

ON DESIGNING THE NEW UPPER SCHOOL BUILDING

By Roger F. Duffy

Mr. Duffy, a partner at SOM, was in charge of design for Greenwich Academy's new Upper School.

The first time my partner David Childs and I visited Greenwich Academy, it was clear that our firm, Skidmore, Owings & Merrill LLP, would have an opportunity to do something extraordinary. Where other schools might want to fall back on tried and true architectural solutions, the combination of Greenwich Academy's dramatic site, enlightened faculty and progressive mission gave us a chance to create a new paradigm for educational buildings.

Our design can be summarized in four words: Site, Light, Environment and Wonder.

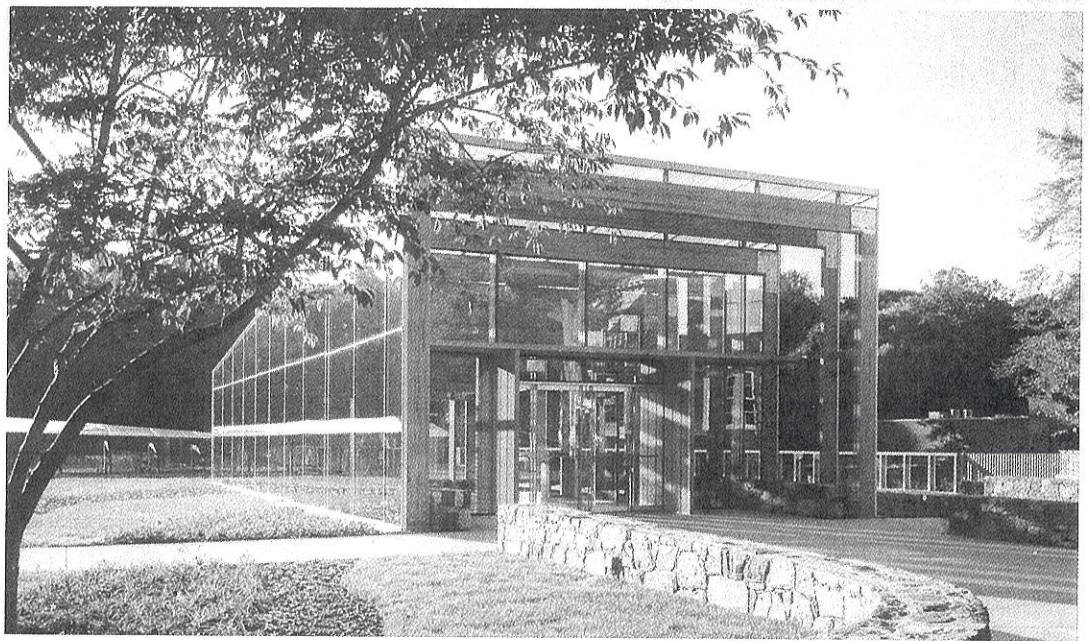
SITE

As architects, what we saw on this first trip was, in parts, a beautiful wooded campus with some disparate architecture and a complicated site. The neo-Georgian Ruth West Campbell Hall, the Academy's oldest building, sits just to the east of the Upper School site, and a cluster of 1970s brick buildings to the north houses the Lower School, Middle School, Dining Hall and Young Assembly Hall. To the south are Ramsing Gymnasium, Pethick Dance Studio, Wallace Performing Arts Center, Raether Athletic Center, as well as athletic fields. From the front lawn and Ruth West Campbell, the site slopes down twenty-three feet to the athletic facilities, a pond and a path toward the affiliated Brunswick School for boys.

To unify the topography and to knit the different elements of the existing campus together, we created a design that extends the front lawn of the campus to the west, so that it forms the roof of the new building. The building's

base is established by the lower campus's athletic fields and pond. This scheme yields a three-story building: front lawn/entry/roof level, terrace level and field level. A brick-enclosed courtyard at the field level joins the building to the brick buildings on the north side.

Preserving the natural beauty of the site was also a goal. Strategic placement and size of the building integrate the field and garden levels, opening up views to the surrounding forest and hills. By weaving the new facility into



the landscape in both plan and section, we allowed the classroom spaces, library spaces and the other major student and administrative spaces to benefit from the closest possible adjacency with the natural environment. The use of the floor-to-ceiling exterior glass walls invites the exterior into the building. As the building is woven into the surrounding campus, a series of courtyards is created that engages the landscape and extends the life of the building into the adjacent athletic fields, lawns, wooded hillsides and pond.

New US

LIGHT

From the outset, part of our architectural brief was to bring as much natural light into the building as possible. Both SOM and Greenwich Academy understood the positive effects that daylight can have on the learning process. All classrooms also get daylight from the outside, since the drop in slope permits the north, west and south sides of the structure to be built as glazed curtain walls.

In addition to the glass curtain wall, a series of four vertical glass elements, or light chambers, allows additional light into the building. When the building is approached from the east, the tops of the light chambers are all that is visible of the Upper School as they puncture the grass roof. From within the building, the light chambers serve as courts, organizing the school's activities into four areas (math and science, art, humanities and learning center) and infusing more daylight into all classrooms.

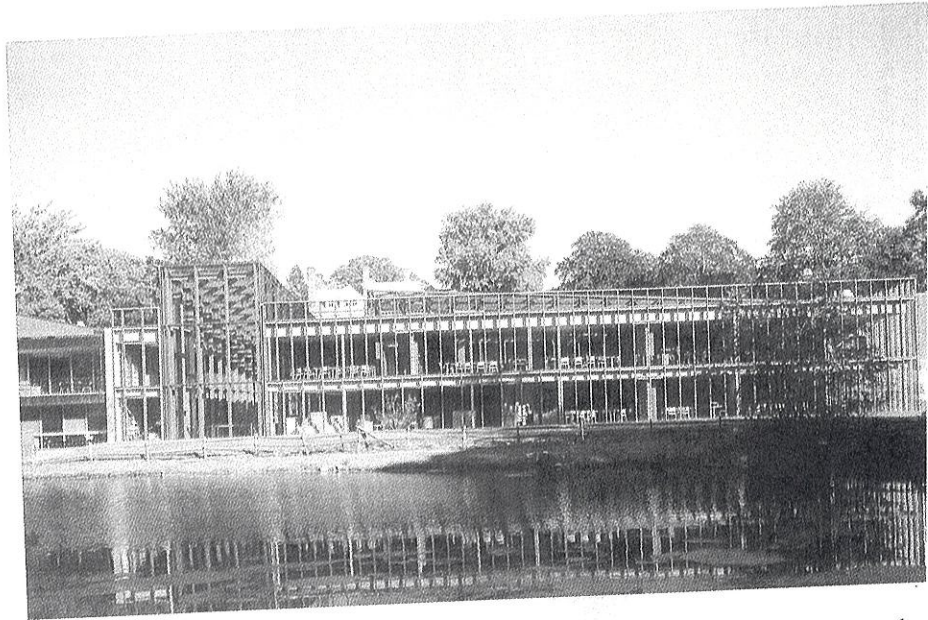
ENVIRONMENT

The incorporation of sustainable design measures is always a high priority for SOM. At Greenwich Academy, the emphasis on maximizing the penetration of daylight into the building through the transparent glass facades and light chambers reduces the need for artificial lighting and, therefore, dramatically reduces the building's energy consumption.

The second primary green feature of the new Upper School building is the use of the green vegetated roof that extends the front lawn of the campus as an uninterrupted green surface over the top of the new Upper School. This grass roof provides additional green lawn area for the school's use, provides improved thermal protection for the building and mitigates the heat-island effect of traditional buildings. Soils in the grass roof filter the storm-water runoff and improve the quality of the storm-water discharge.

WONDER

Known for its outstanding academics and progressive attitude, the Academy was firm in its conviction that the new Upper School building also had to enhance the school's educational mission, which encourages students to "follow their curiosity beyond textbooks." Throughout the design



process, our design solutions were continually measured against the client's goal of striving for the highest educational ideals.

To further this goal, SOM invited artist James Turrell to collaborate in the design, adding meaning to the interplay between the built environment and the landscape and contributing to the sense of wonder that is essential to learning. Turrell designed a variable-color LED system that illuminates the chambers. In addition, variable-color, fiber optic light outlines the entrances and floor geometries, creating thresholds for the light chambers. The colors will move from one to another in a perpetual circuit, symbolizing the flow of energy and knowledge among academic disciplines.

The result, we think, is unlike any other school building. It is a modern and bright place that houses the act of learning. It is also a work of art that infuses the act of learning with a sense of wonder. We were all honored to have the opportunity to design it and hope that generations of students will feel inspired by the chance to study there.