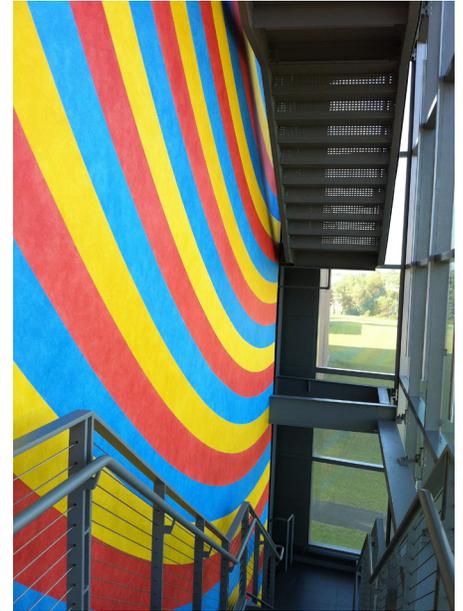


CREATIVE SOLUTIONS FOR INSPIRING SPACES



## COLBY COLLEGE MUSEUM OF ART, ALFOND-LUNDER FAMILY PAVILION BUILDING, WATERVILLE, ME

The Colby College Museum of Art is not only used for educational purposes by Colby College, but by the surrounding community as an outstanding cultural resource. Its American art collection is one of the most important ever to be donated to a liberal arts college. When the Museum commissioned a 29,000 ft<sup>2</sup> addition as well as 10,000 ft<sup>2</sup> of new exhibition space, BuroHappold Engineering was engaged to develop the structure's refined design, while meeting strict environmental requirements.

The project architect, Frederick Fisher and Partners, envisioned the Museum's pavilion as a prism that will reflect its natural and architectural context in continually changing images. Achieving both the visually striking design, while meeting the project's sustainability goals, posed a significant challenge. What's more, the building's mechanical system needs and limited space demanded an integrated and creative design approach.

We used computational analysis to meet both the sustainability goals and the gallery's temperature specifications.

We verified comfort levels in the glass stair cores, then studied the airflow, convection currents, and temperature distribution in the building. This allowed us to mitigate the risk of condensation, make design suggestions and meet the stringent environmental requirements.

With limited space, the pavilion's mechanical system needed to be designed creatively. We devised an innovative system of high efficiency fans, energy recovery units and chilled beams, all integrated into the campus building automation system.

We also used the gallery's high ceilings to construct a mezzanine for housing mechanical equipment. In addition, plenums were created within structural cavities for return air in the stair cores.

The pavilion at Colby College Museum of Art completes the multi-building complex as its fifth wing. Its glass walls house galleries, classrooms, offices, and even a sculpture gallery. Hidden behind the minimalist design are BuroHappold's innovative mechanical systems, which enable the Museum to run efficiently without compromising the architect's aesthetic vision.

**CLIENT**  
Colby College

**ARCHITECT**  
Frederick Fisher and Partners Architects

**PROJECT VALUE**  
\$15 million

**DURATION**  
Completed in 2013

**SERVICES PROVIDED BY BUROHAPPOLD**  
Structural engineering MEP/FP engineering, security, energy modelling, computational fluid dynamics