

Projects That Pencil Out

THOUGHTS BY THINK WOOD



Speeding Up Construction With Mass Timber

THINK
WOOD®

Material costs fluctuate and land prices rise with market demand – time is the one constant developers can leverage to cut project costs. Prefabricated mass timber systems are enabling development teams to streamline project delivery, erect buildings in less time with smaller crews, in turn realizing cost savings and delivering added value.

Keep reading to learn about four mass timber builds that delivered on speed of construction, while boosting marketability with the warmth of wood.



PHOTO | Stéphane Groleau

WESSEX WOODS

Affordable Housing That Cuts Costs Not Corners

In Portland, Maine stands a purpose-built affordable housing development that shows how light-frame and mass timber construction can cut costs while delivering on quality and design.

The 40-unit affordable senior housing complex, [Wessex Woods](#), provides 10 homes for households at 60% of the area median income and 24 homes for households at 50% of the area median income.

While mass timber was not part of the original design, a \$700,000 budget overage prompted the team to go back to the drawing board—and cross-laminated timber (CLT) was a key part of the solution.

By using mass timber, the design team reduced the elevator shaft's three-week construction time to one day, cutting their budget by \$75,000 while realizing additional cost savings related to reduced labor, heating, and tenting requirements.

“CLT was not initially in our consciousness, but as we dug into the idea, we discovered that it would save us time and money.”

GREG PAYNE
DEVELOPMENT OFFICER AT AVESTA HOUSING

Along with CLT in the elevator shaft and stairs, Wessex Woods features light wood framing throughout, including plated roof and floor trusses, wood-paneled walls and load-bearing corridors.

The development site contains eight contiguous lots located in a walkable area with a proximity to services and amenities, making it a prime location for housing. The site also is located close to a bus stop on the extensive Portland public transportation system, connecting residents with the downtown area and adjoining communities.



SIDEYARD

A Winning Prefab Proforma

Across the country in the Burnside Bridgehead neighbourhood of Portland, Oregon, Key Development turned to a prefabricated timber solution to streamline construction on an awkward and tight worksite.

New roadway reconfigurations left a 9,000-square-foot berm space orphaned among artistically muraled offices and upscale residential mid-rises. The wedge-shaped parcel initially seemed unusable.

In considering their options, the project team knew mass timber was their structural material of choice. CLT enabled a prefabricated “kit-approach” instrumental to an efficient, cost-effective construction sequence.

As a difficult-to-access lot, the site’s potential was more fully realized using this just-in-time approach. The resulting five-story mixed-use property—[Sideyard](#)—features a CLT structural system with ground-level retail and office space on the floors above.

“The site did not scream opportunity. It was an uncommon, remnant space and we saw an opportunity to make it stand out.”

CLAUDIA MUNK-VON FLOTOW
CHIEF OPERATIONS OFFICER AT KEY DEVELOPMENT

The design team also discovered a positive domino effect with the prefab construction schedule. Because mass timber panels are manufactured with precision off-site, the amount of time at the build site and trucks driving to and from were greatly reduced, the team shared.

Flexibility and ingenuity in the design became even more relevant as Sideyard’s construction was completed at the onset of COVID-19. When tenants began to terminate leases and change office space requirements, the developer found immense value in mass timber’s ability to easily reconfigure the floor plan.



PHOTOS | Stephen Miller

Timber Overbuild Speeds Construction

In addition to advantages of mass timber's prefabricated approach are the benefits of wood's light weight, which make timber systems ideal for vertical overbuilds.

Such was the case in Washington D.C.'s [80 M Street](#), which added two stories of new office space and amenities to an existing seven-story office building through overbuild expansion, including a penthouse and rooftop terrace for social gathering.

Originally built in 2001, 80 M Street was among the first office buildings in what would eventually become the city's Capitol Riverfront District. At a current height of 90 feet (seven stories), 80 M was a perfect candidate for vertical expansion.

Developer Columbia Property Trust aimed to differentiate the District's crowded commercial market and worked with architects at Hickok Cole to envision a 100,000-square-foot mass timber overbuild—a first of its kind for the city and the design team. According to Thomas Corrado, senior associate and senior project designer, Hickok Cole, the existing building could not handle a load of a traditional concrete overbuild.

“Columbia recognized the marketability of having 16 ft floor-to-floor with mass timber instead of 9.5 ft floor-to-floor with concrete.”

JASON WRIGHT
ASSOCIATE PRINCIPAL AND SENIOR
PROJECT MANAGER AT HICKOK COLE

Not only did timber's light weight allow the team to deliver the project faster and with less impact to the occupied building and tenants, but it also boosted marketability, according to the design team.

“We wanted to bring something new to the market—something that would set the space apart,” said Corrado. “We're a concrete city, so we wanted to see how we could introduce mass timber into the D.C. marketplace as a viable building system.”



IMAGES | Hickok Cole

Adaptive Reuse Offers Lofty Savings

Whether building on top or adjacent to existing structures, design teams across the country are leveraging mass timber for adaptive re-use.

Northwest of D.C., Milwaukee's first mass timber building, [Timber Lofts](#), combines a 130-year-old warehouse renovation with new CLT construction in an adjacent parcel. The developer's choice to use mass timber offered faster, agile assembly and shaved 20% off the overall construction schedule.

The previous warehouse and new build combined to create a 60-unit multifamily complex with ground-floor retail, walking distance to nearby amenities in the city's historic Walker's Point neighborhood. Material cost was a consideration when choosing mass timber, and one that proved to pencil out.

"The reality is, there is a lot to gain by offsetting costs," said Tim Wolosz, Principal at Engberg Anderson, the project's architect. "For example, less interstitial space between floors translates into less exterior material plus a reduction in components like resilient channels and insulation. When you start multiplying those savings by 400-square-feet around the building, you see the true cost savings potential of mass timber. Now we're huge fans. For every new project I start, I propose CLT as an option to consider."

"The big myth for us was that mass timber is expensive."

TOM WOLOSZ
PRINCIPAL AT ENGBERG ANDERSON

"The difference in labor costs and frankly the number of people up on the deck (and the safety concerns associated with that) are significantly less than a traditional post-tension building. That's an interesting nuance to mass timber construction. You can literally hit things in place with a mallet. It sounds really simple and it actually is," said Adam Arndt, President of Catalyst Construction, the contractor for the project.

The team also believes mass timber can give a lift to sales and lease rates. Residential units were 90% leased six months after opening and retail leasing is expected to increase as the impacts of the pandemic wane.



PHOTOS | Engberg Anderson

Timber Takeaways

From newly-built affordable housing to revamped office spaces these four projects are demonstrating how timber systems can speed construction while offering other benefits. Whether making overbuilds possible with wood's lighter weight, streamlining construction schedules with prefabrication, reducing a crew's time on site, or boosting marketability with visual warmth, design teams are turning to timber as a compelling cost-cutting solution.