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**LA HOME:**  
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TO WEAR  
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BY JOSH KUN



**LEWIS & CLARK**  
Cedar siding, glass,  
and steel appear  
inside and out at this  
prefabricated house  
in Santa Monica

2914

# ASSEMBLY REQUIRED

→ A MODEL HOME IN SANTA MONICA  
MAKES A CASE FOR PREFAB HOUSING

BY EMILY YOUNG | PHOTOGRAPHS BY EDHUND BARR





**GRAND OPENING:**

The living room, study, and media room (opposite) offer views of the second floor. This page, clockwise from far left: Modular storage in the study; owner and developer Steve Glenn with architect Ray Kappe; sliding glass doors and wall panels in the master bedroom



# IN

**A SEA OF STUCCO CONFORMITY, THE NEW** house on the block stands out as a head-turning, traffic-stopping exemplar of California modernism: Fluid indoor-outdoor spaces. Warm wood playing off cool concrete and gleaming glass. An open plan of rooms with multiple views. In short, all the design cues you'd expect to find in the work of Ray Kappe, L.A.'s grand old man of residential architecture.

But unlike Rome—or any of Kappe's previous projects—this place was built in a day. It consists of 11 steel-framed modules that were manufactured in a factory in Santa Fe Springs, trucked to Santa Monica, and then hoisted into place by a crane in eight hours. The conceptual cousin to the lowly mobile home, this house represents the latest in prefabrication.

The owner, Steve Glenn, realizes that many people still associate prefab housing with cheap, flimsy, last-resort shelter for the masses. As founder and CEO of the real estate development company LivingHomes, he wants to change that perception. Using his modern residence as a prototype, he



## THE ANATOMY OF A PREFAB HOUSE



### 01 PRE-PREFAB

Lawn dominates the slightly sloped Santa Monica site in July 2005.



### 02 DIGGING IN

Excavation begins the next month on the subterranean garage and radiant-heated concrete foundation.



### 03 FACTORY BUILT

From October 2005 through April 2006, the house is prefabricated in 11 modules in Santa Fe Springs.



### 04 DAY OF THE DEED

On April 13, a 340-ton crane arrives to erect the house, followed by the first of seven trailers transporting the modules.



### 05 PREP WALK

Workers clear the foundation for the intricately choreographed installation.

**HOUSE SPECIALS:** The kitchen (opposite) features energy-efficient Bosch appliances, modular cabinetry, and counters made of recycled paper. This page, below: The steel staircase through a perforated steel wall; the alcohol-burning double-height fireplace



hopes to appeal to buyers in the small but growing market for high-end, high-style prefab. "Our most likely customers are people who read shelter magazines to track architecture and design," Glenn says. "They're comfortable with the fact that—like their cars, iPods, and computers—their homes are built in a factory."

As home prices skyrocket, progressive architects across the country are rethinking modular construction. Here in Southern California, Jennifer Siegal has experimented with homes fashioned out of shipping containers and moving trailers, Leo Marmol and Ron Radziner have completed a prefab house in Desert Hot Springs, and Whitney Sander is busy with his version of erector-set design.

Like these architects, Glenn is targeting upscale clients seeking the sophisticated look and brand-name cachet of a recognized architect at more affordable prices. As an entrepreneur with a social agenda, however, he also plans to incorporate an extraordinary array of "green" features in houses dreamed up by several architects.

"People who are interested in prefab are concerned about the design, health, and sustainability of the homes they buy," he says. "They can drive a Prius or shop at Whole Foods for products that reflect their concerns. But there are no homes. They can build one custom, but it's expensive, requires a lot of time, and is stressful. We didn't invent modern prefab, but we're part of the first wave."

Prefab housing has been around for a century. Mail-order kits were sold for decades

through Aladdin and Sears, Roebuck, and modular homes remain the cornerstone of trailer parks everywhere. Almost from the beginning, avant-garde architects have been intrigued by prefab's design and cost-saving potential. Walter Gropius, Le Corbusier, Frank Lloyd Wright, and Buckminster Fuller are among those who dabbled in prefab. The Case Study architects created their rich local legacy using prefab techniques. Yet their modernist sensibilities didn't appeal to mainstream tastes, nor did the anticipated cost benefits translate into less expensive homes. So modern prefab went on hiatus.

Glenn expects to succeed where others have failed because he's a businessman rather than an architect. He had originally wanted to be an architect and was inspired by developer James Rouse, who envisioned the indoor mall and urban entertainment centers such as Boston's Faneuil Hall as ways of building community. But Glenn, who is 42, got sidetracked in college when he co-founded Clearview Software—later bought by Apple Computer—and then oversaw start-ups such as Idealab and PeopleLink. After leaving the technology industry, he volunteered with the Clinton Foundation, working on AIDS relief in Africa and children's health in the United States.

When Glenn ventured into real estate a few years ago, he combined his design and humanitarian interests, pairing world-class architects with ecologically friendly prefab housing. At about the same time, he met Ray Kappe—his "favorite living architect"—at

ASSEMBLY BEGINS: 9:00 AM



06 | A SWINGING START

The first module—the steel staircase and north side of the house—is lifted into place.



07 | LOWERING THE BOOM

The kitchen is a self-contained unit, complete with windows and some plumbing.



08 | BOXED IN

The study, lined in plywood where interior cedar siding will be attached at a later date, is lowered into position.



09 | ON THE BLOCK

The master bathroom, containing a tub and some plumbing, is set on top of the kitchen.



10 | A FRAME JOB

The dining room and south side of the house are hoisted into place. Sliding glass doors will be installed later.

an open house. Noticing the home's pre-cut, pre-laminated timbers, Glenn asked Kappe if he was interested in prefab. Kappe replied that he'd contemplated modular construction for 40 years but never had a chance to put his ideas to the test.

Kappe was the founding director of the Southern California Institute of Architecture and, at 79, is still regarded as one of the region's finest residential designers. Picking up where Bernard Maybeck, Charles and Henry Greene, R.M. Schindler, and Harwell Harris left off, he builds in harmony with nature, infusing modernism with a Craftsman-like warmth. He began with post-and-beam homes, then shifted to site-sensitive explorations of concrete, wood, and glass.

Best known among Kappe's single-family projects is his own home in Pacific Palisades. In 1968, Kappe designed six concrete towers supporting laminated wood beams to preserve the site's steep slope, its many trees, and a stream. The treehouse-like result features several tiers of wall-less rooms that flow into one another as well as the outdoors. "I grew up in Minnesota in apartment buildings," Kappe says. "As a boy, I remember always standing at the windows, looking out. It's been kind of a theme in my work—to extend out to the views."

Kappe once worked with NASA on unrealized plans to apply space technology to modular residential architecture. Twenty-five years later he is getting another shot at prefab design. The 2,500-square-foot, three-bed-



**LOFTY PERCH:** The second-floor lounge, accessible by way of two outdoor terraces, appears to float in midair

room, two-bath house he created for Glenn looks less like a sterile space capsule, though, and more like his own much-admired multi-level retreat. Bright and airy yet warm and snug, it, too, feels like the quintessential California house.

"The design is a product of the constraints of this site and height restrictions of the building department, but it's based on the same principles as my house," Kappe says. "It was important to break open the ceilings and extend the decks and patios to get vertical and horizontal movement." On the sloping lot, the house sits atop a subter-

anean garage. At street level, the concrete foundation serves as a series of platforms for public spaces separated not by walls but by steps. On the loftlike second floor, bedrooms can be reconfigured with movable walls, floor plates, and modular closets.

The house features a host of environmentally responsible materials and systems. Green finishes include sustainable cedar siding, natural cork flooring, recycled porcelain and glass tiles, and concrete containing local cement and fly ash, a by-product of coal-burning electric generating plants. Stains and sealers that release little or no toxic fumes reduce indoor air pollution. So does a flueless fireplace that burns denatured alcohol instead of wood. "Pretty much everything you walk on, touch, or see has a story to it," says Amy Sims, the project architect for LivingHomes.

While the floors are radiant heated, the windows and doors and a thermal chimney provide natural ventilation. Photovoltaic panels on the roof power kitchen appliances. A cistern collects storm runoff for use in an underground drip irrigation system. Based on these and other components, the U.S. Green Building Council gave the house a "platinum" Leadership in Energy and Environmental Design rating, the highest possible and the first ever awarded to a residential project.

Other benefits, Glenn says, include less construction waste and fewer contractors and tradespeople working on-site for months on end. All this doesn't slash costs nearly as much as one might expect—not yet, anyway.



EXDS: 8:00 PM

11 HEAD QUARTERS

The master bedroom and its modular walk-in closet are stacked above the dining room and kitchen.

12 UPSTAIRS, DOWNSTAIRS

The second bedroom module comes to rest on the second floor, followed by the media room below.

13 ROOMS TO SPARE

The third bedroom module, which includes the lounge, approaches its designated spot.

14 SMOOTH LANDING

The second bathroom touches down above the study, completing the second floor.

15 A DONE DEAL

An hour after all the pieces are bolted together, the crew celebrates on the front terrace.

So like those who want hybrid cars and organic vegetables, people with their hearts set on prefab must be willing to pay a premium.

Construction costs on a LivingHomes house are \$250 a square foot. A foundation could run anywhere from an extra \$30 a square foot on a flat lot to more than \$100 a square foot on a hillside. Transportation and installation add another \$20 a square foot in Los Angeles, more for a location farther away. A 2,500-square-foot house on level terrain in, say, Hollywood would set a buyer back \$300 a square foot, or \$750,000. Not cheap, but a custom house of comparable size and style designed by a top architect would cost at least \$400 a square foot, or easily \$1 million.

LivingHomes started by offering semi-custom homes based on variations of Kappe's modular system, and so far the company has contracts to build seven. The goal is to make six standardized floor plans, ranging from 700 to 4,000-plus square feet, available this fall, and to develop a 20-acre community in Joshua Tree. Already Glenn has hired Santa Monica architect David Hertz, another dedicated environmentalist, to design the next set of floor plans. He's also negotiating with other architects.

Kappe's spatially complex, impeccably green design will no doubt prompt prospective home owners to give modern prefab a second look. If the looky-loos don't turn into buyers, then Glenn's house at the very least will stand as a monument to what might have been. LA

# GREEN PIECES

A LivingHomes house will feature elements that can help owners lead a sustainable lifestyle. Here's a partial list:

## INDOORS

- All general illumination is LED—or light-emitting diode—lighting, which uses far less electricity than incandescent or fluorescent lights and may not require new bulbs for almost ten years.
- Living room windows are translucent Polygal polycarbonate panels that offer privacy, thermal insulation, and protection against ultraviolet exposure.
- The EcoSmart Fire fuelless fireplace burns denatured alcohol and produces steam and carbon dioxide rather than smoke.

- Kitchen counters that look and feel like soapstone are heat-tolerant, stain-resistant PaperStone, a blend of recycled paper and water-based resin.
- Shower dividers (pictured) are impact-resistant ecoresin™ sheets of nontoxic polyester resin embedded with organic materials, such as blades of grass, for decoration.



- GreenFiber roof insulation is made of cellulose, or recycled newspaper. Johns-Manville ComfortTherm first-floor ceiling insulation is sealed, formaldehyde-free fiberglass. Bonded Logic wall insulation consists of recycled denim.
- A motion-activated Tamarack GV7 exhaust fan in the garage vents carbon monoxide.

## OUTDOORS

- The cedar siding and the tiger wood rooftop deck are fashioned from wood that has been certified by the Forest Stewardship Council as being reclaimed, recycled, or from a sustainable source.
- A Weatheriser RSFIS sensor shuts off the subterranean drip irrigation system to adjust for rainfall.
- Patio paving, walls, a fountain, and a pond are chunks of concrete recycled from an old path.
- An Apricus solar water collector on the roof heats water stored in a solar water tank in the garage that is used for warming the floors and domestic water supply. (On cloudy days and at night, a gas-fired boiler kicks in.)
- The fence is made of Trex, a blend of recycled and reclaimed wood and plastic that resists moisture, bugs, and ultraviolet exposure and does not require painting.—EX