

# Case Study



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## University of Massachusetts' Life Science Laboratory Optimized for Thermal Performance

**Canopy walkway connections with Schöck Isokorb® structural thermal breaks support LEED Certification and contribute to an estimated annual energy cost savings of \$300,000**

When the University of Massachusetts at Amherst broke ground for its new Life Science Laboratory (LSL) in the summer of 2010, it launched the construction of a \$ 156.5 million facility equipped for cutting-edge scientific research, designed to bring together researchers from different fields to work on initiatives ranging from developing biofuels and clean energy to drug design. Phase 1 of the building project, to be completed in March 2013, will house large, flexible laboratory space, and feature energy-efficient building systems and a high performance envelope.

Incorporating sustainable design into the 310,000 square foot Phase 1 facility was key to the building's creation. As a result, the LSL includes a variety of systems that will qualify it for LEED Silver certification – perhaps even LEED Gold. One system is the innovative, Schöck Isokorb® Type S (for steel-to-steel connections), a load-bearing and thermal insulating connection. To meet the project's energy efficiency goals, more than 248 Isokorb® elements were installed at structural steel beam connections, supporting the glazed canopy covering the 310-foot walkway along the building's facade. Isokorb® provides a structural thermal break connection at the canopy which helps retain energy in the building while also preventing condensation, and mold which could cause damage to the interior finishes.

According to project architect Kevin Triplett, of Wilson Architects, building canopies are typically supported on beams that cantilever out from the interior of a building. During winter months, these beams are exposed to cold weather and transfer cold temperatures into the building. "To address this problem, we consulted an exterior envelope specialist, who recommended Isokorb®," Triplett said. "He said it was the only solution and identified Schöck as the pioneer in this area."

Schöck invented the first thermal break technology for use in structural building components such as concrete and steel. Currently utilized at many sustainable projects in the U.S., Schöck Isokorb® Type S is specifically designed for use in steel construction. It can withstand extremely high loads and bending and shear force. Its stainless steel components (stainless steel allows just a quarter as much heat flow as standard steel re-bar), working in tandem with 3-inch rigid polystyrene foam insulation, ensure that no condensation can occur and thermal bridging is kept to a minimum.

“We are required to meet LEED Silver with this project,” said Triplett, with the many sustainable design systems installed, “we are on track for LEED Gold.” The architectural team performed ASHRAE energy modeling on the project and as a result, “we expect to save \$300,000 annually in energy costs, and Isokorb® is contributing substantially to this savings,” he added. In addition to Isokorb®, other energy efficient elements in the building include a heat recovery plant, continuous air monitoring, radiant floor heating, and energy metering systems.

“We would by all means use Isokorb® on the next phase of the project,” he added. “We were very impressed with Schöck’s products and the responsiveness of their staff - they responded quickly to our questions and visited the job site to make sure that the system was installed correctly.”

The LSL occupies a site at the east edge of the school’s core campus, in a beautiful natural setting. When complete, it will link with adjacent buildings, specifically the Integrated Sciences Building, and to the pedestrian and infrastructure network in a way that creates both “civic” space and enhances accessibility. It will be home to 64 faculty members and their research groups and will, according to Chancellor Robert C. Holub, “allow current research to flourish and open new avenues for scientific advances by our faculty and students.”

For more information please contact Schöck USA Inc. at 855 572 4625 or visit [www.schock-us.com](http://www.schock-us.com).

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approx. 624 words, 4,200 characters (with spaces)

### **Details**

**Project:** University of Massachusetts – Life Science Laboratory

**Architect:** Kevin Triplett, Wilson Architects

**Structural Engineer:** RDK Engineering

**Contractor:** Whiting-Turner

**Products:** Schöck Isokorb® Type S

**Start of construction:** Spring 2010

**End of construction:** Summer 2013

Notes to the editor

Schöck: The Leading Thermal Break Supplier.

Headquartered in southern Germany, Schöck develops and produces innovative components, solving thermal bridges and impact noise in buildings. For almost thirty years, the Schöck Isokorb product range has led the market in providing exceptionally high performance thermal break and reinforcement solutions for houses, industrial and commercial buildings with balcony, canopy, and beam connections. Schöck Isokorb® type CM and S provide solutions to prevent thermal bridging and allow design freedom for concrete-to-concrete and steel-to-steel cantilever connections.

Since the Isokorb® line was introduced, Schöck group of companies has installed more than 36 million linear feet of the product. Schöck provides high-quality, easy-to-install products with the highest level of technical back-up and comprehensive customer service to the construction industry – for simply better building.

## **Project Photographs**

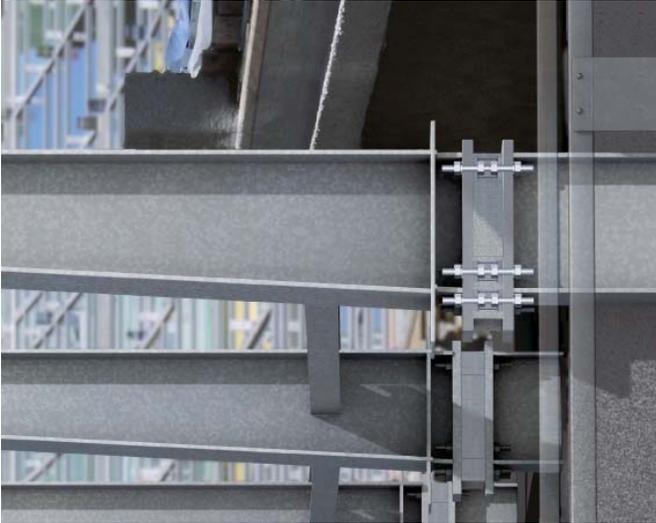
[canopy.jpg]



*University of Massachusetts – Life Science Laboratory located in Amherst, MA: To meet the project's energy efficiency goals, more than 248 Schöck Isokorb® elements were installed in the steel beams supporting the glazed canopy covering the 310-foot walkway along the building's facade.*

**Photo courtesy of: Schock USA Inc..**

**[Isokorb installed.jpg]**



*Schöck Isokorb® type S installed at canopy beam. Isokorb® provides a structural thermal break connection at the canopy which helps retain energy in the building while also preventing condensation, mold, and which could cause damage to the interior finishes.*

**Photo courtesy of: Schock USA Inc.**

**[Life Science Laboratory rendering.jpg]**



*University of Massachusetts – Life Science Laboratory rendering, located in Amherst, MA.*

**Photo courtesy of: Wilson Architects Inc.**

[canopy walkway rendering.jpg]



*Canopy walkway at University of Massachusetts – Life Science Laboratory located in Amherst, MA.*

**Photo courtesy of: Wilson Architects Inc.**

[Schöck Isokorb Type S.jpg]



*Currently installed in many sustainable projects in the U.S., Schöck Isokorb® Type S is specifically designed for use in steel structures.*

**Photo courtesy of: Schöck USA Inc.**

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