Dwell Magazine

Construction Diary: A Maine Designer Builds His Family’s Home Completely by Hand

Andrew Frederick worked with healthy, locally sourced materials to DIY a woodsy compound for his wife and two kids.

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Photos by
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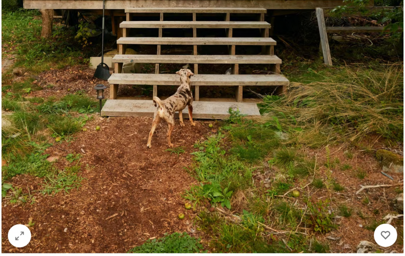
In the 1960s, Betsy Frederick’s grandparents’ property in Owls Head, Maine, was struck by lightning. It caused a fire that cleared a half acre on a small hilltop, close to where members of her family still live. Wanting to raise their two children there, Betsy, a midwife, and her husband, Andrew, who runs his design-build firm Croft (which makes carbon-sequestering prefab panels), located a site on the hill to create a new home for their family. Andrew relied on his architecture education and carpentry background to build it largely himself, by hand.



Andrew and Betsy Frederick's Maine home comprises two volumes with clapboard siding treated with pine tar to preserve it. A deck at the rear of the home leads to floating walkways that hide plumbing.

Photo Categories: outdoor, side yard, decking patio, porch, deck, walkways, front yard, grass, woodland, shrubs, trees, large patio, porch, deck, wood patio, porch, deck

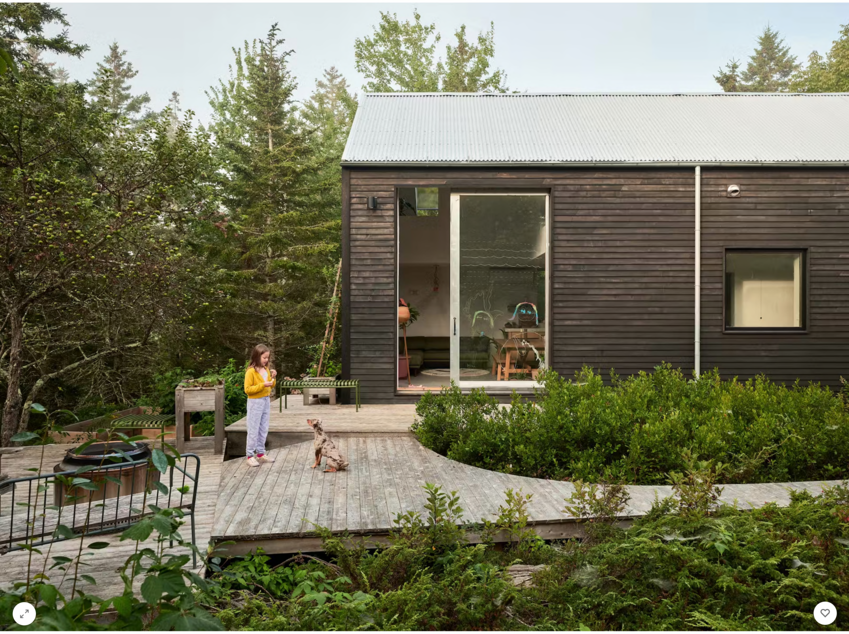


Photo Categories: outdoor, wood patio, porch, deck, large patio, porch, deck, front yard, shrubs, walkways, trees, woodland, decking patio, porch, deck, garden

Part of the go-it-yourself plan was to avoid labor costs, which would have eaten into the budget, but Andrew and Betsy also wanted to touch every part of the process to create the healthiest and most environmentally friendly home they could. That meant no paint and no diesel-powered machinery, among other criteria. Keeping the plan small at 1,040 square feet across two structures—one for living areas and another containing the primary suite, the two connected internally and with outdoor walkways—

gave them a big advantage when it came time to build.

Photo Categories: living room, sofa, pendant lighting, stools, storage, sectional, wall lighting, concrete floors

Andrew sits at an oak Ikea Möckelby table near the back entrance, a 12-foot pocket door framed in Douglas fir.

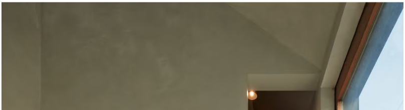
Photo Categories: living room, pendant lighting, table, stools, sectional, wall lighting, bench, end tables, concrete floors

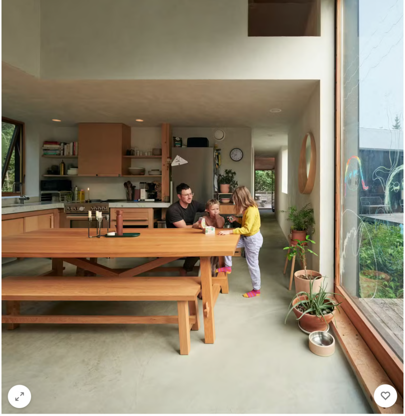
Photo Categories: living room, sectional, concrete floors, wall lighting, bench, pendant lighting, table, ottomans, sofa

A Magical Location

Betsy: The design for the house really came together after we decided on the site, which we chose for the elevation and flora: beautiful huckleberry bushes, juniper, and low bush blueberry. We wanted to emphasize that uniqueness and not destroy it.

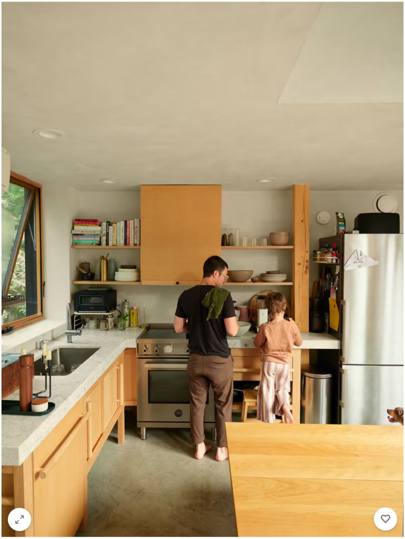
Andrew: We built on bedrock, which is essentially a ledge, with a nine-foot vector between the highest and the lowest point of the home's footprint. Because windows are so pricey, we positioned the house on the land in a way that would deliver the most natural light to the interiors in every season.





An opening off the children's bedroom (top right) brings in light and functions like a window looking over a courtyard, allowing the family to communicate easily from different levels.

Photo Categories: dining room, wall lighting, concrete floors, table, bench, ceiling lighting



Andrew made the shelving, cabinets, and shroud in the kitchen from a felled maple tree.

Photo Categories: kitchen, wood cabinets, microwave, marble counters, refrigerator, wall oven, range hood, range, undermount sinks, ceiling lighting, concrete floors, cooktops

Walls throughout the house, including in the ground-floor hall, are finished with veneer plaster. A custom mix of base and finish coats, tinted with bright-white titanium dioxide, allowed for two textures and three shades of white, all of which Andrew modulated during the troweling.

Photo Categories: hallway, concrete floors

An Honest Design

Andrew: After our first daughter was born, I asked myself, Why would we build with anything that we wouldn't want our toddler to put in her mouth? Rather than build a giant house with damaging materials that are unhealthy, we wanted to create a smaller one and make it out of nicer things.

Betsy: We tried to do things in the least toxic way possible and sourced lumber locally.

Andrew: Being familiar with the typical approach to home construction, I was curious: Could you do it with just humans and without heavy equipment? If you were to just go gather the materials and make a shelter, what does that take?

The children’s reading area off their bedroom, affectionately called the book nook, has an eave skylight that Andrew made from a reclaimed piece of safety glass. The aperture opposite the skylight looks down into the living area.

Photo Categories: kids room, girl gender, storage, lamps, toddler age, playroom room type, dresser, light hardwood floors, den room type, boy gender

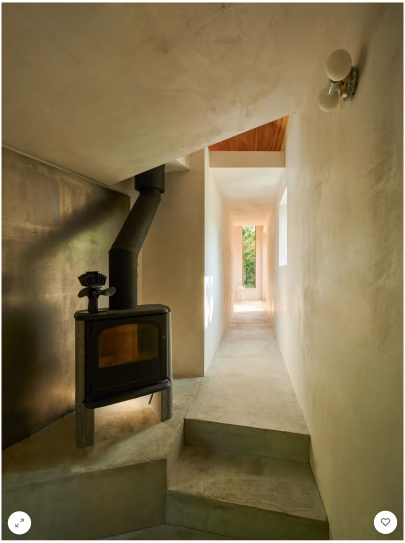
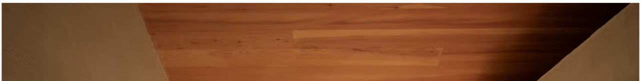


Photo Categories: hallway, concrete floors



The primary suite has a pivot door made with optical glass that makes it "our little vitamin D hub," says Andrew.

Photo Categories: bedroom, bed, wardrobe, storage, concrete floors, wall lighting, light hardwood floors

The Build

Andrew: I had a good friend who was helping ten to fifteen hours a week, but I did the rest of the build solo, working nonstop for eighteen months. We excavated by hand with a shovel and a geologist hammer and pinned the house to the site's bedrock with concrete piers. We framed the building, built and programmed the heat-recovery ventilators, and built the kitchen cabinets from a maple tree that we felled at our last house. We also used a structural roof ridge, which allowed us to have a fully open cathedral ceiling. We had a party with two friends to celebrate lifting the ridge beam into place.

Photo Categories: exterior, gable roofline, metal roof material, wood siding material, house building type

> "We ran windows all the way to the ceiling so that you have a view of the sky virtually anywhere in the house."
>
> —Andrew Frederick, designer and resident

Photo Categories: bedroom, concrete floors, wall lighting, wardrobe, storage, bed, light hardwood floors, shelves

Lessons Learned

Betsy: It amazes me every day how big the house feels, given that it's really quite small. I think we executed on the vision that we had for the home in that there are just all these pretty unique moments that happen as you're moving through it.

Andrew: If you're doing all the labor yourself, you've essentially removed fifty percent of the costs, so you can get roughly twice the house in terms of quality that you would otherwise. We have plaster finishes, hardwood cabinetry, and marble countertops. Even our bedding has nontoxic organic fibers. Betsy and I are the sort of people who will forgo a lot in order to seek out one nice thing. And I think that played out in the creation of our home.

The interior lights are from Schoolhouse Electric.

Photo Categories: outdoor, trees, garden, front yard, wood patio, porch, deck, large patio, porch, deck, shrubs, woodland, gardens, walkways, decking patio, porch, deck

Photo Categories: outdoor, large patio, porch, deck, front yard, side yard, garden, wood patio, porch, deck, walkways, gardens, shrubs, trees, grass, woodland, decking patio, porch, deck

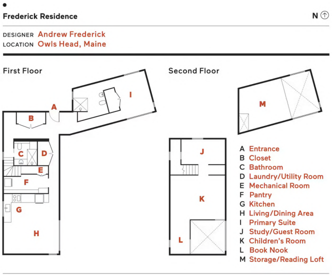

Frederick Residence
N
DESIGNER Andrew Frederick
LOCATION Owls Head, Maine
First Floor
Second Floor
A
B
C
D
E
F
G
H
I
J
K
L
M
A Entrance
B Closet
C Bathroom
D Laundry/Utility Room
E Mechanical Room
F Pantry
G Kitchen
H Living/Dining Area
I Primary Suite
J Study/Guest Room
K Children's Room
L Book Nook
M Storage/Reading Loft

Illustration by Lohnes + Wright

Project Credits:

Designer of Record: Andrew Frederick, Croft

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Head back to the November/December 2023 issue homepage

Published
November 14, 2023

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