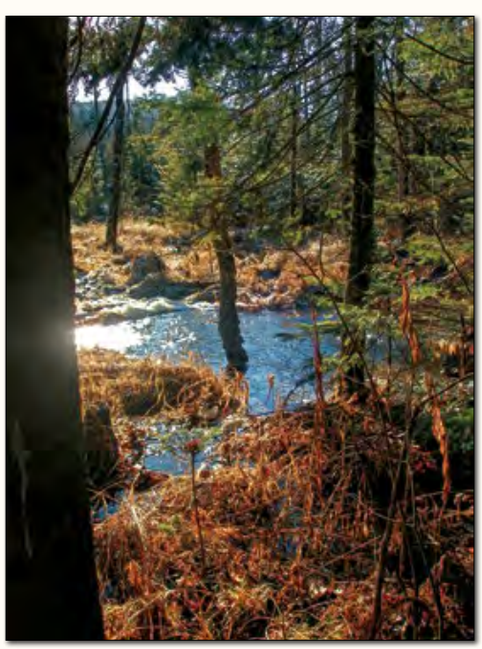
In the fall of 2008, we came across an opportunity to pick up pine trees that were locally cut. We adapted our plans to the amount of wood available. We hired a local sawmill owner to cut the timbers for us.

That winter we rented a shop and prebuilt a 24′ × 30′ timber frame of 9″ × 9″ pine. The joinery is mortise-and-tenon, sculpted with mallet and chisels.

During winter 2009, a client offered to tear down a house for salvaging materials. *Mercí la vie!* We continued our search for land, which paid off in the spring of 2009 when we acquired 5½ acres in Val-Morin, Quebec.

The house is raised on a concrete slab. Hemp oil is used as a preservative for the wood inside and outside the house. There is a minimum of electrical light and heating required because the main fenestration is south-facing.

We believe the 1200-square-foot home is suitable for six people. Seventy-five percent of the building materials are recycled.



We use a surface well and a traditional system for greywater. Our piece of land has three cascading streams, an island of an acre with a wooden platform and a tipi, a wetland, and mature forest.

Our home building and landscaping are guided by Permaculture principles. We have implemented an edible forest garden of 150 fruit and nut trees, vines, shrubs, and small berries, as well as our vegetable garden. Our philosophy is to aim towards food security for the family and slowly educate our neighbors to plant shared orchards on public land.

I am a birth doula, a death midwife, and firefighter.

Marc works in landscaping, gardening, dangerous tree removal, and traditional construction of log and timber frame.

We currently live in our home with four children: Sonam, 15; River, 7; Dylan, 6; and India Rose, 4; as well as Boots, the cat and Balto, the husky.

Floor Area: 1200 sq. ft. / 111 m²

lavieenvertdesign.blogspot.ca

The joinery is mortise-and-tenon, sculpted with mallet and chisels.

SPECS

Bedrooms: 3

Bathroom: 1

Foundation: Concrete slab

Construction: Mortise-and-tenon timber frame with 2″×6″ studs and afters

Siding: Exterior walls, tamarack board and batten, 50% recycled; gable ends, recycled western red cedar; trim: black recycled cherry, milled locally

Roof: Cathedral collar tie roof system is 3″×8″ spruce.

Insulation: R30 Airmetic soy spray foam

Sheathing: V-joint pine inside and galvanized tin outside

Heat: Electrical. Convectair convection heaters are 60% recycled; woodstove is slow-burning and meets environmental codes.

Electrical Service: Electrical panel recycled. Electrical and Internet wires buried to eliminate visual pollution

Windows: 60% recycled

Stairs: Local wood

Floors: Recycled pine, oak, spruce, maple, red pine

Kitchen: recycled sink; cupboards: recycled pine milled locally, mahogany palettes, tamarack, and recycled cherry, milled locally

Bathroom: Toilet, sink, hot water tank, water reservoir, bath, and plumbing fixtures all recycled

Bedrooms: Walls in the lofts are 100% recycled pine.

Finishing: Living room: barn siding; dining room and kitchen: recycled v-joint pine; entrance: 14″ white pine salvaged from tree work, cut and milled locally; short walls inside loft area: recycled red cedar shingles; moldings: butternut and cedar bought and milled locally

"We decided to build with as much free stuff as possible."

"A minimum of electrical light and heating is required because the main fenestration is south-facing."

Small Home in Minnesota

Frank Rodrigue

My 16′ × 20′ home sits on a concrete slab which was poured on my birthday, August 1st, with the help of several friends who had experience with concrete; it was my first time working with it.

The slab was smoothed with hand trowels so that we could create a uniquely textured finish.

This spring I acid-stained the concrete to create a more natural-looking surface.

The small footprint of 320 square feet, not including the sleeping loft, is actually quite spacious due to the number of windows, tall ceilings, and open floor plan made possible by a main carrying beam.

Passively designed, the house is easy to heat and cool. The concrete slab acts as thermal mass as light passes through the southern exposed windows, which also lets in lots of natural light, as well as warmth. The tall ceilings, with the clerestory windows, act as a "chimney" in the summer, allowing for any warm air to escape, while the elongated eaves help shade the windows from direct sunlight.

Heating for the home is currently provided by a centrally located Vermont Castings green enamel woodstove with a glass front—adding the perfect ambiance on a cold winter evening.

Interior wall coverings will be a mix of shiplap pine and sheetrock for a varied wall surface and to allow for different paint colors.

The bathroom floor is constructed 18″ above the slab so that all of the plumbing can be accessible above the concrete (besides the main drain and sleeve for the future waterline).

The electric source consists of a generator, and a vehicle battery jump-start kit, which can be plugged directly into the wall to power the outlets; solar will be next.

Roofing consists of gray metal sheets and the exterior siding will consist of locally harvested and milled cedar shakes.

I have done all construction on the building myself after work and on weekends with the help of a childhood friend—both of us rather inexperienced.

From the start, my goals for the project have been: mortgage-free, easy to maintain, and doing as much of the work myself as possible. Future landscape plans include low-maintenance, edible plants, with a permaculture focus, an outdoor rock wood-fired oven using rocks from the property as well as a smoker, natural swimming pool, wood-fired hot tub, and coppiced woodlot.

Floor Area: 320 sq. ft. / 30 m²

"From the start, my goals for the project have been: mortgage-free, easy to maintain, and doing as much of the work myself as possible."


1


2


3


4


5


6

"Passively designed, the house is easy to heat and cool."

Inspiration board

"The bathroom floor is constructed…so that all of the plumbing can be accessible."

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