

WILLIAMS COLLEGE MUSEUM OF ART

Williamstown, MA | Design Phase

Role of the firm: Structural Engineer of Record

Area: 76,800 sq. ft. (7,135 sq. m.)

Architect: SO-IL with Perry Dean Rogers

Client: Williams College

Nestled in the rolling hills of Western Massachusetts, the new home of the Williams College Museum of Art (WCMA) represents a fusion of excellence in arts education and sustainable design. The building will offer substantial gallery space for showing more of the 15,000 works in the museum's collection, as well as facilities for easy access to collections for student, faculty, and visiting scholar requests, and more object study classrooms.

The primary structure is composed of glulam (glued-laminated timber) post and beam construction, which provides robust support while allowing for spacious, open interiors. This is complemented by a cross-laminated timber (CLT) deck, enhancing the building's structural integrity and sustainability. Additionally, a concrete transfer slab is incorporated into the design, effectively distributing loads and ensuring stability, particularly above the basement level.

The iconic undulating roof, constructed with cross-laminated timber with warped geometry, symbolizes WCMA's dedication to innovation. Finite element modeling and analysis were performed to inform and validate the warped CLT geometry, ensuring robust design integrity. Full-scale mockup testing at Nordic Structures' fabrication facility provided a deeper understanding of the complexities and constructability of the mass timber panels under warping conditions. Similarly, tests assessed the constructability of glulam beams with curvature in two axes. These warped and curved mass timber elements will be exposed and featured in the final building, particularly within the entry lobby space.

