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The Astrodome, originally Judge Roy Hofheinz’s vision of a modern Colosseum, has in 25 years become its own archetypal social form, creating the first infinite interior space and recasting human (and vehicular) spectacle.
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Left to right: Gene Lam, Wharton & Lam Architects; Rick Berry, Superintendent, Arlington ISD; Joe Romine, Multatech Engineering, Inc.
Growing variety greets the AIA

IN OUR PLANNING FOR THIS ISSUE in meetings with Chairman Willis Winters and the members of the TSA Publications Committee, we knew that we wanted to welcome the American Institute of Architects' national convention to Houston by focusing on the host city's diversity. We didn't realize at the time that there would be so much happening in Houston that would merit coverage. As a result, we were faced with an embarrassment of riches.

We open our news section with a story on controversial plans by Cullen Center, American General Insurance, and other landowners to redevelop the area just west of downtown Houston into a new urban village; it promises, at this very early stage, to be an outon of Leon Krierism in what was supposed to be the last best hope of suburban America. On a more conventional note, we have the story of new towers in downtown Houston and Dallas and a review of a lecture series sponsored by the estimable Rice Design Alliance examining the problem of affordable housing.

In our Features section, we start with a look at some work from the University of Houston's Saskaka International Center for Space Architecture. In their earnest exploration of responses to difficult conditions, the projects presented here raise a number of interesting questions about the future of architecture both in space and on earth. Douglas Harvey, a TA contributing editor, next profiles the Houston Astrodome, a building that, he says, recreated the meaning of crucial rituals in our society, becoming in the process a reference point to rival the Roman Colosseum. We also have a feature on new healthcare projects in Houston, mostly in the Texas Medical Center. In our Interiors section, we present five lively new showroom designs by Texas architecture firms.

The Survey section is unusually full this issue. We have Philip Aricidi's review of the splendid new Houston Architectural Guide (written by Stephen Fox and with photographs by Gerald Moorhead, both TA contributing editors); some thoughts on image-building for architecture firms by Randle Pollock of Houston; a profile of the Houston-based Office of Pierce Goodwin Alexander & Linville; reflections on Hurricane Hugo, by Nick Glazbrook of Dallas, who lived through the storm while working on the island of St. Croix; and an essay on Louis Kahn and the link between personal transformation and architecture by Austin architect Milosav Cekic. In our "In Progress" department, we present a house in Monterrey, Mexico, by Jim Mayeux and Cecilia Rangel of Austin, as well as Camp John Marc Myers, designed by Good, Fulton & Farrell of Dallas. Finally, writer Laura Kenny-Negri describes research on ways to tornado-proof houses being conducted at Texas Tech University.

It's a pleasure for us to be able to have so much variety in one issue. Given the gathering strength of the Texas economy and the growing ingenuity of Texas architects, it looks like a trend we will be able to continue.

Joel Warren Barna
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We are extremely grateful for our complimentary copy of Texas Architect magazine and use it regularly. Frankly, however, we would use your publication far more often if it had an index. If there is any way we can acquire one for past and future issues, we would appreciate it very much.


We were especially happy to be given a second copy which we could cut up and insert in our architectural history files.

Ed. Note: Texas Architect does not maintain an index, but is indexed by the Avery Index of Architectural Periodicals.

On a recent visit to the TSA offices, I was somewhat struck by what the two Texas Architect editors accomplish with so little staff. T4 represents a well-invested portion of our TSA funds. It continues to provide an effective medium to expose designs from various parts of the state to a broader view and criticism.

David R. Richter, AIA Kipp-Richter & Associates Corpus Christi

A news story in the January/February issue about the Houston Chapter/AIA Design Awards inadvertently omitted the name of the Webb Zerall Menkès Housden Partnership, Toronto, which was the architect for the Bank of Nova Scotia’s base building, including its new 68-story tower. Gesler Associates/Architects designed the interior spaces of the bank headquarters and banking hall and won its award for interior architecture.

A story about the Lena Pope Home’s new Leonard Chapel in Fort Worth that appeared in the March/April 1990 “Survey” section failed to credit the contractor, The Frymire Co.
The Wild Wild West

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DALLAS/HOUSTON Powerfully tangible indicators of a reawakening Texas economy will soon rise in these downtowns.

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**Founders Park plan proposed**

**HOUSTON**

A CONSORTIUM of developers in March announced a giant residential and commercial redevelopment that could reorder Houston’s demographic patterns and turn the path of new growth toward the city center. Black community activists and preservationists who oppose the project charge, however, that it will kill a once-thriving neighborhood and wipe out a major portion of the city’s historic fabric.

Proposed by Cullen Center, Inc., American General Corporation, and Ayrshire Corp., the Founders Park project calls for redevelopment of a 600-acre area stretching from downtown westward to Montrose Boulevard, between Allen Parkway on the north and West Gray Street on the south, dipping southeast to the intersection of McGowen at Bagby streets.

The area includes the middle-class Temple Terrace neighborhood west of Taft Street; the old Fourth Ward, one of the city’s poorest; the bitterly disputed Allen Parkway Village public housing complex; and the abandoned Jefferson Davis county charity hospital.

Marvin Marshall, president of Cullen Center, and Max Schuette of American General said in a recent interview that the Founders Park scheme would require the removal of Allen Parkway Village and almost all of the Fourth Ward’s existing buildings. In their place, plans call for an extensive low-scale building campaign, with 2,500 new single- and multi-family dwellings, 440,000 square feet of retail space and 1.3 million square feet of offices.

Typically, middle-income housing in Houston is suburban; downtown is ringed by low-income neighborhoods that have lost both owner-occupants and city services. Founders Park proponents say, would reverse that trend, bringing increased vitality to an area that can provide badly needed housing for downtown’s 140,000 workers.

“We see this as an opportunity to offer close-in housing for a cross-section of the community—from low-income to affluent,” says Marshall. “But it’s not without its risks. First we have to establish that it will be marketable.”

“This would involve relocation of about 5,000 people,” adds Schuette. “We won’t go ahead unless we can answer the concerns of the people who will be affected.”

Plans call for using a third of the taxes raised by the project’s special taxing district—$120 million—to create 1,200 units of public housing. Of these, 200 would be in Founders Park, while the rest would be “scattered-site” housing elsewhere. In addition, planners propose preserving several historic buildings in a small park. Preservationists, fighting for the Fourth Ward and Allen Parkway Village, oppose such an idea. The Founders Park plan also calls for making a historic local school building into a black heritage museum.

Preliminary studies for the project’s Savannah-like mix of buildings and green space and Mediterranean-style architecture are the work of Phillips & Brown Architects of Houston in association with EDI Architects, with Miami-based architects Andres Duany and Elizabeth Plater-Zyberk as consultants.

Duany will lead a week-long community charrette, planned for early July.

*Joel Warren Barnes*
Plan set to redefine Cultural District

The Cultural District, located west of downtown, exists as an ad hoc blend of art museums, science exhibits, summer musicals, horse shows, and rodeos, but it may soon flower as a performing-arts mecca if the first phase of an ambitious new master plan succeeds.

The plan, developed by EDAW, Inc. of Alexandria, Va., with the Fort Worth Cultural District Committee, calls for renovating three existing theaters to house ballet, symphony, opera, and theater within walking distance of other attractions. It addresses physical improvements and development potential over the next 15 to 20 years for a 950-acre area comprising the museum district, the Will Rogers complex, and a Trinity River greenbelt that includes the botanical garden. The plan is intended to unify the visual impression of this district, increase its accessibility, and enhance it as a pedestrian, urban environment in suburban Fort Worth.


The most challenging Phase I project is CJM's adaptive-use plan for Will Rogers Auditorium to become a 2,163-seat multipurpose facility and permanent home of the local opera, orchestra, and ballet, as well as for the finals of the Van Cliburn Competition. Wyatt C. Hedrick's 1936 auditorium is the western anchor of Will Rogers Memorial Center, which includes Will Rogers Coliseum and Pioneer Tower, a focal point of the master plan. The art moderne facades of all three structures will be restored, including the mosaic murals above the auditorium's entrance. The original 54,000-square-foot hall will be increased to 138,000 square feet to create the larger acoustic volume required by a symphony orchestra. The increase in the height of the building above the pediment of the existing facade is obvious, but setbacks in the roof line and the addition of side stairs will mitigate the additional mass. The further need for a deeper stagehouse led to a complete redesign of the auditorium's interior, for which CJM used many details from Hedrick's original plans, creating a moderne flavor for a new multi-level lobby. On the exterior, lanterns planned for the original building but never constructed will be placed to the sides of each stair tower. New construction extending from the west side of the building will alter its symmetry, but will provide space for a cafe, catering facilities, and a rehearsal room.

CJM also designed renovations to William E. Scott Theatre, a 1966 structure connected to the Modern Art Museum of Fort Worth. Its lobby and rehearsal rooms will be renovated, and acoustic changes will be introduced.

Mitchell/Giurgola's renovation and expansion plans for the Casa Mañana theater, architect A. George King's 1958 theater-in-the-round adaptation of Buckminster Fuller's geodesic dome, include much-needed acoustical improvements, an enlarged lobby and concession areas, a new courtyard, an expanded rehearsal hall, and classroom space for its theater school programs, all in a rectilinear stucco addition wrapped around the original structure.

The master plan will create an enhanced pedestrian environment and better vehicular access. Yet it needs more than tree-lined streets and colorful banners to create a dynamic visual impression of the district. While the EDAW plan emphasizes the axis of the "great lawn" and its southern terminus at Will Rogers Tower, it lacks an architectural presence needed to terminate the northern end.

While city-council approval was likely in April, the plan still must win a bond election to be fully realized. Already, though, the master plan has stimulated development that has resulted in the loss of a landmark east of the museum core: the grain elevators long associated in local myth with Kahn's inspiration for the cycloid-vaulted Kimbell Art Museum were demolished last year. The plan has also provided fuel for local debate. Its support for preserving park spaces was invoked by Kimbell trustees, who declared the great lawn inviolable and removed it from their expansion deliberations. Of note also are sites of future mixed-use developments, particularly one uncomfortably close to the Kimbell. The plan proposes easing height restrictions to attract development to the district.

Barbara L. Koerble

Barbara L. Koerble is a free-lance writer living in Fort Worth.

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New towers to rise on prominent sites

HOUSTON/DALLAS

The deadlock that halted construction of new downtown office towers in Houston and Dallas after the collapse of oil and real estate prices in the mid-1980s is over, and it looks like Chicago-based architects will design the first buildings of the 1990s.

In Houston, oilman-developer George P. Mitchell announced in March that he was seeking to build the first downtown tower to be started in the city since 1985. The site he wants was once owned by the Houston-based Southwest Bancshares, which in 1982 staged a competition for design of a new headquarters building. Helmut Jahn of Murphy/Jahn, Inc., of Chicago won the competition with a glass-aluminum-and-granite-clad obelisk building that harkened back to imagery from 1930s skyscrapers.

Before Rizzoli could publish its competition monograph in 1983, however, Southwest Bancshares had forced to merge with Mercantile Texas Corporation, which was itself later seized by federal bank regulators. The site, now a parking lot, passed into the hands of the federal Resolution Trust Corporation.

Mitchell had served on Southwest Bancshares' board, and he remains "strongly impressed" by the design Jahn developed for the 1982 competition, according to Danci Perugini Ware, a spokesperson for Mitchell. Ware says Jahn will prepare a new design for the site—if that is, the Resolution Trust Corporation accepts Mitchell's bid. A decision by federal officials is expected by the end of June.

Lone Star Plaza in Dallas, designed by Fujikawa Johnson of Chicago, with F&S Partners of Dallas as associated architects, will consist of two 1-million-square-foot, 48-story Chicago-style towers hanged in glass and granite with rounded side elevations. The project is being developed by Metropolitan Structures on a site next to the recently constructed Meyerson Symphony Center (see TA News, Sep/Oct 89). Metropolitan Structures' spokesperson Carol Stabler says construction on the first phase will begin this year, and the second tower will be added "as market conditions warrant." Company officials say work will begin soon. The last major skyscraper in downtown Dallas, the Texas Commerce Tower designed by Skidmore, Owings & Merrill's Houston office, was started in 1986.

Joel Warren Barna
Series sounds alarm for public housing

HOUSTON

As in virtually every American city, the housing problems here are acute. The city's homeless population is over 10,000, including 1,500 children, according to the Houston Campaign for the Homeless. Some 150,000 people live doubled-up with friends or relatives. In response to this tragedy, the Rice Design Alliance sponsored a lecture series in March entitled “Giving Shelter: Housing and Public Policy.”

The series commenced with a history of European social housing, presented by David Dunster of London's Bartlett School, who traced two competing models: the stedding, or village, and the block. He said the stedding, as used by Ebenezer Howard, Heinrich Tessnow, and Leon Krier, is an ordinary architecture that borrows, but does not create, style. By contrast, block projects such as Vienna's Karl Marx Hof and James Stirling's Runcorn New Town housing illustrate modernism's concern with sanitation, transportation, and function. Dunster said most social housing, however, has failed, its construction prompted by fear and greed.

In the second session, David Handlin, author of The American House, analyzed the relationship of architecture, finance, and housing production in the U.S. from the mid-1800s through the First World War. Handlin said the housing crisis then was considered primarily a wage problem, although it led to innovations such as limited-dividend housing corporations, mortgage financing, and, most significantly, preferential tax treatment for mortgage interest.

Barry Zigas, president of the National Low-Income Housing Coalition, said in the third lecture that the last 50 years of U.S. housing policy have focused on supply, standardization (to attract investors), and homeownership. Gentrification, urban renewal, and increasing housing costs have reduced the stock of sound, affordable housing. Additionally, the Reagan administration disengaged the federal government from the production of low-income housing, and by 1988, three million more families were at the poverty level than had housing available for them. A variety of novel approaches must be used to solve the housing crisis, Zigas said, including new forms of ownership such as land trusts and co-ops. The federal government, he added, must greatly increase its financial support.

The series ended with a hurried symposium on solutions to the housing crisis, moderated by political scientist Robert Stein of Rice, with panelists Paul Grogan, president of the Local Initiatives Support Corporation, Bernard Frieden of MIT, Richard Baron, a developer of low-income projects, and Santa Monica architect Julie Eizenberg.

Describing perhaps the most innovative solution available, Grogan said community development corporations allow low- to moderate-income communities to develop housing and commercial projects. With financial commitments of over $100 million, LISC is the nation's largest non-profit financial and technical intermediary to CDHCs, which combine funding from both the public and private sectors to achieve results that neither sector could match alone. Fortunately for Houston, LISC has recently made a major commitment to support emerging local CDHCs. These groups are investigating their first round of projects, and if Grogn is right, we will undoubtedly be hearing more from them.

John Rogers

John Rogers is an architect practicing in Houston.

“News,” continued on page 15
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Bofill building opens 'Design Dialogues'

A NEW FORUM entitled “Design Dialogues” opened with a lively discussion of the controversial new building for the Shepherd School of Music at Rice University (see “News,” TJA Jan/Feb 1989). The Houston Chapter/AIA has initiated the series to provide for an exchange of ideas on design issues. More than 20 chapter members attended the event, held at Innova.

The dean of the school, Michael Hammond, presented the project, which was designed by Spanish architect Ricardo Bofill and the Taller de Arquitectura with associated architects Kendall/Heaton Associates of Houston. In a spirited and articulate manner, he discussed the genesis of the building program, the qualities of a school of music that make it vital to a university, and the development of the architectural style and details that will house and enhance this activity and compliment campus planning.

Hammond said the design is a metaphor, its organization dealing with the music school’s public, group, and individual spaces. He likened it to the hilltown of Assisi, with its hierarchy of outdoor spaces echoed in the plan.

In the development of the design, both Hammond and Bofill looked for rationalism as a counterpart to the state of music today, which, said Hammond, for the first time includes all styles at the same time. He said he preferred classicism for its hierarchy of orders, to allow reason to prevail over emotion. Proportions adhere to the golden mean, and ornamentation reflects the spirit of composers such as Bach, Mozart, and Vivaldi, but the building’s classical vocabulary, nevertheless, uses high-tech materials and details. Classical columns, for instance, are reinterpreted in precast concrete, with brick infill and simple windows. Details and finishes express warmth and individuality and reflect the school’s philosophy that music depends on detail, feeling, and personalization, qualities that embody style and expression.

Hammond also spoke to the planning implications of the project, as it responds to the Cram, Goodhue and Ferguson plan of 1910 for Rice and the more recent interpretation by Cesar Pelli. He said Bofill won the design competition because of his sense of “resonance” with the original plan’s intentions, although the design’s vocabulary deviated from the Rice look as typified by Lovett Hall. By siting the building at the west end of the campus, close to the stadium and its attendant large parking lots, two planning goals were accomplished: a major building extended the development of the campus, and public access for performances required minimal new sitework.

After Hammond’s talk, the audience participated in a diverse and often pointed discussion. Alan Balfour, acting dean of the Rice School of Architecture, asked about the process of working with Bofill, which Hammond described by drawing parallels between music and architecture: preparation and process were steps toward the “final performance.” Most of the participants complimented the design, although one practitioner suggested that, due to the clarity of Hammond’s ideas, he could have “built his own vision and saved the extra fee [for Bofill].”

Organizers plan to hold further reviews of projects “on the boards” as members volunteer to present and discuss their work. Gilbert Hoffman

Gilbert Hoffman is director of design, The White Budd Van Ness Partnership, with offices in Houston, Beaumont, and Austin.

“News,” continued on page 19
Fort Worth landmark threatened
The Fort Worth Historic and Cultural Landmark Commission in April asked architects to help it spare the 1938 Fort Worth Public Library (designed by Joseph R. Pichich) from demolition. Used as a library until 1978, the building reverted to the heirs of the original donor in a lawsuit brought after the city violated the deed by converting the library to city offices. The current owner applied for demolition in February but was denied by the landmark commission. If no solution to reuse the building is reached during a waiting period that ends June 2, the developer will be able to proceed with demolition.

Capital work continues, for now
Architects continue work on construction drawings for renovations and an addition to the State Capitol, although proposals for education reform being debated by the Legislature have topped the project's budget as a possible source of funding. "My encouragement in that I've not been told to stop work," says Capitol Architect Allen McCree, FAIA, who hopes to ensure the project's eventual success by securing all needed funds by the end of December.

Eight Texans join College of Fellows
Among the 62 new architects elected to the AIA's College of Fellows are Texans Brent E. Byers, FAIA, and Jock Corgan, FAIA, of Corgan Associates Architects, Dallas; James R. Foster, FAIA, of Mormon, and Mormon; Souter Foster Hays, San Antonio; Truitt B. Garrison, FAIA, of CRSS Inc., Houston; John Only Greer, FAIA, of Texas A&M University; Robert H. LeMond, FAIA, of LeMond Associates Architects, Fort Worth; and Larry D. Self, FAIA, of Hellmuth, Obata & Kossoubaum, Inc., Dallas.

"Of Note," continued on page 19

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The Doors: a benefit for art

The Texas Fine Arts Association will hold "The Doors at TFAA," its annual exhibition and benefit auction in Austin, Nov. 3-25 (512/453-5312). The 1989 exhibition in Dallas, "It's About Time," included "Windows of Fragments: Time" (right), by R.B. Ferrier and Amy Wingrove, and "Broyeuse Clock" (far right), by James Sailor.

On Saudi Arabia in Dallas

Last Dec. 15 a group of Dallas architects attended a presentation on Saudi Arabia that transcended stereotype to reveal a proud, diverse, and developed culture.

The Crescent Club luncheon, sponsored by the Dallas Chapter/AIA (underwritten by Aramco, CRSS, Mobil, and 3D/International), featured among its speakers Ziyad Ahmed Zaidon, chairman of the Saudi firm IDEA Network. Zaidon said he hopes to combine American technical skills and knowledge with the rich cultural heritage and traditions of his homeland. Westerners often fail to recognize the cultural heritage, social fabric, and traditions that have developed in many third-world countries, he said, because they erroneously equate an absence of technological development with an absence of development of any kind. Zaidon described a country whose varied regions and multi-stylistic architectural traditions contrasted sharply with the simple "desert kingdom" image perceived by many Americans. Duncan T. Fulton

Little architecture: an exhibition of models

In conjunction with the AIA National Convention, the Houston Chapter/AIA has prepared an exhibition of architectural models, May 5 to June 3, at the Houston Museum of Natural Science. The collection ranges from quick study models to slick high-rise models used for leasing. Shown above are the Mixon House (left) by Taft Architects and a wind-study model (right) by CRSS Inc.

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Southern Living has given a 1990 Southern Home Award to the Schulte Ranch House in Round Top (above) by Cannady, Jackson & Ryan Architects, Houston. The magazine will recognize outstanding residential design in six categories in its 1991 competition. 800/366-4712 ext. 6359, entry deadline: July 31

Excellence on the Waterfront
This competition honors projects along any water body, Waterfront Center, Washington, D.C. (202/337-0356), entry deadline: May 15

City/County Building Competition
Mobile County, Ala., is holding a national, open, one-stage design competition for a city/county building in Mobile. Mobile County Building Design Competition, Box 40471, Mobile, AL 36640, registration deadline: May 18

Charles Moore:
Buildings and Projects 1949-1989
An exhibition of the rich, complex, and often whimsical architecture of Charles Moore, FAIA. The Design District, Dallas (214/744-4212), through May 25

The Art Museums of Louis I. Kahn
An exhibition of 114 sketches, plans, elevations, sections, presentation drawings, and models chronicles the museum design legacy of Louis I. Kahn. Kimbell Art Museum, Fort Worth (817/332-8451), through June 17

Great American Home Awards
Historic houses will be recognized for rehabilitation, additions, or adaptation. National Trust for Historic Preservation, Washington, D.C. (202/673-4141), entry deadline: June 30

Western Red Cedar Design Awards
This competition recognizes built works that use cedar products. Western Red Cedar Lumber Association, Portland, Ore. (503/224-3930), entry deadline: July 1
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OUTER SPACE
INNER LIFE

THE FACULTY AND STUDENTS of the University of Houston's Sasakawa International Center for Space Architecture are being challenged to design habitations for space explorers who will live for years, even decades, sealed in protective suits and cylinders as they push back the boundaries on human knowledge of our universe. What these designers are probing may in time become the basis of a new understanding of the limits of architecture on earth.

Such an effect can already be demonstrated, as Douglas Pegues Harvey argues in "Il Duomo," his feature about the Astrodome in this issue. Writes Harvey, "One of the recurring themes in American cultural history is the quest for Zion: breaking out into infinite space to create (or regain) the ideal landscape and community—to get back to the Garden. When NASA began giving that quest its ultimate form, a conceptual boundary was created that demanded a new understanding of architectural 'space.' In Houston, the Astrodome re-presented this quest as an introspective one, by establishing the possibility of an infinite interior space."

As this issue shows, architectural exploration inevitably leads us back to ourselves.  

Joel Warren Barna
In 1989, SICSA students Eval Akhidime, Michael Bunch, Denise Lund, Nathan Moore, and Kio Murakawa, with research assistants Stephen Capps and Jason Lorandos, faculty advisors Larry Bell, Guillermo Totti, and Deb Neubek, and consultants Alan B. Binder and Elbert A. King, studied the design requirements of a partial-gravity habitat and applied them to the design of a lunar base where liquid oxygen would be manufactured from moon rocks, to be set up near the site of the first Apollo landing on the moon. Funded by the NASA Universities Space Research Association, the project examined everything from low-gravity locomotion to geological conditions. Right: model of the habitation area of the station; the domes at center are greenhouses.

**HOME, SWEET SPACE STATION**

By Joel Warren Barna

As if a reminder were needed, the daunting complexity of the challenge facing planners of the U.S. space-station program of the 1990s was confirmed by a NASA report released in March. Current plans call for building the $30-billion Space Station "Freedom," a 500-foot-long, 290-ton living and working vehicle to be stationed in earth orbit starting in 1995. The space shuttle would carry modules and parts for the station from the earth, and they would be assembled in space. For 30 years thereafter, scientists would use the station for research and to mount further explorations of space.

But according to the March report, the current design of the space station would require station personnel to stop construction and begin maintenance and repair work on the space station when construction was 70 percent complete. Completion would thus be significantly delayed, if not made impossible.

The maintenance problem, discovered by a NASA team led by astronaut William F. Fisher and robotics engineer Charles R. Price, stems from the extreme conditions of the space environment, which can lead to rapid failure of parts and equipment: a piece of the station could be heated to 400 degrees F on the side facing the sun, while its temperature would be -250 degrees on the other; it would be exposed to ionizing x-rays and gamma rays; and it would be exposed to speeding micrometeorites and space debris that can carry explosive force, even when the pieces are as small as the paint chip that recently damaged the windshield of a space shuttle.

Students at the Sasakawa International Center for Space Architecture face the problems of long-term habitation elsewhere in the solar system.
These factors requiring maintenance would also make leaving the station's habitation module for "extravehicular activity," or EVA, extremely hazardous. NASA's guidelines call for no more than 130 hours of EVA per year, but Fisher and Price reported that Freedom's personnel would have to be outside the station performing repairs for up to 2,200 hours per year.

But at a press conference in Houston after the report was released, Fisher said that the problems he and his colleagues had cited were solvable. "This is an engineering problem. Engineering is what NASA does better than anything in the world," he said.

The search for solutions is focusing on making the parts of the station more durable, on developing robots to take over part of the maintenance work, and on developing space suits that will provide more protection and that will allow the astronauts to work more efficiently (suits from the space shuttle that are now used are so rigid that astronauts get bruised trying to maneuver in them, and they operate at such low pressure that astronauts have to breathe pure oxygen for up to five hours before EVA, to avoid getting the bends). These solutions will add to the cost of the space station, but no one can say as yet by how much.

The problems of building Space Station Freedom are formidable enough, but they pale in comparison to the difficulties posed by long-term habitation of the station and by the subsequent steps in NASA's space-exploration program endorsed by the Bush administration: colonization of the moon, followed by exploration of Mars.

It's not the engineering problems that will be hard, but the so-called human factors—making the places in space where men and women will live and work safe, conducive to productivity, and humane.

Just meeting the first criterion will be difficult. Even sheltered from the hazards of EVA by a well-built habitation module or spacecraft, astronauts will be under constant assault. The influence of low gravity, for example, while interesting from a scientific standpoint, is harmful to humans. Low gravity de-conditions people, decreasing muscle mass, leaching calcium from bones, and weakening heart-lung systems. Only rigorous exercise regimens, it has been found, can counteract these effects. People floating free are able to work oriented to any given surface; thus they need to be protected from sharp corners, and fragile parts of the space craft have to be protected from them. At the same time, the lack of leverage and the body postures dictated by weightlessness require that equipment and furnishings be rethought by designers.

Then there are the factors related to the necessary smallness of the quarters. Hygiene is one: Since a space habitation is a closed system, the threat of infectious disease is ever-present, and toilet and washing areas have to work flawlessly. The psychological and mental effects of constant closeness to other crew members, of boredom, or of isolation, all but inevitable over long periods of time, will challenge habitat designers as well as crews. Unless these and countless other problems can be solved, planned space missions will be doomed to failure.
A project to study a base in Antarctica as an analog for habitats on Mars and the moon, where extreme conditions would allow researchers to test equipment and crew interactions, was undertaken in 1988 by SICSA students Alejandro Bottelli, Mohammad Sidiqui, Mashid Ahmadi, and Fernando Brave, with faculty advisors Larry Bell and Guillermo Trotti. Below left: The base would consist of modules that could be helicoptered to the site and a "foam-rigidized" inflatable structure for storage and agricultural production. Below: Section through structure. Bottom right: site plan.

Helping find solutions for those types of problems is where architects can make the greatest contribution to space exploration, according to Larry Bell, a Houston architect who is director of the Sasakawa International Center for Space Architecture (SICSA), a program within the University of Houston College of Architecture. Bell, himself an active designer whose firm, Bell & Trotti, has worked for Boeing, Grumman, and other NASA contractors on the design of Space Station Freedom, was, with his partner Guillermo Trotti, among the co-founders of one of the country's first space-privatization companies, Space Industries, Inc., of Houston. Bell has headed the space architecture program at the University of Houston since its inception in the 1970s; in 1988, the program received a $3-million grant from the Japan Shipbuilding Industry Foundation, and its name was changed to honor the foundation's leader, Ryoichi Sasakawa.

Students in his program, he says, "are not studying something out of Buck Rogers, the way people in the architectural profession seem to think. They are learning about a rapidly developing current industry." The number of former SICSA students employed by major companies and government agencies working on space exploration attests to the importance of the field, Bell says, as does the flurry of speaking invitations he gets from Europe, the Soviet Union, and Japan, and from elsewhere in the country.

Why not leave space to the rocket scientists? Bell says that to do so would be to abandon one of the greatest architectural challenges of the century.

"Unquestionably, space is an engineering-dominated field," Bell says, "Engineers think [architects] do wallpaper for the things engineers design. That's a misunderstanding of the potential role of the architect in space habitation. I would argue that the program that is currently planned—habitations on the moon and Mars, and long space flights—is as much the proper domain of people who design habitats as of people who design rockets."

The great virtue of architectural thinking for space design, Bell says, comes from its underlying disposition. "Architects are conceptualizers, integrators. They see whole systems, but they are not afraid of the details," he says. "We try to create coherence out of the physical, social, economic, and psychological re-
requirements of the space habitat, not just to solve the problems of structure or of air conditioning."

On the other hand, he says, "there is an element of engineering and of industrial design involved; you can’t find the systems used in the SWEET catalogue. And yes, the things we design have to work—people die if they don’t, and failures in the program are incredibly expensive, in terms of dollar cost, in terms of lost years, and in terms of national morale."

The projects shown on these pages demonstrate some of the ways in which students in the SICSA program are dealing with the problems of habitation in space (and of other exotic environments). As the newly discovered difficulties threatening to delay or derail Space Station Freedom show, there can’t be too much planning or too much comprehensive thinking.

Because of the constraints on materials and forms ordained by the difficulty of leaving earth, these projects don’t look much like architecture as it has historically developed on earth. The structures involved speak a new language, but it seems to carry messages only about function, while remaining inarticulate about human meaning.

Paradoxically, it may be that the apparently incoherent rhapsodizing on structural systems and social content that informs deconstructivist architecture, the strongest -ism of the late 1980s, could point the way to the deeper poetic basis that space architecture now lacks. Think of Daniel Libeskind’s "micromegas," with their beams and walls floating somewhere without gravity and measurable time. Space architecture may or may not need deconstructivism, but deconstructivism certainly needs outer space. The problem is that, because of the constraints of energy and money, the best of current design leaves the next generation of space explorers in an environment in which they are, like the Mercury astronauts, more lab specimens than pilots and scientists— in Chuck Yeager’s ringing phrase, “Spam in a can.” Space architecture must go beyond the life-safety, constructibility, and sustainability issues that currently dominate the field; space architecture must create places for people to live in.

But it may simply be too early to talk about space architecture; when a generation has lived in space, new psychological and cultural arrangements will emerge, begetting new types and forms of meaning.
IT'S NOT EVERY BUILDING that gets to be known as The Eighth Wonder Of The World. Texas' nominee, the Astrodome, opened 25 years ago as the world's first interior landscape. On Apr. 9, 1965, a time when the hegemony of television and the standing of the Sunbelt in American life were not yet secure, the Astrodome's opening struck a telling blow on their behalf. The occasion was a Houston Astros exhibition baseball game against the New York Yankees. With President Lyndon B. Johnson watching, Mickey Mantle (naturally) hit the first home run, but the Astros (necessarily) won.

The experience left visitors, well, bug-eyed. At 642 feet, the Astrodome's clear span more than doubled that of any previous enclosure. Its parking lot, the world's largest, held 30,000 cars. That sort of thing. A few miles away, NASA was mounting its giant thrust into the infinite, silent sea. It was one of those times when events get larger than life.

The Dome has had its true believers — evangelist Billy Graham, who held a Crusade for Christ there its first year, and who knows something about the ancient world, has been credited with the "Eighth Wonder" phrase — and its critics— writer Larry McMurtry, for instance, described it as "the working end of the world's largest deodorant stick." In purely compositional terms, it may not have done much. Long-span technology and multi-use ingenuity have long since passed it by.

All the same, there are other measures of the success of this project. Not only did it bring the pageant of stadium sports inside, its introduction of Astroturf permanently changed the "envelope of performance" of all sports previously played on grass. Its "skyboxes" represent a milestone in the evolution of the contemporary notion of "upscale," and transformed the financial structure of professional sports. It even created a new building type—a room where you could see cars colliding in mid-air. And to top it all, it was even a bargain: the construction cost of $18.7 million translates to $64 million in 1989 dollars (including financing, total cost was $107.1 million in 1989 dollars.)

But to posterity, the most important test of a building is not in the continuing influence of its various innovations but in how it engages and alters the mythic landscape. By this standard, the Dome is a landmark of the first order. At its opening the Dome was an instant celebrity and since then it has maintained a star billing that few buildings of any kind ever achieve. It is, as they say, the original.

It certainly wasn't just a "stadium." Only Yankee Stadium, beneficiary of decades of press exposure in the more-or-less Capital of the World, has approached a similar status. But the Dome isn't really a "building," either. Ironically, one measure of its impact is that it has never been casually thought of or described in architectural terms. It is a different category of thing, ill-defined but clearly unique and "other." In homage, equivalent buildings are customarily called "domes" even when they are not at all dome-like—the Hoover Dome, the Pontiac Silverdome. Despite its cable-suspension roof hang from four 300-foot towers, the sports and convention palace now being designed for San Antonio is persistently referred to as the "Alamodome."

The story of the Astrodome's creation is a form of surrealistic frontier melodrama where financial risk-taking, political deal-making, and architectural daring intersect to recast the fates of humanity, redefining our perceptions about the nature of buildings, the functions they contain, and the culture they represent. The Dome was a product of the unspoken conviction that there were, and could be, no limits.

Volumetrically, the Astrodome peculiarly resembles the Hyatt-Regency Hotel in Atlanta, Ga., which opened about the same time. Both buildings redefined and revitalized a building type so as to create new images and possibilities, and they both did so in the same way—by going beyond Piranesi to create infinite space.

One of the recurring themes in American cultural history is the quest for Zion: breaking out into infinite space to create (or regain) the ideal landscape and community—to get back to the Garden. When NASA began giving that quest its ultimate form, a conceptual boundary was created that demanded a new understanding of architectural "space." The significance of the Astrodome and the Hyatt-Regency lies in their re-presentation of this quest as an introspective one, by establishing the possibility of an infinite interior space.

The Astrodome engages the sense of the infinite paradoxically. A single-space building, no matter how huge, appears larger inside than outside. Once inside, we lose the scalar cues the landscape and sky normally provide and have only the structure itself as a frame of reference. But our personal and evolutionary experiences with the natural world have conditioned us to interpret the background as all-encompassing. Therefore we read the distant walls as the natural background, and perceptually "overscale" any uncommonly large interior; the larger the room, the more pronounced the effect.
5. Jose Jimenez, Astro

7. The President Watches

8. Astronauts on Field
The Astrodome's structure encloses so much volume that its roof provides no surrogate scale or visual weight. As experienced by visitors, the Dome's roof is a gossamer web of steel clouds drifting above the playing field, completing a vision of the cosmos and creating a new relationship between the players and the audience in the public ritual of sports.

The Astrodome simply raises this effect to a higher order of magnitude. It encloses so much volume that the roof's visual weight is inadequate to delimit the scale, and the space becomes perceptually unbounded. Viewed through our prejudice in favor of overscaling, it reads as bigger than unmeasurably big—infinitive. The roof is no more than a gossamer web of steel clouds drifting above the field, completing a vision of the cosmos. Because an infinite space cannot be "inside" anything, in the Astrodome, you are not, therefore, "inside."

A parallel physiological effect then reinforces this message. When we gaze into the distance, the alignment and focus of our eyes gives us a certain neuromuscular feedback that we associate with the wide-open spaces. In neuromuscular terms, a sufficiently distant roof is the same as the sky.

The meaning derived from these phenomena are profoundly different; from those evoked by the sense of being inside. Freed of ultimate closure, the Astrodome becomes a microcosm, as though it were a colony in space or on society's conceptual frontier (which, in a sense, it was), with a wholeness independent of the outside world. It is even a "dome"—a form loaded with historical references to the sacred and the infinite. Its location at the edge of the limitless prairie, in a nearly infinite parking lot, heightens the air of unreality, while its name appropriates the aura of outer space on behalf of inner space.

Subjecting the building's functions to such an articulate vastness gives them a "final" ut quality. By its association with the cosmic vision, any mass spectator event instantly becomes a grander, more intense, more focused spectacle; its emotional equations are transformed. The first indoor baseball game became, figuratively, the first game of all time.

However, intensifying the ritual to such a degree also transforms it into entertainment. Beginning with that first indoor baseball game, the sense and even the pretense of continuity and reciprocity between the participants and spectators (such as that postulated by the Texas A&M "twelfth man" tradition) were forever abandoned. The first spectators in the Astrodome became the live audience in the world's largest television studio, furnished with "theater seats"—not bleachers, and with a scoreboard that lit up like a game in a video arcade. Finally the Caesars in the skyboxes had a suitably spectacular barbarity to entertain them.

Success, it is said, has a thousand fathers. It may already be too late to establish with certainty who really originated the idea for a covered, air-conditioned baseball stadium. It is clear that various business leaders in Houston during the 1950s were campaigning to bring major league baseball to town. There were studies for a "War Memorial Stadium" that eventually became the Astrodome in order to cement the deal with the National League.

Public sentiment credits Judge Roy Hofheinz, the Dome's guiding genius and co-owner of its master lease. One story has it that he got the idea for a roofed sports stadium as a tourist in Italy, on learning that the Colosseum (home to blood sports and human sacrifices) had had a retractable sunshade. Prior to getting involved in baseball, certainly, the Judge was in a race (won by Frank Sharp at Sharpstown) to develop Houston's first air-conditioned shopping mall, and he was thoroughly familiar with the design and construction of long-span, air-conditioned assembly spaces. Moreover, the idea was already in the air. Tycoon Glenn McCarthy may have proposed a covered stadium during the 1940s. Walter O'Malley considered building a covered stadium for the Dodgers while they were still in Brooklyn, and Harris County officials met with him in Los Angeles in the late '50s.

But in mythological terms the Colosseum connection is true, regardless of its fancifulness. It invokes the laying-on of hands, conveying the splendor of ancient Rome from its Pantheon to the new cathedral of
The Astrodome site was excavated for construction next to the stadium where the Colt 45s, the National League team that became the Houston Astros, played in the open air.

Former Harris County JudgeRoy Hofheinz is credited with conceiving the idea for the Astrodome in Italy, on hearing that the Roman Colosseum, home of blood sports and human sacrifices, had had a retractable sunshade.

The interior scale of the Astrodome is complemented by the vastness of its parking lot.

**Project credits:**

**Architects:** Lloyd & Manges and Wilm, Morris, Grave & Anderson, associated architects. (Partner in charge for exterior design, S.P. Morris; Partner in charge for interior design, Herman Lloyd; Project architect, Robert Minnies)

**General Contractor:** H.A. Lott, Inc.

**Stadium Design Consultants:** Proctor & Sarnia, Waterbury, New York

**Structural Engineer:** Walter P. More & Associates

**HVAC Engineer:** A.T. Neman, Consulting Engineers

**Civil and Electrical Engineer:** Lockwood, Andrew & Newman, Consulting Engineers

**Scoreboard Design:** Ray Hofheinz, Texas Neon Company

**Steel Fabricator and Erector:** American Bridge & Iron Works, Inc.

America's sports religion. In an article in *Architectural Design* in 1970, Peter Papademetriou equated the Astrodome to St. Peter's as a gigantic urban-edge project that established a defining physical and social form.

In the beginning, the glory of Rome gave a desirable gloss to the Astrodome's image. But today comparisons to either St. Peter's or the Colosseum are redundant. The *Dome*, not Rome, is the archetypal social form across the land. With the coming of the Dome, spectacle at last reached the intensity necessary to bridge the mythic distance from baseball, diffuse and subtle, to football, especially professional football, a gladiatorial contest worthy of the first Colosseum.

The elevation of the spectacle also transformed the nature of the "occasion" surrounding football as ritual event. Formerly, the game itself was only the zone of greatest density of meaning imbedded in an extended activity. In the ancestral pattern, getting there was half the fun—the journey, visits to relatives or friends, the tailgate party, the post-game celebration. (The old ways survive in Dallas the night before the Texas-Oklahoma football game and during "Texas Week" at Texas A&M.) Even the game's prostration before the elements, though sometimes inconvenient, was symbolically meaningful. Through this, the larger event maintained its ties to, and signified its place in, a world larger than the game itself.

No longer. Thanks to the possibilities for artifice liberated by the Astrodome, the Event has been freed from its dependency on Nature's captives and God's sky. The Game has achieved purity of essence. It is reborn as a feature attraction in the world of focused entertainment values based on network television and the ultimate macho voyeurism of Monday Night Football. The feat of mythic transformation wrought by the Astrodome is acknowledged by the attitudes of professional sports leagues towards indoor play. Even though baseball is always postponed for bad weather, major-league baseball will not consider indoor locations for prospective expansion teams. On the other hand, football, which is traditionally played regardless of the weather, has wholly embraced indoor stadiums.

Whereas baseball is a ritual celebration of mythic space, football possesses and defines it. So while baseball needs the presence of the outside world and is distinguished indoors, football is only rendered more intense and primal by the technical refinement that indoor play makes possible.

So where has the Astrodome been all these years? Somewhere at once beneath the notice of the architecture profession and beyond its imagination. What if the Astrodome didn't further the "enobling" of architecture—it forcefully, purposefully, massively, irrevocably changed the social landscape. If any building merits the AIA's 25-year award, it's the Astrodome.

That the architecture profession has failed to recognize it as a key monument offers strong evidence that our criteria for measuring architectural quality remain woefully narrow, drawing so heavily on fineness of composition and on an abstract view of form that they blind us to the emotional, experiential character of our relationships with buildings.
Despite an economic downturn and increasing competition among providers, the market for healthcare architecture in Houston has never been stronger.

**A WELL-HEALED BUILDING BOOM**

By Joel Warren Barna

Over the past five years, the market for new health-care facilities in Houston has been more robust than ever before. This is true despite the fact that the rest of the city's economy has suffered from the withering of sources of capital for new office and retail buildings, and despite the institution of cost-cutting measures by government officials and private insurers that drove down hospital populations, decreased hospital profit margins, and forced health-care-service providers to compete with each other for clients (for more on these cost-cutting measures, see "Health Care in an Evolving Market" and "In Health Care, Form Follows Funding," TAJ Jan/Feb 1986). Between 1985 and 1990 more than $1.5 billion in construction, expansion, and renovation projects were under way in the Texas Medical Center alone, with hundreds of millions of dollars worth of other projects scattered throughout the city.

Private institutions in the medical center have led the way, with projects that show the strategies used in a competitive atmosphere: "attracting shoppers" and "unbundling services."

The new 600,000-square-foot, $68-million Dunn Tower at the medical center's Methodist Hospital, for example, designed by Morris Architects of Houston and with interiors by Janita Lo & Associates, Inc., includes 338 new patient beds, 16 operating rooms, and new intensive-care and obstetrics/gynecology suites. The Dunn Tower's sumptuously hotel-like public spaces provide the medical center's largest single hospital with a new front entrance on Fannin Street; more important, these public spaces reorient the experience of entering the hospital for everyone who passes through them, and they have been matched by a new, hotel-like attentiveness to patient care. The Dunn Tower responds to a marketplace where patients have to shop for medical services.

The $16-million renovation of the six-story Cullen Pavilion at nearby Hermann Hospital, designed by Bernard Johnson Incorporated, similarly works to reestablish a clear sense of entry and orientation for patients and to give the hospital's public spaces a more hotel-like atmosphere.
At the same time that hospitals have been working to attract patients, they have had to “unbundle” many of the services that would once have been provided during a hospital stay. New medical office towers in the medical center now contain not only doctors’ offices but ambulatory-surgery centers, cardiac-catheterization laboratories, and other clinics that provide services for patients who come for brief diagnostic or treatment visits.

For example, several floors of the new 25-story, 1-million-square-foot Smith Tower at Methodist Hospital (designed by Lloyd Jones Fillpott Associates) and the adjacent Scurlock Tower (Morris/Aubry, 1980) have been organized to provide new space together for Methodist Hospital’s outpatient surgical and diagnostic services. The design, by Philo Architects, Inc., carries over the Dunn Tower’s hotel-lobby imagery.

The new $5.8-million, 39,000-square-foot Catheterization Laboratory and Coronary Care Unit in a new office wing at St. Luke’s Episcopal Hospital consolidates services that were once spread over two hospital floors, at the same time that it allows for updating of the hospital’s equipment. Changing technology has been as important to the demand for new healthcare building as changes in the way governmental and private insurers pay for patient benefits: indeed, as architect Gilbert Hoffman wrote in a comprehensive article on new medical center construction in the September and October 1988 issues of the Houston Chapter/AIA newsletter, “[A]dvances in medical ... technology have made it more effective to abandon [some] buildings than to update them.”

St. Luke’s Episcopal Hospital is also the site of a new $70-million, 26-story medical office building (with a central tower rising over six floors of parking), currently under construction. It was designed by Cesar Pelli & Associates, of New Haven, Conn., with Houston-based Kendall/Heaton Associates, Inc., and Brooks/Collier, Inc., associate architects. Early plans
The health-care market requires that hospitals "unbundle" services that would have once required a hospital stay. Philo Architects, Inc., used hotel-like lobby spaces to tie together outpatient clinic areas in two medical-office towers at Methodist Hospital (above and above right).

Unlike those of nearby new private hospitals, the public spaces at Ben Taub Replacement Hospital (above) are spartan; the budget priorities of the Harris County Hospital District emphasized technological capability over amenity.

Right: Bernard Johnson, Inc., renovated the six-story Cullen Pavilion at Hermann Hospital to reestablish a clear orientation and a welcoming atmosphere.

A joint-venture team of CRSS and Llewelyn-Davies Sahni of Houston designed the Ben Taub Replacement Hospital for the Harris County Hospital District. With its brick and glass skin and stair towers, the new hospital provides a strong image at the edge of the medical center for the city's premier indigent-care hospital.
called for a "medical mall" in the building's seventh-
floor public spaces, but architects say that, except for
an ambulatory-surgical center and some conventional
retail spaces, the building will be a traditional medical
office tower. Nevertheless, it will be an important
addition to the confusing urban spaces of the medical
center. Observers predict that the St. Luke's Medical
Tower, with its glass skin and (syringe-like) twin towers,
will become the area's premier landmark, like
Johnson/Burgee's Transco Tower in the Galleria.

Nearly, at Texas Children's Hospital, officials are
building a three-story critical-care and surgical addi-
tion and a tower, designed by Kenneth Bentsen Asso-
ciates of Houston; the total budget for the projects is
$127 million.

Publicly funded entities have also been actively
building. A $133-million, 750,000-square-foot re-
placement for Harris County's Ben Taub General
Hospital, designed by a joint venture of Llewelyn-
Davies Sahni and CRSS of Houston, was recently
completed, establishing greater visibility and improved
facilities for this crucial Houston institution. East of
the medical center, the Veterans Administration is
building a $210-million, 1.5-million-square-foot hos-
pital, designed by a joint venture of 3D/International
of Houston and Stone Marraccini and Patterson of
San Francisco.

A number of research facilities have also recently
been completed. Bernard Johnson Incorporated and
3/D International in joint venture designed the new
11-story, $55-million Children's Nutrition Research
HOUSTON HEALTH CARE

Gelsomino Johnson Architects' new Cardiac Care Unit and Catheterization Laboratory at St. Luke's Episcopal Hospital (right and far right) provides dramatically new technology and consolidates services that previously were spread over two floors.

Kenneth Bentsen Associates designed the new medical-office and outpatient-care tower and a three-story surgical care wing for Texas Children's Hospital (right). Page Southerland Page is consulting architect on the outpatient-care tower.

Center, which is funded by the U.S. Department of Agriculture and operated by the Baylor College of Medicine. Bernard Johnson Incorporated has designed the new two-phased $23-million, 11-story biomedical-research center for Texas A&M University, on the old Shamrock Hotel site. This facility, along with the new biochemistry research building on the Rice University campus nearby, designed by Cambridge Seven of Boston, Mass., is a place where researchers hope not only to come up with medical breakthroughs, but to bring basic research to commercial development. Houston's continued economic diversification depends heavily on the success of such ventures, analysts say.

Away from the concentration around the medical center, other new hospitals have been built to bring services to outlying areas of the sprawling city. A new $51-million, 300-bed Lyndon Baines Johnson Hospital for the Harris County Hospital District has been completed in northeast Houston; it was designed by a joint venture of Rees Associates of Texas, Inc., and Llewelyn-Davies Sahn. Falick/Klein Partnership designed the 219,000-square-foot, $25.4-million Memorial Northwest Hospital for Memorial Care Systems, recently completed to replace a 1950s hospital on the same site in the Heights area.

All these projects have been built while economic disaster seemed to threaten Houston. Now that a widespread recovery is under way, health-care design will continue to be an important component of the Houston economy.
The Lyndon Baines Johnson Hospital, designed by a joint venture of Rees Associates of Texas, Inc., and Llewelyn-Davies Sohni, provides 300 beds and a 15,000-births-per-year maternity center in northeast Houston. It was built for $51 million, three million less than the original budget.

George R. Brown Hall, a 107,000-square-foot, three-story biotechnology research center at Rice University, was designed by Cambridge Seven of Boston, Mass.

Left and below: Falick/Klein Partnership added a strong vertical element to the entry of their addition to Memorial Northwest Hospital, which provides orientation for the outpatient surgery and diagnostic services that are now clustered at the center of the facility, increasing ease of patient access.
Apple Computer Market Center 40
Gensler and Associates/Architects, Houston, uses simple geometry and crisp colors to marry high-tech and corporate looks.

W. Joe Sanders & Associates 43
Gensler and Associates/Architects, Houston, provides a low-budget stage-set for a showroom in a prominent location.

Gunlocke 44
Hermanovski Lauck Design combines black pipes and steel mesh with high-gloss wood furniture for contrast and energy.

DesignTex Fabrics 45
In another block-backgrounded showroom, Hermanovski Lauck uses the company’s entire stock as wallcovering and display.

Haworth Interiors 46
HOK uses hot red peppers, Legos, dollar bills, and a cost of modernist greats to line the walls of this systems-furniture showroom.

Entry (right) and VIP lounge (above), where visitors encounter an intentionally corporate design statement about the inventors of “the computer for the rest of us,” who wish now to build upon a growing business-computer base.
Gensler's Polished Apple

FOR THE NEW 12,500-square-foot Apple Computer Market Center in Dallas's Infomart, Gensler and Associates/Architects tried to marry leading-edge technology with the smooth look of corporate interiors for the business clients that Apple wants to attract.

The showroom is a white square that has been divided diagonally. A semi-circular drum, holding rooms for seminars and briefings, fills most of one half. In the other half, support-function areas flank the exterior. Display areas and visitor seating are set in the white-painted walls.

Throughout, colors contrast crisply. The canted surface of the briefing-room drum is faced in glowing anigre wood, set off from the white of surrounding walls and floor. Steel-and-glass display shelves project from the walls of the showroom shell. Graphics in the center are almost all in white, with a minimum of line and detail, to emphasize a feeling of freshness and clarity. The reception desk is a black box set off-center in the entry area.

The way that the computers are incorporated into the overall design is a crucial part of the marketing center's success. A large computer monitor is set into the anigre-paneled wall to welcome visitors, while a series of wall-mounted computers in the entry area facilitate both visitor check-in and hands-on demonstrations. Computers and peripheral equipment are displayed in the main products area in stylized settings; as a sales person demonstrates the computer equipment at desk height, a duplicate of the screen image being worked with appears on a large monitor in the wall above. The nerve center of the showroom is a telecommunications room that also plays a crucial role in sales presentations.

Joel Warren Barna
Left: seminar area

Below left: environment area

Below: one of three conference rooms
Low-budget Stage Set

The recently completed showroom in Dallas’s Contract Design Center for W. Joe Sanders & Associates measures only 2,400 square feet, but it is prominently located, with glass frontage on three sides facing the building’s atrium. This meant that Gensler and Associates/Architects had to design a system for displaying diverse products from three sides at once. At the same time, the budget for the project was $15 per square foot. To solve the problem, they constructed two stage-set pavilions with several display areas. One pavilion incorporates hard materials—whitewashed plywood, waferboard, and raw two-by-fours, against which chairs are displayed under theatrical lighting. The other is covered in a neutral-colored crinkled cotton fabric, hung from galvanized pipes. A reception/office area along the windowless wall has a desk composed of gray plastic laminate, partly backlit and framed by red-laminate-covered pylons. A geometrical pattern of floor tiles, playing off these colors, establishes the space’s main circulation axis. *JWB*

---

**PROJECT** W. Joe Sanders & Associates Showroom, Dallas

**ARCHITECT** Gensler and Associates/Architects, Houston (Dean Sroubeau, project principal; Suzanne Labarte, project designer, project architect)

**CONTRACTOR** George A. Fuller

**PHOTOGRAPHER** J. Hemier

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Top: view from entry, “hard” pavilion at left, “soft” pavilion at right

Above left: Low-budget flooring and other materials, along with simple details, make for a no-nonsense, working showroom.

Above: Whitewashed plywood serves as an “anti-display” for sleek furniture.

Left: plan
ONE of a pair of showrooms designed by the Dallas firm Hermanovski Lauck Design at the Dallas Design District is the two-year-old space of Gunlocke, a major contract-furniture company.

The designers say they conceived of the project as a "stage-set backdrop for the product, contrasting the spare brutal environment with the high wood finishes of the furniture." The black pipes and steel mesh used to frame the three primary displays in the showroom are not just spare and brutal, but almost ominous. In context with the firm-footed, glossy furniture samples, however, the pipes lose their visual weight and the mesh becomes a thin veil inviting visitors to continue moving from one display to the next.

Interspersed throughout the space are colorful banners and painted elements that add a level of visual punctuation and animate the abrupt contrasts between product and armature. Ray Don Tilley

PROJECT Gunlocke Showroom, Dallas
CLIENT Gunlocke, New York
DESIGNER Hermanovski Lauck Design, Dallas (Carol Hermanovski, principal-in-charge; Hector Ruiz, project manager; Jeff Henry, project designer)
CONSULTANT Mary Preston (lighting)
CONTRACTOR Mengel/Cromer/Sheppard
PHOTOGRAPHER James F Wilson

Above left: the "scenic vista" pits industrial framework against high-polish furniture.

Above: conference room, with view to entry

Top: view of reception area from entry

PROJECT

KEY TO PLAN
1. ENTRY
2. RECEPTION
3. CONFERENCE
4. FABRIC DISPLAY
5. WORKROOM
Textile Textures

HERMANOVSKI

Lauck's design for DesignTex Fabrics (completed in January 1988, just two months before the Gunlocke Showroom) exploits the exaggerated perspective of a potentially troublesome narrow tenant space by adding a pair of skewed freestanding linear walls on which the company's extensive selection is displayed. By skewing the walls, the designers point out, they afforded visitors an overview of the entire fabric line from one spot.

As it did with pipes and mesh in the Gunlocke showroom, Hermanovski Lauck adds a stage-set reference, using one of DesignTex's economical cotton fabrics as a drape along the perimeter wall, peeling back to imply, perhaps, the opening of some performance. Black walls again create a receding backdrop for a product with rich textures and colors. RDT

PROJECT DesignTex Fabrics Showroom, Dallas
CLIENT DesignTex Fabrics, Inc., New York
DESIGNER Hermanovski Lauck Design, Dallas (Carol Hermanovski, principal-in-charge; Hector Ruiz, project manager; Jeff Henry, project designer)
CONSULTANTS Steve Dunn & Partners (mechanical, electrical, plumbing); Mary Pyton (lighting)
CONTRACTOR Wegner Commercial
PHOTOGRAPHER James F. Wilson

Top: at entry, one can see the company's entire textile selection.

Above left: color is introduced in non-display spaces

Above right: An expanse of the company's fabric offsets the arrangement of smaller samples and alludes to the stage.
Not just for designers

The Haworth showroom in Dallas is in an office building away from the district where most other systems-furniture manufacturers in the city show their products. This departure from the norm is also reflected in the showroom's design. Mike Tatum, head of HOK's design team, conceived the Haworth space polemically, as a response to what he sees as the shortcomings of other furniture showrooms, which "because their design was so 'designer-driven' and esoteric, . . . often distracted . . . and even offended clients." His space, he suggested, would "support the facility's . . . sales mission, " instead of appealing to designers whose "proud sense of sociological separateness from the mainstream" creates sales-killing barriers.

With its superscaled murals and its art deco-styled theatrical lobby and presentation room, the Haworth showroom is intended to be a form of "three-dimensional advertising" that speaks to issues of concern to clients, telling the product story in pictures. The chili peppers backdrop (intended to appeal to visiting designers) conveys the message that the system displayed can look "hot," while backdrops of money, a chameleon, and Legos hint at economy, flexibility, and changing appearance. The district sales offices are finished plainly with systems that were assembled by the staff, to show that Haworth can provide a low-cost, efficient work space that is easy to install. JW B

The photos on this page and at top of the facing page illustrate HOK's use of bold motifs that tell Haworth's product story in pictures.

Top: the showroom's unofficial namesake, hot red peppers; left: Lego building blocks; above: money
Top: an impossible meeting of the modernist masters

Above left: lounge

Above: district sales office

PROJECT  Haworth Showroom, Quadrangle, Dallas
ARCHITECT  Hellmuth, Obata & Kassabaum, Inc., Dallas
Guide to the convention city 48
BOOKS Houston's first architectural guidebook in 18 years will accompany the AIA Convention in May.

The lessons of a big wind 49
ARCHITECT ABROAD As hurricane season begins, Nick Glozbrook recalls surviving mighty Huga on St. Croix last year.

Image as selling tool 49
MARKETING Not all Texas architects were battered by the rollercoaster '70s and '80s. Here's one reason why.

PGAL: past and present 56
FIRM PROFILE The Office of Pierce Goodwin Alexander & Linville has built a far-reaching corporate and institutional practice.

The architecture of awakening 58
THOUGHTS Prize-winning architect Milosav Cekic explores the link between personal transformation and sublime architecture.

An artist's studio and library 60
IN PROGRESS Light and sculpture define a small composition of volumes in Monterey.

Camp of hope 62
IN PROGRESS A Bosque County ranch will be a rare retreat for chronically ill children.

Storm-making for safety 64
SCHOOLS At Texas Tech, a research lab employs a "tornado missile cannon" to test materials in natural disasters, safely.

New products and literature 66
ON PAPER Houston architect John Rogers evokes in watercolors the mystical duality of a work-in-progress based on an old silo.

Chapter publishes essential Guide

HOUSTON IS NOT easily understood. It flouts urban-design conventions, and change seems to be its only constant. The city center was bulldozed and reconstituted as an office park, and developers have built a necklace of satellite downtowns along its highway interchanges. There's not a primary building type or material, nor a historical apogee that lends a distinctive character to the built environment. And the suburban periphery is so diffuse that it has not yet produced an identity as compelling as that of downtown.

Given this state of affairs, the new Houston Architectural Guide, written by Stephen Fox and with photographs by Gerald Moorhead and a foreword by Peter Papademetriou, is more than a mere convenience; it's one of the few ways to understand the city in its entirety. Thumb through this book, and you'll begin to trace the city's implicit logic, which is governed by the car, certainly, but with glimpses of tradition still available. The Houston Architectural Guide reveals lodes of architectural riches, from California-style bungalows to pockets of Georgian-revival estates and enclaves of modernist apartment buildings.

Stephen Fox's text is packed with information and often witty; despite the weight of the material he has to convey, Fox is never pedantic in tone. The book's sensible approach is to divide the city into 13 districts, with a total of 852 buildings listed in 19 tours for automotive sightseers. Fox's critical eye is as assured as his prose, and he doesn't hesitate to score those who have devalued the public realm. Buildings that many overlook, from Ulrich Franzen's Alley Theater to Allen Parkway Village, prove to be meritorious in Fox's account. Readers will be likely to take second looks at Houston's stock of buildings, as well as to take pleasure in Alamo motifs and the idiosyncratic shopping centers of the 1950s.

Peter Papademetriou, who wrote the predecessor to this guide in 1972, writes a foreword that contrasts past standards of urban quality with those derived from our current relativistic ethos. His essay is provocative, but he demurs from any summary assessment about this young city, leaving it for readers to attempt on their own.

Here's an insider's tip for the architecture buff encountering Houston for the first time: as you drive along the prescribed tours, get out of your car—you won't melt—and look up at the live oak trees and mountains of clouds overhead. They're common to every part of the city, and grander than anything built by human hands. In a city that is architecturally episodic, this backdrop is Houston's most magnificently consistent offering.  

Philip Ariddi

Philip Ariddi, an associate editor at Progressive Architecture, is proud to say he studied architecture for four years in Houston.
Confessions of a closet architect

ARCHITECT ABROAD

I was on St. Croix, during Hurricane Hugo last year, when I discovered that glass jalousies could be tuned.

I sat in my apartment with jalousie (louvered) windows and doors on both sides. When water and wind blasted one side, the windows on the opposite side flexed outward, as if being sucked out. I found that by cracking the louvers I could relieve the pressure. When the wind changed I shut off the windward side and cracked the leeward side.

Tuning the louvers gave me something to do. It was the middle of the night and I was alone. The wind roared like an approaching freight train if your ear were held close to the tracks. There was no electricity or telephone, just a flickering candle.

My great fear was of being cut by flying glass. I built a barricade by putting a mattress on the floor and turning the box springs on edge alongside the mattress and there I reclined when not tuning louvers or writing in my journal at the dining table. About 11:30, glass crashed to the floor from the east side. It was then that I retreated behind the sliding louvered doors of the closet.

I spent most of the night there, feeling safe from flying glass because the closets were parallel to the air flow. But as I leaned against the party wall I could feel the concrete block shudder and the whole building shake. The barometric pressure dropped so fast I continually had to clear my ears.

I remembered a conversation that I had had a few weeks earlier with a local designer, Ted Schultz. I had been in his office on the island all summer designing houses. We were remarking that people buy these beautiful sites overlooking the Caribbean Sea and invariably want rooms with vast glass areas to take in the view. Bringing the outside in is now so much a part of today's architecture that architects and clients alike take it for granted.

Having no division between inside and outside is a relatively new idea, particularly to the Caribbean. Ted suggested it was a stateside idea imported to the islands. Sometimes we forget why people built they way they used to.

What's in an image? Perhaps your future

MARKETING

TEXAS ARCHITECTS have always been considered rugged pioneers in marketing professional services. They are still. Thriving on chaos in the 1970s and 1980s, they punched through the envelope to new frontiers of practice.

In truth, they had no choice. Among the first professionals to staff and support an organized marketing program, many Texas architects also used innovative strategies that enabled them not only to survive the bust but to prevail.

Strategies such as geographic diversification, client maintenance, principal leadership, and automation explain why many Texas firms withstood the marketplace of the last decade. But only partly. Many Texas architects also learned that the other part of successful marketing can be ignored only at the risk of losing the competitive edge.

That part is "image-building." It is no less important than the urgency of finding work. It is, however, more cost-effective. The return on investment in image-building can be substantially higher than other direct business-development efforts, and its impact more enduring. As a marketing strategy, it is always targeted to clients and the marketplace in general. Never is it pursued to polish an ego that simply needs a shine.

It does set the stage for direct sales efforts—the initial meetings, qualifications, proposals, and interviews—that may culminate in winning a commission. Simply put, it precedes them. It builds an image so that prospective clients know you in advance, before you call on them, and long before they list the firms to invite for their next project. Building an image can involve innumerable and costly tactics. But it need not. Three basic strategies work best:

Build an image of achievement. Creating excitement and credibility about a firm's achievements can bring both client and peer recognition, as well as bottom-line results. Clients like to hire winners. Highlight a recent design award, new contract, appointment to a prestigious board, or recent staff additions and promotions through efforts that communicate the good news.

"Survey," continued on page 55.

Howard Glazbrook III

Howard "Nick" Glazbrook III plans some­day to help rebuild St. Croix, but for now practices in Dallas, which he calls "an easier place to live and work."
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2nd Annual Graphics Competition

Use the entry form on the facing page to participate in this year’s competition.

AWARDS

Given in each category to as many entries as the judges feel merit award. Each entry is judged on its own merits, not on a directly competitive basis with other entries. The judges can choose no to name a winner in a category if they feel no entries merit award. Winning entries will receive the following:

- Certificate of award.
- Publication in Texas Architect.
- Display at the 1990 TSA Annual Meeting.
- Promotion to other publications.

RULES

Eligibility. Eligible work must have been produced by a current member, associate, or professional affiliate of the Texas Society of Architects, or a currently enrolled architecture student at the University of Houston, Rice University, Texas A&M University, University of Texas at Arlington, University of Texas at Austin, or Texas Tech University.

Materials. For Architectural Delineation, Working Drawings, Concept and Imagination, and Sketch Books categories, submit one slide for each entry. A description sheet containing the following textual information is required for each entry:

- Actual Size of Original and Materials Used. High-quality duplicate slides are acceptable. The original or a 4x5 transparency must be available for publication should the entry receive an award.
- For Publication Graphics and Business Graphics, submit each entry mounted on no more than one 20x30-inch foam-core or rigid illustration board, leaving a two-inch margin on all sides for hanging. Do not use glass.
- Any entry that does not follow all rules for submission will be disqualified. Entrants will not be notified of disqualifications, nor will entry fees be refunded.

Entry Form. Complete one form for each entry and attach it to the back of the mounting surface or clip it to the slide sleeve. Use photocopies of the form if necessary. Complete the summary of entries on one of the entry forms and attach an envelope with one check for the total fees.

To preserve anonymity of entries, remove any firm name, logo, or renderers name from the entry, except in cases such as letterhead and brochure work where the firm name or logo is integral to the presentation.

Entry Fee. A fee of $45 for each entry by a TSA member, or $30 for each student entry, must be included with your submission. After judging, an additional payment of $75 will be required for each winning color entry to help offset the cost of four-color reproduction in Texas Architect.

Deadline. All entry materials must be received by Texas Architect no later than 5:00 p.m., Thursday, May 31, 1990. Entries are to be mailed or delivered to: Texas Architect, 114 West Seventh Street, Suite 1400

The Texas Architect

Graphics Competition

recognizes outstanding work by Texas architects as exhibited in drawings, renderings, sketches, and other two-dimensional media. Entrants are judged on the quality, style, and effectiveness of graphic design and presentation, rather than on the merits of any projects or details presented.

Entries are due at Texas Architect no later than 5:00 p.m., Thursday, May 31, 1990.
You can order copies of articles from Texas Architect for as little as a few pennies per copy and in quantities as few as 100. Reprints can be printed to the magazine's high standards in color or black-and-white, and will include your firm's logo, name, and address added at no charge. Some reformatting and custom layout is also available. For more information, call Circulation Manager Kim Burns (512/478-7386) or circle 144 on the reader inquiry card.
"Survey," continued from page 49

Send a one-page news release to local newspapers, trade magazines, and other publications that clients read. Launch a direct-mail program, using the same news release or a custom-designed announcement sent to your clients past, present, and prospective. Celebrate with a reception in your offices—or, better, in a recently-completed project—for clients and friends of the firm. Create an ad trumpeting your news to the world. Ads for many architects, in fact, can be seen regularly in local business journals and trade magazines. Some professionals have even tried ads on cable television and radio. Many of the busiest firms in Texas today advertised yesterday, and will tomorrow.

Build an image of expertise. Promoting expertise in a specialization has helped build architectural practices throughout Texas. While it has long been a method for penetrating a new or growing market, it requires an equally-targeted approach to image-building.

Publish a technical paper in an important journal; then buy it and distribute reprints. Address a client-oriented conference or convention on a specialized subject. Write special reports that demonstrate competence, expertise, and the proof of experience; use them in your qualifications and proposals. Videotape examples of relevant work and send copies to potential clients.

It is possible to cultivate an image of the "expert" around one or a few people. But by doing so, the risk of creating a "cult of personality" and even of losing that person grows greater. Emphasize collective expertise whenever possible, and the firm at large benefits.

Build an image of identity. A credible identity for your firm takes longer than other strategies. It often takes years. From business cards to glossy brochures, from the receptionist to the sales team, everything associated with a professional practice conveys an impression, an image, an identity.

The tactics that build a firm's identity range from the obvious to the exceptional. Staff attire and office appearance, the receptionist's greeting, and the intern's transmittal of project drawings ought to reinforce the firm's overall image positively.

But building an identity can also be accomplished by joining and participating in organizations or causes to which your clients belong. Submitting work to design-awards programs will receive peer recognition and publicity that will be read by clients. Producing marketing materials—brochures, project sheets, and a flexible "system" of information that customizes each submission—will advance the firm's interests.

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Randle Pollock

Randle Pollock, a Houston-based marketing and communications consultant, is currently president of the Society for Marketing Professional Services, Houston.

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THE ARCHITECTURE FIRM that is now called The Office of Pierce Goodwin Alexander & Linville has grown with urban Texas since the end of the Second World War, emerging from the 1980s as one of the largest and most active based in Houston.

The firm traces its roots to the decision by George F. Pierce, Jr., (born 1919; FAIA 1961; TSA Pitts Award 1985) to study architecture at Rice University (born in Dallas, Pierce was influenced by the buildings of George Dahl and Mark Lemmon to turn to architecture from his earlier study of physics) and to settle there after wartime service in the Navy. After working for Nunn & McGinty and Kenneth Franzheim, Pierce went into solo practice, occupying a desk in the Montrose Boulevard offices of engineer Walter P. Moore. Soon after, he went into partnership first with Herbert Cowell and later with Abel Pierce (born 1909) another Rice graduate (to whom he was not related); George handled design, and Abel, with 10 years more experience, handled production. A further reorganization for the young firm came when Pierce and Pierce were joined by Edwin J. Goodwin, Jr. (1926-82; FAIA 1973), a designer with almost no formal education but a natural gift for architectural design (Goodwin later passed the registration examination on the first try, George Pierce recalls). Until his death, Goodwin took the primary role in the firm, while Abel Pierce specialized in production and George Pierce handled marketing and design supervision.

Important early projects by the firm include the Kirby Lumber Office Building and Webster Elementary School (which won TSA design awards in 1956 and 1957, respectively). In 1959, The Office of George F. Pierce, Jr., and Abel B. Pierce, as the firm was then called, won a TSA design award for the Physics Laboratory on the Rice University Campus, the first of the firm’s eight major projects on the campus. Other TSA awards were won for the Houston State Psychiatric Institute in Houston; the First National Bank in Austin; the University Center at the University of Houston; the Houston Intercontinental Airport; and, in joint venture with Golemon & Rolfe, the Houston Intercontinental Airport.

Houston-born Earle S. Alexander, Jr. (born 1931; FAIA 1984), who attended Texas A&M University for two years and graduated from the University of Kansas, became a partner in the firm in 1969; in 1973, on the departure of Abel Pierce, the firm’s name became The Office of Pierce Goodwin Alexander, with Alexander as managing partner. Jack Linville (born 1946), a planner who studied at Georgia Tech, joined the firm and became president in 1988; other principals are Logic Tobola II (born 1940) a University of Texas graduate, and Burt C. Holdsworth (born 1932), a Texas A&M graduate. The firm has offices in Austin, Dallas, Tampa, Fla., and Washington, D.C.

Institutional clients, including universities, businesses, and a variety of government bodies, have brought the firm the bulk of its work; Alexander says their clients’ stability has increased the firm’s long-term strength.

Major projects by the firm include the Marathon Tower in Houston, among the largest office buildings in the city; Two Houston Center in downtown Houston; the Exxon Chemicals campus west of Houston, which is organized around a man-made lake, an idea later used at the nearby Conoco Headquarters; the entertainment mall called Studio City; and Six Greenspoint, the last office building in Houston of the early-'80s boom. When the market in Houston dried up, PGA was able to move into the Dallas market, winning major projects from Trammell Crow, including the million-square-foot Greenhill Park and the Preston Commons and Waterside Commons projects. Crow hired PGA for the Crown Center, a re-skinned '50s office tower in Phoenix, Ariz., and two new towers on an adjacent site. International projects include the facilities of Cameron Iron Works in Edinburgh, Scotland; and the interiors of the Bell Helicopter facility in Iran (a prize-winning interiors division has been active since the 1970s).

Projects under way by PGA&1 are even more diverse. The firm is working (with exhibit designer Disney Imagineering) on the NASA Visitors’ Center in Houston and on the National Airport in Washington, D.C., (with design firm Cesar Pelli & Associates).

Specializing not in office towers but in corporate campuses and other institutional buildings, The Office of Pierce Goodwin Alexander & Linville has been less visible to the public than its size and reach would lead one to expect. With growth into new markets and a more public mix of project types, however, that may change.

Joel Warren Barua
"Survey," continued on page 58
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Kahn: Architecture and Consciousness

THOUGHTS

ALTHOUGH I AM AN ARCHITECT, I have great difficulty understanding why the spectrum of issues within an architect's concern is so narrow. Such narrowness has produced devastating results in terms of not only aesthetics but economics (usually the main excuse for this kind of reductionism), social relationships, and the civic realm. It has caused the profession of architecture to sink in social respectability and self-esteem. Consciously or unconsciously, architectural orthodoxy promotes thinking that reduces human life only to that which is measurable, tangible, and immediately available to the senses.

I would like to explore architecture as a means of awakening to a transcendental dimension of life, an expression of the ultimate reality that connects us to the source of being. This statement presupposes an intangible, eternal principle beyond physical reality, with which one must be connected to be truly alive and to feel the deep mystery of life. I believe that contemplating the existence of this principle and invoking it in life is the central theme of all mythology and the essence of every religion.

Based on my experience of the powers of space realized in both manmade and natural spatial settings, I believe it is possible to create architecture of such tremendous power as to pitch us out of ordinary reality. Space as well as sound seems to have some direct connection with the way we are made; it can touch us in ways much broader and deeper than is possible through intellect alone. Architects throughout the ages have striven to incarnate, and their best examples exhibit this kind of powerful spatial invocation.

In our own century, we had a rare human being, an architect, whose life was a search for transcendent architectural principles: Louis I. Kahn. He died only 16 years ago but, as was the case with Thomas More or Mahatma Gandhi, his death has allowed the resonance of his message, at least for the time being, to grow weaker and weaker.

A couple of years ago, in fact, Peter Davey, editor-in-chief of Architectural Review, in a lecture at UT Austin about the future directions for architecture, did not even mention Kahn. It was his assessment that critical regionalism was architecture's most viable path.

This episode is interesting because of what it suggests. First, Davey may not have understood the real meaning of Louis Kahn's deep penetrations into the nature of existence. Second, in spite of the merit of Kahn's achievements, a sober (or cynical) view of human consciousness in the world today may leave one unwilling to believe there is readiness to pursue this path for architecture. Third, this idealistic pursuit may not be deemed appropriate by society for a "rational and respectable" professional dealing with the tangibles of practice in a capitalist economy.

In any case, Kahn's work is difficult to understand. It exists in a culture still motivated by material gain (though ever slowly waking up to the eco-humanistic realities) and in a profession in search of its identity again and in the midst of great confusion.

One of Kahn's fundamental contributions was to show that the work of an architect is really not about architecture; it is about life. It is about penetrating into the depths of the activities for which we build, discovering their fundamental spiritual nature. In the Exeter Academy Library, for instance, there is an overwhelming reinforcement of the notion of learning, of the great tradition of the West in the preservation and accumulation of knowledge. Perhaps the most poetic moment of this project is realized in a simple yet profound stroke of connection between reader, book, and a beam of light, embodied quietly in the study carrels surrounding one of the most powerful cries for knowledge I have ever experienced. Precisely through such subtle discovery do we become aware of the fundamental nature of our world. We also realize that spirituality is not rare and isolated, but imminent in everything around us, waiting to be discovered.

To take another familiar example, by giving every room at the Kimbell its own sky, Kahn expressed the fundamental nature of light as the source of life on the planet, its necessity for the visual experience, and the connection between natural light and the making and viewing of works of art. Again, an aspect of the physical world is elevated to a spiritual experience by a penetrating and ingenious invocation in space.

Kahn's is an architecture of a diminished ego. By ego I mean a conceptual structure of thoughts, beliefs, and ideas primarily from the intellect, with which most of us identify. Understanding that the ego is only one aspect of our being is a fundamental metaphysical realization that marks the beginning of individuation, the integration of the elements of our being into a whole person, and the acknowledgement of other ways of knowing beyond the intellect that are inherent in our being.

Kahn's buildings call attention not to themselves but to what he called the 'unmeasurable' reality they try to reflect. Kahn seeks not aesthetic beauty but a revelation of the nature of things, of the order of the universe. By revealing the nature of brick, which wants to be an arch, or by unveiling the relationship between mass and force in a cycloid vault, he reflects the order of the universe. As with a bird singing or a spider weaving its web, the beauty of the song or the intricacy of the web reflect the nature of the bird or the spider, not a conscious action on their part to create an aesthetic object.

For this very reason Kahn's buildings are not always beautiful in a purely aesthetic sense. They are vehicles of the source of being that Kahn calls silence. They are, however, valuable and in so doing become real because they participate in a transcendent reality that is beyond history; it is what Kahn calls volume zero of human existence. By invoking volume zero he disarms profane, continuous time and, not unlike the people of archaic societies, attempts what Mircea Eliade calls the "return to the mythical time of the beginning of
mankind. They describe not facts but the way the human psyche experiences facts. Archetypes are the way of transcribing the realm of the collective unconscious into consciousness. In Kahn's terminology archetype is identical to Form; it does not have shape or size, only character and spirit. Take one element out and the entire form falls apart.

One of the most common and most powerful symbols of man is the circle. It suggests a completed totality, beginning and end in both space and time, one and oneness, tomb and womb; it is a reflection of the psyche, or the Platonic soul. In Kahn's work the circle is always presented as a means to invoke the universal and unmeasurable. The square, on the other hand, symbolizes the circumstantial and measurable. Through the interplay of these two primary symbols Kahn renders visible our struggle: a limited awareness attempting to get in touch with the source of itself.

I believe it is possible to initiate or facilitate an awakening to one's own spiritual and depth potentials by modulating spatial means to invoke a mythological experience through architecture. It is architecture created not for aesthetics but for an experience of wonder and mystery of the world. Fundamental to its creation is not design or drafting skills but the architect's realization of this dimension of life. Coupled with exceptional expressive talent it eventually finds its way to radiance. To me, this awakening is the most important quality of the creative process in any art.

The architecture of awakening rewards individual transformation by redefining the boundary of our discipline and our participation in the world. In such a culture, the experience of the sublime and the concern about world hunger come from the same place. Finding the way to that place in ourselves by experiencing mythological spaces is what the architecture of Louis Kahn is really about. To me it represents the noblest pursuit in architecture and urban design.

Milovan Cekic

Milovan Cekic is an Austin architect and a visiting critic at UT Austin.
Where creation and reflection are one

IN PROGRESS

In a vacant lot at the home of Monterrey artist Romelia Milmo, work is under way on a small building that gracefully combines the disparate functions of painting studio and library.

Austin architect James Mayeux and Cecilia Rangel (a registered architect in Mexico and Mayeux's working partner and wife) created separate buildings for the two activities and, in a Gehryesque sculptural recombination, linked them with a pivotal mechanical tower. The skewed angles at which the three major elements meet derived from Mayeux's predilection for pragmatic geometries (see TZ, Jul/Aug 1988) as well as from the desire to integrate views of specific peaks among the mountains that surround the Mexican city and to capture and manipulate natural light.

The smaller, cubic library is capped by a *boceda catalana* dome, with a glass brick inset in its cupola to transmit a shaft of direct light all year long. The stucco-faced studio, by contrast, turns its 19-foot-high window wall to the constant north light. Ray Don Tilley

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“Survey,” continued on page 62
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One year ago, Dallasites Jan and Marc Myers donated a 137-acre tract of their Bosque County ranch as the site of a new camp to be built for children with a wide range of terminal illnesses. Camp John Marc Myers honors the memory of their son, who enjoyed going to the ranch, especially after he became ill with cancer, from which he died in 1987 at age nine.

The architects have designed a rambling, dispersed site plan, with primary communal buildings linked by an arcing open walk. Structures will be constructed to large degree using limestone blasted from a lakebed on-site and posts processed from cedar trees cleared during initial site work.

The camp is expected to open in the summer of 1991.

"Survey," continued on page 64
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Circle 63 on the reader inquiry card
Texas Tech's tempest in a research lab

Right: the "tornado cannon" propels wood at up to 150 mph into building-material samples.

Schools

Tornadoes and Texas go hand-in-hand. Each year Texas records more tornadoes than any other state, and the costs can be high. At the institute for Disaster Research at Texas Tech University in Lubbock, researchers study the effects of strong winds in the hope of reducing the toll of tornado season.

The institute focuses on the effects of weather on architectural designs and building materials. Kishor C. Mehta, director of the Wind Engineering Research Center, says the university has sent teams to major storms since 1970. "We can learn a lot from documenting the damage itself," Mehta says. "For example, what is the area... that is most likely to stand up?"

The studies have found that a small, central room is the safest during a storm, and that many beliefs about tornadoes are wrong. For example, many people open windows when a tornado approaches. But normal air leaks will equalize the air pressure inside, and the building's destruction may be hastened by opening it to the force of the wind.

The institute was created in 1970 after a tornado hit Lubbock, killing 26 people and causing over $1 million in damage. Researchers discovered while examining the wreckage that many buildings might have survived if the builders had reinforced corners and anchored roofs securely. Since then, the institute has developed criteria to protect buildings from excessive winds.

Because many tornado deaths occur outside, the institute developed an in-house shelter. A closet or other interior space is anchored to the foundation and lined with reinforced concrete blocks, which have survived tornado-force wind tests. "Once we began testing concrete blocks filled with grouting and metal reinforcing rods, all we made was toothpicks" from two-by-fours hurled by a tornado-simulating cannon at 150 mph, according to Dr. James McDonald, the head of the institute.

The institute also studies wind-borne projectiles such as gravel, hailstones, and small timber, which can shower people inside and out with window-glass. The Glass Research and Testing Laboratory has shown that laminated glass reduces the danger by keeping the pieces inside the window frame. The long-range goal of the program is a universal design recommendation for all building codes.

The institute hopes to prevent a repeat of the 1970 Lubbock disaster. "As we learn more and as we translate that into usage by architects and engineers," Mehta says, "they'll be able to construct buildings that are safer for people, that sustain less damage, and that will be more economical."

Laura Kenny-Negri
"Survey," continued on page 66
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Land and Sky

The design solution described by these watercolor renderings exemplifies an architecture that presents "not aesthetic beauty but a revelation of the nature of things, of the order of the universe," as described by Milosav Cekic in this issue (see "Survey").

Architect John Rogers of Houston has designed a farm house for a 30,000-acre ranch in Wharton owned by a divorced father in his late 30s who wanted a home "in which he and his children can experience a connection with their land, the environment, and the cosmos," says Rogers. The assemblage of structures incorporates and responds to a 40-foot-tall concrete silo that, like two weathered tin-roofed shacks, remains from the site's previous use as a prison farm. The silo (which will house a kiln), an orchard, and oak columns and stones retrieved on-site belong to the land, says Rogers. In contrast are the roofs and apertures of the new components, which invoke sun, wind, and sky, either literally or metaphorically. In Rogers's words, "The house becomes a site of intersection . . . [and] exists in the space between that which grows from the place and that which descends from the heavens."

Such intangible concerns would be hard to communicate in a set of working drawings, reduced to precise dimensions and reproduced in murky black and white. Through these drawings, however, which began as photocopies on watercolor paper and were rendered later, Rogers evokes the larger metaphysical connections that could otherwise only be adequately perceived from the built object. RDT
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