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For our 10th annual products special, we focus on the sustainable spec. Our expert architects tell us that gee-whiz gadgetry is indeed popular, but the big winners are locally and sustainably sourced, natural materials.

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by S. Claire Conroy

A
fter a brief awakening, skepticism about global warming is growing again. As compared with April 2008, fewer people now believe there’s solid evidence the Earth is warming, according to a poll conducted in October by The Pew Research Center for the People & the Press. Previous polls by other sources have indicated that consumers won’t choose a greener product simply because it will help the planet, but they will do so if it promises to lower their energy bills or benefit their health.

Similarly, architects need a preponderance of reasons to spec green, beyond the mitzvahs of resource conservation and energy performance. They require functional excellence and intrinsic beauty as well. That’s because architects answer to many, often conflicting, masters—their client, their building department, their conscience, and their muse. There’s no single objective truth and no one, unimpeachable answer.

After a recent trip to the USGBC’s Greenbuild convention, I feel the same way about purportedly green building products. I saw many beautiful products that touted sustainability, but when I pushed for more information I was often told that the component materials were sourced in the United States, shipped to China for fabrication, and then shipped back here for the end user. The original materials may well have roots in renewable resources, but lots of petroleum went into their distribution.

Is that really better than chopping down a tree in the Pacific Northwest and chugging it by train to your local building center? Provided that Oregon forest is sustainably managed? Certification programs can help narrow choices based on your top concerns. Worried about clear cutting, energy performance, and indoor air quality? They can help you find a window made from a responsible source, assembled without high-VOC adhesives, and comprising energy-efficient glazing. The trouble is, in selecting all of those boxes, you may have winnowed your windows down to something very expensive or ill-suited to your project.

Even with such guidance, architects still face the struggle of deciding among the best aesthetic choice, the best environmental spec, and the best fit for the overall budget. I attended a case study session at Greenbuild that underlined how far apart zero-carbon and beauty still are from each other—especially in colder climates. A well-known achiever in sustainable building showed his own house as an example of just how difficult the technical challenge is. And let’s just say, it’s not winning any design awards. For both reasons, it won’t inspire any but the most diehard believers to follow suit. Even his wife and children wouldn’t live with him until he made some compromises for human comfort.

Despite the shortcomings of his quest, he made a strong case for the “good, better, best” approach. Very few of us can emulate the best practices he was trying to achieve, but if all of us managed to hit the midpoint, the world would be better off indeed.

Comments? E-mail cconroy@hanleywood.com.
solar flair

As if we needed any more evidence that solar houses can be both high-performing and beautiful, comfortable places to live, the 2009 Solar Decathlon has once again proved the point.

Every other year, the U.S. Department of Energy (DOE) challenges college and university students from around the world to design, build, and operate solar-powered houses. Participants create a veritable solar village on the National Mall in Washington, D.C., pitting their creations against each other to determine which house best fuses design, optimum energy efficiency, maximum energy production, and modern comfort and conveniences.

With an exterior clad entirely in thin-film photovoltaic panels, Team Germany's two-level surPLUShome was designed for energy generation, helping the team repeat its 2007 Solar Decathlon victory.
In October 2009, student teams exhibited 20 cleverly executed concepts that rivaled the best in the business for pure innovation. Each was evaluated in 10 categories: architecture, market viability, engineering, lighting design, communications, comfort zone, hot water, appliances, home entertainment, and net metering. Every house offered a fascinating vision of the possibilities of residential solar design while addressing other key aspects of sustainability, including resource conservation. But there could only be one first place winner in the end. Thanks in large part to its perfect showing in the net metering contest, Team Germany’s surPLUShome outperformed all the others, scoring 908.297 points out of a possible 1,000.

The secret to the German house’s success may be in its name. By integrating 250 thin-film photovoltaic panels into its exterior cladding, along with 40 photovoltaic roof panels, the team from Technische Universität Darmstadt actively pursued—and achieved—all 150 points possible in net metering by producing a large surplus of energy on even the cloudiest days. Team Germany also took third place in lighting design, tied for third place in architecture, and placed first in the comfort zone contest for maintaining a consistent indoor temperature range and relative humidity. Inside the tall, modern box, the team designed a single multifunctional room with a loft, creating a spacious interior that architecture contest judge Kevin Burke, AIA, LEED AP, of William McDonough + Partners, calls a “gracious and adaptable living space.”

The University of Illinois at Urbana-Champaign’s Gable Home placed second, with an overall score of 897.3 points. Blending a traditional form with high-performance materials, a tightly sealed building envelope, and high-efficiency systems, the Gable Home accomplished an exceptionally efficient performance, placing second in net metering and winning the appliances, hot water, and home entertainment contests. Illinois’ entry was truly residential in its scale and quality, Burke says, calling it “the quintessential gable home.”

Team California placed third overall, accumulating 863.089 points, top honors in the architecture and communications contests, and “top three” status in all but three contests. Students from Santa Clara University and the California College of the Arts designed the Refract House as an extruded tube bent around a courtyard—a choice that masterfully controlled both the amount and movement of light through its interior. The judges were struck by its unique form, sheer beauty, and elegance. “It was a very experientially rich design,” says architecture judge Sarah Susanka, FAIA, of Susanka Studios. “It was a wonderful example of how you can use interior views to make space feel larger.”

Since the Solar Decathlon’s 2002 debut, project quality has improved with each iteration, says director Richard King. The 2009 competition—the fourth in its history—showcased a greater overall sophistication in approach, design concepts, and engineering. “The bar is raised,” King says. “The houses were uniformly better.”

Planning is already under way for the 2011 Solar Decathlon. For details on the 2009 houses, visit www.residentialarchitect.com.—stephani l. miller
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family affair

When Charles R. Stinson, AIA, and his sons, Jason and Joshua, purchased a 100-year-old house in Chanhassen, Minn., their initial intent was to tear it down and build new. But as they began demolition, they realized the structure—a former nunery—had solid bones. So the Minneapolis-area trio decided instead to renovate it in as sustainable a fashion as possible while keeping costs down. “We’ve been doing green roofs and geothermal and those types of things at my firm, but mostly on more expensive projects,” the elder Stinson says. “It’s really hard to find cost-effective green products.”

The key to achieving a green house while capping costs at about $200 per square foot, he continues, was “research, research, research.” Word of mouth led the Stinsons to smaller, family-owned material and product suppliers, many located within a car ride of the site. Their investigations also helped them figure out which features—solar hot water panels, for example—would yield the greatest environmental bang for the buck. “They really work,” Stinson notes. “The payback time is relatively short.”

Limiting the home’s size to 2,300 square feet was another cornerstone of their green strategy, according to Jason Stinson, whose company, Stinson Builders, served as general contractor. “The No. 1 thing was that we didn’t add anything to the original footprint of the house,” he says. He and Joshua, who acted as project manager, did add a separate garage, though, connecting it to the main residence with a covered walkway that segues into an extensive rear deck. They also hired a local company to help them recycle most of the construction waste from the project.

Exuberant blue exteriors came to symbolize the experience of creating the house, which the family is currently renting out. “The process was joyful,” Jason says. The senior Stinson concurs. “It became a really fun labor of love,” he adds. And all that green bargain hunting is paying off in other ways for Charles R. Stinson Architects. “Every step of the way, we were thoughtful,” he explains. “Now we can apply two years of research to our other projects.”

—meghan drueding

The finished home blends off-the-shelf windows and IKEA accessories with higher-end items, such as a glossy, energy-efficient Valcucine kitchen. Closed-cell foam insulation and solar hot water panels help keep a lid on utility costs.

Photos: Paul Crosby
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—nigel f. maynard
To get both an open interior and a full garage on a 30-foot-by-80-foot lot, architects Barbara Callas and Steven Shortridge, AIA, gave 543 House, as it’s called, a section that rises in a staggered series of split levels. “The house sort of steps up over the garage, so you don’t feel its impact,” Shortridge says. Including a roof deck, “there are actually seven levels in the house.”

The kitchen, which floats midway between the garage and living room levels, stretches beyond the house proper to include a patio that more than doubles its floor area. An acid-washed concrete floor unites the two spaces, with radiant heating that maintains a constant slab temperature indoors and out.

Underplaying the kitchen’s functional side, the built-in stainless refrigerator, range, and vent hood hide in plain sight, blending into a bank of stainless steel base and wall cabinets. “To avoid having project continued on page 18

Project: 543 House, Venice, Calif.

Architect: Callas Shortridge Architects, Culver City, Calif.

General contractor: Herman Construction Co., Westlake Village, Calif.

Resources: bathroom and kitchen fittings: Dornbracht Americas; bathroom fixtures: Duravit USA; countertops: DuPont (Corian); oven: Miele; patio doors: Fleetwood Windows & Doors; refrigerator: Sub-Zero
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too much stainless, we added teak cabinets all the way to the ceiling,” Shortridge points out. A counter and backsplash of white Corian tie the composition to a custom-fabricated island, whose form in turn echoes the nested “L” shapes of the wall assembly. Because a neighboring house stands only six feet away, the countertop window is glazed with etched glass.

A floor-to-ceiling teak pantry with an elegant TV niche hides a generous amount of storage within a sculpturally monolithic box. It further reduces the risk of clutter by providing a home for the coffee maker and other gadgets. “Appliances that you don’t use as much are behind a door,” Shortridge explains. “Because it’s so close to the living space, we didn’t want to hit you over the head and say, ‘This is the kitchen.’”—Bruce D. Snider

Interior elements deploy an abbreviated palette of materials in broad, simple forms. A sliding glass wall system allows the kitchen to become an indoor/outdoor room. A plate of cold-rolled steel serves as a backdrop for the patio’s gas fireplace.
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The master bath of 543 House (in the photo and floor plan below) bears a strong family resemblance to the kitchen that occupies the space just below it. Its long sink counter and splash surfaces are white Corian, its flush-front cabinetry is teak, and its geometry favors strong, monolithic elements. A wall finished in blue integral-color plaster stacks above the blue plaster wall of the kitchen. Architects Barbara Callas and Steven Shortridge, AIA, added to the mix with black granite at the floor and in the bathing area. Glass tile lines the exterior wall, and etched glass panels enclose the toilet compartment.

In plan, the sink wall comprises an island between the bath and the master bedroom, while pocket doors at two sides close for privacy. The guest bath (in the photo above and floor plan at right) introduces oak cabinetry, limestone floors, and a limestone tub deck. Limestone tiles set into a glass-tile wall create a contrasting “control panel” effect behind the shower fittings. The Corian backsplash wraps onto the face of the linen cabinet as drawer fronts that conceal another design flourish: “They’re fully made of Corian, inside and out,” Shortridge says.—b.d.s.

A Corian sink counter inserts an islandlike element between the master bedroom and bath. The guest bath (top) wraps a related set of forms in a brighter palette of materials.
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Panasonic ideas for life
off the beaten path

how architects survive and thrive in small towns.

by cheryl weber, lead ap

Ross Chapin, AIA, knows cities. He’s worked in San Francisco, New York, and Minneapolis, thoroughly enjoying all they had to offer. But he and his wife became captivated by remote Langley, Wash., after a visit in the late 1970s. They decided to settle there, and Chapin opened an architecture practice in 1982. The tiny town on Whidbey Island, an hour and a ferry ride from Seattle, has about 1,000 residents. It also has whale sightings, gorgeous light, and a close-knit community. What it doesn’t have: glamorous work opportunities, a large client pool, and a steady stream of talented job applicants.

Think of architectural hot spots, and you think of big cities: Boston, Chicago, New York. Major metropolitan areas thrive on diversity and innovation, but they’re also known for pollution, traffic, and expensive real estate, and not every architect wants to live in one. Small towns have trade-offs too. While they’re often equated with sleepy provincialism, the appealing flip side is their relaxed pace, sense of human connectedness, and, in some cases, pristine natural surroundings.

Depending on location, the reality lies somewhere between those opposing stereotypes. (If it’s any consolation to architects in depopulated areas, novelist Richard Russo, who’s been called the patron saint of small-town fiction, once noted wryly that big-city people can be as provincial as those in small towns.) Yet when it comes to practicing architecture, the two environments are fundamentally different. For architects working off the beaten path, what’s missing is not just, say, a Malaysian restaurant around the corner, but also the energy buzz that comes from a concentration of creative types.

“I sometimes tell people that if I were originally pursuing a career, I most likely would have stayed in the city,” Chapin says. “At least there is the sense, if not the reality, that there’s more opportunity in the city. But for me, the balance of a whole life was key.”

Architects in similar settings would likely agree. For some, the decision is personal—it’s the hometown they returned to after

continued on page 24
practice
college. Others are drawn to a less hectic way of life, or see professional promise in an unspoiled tourist destination. Some are staffing a satellite office. All, however, face decidedly different challenges than architects who practice in large cities.
cultural quirks
Small towns are less diverse; they often value harmony and accountability. People want to appear modest, so innovation is not top of mind. That’s especially true in Fargo, N.D., where the harsh winters and a population with German-Russian and Scandinavian roots create a practical mind-set. “Almost the first thing that comes out of clients’ mouths is, ‘We don’t want anything crazy,’” says Philip Stahl, AIA, Stahl Architects.

While his mostly residential clients ask for traditional homes attuned to the climate—with gabled roofs and covered entries that shed snow—commercial clients are afraid of scaring off constituents with a showy building. “They say, ‘We don’t want to build the Taj Mahal here,’” Stahl says. “They don’t want their customers to say, ‘Look how much money they’re making.’ We jealously look at places, such as Los Angeles or New York, that have a bigger demand for more progressive design.”

Given a history of limited aesthetic choices, people are comfortable with the status quo. So the impetus is on architects to demonstrate appealing and cost-efficient alternatives. Working 30 miles from Pittsburgh, in Greensburg, Pa., Lee Calisti, AIA, says almost every new house is done by builders in suburban subdivisions. It’s the maverick type of person who says no to a cookie-cutter home. As a result, most people don’t fully grasp what architects do, and they’re reluctant to pay for something whose value they don’t understand.

“People think that if they build something different, the neighbors will complain, or later the house won’t sell,” Calisti says. Two years ago, he built his own modern, brick-and-metal house in a traditional neighborhood to show that something-of-the-moment could fit in. As a member of Greensburg’s Historic and Architectural Review Board, he also speaks publicly about the value of design from a business and environmental perspective.

As Calisti points out, there are fewer architects in smaller cities, so competition is not as fierce, and you can make a bigger difference than you could in a star-studded metropolis. “I tell my design students at...”

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practice

Carnegie Mellon University to go to Idaho or Montana or Iowa, because the design impact can be really great," he says. "A lot of communities out there could be wonderful towns if someone had the ability to be an architectural coach."

Beth Reader, AJA, and Chuck Swartz, AIA, LEED AP, co-principals of Reader & Swartz Architects, often fill that role in Winchester, Va., near the Blue Ridge Mountains. Like country doctors they are generalists, so as not to compete with larger, specialized firms in Washington, D.C., a hour and a half away. While half their work is for design-savvy city folks building a vacation home or moving to the country, when local people hire them, it's usually because they have a nut to crack: they need help making sense of an old house or a difficult site.

Life is simply easier in a small town, the married couple say. Their commute is almost nonexistent. Their kids go to the same school Swartz attended as a child and get dropped off at the office after school. With a smaller bureaucracy, building officials are more accessible and accommodating. "You're not so tempted to play hardball in a small place," Swartz explains. "A contractor who does a poor job will see the client or the client's friends for the rest of his life at school functions or in the grocery store. There tends to be less tension than there could be."

Likewise, marketing is super-local. Design awards are announced on the company website and in the local paper. Says Swartz: "We eat lunch out almost every day, because people run into us that way."

One thing most young architects in major cities can't do is build their own house to use as a calling card. When Christian Brown moved to Jericho, Vt., four years ago (his wife took a job there), he designed and built a house on land with woods and a stream, near skiing and hiking trails. Still, it took awhile to establish a reputation. Architecture is a word-of-mouth business, especially in a small town, and that works against people just starting out. "This time a year ago I was thinking of leaving the state, but now I feel like I've turned the corner and it would be crazy for me to leave," he says. "I'm suddenly getting called about work."

What helped: joining local groups such as the home builder and remodelers associations. At the suggestion of a builder friend, this year Brown also joined Business Network International (BNI), which exposes him to a cross section of local professionals—lawyers, Realtors, bankers—who are good sources for referrals. Some clients also find him through the furniture he designs. But education remains a constant struggle. He's careful to spell out what architects and designers do in an information packet for prospective clients. And his fee proposal explains each work phase and its costs.

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satisfied. "I've lived in plenty of cities, and I know that if you screw up with one person, there are plenty more to go," Connell says. In a rural situation, on the other hand, "you really need to be honest. There's no starting over; you'd have to move out of town."

To up-and-comers, Connell suggests finding small ways to establish credibility. For example, ask a local Realtor to provide office space for a weekend workshop in which you teach others how to lay out a floor plan. Then get the local paper to write an article about it. For a small fee, Connell also was willing to offer design advice on homes people were building for themselves. It was, he says, a quick way to find quality-oriented people with whom he wanted to work.

Finding reputable builders—and getting them to back you up on projects—is another key piece of the small-town puzzle. Whenever Connell spotted a well-built house going up, he'd stop and chat with the crew. "Once you start talking to the subs, they pigeonhole you—'Oh, he cares about all these trim things.' They say, 'You're a lot like Mel, or Joe. You guys are all about the same thing.'"—c.w.
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The story is similar in Beaufort, S.C., a coastal town of about 13,000 residents. "In small towns, people don't think about hiring an architect for small renovations as often as they do in a big city," says Jane Frederick, AIA, LEED AP, Frederick + Frederick Architects, who moved there several years ago from the Washington, D.C., suburbs. To remind them, she writes a monthly column for a local newspaper on topics ranging from aging in place to designing a house for a hot, humid climate. Another challenge is attracting young interns, who tend to gravitate to big cities. And perhaps a tougher issue these days: Will she have a continuing pool of work to justify moving someone there from out of town?

The upside? "All of our custom projects are nice ones, because people have bought this beautiful piece of property and want to tie it to the land," Frederick says. "People are moving here for the same reason we did — because it's beautiful. We're getting busier — not close to where we were two years ago, but it's picking up. I'm encouraged."

**architecture is personal**

Not so in Livingston, Mont., where the recession has shuttered many firms that catered to middle- and upper-middle-class clients, according to Lori Ryker, studioryker. Unlike large university towns, rural areas have fewer options for out-of-work architects, and the question becomes whether to try to eke out a living or move on. Fortunately for Ryker, out-of-state projects and work at the Artemis Institute she founded are taking up the slack. Before the recession, she says, architecture fees were comparable to those in cities, because much of her client base came from places such as California and Connecticut.

"What it comes down to is being clear about the advantages of where you're working, and turning the disadvantages into positive things," Ryker says. Chief among those advantages in Montana, besides the sweeping natural landscape, is the abundance of enthusiastic craftspeople. Maybe they're not using CNC machines or sophisticated metals or resins, but they're creative with wood and steel and are interested in trying new things.

They also have a more realistic sense of cost. "I find they don't come at projects with an attitude of, How much will I charge? but of, How much time will it take?" says Ryker, who also has worked in New York City. "Certainly people everywhere can inflate a price, but there's more of..." continued on page 30
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practice

a can-do attitude in small rural towns and a sense of let’s-be-fair-and-reasonable. An agreement can occur on a handshake and over the phone.”

That casual business ethic can be a mixed blessing, however. Out-of-towners seeking rural pleasures enjoy the personal relationships they have with builders, but it can be difficult pinning down builders on price and getting documentation on change orders, says Bruce Norelius, AIA, a former partner at Elliot Elliot Norelius Architecture, who recently moved from Maine to Los Angeles to establish Bruce Norelius Studio. In his experience, even work on sophisticated houses is routinely invoiced with nothing more than a slip of paper with a sum written on it each month. Maine’s boat-building tradition yields an enviable supply of expert craftsmen, but tough winters and a laid-back culture mean projects progress at a slower pace. “It’s rare you’d see a project under construction without gaps where people are on site,” Norelius says. “That can be hard on the owners; in cities there’s an economic pressure for things to happen.”

In that way, a country practice can be an appealing counterpoint to a city office. Many developing rural areas operate on a slow burn, and thus have avoided the real-estate roller coaster that consumed highly populated regions. And the problems rural areas face, such as emerging land use codes and lack of infrastructure, are different from in cities. “You have a small village without a sewer system. They want to develop economically but don’t want a strip mall,” says Dennis Wedlick, AIA, who oversees offices in Manhattan and Columbia County, N.Y. “Clients don’t have in-house capabilities to deal with it, and we can bring our experiences with larger developers to the country-side. It’s very satisfying.”

Wedlick’s rural projects range from a 400-acre agriculture community to single-family homes, and he tells potential clients that no project is too small. This isn’t Manhattan, however, and to accommodate limited budgets without lowering his fees, he asks clients to do more of the legwork themselves, such as researching setbacks and neighboring parcels, showing them how to structure their tasks so the information he gets is clear and actionable.

“The other benefit of working in rural areas is that you can form strong relationships with people who really care about building, because they’ve been community members for a long time,” Wedlick continued on page 32

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Community might be judged as a backwater, but innovative planning ideas can be implemented more easily because the community is a manageable size. And people with a progressive vision can get things done without so much NIMBY pushback because they're known in the community. An example is Ross Chapin's Third Street Cottages, a landmark project that doubled Langley's allowable density and paved the way for new zoning codes. "Other cities around the region looked at it and said, 'Maybe we could try this,'" Chapin says. "We were able to do it because it's a small town, engaged in creating policies with a group of people who know each other." (For more on Chapin, see the January/February 2006 issue.)

In Langley, the number of transplants and old-timers is evenly split, Chapin says. Like most residents, he's made his living there, building a practice from the ground up by cheerfully engaging the community. He accepted odd design jobs—a stairway to the beach, help with the community theater. He volunteered with a local nonprofit, sat on the library board, and helped found Langley's first Design Review Board. On large projects, he'd be the local specialist, teaming up with Seattle architects to provide the right fit.

Thirty years later, Chapin's career has taken him well beyond Whidbey Island, yet he's as committed to it as ever. "When you engage in the community, you meet the people, and they get to know you and see your interests, skills, and integrity, and then you're asked to design something," he says. "In many ways, we're here to serve the community, not to have monuments made to us. It's not the place for big egos, but the place to be helpful."
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We all know that green is the new black these days. There are followers who don it like the latest fashion—the trendy cause du jour for the earnest adopters. But for those who understand it's an environmental imperative and not just a cultural superlative, it's hard to parse the hemp from the hype. So for our annual Architects' Choice issue, we decided to focus the field of selections on the proliferating category of sustainable building products. We consulted the experts—architects on the front lines of green specifications—to find out what really works in both design and practice. We expected to see lots of gee-whiz gadgetry, and we weren't disappointed. You'll find recommendations for geothermal air conditioners, solar collection systems, and a wind turbine here and there. But the quiet refrain throughout our interviews was the chant of the locally sourced, sustainably culled natural material. Think global, shop local, and top it all off with a lovely green roof—these constituted many of our architects' choices.

Let us know what you discover in your journey to help center the Earth. And we'll share your expert choices with everyone.
architects' choice

TANNERHECHT architects

"we particularly like visiting salvage yards with our clients and hand-picking the woods. this gets the clients actively involved in the fabrication process and gives them an appreciation for the building process."

\textbf{cotton pick}

More than 85 percent of Bonded Logic’s UltraTouch insulation comes from denim recycled from clothing manufacturers. TANNERHECHT architects value the product’s sustainable story, as well as its performance: “As an insulation material, we find UltraTouch to be superior in manufacturing and installation,” Hecht says. It “achieves the same R-values as typical thermal insulation products and has great acoustical properties.” Better still, the VOC-free batts are treated with borates for fire resistance and mold protection. Bonded Logic, 480.812.9114; www.bondedlogic.com.

\textbf{repeat performances}

Reuse is the ultimate sustainable strategy, which is why TANNERHECHT architects often spec reclaimed wood from local yards (as they did in this project). “Properly sourced salvaged wood can provide a warm, rich material for furniture and casework,” Hecht says. Reuse proponents say salvaged lumber not only saves trees but is of higher quality, with tighter grains, than newer trees. Building Materials Reuse Association, 800.990.2672; www.bmra.org.

\textbf{other favorites}

\textbf{Caroma USA:} dual-flush toilets, www.caromausa.com
\textbf{States Industries:} ApplePly FSC-certified plywood, www.statesind.com
we have used alkemi since the late 1990s.

TANNERHECHT likes the inherent “depth and texture” of Alkemi recycled aluminum solid surfacing (seen here in one of the firm’s projects). “This is a good use of postindustrial scrap and looks great,” Hecht says. Made from 60 percent (by volume) postindustrial fine-flake aluminum scrap and polymeric resin, the material can be sanded and buffed to a matte or high-gloss finish. Sheets measure 3 feet wide by 8 feet or 10 feet long. Renewed Materials, 877.462.6020; www.renewedmaterials.com.

artists’ palette

When a project calls for paint, TANNERHECHT relies on YOLO Colorhouse. “The color palette is robust and reflects the spirit of our times,” Hecht says. Developed and produced by artists, the 100 percent acrylic, no-VOC paint is made with up to 42 percent volume solids, resulting in a more durable, washable surface. YOLO Colorhouse, 877.493.8275; www.yolocolorhouse.com.

aluminum remix

TANNERHECHT likes the inherent “depth and texture” of Alkemi recycled aluminum solid surfacing (seen here in one of the firm’s projects). “This is a good use of postindustrial scrap and looks great,” Hecht says. Made from 60 percent (by volume) postindustrial fine-flake aluminum scrap and polymeric resin, the material can be sanded and buffed to a matte or high-gloss finish. Sheets measure 3 feet wide by 8 feet or 10 feet long. Renewed Materials, 877.462.6020; www.renewedmaterials.com.

“after yolo paints are applied, there’s no lingering paint smell in the space.”
In lieu of bulky solar panels, Vandervort specifies Silicon Energy’s Cascade Series PV modules (as he did for this home). “These neatly built modules sandwich polycrystalline silicon cells between two panels of glass,” he explains, resulting in “a clean-looking, durable unit” that mounts easily and won’t compete with his design. According to the manufacturer, the 48-inch-wide panels’ cascade design sheds water and ice easily. Silicon Energy, 360.618.6500; www.silicon-energy.com.

Salt Lake City-based 3form produces an array of translucent architectural panels with varying levels of recycled content. One of its most popular lines, Varia ecoresin, is made from a minimum of 40 percent pre-consumer recycled content; another product, dubbed 100 Percent, is comprised entirely of post-consumer recycled high-density polyethylene from such sources as milk jugs. Vandervort uses the products—which are available in a wide array of colors, patterns, and decorative interlayers—for doors, cabinet panels, and screens. 3form USA, 800.726.0126; www.3-form.com.
Vandervort admires Squak Mountain Stone for its good looks and “upcycling” attributes. Made from low-carbon cement, recycled paper, recycled glass, and coal flyash, the material “resembles soapstone or limestone,” he says, “and provides a beautiful alternative to concrete.” Slabs come in five colors and measure 56 inches wide, 96 inches long, and 1⅛ inches thick. Tiger Mountain Innovations, 206.234.4791; www.squakmountainstone.com.

Design Span hp standing seam from AEP Span is the architect’s choice for energy-efficient roofing, as seen on the project above. Its ‘Cool Roof’ option “provides for high reflectivity and high emissivity,” in turn reducing “heat gain and heat island effects,” Vandervort says. The 22-gauge or 24-gauge roofing is made from up to 30 percent recycled content in widths of 12, 17, and 24 inches. A factory-applied butyl sealant comes standard, and a snap-together feature makes field seaming unnecessary. AEP Span, 800.733.4955; www.aep-span.com.

other favorites

greenscreen: lightweight modular trellis for vegetative growth, www.greenscreen.com
Windfall Lumber: sustainably harvested wood countertops, www.windfalllumber.com
architects’ choice

minarc

"cem-clad is our favorite material for exterior siding."

rubber made

According to Ingjaldsdóttir, reusing old materials in new ways is a mission Minarc embraces. That’s why the firm adapts recycled rubber for applications such as the cabinets and island below. Its preferred provider, Rubber-Cal, offers a variety of rubber sheet and tile products that are processed from recycled car tires and suitable, the company says, for applications requiring durability and abrasion resistance. Rubber-Cal, 800.370.9152; www.rubbercal.com.

daily mass

Minarc specs concrete floors for their durability and versatility. Ingjaldsdóttir and Thorsteinsson also use the surface to regulate temperature, designing many of their houses (including the one at left) so the sun slowly heats the mass of the floor, which stays cool by day but radiates warmth at night. Portland Cement Association, 847.966.6200; www.cement.org.

clad wrap

Minarc often covers its homes (including the one shown above) in Cem-Clad panels, which are produced from 72 percent portland cement and 20 percent recycled cardboard fibers. Their manufacturer claims the decorative panels are insect- and abuse-resistant, making them suitable for interior and exterior applications. The 4-foot-by-8-foot boards can be cut, routed, and machined with standard carpentry tools and accept both paints and stains. U.S. Architectural Products, 888.238.2541; www.architecturalproducts.com.

other favorites

FlexibleLove: recycled paper and wood furniture, www.galleryskart.com
seal of approval

For sealing concrete floors (like those in the Specht Harpman project above), the firm prefers One Coat Only from osmo. The VOC-free, transparent sealer “looks great,” Harpman says, and is both “low-maintenance and easy to use.” Designed for interior or exterior use, One Coat Only is made from natural oils, as well as wax, and comes in a variety of colors. The manufacturer says it contains 85 percent solids and won’t crack, flake, peel, or blister. osmo North America, 888.487.8054; www.osmona.com.

cell it

Spray foam gets the firm’s vote as an effective insulation. “We’re convinced by the performance,” Harpman explains. A favorite is BioBased, which comes as an open-cell product that uses soybeans in its formulation or as a water-blown, closed-cell product. R-values range from 20 to 28. BioBased Technologies, 800.803.5189; www.biobased.net.

bucket brigade

When a project calls for a rainwater collection system, as the one below did, Specht Harpman turns to Tank Town. The Texas-based company bills itself as a one-stop shop for all things water catchment-related, including various types of fiberglass and metal tanks, filters, pumps, and ultraviolet lights. System offerings are sized from 5,000 gallons to 50,000 gallons. Tank Town, 512.894.0861; www.rainwatercollection.com.

other favorites

Icynene: foam insulation, www.icynene.com
Weston Solutions: green roofs, www.greengridroofs.com
YOLO Colorhouse: no-VOC paints, www.yolocolorhouse.com
SIPs have a reputation for being stronger and more energy-efficient than conventional framing. The architects of Carter + Burton are particularly fond of AFM's R-Control SIPs, which are custom-made for each of the firm’s projects (including the one below). The panels feature an expanded polystyrene insulation sandwiched between sheets of OSB, resulting in a building envelope that’s tighter and stronger than the average house, the company claims. AFM Corp., 800.255.0176; www.r-control.com.

Carter + Burton is a fan of sod roofs because they "absorb less heat than a standard flat roof, reduce stormwater runoff, and replace lost green space from new construction," Burton says. The firm’s favorite system, Building Logics’ EnviroTech, is available with a variety of membranes, region-specific plants, and an optional electronic moisture intrusion detection system. It’s seen here on one of the firm’s projects. Building Logics, 757.431.3170; www.buildinglogics.com.

When a project calls for sleek track lights that also save money, Burton and his colleagues turn to the Ledra II fixture from Bruck. Designed for dry locations, the fully adjustable unit has an integrated AC/DC converter and internal dimming controls. It uses an energy-saving 3-watt LED bulb and comes in several finishes. Bruck Lighting Systems, 714.259.9959; www.brucklighting.com.

*Essroc Italcementi Group:* TX Active self-cleaning concrete, http://txactive.us
*Fossil Faux Studios:* resin panels, www.fossilfaux.com
*Neoporte Modern Door:* stainless steel pivot doors, www.neoporte.com
harmon is a fan of exposed steel because of the wonderful way it expresses a building's assembly, as it does with this house he designed. That it contains pre- and post-consumer recycled content is a bonus. The steel industry says the product's strength and durability have made residential framing one of its most popular applications, representing 50 percent of annual construction spending by market. American Iron and Steel Institute, 202.452.7100; www.steel.org.

have a heart
Harmon's projects often blend contemporary elements—exposed steel, for example—with warmer traditional materials, such as reclaimed 100 percent heartwood pine flooring. His supplier of choice, Heartwood Pine Floors, offers knot-free products with densities of eight to 30 growth rings per inch in lengths of 2 feet to 10 feet. Harmon often specs antique Southern yellow pine or pure heart pine. Heartwood Pine Floors, 800.524.7463; www.heartwoodpine.com.

greeens fees
Green roofs are said to offer many environmental benefits, among them stormwater management, reduced energy costs, and heat island reduction. For these reasons, and a basic aesthetic one— "They are, quite simply, beautiful," Harmon says—his team integrates vegetated or 'living' roofs "into every project we can," including the one shown below. For such installations, they turn to Living Roofs for its consultation, design, construction, and maintenance expertise. Living Roofs, 828.252.4449; www.livingroofsinc.com.
Because Kaplan Thompson’s minimum insulation value for projects in the Northeast is R-40, the firm specs a product designed for extreme conditions. It often turns to cellulose insulation, which has the lowest “embodied energy” of its product class, uses up to 85 percent recycled newspaper, and offers better R-value in areas with wide temperature variations. Cellulose Insulation Manufacturers Association, 888.881.2462; www.cellulose.org.

LiveRoof looks and functions like a traditional green roof but offers the benefits of a modular system. The company says the system, which Kaplan Thompson used on this home, could extend the life of a roof by 100 to 200 percent and may reduce the energy use of a single-story building by more than 25 percent. It “arrives fully grown” and “installs in an afternoon,” Thompson says. LiveRoof, 800.875.1392; www.liveroof.com.

Kaplan Thompson believes the sun offers the only means to heat water efficiently. The firm’s preferred product to accomplish this task is the Apricus solar thermal system, which can be seen on the project shown above. The system includes evacuated tube collectors, an insulated solar storage tank, and closed circulating loops. Thompson describes Apricus as “consistently affordable, efficient, and trouble-free.” What’s more, he adds, “the tubes are modular and easily replaceable if there were a problem.” Apricus Solar Co., 203.488.8215; www.apricus.com.

Zehnder GmbH: ComfoFresh air distribution systems, www.comfosystems.com
hays + ewing
design studio

**green screen**
In keeping to its mission to produce beautiful, sustainable buildings, Hays + Ewing Design Studio uses EcoScreen perforated screen walls to “control light while allowing air movement,” Ewing says. The painted aluminum or stainless steel system offers an open area ranging from 10 percent to 40 percent, for a translucent effect. What’s more, the transmission of light through the material “creates a beautiful patterning on surfaces,” she adds. CENTRIA Architectural Systems, 800.759.7474; www.centria.com.

**hot item**
Hays and Ewing eschew pressure-treated and tropical hardwoods in favor of thermally modified lumber. Their product of choice, Cambia by Greenleaf, is treated with heat rather than chemicals—a process the company says improves the wood’s dimensional stability and rot resistance. Available as decking or siding, Cambia comes in ash, birch, poplar, and red oak. “We’ve begun using it in all our decking applications,” Ewing says. Cambia Building Products, 866.960.9663; www.cambiawood.com.

**solidly light**
The architects love natural light, but they acknowledge that windows—even low-E gas-filled units—can be a significant source of heat loss and gain. So they often turn to Kalwall+ Nanogel, a translucent cladding and roofing system with an R-value of 20. “Polycarbonates and translucent glass systems filled with Nanogel have insulating properties four times greater than insulating glass units and equivalent to solid wall,” Ewing says. Kalwall Corp., 800.258.9777; www.kalwall.com.

"with kalwall+ nanogel, we can have great daylight without sacrificing energy performance in the building envelope."

**other favorites**
Autoclaved Aerated Concrete Products Association: lightweight concrete block, www.aacpa.org
3form USA: eco-resin panels, www.3-form.com
WhalePower Corp.: wind turbines, www.whalepower.com
alchemy architects

• can do
This may look like a traditional recessed fixture, but it’s actually an energy-saving Calculite LED from Lightolier—a Warner pick because of its “great design” and compact size. Available in a round or square shape, the 4-inch aperture offers 1,000 lumens of light output and 50,000 hours of use at 70 percent lumen maintenance. Lightolier, 800.215.1068; www.lightolier.com.

• rain coat
Warner loves the aesthetic of rainscreens as siding (as demonstrated by his work above), particularly when they’re fashioned from locally sourced rough-sawn wood. For such projects, he uses VaproShield’s WallShield, a breathable membrane that prevents water from penetrating the sheathing while allowing trapped moisture to escape. Ideally suited to rainscreens, it’s designed, its maker claims, to reduce the risk of mold, mildew, and rot. VaproShield, 866.731.7663; www.vaproshield.com.

• terra firma
Warner opts for floating floors whenever he specifies radiant heating. Synergy strand bamboo flooring from Teragren is a favorite of his. The manufacturer fuses bamboo fibers with an environmentally safe adhesive under extreme pressure. The high-density sheets, which the company claims are 154 percent harder than red oak, are then milled into planks measuring 3¼ inches wide by 24, 36, 48, and 72 inches long. Teragren, 800.929.6333; www.teragren.com.

other favorites
Sustainable Flooring: engineered floating floors, www.sustainableflooring.com
Holst relies on Miller Paint's zero-VOC Acro Pure to ensure good indoor air quality in its projects. According to the manufacturer, the wall finish is formulated with a new-generation resin that results in improved performance and built-in antimicrobial protection. Miller Paint Co., 503.255.0190; www.millerpaint.com.

Holst specs Cascadia's fiberglass windows (rather than aluminum or vinyl) for projects such as this one because they "perform extremely well when tested for wind pressure and water intrusion," Stuhr says. Features include miter-cut joints, stainless steel fasteners, and a silicone dual-edge seal. The windows' high-efficiency glazing yields a U-value of 0.25 and a solar heat gain coefficient of 0.37. They can be speced in a wide variety of standard and custom polyurethane or water-based colors. Cascadia Windows, 503.453.2614; www.cascadiawindows.com.

The firm has no use for dual-flush toilets, Stuhr says. Instead, he and his colleagues favor those offering a single efficient flush, such as Kohler's Cimarron 1.28-gallons-per-flush toilet tank. The Water Sense-certified unit uses the manufacturer's Class Six canister technology, which it says results in smooth flushing with consistent water usage. It comes in six colors. Kohler Co., 800.456.4537; www.kohler.com.

Fuez: cement and recycled glass surfacing, www.fuez.com
architects' choice

shipley architects

in the groove
Corrugated metal is one of Shipley's favorite roofing and wall materials for two simple reasons: In many cases, "it's the least expensive and most maintenance-free material out there," he explains. His supplier of choice, MBCI, offers 24-inch-wide sheets in 26-gauge and 29-gauge thicknesses. Seen here on a Shipley house, the products use an exposed fastener system and come in a variety of colors and finishes. MBCI, 877.713.6224; www.mbcionline.com.

hardie boy
Shipley clads his homes with James Hardie fiber cement siding because he appreciates "its fire-resistant qualities, as well as its mass, which helps to reduce sound transmission." The manufacturer claims the cellulose and cement-based product won't rot, warp, or decay. James Hardie Building Products, 888.542.7343; www.jameshardie.com.

vintage appeal
Cork is so flexible that Shipley uses it for flooring and on walls (as he did on this project). "Many different looks can be achieved," given the diversity of color and style of grain choices, he says. DuroDesign manufactures its products out of 100 percent postindustrial content from wine-stopper production. Two types of flooring (glue-down or floating floor) are available in 54 colors and six patterns. DuroDesign, 888.528.8518; www.duro-design.com.

other favorites
Boise Cascade: laminated veneer framing, www.bc.com
WaterFurnace International: geothermal air conditioning, www.waterfurnace.com

"it goes up fast."
**ground cover**

In Bowman's view, earth-covered roofs “allow a foot-thick layer of life to continue life's struggles for another day.” To prepare his homes (including the one shown here) for the onslaught, Bowman specs Grace Construction's Hydroduct 660 drainage composite sheet and Bituthene 4000 pre-formed waterproof membrane, which has a self-adhesive rubberized asphalt compound to protect the roof from leaks. Thus fortified, site topsoil removed during construction “is simply relocated several feet atop the roof structure,” Bowman says. Grace Construction Products, 866.333.3726; www.graceconstruction.com.

**rough and ready**

Redwood Lumber & Supply Co. specializes in a variety of lumber products, but Bowman likes the “consistently good” quality of its rough-sawn timbers. “It has always bothered me to take rough-sawn lumber and then remove good wood through planing, milling, or even resawn texturing,” he explains. Instead, his firm “gets more bang for the buck” by incorporating the timber into its projects, such as the one above. The company sources its redwood from sustainably protected forests. Redwood Lumber and Supply Co., 800.435.1236; www.redwoodlumberco.com.

**playing the angles**

Bowman enjoys the effect of sloped glazing on natural light, as seen on this home he designed. “From the inside, it allows rooms to push out beyond the perceived exterior wall, and thereby strengthens the connection with the outside,” he says. He specs Solarium & Skylight Systems products, which have aluminum alloy frames; rubber gaskets; and various types of glass. Solarium & Skylight Systems, 800.794.9776; www.solariumskylights.com.

**other favorites**

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a bite-size building in a limitless landscape.

For such a tiny house, this 320-square-foot dwelling in Marfa, Texas, serves many purposes. San Antonio architect Candid Rogers, AIA, designed it for himself as a weekend retreat. But the project also serves as a teaching tool for his University of Texas at San Antonio students, who make the six-hour drive there once a semester. And it helps demonstrate to clients that size isn’t everything. “It’s sort of a proving ground for looking at spatial efficiency and materiality,” he says.

Rogers priced out the house as a prefab project but found that, due to its one-off nature, it would cost 15 percent to 20 percent more to build it in a factory. So he constructed it on site, acting as his own general contractor. Materials are simple and off-the-shelf: birch plywood cabinets and flooring, sealed concrete floors, and painted gypsum board walls and ceilings. He did splurge a little on the Cor-Ten steel exterior walls, which reference the oxidized metal sheds scattered around town. Most of the siding is corrugated, with a few flat pieces saved for the corners and window surrounds.

Carefully orchestrated views of the vast expanses outside help balance the home’s skimpy square footage. “The size really works well,” Rogers notes. “Ideally, somebody could reside there full time. And people do,” he adds. “In Manhattan and Tokyo, this amount of living space is quite common.”—meghan drueding

Horizontal windows frame views that highlight the landscape’s linearity. Custom polycarbonate doors open onto a south-facing terrace, which receives shade from a welded canopy of stock bar grating and steel tubes.

Photos: Chris Cooper
new material

by nigel f. maynard

**cirque du soleil**

Foscarini says the architecture of Vicente García Jiménez’s Le Soleil calls to mind the outline of Frank Lloyd Wright’s Guggenheim Museum. Fabricated from polycarbonate and chrome-plated steel, the suspension lamp features asymmetric bands that help diffuse light in different directions and uses four 75-watt halogen bulbs. Its shade measures just under 24 1/4 inches wide and 17 inches tall and comes in red, white, and aquamarine. Foscarini SRL, 39.041.595.3811; www.foscarini.com.

**steel rose**

Omnia Industries has responded to the surge of interest in modern design with this square rose latch set in stainless steel. The concealed-screw rose, which covers a 2 1/8-inch hole, can be paired with any of the manufacturer’s stainless steel levers for a complete contemporary look. Omnia Industries, 800.310.7960; www.omniaindustries.com.

**letter set**

The M Collection of modern modular bath products from Montreal, Quebec-based WETSTYLE is inspired by Japanese design. Its five components—wall-hung vanities, linen cabinets, and storage cubes among them—feature concealed European hinges, soft-close drawers, dovetail construction, and fully finished interiors. The line is produced in a multitude of sizes, three materials, and nine finishes, including walnut veneer (shown). WETSTYLE, 866.842.1367; www.wetstyle.ca.
Proper lighting is the backdrop for every great room. In fact, lighting is an easy, relatively inexpensive way to transform a room entirely. The right lighting products, placed correctly, meet functional needs but also create ambiance and depth. Fortunately, lamps and lighting fixtures are available in any style you can imagine on today’s market. Read on to learn about lighting products that will cast a warm glow on your next home.

A Subtle Yet Uncanny Shadow Effect
Indirect lighting offers many benefits — it reduces eye strain, distributes more evenly, and gives a room a pleasant glow. Architectural Products by Outwater has created a special series of high-density polyurethane cornice moldings in its ORAC DECOR® and ORAC MYLINE® collections that are specifically intended for use with indirect lighting. Manufactured to easily accept a variety of cove molding light fixtures (e.g., Outwater’s LED Thin Light, see photo) without causing scalloped or uneven light dispersion and illumination, the ORAC DECOR® and ORAC MYLINE® moldings can also be used just as readily for traditional applications without lighting. Designed to optimally encompass and utilize natural light, these moldings coupled with indirect lighting fixtures create a subtle yet uncanny shadow effect between the moldings and walls.

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Last fall, the principals of ARCHITECTS hanna gabriel wells made good on their long-held plan to buy their own place. The circa 1955 building they chose—once home to an auto repair shop in the heart of San Diego’s Ocean Beach community—was “a diamond in the rough, at its roughest,” recalls principal James Gabriel, AIA, “but we saw it as an opportunity to showcase a lot of the things we preach to our clients.”

Enhancing the streetscape and achieving net-zero energy use were top priorities. They accomplished both by replacing the site’s concrete with landscaping and trees; by relying on daylighting and natural cooling and ventilation; and by partnering with San Diego Gas & Electric Co. (SDG&E) on systems that power the 4,500-square-foot building and track performance. To date, the LEED Gold-certified project has earned awards from both AIA San Diego and SDG&E.

Ironically, the firm’s careful planning failed to anticipate one “pleasurable, though unintended” outcome. The wall of high-performance glazing on the west elevation ends with a 10-foot-tall, nearly 7-foot-wide pivot door with a rubber-coated handle (see top photo), but “no one can find it,” Gabriel laughs. “We thought we’d made it so crystal clear, but everyone just walks up to the building and stares at it. We always have to go out and usher them in.” —marla misek clark
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