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## ecospotlight

*Prefabricated homes have not garnered the best reputation, offering modularized living with little emphasis on personality. That is changing in southern California, as one home developer now offers six prefab home designs created by a well-respected architect. The designs offer so many environmentally friendly attributes that the first home, finished early this summer, has received Platinum LEED certification.*



Your opinion of prefab homes is about to change forever.



Photos courtesy of LivingHomes.



# prefab goes green



"There are people who care deeply about design and the health and sustainability of the homes they buy, and they currently can't buy homes that reflect those values," says Steve Glenn, CEO of LivingHomes of Los Angeles. "I wanted to develop homes for those folks." Glenn teamed with designer Ray Kappe, FAIA, an architect well known for his residential architecture and the founder of the Southern California Institute of Architecture (SCI-ARC).

Homeowners can customize one of six basic Kappe designs, including one-story styles for first-time buyers up through three-story options. The homes range in size from 1,000 to 4,000 sq. ft. and include two to four bedrooms and two to three baths.

The homes are built off-site and delivered in a number of modules for erection once foundations are prepared. The first home, on Highland Avenue in Los Angeles, consisted of 11 modules that were set onto a concrete slab by crane in only eight hours. Producing homes on this basis improves quality of construction and reduces costs, minimizes production schedules and lessens construction waste, Glenn explains.

The process allows site work and construction to proceed simultaneously rather than the latter waiting for the former, speeding the schedule. Full-time factory employees replace dozens of subcontractors, saving time, money and management overhead. And modular construction streamlines the construction process by allowing the use of better tools, providing access to places that would be difficult to reach on the site and allowing multiple trades to work concurrently on different parts of the home. There is no need, for instance, to wait for the shell and roof to be completed before mechanical or electrical work can be done.

This approach makes the homes 20 to 40 percent cheaper than a similar stick-built residence, Glenn says. But with his own homes, he cautions that buyers must compare apples to apples. That means that the comparable stick-built home should qualify for certification from the Leadership in Energy & Environmental Design (LEED) program from the U.S. Green Building Council. LivingHome's first house received its Platinum certification in August.

Indeed, great care was put into ensuring that every aspect of the home provided the most environmentally friendly system possible.

**Key aspects include:**

- A zero-energy design in which the home produces all of the power it consumes, using photovoltaic cells on the roof and an active solar system that heats the home's water
- A radiant-heating system embedded in the floor that warms spaces efficiently
- Double-paned glass and polycarbonate shading systems that offer three times the thermal properties of double-paned windows with low-emitting coating
- A rooftop garden that insulates the home and absorbs sunlight
- A storm-water management system that collects rainwater into a cistern for landscaping irrigation
- Irrigation schedules that are controlled by weather telemetry received from the Internet
- A gray-water system that collects and recycles water from the sink and shower for irrigation
- Formaldehyde- and urea-free millwork and no-VOC paint
- Comprehensive inclusion of recycled and reclaimed materials
- The highest-rated Energy Star appliances
- A denatured-alcohol based fireplace that creates no carbon when burning
- A garage exhaust fan that prevents carbon monoxide build-up
- A whole-house fan that helps cool the home
- A walk-over grate that eliminates contaminants from shoes as guests arrive




"We are designing our homes to create the healthiest living environments and to radically reduce the impact they have on soil, water, air and energy use," says Glenn. "We are following the four core tenants of good sustainable design to reduce, reuse, recycle and reclaim. Our goal is 'zero energy, zero water, zero carbon and zero emissions.'"

The company's models must balance three key attributes, he adds. They must ensure form and functionality work together, blending environmentally friendly functions with aesthetic appeal; they must stress healthy living and sustainability to minimize the home's ecological footprint; and they must offer an attractive price.

## Green Products

Products used in LivingHomes' green prefab designs include:

- Bosch kitchen appliances
- PermLight LED lighting
- PermaCorp photovoltaic cells
- Kohler kitchen and bath fixtures
- Eco-Lumber Co-op's Forest Stewardship Council certified lumber
- Carlisle roofing
- Jacuzzi spa
- Design Within Reach furnishings

"We have spent a considerable amount of time trying to understand how people live in their homes and how homes need to respond to their changing needs. We include a number of features that make it easy for homeowners to change and grow their space." 

*By Craig A. Shutt*