



A pair of tapered W21s clad in cedar cantilevers 20 feet beyond the south elevation of the New Computer Science Building to provide a public entrance canopy.

New Computer Science Building, Stony Brook University

As computer science facilities around the country compete with each other for top talent, an open, light-filled design gives the discipline a more public face in Stony Brook.

From Alphabet to Zillow, computer science has transformed American business and gripped the popular imagination. As digital technology takes the center stage of economy and culture, so education spaces devoted to the field are stepping into the spotlight. "Historically computer science departments were quiet, introverted rabbit warrens, and more attention is being paid to these buildings as the discipline becomes more important," says Stephen Dietz, a partner of Mitchell | Giurgola Architects. With the completion of the New Computer Science Building (CSB) at Stony Brook University's main campus in Suffolk County, the New York-based architecture firm is supporting the move toward good, higher-profile design.

"Some people would say that universities are in a kind of Space Race to have the best facilities," John Fogarty, Stony Brook's director of capital planning, says of higher education's recent focus

on upgrading computer science departments. In the case of the Long Island university, its well-respected program had been housed in part of a 103,000-square-foot wet laboratory dating to the late 1960s. In 2006 Fogarty determined that it was possible to renovate the existing building to accommodate booming student enrollment in computer science, but university leadership deemed it necessary to instead construct a building that reflected the computer science department's top-20 ranking among public universities.

That the department's original home was also emblematic of the rabbit warren may have motivated the about-face. "Computer science research labs were collaborative well before teaming became a popular mode of work, because they're hands-on project environments where groups of people are working on a research grant dealing with cybersecurity or biomedicine," Fogarty observes. Yet, as Mitchell | Giurgola partner Steven Goldberg says, "They had no sense of community in the mid-century building," and he cites "double-loaded corridors that went on forever" as one of several physical causes of the feeling.

The desire to foster community, encourage chance meetings, and overlap disciplines under-



Above The facility's north-south volume rises three stories and includes graduate research labs facing offices and conference rooms. The programs are bridged by an atrium that encompasses 4,000 square feet devoted to circulation and casual communal use, and whose glazing makes visible W12s and W16s.

Facing top The entrance canopy projects from the roof of the two-story east-west volume; the canopy's nearest interior feels like an extension of this signature element, as most of the space appears dematerialized thanks to a painted aluminum and glass wall.

Facing middle Just beyond the public entrance, the second floor's steel-reinforced concrete slab has been opened and strung with energy-efficient pendant lights, to echo the adjacent atrium.

Facing bottom A north-south section drawing of the New Computer Science Building.

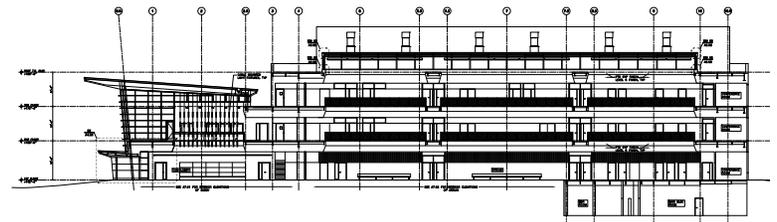
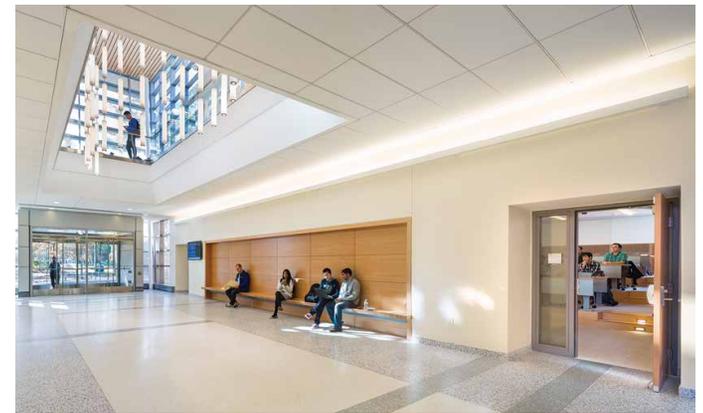
pinned the design of the New Computer Science Building, in turn, according to both Dietz and Goldberg. Mitchell | Giurgola distributed 72,000 square feet into an L shape whose stem follows a primary north-south axis. This longer, three-story volume is divided asymmetrically: Graduate research labs overlook Engineering Road immediately to the west; the spaces average 43 feet in span to facilitate collaborative work and project-by-project reorganization. Offices and conference areas spanning 12 and a half feet are placed directly behind the east elevation. A triple-height atrium featuring multiuse common spaces, walkways, and bridges unites the wide and narrow sides.

The L's shorter perpendicular bar encompasses undergraduate learning facilities—the focal point of which is a 100-seat auditorium at its western terminus—and offices. It fills two stories, stepping back above the auditorium to accommodate a rooftop terrace where building occupants can again congregate. The east-west volume moreover includes the public entrance, identifiable by a canopy that cantilevers 20 feet to the south. Brick and cedar cladding throughout the New Computer Science Building harmonizes with Stony Brook's woodland setting, and offers what Goldberg calls a “high-touch” counterpoint to the high-tech program. Mechanical penthouses are skinned in metal to seem less massive.

Of the final scheme, Goldberg says, “You’re never far away from anybody,” adding that the north-south atrium not only encourages mixing of student and faculty, but also “has something of a wow factor that manifests the university’s desire to attract the best.” Dietz remarks that, in addition to the rooftop terrace, the two-wing concept creates a courtyard between original and new computer science buildings that department staffers based in both facilities have enthusiastically embraced as an outdoor gathering spot. The building’s orientation, plan, and massing respond secondarily to the siting of mature trees and a much-depended-upon parking lot, the preferred relationship between different building populations and Engineering Road, and other conditions.

This nuanced effort had to be mindful of the State University Construction Fund’s rigorous budget, as well, notes Sheng Shi of New York-based Ysrael Seinuk, which served as lead structural engineer of the New Computer Science Building. “The project can save construction costs by just having enough mechanical basement space, with the rest of the building on slab-on-grade,” the partner says, and drove the use of a structural steel frame, especially in light of the research labs’ span. Dietz concurs, “There’s a real efficiency built into steel with composite metal deck, though you may gravitate toward concrete with buildings that are very sensitive to vibration, such as an optics or physics lab.”

For the computing labs, Shi says, “we’re using a W24 roughly 10 feet on center to control deflection.” (The typical dimension of these steel beams is W24x76, and W10s and W12s are specified for most columns throughout the building.) Lighter-weight W12s and W14s frame the more closely spaced offices, in the spirit of keeping costs down, while concentrated conditions warranted members as heavy as W24x250 to mitigate vibration in the third-floor labs located directly beneath the



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mechanical penthouse. “Steel can much more easily handle variation in the floor plate,” Shi says of the all-A992 frame, which he deems “a normal type of steel structure.”

The New Computer Science Building does have its idiosyncrasies, and Shi points to the hybridized lateral system as just one example of the design team responding to a project-specific challenge. In order to keep construction costs in check, Ysrael Seinuk specified HSS10x10 and HSS8x8 braced steel framing everywhere but locations where the architecture demanded less intrusion. In those places—namely in the southern wing and third-floor administration areas—more open, albeit pricier moment frames provide stability. Other unique solutions include welding W30s and W12s together for the undergraduate auditorium’s 50-foot span, in order to

create a recess for the pavers of the rooftop terrace overhead, and tapering the W21s that top the public entrance to enhance the canopy’s cantilevered appearance.

“It’s amazing how versatile the steel allows you to be,” Dietz says of the New Computer Science Building’s various structural strategies. “The material does its job in a very elegant, quiet way.” That subtly allowed Mitchell | Giurgola to create a building whose commitment to interaction and site-specific natural finishes put it in the company of thoughtful new computer science facilities at Carnegie Mellon, Cornell, and other schools. “There is this national trend of giving computer science a more public face,” Dietz says, “and for us that meant positioning this relatively new discipline as part of ancient academic culture.” □



Left to right The New Computer Science Building’s overall L shape yields an outdoor terrace that faces north and east, and which functions as a courtyard with the original computer science facility—still in use by the department—next door. A cedar pergola shades the east-west volume’s rooftop terrace, which Mitchell | Giurgola Architects created by terracing its second story.

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NEW COMPUTER SCIENCE BUILDING, STONY BROOK UNIVERSITY

Location: **Stony Brook University, Stony Brook, NY**
 Owner/Developer: **Stony Brook University, Stony Brook, NY**
 Architect: **Mitchell/Giurgola Architects, New York, NY**
 Structural Engineer: **Ysrael A. Seinuk, P.C., New York, NY**
 Mechanical Engineer: **Joseph R. Loring & Assoc., Inc., New York, NY**
 Construction Manager: **URS Corporation, New York, NY**
 Structural Steel Fabricator: **Owen Steel Company, Columbia, SC**
 Structural Steel Erector: **AJ McNulty & Co., Inc., Maspeth, NY**