

# 5 Hybrid



# Projects

That Deliver Form  
and Function

**THINK  
WOOD®**

TIMBER TRENDS BY THINK WOOD

Photo Credit: Michael David Rose

# What is the Future of the Built Environment?

Mass timber construction is capturing the imaginations of leading building and design professionals, who continue to evolve and advance its potential.

Their designs are pioneering better places for us to live and work, and new code changes were passed for the 2021 code cycle that allow mass timber buildings 8 to 18 stories tall. Conveying warmth and sophistication, it can be used as a load-bearing structure and an interior finish material.

Building on the advantages of wood construction, a hybrid structural approach can sometimes best meet a project's needs. Here are five hybrid projects that deliver on design, budget and sustainability goals.



Photo Credit: Andrew Pogue, Courtesy Kaiser+Path

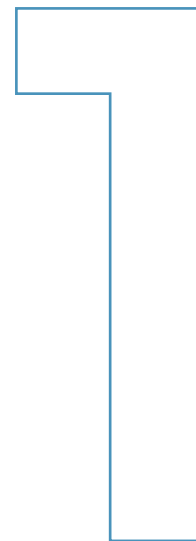


## Long Beach Landmark Provides Welcoming, Flexible Space

Named after one of the city's most famous athletes and social justice icons, the Billie Jean King Main Library in Long Beach, CA, spans 93,500 square feet of a two-story landmark adjacent to historic (and newly restored) Lincoln Park. The hybrid building features glass, wood and steel construction, including an exposed glulam roof system over steel framing. Mass timber is a visual and structural focal point, comprising 80 percent of the structural material with over one million board feet of glulam used throughout. Glulam girders are coupled with plywood decking to construct the floor, creating a warm aesthetic and lighter load atop the concrete garage below. The building's envelope is composed of an aluminum and glass curtain wall that maximizes daylight while mitigating glare.

To achieve LEED Platinum Certification, the building leverages timber construction, rooftop photovoltaic cells, daylighting strategies, controlled air ventilation systems, and extensive glazing with architectural overhangs for solar protection. The library provides Long Beach residents a variety of mixed-use spaces such as group and independent study areas, a technology-driven "makerspace," and resource centers for veterans, refugees, and immigrants. Not to mention, access to more than 230,000 books.

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# Billie Jean King Main Library

SOM | LONG BEACH, CA  
LEED Platinum



# 901 East Sixth Street

THOUGHTBARN / DELINEATE STUDIO  
AUSTIN, TX  
LEED Gold

## Austin's First CLT Building Combines Warmth, Authenticity

As companies compete for top talent, the workplace environment can be a key differentiator. Austin's first CLT building promises to be a recruiting tool, combining the "warmth and authenticity of an older building with state-of-the-art design and new technologies." 901 E Sixth's hybrid structural design helps accomplish this goal. Black steel columns and beams allow for large, flexible column-free floor plates, while mass timber floor decks create inviting, open spaces while functioning as a loft-like finished ceiling. Both materials are intentionally left exposed to create a contrasting yet complementary aesthetic. At ground level, passersby are beckoned by floor-to-ceiling glass and garage-doors that open to the street for special events. The view from the street also highlights the mass timber ceiling inside, as well as a wood feature wall constructed from the project's waste off-cuts. The building's exterior is clad in a distinctive tapered Corten steel panel that will evolve into a patinated, rust-like appearance over time. The building received LEED Gold certification and was fully leased prior to construction being completed. Reports indicate a record-high sale price in Austin's competitive market.<sup>1</sup>

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## Carbon12 Creates a New Class of Condos

Named for the atomic weight of carbon (12 amu) along with its street address (12 NE Fremont St.), this mixed-use, eight-story residential building in Portland, OR, was once the tallest mass timber building in the U.S. Constructed from a glulam post-and-beam frame and cross-laminated timber (CLT) floors and ceilings, the 85-foot-tall building became the model for tall wood projects nationwide. Designers combined the glulam beams and CLT floor decks with a buckling-restrained steel brace-frame core to provide seismic and lateral support.

While the structure is celebrated for its use of sustainable timber products, the deeper story unfolds in the project's masterful design and construction techniques. Like many other projects, Carbon12 is anchored in a concrete foundation and two-story steel core; uniquely, prefabricated CLT panels comprise the remaining multi-story structure. Panels were transported to site and fitted into place with a crane, with construction completed in several months.

**“In my 30 years of building, I have not seen a building framed as quickly and efficiently as Carbon 12.” -- Scott Noble, Senior Project Manager, Kaiser+Path**

In addition to sustainably harvested and certified CLT, Carbon12 features other green building attributes, including: natural daylighting, highly efficient mechanical systems, rooftop solar panels, and state-of-the-art earthquake monitoring and alert systems.

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# Carbon12

KAISER+PATH | PORTLAND, OR



Photo Credit: Andrew Pogues, Courtesy: Kaiser+Path



Photo Credit: Michael David Rose

## Prep School Gets High Marks in Sustainable Construction

Nestled at the base of Taylor Mountain in Santa Rosa, CA, Sonoma Academy is a private, independent, college preparatory high school in Sonoma County. The two-story, 19,500 square-foot Janet Durgin Guild & Commons reflects the institution's multidisciplinary, cutting-edge curriculum and commitment to sustainability through its unique Y-shaped design and locally sourced building materials. The industrial steel structure finds warmth in its western red cedar roof and exterior terrace soffit, constructed of CLT panels made from 100% FSC-certified wood. The choice of prefabricated mass timber also helped the project meet a tight construction schedule. A small crew assembled the prefabricated roof in just two days.<sup>2</sup>

The net-zero building is equipped to handle high energy loads from high-tech maker studios and all-electric commercial kitchens. A green roof provides outdoor space for the high school's students and employees, as well as a classroom, garden, park, and gallery area. Sonoma County-based craftspeople provided many of the construction materials, reducing transportation costs while supporting the local economy. Locally-sourced reclaimed wood is also integrated throughout. The project achieved LEED Platinum, and is seeking ZNE, WELL Education Pilot, and LBC Petal certification.

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# Sonoma Academy Commons

WRNS STUDIO | SANTA ROSA, CA  
LEED Platinum

# 5

## Sea-Tac Airport, Concourse D

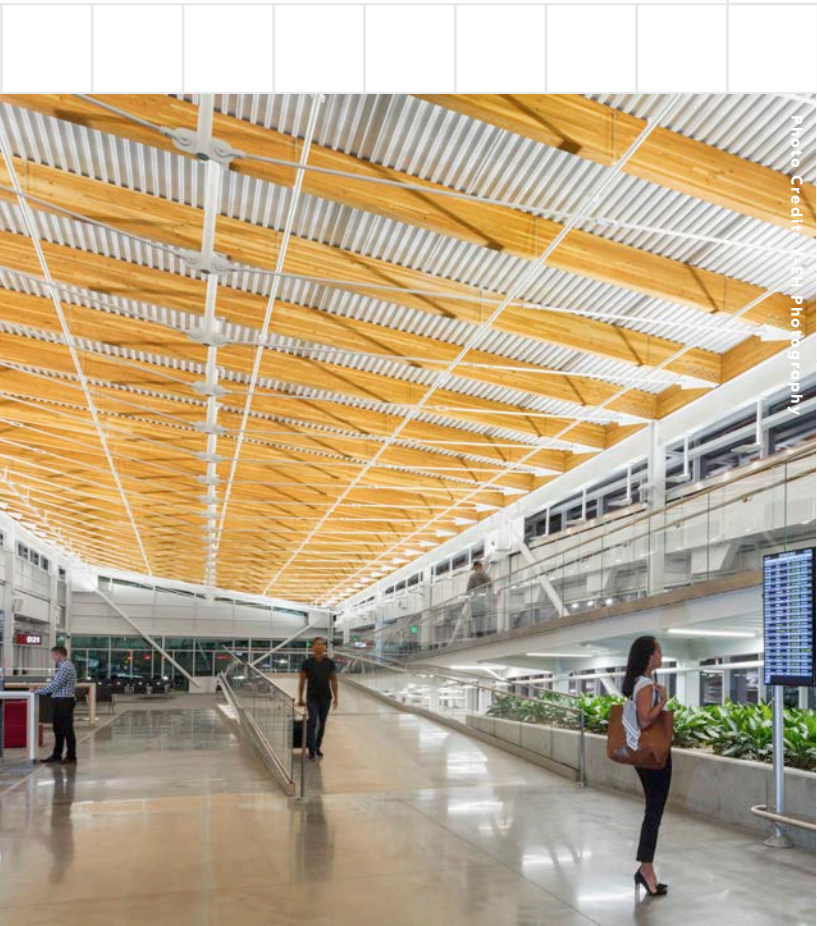
HOK | SEATTLE, WA  
LEED v4 Silver

### New Concourse Brightens Passenger Experience

Seattle's Tacoma International Airport (Sea-Tac) is the [eighth-busiest in the United States](#), and is considered one of the fastest growing in the country, surpassing 50 million passengers in 2019. To accommodate increasing travelers, the airport has funded more than \$550 million in renovations, including a new two-story Annex to Concourse D. The 32,400-sq.-ft. building is the first airport terminal building in the U.S. to achieve LEED v4 Silver certification.

Sea-Tac's airy color palette and glass curtain wall shower the terminal with natural light and connect passengers to the outdoor environment. Distinctive glulam timber trusses (constructed from locally sourced Douglas fir) add warmth and visual appeal while reducing the building's embodied carbon. In addition to extensive daylighting and the use of mass timber, sustainable design strategies include "highly reflective roofing materials that decrease the heat island effect; a rainwater management system that recycles water runoff; and air curtains and a radiant floor heating system."<sup>3</sup> The team also recycled 95 percent of the construction waste, and by relieving congestion at the airport, the new concourse is said to reduce fuel use by airlines and greenhouse gas emissions.<sup>4</sup>

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# Sources

- [1] <https://www.bizjournals.com/austin/news/2019/10/03/why-companies-are-shelling-out-hundreds-of-dollars.html>
- [2] <https://www.woodworks.org/project/sonoma-academys-janet-durgin-guild-commons/>
- [3] <https://www.hok.com/news/2018-11/sea-tac-airports-new-concourse-d-annex-will-improve-the-passenger-experience/>
- [4] <https://www.hok.com/news/2018-11/sea-tac-airports-new-concourse-d-annex-will-improve-the-passenger-experience/>