

MAY-JUNE 1984 VOL. 34 NO. 3

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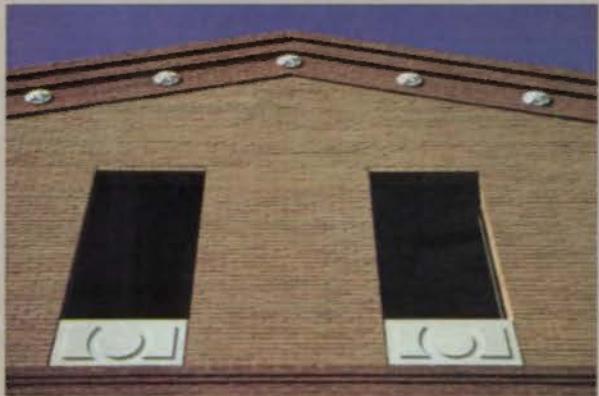
**COMING UP:** Next issue, Texas Architect will focus on adaptive re-use projects.

**ON THE COVER:** Houston bus stop opposite the Rice Hotel. Photo by Richard Payne; hand-tinting by Debbie Sharpe.

**Architectural Illustrations**  
Number Two in a Series of  
Informational Illustrations  
Subject: Masonry's Architectural Palette

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# Forms & Sha



▲ **Sid W. Richardson Physical Sciences Building, Fort Worth**

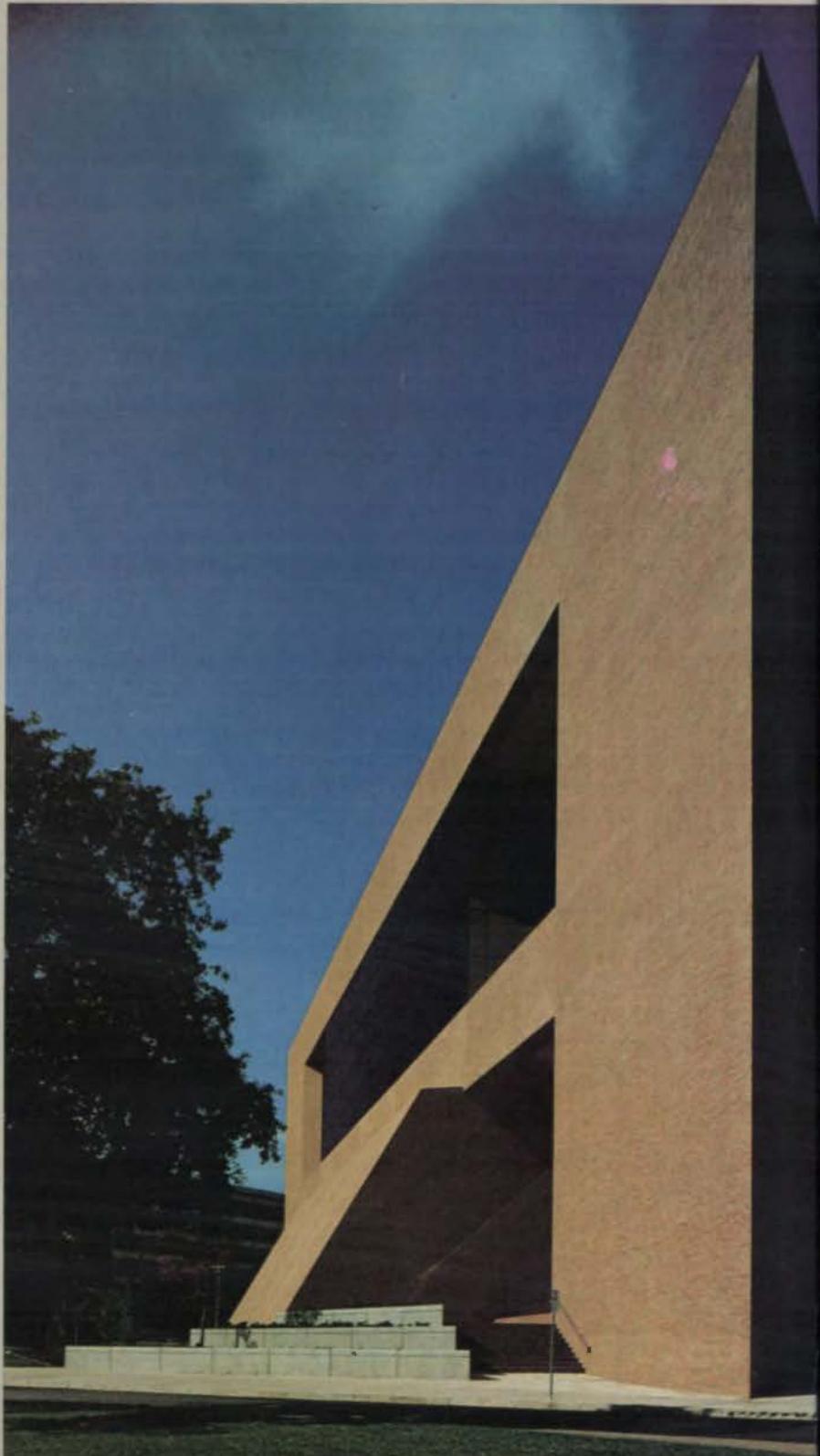
**Owner:** Texas Christian University  
**Architect:** Paul Rudolf  
New York, New York

▲ **Sugar Land Office Park, Houston**

**Owner:** Sugar Land One Limited  
**Architect:** Johnson/Burgee  
New York, New York  
Philip Johnson, FAIA  
Project Designer  
**Masonry Contractor:** Veazey Corporation  
Houston, Texas



Texas Masonry Institute  
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Houston, Texas 77042



# pes/Masonry

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Build It For Keeps With Masonry.



## ◀ School of Nursing Building, Arlington

**Owner:** University of Texas — Arlington  
**Architect:** Geren Associates  
Fort Worth, Texas  
**Masonry Contractor:** Masonry Incorporated  
Fort Worth, Texas

## ▲ Dallas Museum of Fine Arts, Dallas

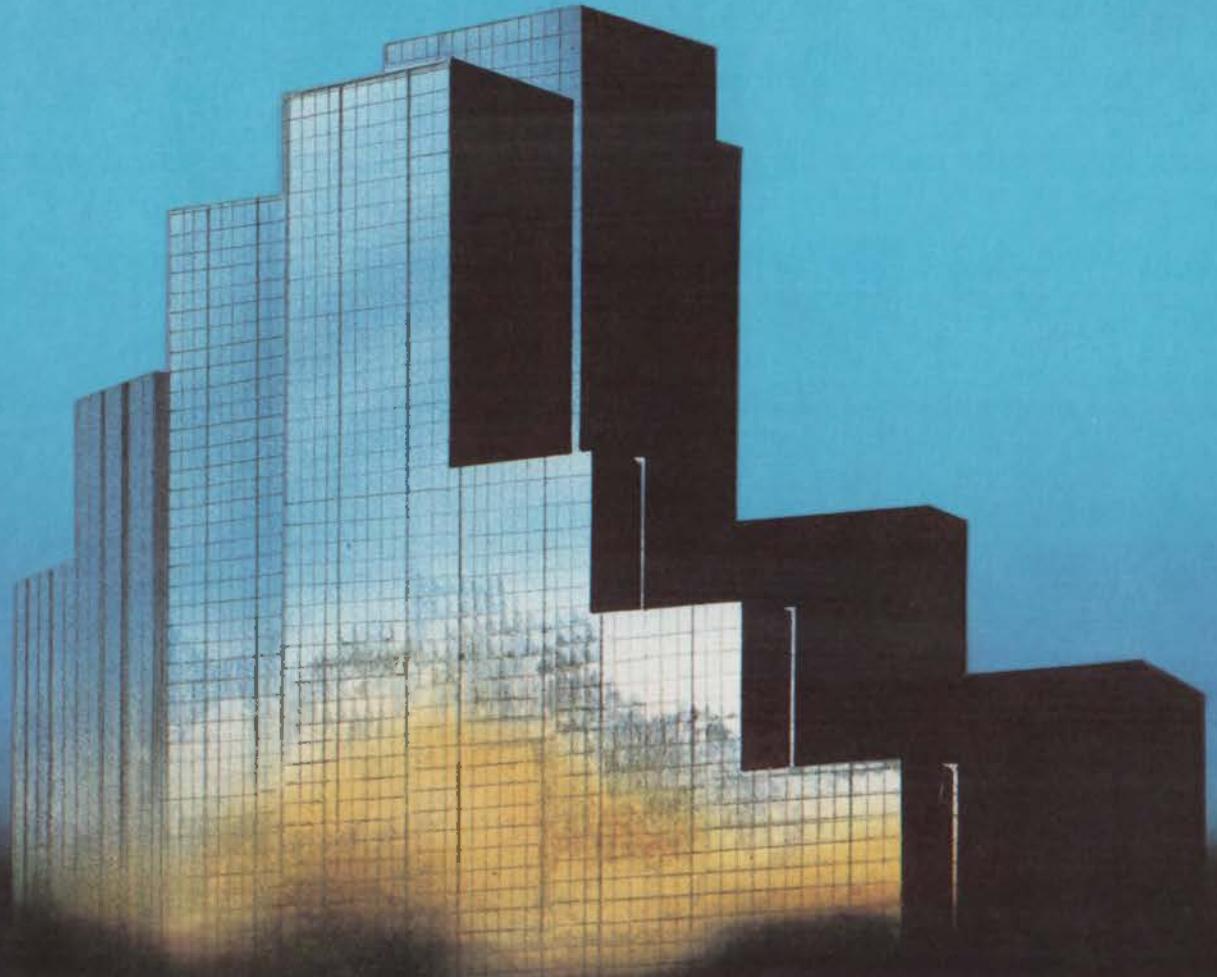
**Architect:** Edward Larabee Barnes  
New York, New York  
**Masonry Contractor:** Dee Brown Masonry, Incorporated  
Dallas, Texas



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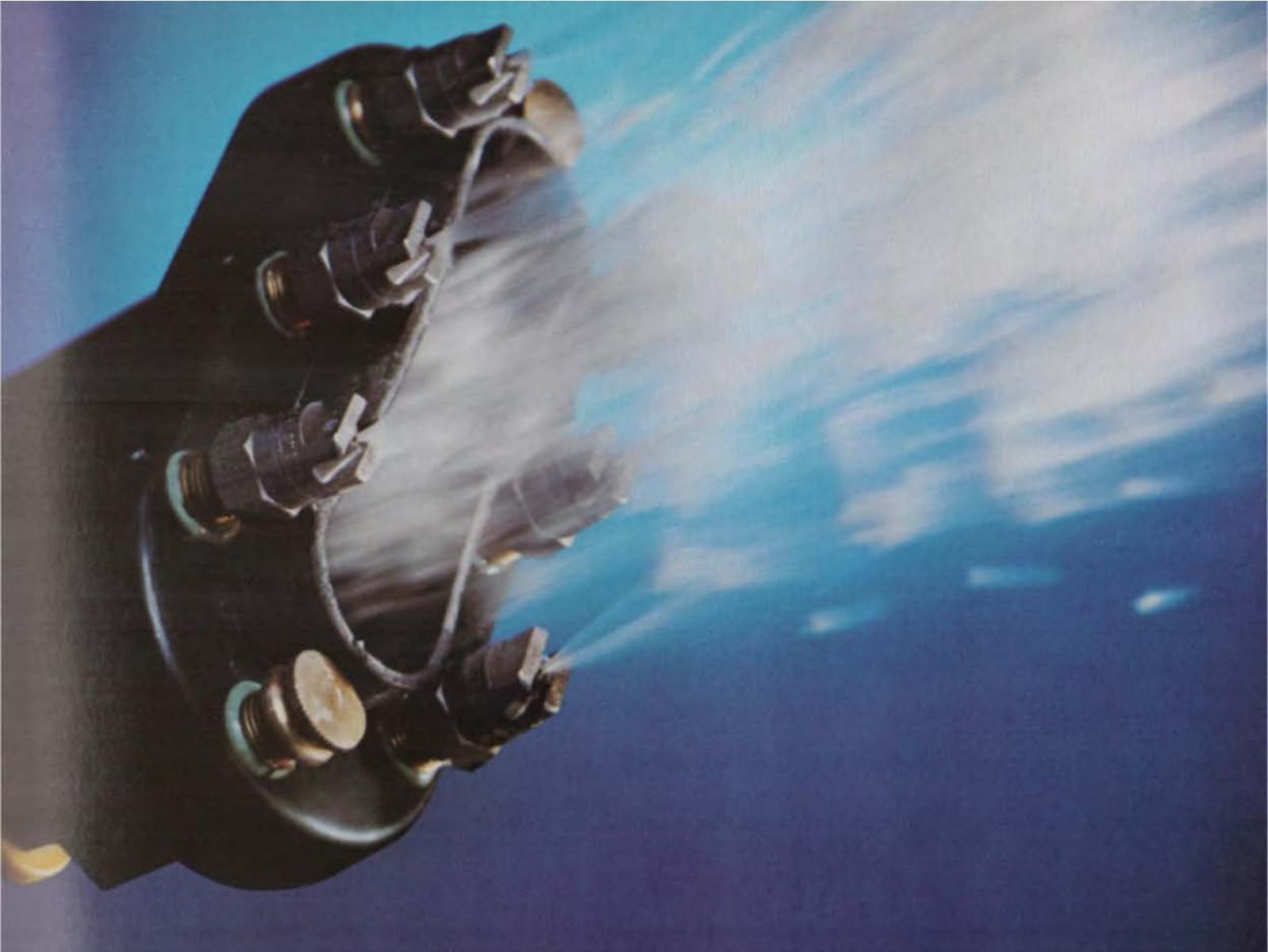
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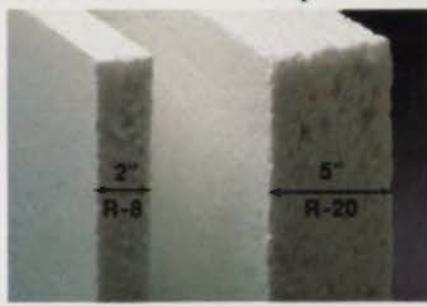
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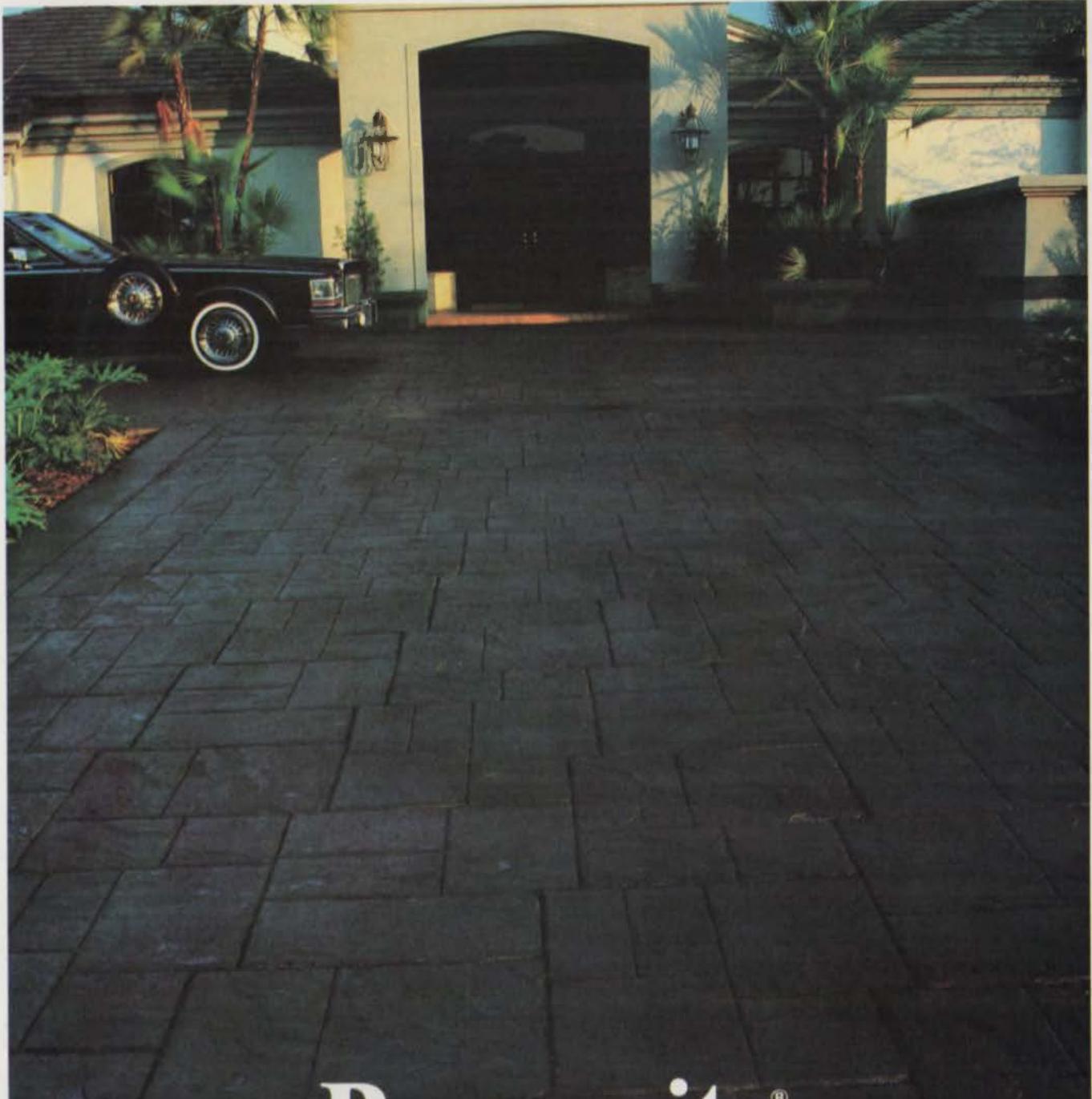
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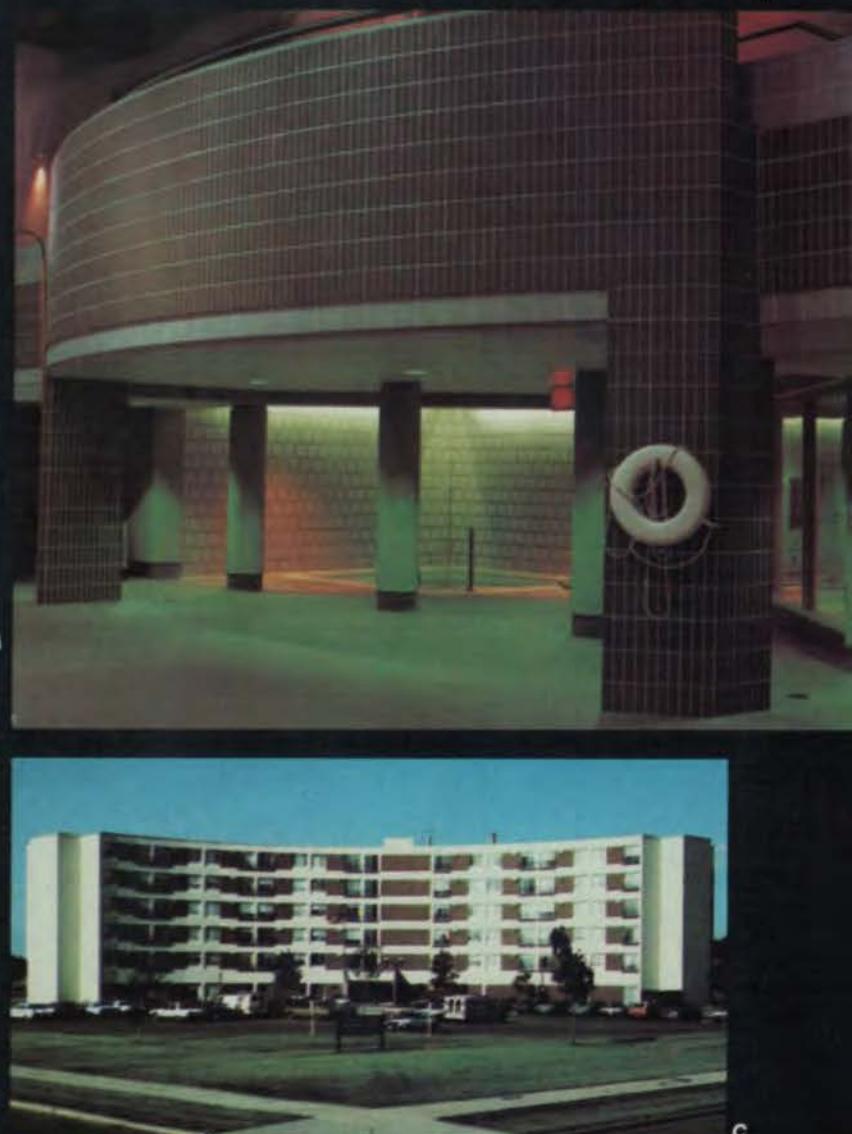
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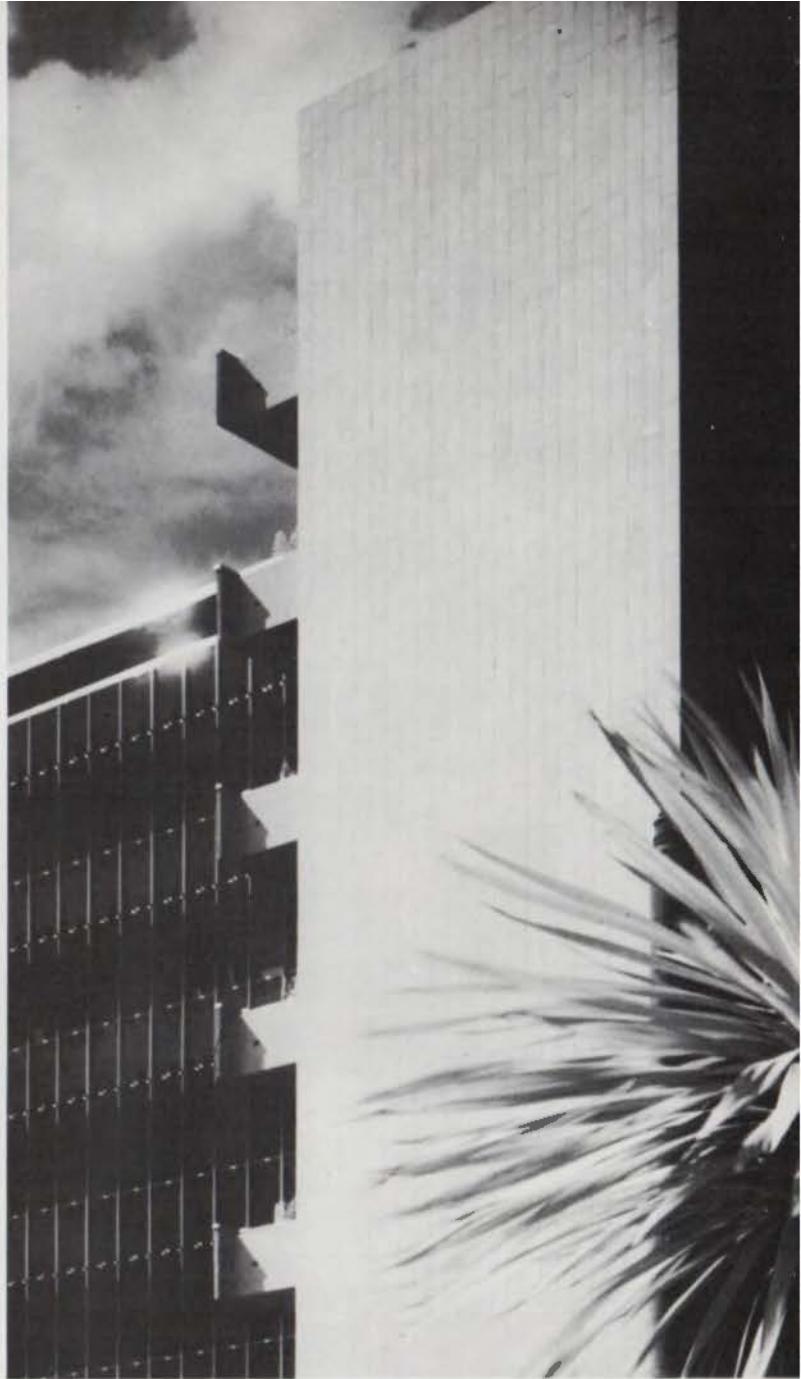
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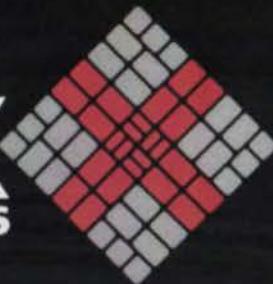
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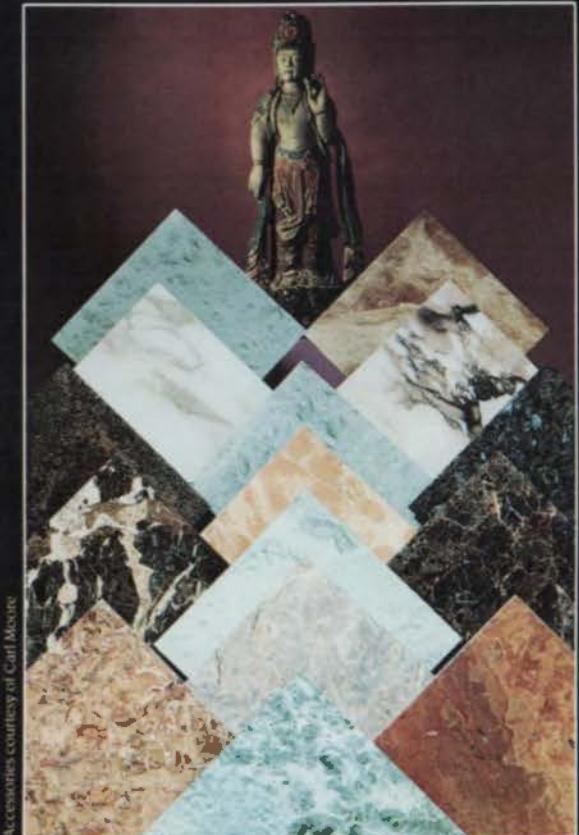
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*Edited by Ray Ydoyaga*

## WINNERS ANNOUNCED IN AUSTIN CITY HALL COMPETITION

It took no more than a few hours after the winners of the Austin Municipal Office Complex competition were announced for developers to scramble to align themselves with one of the winning architects. With that one touch Austin knew at least that its unique two-stage competition—one for schematic design and another for design development—was in its first stage a success. After two decades of planning and controversy over the concept of building a new city hall, the competition's optimistic interlude is being warmly welcomed.

The jury chose the following winners from among 38 entries:

- "Best of Show" First Award to the Austin firm Black, Atkinson & Vernooy, which recently placed in two other national competitions: second place in the Chandler, Arizona, City Center competition (see page 86) and a finalist in the Newport News Cultural Arts Pavilion competition, which is scheduled to announce a final winner in late June. BAV has also proposed a design for Austin City Center which is currently being considered for development (see page 75).

- First Award to the joint venture team of Lawrence Speck and Associates, Robert Jackson, Page Southerland Page, and Villalva Cotera Kolar, all of Austin.

- First Award to the joint venture team of Moore Ruble Yudell, Santa Monica, Shefelman & Nix, Austin and Peter Zweig, Houston.

Honorable Mention was given to Harry Weese & Associates, Chicago, as well as to the team of Jonathan Pearlman, Tim Cross and Diane Berry, all UT Austin architecture students.

The jury consisted of Jonathan Bennett, FAIA, New York; Boone Powell,



*Black, Atkinson & Vernooy's "Best of Show" design*



*Design by Speck, Jackson, Page Southerland Page, and Villalva Cotera Kolar*



*Design by Moore Ruble Yudell, Shefelman & Nix, and Zweig*

FAIA, Ford Powell & Carson, San Antonio; John Chase, FAIA, Chase and Associates, Houston; Hal Box, FAIA, dean of UT Austin School of Architecture; Natalie DeBlois, FAIA, UT Austin School of Architecture instructor.

### The competition

The City of Austin awarded \$10,000 each to the three winners and \$2500 each to the honorable mentions. Of the 38 design entries in the open competition, 19 were local firms and the rest were divided between Texas and national firms.

Under the competition's rules, the city is not committed to building any of the winners. Since Austin decided to fund the City Hall project by leasing to a developer at least two blocks of its three-and-three-quarter block site on the north banks of Town Lake, a second competition will be held later in the year to select development proposals. The local architectural community is still skeptical about the two-stage approach, although the jurors praised the competition process.

"I was pleased to see that some very useful criteria were demonstrated for the first-stage competition," Box says. "The competition has worked because the winners have set important building guidelines."

Barnett believes the city staff has been highly receptive to the competition and its results. "I must admit that I had some skepticism before the competition was held," he says, "But I think so far it has been very successful."

Members of the jury identified several important design criteria that were defined by the winners of the competition: the city hall should be centrally located on the site; public open space should be located in a central plaza with physical or psychological separations from traffic; ceremonial connections should be visible between the buildings and Third Street as well as Town Lake; the ceremonial axis on Second Street should contain focal points that connect it to Congress Avenue.

"If the city incorporates the jury's findings, and they have assured us that they will," Powell says, "then the developers will have to comply."

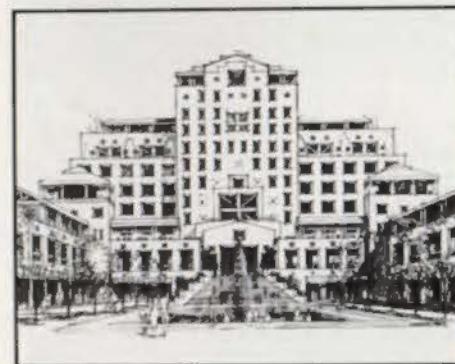
### The site

The Municipal Office Complex will be

located on the site of the existing and undistinguished melange of municipal offices that will all be demolished except for a small-scale historic structure, the Schneider Building. The three-and-three-quarter block site in the downtown warehouse district is one of the last undeveloped multi-block parcels on Town Lake. The project had to solve the practical aspects of consolidating all city offices, and the ideological notions of being a catalyst for the renaissance of the warehouse district. The city asked entrants to design retail spaces and speculative office buildings (with an optional hotel), as well as city offices and a public plaza.

### BAV's design:

All city offices, including the city council chamber, are located in the block north of a depressed civic plaza which BAV calls "the transitorium." The imposing city hall building, which sets an intermediate scale between office towers and lakefront, has a capped central tower and stepped wings. Double stoas partially surround the sunken transitorium and its retail shops—BAV calls it retail stoas. The design also calls for the purchase of an existing railroad depot for use as a new mass transit terminal.



BAV's city hall building

### Jurors' comments:

Barnett: It incorporates almost every single, good idea shown in all the other submissions. They created a very pleasant architectural vocabulary. There is also a sense of completeness about their design, the way all the buildings carefully relate to one another. I think their idea of reusing the railroad depot should be seriously considered by the city.

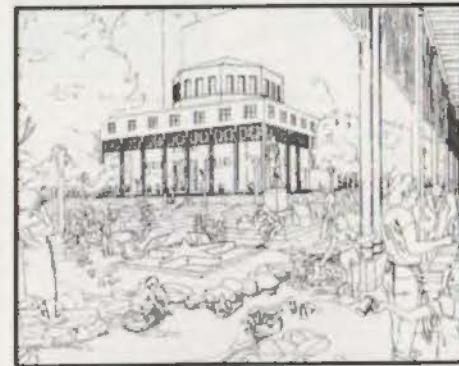
Box: Very successful in urban design and architectural terms. All the activity around the central plaza would be a real asset to the city. The cliché is to call it a

people place. What the jury appreciated most about the BAV scheme was the development of a scale that was both human for the people who will use the complex and the symbolism for the city as a place for municipal government.

Powell: BAV created a focus for real activity, inviting people to come and participate in city government. The sunken plaza surrounded by arcades and loggias is almost a Greek notion of bringing people into a civic setting for human interchange and activity, to stroll, sit or contemplate. And removing it one level from the street was vital—a really nice touch, an elegant idea.

### Speck/Jackson/PSP/VSC's design:

Primary "gathering" functions of City Hall—council chambers, reception rooms and meeting rooms—are concentrated in the "council house" on a square in the block between hotel and office buildings. All other city offices are located in a large building directly north of the council house. As in the traditional Texas courthouse square, the symbolic civic function of the council house occupies the focus of a public square and its surrounding pergola. The square itself is designed as a "map" of the original



Speck's council house

### 14 by 14 block plan for Austin.

### Jurors' comments:

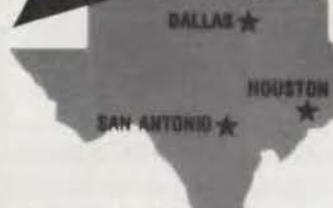
Box: "Very appealing council house. The square itself is quite intriguing with its layout based on the map of Austin. Very appealing pieces of architecture. An open, public-looking place and a very appropriate symbol for Austin. It's just beautiful."

Powell: "By placing the council chambers in a very symbolic way in the square, it becomes a clear and eloquent statement. Perhaps it was the strongest

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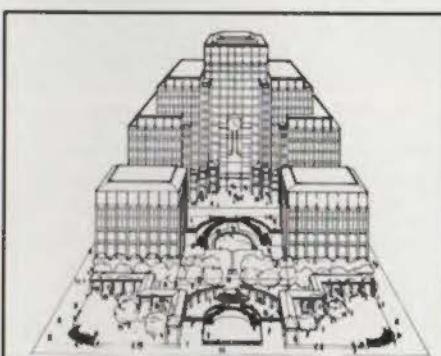
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statement of all the submissions that tried to symbolize city government. The other aspects of the scheme were strictly subordinate to the council house.

Barnett: I think we really liked this entry because of the symbolism. The City Council pavilion gave the whole complex a sense of civic identity.

### MRY/SN/Zweig's design:

City Hall offices are located on the block just north of a civic plaza. In addition, two small city office buildings would be added on the civic plaza during later expansion. Arcades and porches are used extensively throughout the complex. Windows are treated as a contemporary interpretation of the kinds of metal sash windows that might have been used in some of Austin's early warehouse architecture. The plaza is shaded by pergolas and native oaks and contains a series of fountains on stepped terraces.



MRY/SN/Zweig's plaza

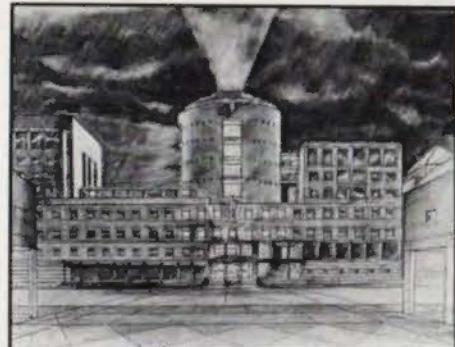
### Jurors' comments:

Powell: There's a real attempt to relate the facade to the surrounding warehouses. The porches and balconies were very interesting. A nice, sheltering kind of architecture.

Box: The scheme followed the logical diagram: a plaza below grade, a connection to the river and the major buildings in the center.



Harry Weese's scheme



Design by Pearlman Cross and Berry

The City of Austin will issue a development RFP in early September and choose a project before the end of the year. RFPs will be sent to a selected list of developers but anyone may enter project proposals by writing to Chuck Terry, Municipal Office Complex Project Coordinator, City of Austin Planning Department, PO Box 1088, Austin 78767.

## CRS WINS AIA HONOR AWARD

CRS/Caudill Rowlett Scott, Houston, won an AIA Honor Award for the design of Carver-Hawkeye Sports Arena, Iowa City, Iowa. One of 13 winners of the national architectural prize, CRS' design for the collegiate indoor stadium previously won a TSA Design Award (see *Texas Architect* Nov/Dec 1983), an Owens-Corning Energy Conservation



Carver-Hawkeye Arena by CRS

award and a Houston AIA Chapter Design Award. The AIA jury noted that Carver-Hawkeye achieves "the remarkable feat of making a large-scale arena blend harmoniously into its wooded setting on the campus of the University of Iowa." The architects placed the bulk of the structure underground in the contours of a natural ravine to reduce the intrusion of the massive, 15,000-seat struc-

ture on the campus environment. Carver-Haweye's most striking features, a lacy skew-chord space-truss roof and glass-block walls, were heralded by the jury as evoking "a lightness and attractiveness rare in such large structures.

#### DALLAS CHAPTER ANNOUNCED DESIGN AWARDS

Seven projects were chosen as winners in the 1984 Dallas AIA Chapter Design Awards. The jury consisted of Graham Gund, Cambridge, Mass.; Antoine Predock, Albuquerque; and Bates Lowry, director of the National Building Museum in Washington. There were no Honor or Interior Awards selected by the jury. Seven projects were chosen to receive Merit Awards:

- Benchmark Office Building, Longview; Gary M. Cunningham Architects/Planners.
- The Cain Center, Athens; The Oglesby Group.
- Kimberly-Clark Manufacturing and Distribution Center, Paris; Henningson, Durham & Richardson.
- 14840 Landmark, Dallas; Gary M. Cunningham Architects/Planners.
- One Forum and the Tenneco Office Building, San Antonio; Helmuth, Obata & Kassabaum.
- Tarrant County Courthouse, Fort Worth; Burson, Hendricks & Walls Architects with Ward Bogard & Associates.
- Texas Governor's Mansion, Austin; Burson, Hendricks & Walls Architects.

Citation Awards were given to two projects:

- New Covenant United Methodist



Tarrant County Courthouse



One Forum and Tenneco Building



New Covenant

Church, Sunnyvale; Parkey & Partners, and Good, Haas & Fulton Architects.

- The Wilson Block, 2900 Swiss Ave., Dallas; Downing Associates.



Governor's Mansion



14840 Landmark



Kimberly-Clark Center

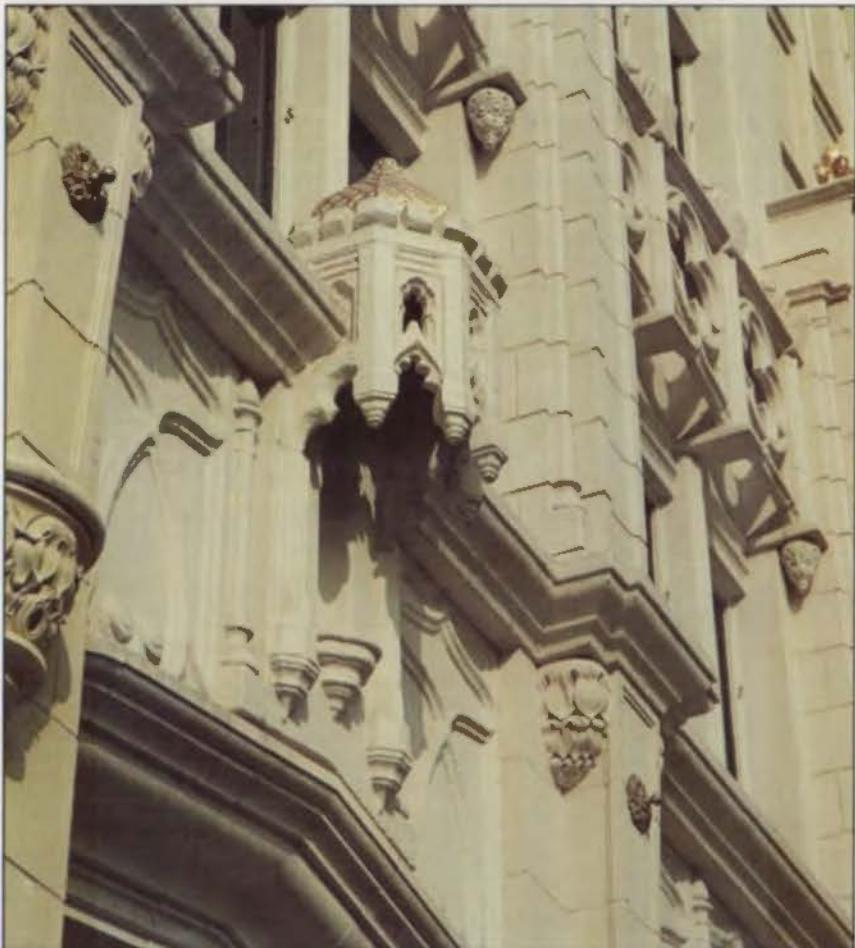
#### STATE BUILDINGS NOW CAN LEASE RETAIL SPACE

Modeled after the successful legislation that affected public/private rehabilitation of the National Post Office, a new state law that took effect Jan. 1 allows state offices to share spaces with private retail ventures. Under a law authored by State Senator Lloyd Doggett, D-Austin, the state Purchasing and General Services Commission is authorized to sell or lease the lower floors of state buildings for commercial, cultural, educational or recreational use. The law also requires PGSC to include a commercial leasing analysis when proposing any new state building.

NEWS, continued on page 30

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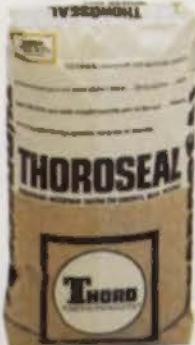


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Doggett introduced the bill because he felt state buildings are usually sited on prime real estate in many Texas cities, yet are in use only 40 hours a week.

"Dark, empty buildings contribute to lifeless, dangerous streets," he said. "The state would be better off financially to rent this prime space and house state offices on the upper floors."

### HIGH-MINDED SYMPOSIUM EXPLORES URBAN ISSUES

Planning for the American city and its surrounding landscape has been the subject of conflicting opinions in the past few decades. The rhetoric continues from Jane Jacobs' and Lewis Mumford's attack on suburban sprawl and the demise of the urban core, to Charles Jencks' and Robert Venturi's populist embrace of the auto-inspired vernacular and its split-level ranch-style with two-car garage. UT Austin took the initiative to investigate the topic and hosted a meeting of minds in April with the intent to reawaken the stalled environmental beautification movement begun in the 1960s.

"The Land, the City and the Human Spirit," jointly sponsored by the LBJ Library and the Southwest Center for the Study of American Architecture, brought together some of the participants in the 1965 White House Conference on Natural Beauty, including Laurance Rockefeller, attorney Henry L. Diamond, former Interior Secretary Stewart Udall and Lady Bird Johnson. But more than a clique-ish reunion of former officials, the sponsors sought to provoke, in the words of Lady Bird Johnson, "a new rallying cry for the pursuit of the nation's unfinished environmental agenda." The rallying voices were provided by such outspoken panelists as Charles Moore, Robert Stern, Nathaniel Owings, Denise Scott Brown, Ian McHarg, Edmund Bacon, Wolf Von Eckardt, Robert Timme (Taft Architects), New York Mayor Edward Koch and Tom Wolfe.

The conference, split over two days in April and divided into three panel sessions, quickly took on the air of Lady Bird Johnson's call for "high-minded earnestness." Nearly all the participants incorporated "beauty" and "hu-

man spirit" into their vocabulary. Almost everyone backed suggestions to improve environmental education and land use by requesting government action in the formation of a national land-use policy, as suggested by Wolf Von Eckardt, and for establishing a national system of environmental laboratories studying 34 American regions, as suggested by Ian McHarg. All applauded and laughed at McHarg's insistence that "we need to toilet-train American industry."

Apart from these areas of agreement, a consensus on other aspects of the urban planning dilemma was never reached. The most interesting debate occurred between J.B. Jackson and Robert Stern. Jackson, an expert on the American landscape, delivered the event's most insightful speech, "The Vernacular City."

"The city was seen as a kind of collective architectural monument," he said. "In terms of massive blocks of solid well-designed buildings that we can admire on foot. But most American cities west of the Mississippi are variations on a basic prototype—Lubbock, Texas. They have to be explored in a car because they stretch for miles and miles. But they are wonderfully impressive when you are traveling at a moderate 35 mph."

Robert Stern adamantly protested Jackson's suggestion that sprawl is almost OK. "Cities must find their dreams and must look to models of excellence such as Washington D.C. and New York. . . . We have to develop a dream for a city and then add to it." He further accused Jackson of condemning whole generations to aimless wandering up and down freeways. Jackson rebutted by claiming that planning is the making of "tolerable cities rather than the rebirth of Athens."

Panelists in other sessions picked up on the debate theme but most seemed to favor Stern's position. "We have a vivid image of the city of our dreams," Charles Moore said, "but it is at odds with our desire for automobiles and air conditioning and other comforts." Making an impassioned plea to further avoid the redundant look of most of the country's urban infrastructure, Stewart Udall asked Americans to "preserve what is truly distinctive in our cities." To Edmund Bacon the new frontier is not the suburbs but the city's center. "The great coming revolution in architecture," he said, "is



Debbie Sharper Focus

*Koch and Bacon discuss the fate of cities.*

the recreation at street level of the joy of the village."

Following Bacon's line of thinking, Nathaniel Owings caught many by surprise by proposing a national height limit of 21-stories. Although admitting that Skidmore, Owings & Merrill has designed its share of skyscrapers, Owings said he disapproved of "the corporate egomania that expresses itself in 99-story highrises with executive offices on top."



*McHarg, Owings and Reilly*

Many of the out-of-state panelists used Houston as an example of what is wrong with the new American city. They also praised the older architectural forms of Galveston and Austin but agreed that even in these cities most new buildings are abysmal. As the only Houstonian on the panel, Robert Timme came to the city's defense by insisting that New Yorkers should not dislike Houston merely because Houston decided it did not want to look like New York. Houston, he reminded the panel, is also much

younger than the rustbelt cities and needs time to develop before rash pronouncements are made.

On the subject of government involvement in the cities, Edward Koch decried federal spending in the sunbelt "to create all that new infrastructure when we already have it in our older cities." Explaining that American attitudes on federal spending have changed, William K. Reilly, President of The Conservation Foundation, predicted that only those private and public organizations that could make the most with the least would survive. Henry Diamond echoed Reilly's notion by saying only a balance between governmental action and private initiative could ensure the success of the environmental movement.

The only weak moments in an otherwise superb conference were a long, tangential argument on the evil of design review boards (Denise Scott Brown) and a minor debate on Modernist formalism vs. applied ornament (Bernardo Fort-Brescia vs. Charles Moore.) Summing up these low notes, Haar pointed out that architecture is not "a canvas by da Vinci" but rather a very public expression. "Architecture is not just a manifestation of the ego of the architect," he said, "there is a need for pattern and design, not just the individual statement. If it weren't for developers and lenders

NEWS, continued on page 34

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and mortgagees sitting on the architects and telling them what to do, I'd be truly worried."

### HOUSTON ARCHITECTS RECEIVE FIRST AWARDS

Houston architects William T. Cannady & Associates, SIR Inc. Architecture & Planning, and Robert Heineman were named Honor Award winners in the 1984 First Awards for Innovation in Remodeling sponsored by First National Bank.

• Cannady was honored for the renovation of a 1930s International Style house which had undergone two previous additions.

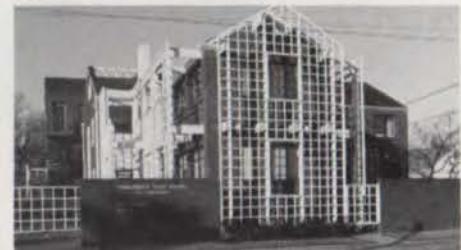
• SIR was honored for the remodeling and adaptive reuse of a 1940s brick veneer and wood frame residence into office space.

• Heineman was honored for the remodeling of his home.

• Certificates of Merit were awarded to Strauss & Wittenberg Architects, Roy Harper & Associates, L. Barry Davidson Architects and John Perry Associates.



1930s house renovation by Cannady



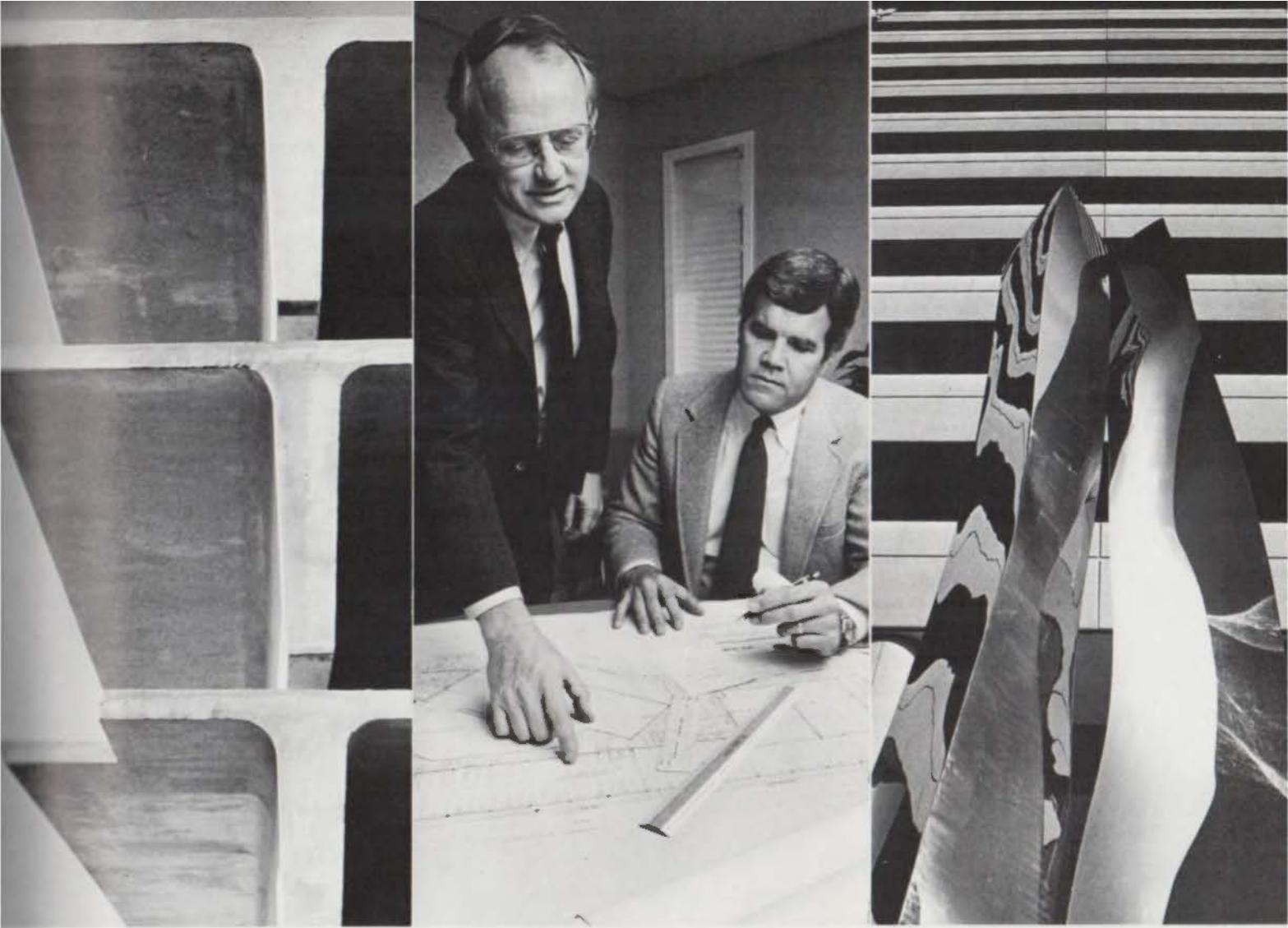
1940s house renovation by SIR



Heineman House renovation

NEWS, continued on page 75

Texas Architect May/June 1984



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Richard Payne

It is a widely recognized reality that transportation, even more than architecture, shapes the urban environment. So it is that the far-flung form of Texas cities represents more than the last vestiges of a stubborn frontier spirit; it also reflects our undying love affair with the automobile. Perhaps it is this blind affection that has obscured the futility of more-and-better-roads as the answer to urban mobility in Texas.

Whatever the reasons, efforts to promote acceptance of mass transit in Texas historically have met with limited success. But with congested freeways threatening the continued economic health and overall quality of life in the state's largest cities, support for mass transit is increasing.

Texas' four largest cities—Houston, Dallas, San Antonio and Fort Worth—already have transit authorities, supported by sales tax revenues, in place. How progressive these cities will be in tapping these resources remains to be seen.

Houston voters, in a much-publicized and ominous vote last June, rejected a \$2.35 billion bond issue for the initial 18-mile segment of a proposed heavy-rail rapid transit system, even though that phase of the project would have required no new taxes. As a result, the city lost all but \$5.5 million of the \$110 million in federal transit aid it had been allocated.

Houston's Metropolitan Transit Authority, known as Metro, now is preparing several alternate strategies for presentation to the citizenry.

Dallas voters, on the other hand, approved the concept of a \$3.4 billion, 160-mile rail system last August as part of a 27-year, \$8.9 billion master plan to be implemented by Dallas Area Rapid Transit (DART). But of course the real test for the fledgling authority—raising the necessary funds—is yet to come.

Texas' limited experience with mass transit confirms what transportation plan-

ners and other urban design specialists discovered long ago—the progress of cities is often less a matter of technology than of politics. In the case of transportation, there are at least two major camps with conflicting notions of what transit goals should be. Automobile manufacturers, highway construction interests and many oil companies—together with a sizable segment of the public—see total mobility via private automobile as the ultimate transportation goal. In contrast, the vision of transportation and land-use planners, environmentalists, conservationists—and such disparate groups as downtown businessmen and welfare recipients—is to create efficient mass transit systems as a means of mitigating the impact of the automobile. It is a vision based on the premise that cities which work well for cars do not work well for people.

With transportation cutting across such a broad range of interests, political strategies become extremely complicated. Clouding the basic issues is the cost factor. Anti-transit spokesmen are quick to point out the exorbitant capital expenditures necessary to put a new rapid transit system in place, as well as the woes of many existing systems operating at a deficit, and the current scarcity of federal funding that could serve to defray costs. But what they fail to point out is the immense public subsidy required to support auto-oriented transportation systems, a subsidy that somehow we've come to accept.

Before real progress can be made in the field of mass transit, we must recognize that most public transit services have been delivered to consumers at artificially low prices. In reality, the cost of optimal urban mobility is very high, and darn well worth it. —Larry Paul Fuller

# TRANSPORTATION, ARCHITECTURE, AND ARCHITECTS

*By Tabor Stone*

**A**ny Texan knows that our only real transportation issue is to get the family car, Bubba's pickup and Texas' ten million other vehicles where they want to go when they want to go. And any Texan knows that if the roads get congested the answer is to build more and bigger roads.

However, this answer isn't working out as well as it once did. The emerging urbanization of the state is producing a physical environment and population densities that increasingly inhibit our traditional ability to move about in our vehicles where we please when we please.

For the last 30 years, the main plan of attack for dealing with traffic congestion in Texas' urban areas has been to create limited access multi-lane expressway arterials that penetrate the urban core, and to create multi-lane bypass "loops" around the fringe areas of the cities. This "more and bigger roads" strategy has been successful historically in terms of sustaining our mobility options in the face of dramatic population growth. But this success is much more attributable to the changes these roadways have created within the urban environment than to increases in the passenger-carrying capacities of the roadways themselves.

These changes are related to an outmigration of activities from the traditional high-density urban cores to lower-density suburban locations. The automobile roadway system functions best in a low-density environment and functions poorly in a high-density environment. While these new multi-lane arterials improved access to the urban cores, they also increased urban congestion, as existing street grids and parking facilities became overloaded. Simultaneously, these same arterials, alone or

combined with loops, opened up raw land for low-density development.

One needs only to follow the exodus of retail businesses from downtown locations to suburban shopping centers to understand the role that ease of access plays in our society, and the automobile/roadway system can deliver the ease of access we demand only in a low-density environment. Thus, thanks to our network of radials and loops, the growth of our cities has been accommodated horizontally, in low-density development, to a much greater degree than it has been accommodated through the densification of the older urban areas we are coming to know as our "inner cities."

It has been argued that the automobile/roadway system facilitates an endless process of regeneration of the urban environment, since an untenable density build-up at any particular point will, over time, be diffused into low-density locations. The success of this argument hinges on two premises. The first of these is that the ability to accommodate growth through horizontal expansion (suburban sprawl) must keep pace with the overall population growth. The second is that portions of our existing urban environment are disposable in the long run, as the "action" moves on to lower-density locations.

However, population growth rates in some Texas metropolitan areas have exceeded the horizontal expansion low-density accommodation rate to such an extent that these cities are experiencing a densification of working and living environments for the first time since the automobiles chased out the trolley cars. This same population growth has brought with it a shift in values regarding the

environment: we may be members of the "throw-away society," but we're no longer as willing to turn our urban cores into ghost towns.

As a result, traffic congestion does not disappear, but instead increases over time. The automobile/roadway system has reached its limit as the sole answer to urban mobility in some Texas cities. Complementary systems and mobility strategies that speak to the movement of people—as opposed to automobiles—are overdue and must be adopted soon if we are to protect both our personal mobility and our physical environment.

**S**o, where is the Texas architect in all of this? Some were among the leaders of the first active resistance to the build-up of expressway systems in our urban areas in the sixties—a movement that hoped to protect existing neighborhoods, parks, and landmark areas. Others have been in the forefront of movements to revitalize our urban core areas. Still others have campaigned to establish local mass transit authorities. But there continue to be



transportation-related issues that call for architects' concern and involvement.

Architects have been effective as political activists on transportation-related issues, and will continue to be effective, so long as they are willing to contribute the time and effort to play this role. But where does the architect have a role as a designer? At some point in any transportation system there is what the transportation planners call a "modal transfer," in which one mode of movement is exchanged for another. The one mode of movement common to all transportation systems is the pedestrian mode. At some point people get out of their cars and become pedestrians. Or they get out of buses and become pedestrians. Or they disembark from trolleys or subways or other forms of rail transit and become pedestrians. They can even be pedestrians at points enroute, as at a park-and-ride station, where the automobile driver must briefly become a pedestrian before becoming a transit system passenger.

These modal transfer points are often the most visible and important elements of the system, and they are in critical need of the architect as designer. Regardless of how well the rest of the transportation system works, if these components are developed in a stark, sterile and strictly utilitarian manner—for example, producing urban parking structures with parking at grade levels instead of spaces for shops, restaurants and people-oriented activities—then we have failed to interact where we are most needed.

Architecture is among the few professions with a social mandate to "humanize" the environment—to push the design of our physical environment beyond that of sheer functionalism into the realm of sensitivity. For various reasons, few of the people with the responsibility for transportation system planning have the training, talent or orientation to push beyond their own clear and urgent mandate, which is to keep the traffic or people moving. Thus the responsibility for sensitive design must devolve on the architect. The transportation scene in Texas is shifting and becoming more complex as time goes by. Texas architects must be prepared to seize the opportunity for as many positive contributions as possible, both in transportation planning and design. Only then can we meet our full potential as shapers of the built environment. —

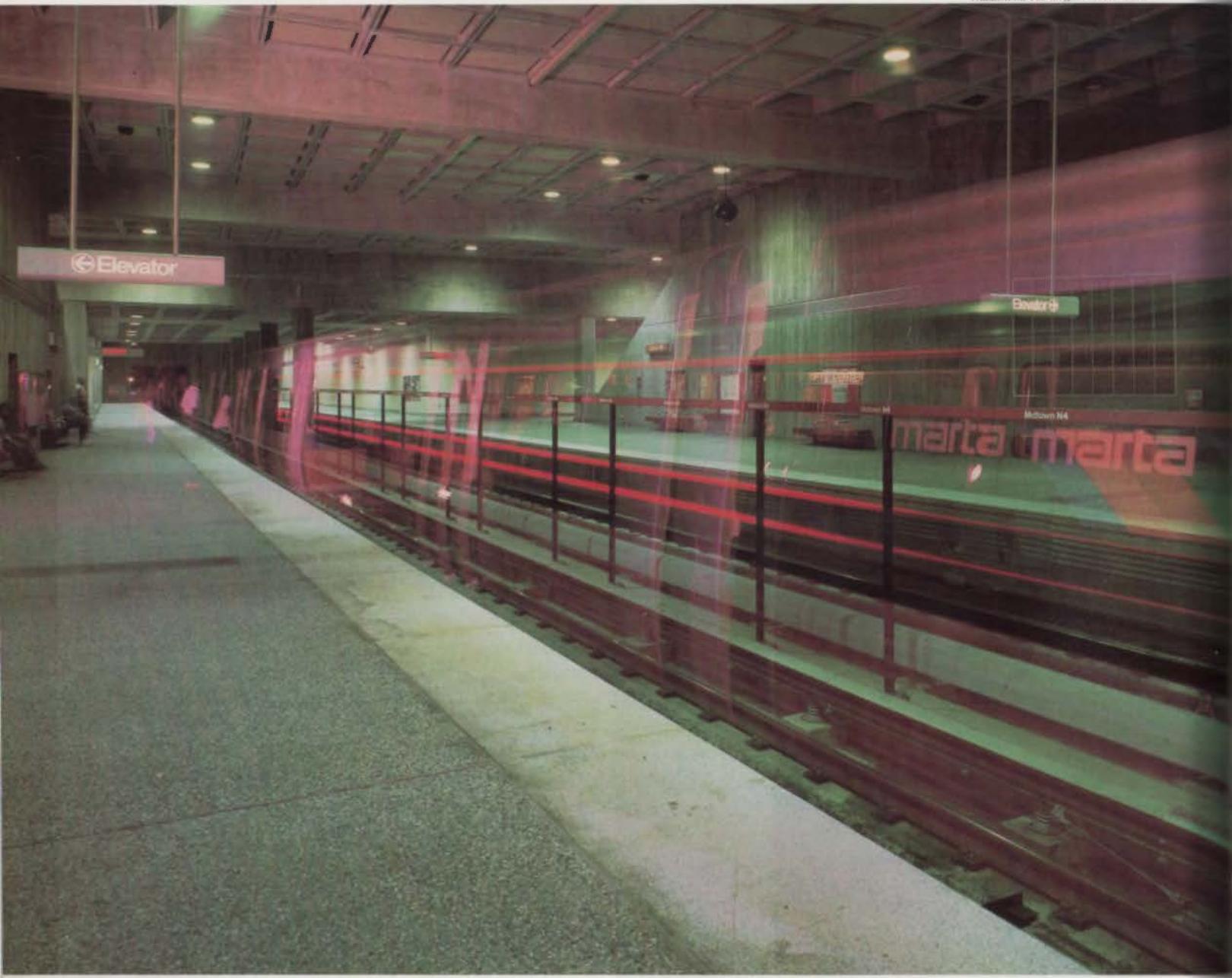
*Tabor Stone is an Austin architect and the author of Beyond the Automobile: Reshaping the Transportation Environment (Prentice-Hall, Inc., 1971). He has consulted on transportation/circulation projects and issues in Alabama, Arizona, Delaware, Michigan, Tennessee, Texas and West Virginia, and has conducted courses on urban transportation planning at Rice University.*

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# TRANSIT AND THE MAKING OF CITIES

By Jeffrey Karl Ochsner

Nakashima Tschoegl + Associates



Motion in midtown Atlanta MARTA system station. Architects: Daniel, Mann, Johnson & Mendenhall (DMJM).

**Enmeshed in the issue of transportation are two basic questions: What form do we want for our cities? And, how can we design transportation networks to create that ideal form?**

The physical development of the city has been directly influenced by the evolution of transportation technology. Texas cities, like virtually all American cities, may be regarded as a series of overlays, each layer of development representing a response to the contemporary technology and pattern of transportation. Because each new technology is added to the pre-existing context, the city bears traces of its own evolution. Even with the dramatic growth of Texas cities in the last two decades, their particular patterns reflect every stage of development from the initial street grid survey to the present. And choices we make today about future transportation networks are likely to have as dramatic an impact on the form of these cities as rapid growth continues. Enmeshed in the issue of transportation are two basic questions: What form do we want for our cities? And, how can we design transportation networks to create that ideal form?

#### THE EVOLUTION OF CITY FORM

The evolution of the city may be divided into three distinct stages: the walking city, the railway city, and the automobile city. The first stage, the walking city, lasted until the post-Civil War period and was a time in which the limitations of growth, both horizontally and vertically, were those of the pedestrian (and the horse). As cities became more industrialized, they generally grew interstitially, becoming more and more dense and remaining tightly constrained.

The second stage began when technology allowed an escape from the restraints of the traditional city, producing a new city form that expanded both horizontally and vertically. Steam railroads, followed quickly by street railways, provided the means for horizontal growth. The development of internal building frames, the elevator, fireproof materials and control of water and sanitation allowed vertical expansion as well. The third stage began about 1920 with the introduction of the automobile, which has allowed the ever-increasing urban sprawl of cities to the present day.

Texas cities emerged in the period immedi-

ately before the Civil War and spent a relatively short youth as pedestrian cities. As a result, few Texas cities display the dense form of the older parts of cities such as New York, Philadelphia or Boston. Since the major growth of many Texas cities has been since 1920, and particularly since WWII, the shape of these cities reflects more than any other influence the impact of the automobile.

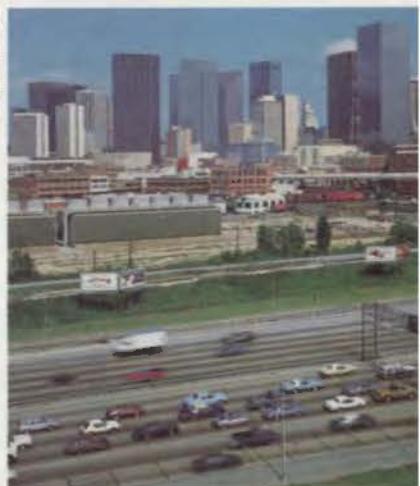
#### PUBLIC TRANSPORTATION

The creation of urban public transportation derives from the conversion of stagecoaches for local use. This was followed by larger, horse-drawn omnibuses, introduced in Paris in 1829 and in New York in 1831. Although the omnibus was a partial solution to public transportation, the problems of congestion and the poor quality of the ride on unpaved streets were major problems. However, the strategy of placing the horse-drawn vehicles on rails produced a smoother ride and allowed the horses to pull even larger vehicles. The first tracked horsecar began operation on New York's 4th Avenue in 1832 with a five-cent fare, inaugurating the earliest public rail transit. With the invention of a flush rail in 1855, solving the problem of interference with other traffic, horsecar lines spread rapidly. By the late 1800s, horsecar lines totaled some 6200 miles in the United States and had been established in major cities throughout Texas.

In larger cities, the congestion resulting from the interference of horsecars with other traffic remained a problem. London introduced underground rapid transit with steam locomotives as early as 1863, whereas in New York, elevated lines were adopted beginning in 1870. Many cities could not afford elevated structures, however, and sought other ways to improve operation of their lines. Cable cars were introduced in San Francisco and soon spread to other cities including New York, Chicago and St. Louis.

*Electric Rail.* After perfection of the electric rail technology by Frank Sprague in Richmond, Virginia, in 1888, electric street railways soon replaced horsecars, cable cars and

Robin Ames Credit



The shape of Dallas.

Historic photos courtesy Peter C. Papademetriou



Houston horse cart, 1870.



Electric trolley, Houston, 1890.



Austin's "Dillo" bus.

steam locomotives. The rapid proliferation of street railways demonstrated an incredible demand for convenient urban transportation, reaching a peak of 44,000 miles of track in the United States by 1917. Electric traction also facilitated subway operation. The first American subway was inaugurated in Boston September 1, 1897, and New York followed with subway construction in 1900. By that time subways were in operation in London, Paris, Budapest and Glasgow and later were added in Philadelphia and Chicago.

The impact of electric railways on the cities was dramatic. Streetcar lines shaped not only older eastern cities, but also younger southwestern and western cities. Los Angeles had an electric railway system with over 1500 miles of track. Houston, Dallas, San Antonio, Fort Worth, Brownsville, El Paso, and Wichita Falls all had streetcar systems. In addition, inter-city electric railways, called interurbans, operated from Houston to Galveston; from Dallas to Corsicana, Waco, Sherman and Fort Worth; and from Fort Worth to Cleburne. In 1917, the Dallas companies were merged to form the Texas Electric Railway, with over 250 miles of track. The Galveston-Houston Electric was known for offering the fastest interurban service in the nation, with limiteds scheduled from Houston to Galveston in 75 minutes.

*The Impact of the Automobile.* Despite the advances represented by this electric streetcar network, it was dismantled over the next 60 years. The first cutbacks occurred during the period of inflation following WWI. Many lines became unprofitable, partly because of five-cent limitations on fares set by municipal charters, and because rising automobile ownership reduced the need for public transit. In addition, automobile congestion began to interfere with street rail operations, thereby causing service to deteriorate.

Further jeopardizing the rail systems was the fact that street pavement, signals and similar improvements were paid for by public funds, while rail transit remained totally dependent on passenger revenues. As a result, motor buses—which not only could maneuver in traffic but could operate on publicly maintained streets—began to be introduced in some transit systems. Buses were first tried in New York in 1907 and by the 1920s were becoming more generally attractive to transit operators nationwide. The process of replacing railways with bus routes was expedited by the General Motors subsidiary, National City Lines, which used high-pressure tactics to force rapid con-

version. By 1950, before the advent of most urban freeways, the majority of street railways had disappeared. However, they survived in eight North American cities—Boston, Cleveland, New Orleans, Newark, Philadelphia, Pittsburgh, San Francisco and Toronto—usually because of public pressure and public ownership. Grade-separated rail (in subway or elevated) survived in Boston, New York, Philadelphia, Cleveland, and Chicago.

*A New Wave of Urban Transit.* Privately held transit lines generally fell into difficulty in the 1950s and by the 1960s public ownership and operation—whether rail or bus—had become common across the country. But even as transit systems suffered decline, the basis for their resurgence began to emerge. The massive urban freeway construction of the 1950s and 1960s inspired opposition in many cities amidst a growing environmental consciousness. Transit planners saw that highway backers planned massive systems and then built incrementally as funds became available. Why not take the same approach with urban transit? Thus began a new wave of urban rail marked by direct, convenient service; facilities designed for safety, openness and security; vehicles that were spacious, comfortable and fully climate-controlled; and roadbed and track which allowed high-speed operations.

The first of the truly modern rail transit systems in North America was the Montreal subway, which the city decided to build in 1961, and which was inaugurated in time for Expo '67. During the '60s and '70s, a host of other cities made commitments to rail transit. In 1962, the San Francisco Bay area approved BART, which was inaugurated in 1972-74. Washington began the construction of its 101-mile system in 1969. Atlanta voters approved a 53-mile system in 1971. Other cities embarking on rail construction in the 1970s were Miami, Baltimore, Buffalo, San Diego and Portland.

At the same time, bus transit received a new impetus. While the "advanced design" buses were plagued with problems, some authorities elected to build exclusive high-speed busways in corridors that could not justify rail. Virginia built 15 miles of high-speed express lanes on the Shirley Highway south from Washington, for example, and restricted them to buses and carpools. The buses make express runs to the Pentagon Station of Washington's rail system, where commuters board trains to downtown destinations. In Los Angeles, the El Monte Busway along the San Bernardino Freeway carries passengers to downtown from the west. And



Phil Portlock



Larry Levine



Forrest Bonden



Arnold Kramer





Richard Payne



ABOVE: The bus is still the state-of-the-art of rapid transit in Texas. TOP AND FACING PAGE: Successful U.S. examples of heavy rail transit. From top—San Francisco's BART; modal transfer at Washington's Rhode Island Avenue station; Silver Spring stop, Washington; Miami's newly inaugurated METRORAIL, one of ten stations on the 11-mile South Line of the planned 21-mile system; Baltimore's Reisterstown Plaza station, by DMJM. While these heavy rail systems are successful, most cities just now beginning to consider rail transit are favoring light rail as a less costly and more flexible option.

the East Patway in Pittsburgh serves similar commuters from the eastern suburbs of that city. However, busways have not been widely implemented because they do not have the capacity of rail transit and are highly labor-intensive. Another drawback is that, since busways often have relatively limited access, they have functioned as "commuter pipelines" in contrast to urban rail transit, which usually has frequent stations.

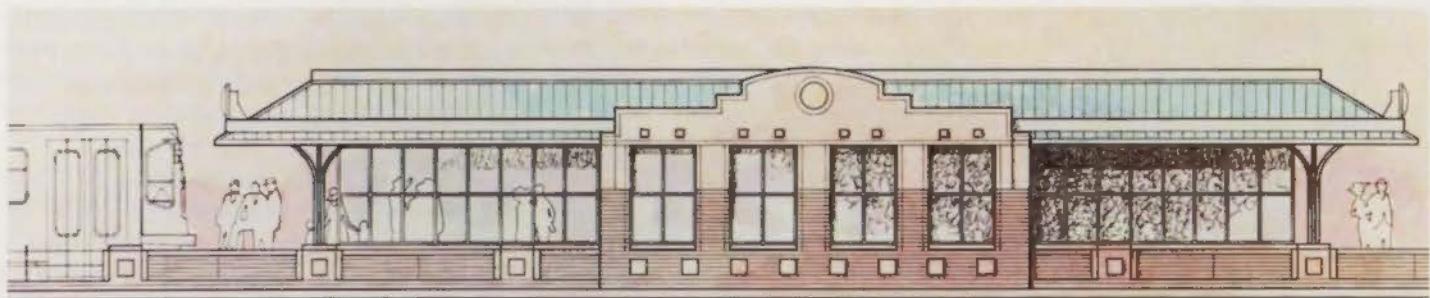
#### MODERN TRANSIT TECHNOLOGIES

When cities begin to consider building transit systems that transcend local bus routes on city streets—which is the point at which most major Texas cities now find themselves—they face a range of options. The following is a short summary of the chief possibilities:

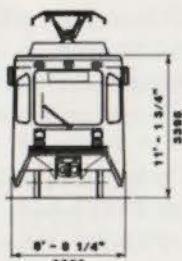
**Commuter Rail.** Commuter rail involves relatively high-speed, intermediate- to high-capacity, long-distance operations over the trackage of existing private railroads. Generally, commuter rail operations use railroad passenger equipment and share the railroad facilities with other railroad traffic. Most American commuter rail operations are located in northeastern cities and are the remnants of once-extensive local networks. In these cities, commuter trains may serve outlying suburbs as much as 50 miles from an urban center, and stations are often as much as five to seven miles apart.

The obvious advantage of commuter rail is the use of existing railroad track. However, commuter rail is probably not a viable option for Texas cities. Texas railroad freight traffic has grown to such a degree over the past three decades that the interference of commuter trains with freight schedules and freight switching operations would be severe. In addition, many Texas freight railroads do not meet the standards required for safe and comfortable high-speed commuter operations, and rehabilitation would be expensive.

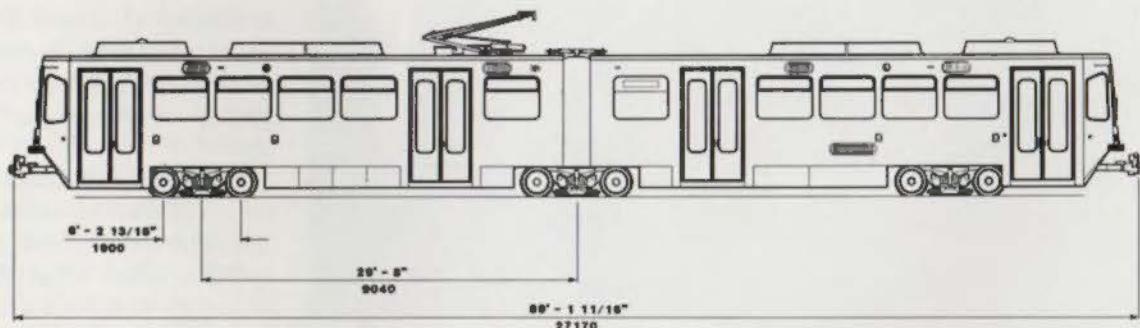
**Rapid (Heavy) Rail.** Rapid rail, or heavy rail, transit is a high-speed, high-capacity system such as those in Atlanta, Baltimore, Miami and Washington. The distinguishing characteristic of heavy rail is the electrified third rail, located at track level, which serves as the power source. As a result of this electrified element, and in order to allow high speeds, heavy rail requires an exclusive right-of-way, whether elevated, fenced, or below grade. Modern rapid rail vehicles are often 75 feet long and can carry about 75 passengers seated and another 75 to 100 standing. Vehicles operate in pairs and can be combined in



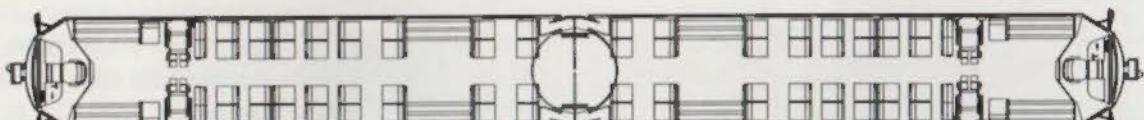
*ABOVE:* Suburban transit shelters for the 15-mile Banfield Light Rail Transitway, the first leg of a proposed region-wide system for Portland, Oregon. Architect: The Zimmer Gunsul Frasca Partnership. Associate Architect: Roger Shiels.



FRONT VIEW



SIDE ELEVATION



FLOOR PLAN



The Portland system will employ this articulated light rail vehicle produced by Bombardier Inc., Quebec. Less capital-intensive than heavy rail, light rail transit is the likely choice for applications in Texas.

trains of four, six, eight, or even ten cars in some systems. Speeds may reach up to 75 miles per hour, with capacities as high as 60,000 passengers per hour. However, typical design capacities range from 20,000 to 40,000 passengers per hour.

With totally separate right-of-way, heavy rail is generally the most capital-intensive rail transit technology. In addition, stations are often elaborate and therefore expensive. Where ridership is high, rapid rail can be cost-effective, but this system generally is appropriate only in large urban areas with high concentrations of employment.

**Light Rail.** Light rail transit is the most flexible of all urban rail technologies. Its distinguishing characteristic is the overhead power source. The right-of-way for light rail can be exclusive (subway, elevated, or at-grade), reserved (as in a street median), or shared with traffic (as a trolley or street rail operation). Modern light rail is generally distinguished from older street rail by requiring at least a reserved right-of-way. It is typified by the new systems in San Diego, Portland, Edmonton, Calgary and Buffalo.

Due to the variety of applications, it is difficult to generalize about light rail vehicles and systems. Modern light rail vehicles range from 50 to 90 feet in length and operate in trains of one to six cars. Vehicles can seat 30 to 90 passengers and carry another 50 to 100 standees. Speeds may reach up to 60 miles per hour, but will be slower in constrained urban applications. Because of the variety of right-of-way applications, light rail costs may vary considerably, but are usually much less than heavy rail costs. Light rail is regarded as the optimal system for medium-sized cities and for larger cities where residential densities may not support higher capacity systems.

**Unproven Technologies.** Automated Guideway Transit, sometimes called small vehicle systems or peoplemovers, encompasses a range of technologies using smaller vehicles operating singly or in short trains over a totally grade-separated guideway in a fully automated mode. The largest of these systems are also called Intermediate Capacity Transit Systems. Like heavy rail, all such systems have the power source in the guideway and therefore require total grade separation. These kinds of systems have been installed mainly in airports in the United States. No applications in urban commuter service are yet in operation, although a peoplemover is planned for downtown Miami and proposed for downtown Detroit. Also, a system called UTDC, backed

by the Canadian government, is being installed in Vancouver and in a short line in Toronto. Because these small-vehicle systems require full grade separation, they can be questioned from a cost-effectiveness standpoint since capacities are generally about the same or less than those of light rail.

Monorail is another technology which, except for a short line in Seattle, has not been applied in North American urban settings. The idea dates to the turn-of-the century, when a short monorail line was built in Wuppertal, Germany. Ironically, the elegance of the technology, in which a single structural beam doubles as the guiderail, is responsible for its limited acceptance. The switching of trains required in rail operations is more difficult with monorail because the guidebeam itself must be moveable or flexible to make the switch. Emergency evacuations are also difficult because the guiderail does not readily accommodate emergency walkways. In addition, all monorail systems constructed in North American amusement parks to date lack the capacity required for urban settings, since they cannot accommodate standees.

**Busways.** In contrast to the various rail technologies, busways utilize conventional motor buses on an exclusive roadway. In some cities, busways have been constructed to allow for high-occupancy vehicles (HOV) such as vans, and in some cases, carpools. Construction is generally similar to freeway construction, with grade separation and exclusive entrance and exit ramps. Some busways such as those in Pittsburgh and Los Angeles have on-line stations as well as access ramps at the ends.

The capacity of busways remains a question of design, since busway operating capacity depends on vehicles entering from and exiting to off-busway locations. The capacity is also a function of the number of lanes. A maximum theoretical capacity of 15,000 passengers per hour for a single-lane facility has been calculated by some analysts, but actual observed capacities are significantly less. Transit analysts generally agree that rail transit should be more cost-effective than busways when ridership exceeds 10,000 persons per hour, and some set a considerably lower threshold.

#### TRANSIT SYSTEM PLANNING, DESIGN AND CONSTRUCTION

The problem in transportation planning is to resolve area or regional objectives and specific technological and locational choices—or, in other words, to resolve technical engineering approaches with a broad vision of the future of



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**Community participation has generally been a part of all transportation planning since the 1960s when citizen protest movements erupted in many cities over highway construction.**

**Municipal politics can also play a role such that the ultimately achievable system will be that which balances the ideals produced by transportation modeling with the compromises necessary to make a system acceptable within a particular urban area.**

an urban region.

The planning of major transit systems as carried out by transit professionals is a somewhat formalized process involving considerations of travel demand, evaluation of existing transportation facilities, selection of technology, system design, capital costing, development of operating plans and costs and development of a financial plan.

*Projections and Comparisons.* The first step is an analysis of travel demand, that is, of the need for transportation improvements. Travel demand is modelled using programs developed for highway construction in the period after WWII. These models consider population and employment numbers and locations, household size, income levels, and other demographic factors to generate estimates, both current and projected, for travel demand within an urban region. The models also allocate trips to various available transportation facilities in an urban region and indicate where deficiencies exist. With the resurgence of public transit and the determination to examine transit alternatives, the early automobile-oriented models were supplemented by "mode choice" models used to evaluate alternative systems for transit improvements.

Travel demand model results are generally the basis for the design of particular system alternatives. Each alternative receiving serious consideration can be carried to a conceptual level of design in order to develop and compare ridership and capital cost estimates for each. In architectural terms, the systems are in a pre-schematic phase. The level of design may include preliminary plans and profiles of the selected alignments, probable station locations and locations of related facilities. Based on such information, conceptual operating plans, capital costs, operating costs and true cost-effectiveness indicators can be generated.

The capital and operating costs can also be used as the basis for financial planning—evaluating available resources, comparing these to annual financial requirements (both depending on particular financial plans), and generating year-by-year financial projections that can be used to evaluate project feasibility.

*Complexities of Planning.* This transit planning process involves many iterative steps and multiple feedback loops. Changes in any of the variables, from population projections, to travel speeds, to capital or operating costs can influence the entire process. Thus, any transit planning process must be considered a "best estimate" based upon the best available information and is generally checked by compari-

sions to other systems in other locations.

The somewhat idealized process described above is also influenced, of course, by political realities. Community participation has generally been a part of all transportation planning since the 1960s when citizen protest movements erupted in many cities over highway construction. Municipal politics can also play a role such that the ultimately achievable system will be that which balances the ideals produced by transportation modeling with the compromises necessary to make a system acceptable within a particular urban area.

Because the transit planning process is most often carried out by transit professionals, it can lack a broad vision of an urban region. Transportation planners may tend to concentrate on transportation plans to the exclusion of other broad urban goals. Thus, there is often a need for the kind of vision that can be introduced through the citizen participation process by a well-informed citizenry.

*The Design Process.* Once a particular system is selected, design can proceed simultaneously in several areas. For a busway system, the primary elements are guideways, stations (if designed with on-line stations), shelters and maintenance facilities. If a rail system, five major elements are involved: vehicles, guideways, stations, equipment, and maintenance facilities.

A major transit project, such as a 20-mile rail line, may require 25,000 to 30,000 drawings, as well as specifications for vehicles, equipment and construction—a task clearly beyond the capability of any transit authority, or, indeed, any single private organization. Typically, transit authorities will hire a general architectural and engineering consultant to coordinate such a massive project. The firms that apply for such general consulting contracts are most often national or international practices with a group or division devoted to transit system design. Often a general consultant will be a joint venture of several national firms with transit specialties and sometimes major local engineering firms as well.

With the approval of the transit authority, the general consultant usually is responsible for the development of vehicle specifications, system-wide equipment specifications, and the overall baseline system plan and profile, including conceptual designs for stations and maintenance facilities. The general consultant will also produce criteria and similar system-wide documents such as guide specifications and system description.

The final design of stations and line sections

## SOURCES FOR ADDITIONAL INFORMATION ON TRANSIT

The major professional organization in the transit industry is APTA (American Public Transit Association) located at 1100 17th Street, N.W., Washington, D.C. 20036.

### Major Periodicals:

*Mass Transit*, 538 National Press Building, Washington, D.C., 20045.

*Metro*, 1155 Waukegan Road, Glenview, Illinois 60025.

*Passenger Transport*, APTA, 1100 17th Street, N.W., Washington, D.C. 20036.

### Books:

*Transit Fact Book*, APTA (Washington: APTA, annual).

*Public Transportation and Land Use Policy*, Boris Pushkarev and Jeffrey Zupan (Bloomington: Indiana University Press, 1977).

*Urban Rail in America*, Boris Pushkarev with Jeffrey Zupan and Robert Cumella (Bloomington: Indiana University Press, 1982), a detailed study of criteria for rail system implementation.

*The Urban Transportation System: Politics and Policy Innovation*, Alan Altshuler (Cambridge: MIT Press, 1979);

*Transportation Decision Making: A Guide to Social and Environmental Considerations*, Marvin L. Manheim et. al., National Cooperative Highway Research Program Report 156 (Washington: Transportation Research Board, 1975).

*Citizen Participation in Transportation Planning: The Boston Experience*, Allan K. Sloan (Cambridge: Ballinger Publishing Co., 1974).

*Light Rail Transit: A State of the Art Review*, DeLeuw Cather & Co. (Washington: Department of Transportation, 1976).

*Joint Development: Making the Real Estate Transit Connection*, Urban Land Institute with Gladstone Associates (Washington: Urban Land Institute, 1979).

*Street Car Suburbs*, Sam Bass Warner (Cambridge: Harvard University Press, 1962).

*Labyrinths of Iron*, Benson Bobrick (New York: Newsweek Books, 1981).

In addition, a private company, General Railway Signal, has published a short brochure on rail transit, titled *Rail Transit Rediscovered*. Although somewhat dated, it presents the case for rail transit in a short, easily read format. (Available by writing to General Railway Signal, Rail Transit Information, P.O. Box 600, Rochester, N.Y. 14692).

is typically subcontracted by the general consultant to individual engineering and architectural firms or to teams made up of such firms.

The design problems faced by station architects are unique. Different authorities have exercised different degrees of control over station appearance—some, like Washington, aiming for a unified appearance throughout, and others, such as Montreal and Atlanta, allowing each station to have some individuality. However, no authority has allowed total architectural freedom. Station designers must conform to system-wide criteria governing everything from hierarchy of uses on station sites to functional station layouts to limited selections of wear-resistant materials. In addition, there is system-wide standardization of certain elements, such as escalators and elevators, signage, advertising (if allowed), fare collection equipment and some station furnishings. Generally, modern transit systems have placed a strong emphasis on the quality of design and have called for the creation of "civic" spaces in the best sense in order to encourage patron respect for and pride in the system.

Upon completion of the contract documents by the final designers, construction is bid, usually by sections of the line, in a conventional fashion. System-wide elements are bid separately, as are vehicles. During construction, the general consultant may act as construction manager for the authority. After completion of construction, four to six months of pre-operations testing are necessary before the system is certified as safe and opened to the public.

If transit—particularly rail transit—planning decisions are made in concert with the full range of agencies active in the region affected, the results can be dramatic. If not, then the impact of transit plans may be diminished.

## TRANSIT AND THE CITY

No one would dispute that rail transit was a major force in the shaping of American cities from the 1880s to the 1930s. The "streetcar suburbs" of Boston, as documented by Sam Bass Warner, have their parallels in virtually every city that had a street rail system. But, can transit shape modern cities that have developed largely in response to the automobile?

The shaping of modern cities is controlled by many forces, and usually multiple agencies—zoning boards, planning commissions, development and redevelopment authorities and others. If transit—particularly rail transit—planning decisions are made in concert with the full range of agencies active in the region affected, the results can be dramatic. If not, then the impact of transit plans may be diminished. In Toronto, for example, 1950s rail construction in the Yonge Street corridor, costing about \$67 million, has been shown to



ABOVE: Platform at State Center Station, Baltimore Metro, by DMJM and Raymond Kaiser Engineers. RIGHT: Model of Forest Hills station, part of Boston's southwest corridor improvement program. Architect: Cambridge Seven Associates, Inc. and Robert L. Wilson, AIA.





*Generally, modern transit systems have placed a strong emphasis on the quality of design and have called for the creation of "civic" spaces in the best sense in order to encourage patron respect for and pride in the system.*



*TOP: Washington Metro's Woodley Park station, by Harry Weese & Associates. ABOVE: Also by Weese, Washington's Metro Center.*

# THE PROGRESS OF CITIES:

More rail transit mileage was constructed in the United States between 1960 and 1980 than had existed before 1960. Remarkably, the pace of rail transit construction around the nation continues to increase, although Texas has yet to become part of this trend. To date, transit authorities have been created in San Antonio, Houston, Dallas and Fort Worth, but general acceptance of any mass transit beyond the conventional bus has lagged behind the rest of the nation. The following summarizes the status of North American mass transit beyond the borders of Texas:

**Boston:** This city has a booming economy based on "high-tech" industry. In 1972, the citizenry determined to stop building highways and to devote future transportation funds to transit. Currently, the old Orange Line elevated is being rebuilt at grade with a railroad right-of-way and the Red Line subway is being extended from Harvard Square toward Arlington Heights.

**New York:** The nation's largest old rail system has been plagued by deteriorating equipment and facilities. Within the past two years, the city reached a decision to rehabilitate the system at an estimated cost of almost \$7 billion.

**Washington:** The extension of the highly successful Washington rapid rail system, which first opened in 1976 for the Bicentennial, continues as planned.

**Atlanta:** The proposed 53-mile Atlanta rapid rail system opened its first leg in 1978. Additional segments have opened since and construction continues.

**Baltimore:** The first eight-mile leg of the proposed Baltimore system opened in November 1983. Planning for the second leg of the system is under way.

**Miami:** The first 11 miles of the 21-mile Dade County rapid rail system opened in May of this year.

**Buffalo:** The new Buffalo light rail system includes operation on a transit mall in downtown Buffalo and a subway in the suburbs. The first line, stretching 6.4 miles, will open in stages beginning in 1985.

**Chicago:** The extension of the rapid rail system to O'Hare Airport recently opened. A new rail line to southwest Chicago is in planning.

**Pittsburg:** Rehabilitation of 10.5 miles of the existing 22-mile trolley system, including construction of a new downtown subway, will give this city a true light rail system, which is scheduled to open in 1986.

**Detroit:** Preliminary engineering of a 15-mile light rail line, including a downtown subway, will be completed in late 1984, but funding for construction remains uncertain.

**San Diego:** The first 18-mile light rail line in San Diego runs from downtown to the Mexican border at San Ysidro opposite Tijuana. By following an old rail right-of-way, costs were kept very low. This system pioneered "self-service" fares in the United States.

**Los Angeles:** The 18-mile rapid rail subway along Wilshire Boulevard to the San Fernando Valley will break ground this year by current schedules. A 22-mile light rail line from downtown Los Angeles to Long Beach is also planned with opening of both scheduled by 1990.

**San Jose:** Santa Clara County, location of the "Silicon Valley," began construction of a 20-mile light rail line in May 1984. Extensions are being planned.

**Sacramento:** This city of only 260,000 will begin construction on its first rail line, following an abandoned freeway right-of-way, this spring. To

cut costs, the line will be a single track with passing sidings initially. A second track will be added as ridership increases.

**San Francisco/Oakland:** The BART system has succeeded in overcoming its early problems. Non-participating Bay area counties have initiated discussions about possible extension of the BART system. A light rail system also operates in San Francisco, and the city has the only remaining cable car line in North America.

**Portland:** The 19-mile Banfield light rail line from downtown Portland to suburban Gresham will open in 1985.

**Seattle:** A consultant team recently has been chosen for the design of a bus subway through downtown. This subway will be designed to accommodate future conversion to rail.

**Edmonton:** This 6.4-mile light rail line including a downtown subway opened in stages beginning with 4.5 miles in 1978.

**Calgary:** The first 7.7-mile light rail line in Calgary opened in 1981. A second 6.2-mile line is under construction and a third line is in the planning stages.

**Vancouver:** This city will open a new transit system using the Canadian intermediate capacity system (UTDC) in 1986.

**Toronto:** This city has the oldest Canadian rail system, including a rapid rail subway and the remaining lines of a street railway system. A new short line to Scarborough Center using UTDC technology is planned.

**Other Cities:** Other North American cities outside Texas that have considered or are considering possible rail projects include Minneapolis, Milwaukee, Denver, Dayton, Columbus, St. Louis, Cincinnati, Salt Lake City, Rochester and Orange County, California.

have generated an additional \$10 billion in development along that corridor. Toronto property assessments increased 32.8% city-wide between 1950 and 1960, but 45.4% in the areas adjacent to subway entrances. In the Bay Area, 17 million square feet of new office construction was put into place in the downtown rail corridors of BART between 1973 and 1981. In Chicago, over 75% of downtown retail shoppers arrive by transit. Washington's system has created a third rush hour—at lunch, as office workers use the system for going to restaurants, shopping, or visiting cultural facilities. And in Baltimore, the new subway has been a major contributor to the revival of downtown and a key to the development of Harbor Place, the major waterfront mixed use complex.

Some of these impacts were unanticipated, but many were the result of joint planning efforts of transit agencies, planning commissions and others. In Toronto and Washington, encouragement of "joint development"—an effort to secure private sector participation in station construction and development of mixed-use complexes on station sites—has produced notable results and has become the model for virtually all later transit projects. In San Francisco, zoning bonuses including increased FAR were provided for development attached to BART stations. And in many newer systems, including those now under construction or in planning, a variety of approaches to public-private partnership will be used: zoning incentives, joint development, special tax and/or development districts, reduced parking requirements or parking controls and coordinated public sector improvements. Indeed, cities such as Atlanta, Buffalo, Sacramento, San Jose, Portland, Pittsburgh and San Diego see rail transit as a key to renewal and continued economic development.

#### THE CHALLENGE TO TEXAS

The profound economic slump resulting from the fall of the Mexican peso and reduced oil and gas demand sent a shock through much of the state, forcing the realization that the key to stable economic growth must be diversification. In the economy of the last part of this century, the most desirable basis for growth will be "high-tech" and similar "clean" industries. But the competition among cities in attracting these kinds of companies is fierce. (More than 50 cities were in competition for MCC before Austin emerged as the new location.) Particularly since the sunbelt-frostbelt controversy has subsided somewhat, Texas

cannot rely on its sunbelt location as an insurmountable competitive advantage in attracting new industry, corporate relocations, and corporate branch offices. It has been observed that businesses choose locations in cities they perceive as working well, and that good mass transit is generally regarded as a symbol of a well-working city.

The past success of many Texas cities in attracting growth has created the problems they now face in transportation, and in other infrastructure elements. How these problems are managed can be the basis for successful growth and development. The difficulties of implementing good urban transit systems are many. The balkanization of transportation funding and the many competing bureaucracies and conflicting interests pose difficult problems, but if Texas cities are to remain economically competitive, this challenge must be met.

Texans in San Antonio, Dallas, Houston and Fort Worth have shown a willingness to tax themselves to pay for good mass transit, but major capital investments in new systems will require long-term commitments of financing that most Texas cities have not yet recognized. Texas' growth has been so sudden that we have not been able to diversify our transportation systems to meet the need. Cities that worked well as auto cities with populations of 200,000 or 500,000 are strangling as their populations continue to grow. A new philosophy of moving people is necessary—one which moves people in large groups, not in isolated units. Only in this way can Texas cities regain their once-envied mobility. And, in creating mass transit networks to meet the challenge of mobility, we can also renew our cities to meet the competitive challenge posed by emerging cities outside Texas. —

*Jeffrey Karl Ochsner is an architect with a small architecture and urban design practice in Houston that includes a sub-specialty related to transit planning. He is also a lecturer at the Rice University School of Architecture and the author of H. H. Richardson: Complete Architectural Works.*

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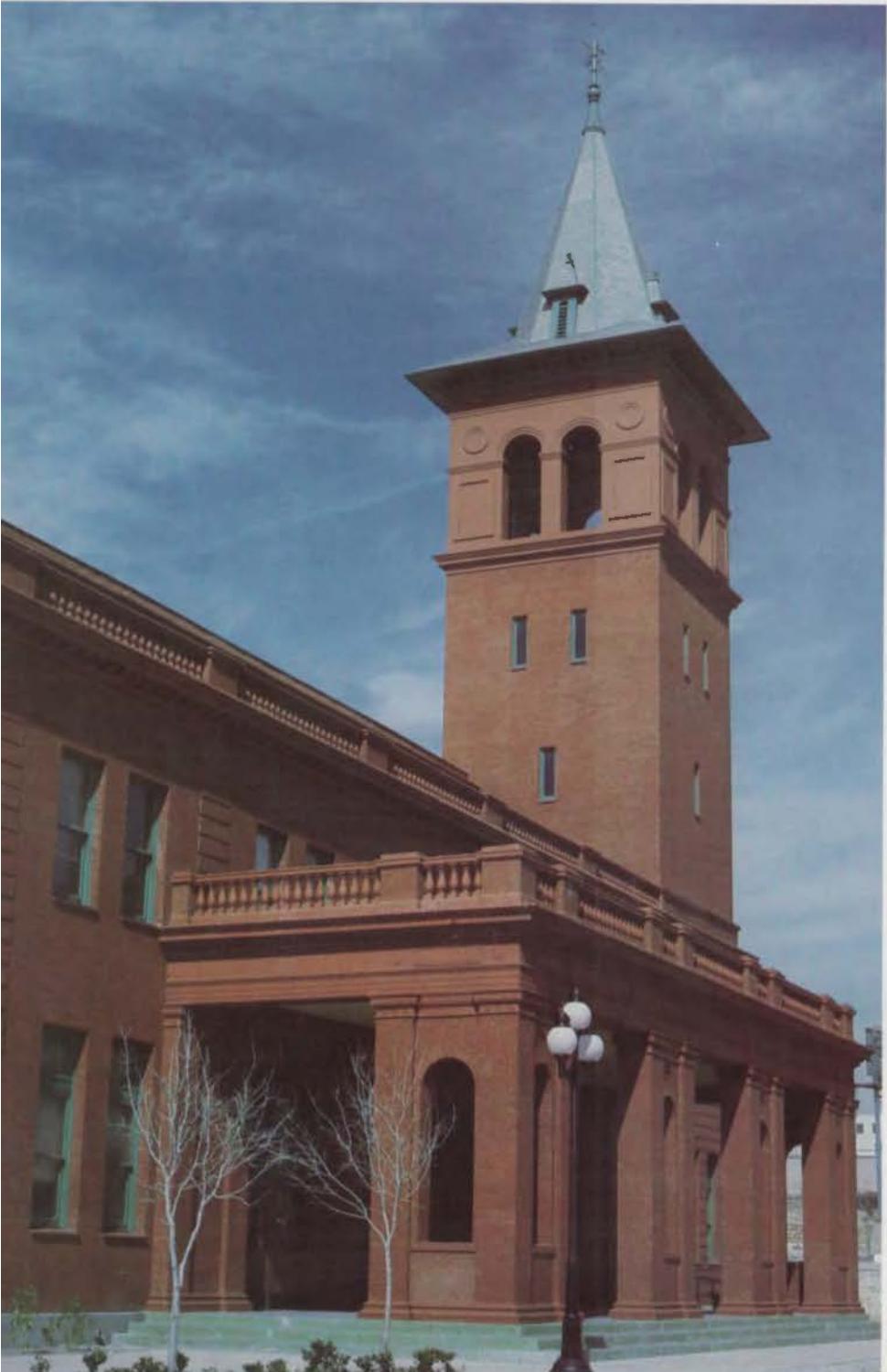
Richard Payne



# REDISCOVERING THE RAILROAD STATION

By Jim Steely

Terrance Brown



Turn-of-the-Century Texas was a period of rapid urbanization for the state. In 1900, one industry stood at the forefront of transportation and expansion: the railroads.

Until the Great Depression of the 1930s, virtually every community in Texas was served by at least one railroad. News, people and necessities arrived daily by train. Building materials and even styles were channeled to big city and small by the network of rails communicating with the rest of the world.

Transportation in Texas once, and for a long time, meant nothing but railroads. Airplanes were still novelties or military experiments until mid-20th Century. Yet, by the end of World War II, Dallas Love Field was a bustling city air terminal and the interstate highway system was but a dream. All-weather roads, particularly outside urban areas, are a thing of the recent past. Heavy trucks designed to haul farm and ranch products did not exist before innovative Texas legislators began to tax our gasoline to "pull the farmer out of the mud." The traditional rail stranglehold on human and commodity shipment ended when individual rubber-tired vehicles were offered surfaces for traveling anywhere, anytime.

Years of decline for rail passenger business were paralleled by years of neglect for railroad architecture. The Federal government organized virtually all nationwide rail passenger operations in 1971 under the name Amtrak, either occupying passenger depots in dilapidated condition or plopping down pre-fab buildings at lonely sidings.

Amtrak's initial concentration on establishing a stable timetable and purchasing reliable rolling stock has at last given way to encouraging and aiding depot rehabilitation projects. Federal and local governments' interest in historic preservation, both in the form of tax breaks and direct grants for private operators, has led to several such projects in Texas.

*Garland & Hilles, El Paso, restored the city's Union Station, including its "witch hat" spire, to its original appearance before a circa 1940 remodeling.*

*Restorations, Inc. restored San Antonio's elaborate polychrome Beaux-Arts vaulted waiting room ceiling to its 1940s appearance.*



*Photos by Jim Steely*



### EL PASO

El Paso's magnificent Union Station of 1904 has been renovated recently, by Garland & Hilles Architects of El Paso. Designed by Daniel H. Burnham's Chicago firm, its Neoclassical styling is similar to Burnham's Beaux-Arts Washington, D.C., station of 1903. The campanile's "witch-hat" spire has been restored, and the complex reflects its original appearance before a circa 1940 remodeling. Offices of the Sun City Area Transit city bus lines have moved in alongside Amtrak in the city-owned station.

### SAN ANTONIO

The Southern Pacific depot in San Antonio has been the subject of an on-going renovation by the railroad, Amtrak and the city since 1981. The 1903 Mission Revival/Italianate structure was designed in the railroad's San Francisco offices by Maintenance-of-Way Assistant Engineer John D. Isaacs and Assistant Architect D.J. Patterson. In keeping with its original construction by bridge-and-building crews of the railroad, current renovation work is being carried out by railroad personnel during available time. Repairs to the roof, costing Southern Pacific \$180,000, began the phased renovation; Amtrak later contributed \$330,000 to interior work. The elaborate polychrome Beaux-Arts vaulted waiting room ceiling was contracted to Restorations, Inc., of San Antonio. While this expansive public area has been restored as closely as possible to its 1940s appearance, the railroad has inserted a state-of-the-art control facility into the station's old dining room. Here computer technicians monitor all train movements on 1,800 miles of Southern Pacific track in Texas.

Restoration of the San Antonio station's exterior, an imposing presence in the St. Paul historic district on Commerce Street, awaits

*San Antonio's Southern Pacific depot, a 1903 Mission Revival/Italianate structure, is being renovated by railroad personnel.*



*Austin's Amtrak station reflects simple Mediterranean details, including tile-roofed awnings and sheds.*

agreements between the city and the railroad. The building's surrounding arcade behind broad Romanesque brick arches will be reopened. Salmon-colored exterior stucco walls on the brick structure will be painted close to the original yellow finish and trimmed with green, brown and red woodwork. Cast stone Baroque ornament framing tower windows will be restored, and according to officials, the once-landscaped entrance lawn might be given to the city as a park for restoration and maintenance.

#### DALLAS

The most notable transformation of a neglected railroad station into an accepted member of current society is Dallas' Union Terminal. The 1914 structure, designed by Jarvis Hunt of Chicago, was incorporated in the late 1970s into the Reunion district west of downtown. Woodbine Development Corporation, and Dallas architects Jarvis Putty Jarvis, converted the white glazed-brick, Beaux-Arts mammoth into a multi-use facility. The original passenger concourse now houses club and dining facilities; former railroad office areas are rented to private tenants; and the Amtrak ticket office and waiting area share space with a City of Dallas visitor information kiosk.

#### AUSTIN

The Austin depot represents Amtrak's willingness to commit funds to a permanent facility, and a railroad's willingness to exist side-by-side with the quasi-federal agency. Built in 1949 by the Missouri Pacific Railroad for \$100,000 (a staggering figure which must have included track and signal construction as well) the small one-story brick facility was renovated in 1981 by Amtrak and the railroad (which still uses part of the structure) for \$325,000. Modifications of many years were removed, and the waiting room and ticket offices assumed their original configurations. Tile-roofed awnings and sheds reflecting the simple Mediterranean details of the station were rebuilt as well. The facility now has an inviting appearance, even though its location remains obscure in the capital city.

Several other Amtrak ticket offices in Texas are housed in historic railroad depots. Large structures in Fort Worth (Amtrak currently services the Santa Fe depot there), Temple, and Texarkana were once the pride and focal points of their respective communities. The old Texas & Pacific depot in Marshall marks time for official interest to save it from destruction. The soaring Texas & Pacific building in Fort Worth, surviving the Depression and later de-



Dallas' Union Terminal is a notable transformation of a neglected railroad station into an accepted member of current society.

The old Texas and Pacific Railroad depot in Marshall marks time for official interest to save it from destruction.



mise of passenger service as a prime example of Texas Art Deco, has been the recent subject of many unrealized multi-use development schemes.

While these large structures recently appeared to have outlived their usefulness, they are being rediscovered as significant architectural specimens. Amtrak seems to be here to stay, obviously needing adequate working space in existing depots. Developers and the railroads themselves are showing an enthusiasm for utilizing these early monuments to transportation. Daniel Burnham's famous statement advising others to "make no small plans" continues as an epitaph which might well be applied to railroad stations. "Make big plans. . ." Burnham concluded, ". . .remembering that a noble, logical design once recorded will never die, but long after we are gone will be a living thing asserting itself with ever-growing insistence." ■



The Temple depot, once a community focal point, also houses Amtrak ticket offices.

Austin freelance writer Jim Steely is a graduate student in architectural preservation and history at UT Austin.



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# VAULTED GATEWAY TO THE ALAMO CITY

By Jim Steely

Chuck Williams



One of the earliest architectural forms to be associated with transportation was the light-weight barrel vault, which—like mass transportation itself—was a product of the Industrial Revolution. Just as Sir Joseph Paxton was erecting his Crystal Palace of prefabricated iron and glass near London in 1851, engineers and architects were employing the same new techniques for railroad terminals. Iron- and steel-ribbed barrel vaults in the vast 19th-Century trainsheds and concourses of Europe and the United States became symbolic of long-range transport, intricate schedules, and the sheer excitement of travel.

San Antonio's new air terminal building, scheduled for dedication July 1, applies the barrel vault to a new era of transportation in which orientation, day lighting, insulation and energy use were computer-simulated for optimum design efficiency. And while influenced by great railroad monuments such as the Gare de l'Est in Paris, King's Cross in London and Grand Central Station in New York, the San Antonio International Airport's 70-foot-diameter main concourse manages to impress without sacrificing human scale. Clever use of finish materials and spatial orientation keep this terminal more on the side of efficiency than monumentality.

## PHASED CONSTRUCTION

The project is a joint venture of Heery/Marmon Mok/Simpson. The large Atlanta, Georgia, firm of Heery & Heery, experienced in air terminal design, joined forces in 1979 with The Marmon Mok Partnership and W. E. Simpson engineers of San Antonio. Since the airport development would depend on air traffic growth rather than an arbitrary timetable, and the existing terminal would be used well into the new design's construction, the joint venture presented the city with a plan to be implemented in phases. The first phase of construction began in 1980, with a central energy plant

*The parking garage is clad in hand-surfaced Mexican Adoquin stone.*

and parking garage now in operation and a 16-gate terminal building nearing completion. Drawings for a second phase have just been completed for a concourse extension, already affirming the expandability of the basic design.

Marmon Mok has been involved with the San Antonio aviation office since 1972, contributing to a master plan that was adopted in 1975. Design partners Jim Foster and Steve Souter, along with (now former) Heery senior designer Terry Sargent and Simpson representatives, engaged in an intensive effort four years later that resulted in the design for the terminal and parking facilities. The joint venture team applied the most up-to-date methods in air terminal design, and at the same time scoured San Antonio for regional inspiration. The result is an efficient, economical concept employing forms readily associated with transportation and finished in colors and textures evocative of the region.

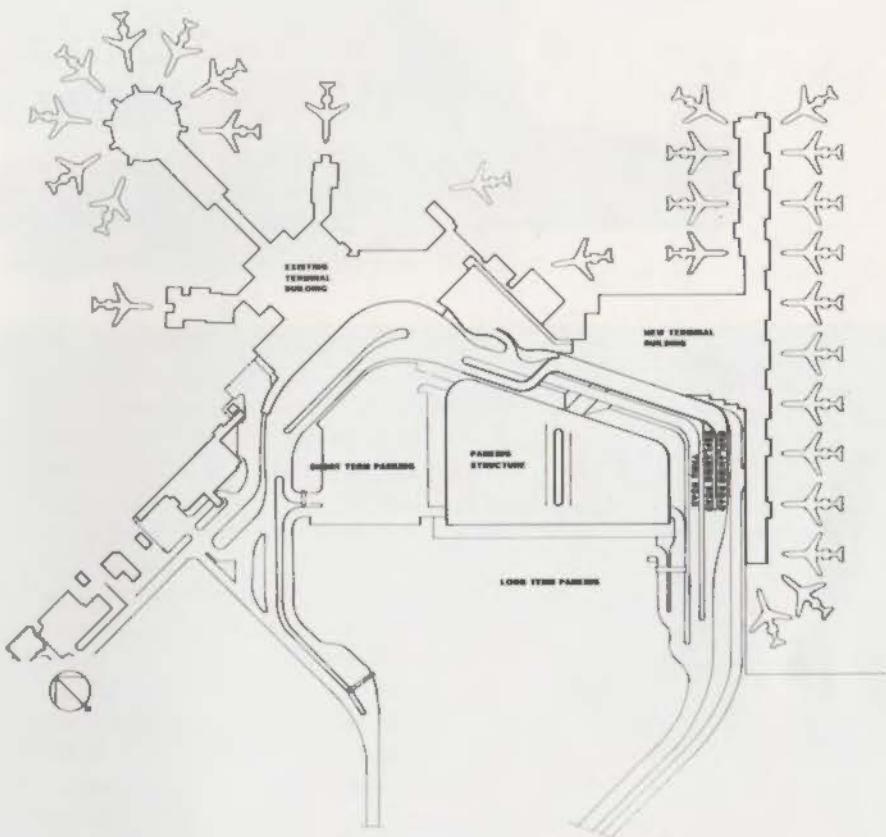
Heery had designed the successful Cincinnati terminal in 1972, which—except for its scale—bears little resemblance to the San Antonio project. The new design utilizes a pier arrangement perpendicular to the main concourse, both ends easily extended for gates and passenger holding rooms. The terminal consists of two levels, each accessible by auto traffic. Vehicles delivering passengers to the airport use the upper level, where patrons enter the main concourse, purchase tickets and check baggage, pass security and walk directly to departure gates. Passengers on arriving flights are routed to the lower level for baggage claim and auto loading or parking garage access.

## A COMPLICATED PROCESS

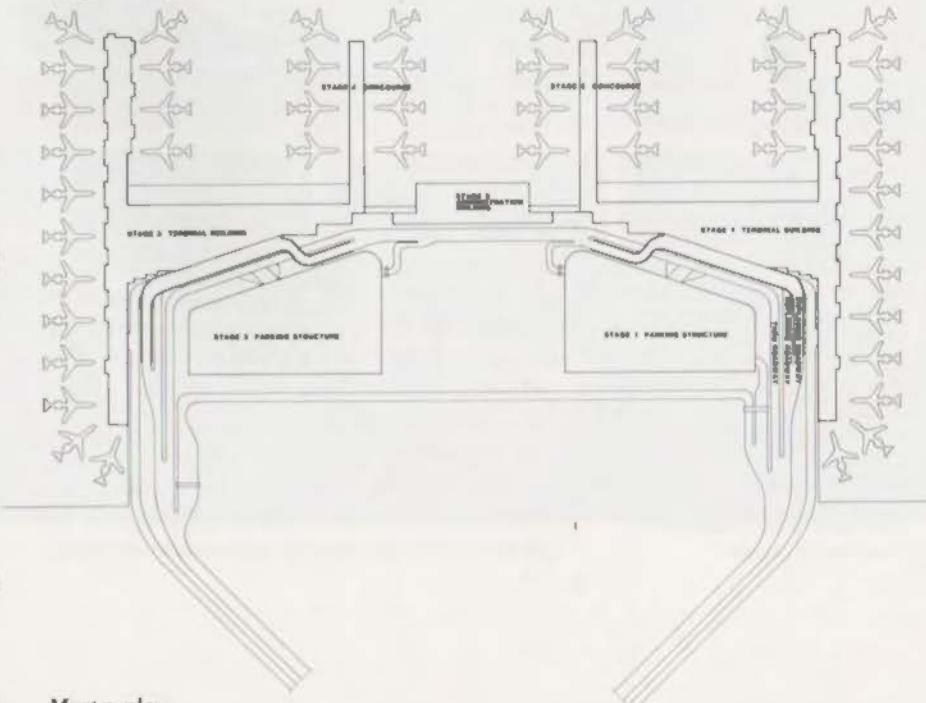
Recent deregulation of the airlines has complicated the already complex process of implementing a phased air terminal development for San Antonio. Indeed, the first-phase terminal was planned for five airlines in 1979, as compared to ten today. Further complicating the design is San Antonio's volume of international passenger traffic, which necessitates extensive provisions for Federal customs, immigration and agriculture facilities.

Airport security arrangements also have changed significantly in recent years. As a result, the San Antonio design represents one of the first aesthetically inoffensive security gates among so many awkward, retrofitted examples around the world.

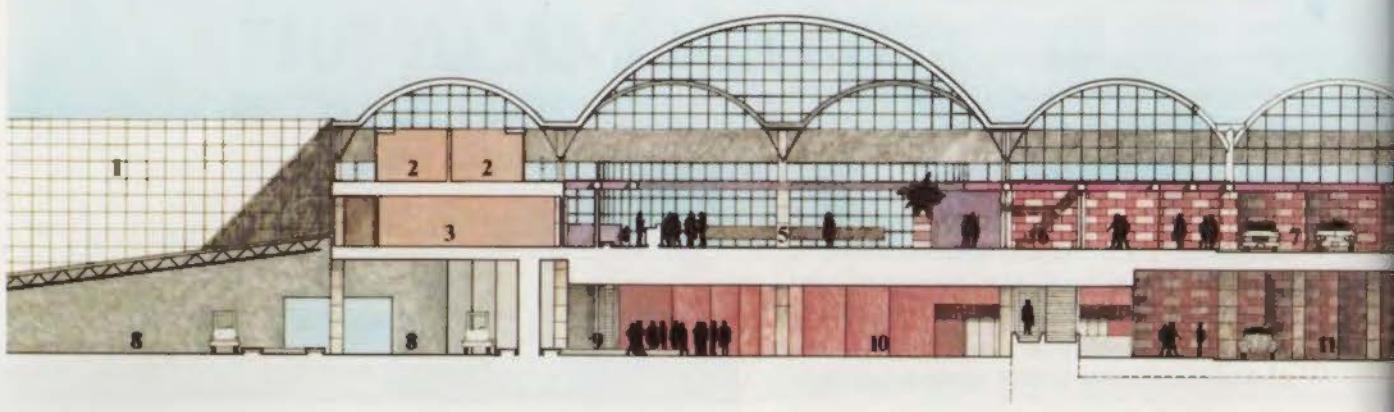
While not excessive, the project's \$64 million budget (actual construction cost—under \$57 million) permitted an enthusiastic bow to aesthetics. In the terminal, a checkerboard wainscot of specially developed square concrete



#### *Stage 1 site plan.*



### *Master plan.*



*Section through terminal:*

1. Concourse beyond;
2. Airline Administrative Offices;
3. Airline Ticket Offices;
4. Ticket Counter;
5. Ticket Lobby;
6. Entry;
7. Deplaning Roadway;
8. Bag Make-up;
9. Bag Claim;
10. Meet and Greet;
11. Planing Roadway;
12. Through Roadway.

Photos by Chuck Williams



Tubular steel trusses support the series of barrel vaults over the terminal's central block.

**PROJECT:** San Antonio International Airport.  
**ARCHITECTS:** Heery/Marmon Mok/Simpson.  
**TOWER DESIGN:** Dabney Byrn Associates, Inc. (engineers) with architect Robert Arburn & Associates, Inc.  
**OWNER:** City of San Antonio.  
**PROJECT MANAGER:** Day and Zimmerman, Inc., Philadelphia.  
**CONSULTANTS:** Weems and Doar, Atlanta (structural).  
**LANDSCAPING:** Marmon Mok and Green, Inc.  
**CONTRACTOR:** Clearwater Constructors, Austin.

masonry units presents the visitor with colors and textures of the region. Charcoal terrazzo floors in heavy traffic areas are blended with a hint of green, complementing adjacent carpet patterns of green and red-striped green grids. Ticket counters are faced with large-aggregate Rosa Levanto terrazzo tiles from Italy. Upper-level surfaces, in contrast to the pedestrian-level earth-tones, symbolize flight technology with raw aluminum and painted triangular tube trusses.

Before finish work was begun on the main terminal, the new energy plant and the parking garage were clad in hand-quarried Adoquin stone from the Huichapan quarry in the Queretaro region of Mexico. Plans to use the same polychrome Adoquin stone on the main terminal were scrapped when Mexican inflation and a fluctuating exchange rate quintupled the price of importing and installing the material. The solution was to develop granite-aggregate concrete masonry units in two tones for a more economical checkerboard surface on the terminal's interior and exterior.

#### VAULT AS SYMBOL

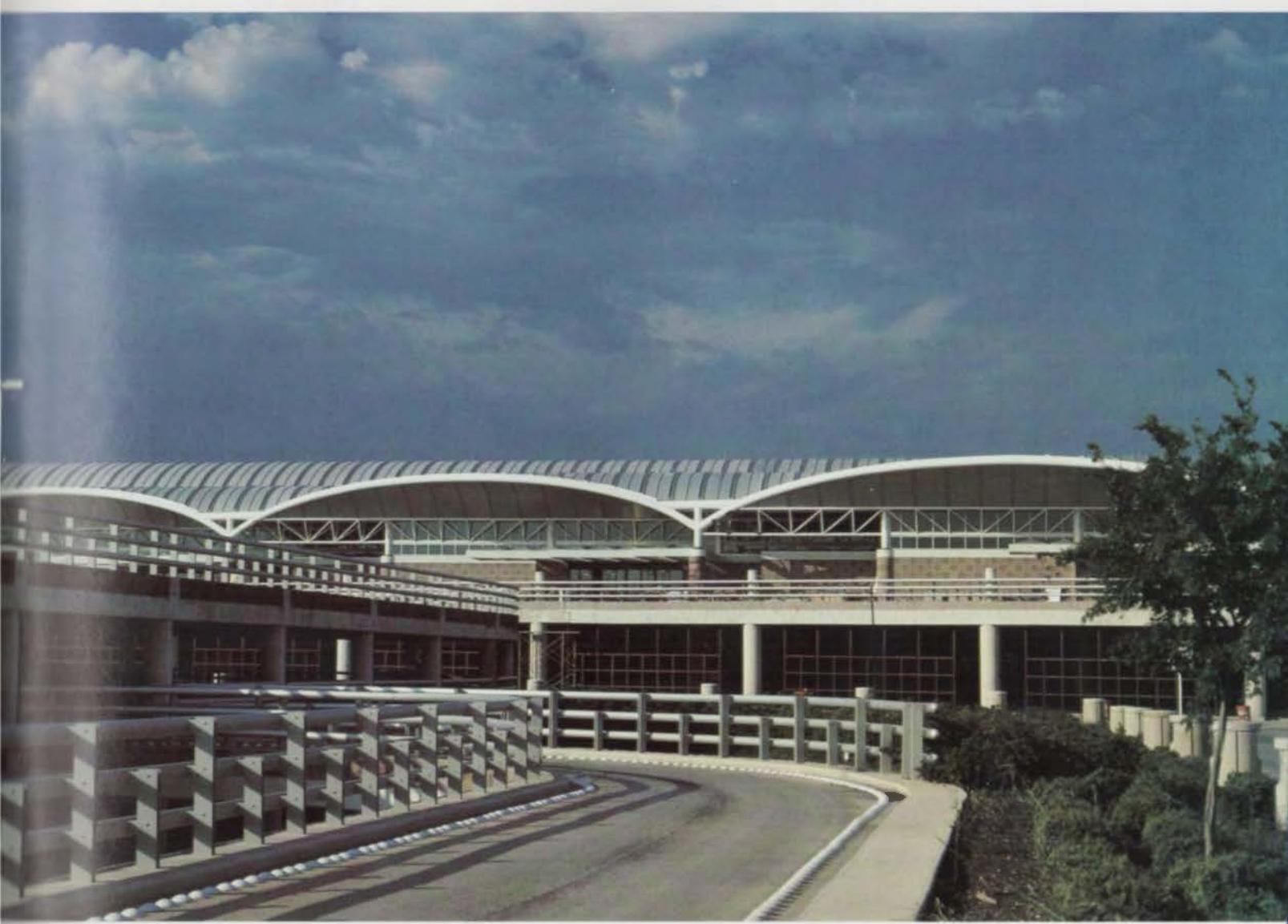
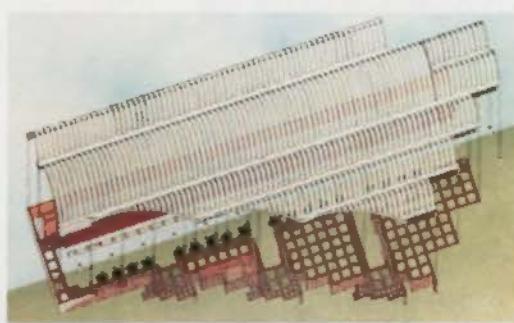
Tubular steel trusses support the series of barrel vaults over the terminal's central block, symbolizing not only 19th-Century concourses, but the Romanesque building techniques of local 18th-Century Spanish colonial missions as well. Three of the 35-foot-diameter vaults are exposed diagonally along the driveway to reveal three entrances to the 70-foot-diameter main concourse. Unfortunately, the solid wall of the south gate pier, so prominent in the vehicle approach to the terminal, is marred by irregularities in the aluminum panels that clad the upper portion of the wall above the neat checkerboard of the smaller concrete masonry units below.

The soaring effect of barrel vaults inside is enhanced by skylight ribs marching down the sweeping surface of the ceiling. These light portals—part of the computer simulation design utilized by Marmon Mok engineers—adequately illuminate the public and private areas below while minimizing solar heat gain. Three surfaces within the vault itself accept and diffuse the sunlight: the exterior is acrylic; a sandwiched diffuser is made of plastic; and the light at last reaches the interior through a 50-percent-perforated panel of painted steel. At night, efficient high-pressure sodium vapor lighting reflects from what appears to be a solid aluminum vault ceiling. A questionable aesthetic side-effect of this mustard-colored lighting is the transformation of the pleasant interior colors to muddy shades of gray.

Early 19th-Century railroad terminals announced train arrivals and departures with a bell, and essential depot clocks were mounted in prominent locations. A campanile or tower became the favored architectural device to elevate the bell and the clock. Before the next phases of air terminal construction begin in San Antonio—including demolition of the old terminal, and replacement by mirror structures of the 1984 terminal, parking garage and pier concourses—a new FAA control tower will be finished. Beyond its functional purposes as part of a state-of-the-art airport, this "campanile" will be yet another fitting allusion to the architectural history of transportation.



*Bird's-eye axonometric with roof removed.*



*Clever use of finish materials and spatial orientation  
keep this terminal more on the side of efficiency than  
monumentality.*

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# GUTSY DESIGN FOR A PROTOTYPE SELF-SERVE

by Ray Ydoyaga

Pumping gas is no longer the fun it used to be. Before self-service became a ubiquitous concept, filling up the tank meant stopping at a neighborhood station that did more than sell gas: full-service stations serviced and repaired the car; provided free maps and travel advice; offered premiums in exchange for a fill-up (remember sets of smoked tumblers?); and was attended by a pump jockey who served variously as an expert town geographer, a neighborhood Liz Smith and a World Series bookie. Alas, urban America no longer wants to pay the price for these down-home services.

Since the oil price hikes of the early 1970s, the direction in gasoline marketing has drastically changed. More than 60 percent of the total volume of gasoline sold in America is now distributed through self-service stations. Gasoline consumption peaked in 1978 and sales are expected to continue to decline at the rate of one percent per year through the 1980s. Furthermore, few consumers have remained loyal to one station, and since many stations now accept all major credit cards, even brand loyalty is eroding.

In a belated move, several large oil companies, including Exxon, Shell and Texaco, have recently begun to change the look of their franchise outlets in an effort to capture a larger share of a declining market. 3D/International's recent design for Gulf Oil is perhaps the most integrated effort by the industry to accommodate market changes in an architectural manner. Six prototypes have been completed in various parts of the country, some of which are in Houston, and over 50 more are scheduled to be built during the remainder of the decade.

After an extensive marketing study, Gulf found speed and convenience to be the two factors consumers most looked for in a gas station. The customer of the 1980s doesn't want to wait in line to fill up the car, just to say hello to the station attendant. As a result of the study, Gulf outlined several requirements for 3D/I: standardization of the design so that it could be reproduced anywhere in the country; greater cost-effectiveness for each facility in terms of both construction and use; and flex-

Photography by Joe Aker



Brightly-colored hoses seem to levitate above curb-less "islands" but are actually connected to high-volume pumps concealed within pylons.

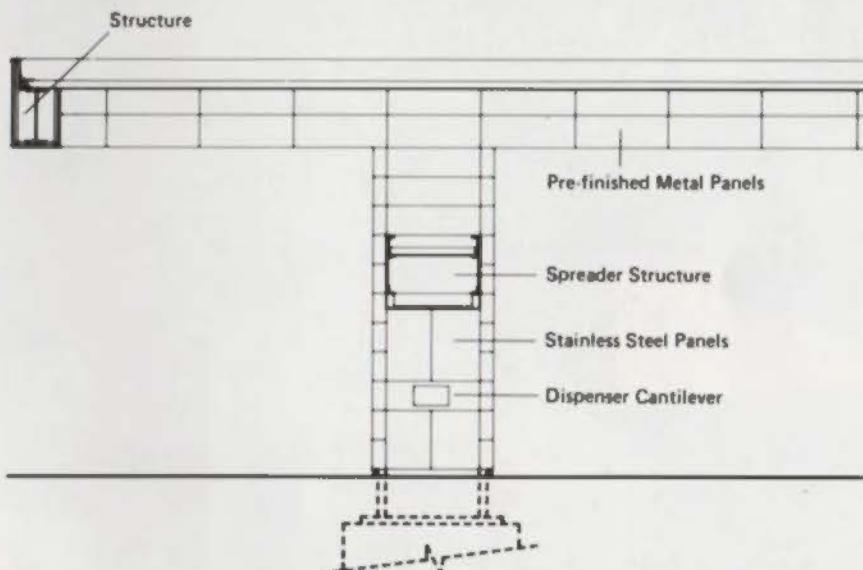


ibility of each outlet in meeting changing market conditions.

For the Gulf prototype design, 3D/I assembled a multidisciplinary design team from within its multiple departments including architecture, engineering, graphics, planning, landscape and interiors. The team realized that the only way to accommodate Gulf's need for standardization and cost-effective application was to go with a modular design that would adapt to specific codes and regulations of different regions, as well as to allow for phased implementation at existing stations.

Unlike many of the self-serve gas stations with gaudy signage and shoddy details, the 3D/I team's new Gulf prototype promises to be unobtrusive to its surroundings. Admirably advocating background architecture, the designers have created a station with an airy, high-tech look and simple, attractive graphics that manage to be effective while keeping a low profile. Although the station has the potential of being out of place if located in neighborhoods with older architecture, its muted grey colors with orange accents are, at least, unoffensive. Outside of historic surroundings, the new Gulf prototype with its commodious canopy should be a welcome addition in most communities.

Serving as the predominant design element



*TOP:* Nearly all of the architectural components in the Gulf self-serves are modular and a complete station can be built within three weeks. *ABOVE:* A 3D/I CADD-generated drawing shows the station's uncomplicated structural and cladding system.

*RIGHT: Car washes, located at the rear of the site, are pre-fabricated units requiring relatively little labor to install.*  
*BELOW: Various lighting techniques combine to make 3D/I's Gulf self-serves attractive, yet glare-free.*



of the station is a grey canopy with a single orange band around the perimeter. Held up by T-shaped pylons, the canopy stretches over most of the service area with either a teller's kiosk located in its center or a convenience store at its far end. Car washes incorporated in some of the stations will be located at the rear of the site outside of the canopy with separate access.

The basic module for cladding all surfaces is a 15" by 48" bent metal panel pre-finished with a misty grey enamel. 3D/I claims the light grey color was chosen because, at a distance, it contrasts with the surrounding environment but becomes more neutral at close range.

(White supposedly has the opposite effect.)

Each component—pumps, signage, kiosks and buildings—was developed as a standardized, pre-fabricated unit that can be used for new construction or the modification of existing utilities. This modular approach allows Gulf to realize substantial cost savings from large-quantity purchases and equally substantial gains in construction time. By literally dropping pre-fab components onto the site in a predetermined configuration, Gulf can have a new station pumping gas within three weeks instead of six to eight months.

In the new scheme, traditional free-standing pumps trailing cumbersome black hoses have been replaced by multi-product dispenser units plugged into pylons. These high-volume pumps are concealed within each pylon, and only its brightly colored hoses and nozzles remain visible. The transaction is recorded on a digital read-out band that runs across the bottom of the spreader panel connecting each pair of pylons.

Raised-curb islands, on which traditional pumps are mounted, have been abandoned in favor of direct, on-grade access. Instead of concrete curbs, the new service stations have bollards outlining its borders. Inside the area defined by the bollards, the paving is textured strips of concrete colored a warm brown. The color visually identifies the zone, while the road feel of the rough texture physically commands the driver's attention and alertness.

Concrete areas around the stations have been significantly reduced from previous Gulf self-serve designs. Instead of the bizarre and sickly fauna found in countless service stations, the new Gulf self-serves will be landscaped with large, mature trees and grass beds that require little maintenance.

One of the oldest clichés in architecture is that anything looks good at night. In the gas station vernacular, replete with "megawatt" fixtures that seem to attract attention in the

form of harsh glare, the phrase doesn't hold much weight. 3D/I's lighting techniques for Gulf are graciously accommodating in avoiding the unpleasant illumination of its service station brethren. Bounce lights highlight the canopy and structure; ambient lights wash merchandising elements; task lights aim toward each pumping unit; and all combine to offer glare-free night-viewing.

The 3D/I designed self-serve has a cohesiveness that seems to be lacking in many of the newer designs of the industry. Since Gulf had no specific architectural style associated with its stations other than a once-prominent orange mansard, 3D/I's approach to combine all the new digital equipment and high-volume pumps in an efficient, modular package seems like a wise move. Other than in the graphics, the station makes no reference to the past; perhaps that is best for a new way of doing old business. —

**PROJECT:** *Gulf Self-serve Station Prototype*

**ARCHITECT:** *3D/International, Frank Douglas, principal in charge; Patton W. Brooks, project director; Stephen D. Harding, project designer; Ray Armor, architectural designer; William Boswell, interior designer; Stephen Thy, landscape architect; J. Rufus Glaze, MEP engineer; Vilas Nujumdar, structural engineer; Richard A. Gottfried, architectural signage.*

**OWNER:** *Gulf Oil Products Co.*

**CONSULTANTS:** *Pete Protzman, Houston (industrial design).*



# THE NOT SO LOWLY PARKING GARAGE

By Michael McCullar

Designing a container for parked cars has generally been considered more of a science than an art. There is an internal intricacy of ramps, columns and stalls to figure out, and—typically—once that's done there is little left to do outside but spruce up the envelope so the structure won't look too bad. The external appearance of the parking garage can be determined primarily by the parking function, according to one school of thought, or it can be determined more willfully, after the fact. In the words of one parking garage consultant, "Our approach—both in budgeting and design—has been to develop a machine to perform a single function—parking. Once this machine has been designed, the question is: What kind of covering or box do we give it?" On the one hand, traditional notions about parking garage design tend toward the purely rational approach to form following function; on the other—architecture as afterthought.

It could be that the parking garage has been considered more utilitarian than aesthetic simply because cars are not people and do not require the levels of comfort and delight that architecture is meant to provide. Aside from a kind of Corbusian *beton brut* in its concrete structure, there is very little inherent in the character of the parking garage to loft it beyond its basic function. There is a certain beauty in the function itself, of course, if the system is smooth and efficient and the garage is not a headache to use. But by and large, the parking garage has been considered more of a facility than a building, and the traditional gauge of its success has not been how good it looks but how well it works.

As the following portfolio illustrates, however, this traditional view is being challenged by architects and developers who maintain that working well as a container for parked cars is not enough for the parking garage. This once-mundane building type is now being called upon to make a visual as well as an expanded functional contribution to its setting. While providing a clean, well-lighted place for people to park their cars, today's parking garage can also offer an elegant assortment of



Richard Payne

ABOVE: Elaborate detailing of parking structure serving Transco Tower, Houston. Architect: Johnson/Burgee, New York, and Morris/Aubry, Houston. FACING PAGE: I. M. Pei's garage for Texas Commerce Bank in Houston. Associate Architect: 3D/International, Houston.



spaces for playing racquetball, eating lunch, going to the theater, shopping for cigars or just appreciating good, basic architecture.

#### LOOKING BACK

It may seem that the parking garage, like the motel or drive-in, is yet another building type that didn't exist before the automobile. This is not entirely true. For as long as people have propelled themselves on anything other than their own two feet—whether by horse, chariot or 280-Z—there has been a need to store their vehicles when they weren't in use. The 19th-century parking garage was the livery stable, where horses and carriages were kept for a fee as their users went about their business in town. In the early 1900s, after the advent of such 20th-Century staples as the automobile, steel-frame building and elevator, the "livery stable" became a rather substantial edifice. In 1941, one of the first underground garages was built beneath Union Square in the heart of San Francisco, and in spite of the extra cost involved (for special waterproofing, lighting and load-bearing roof), it proved to be an effective way to house 1,500 cars while preserving a priceless urban amenity. Subject to the vagaries of automotive fashion and human behavior, however, many of the garages built before World War II—with their tiny stalls and frenetic parking attendants—were obsolete by 1950. Cars got bigger, and people wanted to fetch their cars themselves, which made it necessary for the garage to be roomier and easier to maneuver in. The parking garage has been getting bigger ever since. In the '60s, a 500- to 700-car garage was considered large; now they're being built to hold upwards of 3,000 cars.

As for individual on-street parking, in which the horse was tied to its hitching post or the car to its meter, that has always been more or less available. But as the automobile proliferated, the street became more important as a mover than as a storer of vehicles, and off-street parking became the only way to really make a dent in the conglomeration of automobiles that congests the central city.

#### AN EXPANDED ROLE

As the private automobile became the preferred form of transportation, making it exceedingly difficult to get most people to ride the bus or streetcar or anything else, the parking garage became as important to urban vitality as any other kind of building. Since it consumes a considerable chunk of prime real estate (the pricier the real estate the greater the need for a garage, because a single layer of

surface parking becomes increasingly extravagant the closer you get to downtown), and since it is carefully situated to enhance rather than disrupt pedestrian and vehicular traffic, the modern-day parking garage must do more than just hold cars. Not only should it work well as a garage, but it affords the opportunity to stimulate its context by offering an assortment of other uses—retail on the street level, offices or apartments on top. This range of uses not only enhances the form of the building but also the city's tax base.

#### HONESTY OR DISGUISE

There are those who believe that a place to park your car—even if it provides for a variety of other uses—should look like a place to park your car. What other kind of downtown building can have, just by virtue of its function, a helical ramp spiraling down one end reminiscent of the Guggenheim Museum? Such contrast can be dramatic and useful; not only does it add a certain visual zest to the cityscape, but it makes it easier on the parker, who likes to be able to recognize a parking garage when he sees one.

Another design approach is to camouflage the inner workings of the garage in the interest of the overall architectural expression. But whatever the aesthetic strategy for the bulk of the building, the ground-level treatment is usually the more important issue. How the parking garage fits into and enlivens the street can involve contextualism at its best; a multi-leveled building with a multiple of uses—paramount among them parking—can reinforce the architectural character of its setting while enhancing the vitality of the street and while being part of the downtown-parking solution instead of being just another part of the problem.

#### FUNCTION OVER FORM

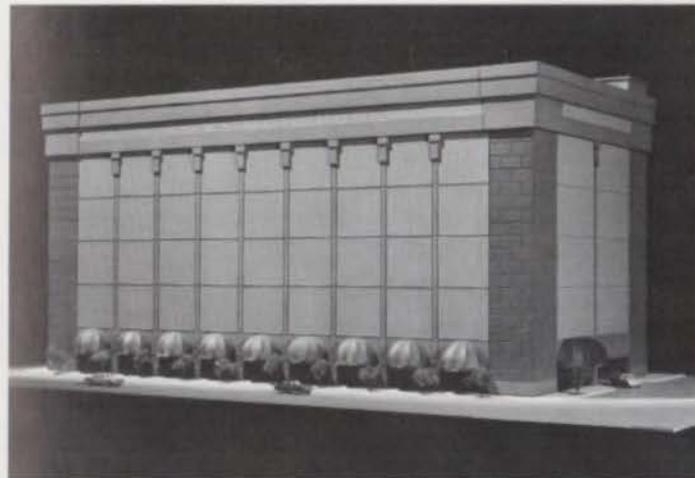
As the parking garage becomes prettier and more ambitious in terms of use, there is always a danger that its primary function will not receive the attention it deserves. One parking garage consultant bemoans what seems to him to be an owner's preoccupation with "cost per square foot, the overall site plan, and the landscaping and architectural treatment" rather than "the more important concerns of the functional design of the facility." Not only is the operation of the parking machine as important as its appearance, but it is also important for the garage to be tough. The parking garage is like a bridge, says architect B. J. Meder of Walker Parking Consultants in Houston. It has to "move and breathe" like a bridge because of

**While providing a clean, well-lighted place for people to park their cars, today's parking garage can also offer an elegant assortment of spaces for playing racquetball, eating lunch, going to the theater, shopping for cigars or just appreciating good, basic architecture.**

Robt. Ames C



*Detail of parking structure at Dallas Galleria. Straightforward, yet not without a certain elegance, this is a parking garage that looks like a parking garage. Architect: Hellmuth, Obata & Kassabaum, Dallas.*



TOP: Facade of parking garage along the canal at Las Colinas in Dallas, conceived as a collage of false storefronts to camouflage the garage itself. Architects: Harwood K. Smith & Partners, Dallas. ABOVE, LEFT AND RIGHT: Two high-style multi-use parking facilities designed for Treptow Development Company in Houston. Fannin Garage, left, by M. Nasar, Houston, and Market Square Garage, right, by Morris/Aubry Architects, Houston.

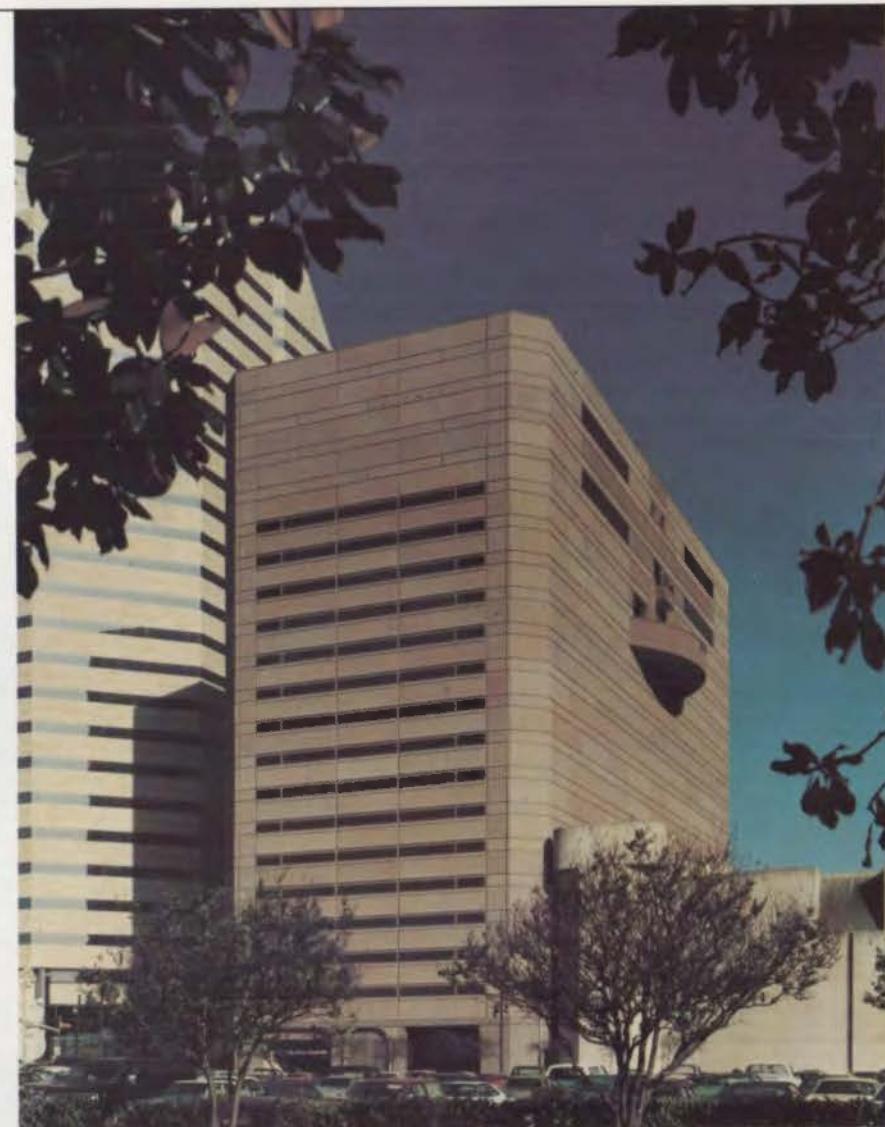
its exposure to the brutality of the elements and of the cars that drive in and out of it every day. "Eighty percent of parking garage design is 'durability engineering,'" he says—making sure that the compressive stresses in the slabs and the connections in the structural system are sound, and not just sound enough to satisfy code.

Building codes themselves, as far as parking garages are concerned, place too much emphasis on fire protection, Meder says, and not enough on security. Studies have shown that fire is not a common problem in parking garages. There is very little combustible material that is part of the garage itself, and the conventional open-air design allows the heat and smoke to dissipate quickly. What is a problem is providing adequate lighting and minimizing possible hiding places, such as enclosed stairwells, which many local codes require to be built of fireproof—and soundproof—masonry.

#### GEARING THE GARAGE TO PEOPLE

It should not be overlooked that, while the parking garage is designed to accommodate automobiles as its primary user, human beings use the structure too, and there is an intimate relationship between the success of its design and the satisfaction of the people who park their cars in it. It is people who enter the garage and have to negotiate its angles and curves. And as they exit on foot, bound for work or recreation, it is people who are aware of adequate lighting, ventilation and security, and of the distance from garage to destination. It could be that the parking garage has a more basic and immediate effect on the people who use it than the building or buildings it serves. The fact that its quality as a building depends primarily upon its efficacy makes it easy to notice its failings. As Meder points out to his clients, the visitor's first and last impression will originate with the parking garage. Serving as a kind of architectural primer, it indicates to people, in the most basic of terms, how a building can or cannot serve its purpose.

Austin writer Michael McCullar, a Texas Architect contributing editor, currently is writing a book for Texas A&M Press on the life and work of preservation architect Raiford Stripling.



Tom Evans

ABOVE: Alley Theater Center, Houston, a 1,000-car garage which reserves the top three levels as expansion space for the existing Alley Theater (adjacent to the parking facility) and provides retail space at ground level. Architect: Morris/Aubry Architects, Houston. LEFT: Hyatt Regency garage, San Antonio, which serves the hotel across the street and offers pedestrian amenities in the form of retail uses at ground level. Architects: Ford, Powell & Carson, San Antonio, and Thompson Ventulett and Stainback, Atlanta.

*It could be that the parking garage has a more basic and immediate effect on the people who use it than the building or buildings it serves. The fact that its quality as a building depends primarily upon its efficacy makes it easy to notice its failings.*

Greg Hursley



*Littlefield Mall, Austin, provides contract parking for the renovated Littlefield Building across the street, as well as a broad range of uses including condominiums, food services, retail and racquetball. Architect: Holt + Fatter + Scott, Austin.*

## RECONSIDERING MERITS OF MODERNISM

By Jon Thompson

**Sverre Fehn/The Thought of Construction**, by Per Olaf Fjeld. Rizzoli International Publications, 192 pages, \$25, paperback.

Having given the architectural community a thorough and lavishly illustrated history of Post-Modernism, from the seminal writing of Charles Jencks to monographs on the Post-Modern masters Stern and Graves, author Per Olaf Fjeld, in *The Thought of Construction*, a new book about the Norwegian architect Sverre Fehn, seems to invite us to reconsider the merits of Modernism.

Born in Kongsberg, Norway, in 1924, Fehn received his degree in Oslo in 1949, later working in Paris for Jean Prouve'. He thus came of age during the period of entrenched Modernism, exemplified in the States by the work of Philip Johnson and Paul Rudolph. Yet, in looking through Fehn's work, it is not the influence of Mies or Corbu that one feels, but an empathy with an immigrant American architect who was beginning to find his own stride in the 1950s.

In his architecture and in his thoughts, Sverre Fehn bears a remarkable resemblance to Louis Kahn. For both men, architecture, rather than elegant artifice, is the most concrete expression of the human spirit. Per Olaf Fjeld, once also a student of Kahn's, presents his Norwegian mentor through a series of the architect's ruminations on what Kahn might have called the "form" of his work. These musings are presented side by side with illustrations of 16 of Fehn's projects, including residences, a home for the elderly and several exhibition pavilions. In each instance, Fehn discusses his search for the nature fundamental to each project. In describing the structural layout of his Boler Community Center, 1972, Fehn says:

*In the community center the children play in a room around the column, since the uninhabitable center is unity. The expressiveness of a structure reveals itself through openings toward light and space, whereas the single column has no discourse. Its height is ultimately our recognition of the roof. This simple condition is perceived through repetition. The four-column unity is but a model of children at play. Within their created "room" there is a dialogue, but the column itself stands alone.*

The photographs of Fehn's work confirm that he is well-rooted in the Modern Movement, concerned as he is with a straightforward expression of structure, material and detail. But what lifts Fehn's work far above the bastardized Modernism of Looplandia is his obvious master's touch in handling scale, proportion, natural light and detailing. More than that, it is his confidence that a simple statement of structure and space can yet have a rich and profound meaning.

In fact, *The Thought of Construction* can be read as a refutation of Post-Modernism, a defense by example of the potential yet untapped in the Modern vernacular. In the earlier Michael Graves monograph, Graves says, "It may be glib to suggest that the Modern Movement be seen not so much as a historical break but as an appendage to the basic and continuing figurative mode of expression. However, it is nevertheless crucial that we re-establish the thematic associations invented by our culture in order to fully allow the culture of architecture to represent the mythic and ritual aspirations of society."

And yet, Sverre Fehn has expressed very well the same "mythic and ritual aspirations" for which Graves yearns, and without resort to the gimcrackery of a painted plywood rococo. He does so, not by examining the figurative and spa-



Skadalen School for Deaf Children

tial theories of 20th-Century art, but by studying the timeless nature of humanity, then building accordingly. Rather than focusing his inquiry on layering or spatial ambiguity, Fehn talks instead of the lives from which his buildings grow, of the mast-like columns in his chapel for a Norwegian fishing village, of the hunger for horizon inherent in those who make their living at sea. His works harbor all phases of life, from a school for deaf children to a retirement home to, finally, a crematorium. And always, he looks for the continuities. Referring to the ramps he uses throughout, Fehn says, "From the first step to the last, the floor is a domain to be conquered."

For those of us practicing architecture today, envying the land speculator more than the poet, contemplating the work of Sverre Fehn is a rewarding reminder that the ultimate design criteria resides always in the heart. ■

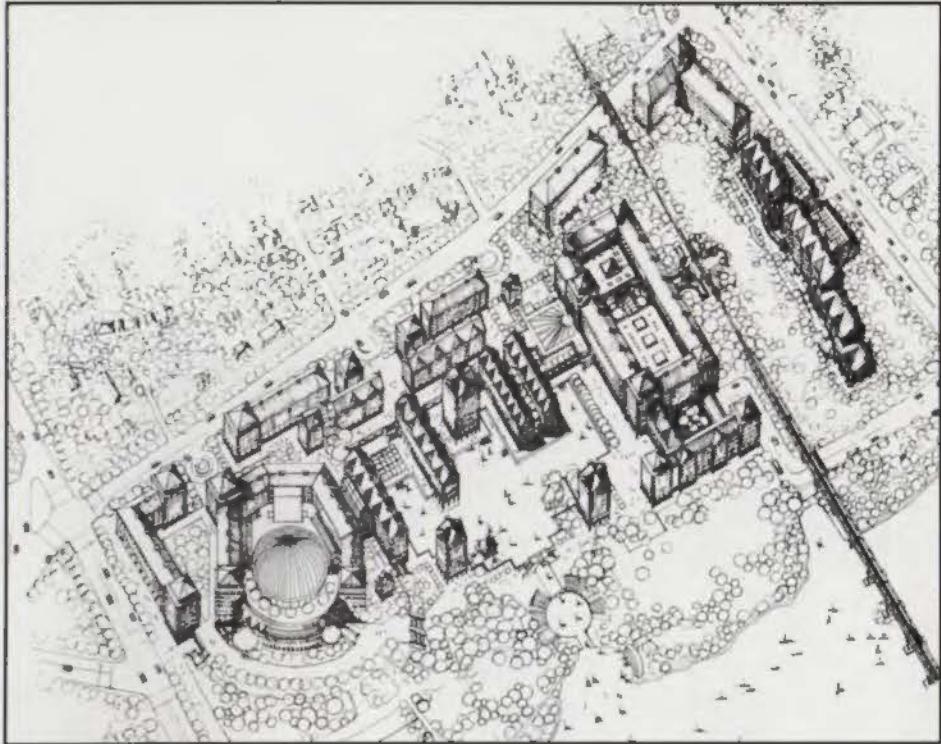
## NEW CIVIC CENTER PROPOSED FOR AUSTIN

Austin government officials, spurred by a push from the business community, have for years contemplated building a new convention center near the site of one of the city's most cherished parks, Auditorium Shores on Town Lake. Powerful local environmentalists and neighborhood associations, known for their impassioned protests at the mere mention of the word growth, have astonished everyone by reacting mildly to an unsolicited schematic design for a civic center campus that has received plaudits from city hall and business leaders.

None of the parties affected by the project seem to have aesthetic problems with the civic center proposal by Sinclair Black, FAIA, and his Austin firm, Black, Atkinson & Vernooy. The civic center's sensitively scaled buildings focused around a seven-acre lake and its pedestrian streets terminating in European-like courts have, in fact, been widely praised. The only criticism has come from residents worried about the increased traffic along two heavily traveled corridors in the area, and the development's effect on adjoining Auditorium Shores.

Black has explained that the traffic problem can be alleviated by using an existing railroad bridge as a form of trolley shuttle connecting the south shore to the downtown area. Several city council members and the planning department staff have also publicly expressed that traffic problems with the project can be solved.

BAV's \$350 million proposal along the south shore includes a city-owned convention center attached to a 600-room



*Axonometric of BAV's proposal*

hotel; 1.1 million square feet of office space; 464,000 square feet of retail space; 900 housing units; and a seven-acre man-made lake. A 5,000-space parking lot would be located underneath the 16-building campus, with additional spaces on the other side of the lake joined by light rail.

The civic center proposal closely adheres to Austin's new comprehensive zoning ordinance, one of the toughest in the state, that takes effect Jan. 1985. Average height on the campus is four stories and none of the buildings exceeds the 120-foot Town Lake height limitation; all have sufficient drop-off points; and the entire complex is designed for pedestrians in what Black describes as "a people place."

According to Black's plan, the civic center will be a public-private joint venture that allows the city to continue own-

ing all land and gives developers 99-year leases on their buildings. Only the new convention center and the renovation of the existing Palmer Auditorium would need public funding in the amount of \$35 million bonds to be repaid through hotel/motel revenue.

Black, who was recently elected to the AIA College of Fellows, has been able to make the civic center idea work partly due to his reputation in the community as a tireless environmental and urban design advocate.

"This is really just an extension of all my efforts about what should happen to downtown," Black said. "The objective is to maximize the quality of the project and the income that comes to the city as a result." The city staff is expected to make final recommendations on the project in the summer.



*Perspective of Civic Center from Town Lake*

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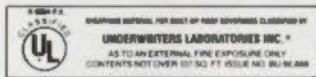
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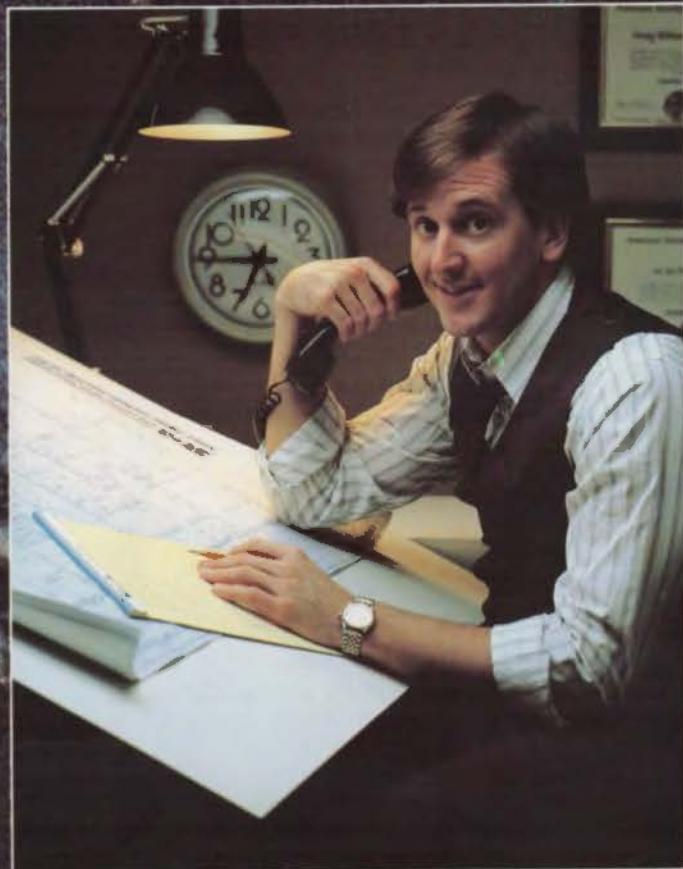


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## OPENING OF TRAVIS COUNTY JAIL HELD UP IN COURT

Texas' rapid growth in the past ten years has created an unexpected boom in one segment of the population—prisoners. The state prison system and many county jails are facing numerous planning problems in an attempt to quickly improve overcrowded and outdated penal facilities. Of the state's troubled county facilities, none has been as controversial as the new Travis County Jail in Austin.

Since 1973 Travis County Commissioners have been under federal court orders to improve conditions and relieve overcrowding in the old jail atop the courthouse. Financed with \$8.5 million worth of public improvement bonds, voters approved new jail construction in late 1978. The new jail, designed by Austin joint venture firms Barnes, Landes, Goodman & Youngblood, and Jessen Associates, was accepted as "substantially" complete in January 1983.

Shortly thereafter, however, the Travis County Commissioners barred the contractors from the site and filed suit against the architects, the contractor, and the subcontractor charging "professional malpractice" and failure to live up to contractual obligations. The 100,000-square-foot jail, featuring 271 individual cells, has been closed since spring 1983. The jail is currently costing the county \$33,000 a month for utilities and personnel.

At the heart of the controversy is the \$1.3 million security and detention system manufactured and installed by Integrated Detention Systems of Dallas. IDS' system first came under criticism when federal jail inspectors, in the process of certifying the facility, were able to break out of the jail in less than 15 minutes. The electronic lock mechanisms on the cells and other security doors are opened with magnetic keys, and inspectors were able to trip the locks using small kitchen magnets attached to Popsicle sticks.

Other jails using the IDS equipment have had similar problems. The Collin County facility in McKinney had a similar IDS system installed in 1978. The

jail's motors have fallen out and switches on control boards have malfunctioned. Collin County Judge Bill Roberts has stated his jail is trying to live with the system knowing it might eventually have to be replaced.

Before construction commenced on the Travis jail, the architects requested county representatives to inspect Collin County's facility, which also uses IDS locks. "We felt it was important for them to see it before it was approved," said Lamar Youngblood, a partner of BLGY.

After inspecting the jail, the Travis County Commissioners approved the IDS lock system. The county now maintains that the architects endorsed a system which was new and untested. AMPAT/Midwest, the subcontractor who hired IDS, has offered to bring the system up to an acceptable level of operation at no cost to the county but the Commissioners have continued to reject all offers to fix the locks.

IDS filed for bankruptcy in June '83, further complicating attempts to remedy the situation.

BLGY has extensive experience in designing penal facilities including those in Hays County, the Travis County minimum security unit in Del Valle and the renovation of the old Travis County facility in Austin. Jessen Associates designed Texas Dept. of Corrections Hospital in Galveston. All of their projects prior to the Travis County Jail were successful but none used the IDS system.

In addition to the security system, a study commissioned by Travis County cites over 100 flaws in construction, materials and design which "need to be repaired to make the jail safe and secure."

Travis County Commissioners made an unprecedented move in order to obtain \$5 million needed to finance a completely new security system, rectify flaws and complete remaining work. On behalf of the county, an amendment to the Certificate of Obligations Act was introduced and passed during the final hours of the 68th state legislative session. Previously, only counties with populations of less than 350,000 could issue certificates of obligation, which entitle a county to pay notes with tax revenue.

The county says its prime objective is still to move into an adequate jail facility as soon as possible. John Anderson, the



*Travis County Jail*

architects' attorney, has stated his clients' objectives. "Before the suit was filed," said Anderson, "our primary objective was to help the county in any way that we could to move into a safe and suitable jail. They wouldn't work with us. The county has consistently ignored the architects' advice since April 1983. At this point it's just futile." The case will be heard in court in October.

—Russell Scott

## TEXAS LANDSCAPE SOCIETY ANNOUNCES DESIGN AWARDS

The Texas Chapter of the American Society of Landscape Architects announced the winners of Landscape Architecture Awards.

### Award of Excellence:

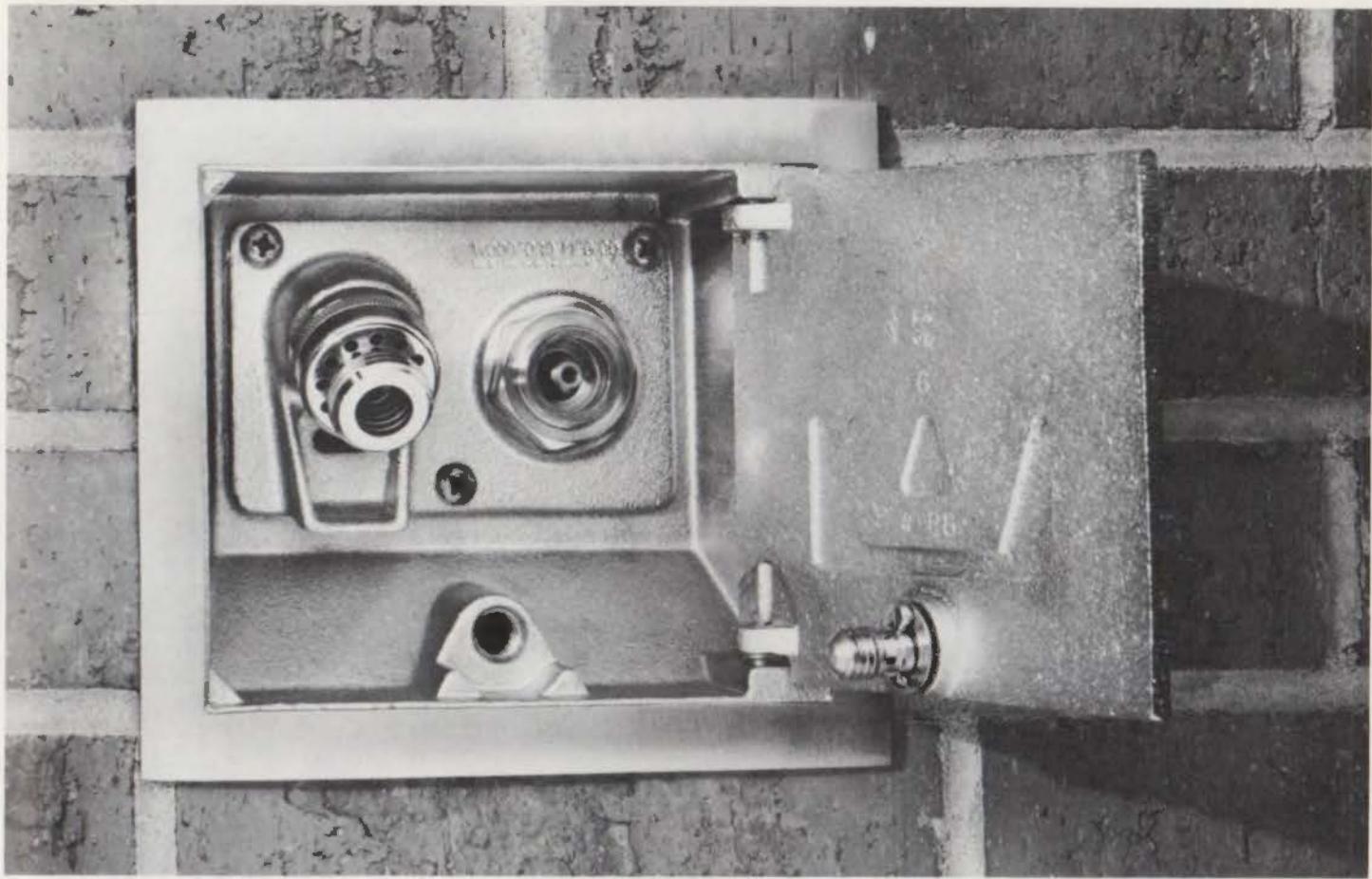
- Allen Center, Houston; The SWA Group, Houston.

### Honor Awards:

- Four Seasons Hotel, San Antonio; Ford Powell & Carson, San Antonio, and Glenn Cook.
- The Warrington Condominiums, Dallas; Myrick-Newman-Dahlberg & Partners, Dallas.
- Las Colinas, Irving; Proctor + Bowers + Associates, Dallas.

### Merit Awards:

- SWA Group, Houston, won eight Merit Awards: Interwood; The Remington on Post Oak Park; The Park at Houston Center; Lanier Middle School and Antioch Park, all in Houston. They also received awards for Las Colinas Sports Club, Irving; Sienna Plantation, Mis-



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*John Cunningham*

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souri City; and First Colony, Sugarland.

• Ford Powell & Carson, San Antonio, won two Merit Awards: Paseo del Alamo and La Villita restoration, both in San Antonio.

• Myrick-Newman-Dahlberg & Partners, Dallas won two Merit Awards: Lincoln Centre, Dallas, and Spectrum Center, Addison.

• Burnett-Baldwin, Dallas, won for the atrium of The Claydesta National Bank, Midland.

• CRS Sirrine, Houston, won for The University of Petroleum and Minerals, Dhahran, Saudi Arabia.

• Schrockel, Rollins & Associates, Arlington, won for the Joe Carter Pool, Plano.



Allen Center, Houston



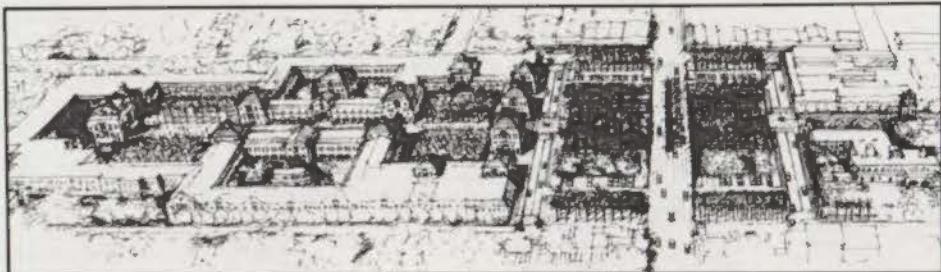
Four Seasons, San Antonio



Warrington Condos, Dallas



Las Colinas, Irving

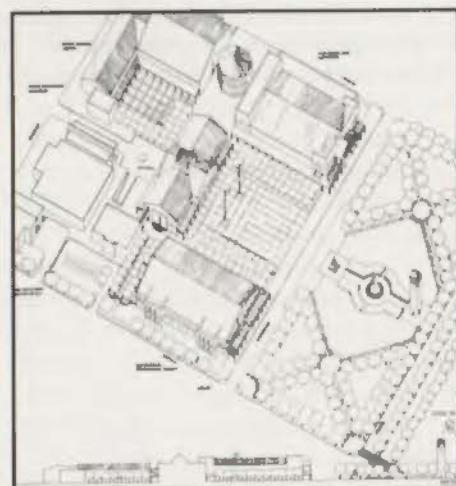


### THREE TEXAS FIRMS LISTED AS FINALISTS IN NATIONAL COMPETITION

Black, Atkinson & Vernooy of Austin, and Smith, Locke & Asakura of Houston were both finalists in a national urban design competition for Chandler, Arizona's, city center. In addition, Lewis & Kocer of Houston won an honorable mention.

The program required an expansion plan for existing city offices adjoining the town's central park, Memorial Plaza. It also required the design of seven new buildings to be incorporated in a pedestrian mall setting: library, performing arts auditorium, drama theater, museum and art gallery and new senior citizens' center.

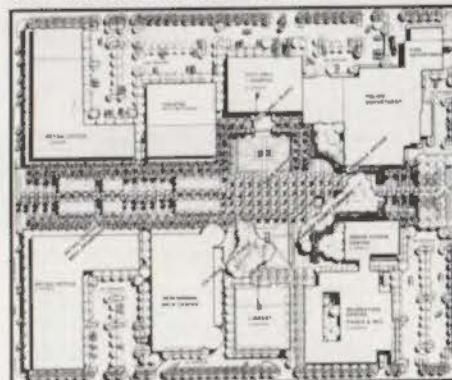
The \$10,000 award-winning design went to Rapp and French, San Clemente, California. Black, Atkinson & Vernooy won second place prize of \$5,000; Danne, Crutcher & Loux, San Francisco, won third place prize of \$1,000; Smith, Locke & Asakura won fourth place prize of \$500; and Hano Weber, Chicago, won fifth place prize of \$500. Lewis & Kocer won one of two honorable mention prizes of \$500.



Scheme by Lewis & Kocer



TOP and ABOVE: BAV's scheme



Scheme by Smith, Locke & Asakura

### HOUSTON LIGHTING & POWER ANNOUNCES ENERGY AWARDS

Five Houston area buildings were named winners in the 1984 Energy Conservation Awards. Sponsored by Houston Lighting & Power with the assistance of the Houston AIA Chapter, the awards recognize excellence in energy effi-



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ciency. Jurors for the competition were Ernst W. Kiesling, Lubbock; L.M. Holder III, Austin; and Larry W. Bickle, Houston. All entries were required to show at least six months of energy bills.

**Grand Awards:**

- Cypress Fairbanks Medical Center Hospital; Page Southerland Page Architects & Engineers.
- League City Intermediate School; McKittrick Richardson Wallace Architects and Grunewald Engineering.



Cypress-Fairbanks Medical Center

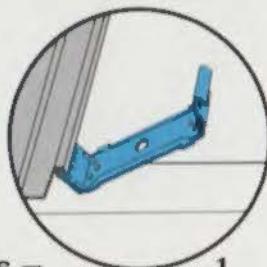
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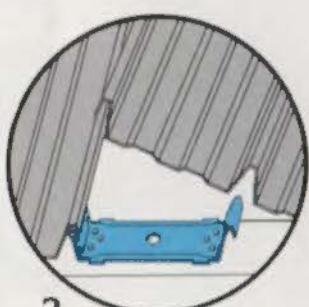
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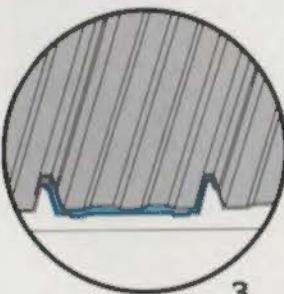
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**Merit Awards:**

- McCaskill residence; Donald E. Weaver.
- Nivers residence; Tackett Lodholz Architects.
- Houston Water Customer Service Center; Kendall/Heaton.

#### WILLIAM WORTHAM SHOT TO DEATH APRIL 4 IN HOUSTON

Prominent Houston architect William Frank Wortham was shot to death April 4 outside his home in Houston by a man who was allegedly trying to steal Wortham's car.

A Houston deputy constable was on routine patrol when he caught a suspect attempting to steal Wortham's Cadillac. As the deputy was trying to arrest the struggling suspect, Wortham rushed to aid the deputy. At that point, the suspect grabbed the deputy's gun and shot Wortham in the chest.

Wortham, a native of the Texas Rio Grande Valley, moved to Houston after World War II. A Texas A&M graduate, he studied with several European architects as well as Frank Lloyd Wright.

#### MORRIS PARKER DIES APRIL 15 IN FORT WORTH

Morris Buford Parker, senior partner of the Parker-Croston Partnership of Fort Worth, died April 15 at the age of 59.

He was born in Austin but lived in Fort Worth most of his life. In 1966, Parker and Merwyn E. Croston Jr. established an architectural partnership that produced numerous significant architectural structures including the Fort Worth Central Library, the Tarrant County Convention Center and the Arlington Convention Center. He served as a member of more than a dozen private and civic groups including Fort Worth's Housing Authority and Planning Commission. Parker was a former vice president of TSA.

Memorial contributions may be made to the American Heart Association.

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## IN PROGRESS

### LAS COLINAS URBAN CENTER, IRVING, BY SOM/HOUSTON

The first phase of the Las Colinas Urban Center is under construction in Dallas. Designed by Skidmore, Owings & Merrill/Houston and developed by the Trammell Crow Company, the development will contain a total of 1.5 million square feet of office and retail space on 14 acres. The first building in the 3-building complex will be 20 stories and contain 396,000 square feet, including 15,000 square feet of retail space in the parking garage.

The granite-clad, pyramid-topped structures will be clustered together so that, from a distance, they will be seen as a single unit with a strong presence on the horizon. A landscaped plaza which features a large circular pool, 120 feet in diameter, is positioned in the center of the pinwheel-shaped site plan. A 40-foot high column of water rises from a plaza fountain highly visible from Las Colinas Boulevard, the "main street" of the



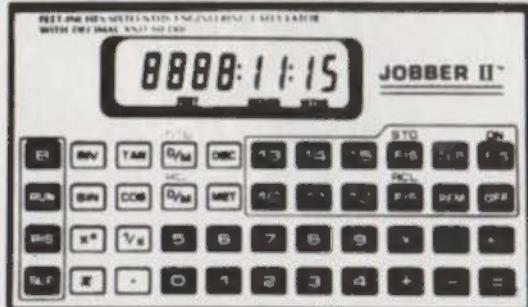
*Las Colinas Urban Center*



*Model showing site development*

community. The pool is also connected with the Las Colinas canal system and its water taxi service. Also planned is an octagonal, dome covered station for passengers of the Area Personal Transit System.

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## SCHOOLS

Final plans for a new School of Architecture and Environmental Design building at UT Arlington have been approved. The four-story building will have 119,660 gross square feet of space and will cost an estimated \$11.6 million. The Dallas firm Pratt, Box, Henderson & Partners is designing the project.

An endowed professorship and an endowed scholarship named for Roberta P. Crenshaw, Austin, have been established at UT Austin. The Roberta P. Crenshaw Centennial Professorship in Urban Design and Environmental Planning is funded by a \$50,000 gift from Mrs. Crenshaw and a \$25,000 gift and \$25,000 pledge from the Superior Oil Company, Houston.

Russell L. Stogsdill, president of The Architects, Inc., Houston, has contributed \$5,000 to the Texas A&M Department of Environmental Design Development Fund. Department Head John O.



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Greer says this is the largest unrestricted contribution in the 16-year history of the department. Stogsdill received Bachelor and Master of Architecture degrees from Texas A&M in 1965 and 1966 and served on the college professional research staff and faculty from 1966 through 1973.

Gifts from the estates of Wolf E. and Janet C. Jessen totaling \$455,585 have been accepted by the UT Austin Board of Regents. A \$54,821 Wolf E. Jessen Endowment Fund in the School of Architecture has been established and \$236,302 will be used in equal shares to fund the previously established Wolf and Janet Jessen Centennial Lectureships in Architecture, Art, Drama and Music.

### EVENTS

**July 16–19:** Harvard University Graduate School of Design will present "Lighting, Sunlighting, and Perception," a workshop to explore how artificial light and sunlight can be integrated to develop architectural forms. For more information, write Continuing Education, George Gund Hall, 48 Quincy St., Cambridge, MA 02138, (617) 495-9340.

**August 3:** Deadline for entries in the fifth annual National Lighting Awards Program, to recognize case histories of lighting system application that enhance the benefits of good illumination. For more information, contact the National Lighting Bureau, 2101 L St., N.W., Suite 300, Washington, D.C. 20037, (202) 457-8437.

**Fall 1984:** The Blaffer Gallery, University of Houston campus, will host the exhibition "The Architecture of Richard Neutra, From International Style to California Modern." The exhibition is scheduled to run from September to early November.

**October 1:** Deadline for entries in the Non-Residential Renovation and Reconstruction Design Award Program. For more information, contact the American Wood Council, 1619 Massachusetts Ave., N.W., Suite 500, Washington, D.C. 20036, (202) 265-7766.

**October 13–27:** The Committee on Architecture for Health of the Houston Chapter AIA and Japan's Technology Transfer Institute will sponsor a study

tour to Japan with a special emphasis on hospital design. For more information, contact tour leaders Frederick Marks, Holt + Fatter + Scott, Inc., 400 Littlefield Bldg., Austin 78701 or D. Kirk Hamilton, Watkins Carter Hamilton, 6575 West Loop South, Suite 250, Bellaire 77401.

## FIRMS

William A. Herrington has been named partner of the Fort Worth firm **Kirk, Voich and Gist**.

**Golemon & Rolfe Associates, Inc.** has named John R. Hardy principal and W. Fritz Schmidt senior associate. Paul C. Gloriod, Dudley B. Lacy and Robert B. Reinders have been named associates.

James M. Bright, John R. Dykema, Jr., and Bibiana B. Dykema, formerly of **Bright/Associates**, Corpus Christi, have created the firm **Bright + Dykemas Architects, Inc.** at 915 Kinney Ave., Corpus Christi 78401, (512) 882-8171.

**James M. Sink Associates** has relocated to American General Tower, 2727 Allen Pkwy, Suite 777, Houston 77019, (713) 522-0700.

**Kuhnel and Associates** has relocated to 3144 Bee Caves, Austin 78746, (512) 327-2321.

**Bogard Architects, Inc.**, Dallas, has changed its name to **Bogard, Guthrie & Partners, Inc.**

**Talbott Wilson/Associates/Inc.** has relocated to 4295 San Felipe, Suite 220, Houston 77027, (713) 626-0350.

**Skidmore, Owings & Merrill** has relocated to 400 One Shell Plaza, Houston 77002, (713) 222-1555.

Hector E. Baeza, Thad Kudela and Thomas Skinfill have been named associates of **Smith Locke Asakura, Inc.**, Houston.

**Cox/Croslin and Associates** has relocated to 6907 Capital of Texas Highway North, Suite 200, Austin, 78731, (512) 346-8420.

**C.I.D. Design, Inc.**, El Paso, has changed its name to **Condell Architects and Engineers, Inc.** Another subsidiary of Condell, Inc., **Landel Properties, Inc.**, has changed its name to **Condell Development, Inc.**

**Gensler and Associates/Architects** has opened a Dallas office at 2950 One Main Place, 75250, (214) 651-1818.

Antony Harbour is managing principal.

**Sikes Jennings Kelly** has named Sam S. Crawford, Robert K. Kuykendall and Patrick Lo as associates.

Samir Hannouche has been named design associate of **Kaufman Meeks, Inc.**, Houston.

Sterling W. Thompson has been named associate of **Raso Greaves**, Waco.

## PRODUCTS



Daphne Round

Daphne Marble Tables, an exclusive line designed by UT Arlington professor of Architecture Fabio Fabiano has been introduced by **Gilbert International**, Fort Worth. Fabiano has utilized black, green, white and travertine marble in a variety of shapes and sizes. The triangular base, made of four marble slabs laminated together, provides a strong, sculptural effect that enhances the expressive quality of natural stone. The base is designed to fit a variety of sizes and types of tops, marble or glass, and to be adapted to a central cross-like con-



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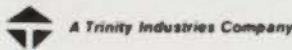
The girder being squared behind James is one of 108 to be fabricated for delivery to a jobsite in Mexico.

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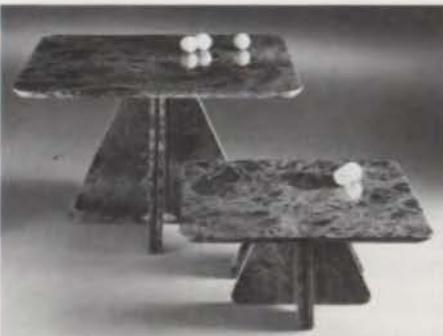
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figuration for square and round tables. For more information, contact Gilbert International, 2945 Stuart Dr., Fort Worth, 76104, (817) 921-5331.



Daphne Rectangular



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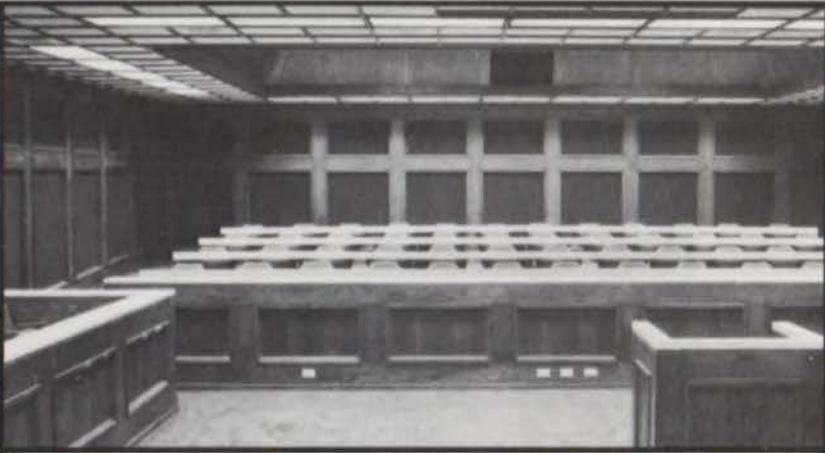
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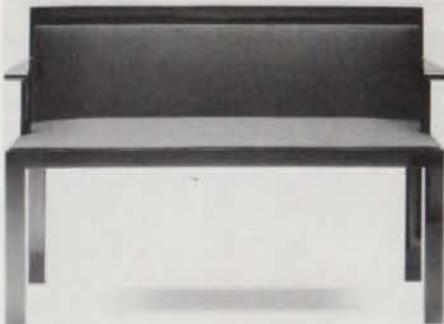


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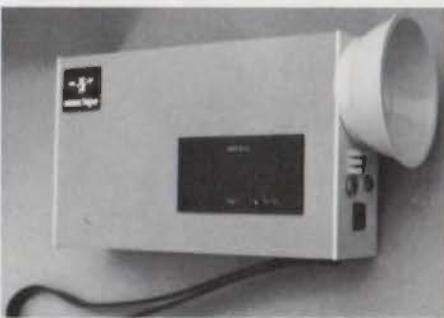
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natural agglomerates, the standard tile is 15 3/4" square by 5/8" thick. It comes in eight colors and patterns. For more information, contact the Dynasty Corporation, PO Box 2552, Muscle Shoals, Alabama 35660, (800) 241-6001.



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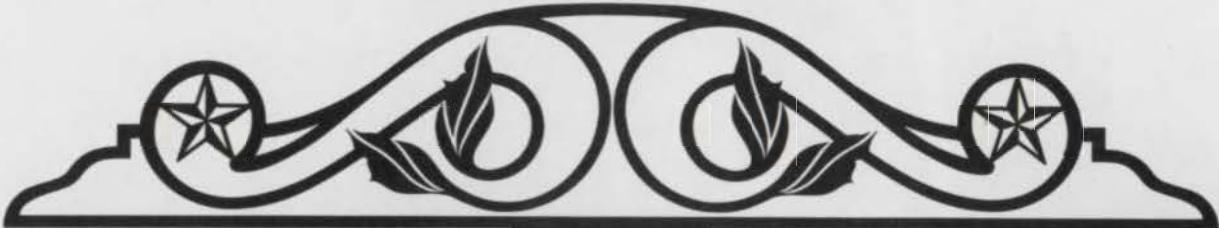
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## TRUCK PEOPLE

Right off the bat, I want to thank you for sending me those clippings out of your local newspaper wherein a lady from Cleveland, Ohio calls Dallas a "sexist city" and names former Mayor Erik Jonsson and me as the number one and two "sexists" respectively.

All this national publicity is almost as startling as the new wrinkle over at Channel 5. Two nights a week, KXAS-TV is bringing us locals "one full minute of *good news!*" I won't bother to tell you what they do with the other 10,078 minutes of the week.

What with being overdosed on two minutes of good news per week, I'm not really sure I can take TA exposing Texans to the idea of transportation systems. A body can only take so much forward thinking.

If they put mass transit in Texas, what in the world will we do with our pickup trucks? My doctor drives a Jimmy, my lawyer is hooked on a Silverado, and I happen to know the beautiful wife of the *numero uno* architect of Texas drives a Jeep Wagoneer.

The richer the Texan, the bigger the truck! The River Oaks Country Club has three members who drive great big Peterbilts with chrome stacks, nickel-plated wheels and a cab bedroom furnished with Louis XIV. You've heard of the "boat people;" Texans are "truck people." They live in their trucks and only come out to buy new Willie Nelson tapes. Texans just ain't the type to ride streetcars.

So why all this fuss about transportation? It's because of creeping gridlock—a strange malady that is attacking the traffic arteries of Dallas and Houston with car cholesterol. Gridlock is what happens when contra-flow contra-fails. Gridlock is the beginning of the day they double-deck Dallas.

There have been a few modest starts in Texas transportation systems. Houston began one, but the voters stopped it when they discovered more people on the planning staff than cars on the freeways.

Dallas has elected to proceed with the Dallas Area Rapid Transit, called "DART." (God only knows what Fort Worth will call theirs.) Soon Dallasites will be able to board the "A"-train and buzz out to their Galleria, which is sort of a K-Mart for Arabs in the northern section. The Dallas DART Board may literally become one, now that the media has discovered their first "mass transit" plan is to transport themselves to Europe to study transit systems at a cost of \$50,000 in public money.

I'm not critical—if the Board is to construct a transit system that works, they need to see some that do. My concern in sending 30 Texans to Europe to study transit is for Europe, not Texas. After all, they might establish a contra-flow through Checkpoint Charlie or double-deck the Champs Elysees—or, worst of all, there may not be enough pickups to haul them around. —



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