

Two: SKIRKANICH HALL

Philadelphia, Pennsylvania

Tod Williams Billie Tsien Architects **knit together a complex of science buildings with a bold centerpiece structure and varied open space.**

By Suzanne Stephens

Architect: Tod Williams Billie Tsien Architects—Tod Williams, Billie Tsien, principals; Philip Ryan, project manager and project architect

Associate architect (c.d. phase): Guggenheimer Architects—Peter Guggenheimer, principal; Niall Cain, project architect

Client: University of Pennsylvania School of Engineering and Applied Science

Consultants: Severud Associates (structural engineers); Ambrosino Depinto and Schneider (m/e/p); GPR Planners Collaborative (lab); Propp and Guerin (environmental design); Axis Group (curtain wall and waterproofing); Fischer Marantz Stone (lighting)

Size: 58,425 square feet (new construction); 12,000 square feet (renovation)

Cost: \$33.4 million (construction only)

Completion date: September 2006

Sources

Granite: Granicor (thermal and honed Peribonka)

Glazed brick: Castaic Brick

Glazed ceramic tile: Heath Ceramics

Preweathered zinc: Rhinezink

Cherry wood panels: Nevamar

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In 1960, the University of Pennsylvania famously fostered the notion that laboratory buildings should be architectural landmarks—emphatic physical statements about the place of advanced scientific thinking within the university. Its Richards Medical Center by Louis Kahn opened that year to great fanfare. However, in spite of Kahn's vaunted "served" and "servant" spaces, the functioning of the medical center and its research

laboratories left something to be desired. In designing Skirkanich Hall, which opened in 2006 for the university's bioengineering department in the School of Engineering and Applied Science, the New York firm of Tod Williams Billie Tsien Architects sought to create a lab building that would stand out but not compromise function. Emulating Kahn's particular solution was not part of Williams and Tsien's mission.

The architects' acclaimed

Neurosciences Institute in La Jolla, California, of 1995, demonstrated an ability to design well-functioning labs integrated into an inviting setting of open courtyards. At Skirkanich,

The west facade is sheathed in green brick as well as acid-etched and sandblasted glass panels (below left). Here, Williams and Tsien designed elegantly rectilinear courtyards that unite the complex of engineering buildings (below).



The main entrance of Skirkanich Hall buiges over the building line of 33rd Street (this page), and its facade angles as it follows a bend in the street. Its glass skin seems to peel away from the brick mass as panes cantilever out in shingle formation from zinc-clad profiles, according to a slight vertical incline.





The glazed lobby along 33rd Street (left) is multilevel. Massive concrete stairs to the basement (bottom left) give the lobby a sculptural presence. Similarly, on the second floor, attenuated concrete stairs activate the space linking the Towne Building and the Moore School (bottom right).

traces of their Folk Art Museum in New York [RECORD, May 2002, page 202] are visible, as well, especially in the dramatic organization of interior spaces around a central core.

At Skirkanich, the labs are straightforwardly practical. But by virtue of the interpenetration of different horizontal and vertical spaces, the play of light from skylights and expanses of glass, and most of all, the manipulation of differently textured machine-crafted materials, the architects have forged a bold architecture to promote individual research and foster casual interaction.

Manipulation of space, light, and texture: It's a promising entrée for Williams and Tsien to make in Philadelphia, where they have just won one of the most challenging commissions of this time—the new Barnes Foundation galleries, slated to rise in the next few years on the Benjamin Franklin Parkway.

Program

Not only did the bioengineering department want to attract key researchers in this ever-expanding field, it needed to accommodate 380 undergraduate and 130 graduate students. In order to do so, the department required a new, 58,425-square-foot facility plus 12,000 square feet of renovated space in the adjoining buildings. Two teaching labs and 13 research labs, all designated "wet," had to be included in the new structure, with two more teaching labs in the renovated spaces. Dry labs—those depending on computer research rather than chemical interactions—would stay for the most part in the department's previous home, Hayden Hall.

The building was to be inserted into a 18,500-square-foot site between two redbrick engineering

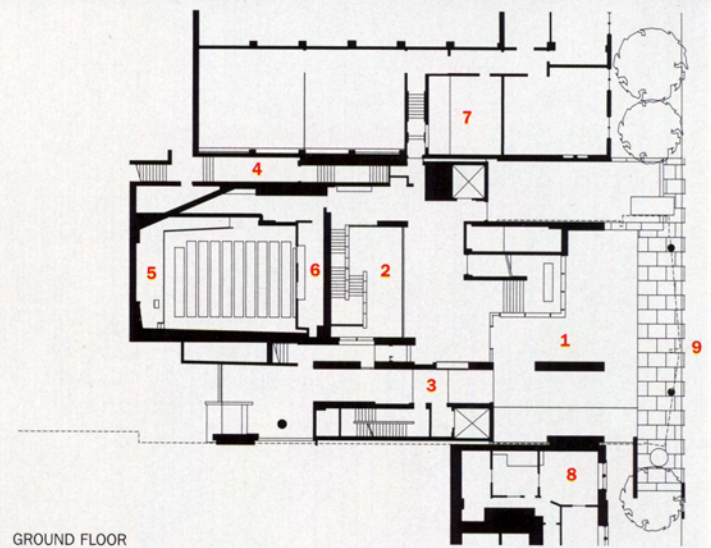
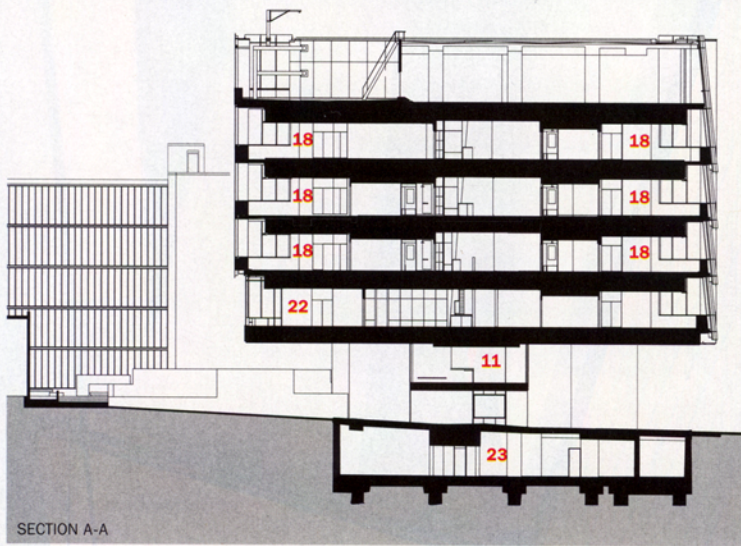




The main lobby facing 33rd Street is composed of interlocking spaces organized around a vertical light well. The mustard-yellow ceramic tile wall bounces light, and a cherry-paneled rear wall marks the hallway to the auditorium.



IN GRATITUDE TO
PETER AND GERI SKLAR
FIGURE
DANIEL H. THAS RESEARCH LABORATORY



SECTION A-A

GROUND FLOOR

An internal courtyard between Skirkanich and Levine Halls unites the various buildings that are part of the School of Engineering and Applied Science (below).

1. Entry plaza
2. Atrium lobby
3. Exterior passage
4. Balcony
5. Auditorium
6. Audiovisual room
7. Moore School
8. Towne Building
9. 33rd Street
10. North lobby
11. Bridge
12. South lobby
13. Lounge
14. Main communications room
15. Courtyard
16. Levine Hall
17. Ramp
18. Lab
19. Lab support
20. Microscopy
21. Kitchen
22. Offices
23. Mechanical

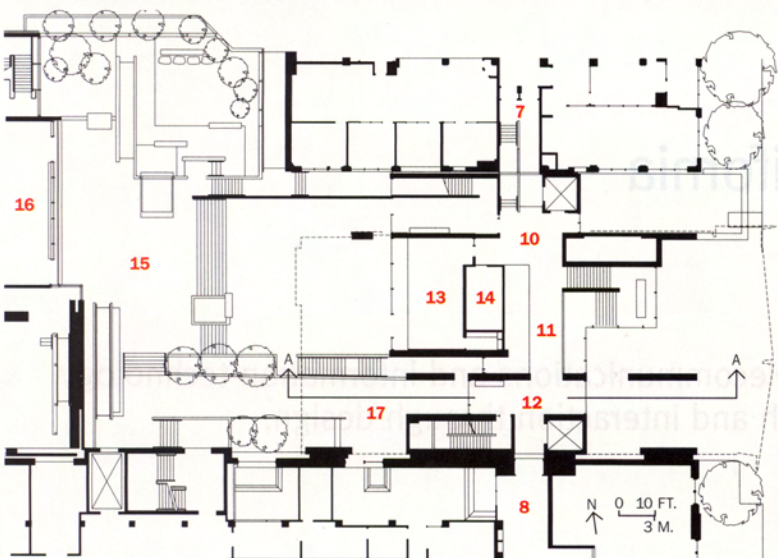
buildings belonging to the university's historic district; one, Moore School, is devoted to the Department of Electrical and Systems Engineering. Originally a factory for musical instruments, it was designed by Erskine and Morris in 1912, and renovated for an engineering school in 1926 by the venerated Beaux-Arts architect Paul Cret. Flanking Skirkanich Hall on the south, Towne Building, designed by Cope and Stewardson in 1906, houses the Department of Mechanical Engineering and Applied Mechanics, and the Department of Chemical and Biomolecular Engineering. Filling out the compound on the west is Kieran Timberlake's Levine Hall, completed in 2003 for computer sciences.

In the words of the engineering school's dean, Eduardo Glandt, the new hall would "speak about the synergy of the various disciplines represented in this complex." While it should fit in with the older context, Glandt still wanted to make sure the hall would stand out, with a grand entrance facing east where the campus is expanding.

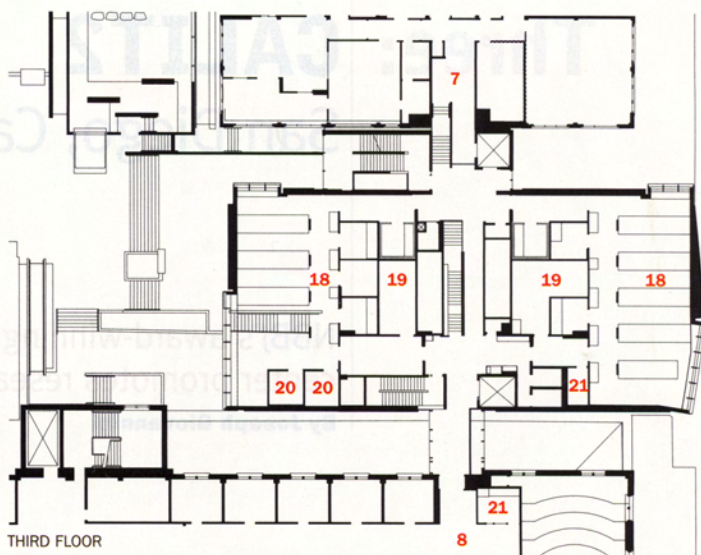
Solution

Williams and Tsien knit Skirkanich Hall into this enclave of buildings with a system of paths and internal courtyards that allows pedestrian circulation to flow unimpeded from the west to the east. In addition, students and faculty can perambulate through the connected





FIRST FLOOR



THIRD FLOOR

buildings in a square doughnut formation, so that Skirkanich can be directly entered from Moore or Towne. By placing the lab spaces at the perimeter of each of the upper floors of the reinforced-concrete structure and pushing the front of the tower over the building line of the 33rd Street entrance, the architects gained sizable work and research areas. The bulk of the building is countermanded by its slightly angled facade that follows the bend along 33rd, and the treatment of the glass skin so it appears to be peeling away from the brick mass: These acid-etched glazed portions, with sandblasted and acid-etched spandrel panels, refer rather abstractly to Philadelphia's own Queen Anne Revival shingle-and-bowed-window architecture.

In addition, the specially glazed, moss-green brick on the exterior emphatically distinguishes the building from its redbrick neighbors. For those surprised by green walls (which some students call "slimy" green), it should be noted that a similar hue can be found in two of the oldest buildings on campus, College Hall (1873) and Logan Hall (1874). Both designed by Thomas Webb Richards, they feature a green Chester Serpentine stone that was considered bizarre at the time. At Skirkanich Hall, the brick, which varies in tones of acid and moss green, has gone through considerable torture before reaching the desired tinge and texture. After the

An auditorium underneath the plaza (right) is lined in cherry. On the second floor, a teaching lab (bottom) occupies the front portion of the building that projects over 33rd Street.

extruded brown brick was manufactured, it was dented by a roller, then glazed with manganese and fired. Finally, it received a green vitreous glaze and was fired again. "We wanted the building to be weighty and dense," Williams says about the brick. "Architecture need not always be lightweight and ephemeral."

Commentary

The combination of materials—the raw, brute, bush-hammered concrete with smaller-scale green brick and yellow tiles, along with dark thermal- and honed-finish granite paving and concrete terrazzo flooring—give the building a strong, tailored, but rich look. Yet the spatial complexity and play of light filtering through glass window walls and skylights bring the textures of the materials into high relief. As students wander through and around the multileveled building, the architectonic nature of the circulation reinforces an experiential aesthetic contrasting with the plain-Jane laboratories. (Nevertheless, the labs do offer compelling views of the campus outside.)

Skirkanich Hall's sophisticated weave of exterior and interior spaces horizontally and vertically is a far cry from the stacks of boxes that usually make up lab buildings. ■

