

BUILDINGS

December 2009

Geochemistry Building at Columbia University Wins Three Awards

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Due to this building being a truly sustainable laboratory – in spite of its demanding environmental requirements – it received three design awards in 2009.

The Gary C. Comer Geochemistry Building at Columbia University's Lamont-Doherty Earth Observatory in Palisades, NY, is the recipient of three different awards in 2009.

"The building's architects set out to make this a truly sustainable laboratory in spite of its demanding environmental requirements," says Joe Ienuso, executive vice president of Columbia University Facilities. "Payette (the architectural firm) sought to achieve this in a holistic way, recognizing that sustainability is more than using green materials or green power. Starting with its placement on the campus, sustainability was at the root of the design concept."



Gary C. Comer Building: courtesy of Payette

The Comer Geochemistry Building garnered an Award for Design in the 2009 Sustainable Design Awards, sponsored by the Boston Society of Architects Committee on the Environment and the American Institute of Architects. It recognizes projects that systematically integrate several aspects of sustainability and make a substantial impact on the environment. Jurors reviewed more than 50 portfolios of projects from around the world. They cited the Comer Building's success in meeting the technical challenges of a complex research program, and how "the solution settles into the landscape beautifully."

The project was also named the 2009 Lab of the Year in the 43rd annual Lab of the Year competition, which brings together judges from the fields of R&D programming, planning, design, construction, and engineering, as well as laboratory scientists and equipment manufacturers. There are more than 30 different characteristics that jurors evaluate, including siting, planning, flow of materials and people, plant operation, aesthetics, working conditions, energy efficiency, and cost to build/operate.

The Society for College and University Planning (SCUP) and the American Institute of Architects' Committee on Architecture for Education (AIA-CAE) also cited the project in its 2009 Excellence in Planning and Excellence in Architecture Awards. The Gary C. Comer Building was recognized with a Merit Award for Excellence in Architecture for a New Building.

"The visionary design combines the three primary attributes of a great and effective building:

environmentally sound and energy-efficient architecture, an uncomplicated layout that is driven directly by the specific needs of the researchers, and a traffic pattern that will enhance important interactions between the many different groups of users," says G. Michael Purdy, director of the Lamont-Doherty Earth Observatory.

A common thread among all jurors was the innovative planning and siting solution for the 70,000-square-foot, cutting-edge research facility. While the design incorporated numerous common sustainable concepts and materials, the actual solution is notable for its siting and building organization strategies. The imbalance between the number of laboratories and offices required led to an innovative "skip-stop" massing strategy. A 2-story wing of 15-foot-high laboratories was coupled with a 3-story wing of 10-foot-high offices. Separating the laboratory and office functions not only reduced the building footprint, it also allowed for a highly responsive energy infrastructure. The lab side is a high-energy environment with complex mechanical systems, while the office side is a low-energy structure with modest systems and operable windows.

Decoupling the constrained lab areas from more ordinary office and support functions enabled the development of a highly efficient, low-impact design (with respect to energy and material use) for more than 70 percent of the building volume. This resulted in a 19-percent smaller building footprint and 13-percent smaller building envelope than the conventional, 2-story baseline design.