



A Rustic Design for a Rugged Climate



Strong bones. Energy-efficient Rastra walls, a type of insulating concrete form, provide a strong and fire-resistant framework for this mountain overlook. Photo taken at A on floor plan. At right, the boom of a pump truck looms over the structure as the walls are filled with concrete.



In 1992, having had my fill of California, I moved to Sandpoint, a scenic town of 5,000 near the top of the Idaho panhandle. Using the proceeds from the sale of my California property, I immediately built a large contemporary home with dramatic views overlooking the Cabinet Mountains and Lake Pend Oreille. Unfortunately, while searching (like so many others) for a simpler, less hectic life, I unwittingly built a home that precisely reflected the sensibilities I had wanted to leave behind.

As luck would have it, I met and married a woman raised in the area, and over the first few years of our marriage, I gained a great appreciation for her tastes and scaled-down sense of proportion. In 1998, we accepted an offer on our house, which allowed us to design and build a home much more in keeping with the area and our simple lifestyle.

We worked with the same architect and builder responsible for our first house because the two were perfect for the job. The architect, who shared our vision of a compact and natural home, has a great feel for artistic, inviting spaces. The builder is a meticulous craftsman who works for the most part by himself and welcomes client participation. Together, we spent the better part of a year designing our new house.

Rugged and well insulated from top to bottom

Northern Idaho's climate is hard on houses, largely because the win-

Tailored to emphasize the surrounding views, this open floor plan executed in durable materials is sheltered by insulating concrete walls

BY MARTIN McBIRNEY

Long views and an open floor plan allow the family to stay connected, whether they are reading in the living room, eating in the dining area, or cooking at the stove. Subtle details, like decorative nuts on the mantel, transform functional threaded rods into attractive focal points. Photo taken at B on floor plan.



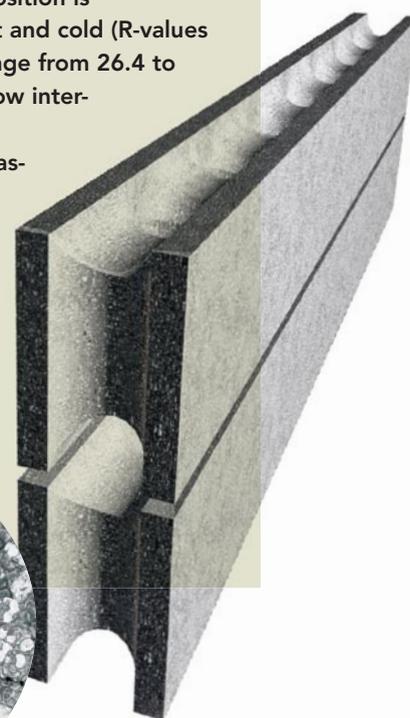
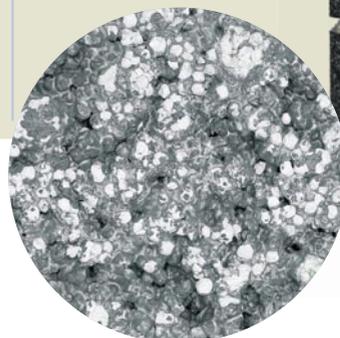
Rastra panels: lightweight, high-strength building blocks

Rastra is an ICF (insulating concrete form) system that combines 85% post-consumer recycled polystyrene with 15% cement in lightweight building blocks. When stacked, reinforced with rebar, and glued together with foam sealant, Rastra forms provide a framework that then is filled with concrete to create load-bearing walls, shear walls, stem-walls, and other building components. The 5¼-in.-dia. circular channels running vertically and horizontally through each Rastra wall are designed to provide high strength with a relatively small amount of concrete.

Each 15-in.-high Rastra panel is available in 8½-in., 10-in., 12-in., and 14-in. wall thicknesses, with lengths of 7½ ft. and 10 ft. (custom panels are available as well), and can be set in place without the use of cranes. Forms can be cut and tooled with saws, routers, or rasps, then glued or clamped together until the concrete is poured.

Unlike traditional wood and concrete wall systems, Rastra does not hold or wick water, and does not promote mold or mildew growth. Its porous composition is effective at blocking heat and cold (R-values for 12-in.-thick panels range from 26.4 to 31.9) but also allows a slow interchange of air.

Currently, 12-in.-thick Rastra forms cost about \$40 per panel. For more information, visit www.rastra.net. For more information on building with ICFs, see *FHB* #170, pp. 81-85.



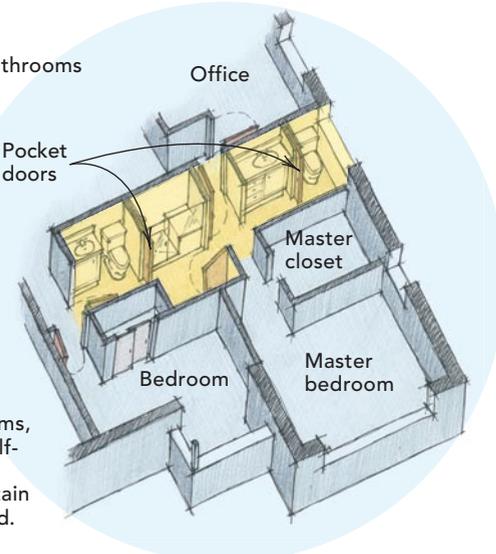


AN OPEN, CASUAL FLOOR PLAN

This plan maximizes views and outdoor access, especially in the public spaces, which are open to one another but still clearly defined with ceiling treatments, timber posts, and a freestanding fireplace. Having sacrificed an attached garage in favor of the west porch, the owners instead built a small, separate garage (visible at the far left in the photo).

SPECS

- Bedrooms:** 2 (plus one unfinished upstairs bedroom)
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- Size:** 2250 sq. ft. (1800 sq. ft. downstairs plus 450 sq. ft. partially finished upstairs)
- Cost:** \$175 per sq. ft.
- Completed:** 1999
- Location:** Sandpoint, Idaho
- Architect:** Bruce Millard, AIA
- Builder:** Mike Murdock



Sharing a shower

Reducing the costs and space typically lavished on bathrooms, two half-baths share a common shower in this plan. One half-bath serves the master bedroom. The other doubles as the daughter's bath and a family powder room. Pocket doors retain privacy and help to keep these spaces from feeling congested.

ters are not cold enough. Often, winter days hover at 32°F, creating annoying freeze/thaw cycles that can result in moisture problems. Having dealt with these issues in our previous house, I wanted our new house to be a building that would live up to the challenge. We chose to build the exterior walls of the house using an insulating concrete form (ICF) system known as Rastra (sidebar facing page).

We liked the high insulation properties that Rastra offered and its impressive four-hour fire rating (important for a rural home in the woods). The rough surface of the blocks allowed us to apply the interior and exterior plaster finish without any mesh. The blocks also have ecological value; they are made mostly of recycled polystyrene foam that otherwise would have ended up in a landfill.

Of the various available sizes, we chose 12-in.-thick Rastra blocks because of their increased insulation values and the resulting deep windowsills.

For the roof, we opted for the sturdy construction of structural insulated panels (SIPs), which are made by sandwiching foam insulation between two sheets of OSB (oriented strand board). The 12-in.-thick

SIPs were manufactured to our dimensions (thus reducing construction waste) by a local manufacturer, then shipped directly to our site. A crane lifted the panels into position so that crew members could screw them to the rafters.

Connected, multiuse spaces make up the floor plan

Taking cues from Sarah Susanka's first book, *The Not So Big House* (The Taunton Press, 1998), we designed a floor plan to match the way we live. This seemingly obvious concept actually represents a significant departure from most planning processes. Rather than start with a conceptual floor plan, our architect pushed us to think of the ways in which we truly would use each room of the house.

We focused most of our design attention on the activities we thought would occupy most of our time: preparing and eating meals, taking in great views, and relaxing by the fireplace.

The result was an open floor plan that makes it easy to move among kitchen, dining, entry-foyer, and living-room areas (floor plan above). The interior walls that normally separate these spaces



Choosing materials that get better with age. Soapstone countertops, oiled fir floors, and recycled timbers all contribute to a kitchen that doesn't shy away from the abuse of daily living. The adjoining open-air porch (above and below) is an attractive and relaxing extension off the west side of the house, perfect for watching a sunset. Photos taken at C, D, and E on floor plan.



are gone, but functional distinctions are still evident, thanks to more subtle devices. For example, the foyer and living room are separated by the fireplace and chimney. The kitchen is set apart by a change in ceiling height, as well as the placement of a few timber posts.

The main floor's open plan does more than create an easy, informal atmosphere indoors. It also makes the most of outdoor views and outdoor connections. Big windows, a patio off the living room, and a porch off the kitchen and dining area (photo left) enhance our enjoyment of a beautiful site.

The west-facing porch and amplitude of windows were made possible by our decision to rethink the role of the garage. Both my wife and I find the car a necessary evil and don't like its dominance in life and in much of residential architecture. The current



formula, which usually includes a large attached three-car garage, leaves a house that is as much about cars as it is about people.

To counteract auto emphasis, we built a small, detached two-car garage about 150 ft. from the house. In the space where an attached garage would have been, we have large windows and a beautiful porch. Sure, carrying groceries in bad weather sometimes can be trying, but the inviting quality of each of the rooms more than makes up for it.

Downplaying the bathroom makes other spaces better

Typical high-end homes have large, lavishly appointed bathrooms that consume valuable exterior-wall space and require no small amount of cleaning. Because most people spend less than 5% of the day in bathing and related activities, why devote so much of the budget and floor space to bathrooms?

Answering this question led us to plan for a single-shower room between two single-sink bathrooms. This compact “suite” of bathrooms is adjacent to both main-floor bedrooms, so convenience and privacy aren’t compromised. The consolidation of the bathrooms freed the floor plan so that most of the other rooms had at least two exterior walls to take advantage of natural lighting and the beautiful surrounding views (floor plan p. 85).

The decision to forgo a bathtub also had a personal element. Having used a bathtub roughly once a year since childhood, I saw no sense in including one on the main floor. Because my wife and daughter do like to take baths on occasion, we compromised and included one in the second-floor plan, part of a space we will finish sometime in the future.

A house that wears in, not wears out

The reality of everyday living in a northern climate is that many surfaces are bound to take a beating. Cosmetically perfect floors and countertops that look pristine for years are tough to achieve out in the woods.

Our response was to choose soft, natural finishes whose defining characteristics are the lack of such perfection. In that vein, we opted for oiled fir floors, natural-slate entryways, soapstone countertops, tinted gypsum-plaster walls, and recycled 100-year-old fir columns and beams. In each case, these surfaces become more interesting and beautiful with age, taking on a wonderful patina as they respond to the bumps and grinds of daily living. When a counter gets dinged, a dab of mineral oil restores the color, and it looks as though it always has been that way.

An unfinished second floor helps the house to adapt

Although we designed our house as a story and a half, our goal was single-floor living—at least at the outset. Knowing that there soon would be a time when our daughter would want to be separate from us (and vice versa), we included an upstairs bedroom and bath in the design. With time running out on the builder’s schedule (we built at the rate of around 100 sq. ft. per month), we opted to finish the main floor completely and to leave the upstairs unfinished. How soon we choose to finish that room will depend on how fast our daughter grows up. If the pace to date is any indication (she just turned 10), we’ll probably be addressing the unfinished floor fairly soon. □



The one room that got bigger. Upsized from the homeowners’ previous house, the laundry/mudroom in this plan grew larger to provide floor space where the family needed it most. Photo taken at F on floor plan.

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