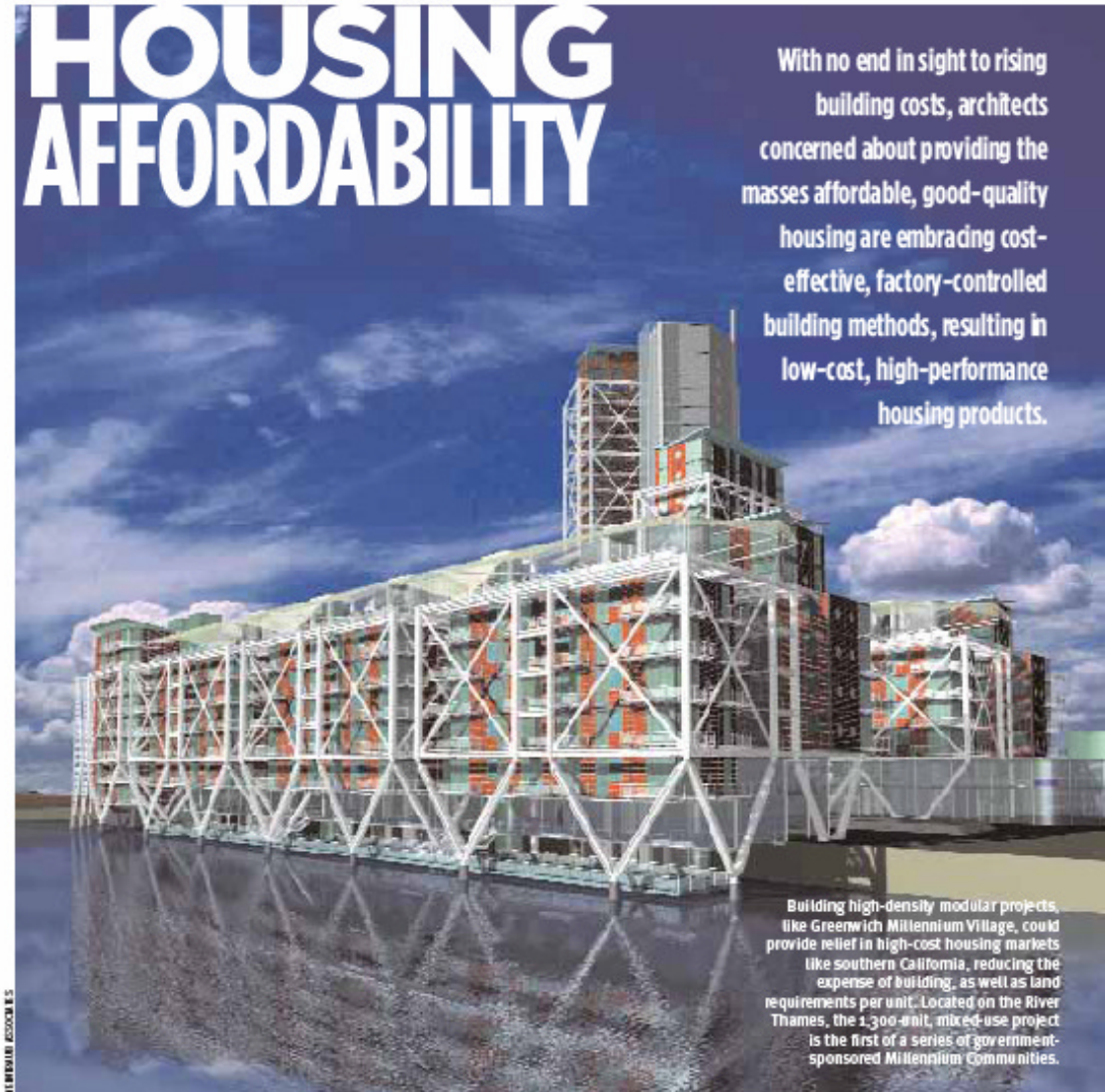


# BUILDING BLOCKS OF HOUSING AFFORDABILITY

Patricia L. Kirk

With no end in sight to rising building costs, architects concerned about providing the masses affordable, good-quality housing are embracing cost-effective, factory-controlled building methods, resulting in low-cost, high-performance housing products.



Building high-density modular projects, like Greenwich Millennium Village, could provide relief in high-cost housing markets like southern California, reducing the expense of building, as well as land requirements per unit. Located on the River Thames, the 1,300-unit, mixed-use project is the first of a series of government-sponsored Millennium Communities.

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Architects and inventors are also experimenting with alternative open building systems, including structural insulated panels (SIPs), which are composed of rigid foam insulation sandwiched between oriented strand boards and can be used as wall, floor, and roof components. Unlike prefab housing components that are delivered 80 to 90 percent completed and quickly installed on site in two to three weeks.

The flatpack product includes structural insulated panels (SIPs), bathroom- and kitchen-pod technology, and preinstalled mechanical systems used to build the structure on site, which generally takes two to four months.

Both modular housing systems require less time to complete than the eight to 12 months needed for ground-up construction. Although modular construction techniques do not guarantee lower home prices, time saved cuts the cost of carrying construction financing and reduces construction-related disruption in a neighborhood.

The cost of dirt and labor in a market influences price most. However, modular building processes do provide efficiencies, such as reduced waste and economies of scale in purchasing large quantities, that often provide homebuyers greater value, or “bang for the buck” in the way of higher-end products and upscale features.

Among the advantages of SIPs, however, are that they are energy-efficient, fire resistant, are pre-wired, and they reduce exterior noise. SIPs also are lightweight, but have the strength of a steel I-beam; flexible so that elements can be added or upper level space developed as a family grows; and because they eliminate load-bearing walls, they can accommodate open floor plans and double-sided access to cabinetry and bookcases.

Los Angeles–based inventor Barry Rosengrant has created an improved SIP product that can be attached to a modular space frame, thereby producing a completely enclosed structure within two weeks using unskilled labor. The ***E-Space Component Building System***, which includes exposed wood interiors that evoke a traditional Japanese aesthetic, provides open timber-frame spaces without the shrinking, cracking wood or expensive mortise and tendon joinery that is inherent to timber framing.

Rosengrant’s product consists of moderately priced, off-the-shelf, sustainable building components and new patented metal connector technology that allows balconies and upper floors to be incorporated into the structure when it is initially constructed or at a later date.

“Our ecologically sound wood, which is engineered from quick-growing waste trees, arrives cut and drilled to size, and the metal connector system eliminates all the handwork required by timber framing,” he says. “By having materials pre-engineered and pre-sized, unskilled labor can bolt them together, eliminating the high cost of skilled tradesmen.”

Please see [www.E-SpaceSystems.net](http://www.E-SpaceSystems.net) for more detailed information.