Courtyard of the Science Engineering Research and Classroom complex (Pelli Clarke Pelli Architects with Kendall/Heaton Associates, 2005).

All photos by Frank White, except where noted

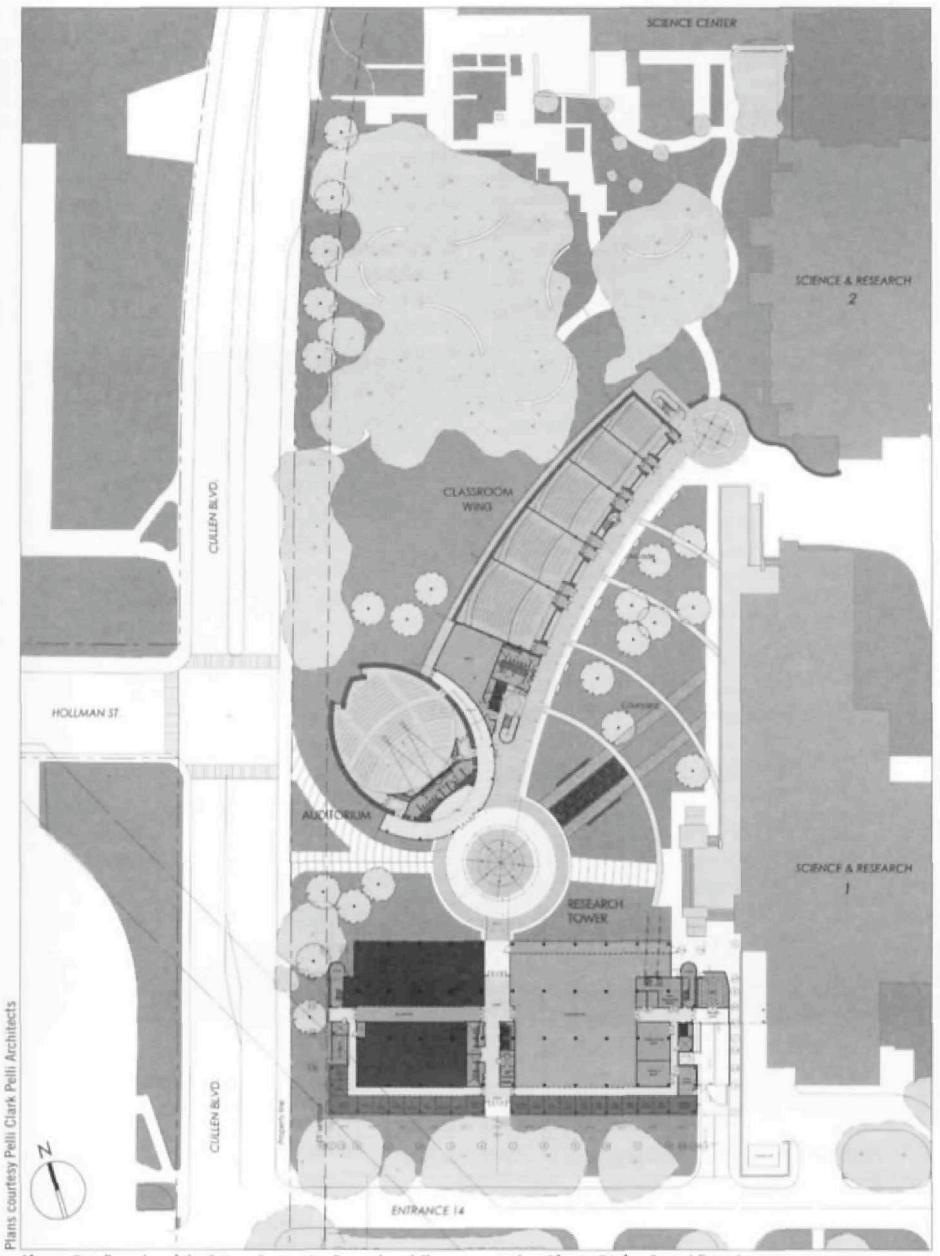
Plans courtesy Pelli Clark Pelli Architects

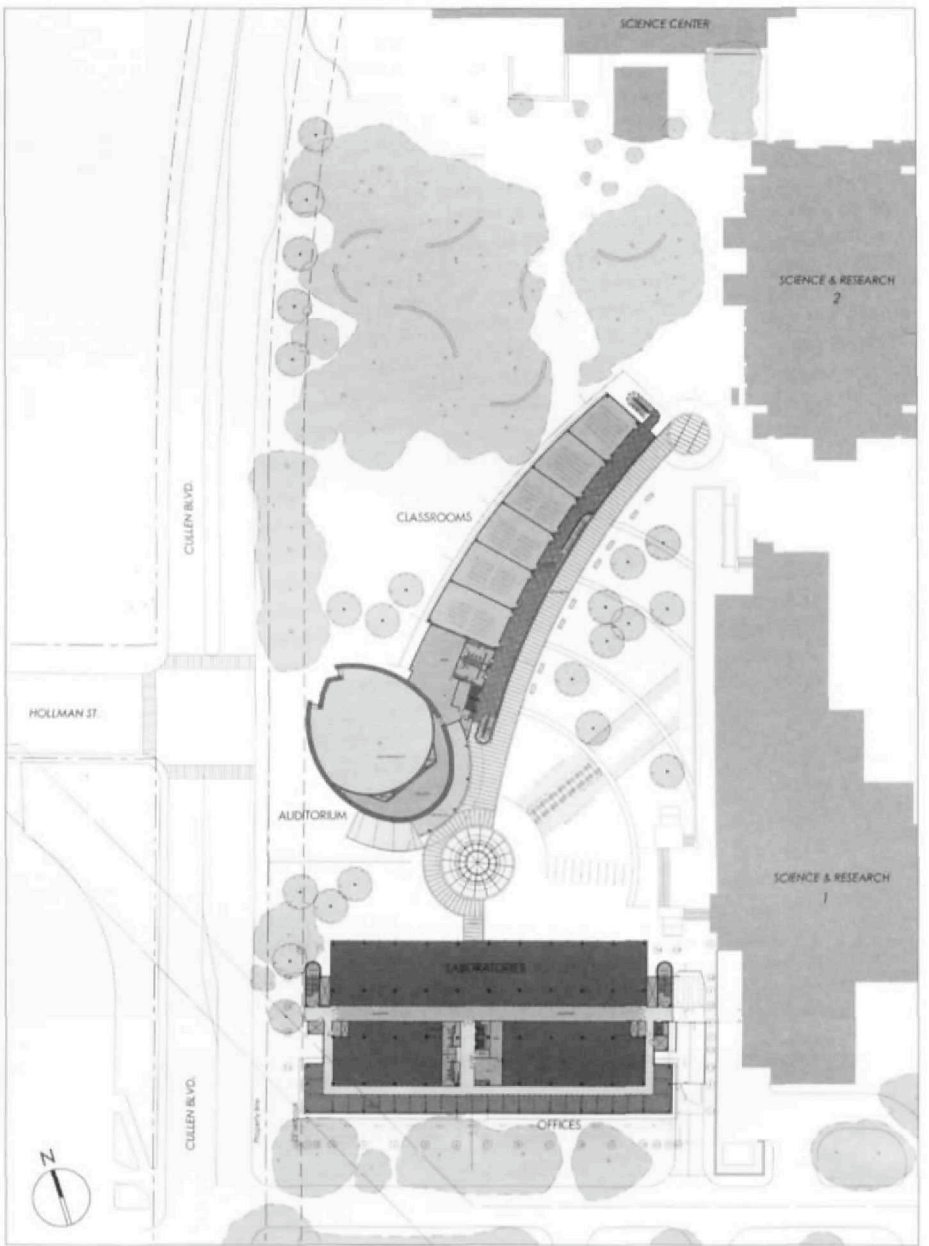
Raising the Bar

Cesar Pelli's Science Engineering Research and Classroom complex sets a new standard at the University of Houston

BY WILLIAM F. STERN

THE UNIVERSITY OF HOUSTON'S main campus has never been particularly well known for distinguished architecture. The campus is represented, however, by more than a few outstanding examples of well-designed academic buildings, if few that attract attention. Among these are the trio of limestone buildings that formed the original campus core, especially the 1950 proto-modern Ezekiel W. Cullen Building, designed by prominent Houston architect Alfred C. Finn. The most recent building to claim broad appeal, deservedly or not, was Philip Johnson's 1986 Gerald D. Hines College of Architecture, a post-modern homage to the 18th century French architect Claude Ledoux. Now, 20 years later, the new Science Engineering Research and Classroom complex (SERC), designed by Pelli Clarke Pelli Architects of New Haven in collaboration with Kendall/Heaton Associates of Houston, is also claiming broad appeal, this time deservedly so. The complex, which opened last fall, establishes a new benchmark of design for future buildings on the university's central campus. Moreover, its architects have succeeded in creating a dynamic arrangement of imaginative





Plans courtesy Pelli Clark Pelli Architects

Above: First floor plan of the Science Engineering Research and Classroom complex. **Above Right:** Second floor plan.

structures that have well-considered spatial relationships to several existing science buildings on the western side of the university's campus.

The work of Cesar Pelli, Pelli Clark Pelli's principal designer, is well represented in Houston. Indeed, the city claims the greatest concentration of Pelli designed buildings anywhere in the United States outside of New York City. These include the Four Leaf Towers condominium and Four Oaks office complex north of the Galleria; the Main Street addition to St. Luke's Hospital; the former Enron building now occupied by Chevron on Louisiana Street; and two buildings on the Rice University campus—Herring Hall and an addition to Rice Memorial Center.

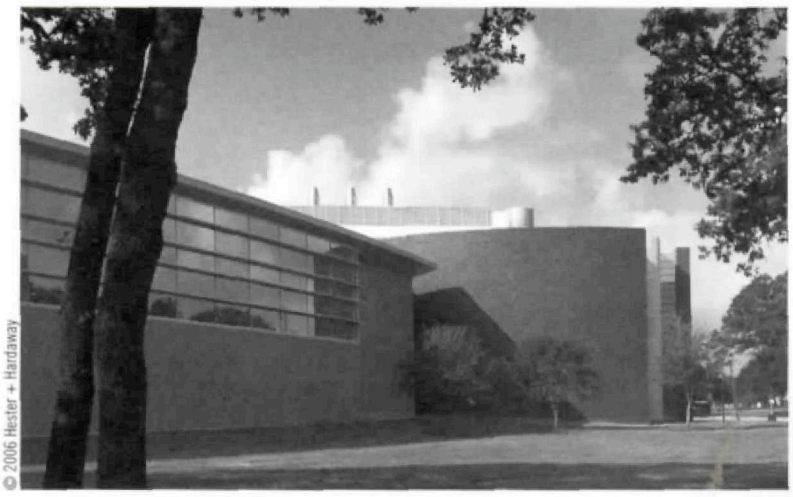
Pelli Clarke Pelli and Kendall Heaton were selected from a field of 27 local and national architectural firms considered for the SERC project. While the University of Houston did not limit its search to so-called "signature" architects, according to Dave Irvin, associate vice chancellor for plant operations, the university did want an architect who would bring design distinction to the project, an architect who would design a building attractive to the kind of research scientists the university is seeking to recruit. One component of the SERC project, a new research facility, was planned to anticipate the hiring of at least 30 new scientists over the next five years for the College of Natural Sciences and Mathematics and the College of Engineering. As Irvin explains, the administration's goal is to establish the university as a top ranked research center, one on par with the best universities in the country. They therefore wanted a building that would be of the same high caliber as the scientists who will occupy it.

Pelli's response to the mixed program of classrooms, an auditorium, offices, and research laboratories was to split that program into separate buildings, in part as a way of responding to a complex set of site conditions. The site is located on the east side of Cullen Boulevard, a major north-south seam in the campus, and adjacent to two older science buildings to the east (Science and Research 1 and Science and Research 2) and the Houston Science Center to the north. An existing grove of trees and a depressed parking lot, which unobtrusively fronted Science and Research 1, were considered attractive features of the site, and the university initially asked the architects to retain both. But the architects quickly realized that to do so would necessitate a stacked building proportionately too tall for the location.

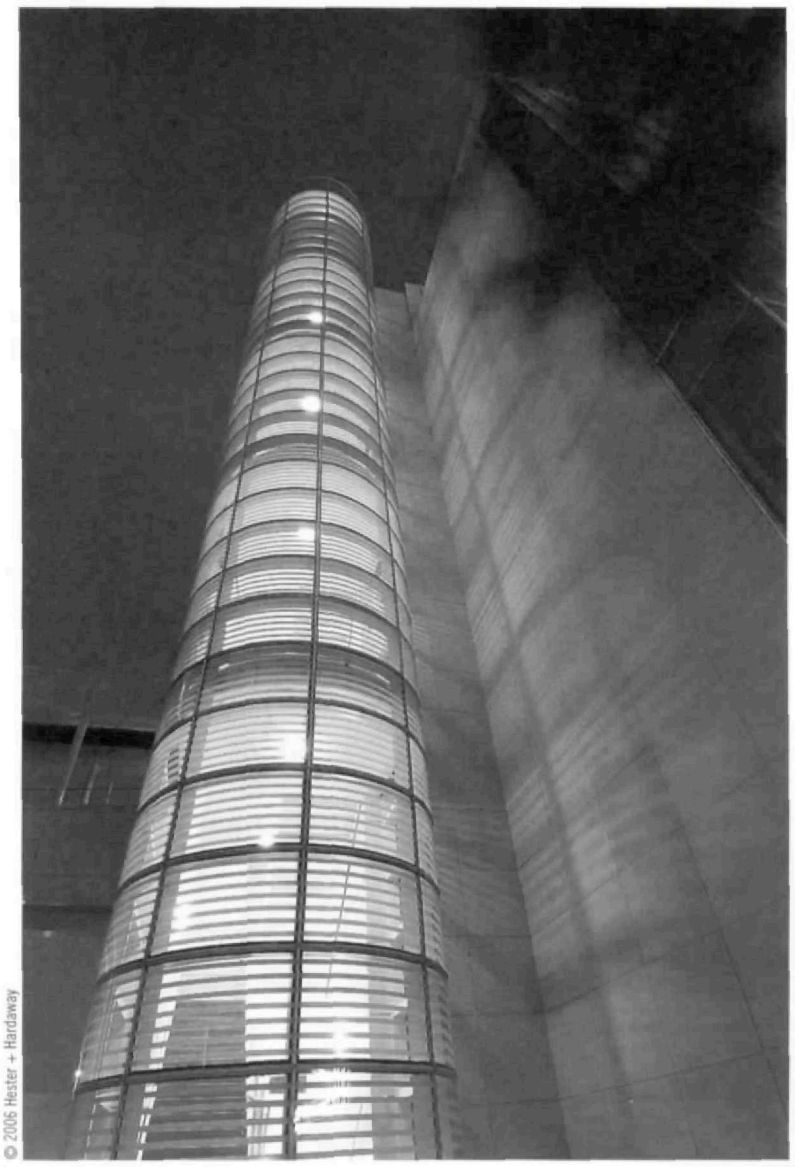
Preservation of the trees took precedent over saving the parking lot, which was sacrificed, allowing the building to encompass more of the site. Of the three buildings abutting the site, Science and Research 1 is the most architecturally significant. Designed by the Houston firm of MacKie & Kamrath and completed in 1969, the tall, visually prominent science building exhibits a Wrightian influence characteristic of the firm's other work, and is one of the noteworthy buildings on the University of Houston campus. The SERC architects chose to reinforce that building's presence and stature by forming a new courtyard along its edge. Loosely triangular in shape, the courtyard is defined on its two other sides by the dynamic curve of SERC's classroom/auditorium building and the new research tower. The auditorium acts as a fulcrum, from which the classroom wing spins out like a celestial comet's tail, even narrowing at the end.

This informal courtyard is in keeping with some of the best aspects of the university's planning. The original Hare and Hare master plan of 1937 anticipated a formal arrangement of buildings, not unlike the beaux-arts planning of the nearby Rice University campus. While a portion of that plan was realized, the majority of the campus has developed in a less structured fashion, becoming more like a large park interspersed with buildings set indifferently into the landscape. The revised master plan of 1966 pushed vehicular traffic and parking to the periphery, making the inner campus a pedestrian precinct, with pathways crossing landscaped grounds. The SERC complex not only adds a new courtyard in the larger garden of the university, but by preserving the grove of trees also provides a pocket park on the site's western edge, adjacent to the Houston Science Center.

The three major divisions of the complex—classrooms, auditorium, and laboratory—function independently. Only the research tower, with its emphasis on science, relates programmatically to its section of the campus. The classroom wing is not assigned to a particular department, but instead fills a general need for more classrooms on the western



Top Left: Classroom wing and auditorium as seen from the Cullen Boulevard side.
Middle Left: The research tower.
Bottom Left: Glass wrapped egress stair at the research tower.
Below: Covered walkway at classroom wing.



side of the campus. The auditorium is also unassigned and can be scheduled by any university department or organization. Together, however, the buildings, each with its own architectural definition, form a unified composition assembled around the courtyard.

The dominant feature of the two-story, brick classroom wing is its double-level, covered outdoor circulation. At the ground floor an open arcade supported by a row of circular columns skirts the courtyard, protected by the second-story walkway above. A wing-like, cantilevered canopy projects over the second story walkway. Besides providing an efficient, cost-effective way to enter and exit the classrooms, the open circulation more directly integrates the classroom wing with the courtyard, promoting interaction as the students come and go from their classes.

The classroom wing's program has been divided into five small lecture halls with fixed seating on the first level and six classrooms with movable seating on the second. The spaces are strikingly differentiated—on the first floor are windowless, almost claustrophobic rooms, and on the second level are spacious rooms with floor to ceiling windows that face the courtyard on one side and the grove of trees on the other. Apparently, this contrasting treatment satisfied the desires of some faculty members who prefer to teach in environments visually sealed off from the outside.

The auditorium, a 550-seat ellipsoidal structure, strategically terminates the Holman Street axis and presents a striking form at the intersection of Holman and Cullen Boulevard. A circular, glass-covered pavilion serves as a link between the classroom/auditorium building and the research tower, providing a generous, protected gathering place, as well as the major threshold to the building complex and garden courtyard. At the opposite end of the classroom wing, a smaller version of the glass pavilion terminates the covered walkway and the courtyard. The circular and curved forms of buildings, pavilions, arcades, and roofs are gracefully joined together into an energetic architectural whole.

Completing this composition is the research tower, a much larger structure that stands apart and is more directly related in scale and massing to Science and Research 1, which runs perpendicular to it. In fact, the two buildings are joined at the third level by a sky bridge. The program for the research tower dictated a more universal space, resulting in a rectilinear form that contrasts with the swooping curves of the adjacent classroom/auditorium building. And its much larger size—157,000 square feet versus 47,000 square feet for the classroom/auditorium building—resulted in a more consolidated multi-story structure. Each level of the five-story tower is zoned with laboratory space facing north into the

Right: Glass pavilion at the entrance to the courtyard, on axis with Mackie and Kamrath's Science and Research 1 building (1969).
Below: Auditorium lobby with Jackie Ferrara installation at inset wall.

courtyard, back-up space for the laboratories on the other side of the corridor spine, and a narrower band of faculty offices facing south.

According to the architects, the ideal module for laboratory and service areas determined the research tower's width. The office row is expressed on the exterior by bands of ribbon windows set into a limestone facade. Windows are protected from the southern sun by curved, perforated sunscreens at each level. Pelli exhibits his modernist predilections most emphatically with stair towers that are clearly expressed at both ends of the building, most dramatically where the taught glass skin curves around the stairs and landings. Taking advantage of its northern orientation, the floor to ceiling windows of the laboratories offer views not just into the courtyard, but to the city beyond.

While the classrooms and auditorium were completed and ready for the 2005 fall semester, the research tower remains an unfinished shell, awaiting funding of approximately $5 million per floor to be completed. The research tower has a floor plate that provides maximum flexibility, so that each laboratory space can be customized according to the specifications of the research. A utility core running the length of the building provides the infrastructure that each laboratory will tap into. As in a commercial office tower, when a particular research project is completed, the area can easily be remodeled for the next project. Moreover, the building is not assigned to any one department, but will serve the disciplines of bio-engineering, nano-technology, strength of materials, and medical engineering, among others. With 30 new research scientists anticipated to arrive over the next half decade adding to the existing pool of university scientists applying for research grants, the building will not be lacking for tenants. Faculty offices are scheduled to be ready for occupancy by late fall 2006, while the laboratories will be built out over the next two years.

Although not directed to use specific materials or colors, the architects chose compatibility with nearby buildings, particularly through the use of buff colored brick for the classroom wing and limestone cladding on the east, west, and south façades of the research tower. Bolder coloration both accents and distinguishes the building forms of the auditorium and the classroom wing. The sculptural shape of the auditorium, which projects above the classroom wing, is clad with an eight-inch by eight-inch crimson colored brick block turned on the diagonal. As seen from the research tower, even the auditorium's bright red metallic roof contrasts with the beige standing seam metal roof of the classroom wing.

Pelli reserved the strongest statement of color for the outdoor stairwells and second story handrails of the classroom wing—perforated metal painted a saturated reddish orange color. This color, a version of University of Houston Cougar red, stands on its own as a foil to the yellowish brick and creamy color of the cantilevered canopy above the second level walkway and the arcaded ground floor walkway. The bluish tint of the research tower's courtyard-facing glass curtain wall adds another element of color to the ensemble.

At the University of Houston, all new buildings are allotted one percent of the cost of construction to purchase commissioned works of art. Over the years this program, which is responsible for the Frank Stella murals at the Moores School of Music and the Scott Burton benches at the entrance to the College of Architecture, has enhanced the campus environment by making the university into something of an art park. For the SERC complex, a committee composed of faculty, artists, and curators selected the nationally prominent American sculptor Jackie Ferrara. Ferrara often works with recognizable architectural shapes such as stairs, walls, towers, and rooms, which she transforms into a language of sculpture.

Ferrara designed two purposefully subtle pieces that blend into the complex's overall architectural assemblage. The first of these, a long courtyard installation, is in fact a fountain rendered in two contrasting colors of granite. Water washes the sides of the extruded triangular form, and a seat edge runs the length of both sides. For the lobby to the auditorium Ferrara created a second work consisting of wood strips stained in multiple colors and laid up horizontally in a staggered pattern, with figural shapes running vertically along the length of an inset wall. In both cases the work blends with the architecture in a satisfying way that is less about the object and more about enhancing the architectural design.

Cesar Pelli and his design team have taken the challenges of a many faceted program and produced a complex of buildings that is visually arresting and functionally expressive. As good as the architecture of this complex is, it is the common area of the courtyard that distinguishes this site. What had formerly been a parking lot next to a grove of trees has been made into a gathering place. And by compositionally incorporating the new complex with the surrounding science buildings to form an abstracted quadrangle, Pelli and his team have brought an invigorated sense of place that had not been there before.

The success of the university's ambitious new master plan will depend heavily on its being fulfilled by distinguished architecture. If the Science Engineering Research and Classroom complex augurs the direction for new buildings at the University of Houston, there is reason to anticipate a bright future for the campus on Cullen Boulevard. ■