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# residential architect

A MAGAZINE OF THE AMERICAN INSTITUTE OF ARCHITECTS

JANUARY · FEBRUARY 2012

## can prefab still deliver?

architects love factory-built  
high design, but will it  
survive the building bust?

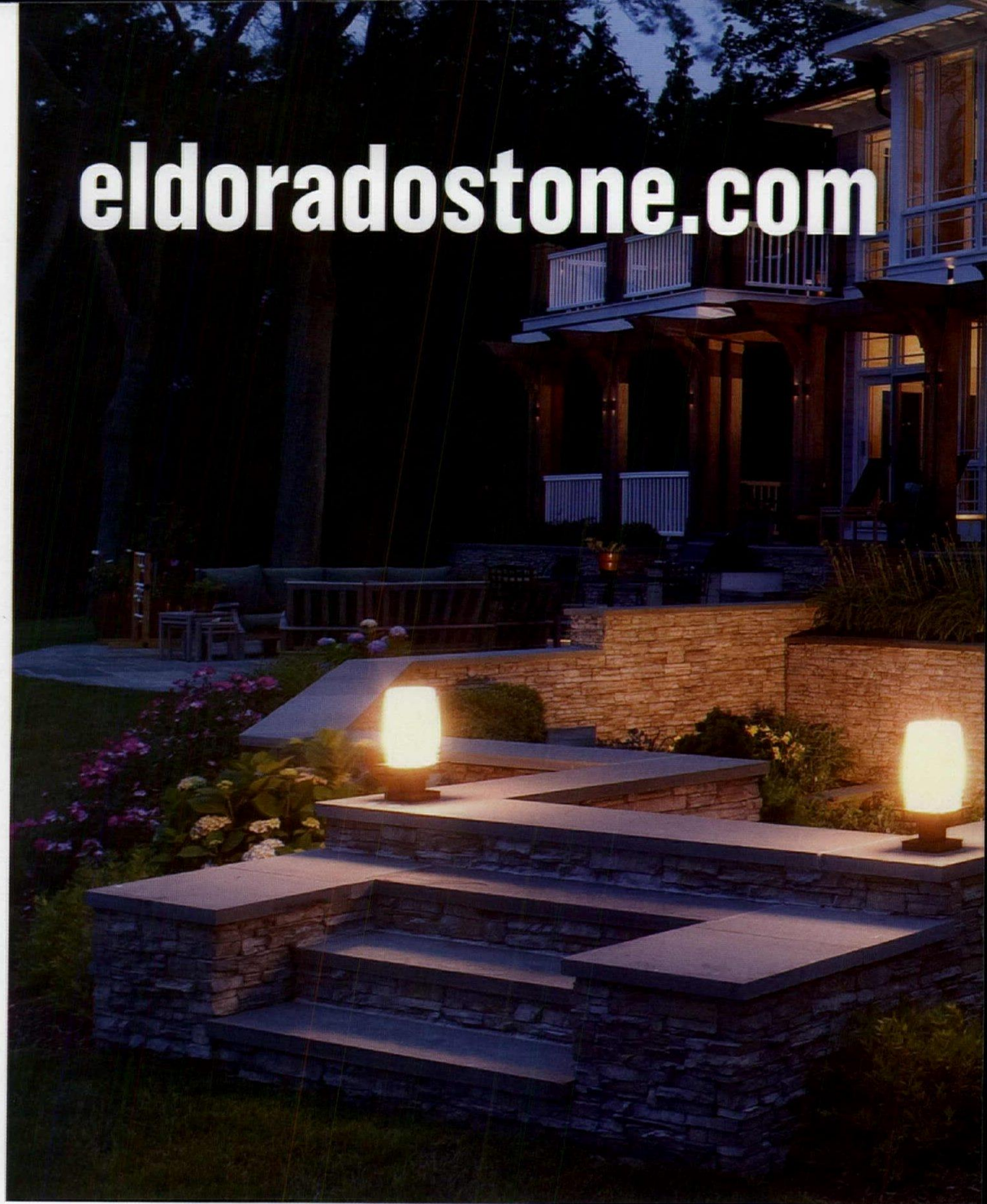


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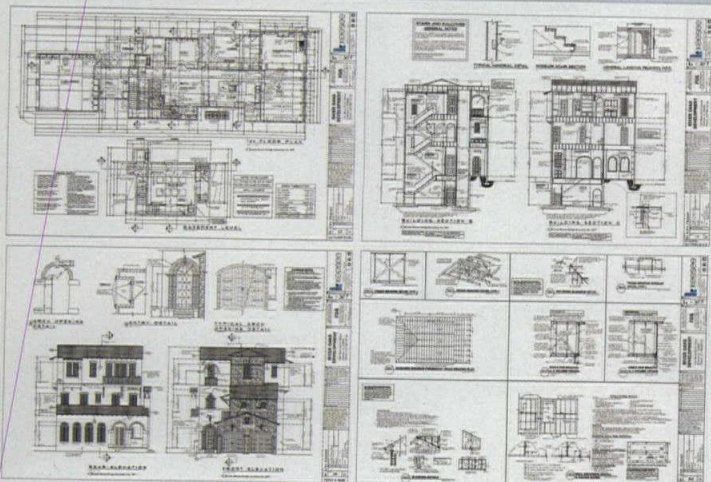


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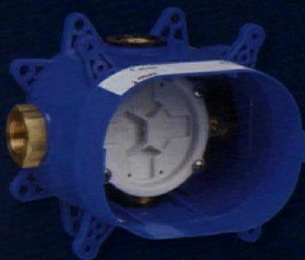
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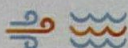
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Modern prefab companies certainly felt the effects of the housing bust. But many have survived the recession, and some newcomers have arrived. In this issue, *ra* takes a look at what's been happening in modern prefab—and what its future may bring.

*by megan drueding*

Cover illustration: Tavis Coburn; photos (left to right): Twist Photography, Paul Dyer

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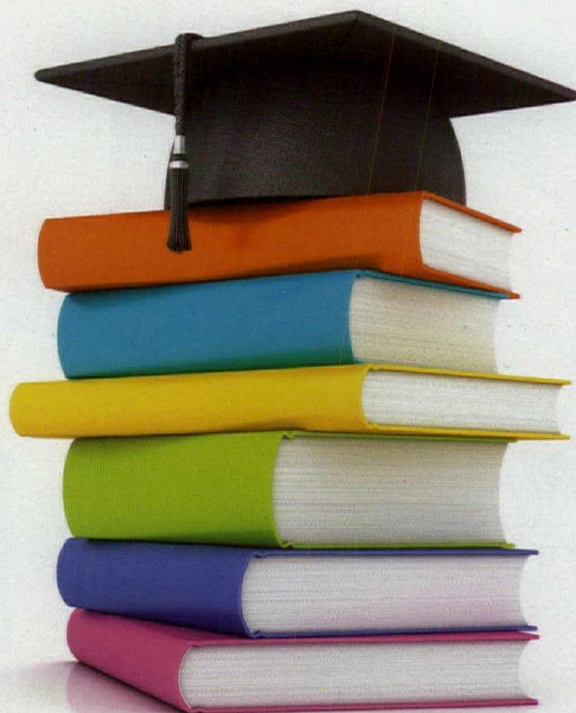
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from the editor

# is prefab still fab?

it seemed like the answer to delivering high-design houses to the masses—until the housing market collapsed.

by s. claire conroy

**W**hen we wrote our first retrospective cover story on prefabricated architecture the world was a very different place. It was January/February 2005, near the pinnacle of the housing boom. Architects were a starry-eyed bunch then, wondering how they could play a greater role in shaping the delivery of good design to the middle-income masses. They latched onto factory-built houses as a promising alternative to all the merchant builder “product” that proliferated in the nation’s suburbs and exurbs. The idea was compelling: Spread the cost of an architect’s clever design thinking over multiple executions. After all, what made custom residential architecture so expensive was and is the one-off prototype approach.

For a while, prefab captured the imagination of the press, too, and the legions of “cultural creatives” who wanted better-looking houses than they could afford under the old paradigm. Even Warren Buffett purchased an old-line manufactured housing company, Clayton Homes, with

ambitions to do hip modular. Similarly, venerable kit companies like Acorn Deck House Co., redubbed Empyrean, and Lindal, of the post-and-beam chalets, retooled to embrace the new future of off-site construction led by architects.

Several fleet-footed, newly minted prefab visionaries emerged from the pack. In 2000, Rocio Romero designed one of the first standout modern prefab houses, a 970-square-foot vacation home on the Chilean coast for her mother: The building was simple and beautiful and stirred such strong buyer interest, Romero decided to market it as the LV Home. In just over 10 years, she’s sold more than 160 iterations of them. In 2003, Resolution: 4 Architecture won *Dwell* magazine’s first modular design competition. (Our CEO, Frank Anton, who was a member of the jury, asked at the time if I had heard of the firm; the answer was no.) However, I had heard of Ray Kappe, FAIA, who also was on the jury, and Ralph Rapson, FAIA, who was a finalist. Both of these well-known architects were involved in modular housing’s first stirrings back in the ’50s; they were early true believers.

Around this time as well,



Mark Robert Halper

Jennifer Siegal’s Office of Mobile Design won attention for its innovative ideas about portable structures that sit lightly on the land. The company’s SwellHouse and a number of other prototypes came out of this laboratory approach. In 2004, Michelle Kaufmann, AIA, LEED AP, launched her breakthrough Glidehouse exhibition in Menlo Park, Calif., under the auspices of *Sunset* magazine. Twenty-thousand curious visitors toured the handsome building that looked nothing like preconceived notions of a manufactured house. The same bonanza year brought Toby Long’s NowHouse and Charlie Lazor’s FlatPak prototype.

In 2006, Kappe joined the fray and, with Steve Glenn of LivingHomes, built the first LEED Platinum house in the country—a modern modular in Santa Monica.

Heady times, indeed. Maybe, we were all starting to think, the time had finally come for factory-built housing. Then, in 2007, the bottom fell out of the market for any kind of housing. Five years later, we’re still awaiting a housing recovery and delivery on the promise of prefab. Is it DOA, or just a dream deferred? Senior editor Meghan Drueding examines the body of evidence, beginning on page 29. *ra*

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# home front

news from the leading edge of residential design.

## big apple prefab

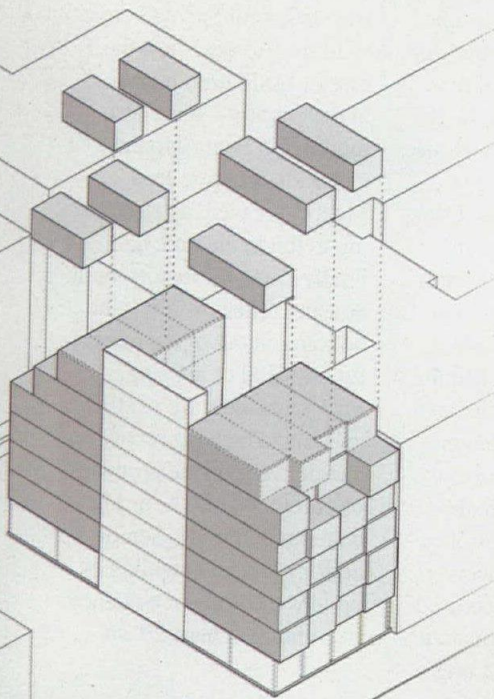
Peter Gluck and Partners has been stick-building its own projects for years. So when the New York-based architecture firm decided to design and co-develop a modular, multifamily apartment building in uptown Manhattan, it already had a sense of how prefabrication could potentially streamline the process. "We

understand all the inefficiencies of the stick-built model—all these issues with coordination and scheduling, physical access, weather," says partner Thomas Gluck. "For us, the appeal of modular is primarily in the time frame, and also the quality—it's easier to control."

The 28-unit, seven-story project, slated for groundbreaking in May, will express its modularity through its design. A grid of colored panels and windows makes up the façade. Some of the modules cantilever out from the front elevation, a strategy that lends texture and emphasizes the building's boxy nature.

Each unit will be constructed in a modular factory in Pennsylvania, then shipped directly to the site in the city's Inwood neighborhood.

(During the time it takes to make the units, the foundation will be site-built.) Once the modules are placed, it will take six to eight weeks to connect wiring and plumbing across the units. "The structure is the modules," Gluck explains. "It's not a superstructure."—*meghan drueding*







Renderings: Courtesy Peter Gluck and Partners

Factory-built modules will form both the structure and the individual units at this prefab multifamily building designed by Peter Gluck and Partners. Located in a dense Manhattan neighborhood, the 28-unit project will require less staging space (and construction time) than typical site-built housing.

Portrait: Robert Troup

| the next files |

## ken andrews, arch11

**a**n architecture instructor once told Ken Andrews he'd never make a good architect because he was too close to the construction trades.

So much for that theory. In 2011, AIA Colorado named Andrews, 37, both its Young Architect of the Year and its Instructor of the Year. Andrews, AIA, credits that success largely to his extensive jobsite experience. "I think I sympathize with people on the construction site more than most architects," he says. "If they say they can't build something, I can tell them, 'Yes, you can, and here's how.'"

That nuts-and-bolts interest in building informs Andrews' work with

Arch11, where he has been a partner for two years. "We're always looking at materials that aren't standard and using standard materials in different ways," says Andrews, whose research



Ken Andrews

at the University of Colorado School of Architecture and Planning focuses on innovative building systems. "The platform frame has been around for 200 years," he notes. "We challenge that as much as we can." Discussions with his students also

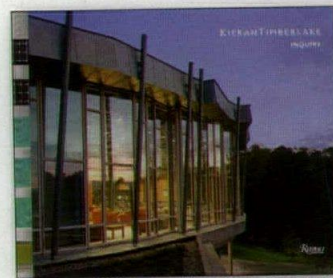
enrich his practice. "My thinking about design problems becomes much more saturated," he says. "I'm able to take all these ideas to my drafting board." And he never discourages former carpenters.—*bruce d. snider*

## design in 10 gerunds

**K**ieranTimberlake is known for its award-winning institutional work, but also for technologically sophisticated buildings. Among them is SmartWrap, an experimental pavilion commissioned by the

Cooper-Hewitt, National Design Museum that's sheathed in a flexible skin printed with organic LEDs and photovoltaics. Another is the ecologically agile Loblolly House on Maryland's Eastern Shore, lauded for its clever assembly system.

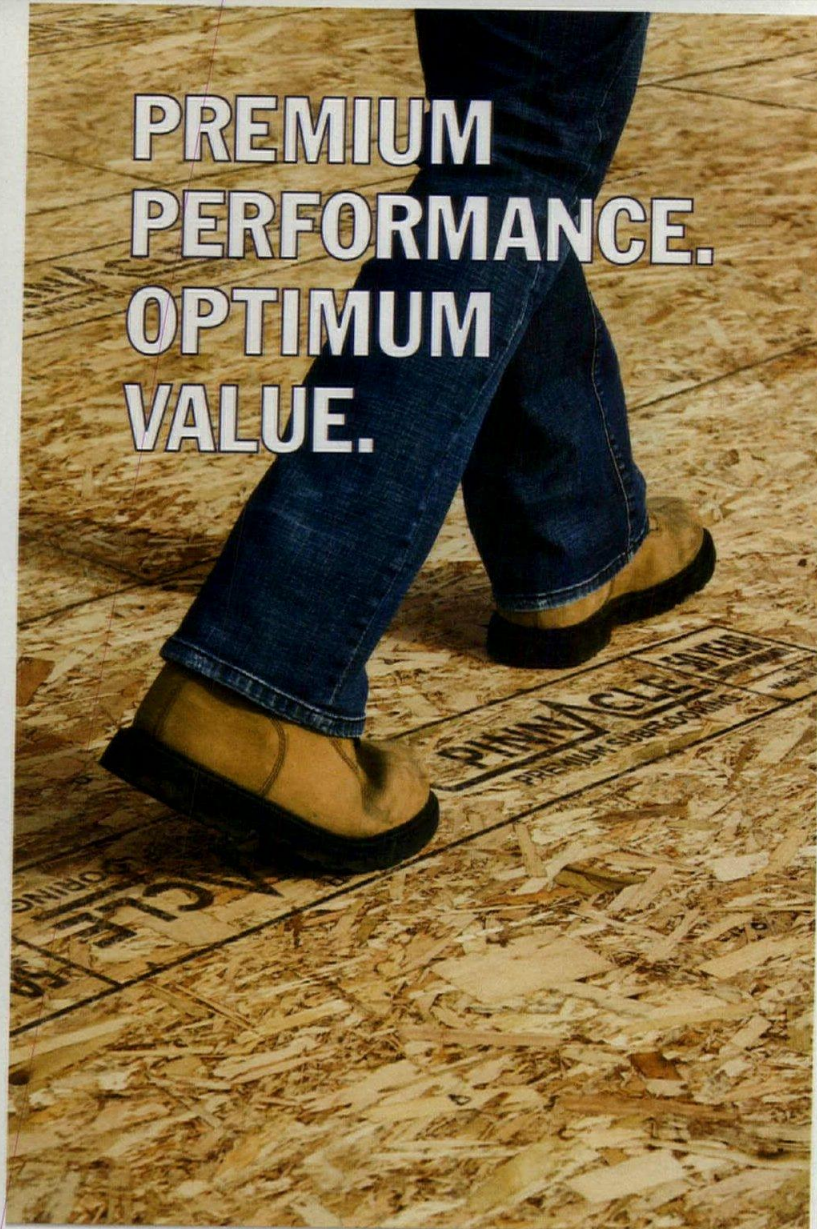
Like its precisely detailed buildings, the firm's new book *Inquiry* (Rizzoli, \$55), by Karl Wallick, AIA, unfolds in layers. The chapter titles distill design into 10 gerunds—bending, coupling, filtering, inserting, offsetting, outlining, overlapping, puncturing, reflecting, and tuning—that form a useful (and poetic) framework for working toward the often contradictory goals of sustainable architecture. Each chapter contains project fragments that illustrate the concepts. An index of 19 projects, arranged chronologically by date, stitches together the entire presentation. These notions can be figurative, too. Bending, for example, refers not just to walls or metal but a certain mindset. "There is also a conceptual bending that impels the design process at KieranTimberlake," Wallick writes. It's a way of resolving the multiple forces at work on a project, and "a calculated attempt to slow down the rush to a singular formal conception. A willingness to bend yields great strength in architecture."—*cheryl weber, leed ap*



*Inquiry*, Rizzoli New York, 2011



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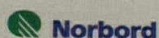


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## AIA VOICES

SHELTER FROM THE STORM | MOVING FORWARD BY TAKING ROOT

Luis Ibarra keeps a photo of his mother's childhood home close at hand—a makeshift shelter perched above a landfill in Nogales, Mexico. Originally a chicken coop, the structure was amended with materials salvaged from the landfill. These places, Ibarra says, have instilled in him an appreciation for resourcefulness, efficiency, simplicity, honesty of construction—values by which Ibarra and his wife and partner, Teresa Rosano, AIA, LEED AP, measure their work. In 1999, they launched a practice—Tucson, Ariz.-based Ibarra Rosano Design Architects—that is now among the most recognized names in architecture in the Southwest.

Our firm launched because of a competition win. Based on snapshots we took of our remodeled kitchen in our home, we won a van in a design contest sponsored by a home magazine. We had no need for a van, but we took it as a sign, quit our jobs, sold the van, bought computers, and launched into practice.

We come from humble backgrounds. We feel that our backgrounds have prepared us to look for ways to make the most with the least—extraordinary spaces from ordinary materials—and delight in the beauty of simplicity. This is where our design philosophy and ethics originate, in the notion of “simple shelters,” spaces born out of solving problems very directly, creatively adapting to circumstance with a pragmatism so absolute that its products are often appreciated as art. But the work is not about

self-expression; rather, it's about expressing the problem.

We like to think that what we are making is a piece of a larger puzzle that in the end could fit no other way. This is how nature behaves. It follows purposeful patterns, purely and simply, efficiently and effectively. So we feel that it is through this simple straightforward approach—where every decision is based on something important, and every resolution is an answer to a problem—that timeless design is achieved. Plus our “simple shelters” value system allows us to deliver projects that meet budgets and maximize the value of resources.

But there is an irony that comes with our success: Prospective clients might assume we are uninterested in their smaller-scale, lower-budget projects. But that's one of the areas in which we excel. In fact, one thing that has helped us in this slow time has been our early decision to keep the practice small. We did this because we wanted to have direct contact with our clients and their projects.

There was a time when we had a waiting list of clients several months deep, and we toyed around with the idea of growing and adding staff, moving our practice off our residential property, and constructing a new office. Thankfully, we were so busy we never did anything of the sort. We would be on the street now if we had. —As told to Ben Ikenson. **AIA**





ILLUSTRATION: MICHAEL GLENWOOD AND MICHAEL GIBBS

## Preservation pushes Chicago past uncertain economic times

BY DENNIS RODKIN

**WHEN VIRGIN HOTELS NORTH AMERICA ANNOUNCED** this summer that its first project would be in Chicago, renovating the 27-story Old Dearborn Bank Building into a boutique hotel, the choice seemed inspired to thrill fans of the city's highly regarded downtown collection of 19th- and 20th-century commercial buildings.

"It's a chance to rebrand or reintroduce a building that a lot of people hadn't noticed," says Charlie Stetson, AIA, lead architect on the project from the firm Booth Hansen. "It's really had background [status], but it deserves to be looked at again."

Completed in 1928, the Old Dearborn Bank Building has lovely terra cotta details on its exterior (such as a squirrel

hoarding nuts above the main entry—an impish reference to the original tenant), a very handsome main-floor staircase, and a wide, shallow floor plate that almost demands to be made into a hotel. And that squirrel over the door could take on new meaning after the building has been renovated for its new function: The developers will have saved both money and natural resources by preserving the structure rather than undertaking new construction.

Both kinds of efficiency are fueling an increased appreciation for preservation and renovation projects in Chicago, several local architects say, and the Windy City's large inventory of admirable old buildings provides ample opportunity. "If we're going to have any kind of rebirth in building here," Stetson says, "adaptive reuse of our existing building stock is going to lead the way."

Chicago is particularly well-positioned because it offers very appealing financial incentives for developers—including "Class L," which reduces property tax assessment levels for a 12-year period if an owner spends at least half of the landmark building's value on an approved renovation. "Everyone has to look for savings now," says Gunny Harboe, FAIA, whose Harboe



Architects has done some of Chicago's most prominent renovations. "If tax incentives are there to help them get going, they'll go where the incentives are."

But Harboe notes that the money doesn't pour out of spigots; it's tightly controlled to ensure that Chicago's architectural treasures are handled well. His firm's lauded restoration of Louis Sullivan's Carson Pirie & Scott Building (aka Sullivan Center) was helped along by money from a Tax Increment Financing District made available for restoring a landmark building exterior that was seen as providing a public benefit. It was a potential honeypot, but the money came with the stipulation that the Commission on Chicago Landmarks would retain a high level of authority over what could be done. The job included restoring Sullivan's wonderfully ornamented cast iron storefront and reinstalling an impressive decorative cornice that had been removed long ago—a welcome flourish that, Harboe suggests, was possible only because of the interconnection of TIF funding with landmarks oversight.

### If we're going to have any kind of rebirth in building here, adaptive use of our existing building stock is going to lead the way.

Going forward, there are questions as to the commission's continuing level of gusto for preservation. After 22 years as mayor, Richard M. Daley, a devotee of Chicago's architectural heritage, retired last spring. His successor, former White House chief of staff Rahm Emanuel, rejiggered the seats on the commission so that no architects other than a single landscape architect currently serve. While that's not to say the panel will gut landmark protection, the city's architects and preservationists wonder what it bodes for the future.

For at least one pair of Chicago-area homeowners, the choice to renovate an old building popped up only when their plans to tear the place down were blocked by local preservationists. In Glencoe, an affluent North Shore suburb, the mid-century Ancel House by architect Edward Dart, FAIA, appealed to buyers only for its large bluff-top lot overlooking Lake Michigan. Paying \$5 million for the site in 2006, they planned to replace the low-slung house with a larger new home and sell off a piece of the lot as a site for another—until pushback from the community eventually forced them to reconsider.

That's when they called in Becker Architects, which has a thick portfolio of traditional as well as modern renovations. Richard Becker, AIA, walked through the home with the couple and, as he recalls, "helped them appreciate Dart's expanse of glass on the lake, and their thinking evolved."

After devising a way to insert a new attached garage in a break in the front elevation and extend the horizontal roofline across an addition, Becker had both client and preservationists on board. A 2011 winner of a Richard H. Driehaus Foundation Preservation Award, Ancel House meticulously preserves the character of the original, while adding new spaces for contemporary living.

In a newspaper article about the award, the homeowner might have been speaking for numerous other old-building owners who find preservation a judicious choice. "In hindsight, I definitely think we did the right thing," Ellen Muslin told the *Glencoe News*. "Whatever the process was, it worked, and we gained an appreciation for what we had." **AIA**

# AIA PERSPECTIVE

## HOUSE PROUD



PHOTO: WILLIAM STEWART

**ONE OF THE STRONGEST PILLARS OF OUR ECONOMY, NOT TO mention one of America's core values, is homeownership.**

As a nation, we need to keep a laserlike focus on how we pursue this dream. If we don't pay careful attention, we can easily slip into the kind of market distortions that caused the housing market to overheat, and then collapse, with consequences from which we still haven't recovered. As a profession and industry, we have to take the long view when it comes to our clients' interests as they make what's likely to be the most important investment in their future.

What I mean by the "long view" is to access the best data available to project not only what homeowners need today, but also what they are likely to need tomorrow. This means designing flexibility and resiliency into their homes. We know, for example, the job market will be tough for the next several years. When the kids graduate, they may be coming back home before they land a job. Can their parents' home bunk one, two, or even three young adults under one roof?

Even if predictions of future job growth are wrong, one stubborn fact is the graying of our society. Can mom and dad age in place? Or will they be forced to leave their friends and neighborhood because the house has become unlivable? This has implications for a host of issues, ranging from access to public transportation to the cost of energy: Do we really want to take away the car keys from the elderly if there's no other way to get around? Do we want to force the retired out of their homes because they can't afford rising utility bills?

These are matters larger than the curb appeal of what we build. If we don't pay attention, you can be sure prospective homeowners will increasingly take them into consideration, knowing they're more likely than their parents to live in one place for a long time.

Keeping on top of a market in flux and advocating on behalf of those who do residential work are two of the many reasons the AIA created the Custom Residential Architects Network (CRAN). The goal is pretty straightforward: to be an indispensable resource in leveraging the housing industry back to a position of health. After all, to paraphrase another famous quip: As housing goes, so goes the nation. **AIA**

Jeff Potter, FAIA, 2012 President



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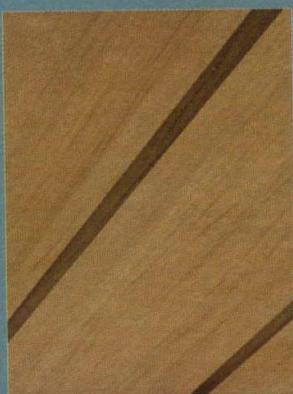
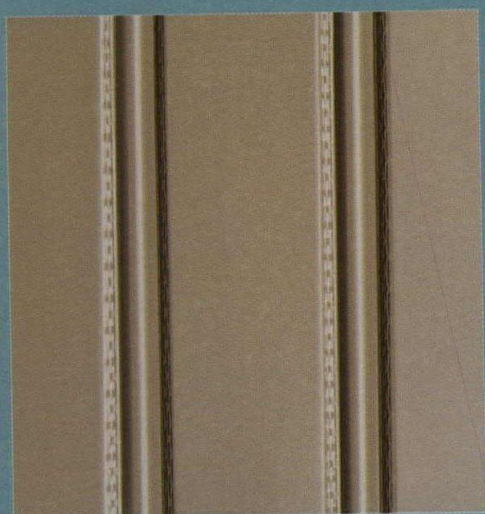
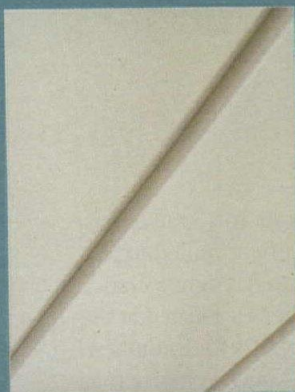
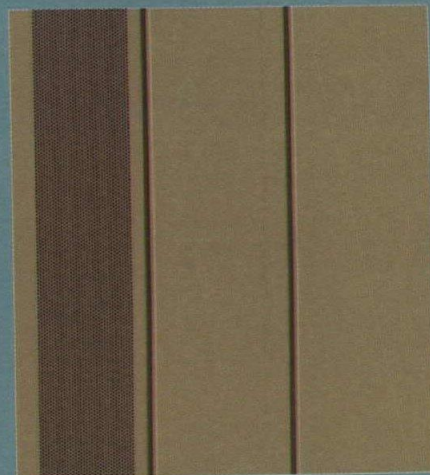
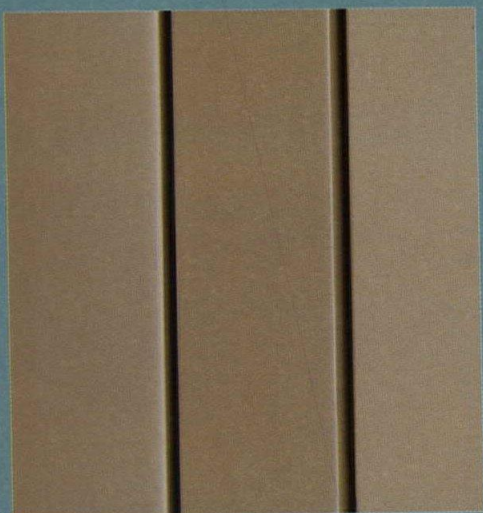


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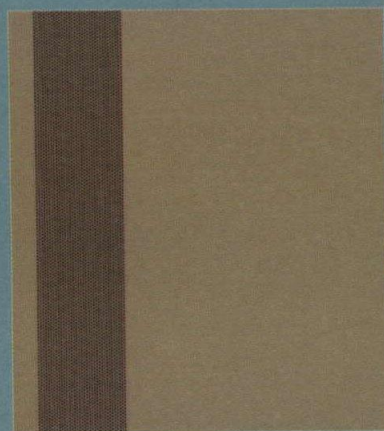
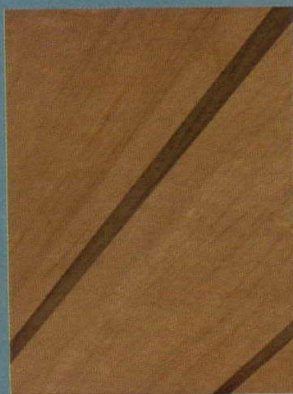




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# k + b studio

## kitchen: lighten up

San Francisco's celebrated Victorian row houses have many charms, but with windows often limited to two elevations, they can make access to daylight a challenge. The Pacific Heights Townhouse, located at the end of its block, enjoys the luxury of a long southern exposure at one side wall. "That," says architect Jonathan Feldman, "bought us 40 feet of space to bring in light." In combining the house's two flats into a single residence, Feldman leveraged that built-in advantage by locating the daytime rooms as close to the sun as possible. "All living spaces are on the top floor," Feldman says, "where there's more light and access to a roof deck."

The kitchen hugs the south wall, mediating between the living and dining rooms to the front, and the more casual breakfast area and family room to the rear. "It's the heart and hub of the public spaces," says Feldman, who highlighted that centrality in the most literal way possible. "We added a ton of large windows down the side of the building, and skylights," he says. Storage concentrated along the north wall, including a walk-in pantry secreted behind a glass-paneled door, frees the south wall for a bank of windows overlooking the house's narrow side yard.

A U-shaped layout of painted wood base cabinets and a small working island, both with stone-composite counters, define the cooking area and contrast with the darker wood floor, an engineered material surfaced with reclaimed oak. Ceiling-suspended storage—glass-front cabinets toward the dining room, open shelves toward the breakfast area—brackets the space at eye level. "It's a kitchen that has a ton of counters and a ton of storage but doesn't feel very substantial," Feldman says, "because everything's put away."—*bruce d. snider*

Storage lines the north wall, behind pantry and cabinet doors paneled with art glass.

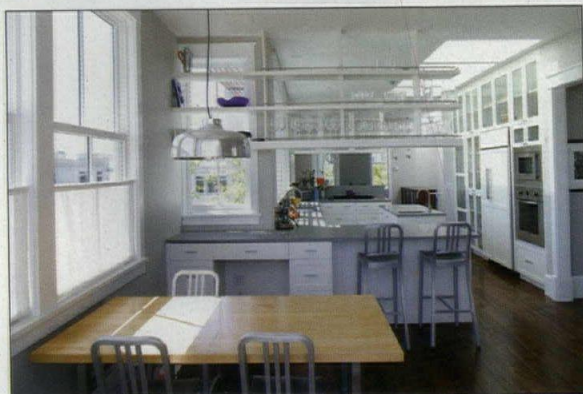
A long southern exposure and a generous bank of skylights make this kitchen a bright oasis. In anticipation of the occasional earthquake, the ceiling-hung shelves incorporate slender metal guardrails (right).

*project continued on page 20*





Photos: Paul Dyer



**project:** Pacific Heights Townhouse, San Francisco

**architect:** Feldman Architecture, San Francisco

**builder:** Lorax Development, San Francisco

**interior designer:** Lisa Lougee Interiors, San Francisco

**resources:** cabinets: Woodshanti Cooperative; countertops: EuroStone; dishwasher: Miele; flooring: Restoration Timber; garbage disposer: Insinkerator; lighting fixtures: Anta, Bocci, Santa & Cole, USA Illumination; oven: Viking; paints: Benjamin Moore; plumbing fittings: Kindred; plumbing fixtures: Ann Sacks, Blanco, Grohe; refrigerator: SubZero; skylights: O'Keeffe's; windows: Marvin



# k + b studio

## bath: bright idea

The Pacific Heights Townhouse master bath stakes out its own southern exposure one floor below the kitchen. Its symmetrical layout centers on a Carrara marble-topped sink counter, bookended by a shower to the east and a tub to the west. (A door opposite the counter conceals the toilet compartment.) The counter's marble backsplash rises to the sill height of the three south-facing windows, establishing a water table that segues into a glass-tile surround at the tub. The same watery blue tile lines the walk-in shower, while variegated blue ceramic mosaic tile picks up the aquatic theme at the floor. The dark wood of the base cabinet and tub skirt—a sustainably harvested hardwood called Chechen—provides an earthy contrast. In the interest of simplicity, architect Jonathan Feldman designed cutouts instead of knobs for the cabinet's drawer and door pulls. "Less is more," he explains. "Less things to clean and stick out at you. It lets the material be the focus." To

avoid the focus of neighbors across the bamboo-planted side yard, Feldman specified etched glass for the windows. "You can see the bamboo silhouetted through them," he explains, "but you can keep your privacy."—*b.d.s.*



Photos: Paul Dyer

Framed mirrors along the master bath's sunny south wall alternate with windows glazed, for privacy, with etched glass (above). The Carrera marble backsplash segues to glass tile at the tub, establishing a consistent beltline (left).



**resources:** ceramic tile: Ann Sacks, Waterworks; lighting fixtures: Waterworks; paint: Benjamin Moore; plumbing fittings: American Standard, Toto; plumbing fixtures: Duravit, Grohe, Kohler, Waterworks; windows: Marvin

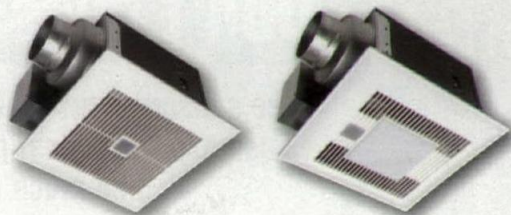




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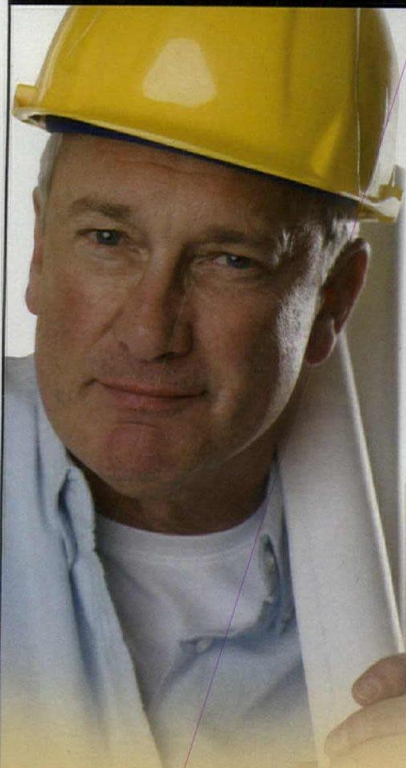
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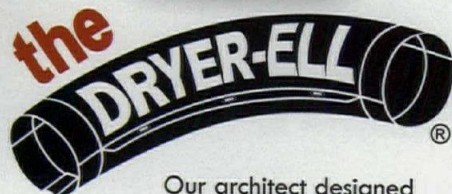
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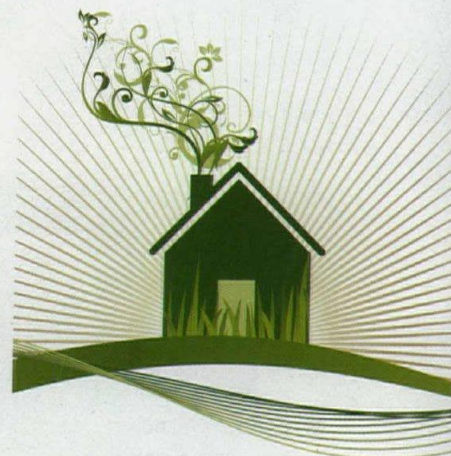
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# back on track

strategies for jump-starting stalled projects.

by cheryl weber, leed ap

In fall 2008, nearly every project in Cunningham | Quill's coffers went cold. Clients who collectively were planning to spend millions on single-family homes suddenly didn't want to, even though they had the financial means. And as we know now, developer funding dried up almost overnight. One 20,000-square-foot office/church project sat as a hole in the ground for the next year.

With projects languishing in various phases of development, founding partners Ralph Cunningham, FAIA, and Lee Quill, FAIA, checked in with their clients every few weeks. They sent gentle emails, but also began matching up projects with mortgage lenders who understood the value of their buildings. The forward momentum was its own reward, Cunningham says, but clients also appreciated the introductions.

Gradually, the Washington, D.C.-based firm's clients regained their confidence. Over the next three years, construction costs dipped, projects were repriced, and almost all have come back to life, including the commercial project with a new investor. "We were not standing by passively

waiting for the phone to ring," Cunningham recalls. "We fought like hell to get the stuff built. For us it was a matter of survival, things crashed so hard."

Today, despite the recession, the firm's workload is steady, though slow. It seems to mirror what's happening across the country. Statistics are not easy to come by, but an-

ecdotal evidence suggests that, even as the economy improves, projects of all types are still sitting on the sidelines. At last check, the AIA's Stalled Projects Database contained 36 projects worth roughly \$1.2 billion vying for investor attention, and about 50 investors looking for a good match, though no deals had been struck yet.

Projects go on hold for various reasons. Multifamily projects can rumble along for years while programmatic changes, funding credits, and public processes are sorted through. But projects that stall because of the economy present an awkward challenge, especially for architects who have never experienced a

*continued on page 24*



Keith Negley



prolonged recession. Quite often, it requires patience, perseverance, and a well-tended professional network.

## architects-in-waiting

New York City's Resolution: 4 Architecture (Res: 4) has seen almost 20 projects peter out since 2007. At least half a dozen came back, half a dozen are still on hold, and just as many probably will never materialize, estimates co-principal Joseph Tanney, AIA. The firm splits its time between custom homes, prefab, and commercial and public projects, so when one project type shuts down, it turns its energies toward sectors where there is work. "Some people just want to see where the dust settles before pulling the trigger. We back off, but we don't put the project too deep on the shelf," Tanney says.

When the economy hiccups, so do clients. One large renovation project is back on track after pausing during this past August's U.S. debt limit crisis. And when the market tanked in 2008, many of Res: 4's clients started to rethink their options. "People planning for a new residence were finding that a lot with an existing home was cheaper than an empty lot right next door," Tanney says. "They kicked the tires, then ultimately came back because what they were looking for wasn't actually available."

To get the ball rolling, Tanney often did quick studies to see if pre-priced proj-

ects could be built for less money. "Clients expected things to be cheaper than they were, so some projects were strung out until there was a comfort level with the reality of costs," he says. Meanwhile, Res: 4's emails announcing published work were meant to tantalize tentative clients. Some called to say they saw the project and looked forward to starting their own again.

With houses no longer the investment vehicle they once were, Reader & Swartz Architects in Winchester, Va., helps its clients get clear about their motivation for undertaking such an ambitious endeavor. "Before the recession, the longer you waited, the more the project cost," says co-principal Chuck Swartz, AIA, LEED AP. "Now cost is pretty flat and there are many options, so it's a little more muddled. It's a higher hoop to jump through, and there's a lot of wavering."

Architect-client relationships take on new dimensions in a broken economy, agrees Seattle architect David Vandervort, AIA. "When you understand the psychology of what your clients are trying to do, you're able to deal with them on a different plane," he says. To accomplish that, the firm has had to rethink how it markets and delivers its services. Clients crave a predictable process, he says, and that means having as many challenges resolved up front as possible.

## take two

Everyone celebrates when mothballed projects come off the shelf. But rarely do multifamily commissions start where they left off. Given the bruising the marketplace has taken, a second round of due diligence is necessary to ensure a solid project. "We have to have facts and figures in front of us to start back up," says Looney Ricks Kiss (LRK) principal J. Carson Looney, FAIA. "Just because it was viable a year ago doesn't mean it is now. We treat it as a new job." That also means reassessing the fee to include startup costs.

Ownership is one of the biggest items to revisit. With many clients set up as separate LLCs, LRK combs through the initial contracts to determine what legal entity it's working for and whether the insurance and financing is still in place. Another issue is whether the project still makes economic sense. Has the market situation changed or do they foresee it changing? If the project could have been built for \$100 per square foot two years ago, maybe today the client needs to spend \$90 per square foot, or \$110 to hit a higher buyer target.

While the design always has to be strong, nothing is truly a triumph unless it fits the marketplace, Looney says. "We're here to lead so our clients have success; that's how anyone creates repeat clients," he says. "If you look around, even though everyone is tighter with money, there's always a flight to quality: the building lives better, is in the right location, and works in the community. We know what that does for us long-term. That's the ultimate success." —c.w.

The firm regularly provides site consultations or home assessments to help clients decide whether to remodel or build new. And using ArchiCAD to move from loose sketches to 3D models helps clients visualize the possibilities before paying for a full construction set. To simplify the process, the firm also offers packaged collaborations with an interior designer or landscape architect.

Frequent code changes in the environmentally sensitive San Juan Islands offer David Vandervort Architects another opportunity to

inspire confidence among landowners there. Regulations are becoming more severe to protect shorelines and habitats, restricting people's ability to build on their property. "We send out marketing cards showing our work there, but also informing property owners of their changing land use rights, which can be upsetting if they're not aware of them," Vandervort says.

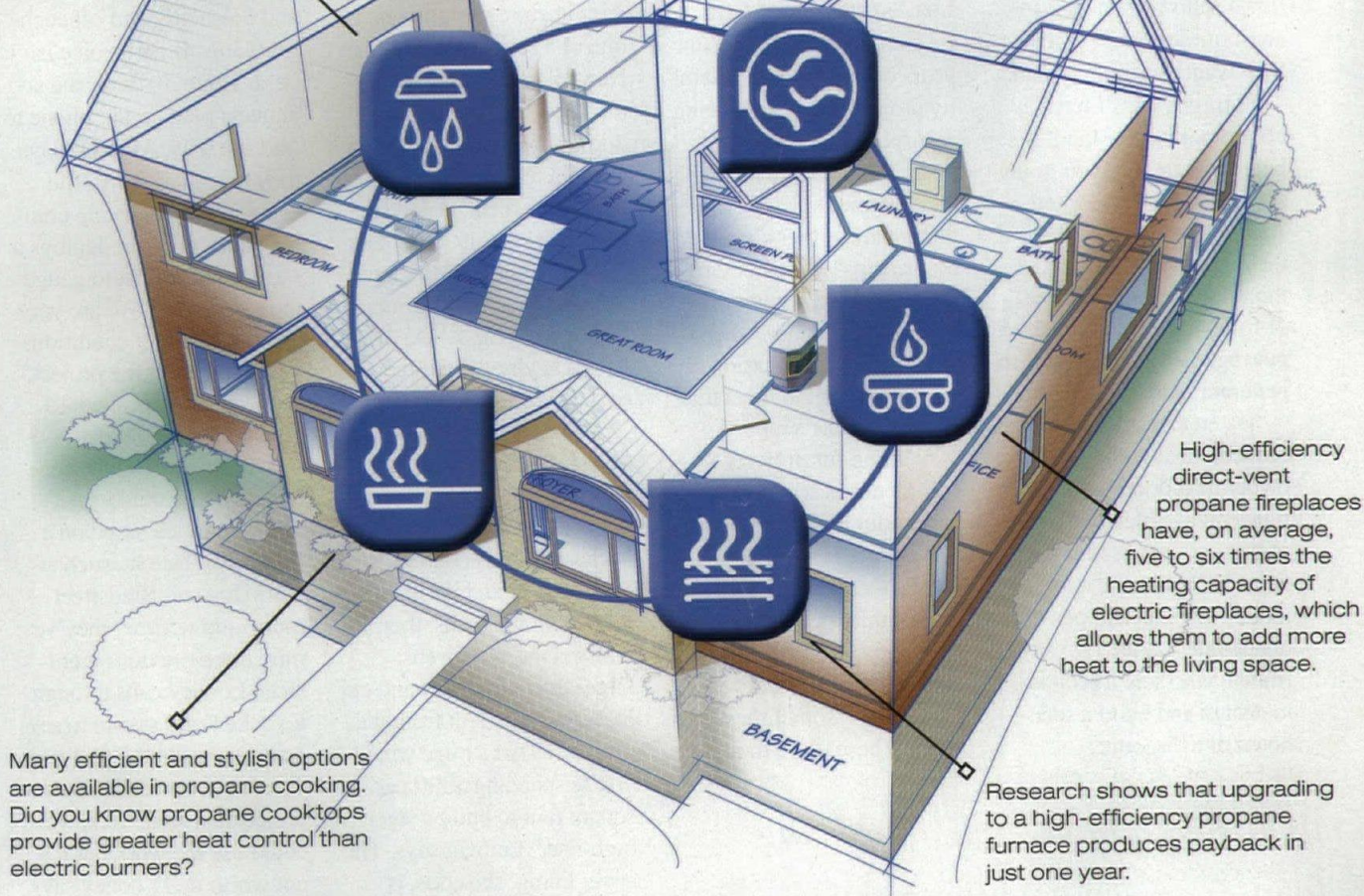
In Palmetto Bay, Fla., a number of Roney J. Mateu's clients who purchased land put houses on hold even before starting. Firm members

*continued on page 26*



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stay in touch with clients because usually they've become friends, but many times follow-up calls also are inquiries about whether they want to sell their land.

"I might say: 'I have a client looking for land. It's been a while; are you going forward or not?'" Mateu, AIA, says. "In most cases they want to wait it out, though there are a couple of folks in negotiations I've put together. It's one way to generate work."

Mateu also hopes to broker a deal with the landowner next door, who was in financial trouble after years of buying distressed properties. "He had made a lot of money but was 100 percent underwater on the lot," says Mateu, who sent a proposal to design and build a spec house at a discount.

*"i might say, 'i have a client looking for land. it's been a while; are you going forward or not?' it's one way to generate work."*

—ronney j. mateu, aia

"Since the owner is in the development business, hopefully I'll have a new client if I do a good job," Mateu says. "He has the ability to fund the construction without getting a bank involved. Maybe we can make a bad deal less of a bad deal."

**eye on the prize**  
In a difficult construction

market, architects of mixed-use housing are helping developers re-strategize, too. Los Angeles-based Griffin Enright Architects spent years designing a multifamily project that is now being repurposed as a boutique hotel. "Every once in a while we do more drawings to help them gain partners," says co-principal Margaret Griffin, AIA. "Because we work in a timely manner, when we do check in occasionally it's just to remind them that we're there for support."

Waiting for projects to commence is second nature for Studio E Architects in San Diego. It routinely deals with tax-credit-financed multifamily projects, a competitive process whereby clients chase a pot of development funds, sometimes for years. These days, though,

the architects let clients know they're available for additional services that might boost their chances of winning. "In some cases we've said we'll collect that fee when you're awarded the tax credits," says principal John Sheehan, AIA. "We're willing to wait but are not giving it away."

A tight business net-

work is critical to getting things done. Five years ago, Boston-based ICON Architecture designed phase one of a residential tower in New Haven, Conn. When the developer pulled away during phase two, ICON found a former client to take over the project, slated for construction this year. "Our former client couldn't have been happier," says principal Nancy Ludwig, FAIA, LEED AP. "They're the fresh energy to come into the deal."

Work also is proceeding on a 350-unit apartment building that was approved three years ago but stalled because of the economy. When ICON and its client pulled out the plans, they realized the units were larger than necessary and cut 50,000 square feet from the project. "That's huge when you're spending \$300 per square foot to build a steel high-rise," Ludwig says. The silver lining, she adds, is that a wider client network is being spawned out of the economic downturn. As businesses got squeezed and loyal clients moved on, ICON followed them to the place they landed.

Looney Ricks Kiss (LRK), Memphis, is one example of the industry shake-ups that have occurred since 2009. Lots of projects went on hold that year, many of them mid-stream. LRK tried to keep things moving by letting its best national clients defer payments. That contributed to the firm's subsequent bankruptcy and downsizing—from 250 employees in nine offices

in 2007 to fewer than 50 in three offices.

Now, stricter checks and balances head off such problems. If an invoice isn't paid within 30 days, the architects pick up the phone to find out why. After 60 days, they may stop work. But even before accepting commissions, the firm deploys a rigorous checklist to gauge their strength. "We are very aware of market conditions that may affect the project," says founding principal J. Carson Looney, FAIA.

Clients receive the same scrutiny. LRK ranks unknown entities based on a number of factors, such as their Dun and Bradstreet rating and whether they've mistreated previous architects. Looney calls it tough love. LRK did say no to several projects in the past year. "I remember we debated one project and said, 'Yes, we could use the work but it's not worth it,'" Looney says. "That hurt at the time. But we didn't suffer for it."

Cunningham urges architects to be proactive, forming alliances with bankers or mortgage brokers who are honest and know their work. And despite conventional recession wisdom, when Cunningham | Quill's single-family clients dusted off their dreams, very few downsized. "The projects remained largely unchanged; our clients loved the designs and wanted to build them," Cunningham says. "I think we did our best work ever during this recession because we managed to get these things built." *ra*



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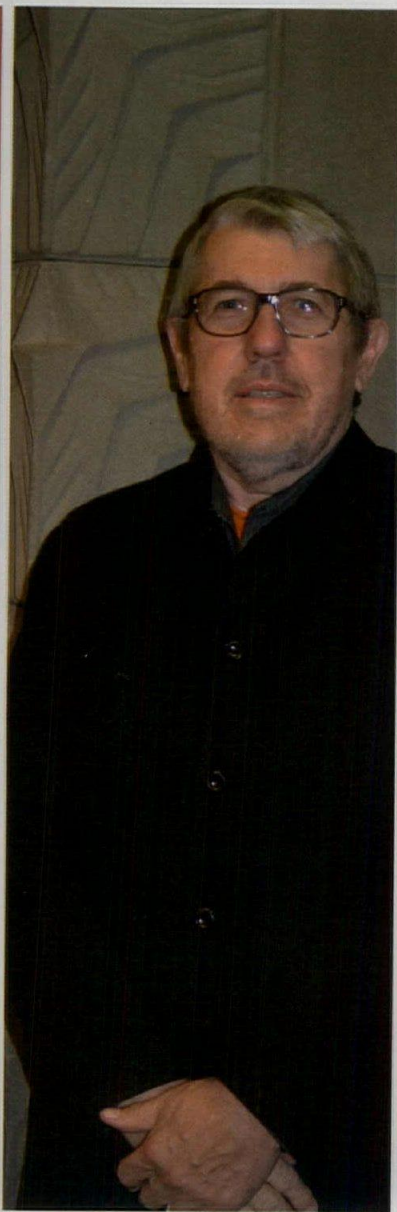
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# why I love residential architecture



“

I realize that architecture is about the creation of memories. Memories are about lives. And the house is sort of the hearth of those memories. I find an intriguing scale and purpose to a house that is so elemental. You have the opportunity to not just bring yourself to the table as much as to create things that reflect your client's expectations and desires. And that's very gratifying.”

**will bruder, aia**

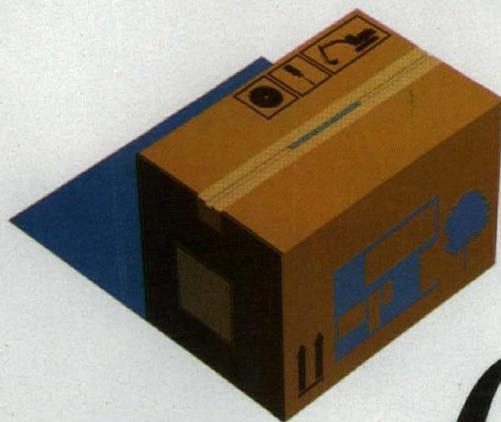
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# *prefab* revisited

modern prefab navigates the post-housing boom era.

**f**ive years ago, modern prefabricated housing was going to change residential architecture. Fueled by a bullish economy, a talented group of architects, an enthusiastic media, and a subset of home buyers hungry for affordable modern design, the world of prefab overflowed with possibilities. The thought of great-looking modern homes for everyone—ones that the homeowner could easily customize, like a car—excited and thrilled idealists everywhere. It was a concept architects had

been pursuing for almost a century but never fully realized. This time, many people thought, the time for architect-led prefab had finally arrived.

We all know what happened next. In 2008, the economy crashed, taking the real estate market down with it. And architects who had invested time and money into prefab took just as much of a hit as their non-prefab peers. Jittery clients canceled or postponed projects, prefab factories shut down, and lenders froze. One of the modern prefab movement's most successful and

charismatic proponents, Michelle Kaufmann, was forced to close her doors in May 2009. "If architects couldn't capitalize on the boom years ... to move closer to mass production, you have to wonder if they will ever be able to," wrote the *Los Angeles Times*' architecture critic Christopher Hawthorne in June of that year.

Many observers thought the cost of modern prefab houses was another culprit, coupled with the free falling economy. "It's still a completely niche, high-end product," says Lloyd

*continued on page 31*

by meghan drueding





# lake|flato architects

## lake|flato porch house

Lake|Flato Architects' status as a relative newcomer to prefab carries significant benefits. By entering the prefab world later than many of its peers, the well-established San Antonio firm was able to learn from others' experiences before building its first modular home. Starting in 2009, the firm researched the history of prefabricated housing and talked to many of the industry's current practitioners. "For the most part, the people involved in doing prefab housing are a very generous, information-shar-

ing group," says principal Ted Flato, FAIA, who heads up Lake|Flato's prefab initiative along with associate Bill Aylor, AIA.

In September 2011, the firm launched its Lake|Flato Porch House, which consists of factory-built modular rooms connected by site-built elements such as porches, breezeways, carports, and terraces. "We've always been about connecting to the landscape," Flato says. "These are houses as we've always designed them—they're just done in a more efficient manner." By limiting material, detail, and floor plan choices, Lake|Flato has kept the average cost of the Porch House to \$150 to \$225 per square foot. (The project won the top prize in the 2011 Builder's Choice Awards, run by *residential architect's* sister magazine, *BUILDER*.)

The firm has built two Porch Houses so far, both in Texas. Several more are in the works.

**architect:** Lake|Flato Architects, San Antonio

**in the prefab business**

**since:** 2011

**prefab homes completed:** 2

**prefab method:** Modular

**average construction cost:**

\$150 to \$225 per square foot

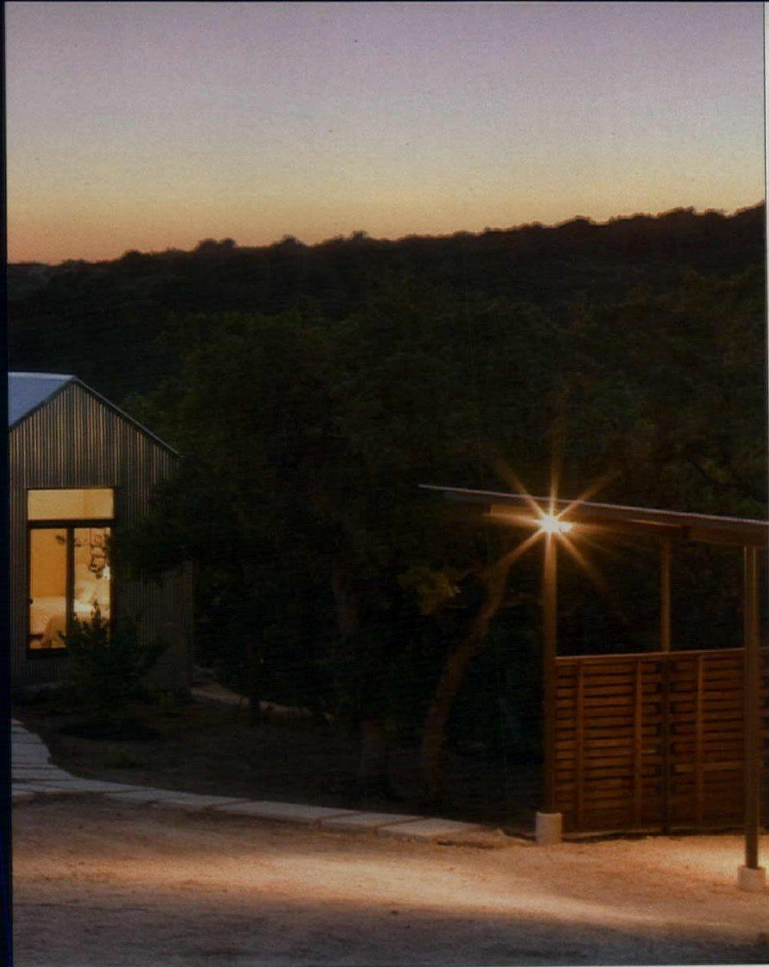


Ted Flato



Bill Aylor





Photos: Frank Ooms



The first completed Porch House, a weekend residence in rural Texas, gathers four separate modules to create a sheltered central courtyard. A site-built breezeway and porches link the house to its landscape.

## prefab revisited *continued from page 29*

Alter, design editor of the blog TreeHugger. As Hawthorne alluded to, in the years leading up to 2008, modern prefab practitioners hadn't been able to achieve the economies of scale they needed to lower their prices as dramatically as many of their potential customers expected. Prefab pioneer Jennifer Siegal, of the Los Angeles-based Office of Mobile Design, notes that once the recession started, "I was getting tons of phone calls from people asking for *cheap*. There was this perception that because it was multiples, it would be \$100 per square foot." In some situations, a prefab house does cost less than its stick-built counterpart. But, as Siegal says, "It's not a cheap building system, and you don't get cheap buildings."

Modern prefab may not have led to the ultra-affordable, high-design utopia of many architects' (and architecture writers') dreams, but that doesn't mean it's over. Drawn by the promise of faster construction times, lowered material waste, and greater control over the building and estimating process, architects have continued to get prefab houses built during the recession, if not at the scale they originally had imagined. And almost everyone connected with modern prefab has a more realistic post-recession outlook. "In 2006, we believed

we would solve societal problems," says Toby Long, AIA, another prefab veteran. "I don't know that those kinds of problems get solved because we have a factory." This reality check could be a good thing for prefab's long-term health. "It's too easy to put up a website and some pretty renderings," says Kaufmann, LEED AP, who still designs and consults on prefab projects. "Now it does feel like people are doing it more thoughtfully."

### delivering architecture

Many of the architects involved with prefab have gone back to thinking of themselves more as designers, rather than as marketers of prefab houses. "I've stepped out of the sales channel," says Long, whose Oakland, Calif., company, CleverHomes, has been around since 2003 and completed a dozen projects in 2011. "The front end and back end of prefab are two different purposes." Long works with his clients to adapt one of his standard prefab house designs, and then bids it out to factories, the same way he would with general contractors if it were stick-built. Joseph Tanney, AIA, of Resolution: 4 Architecture in New York, which has completed nearly 50 modular homes, says he's always seen the design and sales sides of prefab as

*continued on page 33*





Twist Photography

## krdb ma modular

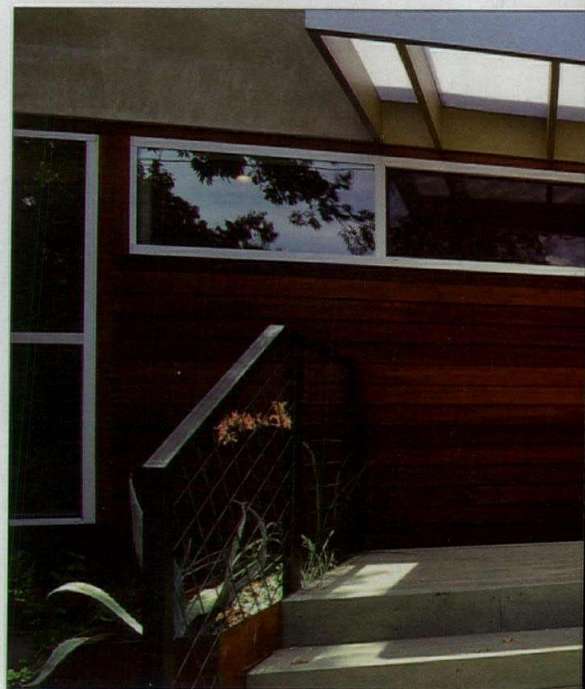
**W**hen Chris Krager, AIA, started ma modular, he envisioned building prefab houses across the United States. “We developed ma as a way to do what we do locally elsewhere,” says the Austin, Texas-based founder of the design/build firm KRDB. That was in 2007; since then, he’s adjusted his expectations. While Krager still plans an eventual national expansion, for now his focus with ma modular is on building a controlled number of prefab houses in central Texas, and building them well. “I realized I’d have to be patient with this process,” he says. “We developed a business model that was smaller, and then we can roll it out bigger.”



Chris Krager

2011 proved a good year for ma modular. The company completed four prefab homes, working with two different factories. Krager has been able to hold the homes’ average prices to \$150 to \$160 per square foot, and for him that’s a key point. “A lot of the [prefab] stuff that’s out there—people love it, but they can’t afford it,” he says. “To me, that’s the potential in modular housing.” He concentrates on designing modules that are easy for factories to build and repeat, using familiar, time-tested materials and techniques.

A 2010 ma modular home (above and below) in Austin serves as a primary residence for a family. One of the company’s first houses (opposite), also in Austin, was built in 2008.





**architect:** KRDB, Austin, Texas  
**in the prefab business since:** 2007  
**prefab homes completed:** 6  
**prefab method:** Modular  
**average construction cost:** \$135 to \$200 per square foot (includes design fee)



Casey Dunn



Twist Photography

## prefab revisited *continued from page 31*

two different beasts. "Our practice is as architects," he explains. "We're not trying to sell anybody anything. If we think modular is the best bang for the buck, we're going to suggest it to the client." (See page 38 for more on Resolution: 4 Architecture.)

Another strategy that seems to be working for architects is cultivating a relationship with one particular prefab manufacturer. Maryann Thompson, FAIA, is collaborating with the Acorn Deck House Co., the 65-year-old kit house maker that had changed its name to Empyrean during the housing boom. (Empyrean went out of business for several months in 2008, but the revived company now has a new owner and has gone back to its previous name.) Thompson and her staff have designed a model for Deck House called the Hinge House, which they'll adapt to a client's site. So far one Hinge House is complete and another starts construction this spring. Thompson is pleased with the experience. "It's much less expensive than full-service architecture," she says. "I like the way the Deck kit of parts works."

Tom Lenchek, AIA, of Balance Associates in Seattle, has a similar relationship with prefab builder Method Homes, which specializes in modular, architect-designed structures.

Some of Method's projects are fully custom, while others are customized versions of standard models. "They paid for us to develop their first model, and we adapt those for each client," says Lenchek, who has since designed several more models and two custom homes for Method. "The houses tend to be nice, small, simple projects. The reduced timelines are another real benefit to prefab." In 2011 alone, Balance and Method collaborated on 15 houses.

Even when the architect is both designer and seller, there's a recognition that modern prefab often works best as a tool for delivering architecture—that its value lies in bundling good design into preconceived elements. "Customers are telling us the cost of building is the same as a stick-built house," says Rocio Romero, whose kit-of-parts LV Home debuted in 2002 (see page 34). "But there are huge savings, because you're getting high-end design." Those who design both prefab and stick-built toggle back and forth between the two, using whichever method best suits a client's site and priorities. "Our goal is to find the most efficient, most appropriate means to deliver the house," says Leo Marmol, FAIA, of the design/build firm Marmol Radziner, which uses both building methods.

Remote locations where labor is difficult to find

*continued on page 35*





# rocio romero

## lv series homes

**S**ince starting her company in 2002, the quietly confident Rocio Romero has completed more modern prefab houses than any other currently practicing designer (160, to be exact). Romero attributes the success of her kit-of-parts LV Series Homes to their sleek design, and to their ability to be easily shipped. "Early on we realized, this is a niche market," she says. "People who like modern are all over the place in the U.S. The way to cater to them was that it had to be prefabricated."



Rocio Romero

All of the LV's pieces, which Romero gathers at her Perryville, Mo., facility, fit on one truck. Once the kit of parts arrives on the site, a general contractor hired by the client assembles it using plans, elevations, and detail drawings provided by Romero. Most of her clients want to customize the house, so she and her team revamped their computer models in November, making it easier for people to choose

various design options.

Like everyone else involved in housing, Romero has felt the pinch of the recession. "We're doing eight or nine homes per year now, which is really slow for us," she says. "We're managing, though." Even in a soft market, the combination of good design and good value remains a powerful draw.



**architect:** Rocio Romero,  
Perryville, Mo., and St. Louis  
**in the prefab business since:**  
2002

**prefab homes completed:** 160  
(including outbuildings)

**prefab method:** Kit of parts  
**average construction cost:**  
\$120 to \$195 per square foot  
(includes design fee)





A Gallatin, N.Y., LVL Home (above and left), part of the LV Series, was built in March 2008 and contains 1,453 square feet. Clerestory windows let light into its Ikea kitchen.

Photos: Ross Partridge

An ipe entry bridge complements the leafy setting of this 1,450-square-foot LVL Home in Eureka Springs, Ark., completed in April 2008 (below).



Ethan Whitehill

## prefab revisited

*continued from page 33*

tend to favor prefab. So do time-sensitive situations and areas with high labor costs. In regions with inexpensive on-site labor, stick building often is a more cost-effective option. "The key thing is, what is the right construction approach to a specific site?" says Charlie Lazor, designer of the panelized FlatPak house and whose firm also does modular and site-built projects (see page 36). "We can tailor fit the solution. At the end of the day, we're just an architecture firm."

### repetitive motion

With a few exceptions, most prefab architects depend on outside factories to build their projects. Maintaining these factory relationships is a major key to the future of prefab. Because of the slowdown, the factories are squeezed financially, and many of the ones that are still around worry about taking a risk on a new prefab project. "We hope to continue building the houses, but we need to make sure we can make a profit," says Kendra Cox, production manager at Blazer Industries in Aumsville, Ore. Cox works with Kaufmann and Seattle-based Stillwater Dwellings, among others, and emphasizes that she can offer a better price when the designer provides more repetition from house to house.

Repetition has been a

troublesome point for modern prefabbers, owing to the desires of the marketplace. "I've always done custom, because nobody wants the same house," Siegal says. The consensus among experienced modern prefab designers seems to be that a typical client wants more customization than they initially had expected—which, of course, drives up a home's price. Prefab custom homes do offer the significant advantage of a fixed price up front. "The fixed price is a big, big factor," says Steve Glenn, CEO of Santa Monica, Calif.-based LivingHomes.

Conversely, quite a few boutique modern prefab companies (such as Marmol Radziner, FlatPak, and Method Homes) have introduced somewhat lower-priced, customizable lines that feature more of the repetition Cox is talking about. They've recognized that many admirers of prefab haven't been able to afford it, and are betting on an eventual thawing of the currently frosty lending environment. Chris Krager, AIA, a designer/builder in Austin, Texas, has consciously kept his prefab line, ma modular, priced from \$135 to \$200 per square foot (see page 32). "The biggest upside of prefab is tapping into a market that wasn't tapped into before," he says. To do so, he's limited customization options and simplified

*continued on page 37*



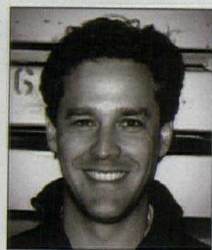


A 2010 FlatPak house (this page) in Birchwood, Wis., sits lightly on its wooded site thanks to its pier foundation system.

# lazor office

## flatpak house

minneapolis-based Charlie Lazor first introduced the panelized FlatPak house in 2005. Since then, his firm, Lazor Office, has built 18 FlatPaks. Over the past few months, it's also introduced a lower-priced version of the house. "The original FlatPak is really a high-performance building envelope," Lazor says. "We've simplified the construction of it so it's more in line with the way houses are typically built." The new iteration will cost around \$200 to \$220 per square foot, whereas the original FlatPak, which is still available, costs approximately \$260 to \$290 per square foot.



Charlie Lazor

The company's own shop in northwestern Wisconsin produces the FlatPaks, which it then takes charge of assembling on the site. "The benefit of doing FlatPak and other modern prefab is that there's a high degree of predictability—of cost, schedule, and what you're going to get," Lazor explains. He estimates that his panelized houses cost an average of 15 percent to 20 percent less than a comparable stick-built custom home.

He's also explored modular prefab, as opposed to panelized, and found that he can achieve a modular price point starting at \$180 per square foot. Additionally, about a third of the firm's current workload is stick-built. "It really depends on what the client wants," Lazor says.

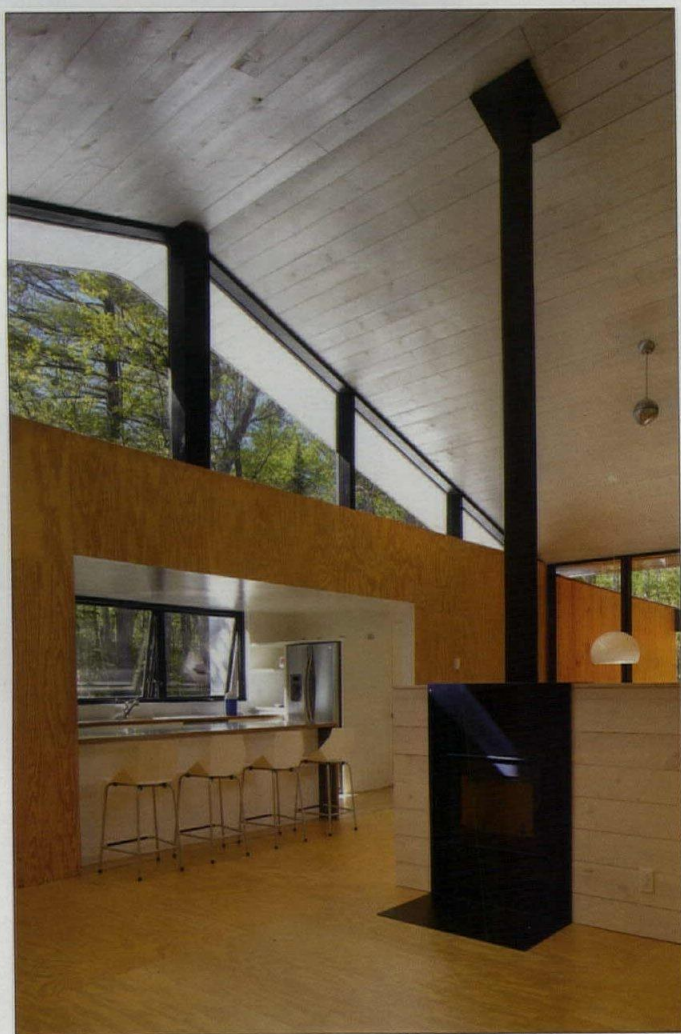


Photos: Courtesy Lazor Office

**architect:** Lazor Office, Minneapolis  
**in the prefab business since:** 2005  
**prefab homes completed:** 19  
**prefab method:** Panelized and modular  
**average construction cost:** \$180 to \$290 per square foot



Lazor Office also designs modular homes, such as this Madeline Island, Wis., project (below), completed in 2010. Its two modules are connected by a site-built main room.



Photos: www.heinrichphotography.com

## prefab revisited *continued from page 35*

the modular materials palette and detailing.

### apartment life

In the view of some industry insiders, multifamily housing offers the best opportunities for architect-led prefab. "Multifamily work is definitely the future of prefab," says Kaufmann, whose design for an eight-unit, solar-powered townhome project in Denver was built in 2010. Long agrees. "Prefab techniques will be most influential in the multifamily sector," he says. "Developers are not satisfied with any status quo." The key for multifamily developers is the shorter construction time involved in prefab; the idea is that the more quickly a building goes up, the lower the carrying costs will be and the earlier the units will be ready to rent. According to John McIlwain, senior resident fellow for housing at the Urban Land Institute, "the actual construction costs may not be that different, when you add in shipping. But you save large amounts of money in the time savings."

In 2009, Interface Studio Architects designed a 72-unit apartment building in Philadelphia that consists of 90 modules. Completed in 2010, the project caters to Temple University students and essentially functions as student housing. Principal in charge Brian Phillips, AIA, LEED

AP, and developer Jonathan Weiss both say they would use modular again, even though the learning curve was steep. "We were happy with how it turned out, as a kind of example of rapid deployment and exploring the prefab process in a real way," Phillips adds.

New York design/build firm Peter Gluck and Partners recently made headlines when it announced a seven-story multifamily prefab project in Manhattan. Principal Thomas Gluck notes that quality control is just as important a factor in prefab as time savings. "Given the same skilled crew, working in the rain and cold and hanging off scaffolding, versus being inside in their shorts with a stepladder ... it's easier to control. Quality is talked about less with prefabrication, but it is a significant advantage." The building breaks ground in May. (See page 10 for more on this project.) Other high-profile prefab projects on the boards include a high-rise tower designed by SHoP Architects as part of Forest City Ratner's Atlantic Yards development in Brooklyn, N.Y., and a five-story mixed-use building by Onion Flats in Philadelphia. Those who follow prefab will be watching closely.

Most of the single-family modern prefab companies seek sustainability for their

*continued on page 39*





# resolution: 4 architecture

## modern modular

**R**esolution: 4 Architecture was one of the first players in the high-design modular game, and it's still going strong. The firm designs factory-built houses using the same attention to detail it applies to its stick-built residential and commercial work. It's completed 48 modular homes in the past decade, all while honoring its commitment to architecture that fits the landscape.

The New York firm's principals, Joseph Tanney, AIA, and Robert Luntz, AIA, achieve site-specificity by offering standard physical components that they customize to a client's program and preferences. They've worked with modular factories long enough to know how to create houses that can be built largely within the assembly-line system. "We're tapping into an existing process," Tanney explains. "We're just attempting to bring design to it."

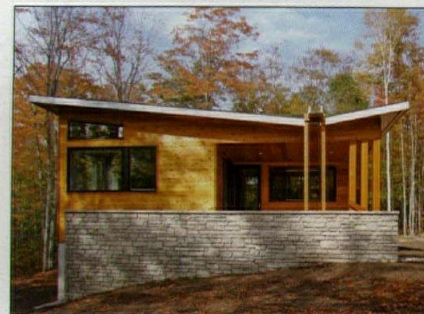


Robert Luntz



Joseph Tanney

Tanney and Luntz find that their modular houses, while still high-end, offer significant value. They've also discovered opportunities within the prefab process for sustainable design, including factory-friendly insulation details they've developed to increase energy efficiency. "We're preoccupied with building performance," Tanney says. The firm currently has six prefab houses in progress.



**architect:** Resolution: 4 Architecture, New York  
**in the prefab business since:** 2004

**prefab homes completed:** 48  
**prefab method:** Modular  
**average construction cost:** \$225 to \$325 per square foot





Photos: Courtesy Resolution: 4 Architecture

Resolution: 4 Architecture has built modular houses all over the country, including the 2009 Vermont Cabin in Jamaica, Vt. (above), the 2009 High Peak Meadow House in Maplecrest, N.Y. (below, right), and the just-finished Wisconsin Cabin (below, left) in Door County, Wis.



## prefab revisited *continued from page 37*

process and products. Some, such as Blu Homes and LivingHomes, have made eco-friendliness a central tenet. The same goes for multifamily prefab. For example, ZETA Communities, a San Francisco-based prefab builder, plans to begin construction this winter on its first multifamily project, SmartSpace SoMa in San Francisco. The four-story, 23-unit building, designed by Trachtenberg Architects, is going for LEED Platinum. "Our goal from the beginning was to decrease the impact of the built environment on climate change," says ZETA co-founder Shilpa Sankaran.

### future vision

The multifamily housing sector, in general,

looks to prosper as the economy picks up and the rental market grows. So it's easy to understand the current optimism about multifamily prefab. Also, the small but lucrative niche of custom homes on remote or hard-to-access sites is becoming an attractive avenue for prefab. But what about the wider single-family market? Will architect-led prefab in North America ever become a commonly accepted path to creating a house, rather than an interesting but still fairly unusual building technique?

In these post-housing boom days, the question of market dominance is no longer the main point. For architects today, getting anything built is a

triumph, no matter how it's done. Modern prefab hasn't become wildly popular yet. But some architects are succeeding in making it an important part of their practices. They're using it as a way to provide customers with high-quality houses, built under controlled circumstances and to varying degrees of customization.

Established prefab companies have carefully refined their techniques and business models, and new converts have entered the scene. The truth is, modern prefab's near and long-term future likely contains more successes and more defeats, as architects press on in their quest to create more and better housing options. *ra*

## on the horizon

Here are five prefab companies, launched in 2008 or later, that may be poised to ramp up as the economy grows.

**Blu Homes**, bluhomes.com. "Our steel frames are made exactly to each home's specifications. This means less waste—fewer supplies come into the factory and fewer waste shipments leave."—Maura McCarthy, co-founder and vice president, sales and marketing

**Method Homes**, methodhomes.net. "We're a custom modular manufacturer that specializes solely in architect-designed structures."—Brian Abramson, co-founder

**Simpatico Homes**, simpaticohomes.com.

"There are people out there who love good modern design but just can't afford it. We're doing this to appeal to them."—Robert Swatt, FAIA, co-founder

**Stillwater Dwellings**, stillwaterdwellings.com. "We do a site analysis before anything else. The response to the site happens immediately and isn't that difficult to accommodate."—Matthew Stannard, AIA, co-founder

**ZETA Communities**, zetacommunities.com. "We work closely with the designer to make things as efficient as possible in terms of energy use and cost."—Shilpa Sankaran, co-founder and vice president, marketing and communications



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- Describe what a green home means to today's homeowner
- Describe strategies that will help you market your green expertise to clients

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- LEED Green Associates and LEED APs can earn 1 GBCI hour towards CMP requirements for completing this program.

To access this course through Hanley Wood University, go to <http://tinyurl.com/hwu-bosch> or visit [www.residentialarchitect.com/ceu](http://www.residentialarchitect.com/ceu)



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# triple crown

an oregon project pursues three green certifications.

a private residence under construction in Yamhill County, Ore., is on track for certification under three separate sustainability regimes: Passive House, LEED for Homes Platinum, and Minergie-P-ECO. Minergie, a Swiss program, is the key-stone of this unprecedented trifecta, says architect Jeffrey Stuhr, a principal at Holst Architecture in Portland, Ore. "The owner read an article in a science journal published by MIT that covered the Minergie process, and he contacted the Swiss folks," he says. A trip to Switzerland, where Stuhr and the client met with representatives of the parent organization, convinced Stuhr that Minergie deserves a place in North America.

With its rigorous approach to both energy efficiency and sustainable materials, Minergie combines complementary strengths of Passive House and LEED, Stuhr explains. Because



Renderings: Courtesy Holst Architecture

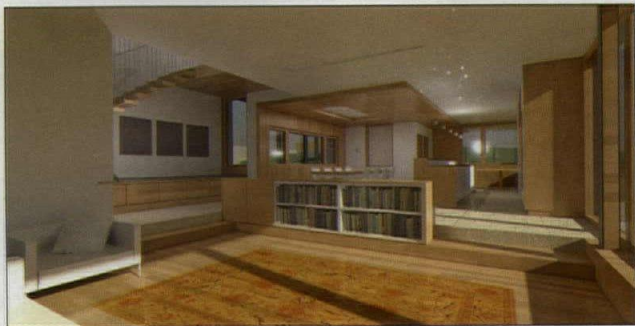
Minergie (P-ECO refers to its highest-level certification) had not yet been translated from the metric system when the project began, he says, the organization agreed to accept the Passive House yardstick for energy performance. The design adheres to Minergie's material-sustainability guidelines, which consider environmental impact throughout a material's life cycle. Because the Swiss program's sustainability

standard and its points-based rating system are similar to LEED's, Stuhr explains, "we thought, 'What the heck. We can get [the additional LEED Platinum certification] done for a reasonable cost.'"

Superinsulation, meticulous air-sealing, elimination of thermal bridging, and a package of German triple-glazed windows result in energy consumption that Stuhr projects at 60 percent less than the code maximum (a wind turbine on the property is expected to bump the project to net-zero energy use). However, achieving Passive House-level thermal performance without site-blown urethane—a Minergie no-no—posed a challenge, as did sourcing certain Minergie-specified

Simplified building forms (above) help this house meet Passive House's stringent heat loss standard. Material selection coordinates the overlapping guidelines of LEED for Homes Platinum and Minergie-P-ECO, a Swiss program new to North America.

materials. In Switzerland, Stuhr explains, "manufacturers all follow the protocol. It becomes this kit of parts. Over here, you have to start from scratch. We're having to find some acceptable alternatives." Thus far, though, Stuhr's firm and builder Hammer & Hand have put a check in every box, establishing not only the feasibility of the Minergie program on this side of the Atlantic, but also its compatibility with first-rate architecture.—*bruce d. snider*





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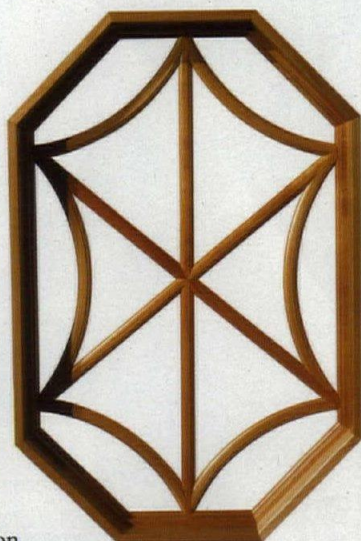
Go to <http://research.hotims.com> for more info



by nigel f. maynard

## mirror mirror

The Ultra-R direct set window uses Southwall Technologies' Heat Mirror technology that results in a center-of-glass R-value of 20. Heat mirror films are coated with nano-scale metal particles that reflect heat back to its source, which improves insulation, blocks UV rays, and reduces noise. The window has a total unit R-value of 9 and is 33 percent lighter than triple-pane units, says the manufacturer. Hurd Windows & Doors, 800.433.4873; [www.hurd.com](http://www.hurd.com).



## evolution theory

Inspired by products that are common in Europe, the Evolution Series 9000 tilt-and-turn aluminum window line offers the dual-action functionality of a hopper and a casement. The tilt-in operation provides a 4-inch opening at the top for indirect ventilation and the swing-in casement function allows full opening and easy access. Crystal Window & Door Systems, 718.961.7300; [www.crystalwindows.com](http://www.crystalwindows.com).



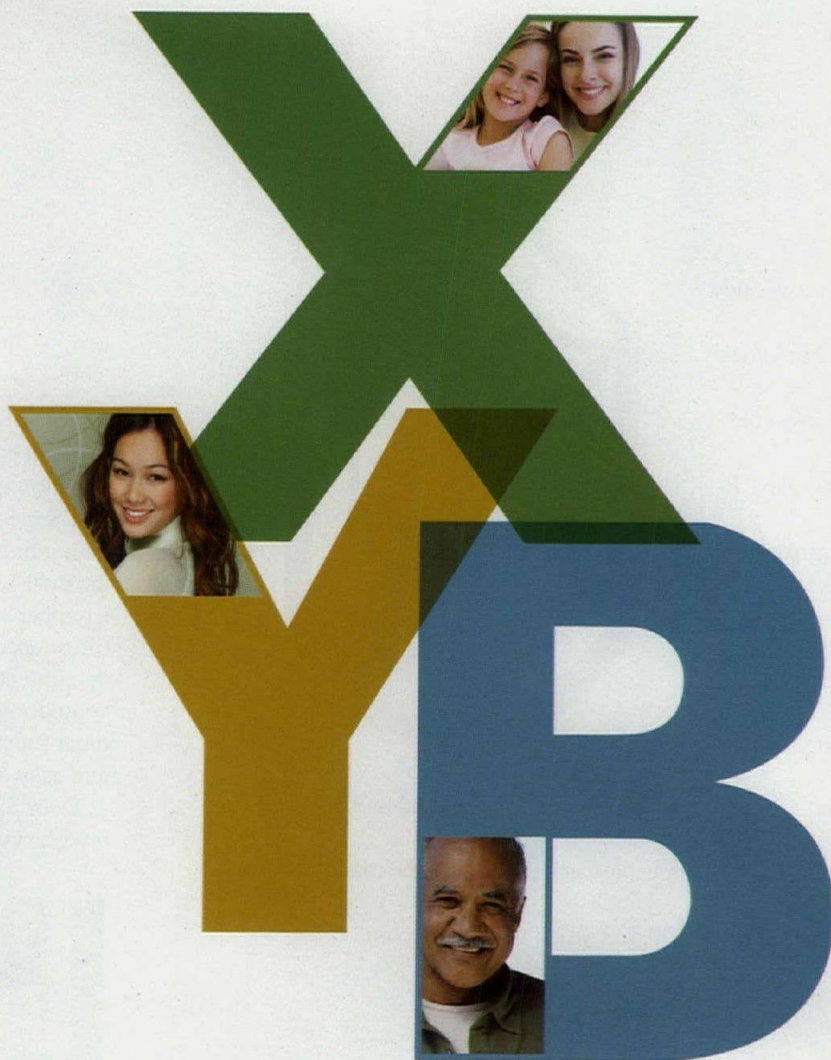
## wood wrights

The manufacturer's custom wood double-hung windows come with a variety of enhancements that improve both look and performance. Features include a concealed jamb liner that's covered with matching interior wood species, a concealed tilt latch for easy cleaning, and a larger bottom rail. Jeld-Wen, 800.877.9482; [www.jeld-wen.com](http://www.jeld-wen.com).

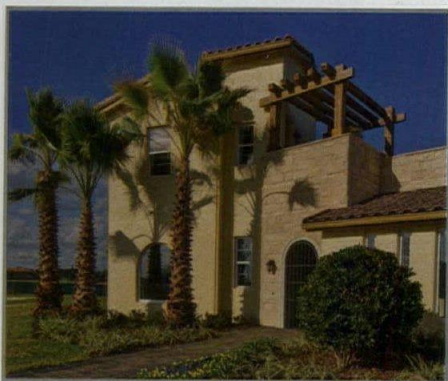




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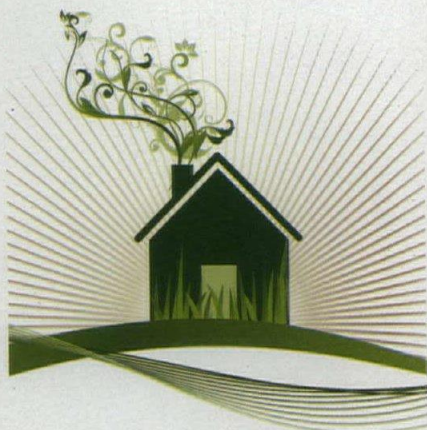
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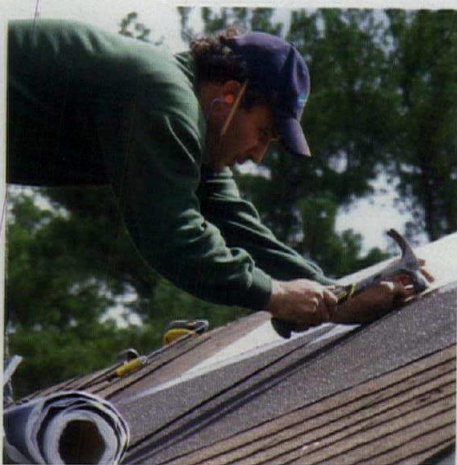
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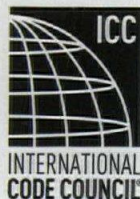




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workspace

## walker warner architects

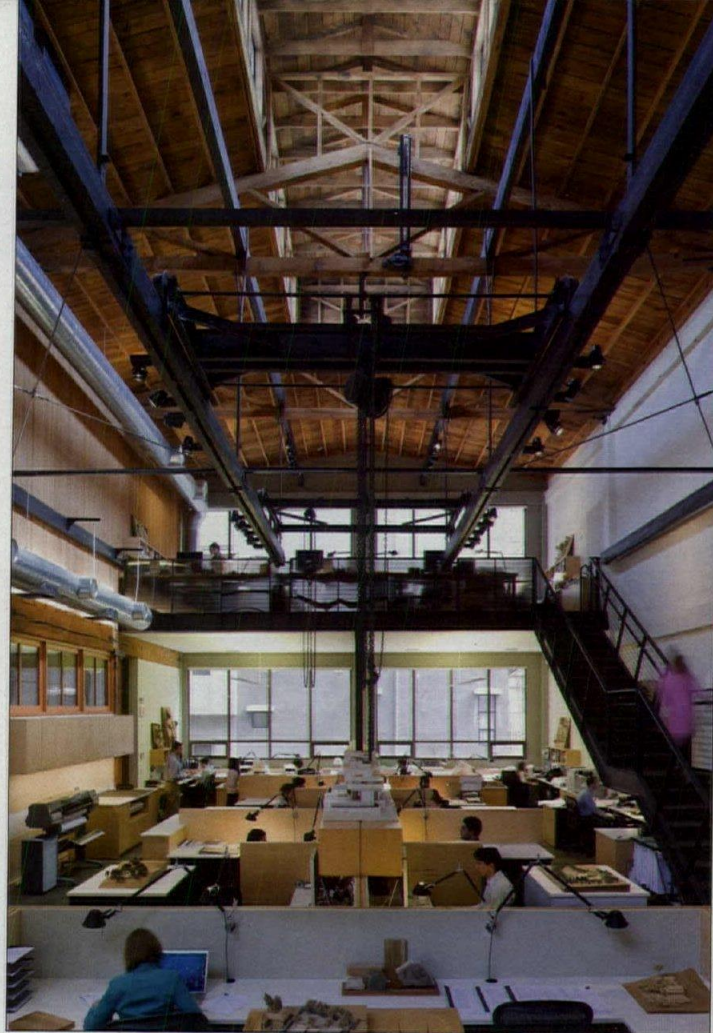
san francisco

[www.walker-warner.com](http://www.walker-warner.com)

Walker Warner Architects' home is a blue-collar building with a deceptively distinguished architectural pedigree.

Dating from the 1920s, the concrete structure wears the painted signs of E.M. O'Donnell Copper Works, which produced, among other things, architectural detailing. Later, it housed firms led by the late Howard A. Friedman, FAIA. "It's an iconic building from the exterior," says Walker Warner principal Greg Warner, AIA, LEED AP. Inside, with a soaring two-story space crowned with a glazed monitor, "it's almost churchlike."

Warner and partner Brooks Walker (shown below, left to right) preserved that space, now the office's main



Photos: Bruce Damonte



studio, by sandblasting the ceiling and timber frame and adding a mezzanine that shares the original building's industrial aesthetic.

"We think of ourselves as contextualists," Warner, LEED AP, explains, and this space—inspiring to employees and impressive to clients—effortlessly proves the point. "This building had such a strong identity, we didn't have to create interest," he says. "We played off of what was here."—*bruce d. snider*



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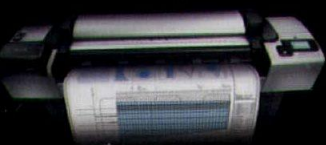
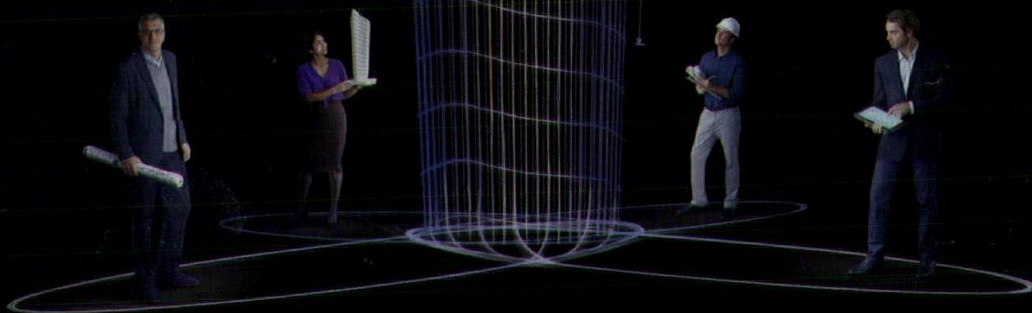
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