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Case Study

Ragon Institute's New Research Hub

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Overview

Client/project name	Ragon Institute
Location	Cambridge, MA, USA
Architect	Payette
Structural/electrical engineering	Arup
Civil engineering	Bristol Engineering
General Contractor	Consigli
Glazier	Interpane
Timber curtain wall and skylight system	Unicel Architectural



The [Ragon Institute](#) of Mass General Brigham, MIT, and Harvard is a pioneering immunology research center dedicated to harnessing the human immune system to prevent and cure some of the world’s most pressing diseases, including HIV/ AIDS, tuberculosis, cancer, and emerging infectious threats. Founded in 2009 through a \$100 million gift from Phillip and Susan Ragon, the institute has become a global leader in collaborative, translational research.

Completed in 2024, the Ragon Institute’s new headquarters in Cambridge, Massachusetts, represents a bold evolution in [research facility design](#). Situated in Kendall Square - one of the world’s most dynamic innovation hubs - the building was conceived to physically embody the institute’s mission: breaking down silos between disciplines to accelerate discovery. By bringing scientists, clinicians, and engineers together under one roof in a highly transparent and interconnected environment, the facility fosters both planned and spontaneous collaboration.

Designed by Payette, the building is as much a tool for scientific advancement as it is an architectural statement—one that leverages mass timber, daylight, and openness to create a warm, human-centered research environment that departs from the traditional lab aesthetic.

Challenges and Objectives

The architect, Payette, aimed to create a building envelope seamlessly integrated with the mass timber structure and accompanying steel bracing, allowing natural daylight to flow through a timber curtain wall and leaf-shaped skylight system installed onto mass timber beams.

But integrating a high-performance curtain wall system and skylight with a mass timber structure presented unique design and construction complexities:

- Unlike conventional steel or concrete frames, mass timber introduces natural variability in its dimensions and behavior, making it difficult to achieve the extremely tight tolerances required for a precisely fitted curtain wall and skylight system.
- The architect's vision – a seamless aesthetic dialogue between the timber structure and the building envelope – left little room for the typical adjustments that curtain wall installers rely on in the field.

The skylight system involved a similar level of complexity. Installed directly onto mass timber beams, it demanded exact beam positioning to ensure proper alignment, weather tightness, and the unobstructed flow of natural daylight intended by the design. Any deviation in the placement of structural members would have compromised both the performance and visual continuity of the envelope.





Solution

Unicel Architectural worked closely with Payette to bring its vision to life by enveloping the atrium in a 3,000-square-foot segmented, curved curtain wall. Aluminum mullions and sweeping 20-foot glass spans strike a balance between transparency and structural integrity. An 860-square-foot Vision 700S skylight crowns the space, sitting atop the mass timber glulam structure accented by decorative steel bracing, reinforcing a sense of warmth and openness.

To overcome the challenges posed by such a complex design, Unicel Architectural engaged in an intensive design-assist process alongside the project architect and structural engineering team. Rather than adapting the curtain wall to an already-built structure, Unicel Architectural worked proactively to define precise reference points that governed where each timber beam needed to be installed.

This collaborative, front-end approach ensured the structure was built to meet the envelope—not the other way around—allowing the completed building to achieve the clean integration of mass timber, curtain wall, and skylight system that the design demanded.

Ultimately, Unicel Architectural provided the following to the LEED Gold-certified Ragon Institute:

- **3,200 total square feet of glazing**, including the THERM+ H-I 76mm timber curtain wall and a custom-shaped, aluminum single-slope skylight installed on a green roof
- **Black Spruce, Pine, and Fir wood glulam** with clear varnish (10% gloss), sourced from Quebec, Canada
- **Aluminum skylight extrusions** coated in PPG Duracron black finish

All glazing featured triple-paned, laminated Planibel Clearvision glass (52mm) supplied by the client.

Results

The finished building speaks for itself. The Ragon Institute's headquarters is defined by its lush green roof and striking triple-glazed curtain wall, which wraps the building's V-shaped form across its corner lot. Layered with tapered aluminum fins, the façade achieves a distinctive textured rhythm while maintaining strong visual connections to the surrounding urban fabric. The result is a building that feels open and refined rather than heavy or institutional.

Beyond aesthetics, the façade is highly performance-driven. The fluted pattern of the aluminum fins was carefully calibrated through [solar studies](#) and parametric modeling to reduce solar heat gain, with spacing and profiles adjusted based on orientation. This works in concert

with the high-performance curtain wall, which manages light transmission, minimizes thermal bridging, and maintains airtightness.

The system also integrates ventilation grilles for the building's mechanical systems, concealing rooftop air handlers within a recessed well to preserve the façade's clean, uninterrupted appearance.

Inside, the natural warmth of the timber structure is fully expressed, with the curtain wall and leaf-shaped skylight working together to flood the interior with daylight. The result is a cohesive environment that enhances occupant well-being while supporting the institute's collaborative research model.



Recognized with a Citation at the 2024 AIA New England Design Awards, the project demonstrates how a timber curtain wall, mass timber structure, and custom aluminum skylight system can converge to create a building envelope that is both visually compelling and technically advanced—mirroring the innovation of the scientific work within.



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