

**THINK**  
**WOOD®**

# Hybrid Design LookBook

Photo credit: Michael David Rose



# Unlock design possibilities by combining structural systems.

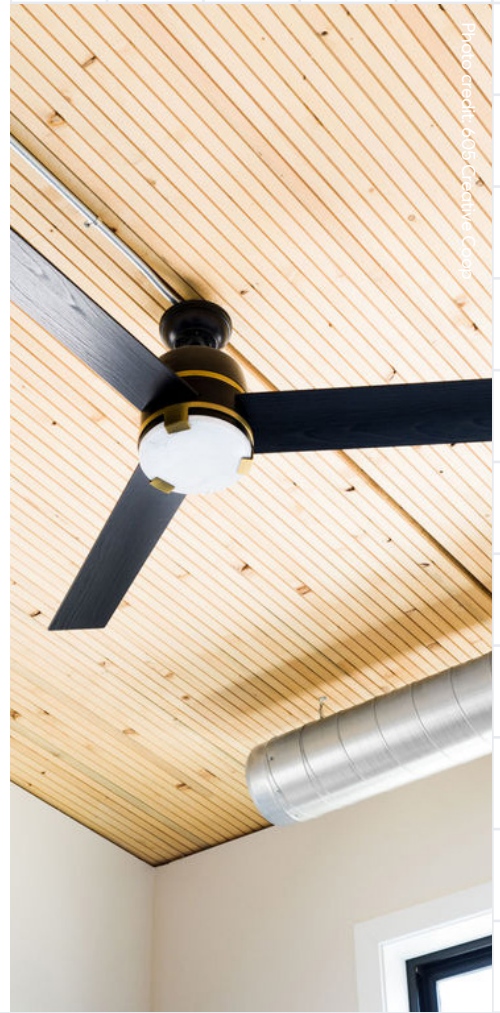
Sustainable construction is more than a trend, it's a necessity. The built environment is responsible for [39% of global emissions](#), empowering design professionals to create change by specifying sustainable construction materials.

Innovations in wood engineering, like mass timber, have allowed expanded possibilities for wood's role in structural design. Combining mass timber products with concrete or steel systems in a hybrid approach can help achieve a project's objectives while delivering on design, budget, and sustainability goals.

A hybrid approach can reduce emissions and decrease a building's carbon footprint without impacting construction time, project costs, or [design](#). Industry leaders embracing [hybrid structural systems](#) unlock seemingly endless possibilities to build innovative, beautiful, sustainable projects.

**“Mass timber plays well with other structural materials. Often the right structural solution for a project is not a pure mass timber structure, but a hybrid solution.”**

[STRUCTURE MAGAZINE](#)



# Hybrid Design Innovators

**KAISER+PATH**

**Perkins&Will**

 **DLR Group**

**ktgy**  
Architecture+Planning

**Gensler**

 **hickok cole**

  
**HARBOR BAY**  
REAL ESTATE ADVISORS

# Combining Structural Systems

These six project examples explore hybrid systems allowing for innovation across building sectors, including mixed-use, commercial, multifamily, civic, and education.



Photo credit: Michael Davis Rose

# INTRO

## Tall timber differentiates in coveted Cleveland locale.

Upon completion in spring 2022, INTRO will be Cleveland's first mass timber building and the second tallest mass timber structure in the U.S. Neighboring the city's well-known [West Side Market](#), the building will honor its historic surroundings with a stunning mass timber design.

INTRO's hybrid structural system will achieve both structural and aesthetic ambitions, with eight stories of mass timber above a one-story concrete podium. The mixed-use building will include ground-floor retail, 300 luxury apartments, and a top-floor event venue. Interior surfaces will feature exposed structural wood, including glulam beams and columns and CLT floors and ceilings.

**“In 50 years, people will look at this building and know that it's not just another apartment building. Timber helps us bring that to fruition.”**

DAN WHALEN  
VICE PRESIDENT AT HARBOR BAY REAL ESTATE



Rendering credit: Imogefiction

**ARCHITECT:** HPA

**DEVELOPER:** Harbor Bay Real Estate

**CONSTRUCTION TYPE:** IV-B

**MATERIALS:** Eight stories of mass timber over a concrete podium



Rendering credit: Imogefiction



Concept designs for INTRO began when the 2021 IBC tall-timber code modifications were still in development. The design team, including the project's architect [HPA](#), worked with WoodWorks to engage IBC code advisors and Cleveland building officials to ensure code approval regarding the alternate means and methods request required for construction.

According to Harbor Bay, INTRO's construction time has been about 25% faster than typical concrete or steel construction, driving reduced costs and construction times – a key differentiator in downtown Cleveland's competitive multifamily sector.

[READ MORE](#)



# Billie Jean King Main Library

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 Lincoln Park.

The hybrid building features 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.



Photo credit: Benny Chen



Photo credit: Benny Chen

**ARCHITECT:** Skidmore, Owings & Merrill (SOM)

**DEVELOPER:** City of Long Beach or Plenary-Edgemoor Civic Partners

**CONSTRUCTION TYPE:** IV-HT

**MATERIALS:** Two stories of mass timber over steel framing

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.

**“Wood made sense for the new two-story, 93,500-square-foot building and adds instant character to the complex.”**

JOSE LUIS PALACIOS  
DESIGN DIRECTOR AT SOM

[READ MORE](#)





# 1430 Q

## Meet the first 6-over-2 podium in the U.S.

When D&S Development decided to build a new mixed-use multifamily project in Sacramento, CA, the firm did something no one had done before. D&S and their design team worked with the City's Building Department to build the country's first residential structure with six stories of light wood-frame construction and mezzanine over a two-level concrete podium. The eight-story building makes the most of its small but desirable site while maximizing owners' financial return.

Sacramento's competitive building market required that [1430 Q](#) have at least six floors of residential units to make the project profitable, beyond the five stories of wood-frame allowed under the existing International Building Code.



Photo credit: Greg Folkins

**ARCHITECT:** HRGA, The HR Group Architects

**DEVELOPER:** D&S Development

**CONSTRUCTION TYPE:** III-A over I-A podium

**MATERIALS:** Six stories of light-frame plus mezzanine over a two-level concrete podium



Photo credit: Greg Folkins



Photo credit: Greg Folkins

Using the City's Alternate Means and Materials Request process, the design team achieved the extra height and, in so doing, built the country's tallest light wood-frame building. 1430 Q's structural engineering firm, [Buehler](#), suggested that the project's success is an indicator of good things to come for light wood-frame construction, as evidenced by all the questions coming in from other developers.

**“Wood is the obvious choice for these types of buildings.”**

RYAN MILLER  
ASSOCIATE PRINCIPAL AT BUEHLER

[READ MORE](#)



Photo credit: Greg Folkins

# Sonoma Academy Commons

## Prep school gets high marks in sustainable construction.

In sunny Santa Rosa, CA, Sonoma Academy's Janet Durgin Guild & Commons features a unique Y-shaped design and locally sourced building materials reflect the institution's commitment to sustainability and environmentally conscious learning and living.

The building's industrial steel structure finds warmth from the western red cedar roof and exterior terrace soffit, constructed from CLT panels made from 100% FSC-certified wood. Prefabricated mass timber helped the project meet a tight construction schedule, allowing a small crew to assemble the prefabricated roof in just two days.

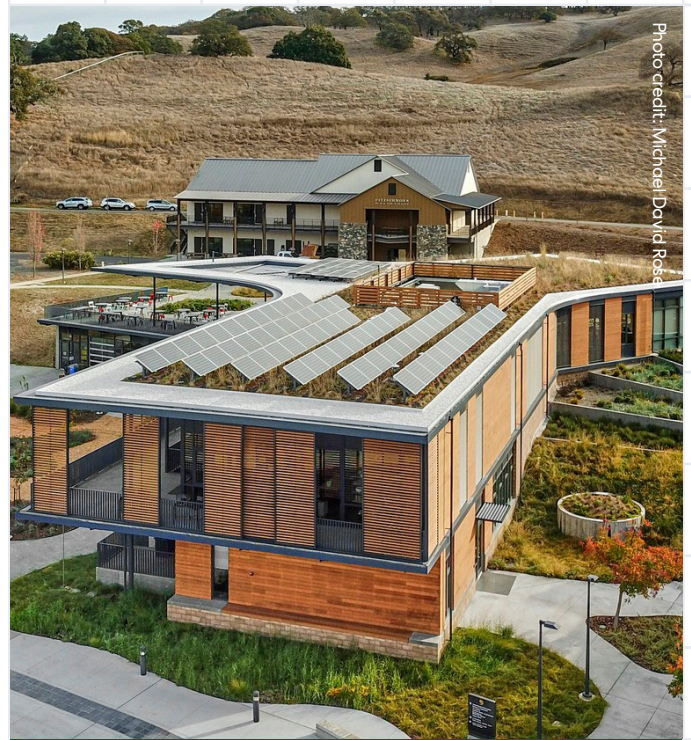


Photo credit: Michael David Rose

**ARCHITECT:** WRNS Studio

**DEVELOPER:** Sonoma Academy

**CONSTRUCTION TYPE:** II-A

**MATERIALS:** Two stories of structural steel with a red cedar roof and CLT panels



Photo credit: Michael David Rose

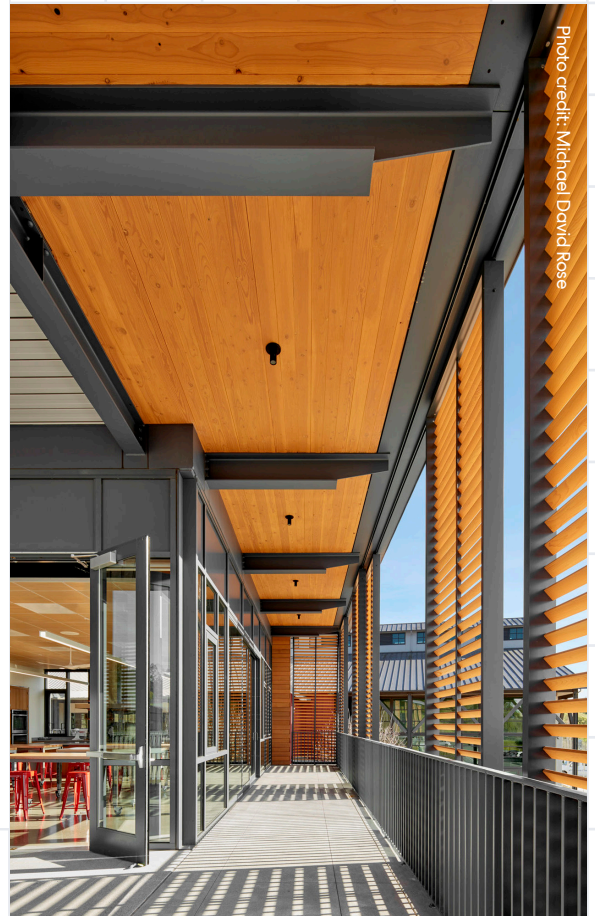


The Commons building was constructed to net-zero standards and can handle high energy loads from high-tech maker studios and all-electric commercial kitchens. A green roof provides outdoor space for the high school's students and employees and a classroom, garden, park, and gallery area. Sonoma County-based 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.

**“This project demonstrates that, even with an energy-heavy program that includes a commercial kitchen, a fully integrated and dedicated design team can produce a beautiful and extremely well-performing building.”**

[AIA](#)

[READ MORE](#)



# Railyard Flats

## Rethinking development with history in mind.

Railyard Flats sits at the crux of historic and modern, constructed on what used to be a railroad switchyard. Located in the heart of downtown Sioux Falls, South Dakota, the new [four-story mixed-use project](#) blends modern construction techniques with a naturally historic feel. Railyard Flats includes 41 loft-style apartments atop a ground-floor retail space and a two-story mass timber office.

Wood plays heavily throughout [Railyard Flats](#)' hybrid design, with mass timber beams and columns, heavy timber decking, and dowel-laminated timber (DLT) ceilings topped with a thick sound mat and 3 inches of concrete for an added sound barrier. Mass timber provides stability, durability, and warmth, tapping into the material's biophilic properties to create warm and inviting spaces in the building.

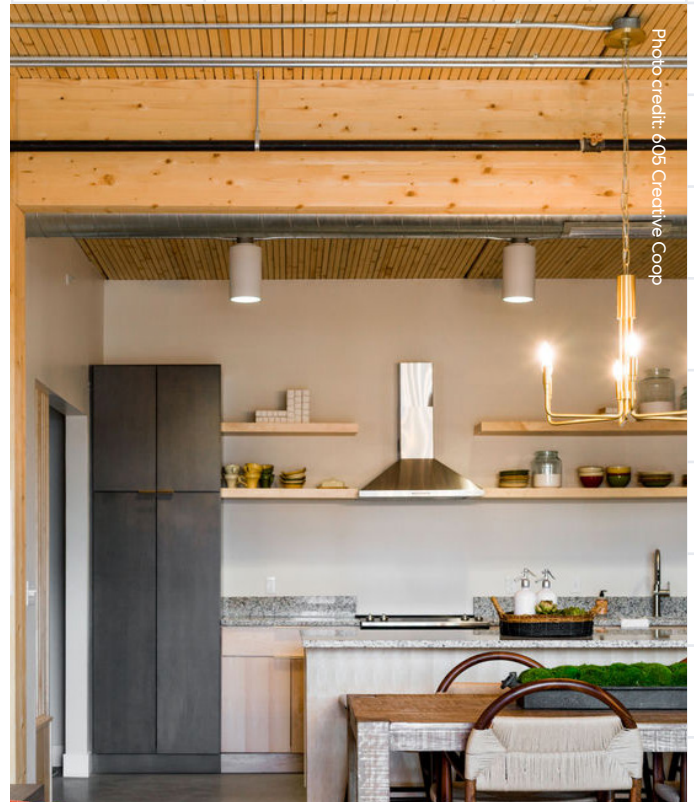


Photo credit: 605 Creative Coop

**ARCHITECT:** Co-Op Architecture  
**DEVELOPER:** Pendar Properties  
**CONSTRUCTION TYPE:** IV-A  
**MATERIALS:** Three stories of DLT and light -frame construction



Photo credit: 605 Creative Coop

**“There is nothing like what mass timber can bring to an interior space. It provides a warmth that feels like home right away.”**

**ANNE HABER**  
PARTNER AND DEVELOPER AT PENDAR PROPERTIES

When completed in spring 2022, Railyard Flats will be the first modern mass timber project in South Dakota. It will pave the way for innovation, sustainable development, and a new era for building that showcases wood in both structural and aesthetic capacities—honoring the past while looking to the future of the built environment.

[READ MORE](#)



Photo credit: 605 Creative Coop



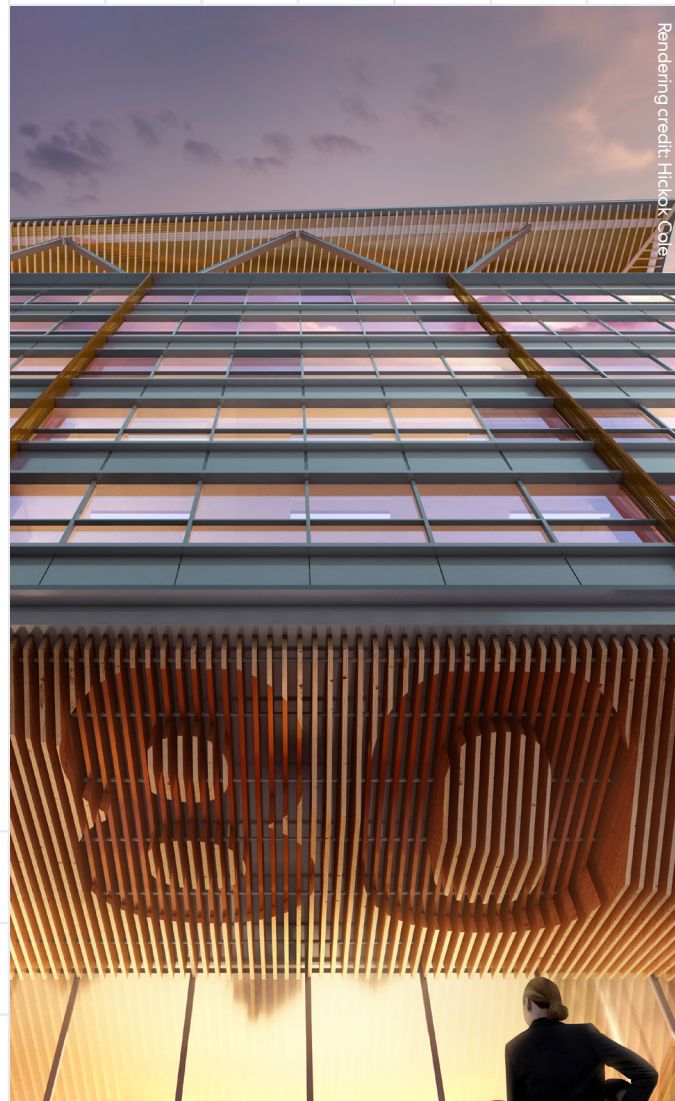
Photo credit: 605 Creative Coop

# 80 M Street

## Wood breathes new life into existing buildings.

In Washington D.C.'s Capitol Riverfront neighborhood, land is scarce, and the city's building codes limit height to 130 feet. Builders must make the most of every square foot.

80 M Street, an overbuild project in the historic Navy Yard community, was a perfect candidate for vertical expansion and developers aimed to differentiate in D.C.'s crowded commercial market. To accomplish both goals, mass timber was selected for the 100,000-square-foot expansion.



**ARCHITECT:** Hickok Cole

**DEVELOPER:** Columbia Property Trust

**CONSTRUCTION TYPE:** IV-C Vertical Addition

**MATERIALS:** Three stories of mass timber over an existing concrete structure



Timber's light weight was a driving factor in the design team's material decision, as the existing building could not handle the load of a traditional concrete overbuild. Using timber also allowed the team to deliver the project faster, with less impact on the occupied building's tenants.

The overbuild will add two full floors of trophy-class office space, a penthouse, and a rooftop terrace atop the 286,000-square-foot building. The existing lobby will also be redesigned to incorporate new wood elements and upgraded amenities. This foundational project is positioned to drive increased interest in mass timber construction in the D.C. area.

**“Creating engaging places where people want to work and live or socialize — that’s the key - and mass timber is something that helps you create that kind of environment.”**

**PAT KEELEY**  
SENIOR VICE PRESIDENT AT COLUMBIA PROPERTY TRUST

[READ MORE](#)

