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THOUGHTS BY THINK WOOD



Five Prototypes Making Housing More Affordable in America

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STACKING THE DECK:

Prefab modular apartment creates 100+ homes for homeless.

At first glance, the Star Apartments in downtown Los Angeles could be mistaken for an avant-garde luxury condo development. The six-story 95,000-square-foot project is instead home to over 100 formerly homeless residents. Designed by architect [Michael Maltzan](#), an alum of [Gehry Partners](#), the stacked, sculptural form levitating above Skid Row seems almost out of place in a part of the city most known for its transient population.

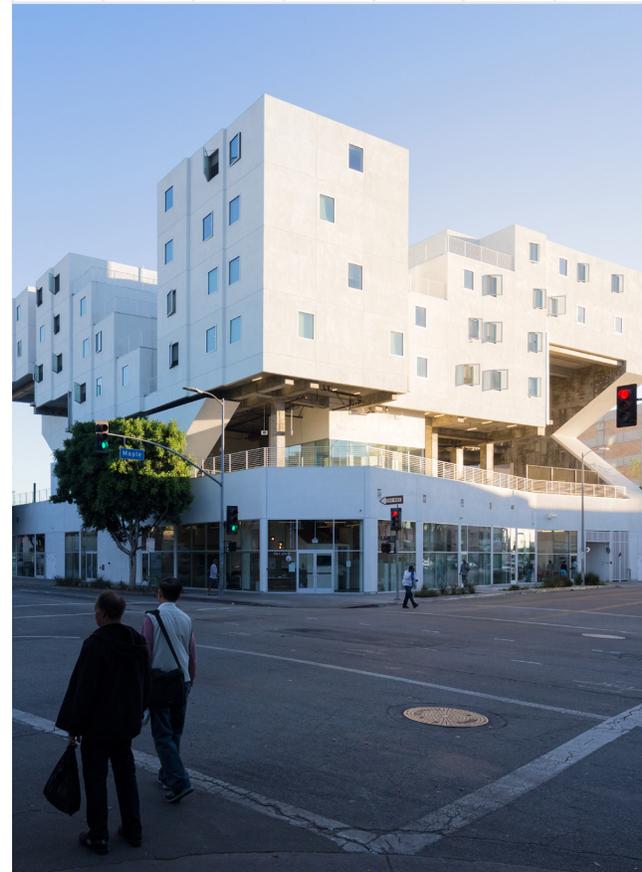
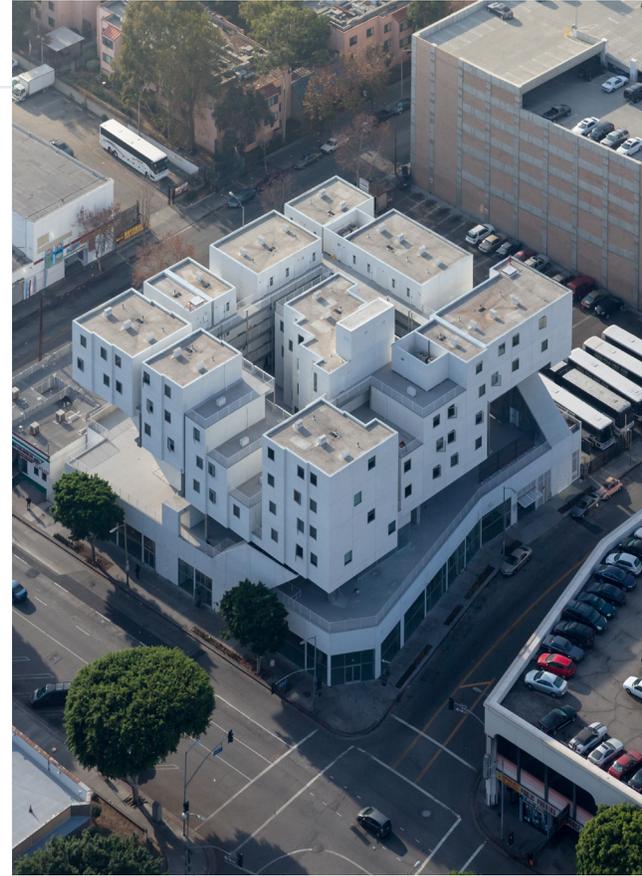
The project's unique form is an inventive solution to the project's design challenge: to build affordable housing units over an existing ground floor structure. Star Apartments' gravity-defying design is made possible by using light-frame prefabricated wood construction. The project is not only an architectural spectacle but a deliberate effort to redefine affordable housing as both beautiful and functional—in turn, helping to reintegrate individuals who have been excluded from housing. By using a lighter-weight prefabricated wood system, Maltzan was able to build an entirely new structure atop the existing one-story building footprint. To residents' gain, the lower cost of the prefabricated wood-frame units and savings from [faster construction](#) afforded [higher-quality materials](#) in the apartment units.

“Prefabrication made sense for Star Apartments for many reasons. For one, Skid Row, which is located in the middle of downtown L.A., doesn't have much room for a traditional construction site. Prefab construction also allowed the architects to lift an entirely new building on top of the existing one-story structure.”

MICHAEL MALTZAN
ARCHITECT AT MICHAEL MALTZAN ARCHITECTURE

CHECKING ALL THE BOXES | The Star Apartments in LA's Skid Row makes a bold architectural statement complete with four terraced floors of residences, along with community and public health facilities including a 15,000-square-foot Health and Wellness Center. Other amenities include a community garden, running track, exercise and art rooms, and a library.

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PHOTOS | Michael Maltzan Architecture



PHOTO | Michael Maltzan Architecture

The Pressing Need for Affordable Housing

In the face of America's housing crisis, Star Apartments is a shining example of a rising trend to think outside the box by taking advantage of prefabricated, sustainable building systems—like modular wood construction—to deliver more affordable housing solutions. And the solutions can't come fast enough.

The demand for affordable housing is outpacing supply nationwide, with new multifamily units [renting at prices cost-prohibitive](#) for middle- and low-income renters. Nearly [two-thirds of renters](#) across the U.S. say they can't afford to buy a home, and saving for a down payment is out of reach when home prices are rising at twice the rate of wage growth. These challenges, along with a [year-long pandemic](#), have only intensified America's housing problems.

One in four renter households in the U.S. pays more than half their income on rent, and another 610,000 people have no home at all.

Housing as a [social determinant of health](#) and well-being is brought to light in a plethora of research. And access to affordable housing is a cornerstone to [improving quality of life](#), remediating inequality, addressing social problems, and reducing unemployment.

Making housing more affordable is a complex issue with no single solution. Keep reading to learn about four projects that are demonstrating how materials like light-frame and mass timber wood construction, along with fresh approaches to design, can offer flexibility and play a role in curbing costs by streamlining fabrication, assembly, and installation.

“We needed to devise a model for another kind of urban space. Prefab emerged as the most direct and efficient approach, addressing issues from technical and financial to social and urban.”

MICHAEL MALTZAN
MICHAEL MALTZAN ARCHITECTURE

MERITS OF MODULAR | The Star Apartment's wood-framed units were built in a factory just outside of Boise, Idaho. They were transported on pallets, trucked on a flatbed, and [hoisted into place](#) with a crane upon arrival.

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FOSTERING COMMUNITY:

Affordable housing for young adults post-foster care.

Fostering healthier communities and tackling inequality is something Portland, Oregon developer Kevin Cavanaugh has made central to the mission of his spry, nimble firm of five.

“For us, all building isn’t a pro forma with windows. We aren’t looking to simply maximize profits. I truly want to lean into what is best for the community,” said Cavanaugh. These are words you might not expect to hear from a developer. But Cavanaugh and [his crew](#) are looking to do things differently—from vibrant paint schemes to social impacts, [Guerrilla Development](#) is a for-profit business with ambitious social goals. “Our affordable housing projects do not rely on a single penny of public subsidy. We are a small company that punches above our weight, that’s something we are good at.”

This includes one of their latest projects: [Great Scott Trio](#), a four-story mixed-use building in northeast Portland. Using light-frame construction, the simple but clever design overcomes affordability challenges by doing more with less—which includes keeping all the common areas open and unheated. Slated to finish construction in 2022, the project’s 40 apartments will all be classified as “affordable housing”, rented at 60% of median family income. A number of apartments will be reserved for 18-year-olds aging out of Oregon’s foster care program.

A mix of resident ages and income levels will create a diverse community. An open-air design, with a central courtyard, will offer natural ventilation, cooling flora, and opportunities for chance meetings. “My goal is to design as sexy a building as possible at the best price. We have gotten good at that here at Guerrilla.”

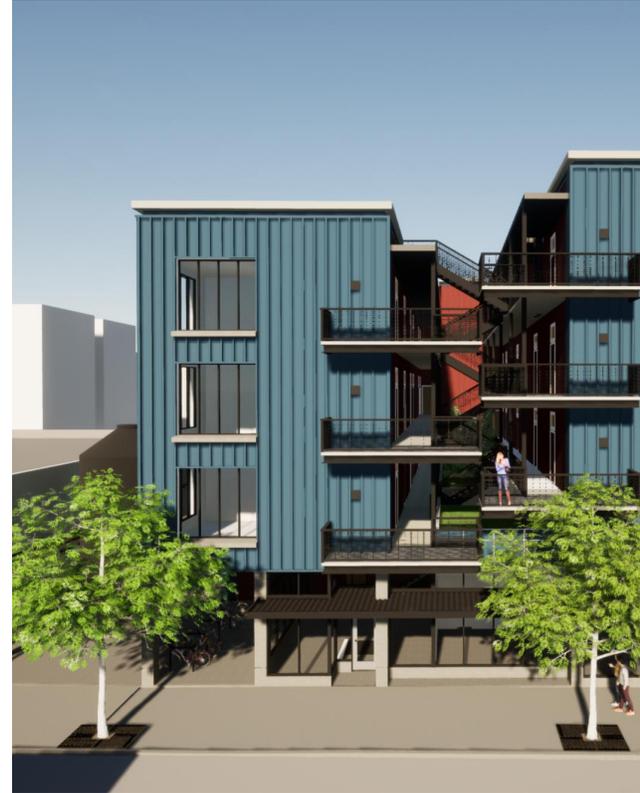
“When it comes to building materials, I never have considered anything but wood. I haven’t found anything that comes close to wood for the price, flexibility, and rapid renewability.”

KEVIN CAVENAUGH
DEVELOPER AT GUERRILLA DEVELOPMENT

Cavanaugh’s firm is committed to sharing their learnings, making [pro formas](#) and [project plans](#) available to anyone.

GREEN ON PAPER | [Great Scott Trio](#) incorporates simple cost-effective green design strategies. The light-frame structure keeps common areas open to the elements, reducing unnecessary heating costs while offering passive natural ventilation and cooling. The project’s [renderings](#) envision solar power on the roof and cistern for collecting rainwater.

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RENDERINGS | Guerrilla Development



TACKLING AFFORDABILITY WITH MASS TIMBER:

A CLT honeycomb bearing system.

On the other side of the country, in New Haven, Connecticut, another four-story affordable housing project is looking to do things a little differently, this time with mass timber.

“The new project will not only transform a major corridor in Dixwell but lead the way in the use of mass timber to make deeply affordable and attractive housing, deeply needed in New Haven, a nearer reality.”

DARRELL BROOKS
CHIEF OPERATING OFFICER AT BEULAH LAND DEVELOPMENT CORPORATION

The non-profit [Beulah Land Development Corporation](#), [Spiritos Properties](#), and [HELP USA](#) are teaming up to develop 340+ Dixwell. The architects are [Gray Organschi Architecture](#) and [Schadler Selnau](#). The two-building complex will provide a range of 1, 2, and 3-bedroom units for individuals and families challenged by housing costs, along with ground-floor commercial retail space with an aim to thread mixed-use elements into the project.

To explore affordable solutions and realize potential cost savings, 340+ Dixwell will take advantage of faster, prefabricated construction techniques using a CLT honeycomb bearing system. A [special report](#) on the project writes “[the system] provides the opportunity to expose more timber, creating warm, natural, hygroscopic approach, and helps achieve passive house performance easier, cutting long-term energy costs.”

Of the project’s 69 apartments, [80%](#) will be reserved for those earning up to 60% of the Area Median Income (AMI) including 20% for supportive housing units. The remaining 20% will be market rate.



RENDERINGS | [Gray Organschi Architecture](#)

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TALL ORDER:

Maltzan turns to timber for his next affordable housing project.

Mass timber can not only help build mid-rise affordable housing like the Dixwell project, it can also boost density by going taller.

A case in point is the ambitions of Michael Maltzan's latest Skid Row project—[The Alvidrez](#). The Alvidrez will be a 14-story tall timber tower of modular building blocks constructed from cross-laminated timber (CLT) column, beam, and deck members. A far cry from underwhelming, the building will be one of the [tallest timber towers](#) in the state of California.

Maltzan Making Affordable Housing a Priority of His Practice

Revitalizing downtown L.A.'s Skid Row neighbourhood with bold design statements has been ingrained in [Michael Maltzan Architecture](#) since the firm's founding in 1993. Maltzan's first project in the area, [Inner-City Arts Campus](#), an arts education facility for at-risk youth is another architecturally significant project that uses ordinary and affordable materials from the local area and California at large—white stucco walls, raw concrete, and low-cost wood-planking for load-bearing structures. In 2010 he completed the New Carver Apartments, the stark white six-story project with its circular iconic form visible from the Santa Monica Freeway.

Maltzan acknowledges that his affordable housing projects sometimes get criticism, with detractors questioning: "Why would you build affordable housing to be so nice?" In a recent lecture hosted by the [Harvard Joint Center for Housing Studies](#) Maltzan challenged that notion, responding, "The question, then, for architecture is not, 'How can we build something so nice for them?' but rather 'How can we not?'"

TALL AMBITIONS | At 14-stories-tall, the affordable housing project Alvidrez is among the tallest timber buildings planned for California.



RENDERINGS | Michael Maltzan Architecture

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Breezeway home offers affordable concept for emergency pandemic housing.

Along with the need for permanent, long-term affordable housing options, there is a [growing need for temporary solutions](#) in the face of disasters whether a global pandemic, raging wildfire or major earthquake.

This spurred Orlando, Florida-based architect Trevor Boyle to develop the Breezeway Home—a concept design envisioning emergency temporary housing for healthcare workers during an event such as the COVID-19 pandemic.

“There is a human psychological response to natural materials such as wood. It’s something that we respond well to without even thinking about it.”

TREVOR BOYLE
ARCHITECT AT HUNTONBRADY AR

“I wanted to bring a lot of that warmth and feeling into these mobile units, combining it with large windows for daylight, to provide a peaceful environment. Healthcare workers especially have to work in very sterile environments, so the use of natural wood for many of the tactile surfaces here was a must,” said Boyle.

Making use of steel-framed transportable trailers and light-frame wood, the Sun Belt-specific design is meant to [operate easily in a hot and humid climate](#) by promoting passive ventilation. Structurally, the unit uses light-frame wood construction on top of the trailer base. The interior features custom built-ins for storage and seating, using finely sanded plywood finish for a clean aesthetic. The unit exterior is clad in wood paneling, creating vertical shadows that reduce the amount of direct sunlight hitting the exterior and reducing the amount of heat gain inside.

[Watch Video](#)



BEND WITH THE WIND | Designed to be resilient and adaptable in the face of adverse events, the Breezeway Home concept draws inspiration from the dogtrot style of cracker houses that used a corridor between two building masses to draw in natural breezes. Its passive design is complemented by solar panels to reduce energy usage, and rainwater collection to lessen water supply demands.

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RENDERINGS | Trevor Boyle



RENDERING | Trevor Boyle

AFFORDABLE AMBITIONS:

Cutting costs through innovation.

From modular boxes to breezeways, these affordable housing examples draw on both simple and advanced innovations in wood construction. With projects like these, building designers are showing that housing solutions don't have to be bland or bare-bones—curbing costs can come with cutting-edge creativity.

By bringing these types of projects to market, design teams are challenging our ideas of what affordable housing can look like, how it can perform environmentally, and how these buildings are experienced by residents.

Are you looking to tackle affordable housing on your next project? Check out these resources to learn more about affordable housing and design:

- [Housing Innovation Collaborative](#)
- [Affordable Housing Design Leadership Institute](#)
- [Affordable Housing Design Advisor](#)
- [Creating Affordable Housing Opportunities with Mass Timber](#)
- [Young Architect Guide: Every Type of Affordable Housing Explained](#)
- [Affordable Housing and Energy Efficiency Tools by the U.S. Department of Energy](#)



RENDERINGS | Gray Organschi Architecture