MASS TIMBER DELIVERY AND INSTALLATION

Source: Timberlab Inc.

CASE STUDY: BUILDING 4

FINANCIAL SERVICES CAMPUS EXPANDED WITH MASS TIMBER

PROJECT OWNER: CONFIDENTIAL FINANCIAL SERVICES CLIENT

PROJECT LOCATION: WILMINGTON, NC, 28401

COMPLETION DATE: MAY 1, 2024

ARCHITECT/DESIGNER: LS3P

MASS TIMBER ENGINEER/MANUFACTURER: SMARTLAM NORTH AMERICA

GENERAL CONTRACTOR: SWINERTON/MONTEITH

STRUCTURAL ENGINEER: LYNCH MYKINS

MECHANICAL, ELECTRICAL, AND PLUMBING: HARRELSON

OTHER CONTRACTORS: TRIPLE-R ELECTRIC

BUILDING 4 IS a 67,000-square-foot addition to a financial services campus located along the coastline in Wilmington, North Carolina. The client pursued mass timber for its constructability and aesthetic benefits. The ownership team was committed to a sustainable, low-carbon structure to boost employee

SOUTHERN YELLOW PINE MASS TIMBER

Source: Timberlab Inc.

MASS TIMBER OFFICE

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satisfaction and retention, and to pay homage to the forested terrain that surrounds the development.

Even though the client has a portfolio in hybrid timber buildings, this project is its first 100 percent mass timber building and one of the first full-scale projects in the region. The project team was able to show that a full mass timber build would provide a faster schedule for construction than a conventional building using structural steel. That was a high priority for the client.

The inception of this mass timber office was marked by strategic partnerships that played pivotal roles in bringing the vision to life. The collaboration facilitated the seamless integration of mass timber into the project, ensuring structural integrity and aesthetic appeal. The design team involved LS3P, architect; Lynch Mykins, engineer of record; and Timberlab Inc., delegated design. Building 4 was constructed via a joint-venture collaboration between Swinerton and Monteith. The mass timber elements were regionally supplied by SmartLam, while Timberlab Inc.'s East Coast team fabricated and erected the timber structure.

The owner was dedicated to a regional procurement strategy to keep project emissions low. Timberlab worked with SmartLam to locally source the Southern Yellow Pine (SYP), a species that is abundant in the region. The 4-story structure spans 67,000 square feet and includes nearly 1,000 pieces of glulam and 250 Cross-Laminated Timber (CLT) panels. All the timber was delivered to the jobsite in 40 truckloads.

The project team's expertise in mass timber design and engineering played a crucial role in shaping the structural elements. The decision to employ a double girder system not only maximized head height but also enabled ease of implementing cantilevered framing. The incorporation of cantilever connections at the building's corners allowed for columnless features, providing unobstructed views and enhancing the building's visual appeal.

Because the structure is in a hurricane-prone coastal region, the connections are engineered to resist net uplift wind forces. Withstanding hurricane-force winds is a formidable challenge, and this structure showcases the potential of mass timber in such demanding environments as the Carolina coast.