

CASE STUDY

Edelman Fossil Park
& Museum of
Rowan University



Mass timber helps museum
visitors 'discover the past,
protect the future'

When scientists began finding clues to the ancient mystery of dinosaur extinction in a suburban New Jersey quarry, they wanted a remarkable building to share their remarkable discoveries—a place that would provide both a window into Earth’s past and a view of its sustainable future. To connect visitors with this goal, architects for the Edelman Fossil Park & Museum designed a two-story structure where expansive views and mass timber elements form the main architectural expression.

“We chose mass timber for its positive environmental attributes, as a sustainable, renewable resource, and for its aesthetic appeal,” said Thomas Wong, a partner at Ennead Architects. “We wanted to visually integrate the structure with its natural surroundings and provide a warm, inviting environment for museum visitors.”

A ‘Window Through Time’

Located in a 123-acre park with nature trails and a quarry where visitors can dig for fossils, the museum building is comprised of five wood-clad rectangular pavilions. Windows in each of the volumes serve as metaphorical lenses, shaping views out onto the dig site and lake, and framing a ‘window through time’ that connects visitors inside with the discoveries being made outside.

Architects strategically used mass timber in the most public areas of the building—the lobby, terraces, and café—leaving wood visible where possible to reinforce the museum’s commitment to environmental stewardship. The wood ceilings also create a natural backdrop for the full-scale skeletons of dinosaurs, reptiles, and sea creatures hanging overhead.

Steel and concrete were used elsewhere—in the interactive display areas where ceilings were painted black so visitors could better focus on the exhibits, and in workshops and other spaces not open to the public. The result is a hybrid structure that optimizes the impact of exposed wood and balances the goals of beauty and sustainability with the museum’s budget.

Visitors enter through a spacious lobby with a wood post-and-beam framework featuring exposed mass timber beams and columns and matching roof panels. Glue-laminated timber is used for both, referred to as glulam in beam and column applications and GLT when used as panels. Mass timber is also featured throughout the covered outdoor terrace overlooking the quarry and in the café space, creating a warm and welcoming place for visitors to relax.

“The two most important goals of the project were sustainability and guest experience,” said Andy Sniderman, Senior Associate with KSS Architects. “Our use of mass timber in this building effectively supports both.”

Douglas Fir Brings a Unified Material Palette

After considering other mass timber panel options, the design team chose GLT roof panels for the lobby, terraces,

and café. “GLT panels offer a cohesive visual appearance,” said Nikki Maxted, Relationship Manager with Western Archrib. “Their slender profile brings practical advantages by being lighter weight, easy to handle, and easy to install. We also provided engineering support, including diaphragm design and span and load calculations, to ensure a smooth design process.”

Because Western Archrib provided the glulam columns and beams as well as the GLT panels, all mass timber elements could be manufactured from Douglas fir, which is also used for the curtain wall system. The result is a warm and unified material palette that blends seamlessly.

PROJECT DETAILS



Edelman Fossil Park & Museum of Rowan University

LOCATION: Mantua, New Jersey

STORIES: Two

SIZE: 44,000 square feet

CONSTRUCTION TYPE: V-A

COMPLETED: 2025

PROJECT TEAM

OWNER/DEVELOPER: Rowan University

ARCHITECTS: Ennead Architects
(Design Architect)
KSS Architects
(Executive Architect)

MUSEUM PLANNING &
EXPERIENCE DESIGN: G&A

STRUCTURAL ENGINEER: Buro Happold

GENERAL CONTRACTOR: Dobco Group

MASS TIMBER: Western Archrib

MASS TIMBER COATINGS: Sansin

Connect with the Edelman Fossil Park & Museum project team at woodworksinnovationnetwork.org/projects/edelman-fossil-park-and-museum





“The spanning characteristics and directional nature of the GLT reinforce the cross-grain geometries of the timber framing and panels to create a rich interior expression,” said Wong.

Durable Protection, Sustainable Solutions

The same glulam beams, columns, and GLT panels used in the lobby extend to the covered outdoor terrace, which meant they needed to be protected from weather. Western Archrib applied low-VOC, low-luster coatings from Sansin to all mass timber members to shield the wood from moisture absorption, UV degradation, and staining.

The design team’s commitment to using sustainable materials also extended to the museum’s exterior. Architects wanted natural materials to connect the structure with its surroundings, while the museum’s owner, Rowan University, wanted a durable exterior that would be easy to maintain. Together, KSS and Ennead found a unique, sustainable solution. They clad the building with FSC-certified modified wood, manufactured using plantation-grown radiata pine treated with an acetylation process that creates a natural, durable, dimensionally stable product. The acetylation process modifies wood cells and reduces their ability to absorb and retain water, which minimizes shrinkage and swelling and allows the cladding to maintain tight joints over time. The process also makes the wood resistant to rot and insect damage, for long-term durability.

“Our cladding solution required detailed collaboration, but in the end we got the sustainability and the look we wanted, and Rowan University got a durable building exterior with a 50-year warranty,” said Sniderman.

A Fossil Fuel-Free Fossil Park

Ironically, in a project dedicated to the understanding of ancient fossils, the museum operates without the use of fossil fuels. Architects designed the structure with passive energy features and all-electric mechanical heating and cooling systems, using the Energy Petal Certification requirements of the Living Building Challenge (LBC) as a framework.

To follow LBC requirements, the project team also held an all-day Biophilic Exploration workshop early in the design process. During this collaborative session, they identified design opportunities to meet the biophilic tenets of the LBC program. Since museum spaces are designed to both educate and inspire, the team knew their use of biophilic design principles could help them create an engaging learning environment.

“This is where our use of mass timber was especially helpful,” added Sniderman. “Wood is a key part of our ability to connect visitors and staff with the natural world. The warmth of the wood and the biophilic connection mass timber brings is very evident in this building.”

Buro Happold provided structural and MEP engineering, as well as sustainability consulting services for the project. “The visible structural mass timber is a strong expression of biophilic design,” said Principal Stephen Curtis. “Here we have a natural material that building occupants get to experience by seeing, feeling, and touching. Our use of wood helped create not only a warm and welcoming environment but also an awe-inspiring lobby that leaves a lasting impression on every visitor.”





Museum Gives Everyone a Chance to Learn

While involving a mass timber fabricator early in the design process can provide significant value, Edelman Fossil Park & Museum was a public project and had to be designed before going out for bid.

“I understand the value of early team collaboration and agree with it, but we learned that you can still have a successful mass timber project even if that’s not an option,” said Sniderman.

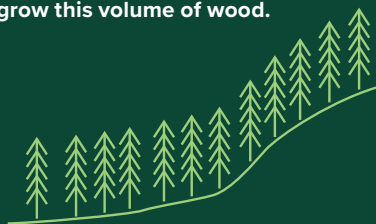
“Public bids have specific requirements that changed the way we had to specify the wood materials for this project, but we’re proud that mass timber is being used and pleased we could make it work.”

Because of its unusual shape, architects were challenged because the building didn’t have repetitive structural bays, which can be especially efficient with mass timber. Every bay is slightly different, and each of the two stories has a unique structure. They also had specific goals in terms of aesthetics for the wood, so KSS requested guidance from WoodWorks to help with the specifications.

“We wanted to control the quality, color, texture, and other tactile aspects of the wood used, but we didn’t want to limit our supply options,” explained Sniderman. “This meant we had to be very specific as to the type of wood that would be acceptable, but broad enough to keep it competitive. The assistance we got from WoodWorks was very helpful.”

Supporting Sustainable Forests

Edelman Fossil Park & Museum includes 9,200 cubic feet of wood products. It takes North American forests 1 minute to grow this volume of wood.



Estimated by the Wood Carbon Calculator for Buildings, based on research by Sarthre, R. and J. O’Connor, 2010, A Synthesis of Research on Wood Products and Greenhouse Gas Impacts, FPlnnovations.

Curtis added, “It’s important to dispel the notion that projects with complex structural and MEP systems only succeed with ample funds and clients who can invest heavily in design and engineering support. This building demonstrates that such projects can be successfully realized, even with budgetary constraints, which can often be faced by public entities.”

Wood Helps Elevate the Guest Experience

The team wanted to connect the building with what’s being discovered in the earth, and used wood to help the museum’s architecture blend into its natural setting. “We also wanted to feature mass timber to signify its role in a sustainable future,” said Sniderman. “When museum visitors walk in through the front doors, they see all this beautiful wood. The mass timber helps us elevate the guest experience with a sustainable building, and that was our goal.”

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