The modern dream of the readymade has carried prefab far since it was first imagined over 100 years ago, but now with the pressure to be all things to all people—green, luxurious, and even one-of-a-kind, *Kimberly Stevens* wonders if prefab can ever live up to its own potential.

CAN PREFAB DELIVER?

KAA Design is teaming with a major builder to produce its HOM prefab homes (opposite page, top and below). Marmol Radziner Prefab's new standardized Rincon units (below) can complement a home.

There's nothing new about prefab—in fact, it's often referred to as modern architecture's "oldest new idea." But in its current trendiness—widespread glitzy press coverage and the benedicton of a major new exhibit scheduled to open at MoMA in New York on July 20—a handful of architects, investors, large firms, and real estate brokers are still trying to prove that the concept can live up to its hype.

Historically, the idea of prefabricated building systems has always seemed fresh and of-the-moment. In 1892, Ernest Franklin Hodgson developed a prefabricated building system to sell chicken coops, doghouses, tool sheds, and small summer cottages. Eventually, he introduced larger homes and garages, a concept met with intense excitement. Later, in 1906, Aladdin Readi-Cut Houses produced a kit house of pre-cut pieces. But the real hit came in 1908, when Sears & Roebuck developed the wildly popular "House By Mail" program that took the nation by storm. By 1940, when the program ended, the company had sold over 100,000 units. The fervor for prefab was captured in *One Week*, starring Buster Keaton in 1923, in which a newlywed couple builds their own prefab home with comic results.

Today there is once again a sense of excitement and curiosity as modern prefab architecture returns to the mainstream, rescued from its stigma as cheap or even mobile housing by a new wave of well-designed units. Innovative new ideas have popped up in large numbers, ranging from Ecoshack's prefab yurts and the Katrina Cottages for Gulf Coast hurricane victims to prefab homes by the furniture company Design Within Reach. But there's also intense scrutiny and skepticism surrounding prefab, or modular or factory housing, as it's otherwise called. Some argue that while prefab is touted for its ability to be mass-produced, it's delivered to relatively few. Others note that while it promises affordability, modern prefab is often expensive (for example, California developer Steve Glenn's much-publicized Living Homes, with designs by Ray Kappe and Kieran Timberlake, generally average well over $200 per square foot). More question marks surround such issues as durability, comfort, and variety. For the architect entrepreneur looking to sell prefab as a business, it remains unclear if it's possible to turn a profit. For the time being, as prefab units rise in cost, dividends remain small because few houses have been widespread sellers.

"I just think the whole thing is a false promise," said Los Angeles realtor Brian Linder. "They're very difficult to sell. There's nothing low-cost about them. Until someone like Honda or Toyota gets involved, I don't think it's going anywhere."

Allison Arieff, author of *Prefab* (2003), said that people designing 7,000-square-foot prefabs might as well do stick-built. "Prefab for the sake of prefab isn't going anywhere; that would just continue what some have called 'the curse of the prototype,' whereby a great one-off house is built, but no others follow."

Still, Arieff predicts that architects who can master the practical side of prefab—factories, mass production, shipping, and, of course, marketing—will thrive in the future. And architects, while committed to proving critics wrong about prefab, are also trying their hardest to make the system worth their while, design-wise. One California firm that stands out in the quest to effectively exploit the rise in consumer interest toward prefab is Marmol Radziner Prefab, a division of Los Angeles-based Marmol Radziner Associates. The firm has a local factory to manufacture and package high-end, modern steel-frame houses and has even established a blog on prefab. The advantage, said firm principal Leo Marmol, is that prefab allows the firm to "tackle the inefficiencies involved with site-built construction, including weather and subcontractor delays, runaway costs, and excessive material waste."

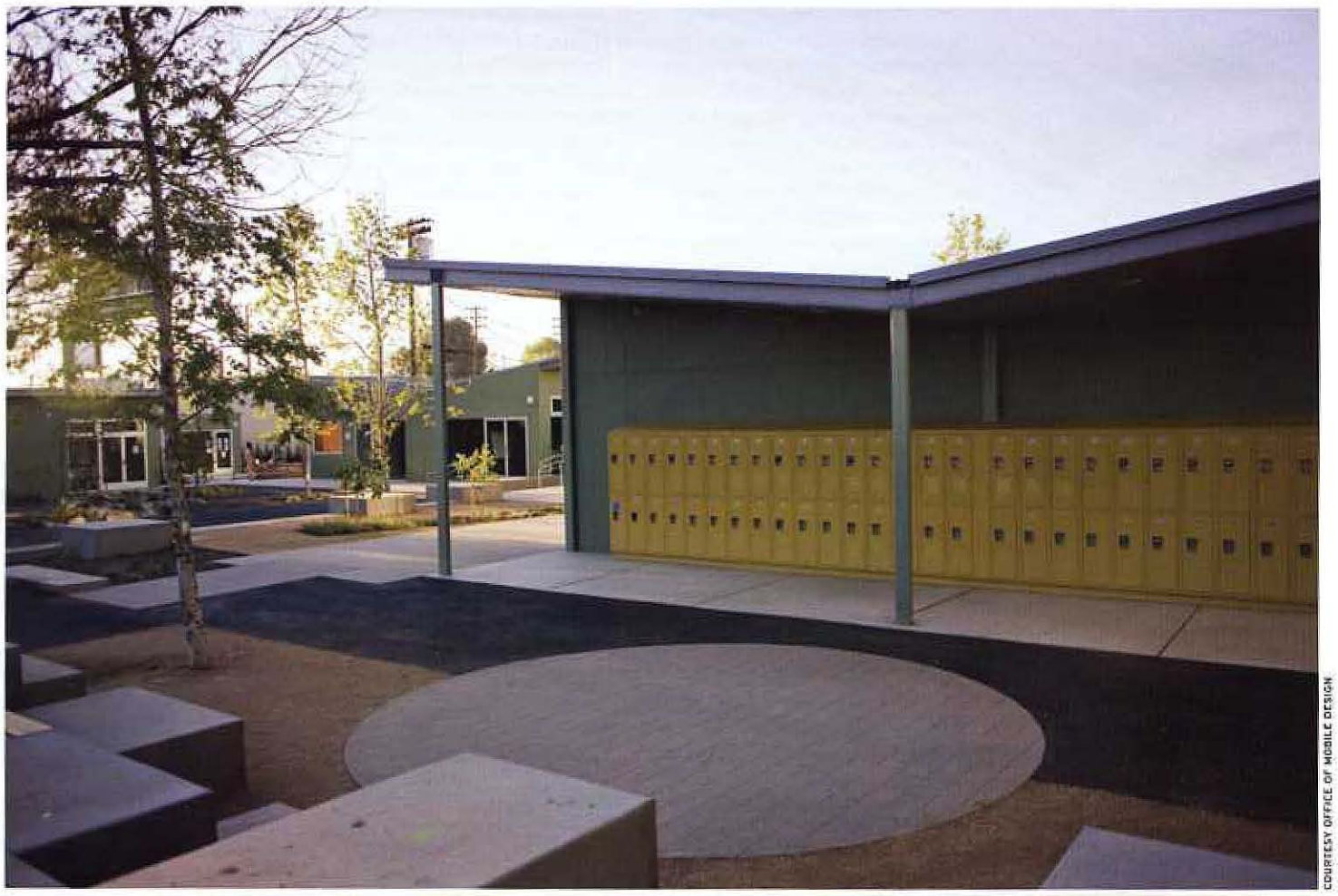
After the success of their first prototype, the 2005 Desert House, and having built over 20 custom prefab homes in all possible configurations and sitings, the firm has now taken their work to the "next level" with standardized models: the multi-module Skyline and single module Rincon series, both of which begin at about $180,000 (although Marmol notes that all prefab homes are notoriously hard to price accurately because of the varied costs involved). All have large decks to maximize outdoor living (although these can be enclosed for colder climates), and use natural cooling, solar panels, and steel frame construction. Extra materials, say the firm, are recycled in their factory. The firm is also hoping to take on the next frontier of prefab: mass production. Marmol, who calls mass-produced prefab "the holy grail of prefab," claimed that it would offer similar benefits to developers and homebuilders as it does to consumers, like the ability to fix the price of the construction process and deliver homes with shorter schedules, reducing carrying costs.

COURTESY MARMOL RADZINER PREFAB

Only time will tell whether Marmol's pitch to the homebuilder industry works. One architect, Oakland-based Michelle Kaufmann, is already having success in prefab mass production. Her firm Michelle Kaufmann Design (MKD), which had established itself with individual prefab models like the mkLoft and mkSolaire, is now working with home builders to create prefab communities like SolTerra, a 24-unit multifamily project in San Leandro, California, set to be completed this fall; and Denver Townhomes, an 80-unit townhouse development outside of Denver with a mix of two- and three-bedroom, multi-story homes that will be completed next year. The project features contemporary-style units built with eco-friendly materials, and includes shared parks and green systems like geothermal energy. Prices for these homes, which Kaufmann describes as "healthy, beautiful, and cost-effective," range from about $100 to $200 per square foot.

Architects and designers are also coming up with ways to make the prefab building process more seamless. Brian Adolph, an architect

Office of Mobile Design has ventured into prefab school production with its Country School in Valley Village, California (top). Marmol Radziner Prefab's Desert House prototype (2005, below) is an example of how upscale the movement has gone.



COURTESY OFFICE OF MOBILE DESIGN

COURTESY MARMOL RADZINER PREFAB

Philadelphia architects Kieran Timberlake Associates joined with Santa Monica-based LivingHomes to create prefab multi-housing units (top) and a single family residence that can expand from 900 to 2,000 square feet (below).

with the LA-based KAA Design Group, said his company looked to combine unique design with not-so-unique prefab production methods in developing its HOM units, which are simple, high-quality units meant to merge indoor and outdoor living. Instead of developing its own factory, KAA teamed with a long-established prefab building company (KAA is in final negotiations with the company, so they would not reveal its name) that already has outlets across the country. Their models average about $200 per square foot. "We wanted to come up with a system that could truly deliver in mass. To marry these two industries (architecture and manufacturing) and get over the stigma of the manufactured model," he said.

Other prefab architects are venturing into new building types to try to find their own "holy grail." Jennifer Siegal, principal at Office of Mobile Design (OMD), has worked on numerous modern prefab homes, including a project that she parked along Abbot Kinney Boulevard in Venice, California that she uses as her showroom. Siegel recently shifted gears and started working on modern prefab schools, which she thinks might be another wave of the future. She was awarded a grant from Southern California Edison in 1998 to help rethink the portable classrooms built in LA. Working with her students at Woodbury University, she developed Sustainable Portables, classrooms based on prefab modules that used less energy, were built with more sustainable materials, and had a more contemporary aesthetic. Since then, her firm has completed its own school projects including the Country School Prefab Expansion in Valley Village, California; the mobile ECOLAB; and the Portable Construction Training Center in Venice. Like all of her projects, the classrooms are designed to "be easily described visually and intellectually to new clients," Siegal said, and to "help clients make choices more quickly, since we've limited their options due to the building systems and pre-selected material finishes."

COURTESY KIERAN TIMBERLAKE ASSOCIATES

Yet limited options are not a plus for all clients. If prefab really does reach its factory-model potential, the balance between standardization and customization is destined to become an important issue. Empyrean International, which manufactured Dwell Homes, a collection of ultra-modern prefab units in 2005, is now working on a 50-unit prefab project in the U.K. along with a program to collaborate with specific architects to create customized prefab homes. The company's CEO, Patrick Gilhane, said the firm offers nine standard plans with the potential of 32 different outcomes. "The homeowner wants something more unique and specialized," he said. "The most promising thing I'm seeing in prefab is the sheer number of new projects that bring new and innovative ideas to the table. That's why I think this is going to be a long-term trend."

Barry Bergdoll, MoMA's architecture and design curator, chose the subject of prefabricated design as his first show, called *Home Delivery*. In the empty lot next to the museum, five houses by architects including Kieran Timberlake; Douglas Gauthier and Jeremy Edminston; and Horden Cherry Lee Architects will be built and ready to tour. "I am most interested in the people that are pushing the design envelope," he said. But he admitted to thinking that the firms taking a more pragmatic approach to prefab and going with the tried-and-true technology will probably succeed more quickly. One of his favorite designs in the show is Kieran Timberlake's aluminum-framed Cellophane House, which is being constructed from reusable materials. "They span the pragmatic, but are also theorizing the entire framework of prefab design," he said. And that combination of the prosaic and the poetic may well be the ultimate promise of prefab.

KIMBERLY STEVENS IS A REGULAR CONTRIBUTOR TO *AN*.