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Philip Johnson’s Texas Connections
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New Year, New Columns

1992 was a Good Year for Texas Architect. The best measurement of this shows in the fact that, despite a national economic downturn that started in 1991 and that seemed only to lift in the closing weeks of November 1992, the magazine finished with just under 20 percent more advertising revenues than for the year before. For this we can thank, of course, our advertisers, whose continued interest in reaching the architects of Texas makes publication of the magazine possible. And, for bringing those advertisers in, we can thank Carolyn Baker and Billie Dixon, both of Austin. Both are experienced magazine marketing people, and in the last year, as Baker (working with Katie Larson in Dallas) and later Dixon have brought their talents and effort to bear, the magazine has gained strength. So much so, in fact, that the effect is already spilling over to 1993: Although the figures are not final as I write this, advertising sales for this current issue are substantially higher than they were for the equivalent issue a year ago. Thanks also to Ray Don Tilley, TAs general manager, for working so effectively with the magazine's largest and steadiest advertisers. It's a good way to start the year.

With this we initiate a number of changes. Texas Architect has always emphasized design in its editorial coverage. Design is, after all, the crystallization of what architects do to create value for their clients. But the world of architectural practice has seldom been design-driven; instead it is the business and legal climate, the need for even more proficient management, and the demand for new technology and new skills that occupy most of the time of most architects. In recent years, it seems that the business of architecture has become more and more a competitive trial and legal minefield. That's why the lead feature story in this issue focuses on one of the more difficult business issues facing a number of architecture firms.

Also for this reason, we are starting a number of new sections in the magazine. For example, on page 22, John McGinty, FAIA, inaugurates a new column called Laws, Regs, and Red Tape, about the legalities that can determine whether an architectural practice will succeed or fail. On page 68, Texas Architect editorial intern Johanna Rowe has assembled a new Texas Index, with demographic and economic information about the state. Our hope is to make this section more specifically related to the construction industry as time goes on; any help that readers could provide in this effort would be appreciated. Our special advertising sections, on ADA Compliance and Computers in Architecture, both contain stories that could have been used in a new Small-Firms Practice section that we will begin in March. In May, we plan to begin the first of our Continuing Education columns, in anticipation of the day, coming in 1994, when a continuing education requirement goes into effect as part of AIA membership.

At its core Texas Architect will remain focused on design, but, as ever, it continues to change to keep up with the times.

 Joel Warren Barna
Letters

THANKS ON BEHALF of the other architects in the state for your timely editorial concerning ADA compliance and submission to the Texas Department of Licensing and Regulation’s Elimination of Architectural Barriers (EAB) division (see T/A Nov-Dec 1992, p. 5).

The heartburn is that said department does not make widespread publication of rulings to the architects of the state. The most recent document of which we are aware is that published September 6, 1991—which we discovered by submitting documents, only to be notified that we did not conform to the latest published criteria. If it was covered in Texas Architect, we missed it. At least we should supply the department with a current list of TSA members and their addresses.

Also we would like to be notified in writing that the department has adopted the ADA requirements verbatim. We see no reason for the department criteria to vary. Disabled is disabled. Accessible is accessible.

The EAB division accessibility requirements are identical to those of ADA. NOT! Full adoption of ADA requirements will help us to do a better job for our clients and assist the DLR to do theirs.

C.L. Henry, AIA
Foster Henry and Thorpe, Inc.
El Paso

I AM PLEASED TO SEE the A. Frank Smith Memorial Library, Georgetown, by Skidmore, Owings & Merrill honored with a TSA Design Award (see “A New Set of Stacks,” T/A Nov-Dec 1992, pp. 56-57). I would like you to note that I was the Technical Coordinator for this project and that all the contract documents bear my signature. You may also wish to note that Mr. Ed Thompson was the Project Manager. I am sure that these credits were inadvertently omitted from the listing forwarded to you.

Christopher Graeme Ions, AIA
CTHL Architects
Charlotte, N.C.

Editor's Note: The listing for Technical Glass Products' Firelite glass (see T/A Sep/Oct 1992, p. 65), should have said the glass is 3/16 of an inch thick, not 3/4.

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Thomas Fochtman
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FORT WORTH Jurors chose five winners in the chapter's design-awards competition.

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MIDLAND The West Texas chapter had four winners in its design-awards program.

Deep in the Heart

HOUSTON A Houston-based team was named the winner of the Heart of Hermann Park design competition; the announcement was made at the Rice Design Alliance gala in November. The national competition, sponsored by the RDA, the City of Houston Parks and Recreation Department, and the Friends of Hermann Park, proposed improvements to the park between the Sam Houston Monument and the Great Basin.

Jurors, in what was called a unanimous decision, chose the plan of Melton Henry/Maurice Robison Architects, Inc., Peter Brown, Scott Slaney, and Steve Harding. The winners received a $15,000 prize and the commission to design the project.

The winning plan connects the park's reflecting pool and lake and adds fountains, seating, and pathways, as well as a garden honoring the late O. Jack Mitchell, former dean of the Rice University School of Architecture; the competition was dedicated to his memory.

Second place and $7,500 went to the team from the Office of James Burnett, of Houston. Third place and $5,000 went to the team of SLA Studio Land, Inc., of Houston, and Lake/Flato Architects, San Antonio. A team of students from Kansas State University received fourth place and $2,500.

Jurors were chairman John J. Casbarian, FAIA, Taft Architects, Houston; Raymond
A partnership formed

ROMA The hot plaza of historic Roma, midway between Laredo and Brownsville on the Rio Grande, was the scene of a fiesta on Oct. 30, held to celebrate the signing by U.S. and Mexican officials of an agreement to participate in the Los Caminos del Rio Heritage Corridor project (THJ, Jul/Aug 1991 and Sept/Oct 1992). Delegates from the two countries, including Senator Lloyd Bentsen, met on the international bridge between Roma and Ciudad Miguel Aleman, escorted by a Mexican drum and bugle corps, prior to the signing.

The festivities in Roma concluded a three-day conference in Brownsville that brought together local, state, and national agencies from the U.S. and Mexico to discuss preservation of historic resources including Roma, cultural resources such as the music and dancing performed in Roma the day of the signing, and the environment. Also discussed was the need for the economic means to make preservation a stimulus to the region's growth.

The Los Caminos del Rio Heritage Project was begun in 1990 by the Texas Historical Commission (THC) with the support of the Meadows Foundation of Dallas. A cultural corridor, 200 miles long, from Brownsville to Laredo on both sides of the Rio Grande, is the centerpiece of the project, which hopes to use tourism as the economic base to support the conservation of natural, cultural, and historic resources.

The agreement signed in Roma is actually between the THC and Mexico's Secretariats of Tourism; it marks the first time a Texas state agency has independently entered into an agreement with a federal agency of another country.

The broad base of support assembled for the Los Caminos project greatly increases its chances for success. The project has drawn in everyone from small-town mayors and civic clubs to the U.S. Department of the Interior, as well as Senator Bentsen. Similar layers of public and private commitment are developing in Mexico.

The valley is perhaps second only to San Antonio in its wealth of historic assets, but these resources have not, up to now, been protected or developed. The emphasis of the Brownsville conference, and of the Roma accord, was on the formation of partnerships, between government agencies and between public and private interests, to finance and manage programs for preservation.

Gerald Moorhead, FAIA
Architect Gerald Moorhead, FAIA, of Houston, is a TA contributing editor.

FROM LEFT, DR. MARO Sanchez, OF THE Texas Historical COMMISSION, Senator lloyd Bentsen, AND OTHERS AT THE Roma CELEBRATION.
Award Categories

**Honorary Membership**
Awarded to an individual for long-term association with architects and architecture in providing a better quality of life in Texas.

**Citation of Honor**
Awarded to groups or organizations whose activities make significant contributions to the goals of the architectural profession for improvement of the natural or built environment in Texas.

**John G. Flowers Award**
Awarded in memory of TSA's first executive vice president. Recognizes an individual or organization for excellence in promotion of architecture through the media.

**Llewelyn W. Pitts Award**
TSA's highest honor, awarded in memory of Llewelyn W. Pitts, FAIA, who served as TSA president in 1961 and was an influential and dedicated AIA leader. Recognizes a distinguished member for lifetime leadership and achievement in the profession of architecture and the community. Although no formal nominations are accepted, suggestions may be directed to the Honors Committee.

**Distinguished Achievement in Architectural Education Award**
Awarded to a distinguished architectural educator who has inspired others to excellence in architecture. Nominee must be a current or former member of the faculty of one of the six accredited Texas schools of architecture, living at the time of nomination, and a full-time educator for at least five years. Criteria for selection will include evidence of the following: teaching of great depth, having a cumulative effect on a long line of students; teaching of great breadth, having influenced a wide range of students; and the ability to maintain relevance through the years by directing students toward the future while drawing on the past.

**William W. Caudill, FAIA, Award for Young Professional Achievement in Recognition of Outstanding Service in Leadership Development**
Awarded in memory of William W. Caudill, FAIA, recipient of the 1985 AIA Gold Medal and a pioneer of architectural design, practice, and education. Recognizes a TSA member who exemplifies qualities of leadership and service to the organization and community. Must be an AIA member in good standing and an active member of the local AIA chapter and TSA for a minimum of two years, not to exceed ten years (40 years of age is a recommended maximum for a nominee). The individual should be a role model to the organization with these qualities: goes beyond the call of duty in service to the profession; influences improvement in the organization at the state level; encourages participation among fellow members and nonmembers; exemplifies qualities of leadership; and exemplifies qualities of professional practice.

**Nomination**
Each nominee's submission should include:
1. completion of the nomination form;
2. illustrations (photos, publicity releases, other graphic material);
3. letters of recommendation from individuals outside the architectural profession (mandatory for Honorary Members limited to five letters; optional for other nominations);
4. letter of recommendation from chapter president (mandatory for Young Professional Achievement Award; optional for other nomination);
5. photograph of nominee (mandatory for Honorary Members and Young Professional Achievement Award).
Include all material in 8½” x 11” plastic sleeves and submit in a ring binder. Reduce all oversize material to fit within sleeve.

**Selection**
The TSA Honors Committee will meet on June 11, 1993, to receive submissions. After the TSA Board has taken action on the Honors Committee recommendations, winners will be notified by a letter from the TSA President. News releases will be originated by TSA. Recipients of the Pitts Award, Educator Award, and Caudill Award will be revealed at the awards presentation.

**Presentation**
Awards will be presented during TSA's 54th Annual Meeting at The Worthington Hotel in Fort Worth in October 1993.

**Submission Deadline**
All nominations must be received in the TSA Office no later than 5:00 p.m. on Monday, May 31, 1993. Nominations should be sent to:

TSA Honors Committee
c/o Texas Society of Architects
114 West Seventh, Suite 1400
Austin, Texas 78701
512/478-7386
CALENDAR

Brick In Architecture Awards
Projects completed since Jan. 1, 1987 in which brick is the dominant building material are eligible. Brick Institute of America (703/620-0010), DEADLINE: JAN. 11 (ENTRY FORMS); MAR. 15 (SUBMISSIONS)

"Building Connections"
Three four-hour video teleconference programs broadcast to 150 cities will focus on new design and construction practices that turn environmentally responsible architecture into fiscally sound business. American Institute of Architects (800/365-2724), JAN. 14, MAR. 4, APR. 22

American Hardboard Association
Single-family detached homes that were ready for occupancy between Jan. 1 and Dec. 31, 1992, and that used at least 50 percent hardboard siding to clad the exterior are eligible in the "Home of the Year" competition. American Hardboard Association (1210 W. Northwest Hwy., Palatine, Ill. 60067), DEADLINE: FEB. 15

"For All the World to See"
This exhibition examines the history of world's fairs, focusing on London (1851), Chicago (1893), and New York (1933-40). UT Austin (512/471-8944), THROUGH FEB. 26

"Theatre in Revolution"
Russian avant-garde stage design from 1913 to 1935 is examined through works lent by the Central Theatrical Museum in Moscow. McNay Art Museum, San Antonio (210/824-5368), THROUGH FEB. 28

Competition for a new infrastructure
Competitors are to prepare a plan for a new infrastructure needed to support electric vehicles, using as their subject either an existing or planned new community in the U.S. A jury will allocate $100,000 in prizes. Electric Vehicle Infrastructure Competition (432 N. Saginaw St., #801, Flint, MI. 48502), DEADLINE: APR. 13

Prairie View prevails

HOUSTON Teams of architecture students and alumni worked for a day in November to produce a plan for redevelopment of an abandoned shopping center in the Sunnyside community of Houston and to design a new community symbol for the neighborhood. The teams from Texas Tech, Texas A&M, the University of Houston, Prairie View A&M, the University of Texas at Arlington, and the University of Texas at Austin were competing in the TSA/Herman Miller Student Design Charrette, conducted as part of TSE's Annual Meeting.

Each team gathered under a banner bearing its school's name on the floor of the George R. Brown Convention Center, armed with information about the Sunnyside community, a statement of the problem, and their drawings and model materials. After eight hours, the teams had finished their work. The jurors—Jeff Millar, columnist for the Houston Chronicle, Melanie Lawson, co-anchor of Channel 13, Robert C. Newberry, columnist for the Houston Post, Ed Lockett, president of the Sunnyside Community Development Corporation, and Robin Harrison, board member of the Sunnyside CDC—spent the next morning listening to presentations from each team.

The team from Prairie View A&M was selected as the winner; this was the first year a team from Prairie View, whose architecture program received its accreditation this summer, has participated in the annual student design competition. Student members of the team were Verrick Walker, Ernest Crawford, Woody Bryant, and Charles Harris; alumni members were Ben McMillan, Kelvin Hall, and Philip Imoni.

The competition was again sponsored by Herman Miller and coordinated by TSA's Student Liaison Committee, chaired by Edith Porras. The winning team was presented with a trophy, the Texas Cup, provided by Herman Miller and created by Rodney Hill, architecture professor at Texas A&M. The trophy, inaugurated this year, will travel each year to the school of the winning team.

Urban design honored

DALLAS The city of Dallas's Urban Design Advisory Committee has named the recipients of its 1992 urban design awards. This program "recognizes those projects and individuals whose contribution to the urban fabric of Dallas improves the quality of life." The Urban Design Advisory Committee represents all professions and trades involved in the urban planning process; members are appointed by the city manager's office.

From an initial submission of more than 40 projects, the awards committee selected eight winners. All of the winners share one concept, according to the committee: an impetus towards the revitalization of neighborhoods that will become the seed for future development.

Winners in the built category were the Lakewood Shopping Center renovation by Good, Fulton & Farrell Architects and Newman Jackson Biehlerstein, Inc., both of Dallas; the plaza at Texas Commerce Bank by SOM (formerly of Houston); the White Rock Creek Trail by Albert H. Halff Associates, Inc., of Dallas; and the programs and improvements of the Jefferson Area Association, coordinated by the Texas Main Street Program.

Winners in the proposed project/master plan category were the State Thomas area master plan by RTKL Associates, Inc., of Dallas; the North Central Expressway conceptual plan by HOK, Inc., of Dallas; and the Downtown Dallas 2010 master plan by Corgan Associates and the SWA Group, both of Dallas.

The George Kessler award, which goes to an organization that has demonstrated a long-standing commitment to improving the urban environment, was presented to the Dallas Parks Foundation, a non-profit group that advocates the use of parks and trees as tools to revitalize the urban fabric.

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A Bumper Crop

SAN ANTONIO Nine winners were chosen from among a record 41 entries in the AIA San Antonio chapter's 1992 design-awards competition. Jurors this year were Kyle Johnson of New York; Regelio Guzman of Monterrey, Mexico; and Paul Lamb of Austin.

An honor award went to Lake/Flato Architects for the Carter Ranch House in Millican. Lake/Flato also received commendations for the Green Gate Building in San Antonio and for La Estrella Ranch House in Starr County.

Marmo Mok received an honor award for the campus of Texas Southmost College in Brownsville and an award of merit for the Leon Springs Elementary School in Leon Springs.

An award of merit went to Sprinkle Robey for the break room at Harris Corporation in San Antonio, and commendations to Jones/Kel' for the Builders' Square Corporate Headquarters in San Antonio and to O'Neill Conrad Oppelt for Holy Trinity Catholic Church in San Antonio.

A special preservation award was presented to 3D/M for its work on the Majestic Theatre in San Antonio.

Carter Ranch House by Lake/Flato (top); Texas Southmost College by Marmo Mok

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Four winners chosen

LONGVIEW Four projects were honored in AIA/Northeast Texas' 1992 design awards competition. Jurors Brent Byers, FAIA, Duncan Fulton, and James Langford, all of Dallas, selected the winners from among 13 submissions to the biennial competition.

Winners of awards of design excellence were Santo Ferrara Hair Salon in Shreveport, La., by Jeff Potter Architects of Longview (see pages 58-59), and the Stroup Residence in Longview, by the Allen/Boone Partnership of Longview.

The Museum of East Texas in Lufkin by Morgan, Hill, Sutton & Mitchell of Lufkin was presented with an award of merit and the Atlanta Elementary School in Atlanta by Bratz Thacker Architects, Inc., of Longview won an award of merit/honorable mention. SW

Northeast Texas design-award winners include Atlanta Elementary (above); and the Stroup Residence (left).

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Fort Worth picks winners

FORT WORTH Jurors for AIA Fort Worth's 1992 design-awards competition met in early November and chose five winners from among 36 entries. The jurors for this year's competition were Brent E. Byers, FAIA, of Corgan Associates, Inc., Dallas; James L. Fisher, curator of the Modern Art Museum of Fort Worth; William F. Stern of William F. Stern & Associates, Architect, Houston; and William K. Vinyard, architect and professor at the University of Texas at Austin.

A merit award was presented to the Infant Formula Addition to the First United Methodist Mission in Fort Worth by Hahnfeld Associates Architects/Planners, Inc.

Three projects were selected for citation awards. They are the Tarrant County Parking Garage and Plaza in Fort Worth by Kirk Voich Gist, Inc.; the Henley+Woods Residence at Eagle Mountain Lake by Jackson & Ayers Architects, Inc., with Richard Wintersole, Architect; and the Botanical Research Institute of Texas in Fort Worth by Halbach • Dietz Architects.

Also honored was a student project, titled "River House: The Centripetal Suburb," a conceptual design for housing for 21st-century Tokyo, by Dean Bowman and David R. Steward, of the University of Texas at Arlington. SW

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Circle 12 on the reader inquiry card
Four projects honored

**Midland** Four projects were selected as winners in the AIA West Texas 1992 design awards competition. The winning projects were selected from among 23 entries by jurors Scott Strasser of Houston; R.B. Ferrier of the University of Texas at Arlington; and David Lake of Lake/Flato Architects, San Antonio. The jury met during TSAs annual meeting in Houston in November.

An honor award was presented to Rhotenberry Wellen Architects of Midland for its design of the Confederate Air Force World Headquarters, including the American Air Power Heritage Museum, in Midland. Rhotenberry Wellen Architects also won two residential awards, one for the Carter Addition and the other for the Compton Residence, both in Midland.

Conolly & Company Architects of Midland won an unbuilt award for its design of the World Gym in Midland.

In addition, a special 25-year award was presented for the Hogan/Shell/Perroleum Building in Midland (1979), designed by Wyatt C. Hedrick, Architect. The 25-year award was chosen this year by the chapter's Midland-based members; in 1994, when the next chapter awards program is scheduled, the Odessa members will make the selection.

Ironically, the most trouble-free element of constructing the new Austin Convention Center was a unique wall system fabricated 6,000 miles away in Germany. Architects used the sturdy 3-mm champagne anodized aluminum Pohl Europanel rainscreen to clad the center’s upper levels. Working with Pohl’s engineers and their Houston representative Southern Architectural Systems, Inc. (SASI), they created a flat, low-maintenance cladding that took the building’s angles, turns, and level changes with precision and long-lasting beauty.

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ARCHITECTURAL PRACTICE
Legalities and Realities

WITH THIS ISSUE, I am inaugurating a new column on the law and architecture. That such a column is necessary is, in itself, testimony to the times in which we live and practice. In school, we spent time on design. During apprenticeship, we first practiced and the State Board then tested us on technology. But once licensed, we found that much of the rest of our professional lives would be a test of skill at surviving in a hostile liability climate.

From my perspective, based on 25 years in traditional practice and now several years as a forensic consultant, that climate stems from a rising tide of societal expectations about professional performance, developing at the same time that architects are tethered to an outmoded notion of practice. Neither our clients nor, perhaps more important, ourselves have a clear understanding anymore of what an architect is and is not and does and does not do. Nearly every construction dispute I have witnessed can be traced to some variation on that theme.

The standard AIA documents, intended to clarify the role of architects, are instead sort of like democracy—i.e., the worst system except for all the rest. While carefully integrated and the repository of generations of legal wisdom, they rely on a jargon that does not illuminate, much less truly educate, the parties to the modern game of construction about their roles and the roles of others.

Owners read all about the duties of the Architect in B141, especially Article 2.6.5 wherein the Architect "shall endeavor to guard the Owner against defects and deficiencies in the Work." They hardly ever read Article 4, about the Owner's responsibilities to furnish critical information upon which a design is based.

Architects know well Article 2.6.6—"The Architect shall not have control over or charge of acts or omissions of the Contractor"—and most have memorialized Article 2.6.12 on their shop drawing stamp. However, I have learned that most have less understanding of Article 2.6.10 regarding the true extent of representations made to the owner on the contractor's application for payment.

And contractors, of course, seem to believe that the entire purpose of the shop drawing, pay-application, and substantial-completion language of A201 is to create an estoppel on latent defective work.

Where these documents break down is in their lack of recognition of just how complex design and construction have become. I have on my desk a 1996 Sweets Catalogue, the entire thickness of which does not equal the index of the 1992 version. Buildings are the artful assemblage of thousands of products and technologies that manufacturers know much more about than do architects. To be competitive, contractors are often at the leading edge of the new technologies and of the means and methods of construction. Many clients build more buildings in their careers than do architects, and their management and project delivery systems are becoming far more sophisticated than those envisioned in A201.

None of this, however, is to suggest that the architect must be a victim, either in business or in court. What is needed is a sharper awareness of the scope of our assignments, how that scope is perceived by the other team members, and how that scope is documented contractually. In some instances this may mean doing less in order to avoid assuming another's contractual liability. In other instances it may mean doing more, with greater precision and documentation when exercising a responsibility that is rightfully ours. The standard of care does not require us to warrant perfection. It does however, require the careful, and learned performance of the professional duty that you contracted for.

In coming issues, I hope to address specific cases, as well as such topics as implied approvals, rights of reliance, performance specifications, and troublesome technologies. My purpose is to share the insight of an architect who loves architecture, with the hope that a more focused awareness will provide more productive time at the Bauhaus and less at the courthouse.

John M. McGinty, F.AIA  

John M. McGinty, F.AIA, is a former president of The American Institute of Architects. He is the managing principal of American Construction Investigations, Inc., a forensic consulting firm.

Nearly every construction dispute I have seen can be traced to a lack of understanding of what an architect is and is not and does and does not do.
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Each entry must be submitted in only one category. Texas Architect reserves the right to recategorize improperly labeled entries.

MATERIALS. For Architectural Delineation, Working Drawings, Concept and Imagination categories, submit one slide for each entry. A second, detail slide of the same artwork can be included. High-quality duplicate slides are acceptable. The original artwork or an original 35mm slide or 4x5 transparency must be available for publication should the entry receive an award.

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For Publication Graphics and Business Graphics, submit each entry mounted on one 20x30-inch foam-core or rigid illustration board, leaving a two-inch margin on all sides for framing. Do not use glass. Heavy publications or graphics that are larger than 20x30 inches need not be mounted.

An entry that violates any rule may be disqualified. TSA staff will endeavor to resolve entry problems. However, entrants may not be notified of disqualifications, and in no case will entry fees be refunded.

ELIGIBILITY. Eligible work must have been produced by (1) a current member, associate, or professional affiliate of the Texas Society of Architects; (2) an architect registered with the Texas Board of Architectural Examiners, or (3) a currently enrolled architecture student at the University of Houston, Prairie View A&M University, Rice University, Texas A&M University, University of Texas at Arlington, University of Texas at Austin, or Texas Tech University.

JUDGES. Three eminent judges will be announced with the full Call for Entries in our March/April 1993 issue.

AWARDS. Given in each category to as many entries as the judges feel merit an award. Each entry is judged on its own merits. The judges can choose not to name a winner in a category if they feel so entries merit an award. Winning entries will receive the following:
- Certificate of award.
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ENTRY FEE. A fee of $45 for each entry by a TSA member, $30 for each student entry, or $75 for each entry by an architectural graduate or registered Texas architect who is not a TSA member, must be included with your submission. After judging, an additional payment of $15 will be required for each winning color entry to help offset the cost of four-color reproduction in Texas Architect.

DEADLINE. All entry materials must be received by Texas Architect no later than
5:00 p.m., April 30, 1993. Entries are to be mailed or delivered to: Texas Architect, 114 West Seventh Street, Suite 1400 (Norwood Tower, 14th Floor), Austin, Texas 78701.

Look for final details in the March/April 1993 issue.
Graphics
The Computerized Office

WE WERE PULLED kicking and screaming into the computer age. After years of experience, my wife and partner, Maryann, and I had done just fine with traditional documentation and were quite content to remain blissfully computer-illiterate. When our son Ben joined the firm, he insisted that we make the shift into computers or suffer dire consequences. In an uncertain economy, our small office had to be more competitive and more flexible or we simply would not survive.

For me, the computer was a very intimidating machine. With every keystroke, I thought I would erase or lose valuable material. How could information on a television screen be as reliable as lines on paper? Wouldn’t it be much easier to go back to my pencils and pens than to re-learn instructions for every little move?

It wasn’t that we were unaccustomed or adverse to change. The high stools and drafting boards with T-squares and triangles of my college days had given way to desk tops with parallel bars. We began architecture sharpening pencils with a penknife, then we had electric erasers, and then mechanical pencils that needed no sharpening. We began our drafting careers with hand-filled screw-regulated ink pens, and then moved up to rapidograph pens. Presentation lettering was begun using lettering templates, then came press-on letters, and then the Kroy machine that punched out letters as you needed them.

As I began to use the computer, I thought it would be just one more convenient drafting aid. I wasn’t prepared for a revolution that completely redefines the profession. After eight years of computers in our firm, we are now equipped with a computer for every member of the staff. Each of us designs and produces electronically. From this personal experience, I have several observations about the enormous influence that the introduction of computers has had on the profession.

1. Precision: Based on manual drafting, it is assumed that precision is time consuming. The AIA Contract institutionalizes this with Schematic Design, Design Development, and Construction Documents. Each phase is assumed to be more precise than the proceeding. With computer-aided design and drafting (CAD), the first drawing may be as precise as the last.

2. Scale: In manual drafting each scale is a separate drawing; with CAD, objects are created with their full-size dimensions. Documents can be viewed at any size and can be plotted at any scale.

3. Presentation quality: In manual drafting it is assumed that presentation drawings are special in line weight, lettering, and format. In CAD, all drawings may be presentation quality depending upon output device. With the Macintosh platform, our office can easily transfer and share materials between programs and workstations for plotting, printing, or exporting. Virtually any document may be turned into a presentation.

4. Three-dimensional views: The assumption of manual drafting is that three-dimen-

"Computerized Office," continued on page 30
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The Apple Macintosh Quadra.

The notion of integrating into an environment rather than overwhelming it, of complementing what already exists rather than eliminating it, is as relevant to the architecture of computers as it is to the architecture of buildings.

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“Computerized Office,” continued from page 26

sional perspectives are difficult to construct; therefore few are presented. With CAD, once the building is placed on a three-dimensional software program such as Macintosh’s MacPerspective or Dyna Perspective, the building can be presented from any point of view instantaneously.

5. Dimensional changes: In manual drafting, dimensional changes are time consuming. With CAD not only are changes rapid, but in VersaCad, for example, geometries and dimensions change simultaneously.

6. Repetition: In manual drafting, a detail is redrawn using a template, is traced from a copy, or is affixed to a tracing with adhesive-backed paper. The process is time-consuming and unreliable. With CAD, however, details are stored and can be quickly reused, copied, or modified.

7. Consultants: Unlike the situation with drawings produced using manual drafting, computers allow us to check complex calculations in-house. In one case, we identified survey dimensions that did not close and pointed them out to our civil consultant. In the area of structural engineering, we have begun using the computer for repetitive beam and truss calculations.

Using computers has also enhanced our emphasis on team interaction. Though I remain the design principal, our talented personnel work together as a close-knit group, thanks to computer networking, which allows our computer units to be interconnected.

What comes next? As I look beyond the day-to-day changes that the introduction of the computer has made in this firm, a wonderful vision of a new and expanded profession emerges. No, it’s not a future cluttered with blinking lights and laser beams. As the near limitless power of the computer is embraced as an essential tool for architects, we will be better able to visualize, to communicate, and to document increasingly complex ideas and information.

How about the fear that the computer could mean the end of architecture as a profession? When everyone has use of the computer’s tools will the design process be replaced by new technology? Is it possible that a kit-of-parts program will enable anyone to design without an architect’s help?

Emphatically not! The computer’s advent has increased our ability as professionals to provide valuable services to our clients and communities. The removal of traditional communication barriers will be a key component of our new computer-based profession. By the year 2000, we believe that the drafting board may be used for hand sketches, but production drafting will be history.

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...continued on page 32

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"Computerized Office," continued from page 30

videos and walk-throughs to be essential work products. We expect that such products will enable non-professionals to better understand all design options. How will we determine the best solutions? That’s where aesthetics and judgment—the products of an architect’s training—come in, making the architect’s participation even more essential when people build new structures or renovate existing buildings.

Second, the architect’s role in the building process as it relates to other professionals in the building industry will be enhanced. Better and more precise documentation will increase the architect’s say in the work of the contractor and sub-contractors. We may assume more responsibility for the work of outside consultant engineers and specialists. Facilities-maintenance professionals will be looking to architects for information about their completed buildings.

Finally, the computer opens up areas of the built environment once thought too complicated for consideration by architects. I believe that we will see a future where zoning and building codes, transportation guidelines, and environmental standards can be replaced by performance goals. A myriad of regulation criteria in building and construction will soon be obsolete. One by one, architects will be discovering new ways to go beyond the “one-size-fits-all” approach to complexity. We will be able to develop a new approach and new systems of flexible standards for efficient design and decision making.

With the help of computers, our documents will change, our building regulations will change, and our professional relationships will change, and we must be ready to change as well. There is one important point, however, that architects must not lose sight of: Computers may mean the end of drafting, but they are only tools. These tools are very powerful and very valuable and they can enhance our design capabilities, but they can never replace them. Clovis Heinsath, FAIA

Clovis Heinsath, FAIA, has practiced for 30 years in Texas. He is the design principal of Clovis Heinsath Architects, Austin.

Ben Heinsath, who assisted in the writing of this article, has practiced with Clovis Heinsath Architects for more than eight years; he is the general manager of the firm.

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CAD: a preservation tool

Because historic buildings are by definition unique and generally have very little repetition in their design, most firms in the historic preservation field shy away from the use of computer-aided design (CAD). On the other hand, historic renovation projects typically involve preparation of many copies of voluminous reports that must be distributed to various interest groups and that are critical to the project's success. For this reason, the Williams Company of Austin, specialists in the renovation of historic buildings and urban planning for historic districts, has pioneered the use of CAD not only in preparing plan drawings but even in feasibility studies.

We have developed a set of tools and techniques, primarily based around the Minicad+ CAD software (from Graphsoft of Ellicott City, Maryland), which allow us to produce computer-generated presentation drawings in less time than would be required to produce hand sketches. Of course, the computer-generated drawings look far better than hand drawings and can also be used as the basis for future detailed drawings, a considerable time savings. For example, on the Texas General Land Office project, we did the entire feasibility study and our firm's 40 percent share of the production drawings using automated tools even though nearly all of the 30 unsuccessful bidders said it couldn't be done cost effectively.

The Williams Company was formed in 1983 and in 1984 purchased its first Macintosh computers for use in preparing reports using a word processor for government and institutional clients. At that time, we believed that CAD would be great for structures like hospitals and office buildings that are repetitive on a large scale, but could not be used effectively for historic buildings because such buildings are generally smaller and contain so much individualized detailing. We experimented with MacDraw but concluded that the time involved in producing CAD drawings didn't make sense for us.

In 1986, more advanced CAD packages for the Macintosh were coming onto the market. One of these packages in particular, Minicad+, seemed to offer such a wealth of time-saving features that we felt the subject of CAD merited another look. We purchased the program and simultaneously began to look more closely for repetitive details in areas such as windows on the structures with which we were involved. Before we knew it, we were generating production CAD drawings in times comparable to doing the job by hand. Then, we took the logical next step and began using the software for presentation drawings as well. We have never considered switching back.

Our ability to produce feasibility studies that look better than those of our competitors has increased our work in the preservation field to the point where it now constitutes 60 percent of our volume. Our documents generally look more professional than others because all pages have the same format and all drawings are cleaner, with even line widths, no erasures, and perfect corners.

Producing feasibility studies on a computer also saves us the time normally required to change the scale of documents through photocopying. Using the computer, we simply enter the desired scale when we print out the drawings. In recent years we have gone one step further by using a database program called Filevision; it stores the Minicad+ drawing as well as relevant textual information, such as building date, historical background, and budgeted renovation cost, on each building in the project. We have even used this technique to catalog entire historic districts. The interrelated database then becomes a complete compendium of information on the project that can be provided to the client in either paper or electronic format. It can be used to perform queries such as "Show me all buildings built between 1880 and 1910 that are 20,000 square feet or more and vacant." The concept is similar to a graphic information system but the cost of the software and training was only about a tenth of using that approach.

On projects where we also provide production drawings, our advantage is even greater because most of the master plans can be converted to production drawings without a great deal of additional work. In this situation we are often able to finish the project at about the same time that our competitors would be starting production drawings.

Of course, this entire process is dependent upon being able to produce feasibility drawings quickly on the CAD system. Because of our previous Macintosh experience, we were able to begin utilizing Minicad+ quickly. Minicad+ follows the Macintosh user interface principles very closely. Unlike other CAD programs that have been transplanted from the DOS world, there are no commands to memorize. We have even taught the program to clients so they can make their own changes.

In addition to ease of use, Minicad+ provides a number of time-saving shortcuts that allow us to edit drawings easily and quickly, thus giving us another competitive advantage: We are able to develop three or four alternative proposals to include with the feasibility study. And we have no fear of client changes because we can quickly and inexpensively incorporate them into the drawing.

An example of a project completed by these methods is the historic Land Office of the State of Texas in Austin. Built in 1857, it is...
the oldest standing building in the state. The $3 1/2-million renovation project specified that the master plan, feasibility study, and production drawings be produced using CAD. Nearly all of the 20 companies that bid on the project qualified their bid to state that they did not feel that such a small project, and particularly the feasibility study, could be successfully automated. Several asked for additional fees to put the project into computer format. We won the project by forming a joint venture with a larger firm under the terms of which we prepared the feasibility study and 40 percent of the production drawings using Minicad+. Many of the other firms that were bidding scoffed at our ability to complete the project on CAD, but we did so within the budgeted amount of time and made a significant profit on the job. The feasibility study included a database analysis of the project and analytical drawings in computer-generated format and won a Texas Historic Commission preservation award. Construction on the Land Office project is now nearing completion.

"Preservation tool," continued on page 36
“Preservation tool,” continued from page 35

The techniques described here have won our firm recognition on a regional and even on an international level. Currently, our primary project is preparation of a master plan for the business center in Tallinn, Estonia (one of the countries formed by the breakup of the former Soviet Union). The buildings involved possess intricate and unique detailing on a level far beyond anything I have ever seen in the U.S. One building does not have a single square corner either in plan or elevation view. In spite of that, we have experienced no difficulty in producing feasibility studies with Minicad+ in one or two weeks per building. Our colleagues in Estonia have been shocked at how easily we are able to create and edit drawings. All in all, our firm’s success has been closely tied to our ability to produce feasibility studies and production drawings quickly. Using Minicad+ has helped us accomplish that and provides the added benefit of allowing us to interface with the desktop publishing and graphical database tools available on the Macintosh.

Kim Williams

Kim Williams is a principal of the Williams Company, based in Austin.

Using CAD allows the Williams Company to efficiently produce drawings for inclusion in feasibility studies; here, existing condition of the Land Office’s north elevation.

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Editorial Feature Themes

Competitions, Brokered Deals: Optimizing the Design Process
Competitions in which architects propose designs before being commissioned for a project are a longstanding but problematic tradition. Now clients have turned to real estate brokers to run competitions, hoping to keep up-front costs to a minimum. We examine the benefits and problems facing architects, clients, and brokers.

New Public Buildings
From the Federal Reserve Bank in Dallas to the Addison Convention Center, the Dallas Convention Center expansion, and the Mamodonde in San Antonio, major new public buildings are coming on line in many Texas cities.

Directory of Texas Architects and Guide to TSA
In one invaluable directory issue are names of all 4,000 members of the Texas Society of Architects and their firms, indexed and organized by chapter. Also included are TSA Bylaws, a guide to the Texas Legislature and profiles of TSA's three dozen committees, including committee charges and names of chairs and members.

Health-Care Design: Responding to Crisis
The past few years have seen innovation in theory, practice, and economics in health care, along with unprecedented challenges to the health-care system in Texas and nationwide. This issue will focus on projects that show the latest developments in design and the emergence of new forms of health-care institutions.

New Museums in Texas
New museums and galleries are under way throughout Texas. This issue will present the Children's Museum in Houston, expansion plans for the Houston Museum of Fine Art, and new galleries in Corpus Christi, along with the African-American Museum and the expansion of the Dallas Museum of Art in Dallas.

Church Design in the 1990s
From a small church for a Cistercian Abbey in North Dallas to thousand-seat sanctuaries for Baptist churches in fast-growing suburbs, Texas shows new developments in church architecture, as congregations and designers work to give form to their faiths.

Annual Review of Texas Architecture
This issue will present the winners of the 59th Annual TSA Design Awards competition. Each project will be presented in full color, along with jury comments.

Special Advertising Sections

Computers in Architecture
From CAD to project management to presentations, architects have embraced computers in their practices.

ADA Industry Alert!
A first-ever guide to products and services for the Americans with Disabilities Act.

Masonry & Concrete
Brick, structural tile, CMU, glass block, pavers, retaining wall systems are just the beginning. This section also explores architectural concrete and the spectrum of coatings, stains, and admixtures that enhance and protect these timeless building materials.

Architect's Guide to Professional Consultants
For only $225 each, professionals who provide services to architects will be featured in a pullout directory.

Buyer's Guide to Services & Products
Manufacturers and suppliers can reach Texas architects in a business-card and product-listing section. Buy space for $225 and get it free with a display ad in the same issue.

Kitchens & Baths
Spring is the perfect time to introduce Texas architects and their clients to new products for these special parts of today's houses. Surfaces and fixtures, cabinetry and accessories, fine custom millwork, even skylights and windows: if your product or service enhances the kitchen or bath, this is the place to show off.

Roofing
The roof is the surface that concerns architects more than any other is the roof. This section will get Texas architects' attention for new solutions to an age-old problem: keeping the water out. Space-age single-ply membranes to nearly lost restoration specialties to time-honored tile, shingles, and shakes—all will be covered.

Ceramic Tile
Ceramic tile offers architects versatility, durability, and endless color, texture, and pattern possibilities for interior and exterior walls and floor design. By reaching specifiers and interior designers, too, advertisers in this section reach a well-targeted diverse group of design professionals in an unbeatable economical package.

54th TSA Design Ideas & Products Exposition
Always the most widely read and noticed issue each year, this profile of TSA's annual Design Awards winners is distributed to all attendees of the TSA Annual Meeting. Bonus distribution comes with free product listings and a welcome 15% discount for exhibitors in the show, rounding out the year's most comprehensive package for reaching Texas architects.

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A combined 1,000 copies will be distributed at the September IBD Houston trade show and the October CSI Dallas show.

Exhibitors of the 54th Annual TSA Design Ideas & Products Exposition: Services and Products Listings Offered Free to All Exhibitors

Highlighted New Products

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ADA Industry Alert on the Americans with Disabilities Act

Energy-Saving and Environmentally Conscious Products and Methods

Lighting and Illumination Products and Specialties

A/E/C Systems '93 Show
New Introductions for Computers in Architecture

Doors & Windows, Glazing Systems, and Skylights

Exhibitors of the 54th Annual TSA Design Ideas & Products Exposition: Services and Products Listings Offered Free to All Exhibitors
Building an ADA bookshelf

THE AMERICANS With Disabilities Act has been in effect since July of 1992, but the average architect is still in a state of denial as to its existence. Initially, many architects attended seminars heralding the passing of the new federal law, but most of the early seminars were cloaked in an air of mystery that obscured what the law entailed and what its effect would be on the practice of architecture. Most seminars concluded with the statement: “We will just have to wait to see how the courts interpret the law and how it will be enforced.” Architects can no longer hide their heads and try to ignore this legislation. In the media we are seeing reports of lawsuits filed on the behalf of the disabled against convenience stores, restaurants, stadiums, and even blue-print shops for not providing accessible facilities.

With the threat of lawsuits, many owners of existing buildings are calling upon architects to assess their properties for compliance with the ADA. Clients for new projects are seeking their architect’s assurance that when completed their new building will be in total compliance with ADA. By default, the architect has inherited the mantle of “ADA Expert.” Unfortunately, many architects are woefully ignorant of ADA requirements. This ignorance can be very costly to an owner, both in the expense of making renovations which may not have been required and in the cost of defending against lawsuits when a facility is deemed non-compliant. The need for architects to increase their awareness of the ADA is imperative, and it is important that the information obtained be good. One step in the right direction is creation of a reference collection.

The most comprehensive and affordable reference on the ADA is Americans with Disabilities Act Handbook published by the Equal
Employment Opportunity Commission and the U.S. Department of Justice. The publication, which costs $30, can be ordered by calling 1-800-669-EEOC. Included in this handbook is a copy of the law along with a running analysis. However, for architects, the most important sections are Appendix B—ADA Accessibility Guidelines, and Appendix C—Federal Accessibility Standards. Beginning with a glossary of the terminology used, these guidelines provide a fully illustrated set of design standards for each facility type. The illustrations are well drawn and easy to understand.

If an architect is looking for a fast and easy-to-use book that gives a condensed overview of the ADA, coupled with simple-to-use checklists for compliance with the ADA Title III regulations (addressing accessibility in buildings), he or she should look to ADA Compliance Guidebook, A Checklist for Your Building (AIA Special Edition) by the Building Owners and Managers Association (BOMA) International (New York, 1992). This short guidebook is broken into three parts: First is general information, regarding technical requirements of the ADA; second is technical elements, describing 29 distinct elements for which there are special requirements; and third is the special application sections, which include specific requirements for various building types. The BOMA Compliance Guidebook is aimed more at the assessment of existing buildings for compliance than at providing comprehensive guidelines for new facilities. The only thing missing from this book is illustrations, which is a major drawback, since it is very difficult to convey physical design requirements without accompanying diagrams. The Compliance Guidebook is also an excellent tool for facility managers. "ADA Bookshelf," continued on page 40

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“ADA Bookshelf,” continued from page 39

managers and owners to use for self-assessment of their facilities, so that they can identify problem areas and decide if a professional assessment is warranted.

By comparison, Americans with Disabilities Act, Facility Compliance Workbook, by Evan Terry Associates, P.C. (John Wiley and Sons, New York, 1992), is an expensive and cumbersome loose-leaf workbook. The book begins with an overview of the ADA and a discussion of the ADA Guidelines. There is little in this overview that could not be found in the Americans with Disabilities Handbook, which is included in its entirety as a “section” of this workbook. The rest of this workbook consists of individual work sheets, each addressing a different technical element of the law with an excerpt from the law and a description of the element, any relevant illustrations of the technical element, blank space for comments and notes, and a grided space for sketches of existing field conditions. A participant at a recent ADA seminar commented that for $150 he could buy his own pad of grid paper. The appendix for this book also includes a section titled, “When You Meet a Disabled Person...” Although this section was apparently written to be helpful, it includes such obvious and simplistic tips as: Do not park in disabled parking places, unless you are disabled. For anyone who works with the disabled these comments seem unnecessary, divisive, and condescending. The book seems to be primarily aimed at professionals planning to go into the ADA consulting business, but it is too simplistic and prescriptive to meet those needs. Possibly this volume should be a part of a library reference collection, but the individual practitioner should save the money. This volume is being aggressively marketed by mail and by phone.

For architects looking for additional information and assistance, or who have specific questions concerning the ADA, a good source for general information in Texas is the Texas Governor’s Committee for Disabled Persons, 4900 No. Lamar Blvd., Austin, Texas 78751-2316, (512) 483-4380. They can answer questions, and, in addition, offer several free publications including a simple owner’s self-evaluating checklist for ADA compliance.

As more cases come to court, precedents will be established that will better define the requirements of the ADA and the architect’s role. It is important for architects to enhance their knowledge of the Americans with Disabilities Act. The profession must not, through ignorance of the requirements, surrender interpretation of this law solely to lawyers, and should not allow the development of a paraprofession of ADA design consultants who usurp the architect’s role as design professional. The books described in this article may help architects to develop a clearer understanding of the law and of building accessibility requirements. Architects must take a leadership role or be forced to follow others.

James W. Larson

Architect James W. Larson is a principal of Austin-based L.A. CADD.
First ADA suits filed

IN AN EFFORT TO FORCE businesses to renovate in compliance with the federal Americans with Disabilities Act (ADA), the first Austin-area lawsuits concerning accessibility for the disabled were filed in Travis County State District Court in November. Chuck Weir, an Assistant City Attorney in San Antonio, filed suit against several Austin businesses for failing to meet ADA requirements. Weir filed against 15 businesses, including three Blockbuster Video stores, a Luby's Cafeteria, a Coco's restaurant, an Eckerd's Drugstore, and Miller Blueprint Co.

More lawsuits will probably be filed in the future, according to Weir's attorney, Ginny Agnew of Austin. She says that, since Weir's suits have been publicized, she has received calls from others concerned about the accessibility of area businesses. No other suits had been filed as of the first of December.

Weir, who uses a wheelchair, filed the suits privately as civil cases. According to Agnew, Weir hopes that the publicity generated by his actions will force businesses into compliance. The businesses targeted for the suits, Weir says, are in Austin because he visits the city frequently, and has had trouble gaining access to the buildings there.

All "public accommodations," including places of eating or drinking, lodging, sales and rental places, arts and entertainment places, places of public gatherings, and recreational and educational facilities must take "reasonable" steps to comply with the requirements of the ADA; the law went into effect in January 1992.

No compliance suits have as yet been filed by any of the state agencies involved with accessibility statute enforcement in Texas, including the Elimination of Architectural Barriers division of the Department of Licensing and Regulation, the state Attorney General's office, or the Texas Commission on Human Rights.

In a recent article in the Austin American-Statesman, Agnew said "The ADA is a major civil rights act intended to open the doors that have been closed to disabled persons in the past. The doors need to be opened, literally and figuratively... and that's the goal of these lawsuits."

Johanna Rowe

ADA products introduced

MANY COMPANIES have introduced products that can help architects meet the requirements of the ADA. Some such products available from companies advertising in this section are:

- Signage, including graphics, text, and Braille, in a wide variety of materials from Best Sign Systems.
- Accessibility products, including Braille plates, voice floor annunciators, and wheelchair lifts, from Elevator Parts of Texas, Inc.
- Detectable-warning-surface tiles that meet the requirements of section 4.29.2 of the ADA from Lone Star Ceramics Co.
- Architectural signage specifically designed to comply with ADA guidelines from Texas Marking Products.
- ADA-grade dry-pressed pavers available in contrasting earth-tone colors and in three thicknesses from Whitacre-Greer.

To receive more information about these products, circle the following reader inquiry numbers: Best Sign System, number 109; Elevator Parts of Texas, number 105; Lone Star Ceramics, number 190; Texas Marking Products, number 113; and Whitacre-Greer, number 191.

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THE FEATURES IN THIS ISSUE range from the Texas connections that brought Philip Johnson some of his early clients to the competitions that are increasingly common for today's Texas architects.
Architects complain that brokers interfere with communication between architects and clients, overuse competitions as a selection tool, and get paid to drive architect fees down.

Competition and Brooks

by Joel Warren Barna

A GROWING NUMBER of architects are beginning to rethink competitions.

Not the need to compete, which is an inescapable fact of architectural practice. Architects compete fiercely among themselves, and, without the legal protections afforded to doctors, lawyers, and other professionals, architects must also compete with an array of paraprofessionals who provide bits and pieces of what had earlier been comprehensive architectural services.

It is architectural competitions (in which, in hopes of winning a commission, architects prepare and present designs in advance) that architects are more and more seeing as damaging to their long-term interests. Architects in some of the most competitive firms in the state, pushed by recent shifts in the ways potential clients select design firms, are starting to reevaluate the conditions in which they will take part in architectural competitions, or whether they should take part in them at all.

And the most important factor in this reevaluation, according to many of the architects interviewed for this story, is the increasing importance of real estate brokers in the architectural selection process. Some context helps to gauge the new importance of real estate brokers in the professional lives of architects.

In this century, architects have traditionally been chosen directly by clients, who could be government officials, corporate managers, or individuals. In the most common traditional arrangement, clients and architects have entered into what is called a design-bid-build relationship. In design-bid-build, the owner chooses an architect to design a project, using the architect’s experience and qualifications as the basis for selection, and agreeing with the architect on a fee. The owner then solicits bids from general contractors, making a contract with one of them to build the project. In this phase, the architect serves as a construction advisor and as mediator between owner and builder. Another type of arrangement, called a negotiated contract, also relies on qualifications-based selection. In it, the owner chooses an architect, an engineer, and a builder, and all three collaborate in the design and construction contracts for the project.

Architects, by and large, are familiar and comfortable with such arrangements: In them, clients are usually making choices on the basis of qualifications and experience, not just on the basis of who has presented the lowest bid for services. Some architects are even comfortable working in the more radical arrangement called design-build, in which the architect is essentially working under contract to a builder who has been chosen on a low-bid basis. Again, in design-build arrangements, the initial selection of architect by builder is usually based on qualifications.

The familiar types of client-architect relationships are becoming increasingly rare, however. In the last five years, a new paraprofession has played a larger and larger role in the market. Led by Cushman & Wakefield, Henry S. Miller, The Fults Company, Swearingen, CB Commercial, and, most prominently, The Staubach Company, such firms offer themselves as client representatives for everything from construction management to architectural selection. Having a third party represent the owner during construction is not unusual: Many architecture, engineering, and construction firms, along with brokers, offer construction-management services. It is the emergence of brokers in architect selection that has proved most controversial among architects.
"Ten, even five years ago, we dealt directly with most of our potential and actual clients. Today, brokers and other intermediaries are involved in 30 or 40 percent of the new business that we are asked to present our qualifications for," says one Dallas architect, who, like most of those interviewed for this story, asked to go unidentified.

It's easy to see how clients—particularly those who haven't been involved in building in several years—might benefit from contracting with an owner's representative with knowledge about the real estate market, as well as experience in dealing with architects. Some firms, such as the Staubach Company, are widely respected in architectural circles for their experience, and for employing architects in their client-representation divisions.

"I think Staubach does a better job of preparing requests for qualifications, running interviews, and actually selecting architects than an inexperienced client would," says a partner in one Dallas firm.

Still, in all but the rarest cases, architects voice three related complaints about the growing role of brokers as owners' representatives.

The first complaint is that brokers interfere with the flow of communication between architects and clients that is required for a good project. The second is that brokers tend to overuse competitions as a tool for selecting architects, that competitions also interfere with client-architect communication, and that they almost always injure competitors, even the winners. And the third is that brokers typically focus strongly on fees in the selection process—in the words of a San Antonio architect, "They earn a fee to drive our fees down."

Three recent examples illustrate the problems some architects see emerging from this process.

The first comes from 1991, when Cushman & Wakefield announced a competition for the design of a new office complex in Houston. Only after several firms entered designs and a winner was chosen did the brokers reveal that the client was Schlumberger, the oil-field services giant.

Says one Houston architect whose firm now swears off such competitions, "Architecture is business of particulars. You listen to your clients and you respond to their needs, and that's how you build the relationship that results in a good building that can be built in their budget and that they're happy with. But if you are proposing something in a competition for a client you don't even know, you can't give them anything more than a generic product. In the long run, that's got to be a disservice to the client."

Adds another architect whose firm took part in the competition, "If you're serious about going after a job in a competition, you put a lot into it. Even if you didn't win the Schlumberger project, the brokers demanded so much up-front work that we had already spent what would have amounted to all our profit, before the job started. Never again."

Adds a third, "Enter too many of these competitions and you can put yourself out of business fast. That's bad enough. But what's worse is that, by competing for no pay, we are supporting the idea that clients should expect to get free work out of architects. But it's tough when they're the only game in town. What are you going to do?"

A second example occurred in 1992, when a Dallas brokerage firm arranged a competition for the redesign of a medical office building.

"They paid a token amount for the entry, and at least we knew who the clients were, but there was only minimal contact. Of course, it took us three interviews with the client to really get started on the project," says the head of the firm that won the commission. "You can see what the brokers wanted to do, which is to get a solution for their clients to bid on. But that's backwards for architecture. You don't look for a solution first. You look for an architect who will develop the solution that will serve the client best. And that can't happen when there's a filter between the client and the architect."

Architects agree that compensated competitions are better than uncompensated ones, because the risk for the architects is decreased. But, as one Dallas architect says, "Where you have someone standing in between you and your client, it denies you the ability to find out what's really driving the client's decision-making process. When the owner and the architect aren't discussing the problems the owner wants to deal with, along with the other things that the architect can identify that the owner didn't see before, both parties suffer."

Says a Houston architect who has also worked in both construction and real estate, "The destructive part comes in when the management service tends to buy the 'products' of architects as if they were commodities, in which everything is equal and the price is the only question."

Architects cite a third example, involving the Staubach Company, which requested a short list of six architecture firms to make presentations and proposals to their client, the Fossil Watch company. Says one architect who was involved, "What we weren't told is that the clients hadn't made up their minds to build or even to move from their present location, and that the brokers were also exploring ways to get other available space or to renegotiate the client's lease. The brokers got paid for their work. We didn't."
Rethinking Rangergate

Baseball was a hot subject in 1991. New ballparks were about to open in Baltimore and Chicago, and this had reawakened interest in the urban potential of the building type, along with the sources of iconography available for re-capturing and updating the game's hundred-year history. So when the Texas Rangers announced that the team was inviting 27 architecture firms—including nationally known heavy hitters and some Texas talent—to enter a competition for the design of a new $170-million stadium in Arlington, it attracted the interest of the national architecture magazines, along with that of Texas Architect.

As material for publication, the 17 schemes entered in the Rangers Stadium competition proved rich and stimulating, ranging from Antoine Predock's stadium-in-an-earthwork to Lake/Flato's true urban park and Keating Mann Jernigan Rottet's vast freeway landscape. David Schwarz, a Washington, D.C., architect with two major projects in neighboring Fort Worth, won with an entry that many observers found a little long on cowhead decorations but otherwise intriguing in the quirkiness of its playing-field configuration. In the 1992 Rangers Souvenir Program Magazine, Schwarz is quoted as saying, "There was no question in my mind we could win this.... I went back to my office and said, 'Look, we don't have money to do this... But if you guys want to contribute your weekends and put a lot of work into it, we'll enter.'"

It was only later, when the Rangers management sent out a series of press releases in which a children's design competition was touted in almost the same terms as the earlier architectural competition, that it became clear that the whole thing was a publicity stunt that had pulled a fast one, and that the architectural press, along with most of the competition entrants, had been had. Writing in Texas Architect in November, Ray Don Tilley called the affair "an example of architects accepting exploitation for a shot at a prize commission."

Rangergate in no way reflects on Schwarz's design, such as it is. But it taught us a Texas Architect lesson. From now on, we'll be covering some compensated competitions, along with competitions sponsored by non-profit groups for major public spaces, and other worthy projects. But no more free ink for unpaid competitions sponsored by clients with billion-dollar budgets and a stunted sense of fair play. JWB

Top left and top right: David Schwarz's winning scheme in the 1991 Texas Rangers Stadium competition, with its brick and granite and its mixture of historicist and Wild West iconography, is under construction in Arlington. Schwarz recalls that his employees worked nights and weekends without pay on the competition entry.
Philip Johnson's Texas Connections

Part one of Frank Welch's two-part story examines the Texas connections that helped nurture Philip Johnson's early career and that continue today.

PHILIP JOHNSON OFTEN GREETs VISITORS to his famous house in Connecticut by saying, "I'm the greatest architect in the world!"

Some people might argue even with this self-mocking description, but it can't be disputed that no living architect is better known worldwide than Johnson. What is perhaps less well known is how important Texas has been in Johnson's career. Certainly he has been one of the most influential architects in Texas in the last 25 years, both because of his world fame and his near dominance of the high-end of the development market since the early 1970s. Even today, after the dissolution of his partnership with John Burgee (the official split came in 1988), friendships and connections established in the 1940s with influential Texans are still spinning out important commissions, including a new chapel for St. Thomas University in Houston and a law school addition at the University of Houston. In spite of all the honors, controversy, and celebrity, Johnson at 86 shares a concern with the most obscure one-man-office architect: He wants to know where the next job is coming from. And he values his Texas connections. During a recent interview, seated at a round granite table in a small, elegant conference room overlooking New York's Third Avenue, Johnson marveled at his success with Texas clients—"Any New York architect with a brief case is highly persuasive"—and added, "I should have moved there. It's the only place I have work now."

Unlike a composer or painter or sculptor, the artist/architect cannot express himself without a client, a patron—an employer, if you will. (Johnson has sometimes described the architect's need to please a client as no better than harlotry.) Young, ambitious designers may reach out for attention with theoretical concepts, but the constructed building is the only reality that counts. It constitutes the record and is the subject for analysis, admiration, and criticism by historians, critics, and, increasingly, by the public. Johnson is unique in his position vis-à-vis clients in that he has done just as well, or even better, serving as his own client as he has in more traditional relationships. This explains his declaration that designing for oneself "is the only way to get it right." In fact, Johnson's first building, in 1942, was a Miesian courtyard house for himself in Cambridge, Mass. It served as his thesis at Harvard when he returned to the school in his mid-30s to study architecture formally.

Raised in wealthy comfort in Cleveland, Ohio, Johnson was the only son of a highly successful but stern father and a mother who
inculcated the boy and his sisters with her interest in the arts. One of his first memories of architects and architecture was sparked when his parents made an addition to their house and employed “the best architect around,” who produced a richly detailed, design-intensive structure. Later, when the teenage Johnson, touring Europe with his family, entered Chartres Cathedral, he burst into tears. “It was years and years before I realized that everyone wasn’t affected the same way,” he recalls.

After graduating from Harvard in 1930 as an undergraduate with a degree in philosophy and Greek, Johnson was drawn to New York’s art world and into the burgeoning Museum of Modern Art through friendships with its first director, Alfred Barr, and Barr’s wife. Johnson’s energy, intellect, and youthful charm attracted attention.

In addition, he had a lot of money, more perhaps than anyone else involved with the museum except the Rockefellers, whose patronage, with others, had created the museum. Johnson’s wealth allowed him to serve as the first director of the MOMA’s Department of Architecture, taking no salary and paying his staff out of his own pocket.

More important, after touring Europe with Henry-Russell Hitchcock in 1930 and interviewing le Corbusier, Oud, Mendelsohn, Gropius, and Mies van der Rohe, Johnson and Hitchcock co-authored The International Style for the museum and, in 1932, put together a history-making exhibition.
Based on the book. This exhibition served as the official and highly influential introduction to America of European modernism in architecture; soon its exhibits were echoed by contemporary home-grown versions in every city in the country. After serving the museum for almost 10 years, Johnson went back to his alma mater, where he received his Masters of Architecture in 1943.

In 1946, following a spell in the army, and after writing the first-ever book on Mies van der Rohe, he started an architectural office in New York—without a license—and began doing modest-sized projects. He soon ran afoul of New York’s licensing regulations and moved his office to the second floor of a plain brick building on the main street of New Canaan, Conn., where he lived at the time and where licensing regulations were not a problem; older colleagues such as Breuer, Johannson, and Noyes were also exploring modern residential design nearby. Soon he purchased five wooded acres behind a colonial stone wall (“The first piece of property I looked at,” he recalls.) and began work on a two-building residential design for himself. Johnson’s flat-roofed house of glass and steel, with its revolutionary assault on received expectations about house design, was constructed in 1948 and 1949.

It was while in Connecticut, even before his house was completed, that Johnson made contact with his first Texas clients, whose patronage would form the font of his Texas career. These patrons were the Houston art dealers and cultural leaders, French émigrés John and Dominique Schumberger de Menil. They had heard of him, according to Johnson, through the New York sculptor, Mary Callery, a shared friend and a figure in the New York museum and art world of the ’40s and ’50s that the Houston couple, like Johnson, played a part in. Dominique de Menil recalls that Callery told them to call Mies van der Rohe if they wanted to spend $100,000 on their new house and Philip Johnson if they wanted to spend $75,000. The Johnson personality and enthusiasm were compelling and, by this time, well known to insiders of the art and architecture world; in any case, word of his house in New Canaan was spreading rapidly. The avant-garde Menils asked Johnson down to Houston at a critical juncture for him. “You bet it was critical! My first important house for someone besides myself and way down in the Southwest too!” he says. Johnson’s recollections of the clients and program would strike most people as surprising: “When I look back, they were very concerned about cost. They seemed so poor,” he says. “The construction budget wasn’t much. We set the house back on San Felipe Road so the front part of the lot could be sold off. Of course, they never did that.” (It’s hard to imagine the Menils presenting such a penurious posture to Johnson. It’s possible that the architect’s reputation for “expensive” construction was earned early and that the Texans were talking down the budget.)

The Menil house, completed in 1950, is of a simple character: a long, single-story, salmon-colored brick block surrounding interior courts with a few white-trimmed openings on the street side. (Dominique de Menil added the streetside kitchen windows, which are not on Johnson’s plans, during construction; Johnson was out of town and local architect Hugo Neuhaus was supervising. Such alterations and the fact that the Menils hired the New York couturier Charles James to decorate and enliven the interiors might account for the absence of the Menil house on most lists of Johnson’s completed works. It is seldom published.) The house later received additions and alterations and general overseeing by Howard Barnstone, the late Houston architect who was close to the Menils at the time. (One Houstonian says: “Howard was the ‘maintenance man’ over there for more than 20 years.”)

Not only was this the first Johnson job in Texas, it was the first house outside of New England of the uncompromised international style pounded by Mies van der Rohe. Johnson’s personal yet stern rendering of the Miesian manner and his lectures to local architects stimulated and affected
an entire “generation” of Houston architects such as Neuhaus, Barnstone, Preston Bolton, Burdette Keeland, Magruder Wingfield, Kenneth Bentsen, Harwood Taylor, William Jenkins, and Anderson Todd. In no other city did Mies’s ideas and Johnson’s interpretation of them take such firm root. (In Anderson Todd’s case, the “take” was on Master Mies himself. Todd, who was married to Nina Cullinan’s niece, was also influential in gaining Mies his first major commission outside of Chicago: the Houston Museum of Fine Arts’ Cullinan Hall in 1958.) In addition, the Menil house directed further attention to Philip Johnson, “the New York architect” whose personal dwelling, set with brittle transparency in a rolling pastoral setting beside its opaque masonry companion, was receiving international publicity. England’s Architectural Review had given eight pages to the Glass House, as it came to be known. Both iconoclastic and iconic from the beginning, it was the Gehry Santa Monica house of its day.

Johnson was soon busy outside of Texas on additions to the Museum of Modern Art, more Miesian houses in Connecticut, and a small Manhattan townhouse for Mrs. John D. Rockefeller III. (She asked him on the museum elevator one day who she should get to design it. When Johnson began naming names she stopped him and said, “Why don’t you design my guest house?”)

When the time came to consider an architect for a new campus for Houston’s St. Thomas University, John and Dominique de Menil were influential enough to get the job for their new good, and increasingly famous, friend, Philip Johnson.

From the beginning of his life as an architect, Johnson has never hesitated in attributing the sources for his designs. In the Architectural Review piece in 1950, Johnson noted no less than six sources for the Glass House, including Ledoux, Schinkel, le Corbusier, and the “main man,” Mies. (It’s the flip side of the Howard Roark Syndrome of the architect as sole, superman creator. Maybe not as generous as it seems, it was possibly a form of name-dropping; the illustrious list could be seen as enhancing the architect’s credentials.)

In the case of the buildings and master plan for St. Thomas (1957), Johnson at the time noted a debt to Jefferson’s University of Virginia plan, which is characterized by symmetrically long, parallel colonnades attached to perimeter buildings, gently stepping down a terraced slope. The Houston school, on several flat blocks of closed streets in the Montrose area, was executed with light, open, double galleries tethering tastefully “correct” two-story Miesian blocks of brick and steel. Mies’s L.T.
campus vocabulary was the source, particularly for the Mondrianesque exposed steel framing in certain buildings. Instead of the axially focused rotunda library in Charlottesville, a chapel was planned to anchor the St. Thomas campus. After 35 years, construction of the chapel will begin soon—something radically different from what he would have placed there in 1957. Johnson's latest chapel design evokes Koolhaas, Eisenman, and SITE all at once. Famous for his 1955 exhortation to his Yale students that "One cannot not know history," Johnson has subsequently produced designs in cycles of style that seem to say one cannot be "hip" enough. He still finds great comfort in keeping company with and reflecting and supporting the avant-garde in art and architecture.

Another important commission for a Texas client was the result of Johnson's work at St. Thomas, at least indirectly. Jane Blaffer Owen heard Johnson speak in Houston at a University of St. Thomas affair and determined that he was the one to implement an idea of hers. A friend of the Menils and a member of Houston's prominent Blaffer family, Jane Owen was directing the restoration of the Indiana town of New Harmony, a 19th-century utopian community founded by her husband's forebears. She had conceived of a place of ecumenical worship open to the sky and was looking for the right architect. What became known as the Roofless Church (1960) was the first well-publicized design by Johnson that retained his rigorous, modernist language but added a strongly expressionist inflection. This high-walled "outdoor room" has a freestanding domed chancel of undulating shingled walls; their lower edges rise and fall to form arches lightly pinned to avoid concrete footings radiating in plan. Some compared the chancel to a haystack rising within the walled enclosure, but its voluptuous form grew from a strict plan geometry of intersecting circles. Jane Owen had rejected Johnson's original scheme for an angular, sharp-edged structure. She takes credit for the soft, rounded forms of the final product, saying that she urged him to reflect on the undulating Indiana countryside. Johnson later wrote her, crediting her with causing him to embrace curved forms in his work. Despite the church project's curvilinearity, the result is rigor and rectitude, but with a plasticity totally new for Johnson.

In 1956, Johnson's synagogue in Port Chester, N.Y., had departed from orthogonal geometry. It had an elliptical, domed foyer attached to a sanctuary marked by a taut plaster ceiling "stretched" as a low tensile vault. An almost static, immobile rectitude marked the synagogue, however, as well as most of Johnson's subsequent work, at least the next 20 years of it. Not until 1970 did a strong and effective break toward "kinetic" composition and form come with his own sculpture gallery at the Glass House complex.

Nevertheless, with the Roofless Church, Johnson was leaving strict Miesian theology behind (while retaining its details, as he does to this day) and his growing Texas constituency was helping him do it. Other architects of his generation like Saarinen and Rudolph were also seeking ways to loosen the straitjacket that unblinking modernism imposed. In the '50s, Johnson experimented on paper with a curving inside corner that widened and became an arch in his '60s buildings. The first notable "arched" building was the Amon Carter Museum of Western Art (1961) in Fort Worth.

Ruth Carter Johnson (now Stevenson) met the Menils through Cynthia Brants, an artist friend, in Fort Worth. Stevenson and her husband were invited by the Menils to the dedication of the first buildings at St. Thomas, including several days of lavish entertainment at the Warwick Hotel and elsewhere in Houston. Johnson (the architect) was staying at the hotel and he and his future client hit it off over cocktails and at the sumptuous affairs hosted by the Menils. Ruth Stevenson recalls her introduction to Johnson and the impression given by his connection with the Menils. "They were the 'creme de la creme' and all the rest of us were canned milk," she says.
Before the weekend was over, Stevenson asked Johnson if he would come to Fort Worth to discuss her plans for a building commemorating her father, Amon Carter, who had died in 1955. She was determined that it would be a fitting memorial and fine architecture also. (Earlier, when Amon Carter was alive, she got his permission to hire the best architect available, not limiting the choice to Fort Worth as had been her father’s strict habit. Carter, a wealthy publisher and businessman and his city’s most active booster, was known as “Mr. Fort Worth” and was reputed to always carry a sack lunch to Dallas business visits to avoid patronizing the rival city’s restaurants.)

“The building was never intended to be used as it is today,” Johnson recalls. “Ruth wanted a memorial for her father with his Remingtons and Russells on exhibit, and for a time there was to be a replica of Carter’s office, just as he left it, and a fine collection of china.” Johnson says that his friends Alfred Barr and Rene d’Harnoncourt convinced his client to start a collection of Western art and house it there. “She is a genius and began straight-away giving the building a strong meaning by gathering great art for it,” Johnson adds. When the collection was being formed, its first director, Mitch Wilder, described Western art as encompassing “everything west of Fort Worth, all the way around to Arlington.”

Completed in 1961, the Amon Carter Museum is often documented as an outstanding example of Johnson’s deft way with a site, which Johnson traced to his admiration for the Greek style of non-axial approach, like that at the Acropolis. “They had bought this huge, wonderful block, sloping down from the west with a view of the skyline from the high part,” Johnson explains. “After visiting the site and consulting with the family, I decided it needed to be at the top of the slope. A wooden platform was built so everyone could climb up and see what the view would be.” The building’s colonnaded facade (“The building is nothing but a loggia, really!”) faces east to downtown across the low-lying, river valley from a plinth of limestone that terraces down gently from the building to a rectangular open ambulatory raised above the site’s floor. The creamy Texas shellstone cladding on the
Arches and loggias formed an important part of Johnson's vocabulary. He said the Amon Carter Museum (below) was "nothing but a loggia"; he used similar forms for the lake folly at his New Canaan home (right), which was scaled small to mock perception of size and distance, as well as for the Henry C. Beck House in Dallas, in which a system of arches was "slip-covered" over another architect's floor plan that Mrs. Beck wanted to use. 

The construction of the Amon Carter, designed by Johnson as a result of the Menil's example to other Texas patrons, placed Fort Worth on the map as a city with a culture beyond that of a "cowtown." The city's "bet" was down on artistic and architectural eminence. That bet would be covered many times and with great distinction in the ensuing years. It is doubtful that the Kimbell Museum would have been built without the example of the Amon Carter. Ruth Carter Stevenson and Johnson have remained very close friends and not even the slightest change is made at the museum without Johnson's okay. Soon after its completion, the large skylights and clear wall of glass were darkened to preserve the art works. More recently, several additions have been made, all by Johnson.

In 1964, Johnson's focus shifted to Dallas when he was introduced, again through his Houston connections, to Mr. and Mrs. Henry Beck. The Becks had interviewed several architects for their large new house on Strait Lane but circumstances kept preventing a final selection until Johnson entered the picture. Patty Beck's sister Camilla Blaffer, who was Jane Blaffer Owen's sister-in-law, lived next door to the Menils in Houston.

Johnson recalls that Patty Beck had a floor plan that she liked, developed by California architect Gardner Dailey (whose elevation studies, according to Henry Beck, all looked like Stanford University buildings). Johnson dropped a modular system of pre-cast arches, both blind and open, like slipcov-
Johnson's Texas Connection

The arches are large-scale versions of those developed for his little pavilion “folly” built on the pond below the Glass House in 1962. The sculptural arches, with their tapered shafts and slightly flared bases, vault smoothly from the concave surfaces that define the shaft in one continuous line, as at the Amon Carter. The two-story symmetrical entry loggia is flanked by wings offset and receding from the central block. The infill of the blind arches is slate gray plaster, a harsh chromatic contrast to the subtle light tone of the ranges of arches. The street side is marked by a large motor court behind an earthen berm and carefully pollarded trees flanking the entry. It was completed in 1964.

The 1960s can be described as Johnson’s post-graduate period of self-discovery following the acolyte decade of the ’50s when he produced his series of mostly small-scaled tributes to Mies van der Rohe. He called that period his “pupil architecture.” But, beginning with the synagogue in Port Chester, N.Y., and the Roofless Church in Indiana, Johnson explored modernist monumentality and grandeur through a series of projects that inaugurated what the critics dubbed “the new formalism”: the Carter Museum, the Munson-Williams-Proctor and Sheldon Art Gallery museums, the exquisite Museum for Pre-Columbian Art at Dumbarton Oaks in Washington, the high-rise Kline Science complex at Yale, and the New York State Theater at Lincoln Center (the last two projects with Richard Foster). During this period, Johnson took pains in print, in person, and in practice to eschew the abstract, modernist structural clarity and articulation that his ’50s projects had at their best embodied. He seemed to delight in the curve of arches, vaults, and circular column sections for their aesthetic, graphic, and sensory value instead of their practical performance of supporting or spanning.

At about the turn of the decade, Johnson was still imploring his students at Yale to “know history” as a basis of design. His own underground painting gallery (1965) of interlocking circles was compared to a Mycenaean tomb, and the facades of paired columns of his New York State Theater (1964) were, he claimed, inspired by the 17th-century east facade of the Louvre by Claude Perrault.

A national tragedy brought Johnson back to Dallas. Following the assassination of John F. Kennedy, a small group of Dallas businessmen headed by Stanley Marcus, the retailer and cultural leader, began raising money for a memorial to the president whose death had traumatized the city. The committee was small; there weren’t many civic leaders with an interest in a memorial. The conservative Dallas political establishment seemed to believe that ignoring the event would erase memory of it. The committee had trouble deciding on a site and raising money for it. “There weren’t many rich Democrats to approach,” Marcus recalled.

Finally, after several years, the committee raised $200,000 and had a site several blocks from Dealey Plaza bordered on adjacent sides by old and new courthouses. An underground garage was planned for the block and County Judge Lew Sterrett arranged for the land above the garage to be the location for the memorial. Stanley Marcus had met Johnson in the late ’50s, having had lunch at the Glass House while serving on Harvard’s Visiting Committee of the Graduate School of Design. Johnson’s fame and his friendship with the Kennedy family made him Marcus’s only choice for architect for the memorial. Johnson immediately agreed to do the job, waiving his fee.

The design, completed in 1970, is a roofless cube of bound square concrete columns; four column pairs extend like short legs to lift the cube off its base. Access to the empty “room,” which is cen-

Above: John F. Kennedy memorial, Dallas
tered on a block of granite incised with the president's name, is through two vertical voids in the repeating chamfered pattern of the walls. Levitating on its tiny feet, the memorial has a tentative, mute quality, maybe reflective of the city's uncertainty about what to do with its grief and shame. There is a definite gloom about it, despite the balletic structural scheme and its light-catching surface. Asked about the memorial, Johnson says, "Don Judd (the minimalist sculptor who now lives in Marfa) thinks I owe him a commission for the design."

Johnson's work up to this point would have been enough to ensure his fame, but at age 62 he met John Burgee and his career took off in a new direction. The two architects met in Chicago, where they were part of a group being interviewed for a large project; Johnson, Burgee (representing C.F. Murphy Associates), and two other firms participated. The first firm was questioned by the client. Then came Burgee's turn. He gave such an impressive performance that after he left the room, Johnson stood up and said, "You should give the job to that young man," and left hurriedly. Finding Burgee at the elevators, he asked, "Will you go to work for me?" Johnson was 62 and his new associate was 35; they would go on to make architectural history on a grand scale through the '70s and '80s.

After serving the non-design end of architectural practice in a large firm, Burgee was eager to participate in the creative part of architecture and design buildings. It didn't hurt the new partnership that Burgee had served with C.F. Murphy, the country's most astute large-scale interpreter of Miesian philosophy. Johnson's fortuitous tie-up with Burgee led to the big projects that Johnson yearned for that might never have come to him otherwise. (Johnson often said he wanted to be l'architecte du roi; in the latter half of the 20th century in the United States big business was le roi.) Burgee provided the business and production savvy; Johnson furnished the art and reputation and witty charm. While their association was intact, Johnson did share design credit with Burgee from time to time, declaring once, "Why, I believe John thought of that hole at the top of AT&T." The public and the profession, however, gave the credits and the demerits for their buildings to Johnson, and this ultimately stuck deep in Burgee's craw.

As the partnership was blossoming, one of their first high-profile projects—another Menil referral—was in Texas: This was the Art Museum of South Texas (1972), located near the gulf shore in Corpus Christi. Edwin and Patsy Singer, art patrons, were urged by Dominique deMenil to contact Johnson, and after Patsy Singer visited with Johnson in New York, he agreed to design the museum if she would first raise money for construction. She returned to Corpus Christi and, with her husband, organized a fund-raising effort. The museum followed by a few years Johnson's own tour-de-force Sculpture Gallery in New Canaan and embodies some of its barn-like qualities, but with the precise, orthogonal ordering Johnson cut his teeth on. Rendered in large-scaled, ivory-white sculptural concrete, the museum looks like a giant chunk of carved soap. Monolithic and white, like a vessel moored near the Nueces Bay bridge, it is fronted with a lawn gently sloping up from the street to the broad recessed dark-glass entry. The interiors are of the same concrete, and are sedate, austere, and punctuated with skylights. The story here is the way the building surface catches the light. Water, sky, and green turf conspire with the brilliant planes of the building to compete strongly for one's attention in a motley district of cultural and civic structures.

Johnson, with Burgee this time, returned to Fort Worth in the mid '70s for another project for Ruth Carter Stevenson.

In 1975, the Fort Worth Water Garden was completed on two blocks of cleared downtown land that had been purchased by the Amon Carter Foundation and developed into an urban park as a gift to the city. Ruth Carter Stevenson didn't consider any other architect for the job. There were several parties presented by Johnson before the con-

Below: Johnson and Burgee's Art Museum of South Texas

As ked about Gerald Hines,
Johnson at first muses, "... Where in the world did HE come from?"
cept of a “water garden” emerged to touch a nerve with the foundation. (The other two governing members of the foundation were Amon Carter, Jr. and Amon Carter, Sr.’s long-time secretary Katreen Deakins, but Ruth Stevenson personally established and protected the foundation’s lofty ideals of civic and cultural patronage. These ideals are still spinning off initiatives for architectural distinction in Fort Worth and helping set a standard of achievement in rival city Dallas as well.)

The Water Garden turns water, trees, and terraces into a varied and complex three-dimensional composition, rendered in what seems to be a single pour of roseate concrete. The turning, rotating, and descending walks, levels, and retaining walls have a smaller-scale precedent in the Sculpture Gallery at the Glass House (1970) and even can be seen to echo artist Frank Stella’s shifting, overlapping, hard-edged three-dimensional wall constructions of the period. Johnson, in typical self-deprecation, explained, “I have a man in my office who’s good with angles” when asked about this major public space, which is devoid of the orthogony and curves that had imbued his designs since the 1940s.

The most memorably dramatic water feature of the park is a plunging cataract that falls into a geometrically sculptural chasm of sloping, faceted concrete. It surrounds a descending series of blocky “stepping stones” that snake sinuously down the faceted banks, reaching a focus for the exhilarating vortex of the cascading torrent. It is high drama that casts the other pools and fountains in the park as pale and bland, a comparison willed by the architect, no doubt.

At about this point, a 25-year-old set of cumulative circumstances, referrals, and relationships came together and set up the most fruitful architect-client symbiosis of Johnson and Burgee’s partnership. When asked about Gerald Hines last year, Johnson turned his head and gazed out the window at the Third Avenue traffic below.

He mused, almost to himself, “Gerald Hines... Where in the world did he come from?”

Above: The Fort Worth Water Gardens, Fort Worth

Frank Welch, FAIA, is principal of the Dallas architecture firm Frank Welch & Associates.
Looking Sharp at Santo’s

A close collaboration between architect and client is what gives the Santo Ferrara Salon in Shreveport, La., its innovative new look. Jeff Potter of Jeff Potter Architects in Longview designed the rectangular 1,200 square feet of column-free space to fit the spare lines of lighting and specialized fixtures designed by his client.

Within the open plan, the architects placed individual stylist’s stations, each with a removable wall-mounted equipment case consisting of a bird’s-eye maple cabinet under a bullnose steel plate that supports a polished granite countertop.

Four central stations form the focus of the salon. Hanging between them, a working sculpture composed of four-inch steel tubes and stainless steel arms forms a movable counter that holds two double-sided mirrors in place. This system can pivot left or right to open the space for other uses.

A notable feature of the space is the lighting system, also designed by the client. It utilizes M16 halogen bulbs plugged into prefabricated sockets in aluminum conductor tubes; wires run through the tubes to alligator clips, and these attach to bare speaker cables that run the length of the salon. In the spare space, this low-cost system exemplifies the collaboration that gives the salon its edge. J ohanna Rowe
Facing page: The central stylists’ stations are arranged around a pivoting sculptural element (shown folded against the wall) that holds two double-sided mirrors.

Above: Light fixtures and stylists’ cabinets were designed by the client.
SURVEY

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FABULOUS DALLAS

URBAN DESIGN

In June of 1992, the Dallas Institute of Humanities and Culture (DIHC) published DALLAS VISIONS for Community: Toward a 21st Century Urban Design, a book that marks the latest milestone in the Dallas Visions process, which was begun in 1987 by Gail Thomas, director of the DIHC, and architect and urban thinker James Pratt, FAIA. Their work, which involved well-known design firms Good, Fulton & Farrell, Hall/Merriman Architects, Slaney/Santana Group, and others, along with dozens of civic and neighborhood groups, resulted in a multi-media exhibition in 1990 at the Dallas Museum of Art (see “Pratt’s Grand Visions,” TAJ Jan/Feb 1991, p. 11). The giant drawings and other pieces of the exhibition later were shown at City Hall and in various community centers throughout the city. The idea, proponents of DALLAS VISIONS said, was to stimulate further discussion and develop a consensus for refining and implementing the package of proposals that DALLAS VISIONS represented. Swamped by political division and recurring economic crises, however, the City of Dallas has done little to advance hope for the plan.

Pratt’s new book may be enough to keep hope alive. Where the museum show was overwhelming, the book is intimate and rich in background detail, presenting the compendium of present-day humanistic urbanism that Pratt and his fellow visionaries have achieved in a newly convincing way.

What they propose is a way to rekindle the life of the central city. Urban planners with such a goal have had only two available strategies. The first lies in trying to use tax breaks and other economic incentives to make the inner city more attractive for new development than the suburban fringe. As the history of all American cities since World War II has shown, this is almost impossible. The second strategy, which is even more rarely tried than the first, amounts to making the inner city a more fabulous place than the suburbs could ever be. Perhaps the best example of such a strategy in Dallas is the Turtle Creek Parkway, created as one of the outgrowths of George Kessler’s 1911...
civic plan. Again, however, the traditional flow of money away from the inner city toward the suburbs makes this a difficult strategy to implement. But Dallas Visions shows, as compellingly as anything I have ever seen, how it could be made to work.

Following Kessler's lead, Pratt proposes turning Dallas's creeks, lakes, and escarpments into a series of parks, residential areas, and parkways. Where Kessler was anchoring an elite enclave, however, the Dallas Visions plan is tying the entire city together; it is a contemporary version of Olmsted's vision of public space as the glue necessary to democracy. Specifically, Pratt proposes turning the Trinity River into a lake surrounded by residential development; uncovering Mill Creek, a year-round creek that has been buried since 1917; creating a large new "Dream Lake" between downtown and Pleasant Grove along White Rock Creek; building parkways along the Dallas Escarpment into currently underdeveloped land southwest toward Cedar Hill and northwest toward North Lake. These developments, he suggests, could counterbalance the fatal attraction that D/FW Airport has exerted on business and residential growth since the 1970s. Other dramatic gestures are suggested at a number of scales: One proposal calls for bridging IH-35 west of downtown Dallas to connect the CBD with park land to be created along the Trinity.

Additional transportation-network proposals, for widened thoroughfares to connect Fair Park and downtown, for example, are less striking but more immediately practicable. So are suggestions for infill housing, visually organized street markets and retail districts, and historic preservation throughout the city. The process by which these proposals have been incorporated is one of overall plan's most interesting and hopeful aspects.

Skeptics may see Dallas Visions as little more than a dream. But, as Caitlin Thomas suggests in her Foreword, dreams must first.
A Collaborative Effort

EDUCATION A group of architecture students at Texas A&M University moved from the drawing board to the construction site during the past year, working to make the group's design of a community resource center a reality for residents of two colonias—poor, rural communities—in South Texas.

The students, working with faculty members and A&M's Center for Housing and Urban Development, programmed and designed a prototype center in a design lab last spring. Then, during the summer, they traveled to the sites, near Brownsville and Progresso, to participate in construction of the centers.

In 1992, the Texas Legislature allocated $1 million to A&M's College of Architecture to fund colonias-related programs, according to Kermit Black, director of the college's Center for Housing and Urban Development. The colonias are impoverished Hispanic settlements located in the rural areas of Texas' southernmost counties. State officials estimate that Texas has about 1,100 colonias with approximately 300,000 residents, most of whom speak only Spanish. Unemployment is believed to be more than 50 percent and most residents are without water and sewer service.

Center officials began their project by talking to colonias residents, service providers, and Texas A&M Agricultural Extension Service staff. Based on this input, officials decided that, although housing is an urgent need in the colonias, multi-use community centers should have a higher priority. During the design phase, students and faculty members also worked with residents and service providers to ensure that the centers could be used to provide a wide variety of services, including literacy, vocational, and nutritional training, along with healthcare services, including prenatal care programs, flu vaccination clinics, and mobile medical teams. The centers will also serve as outlets for food stamps and other aid.

"The services provided through the community centers are the key to a long-term solution to the problems of the colonias," Black says. "The education and training services are the focal point of our program. Health services are important, but they are only a band-aid, not a long-term solution, like education." Black believes that the centers may affect the colonias in another important, although perhaps less tangible, way. The involvement of the residents in the design and construction process, he says, will provide them with concrete evidence of the effect their efforts have had on their community; this, he hopes, will give them the confidence they need to begin to improve their living conditions themselves.

The A&M project is funded through 1993 and current plans call for construction of two more centers, near El Paso and Laredo. After that, the project's future is up in the air, although Black hopes funding will be extended. "Our objective is to demonstrate something that works so that someone else can replicate it," Black says. The Center hopes to interest federal agencies and private foundations in funding the construction of more centers, along with the development of a field team to oversee the centers' future operations. "What we need to keep doing is helping these communities grow around the centers," Black says.

Although the community centers are the centerpiece of the A&M project, the colonias program includes other components: an evaluation of the centers' impact on the colonias; development of an international database on low-income housing and economic and community development; an outreach program to share experience gained from the colonias project with low-income groups in urban areas in Texas; and development of techniques, including videotapes, to teach home-building skills to colonias residents. Students will continue to participate in all aspects of the project. Such hands-on involvement is the basis not only of a learning process for the colonias residents, Black says, but for the students as well. SW
A New Focus for LCRA

IN PROGRESS The offices of the Lower Colorado River Authority were scattered throughout Austin when the agency decided to consolidate those offices and create a headquarters campus. The desired image was simplicity and conservatism, and the plan reflects this with its forward focus and geometric forms.

The renovation of two existing buildings and the completion of two new buildings will provide LCRA with 250,000 square feet for 600 employees.

The owner of the land, the University of Texas, imposed height restrictions, that, combined with strict street setbacks, resulted in a master plan focused on a formal courtyard and waterwall.

The new buildings have been designed as simple four-story boxes, 90 by 80 feet, with masonry veneer and square punched windows. Color plays an important role in adding dimension to the flatness of the buildings' facades. The mass of the buildings is broken up by using large sections of two different colors of brick, dark brown and beige. The third brick, a dark beige in color, is used as a graphic stripe, alternately a dark or light accent depending on its context.

Set on a triangular site in west Austin, the new headquarters juxtapose the geometric forms of the buildings and parking lots with the organic shapes inherent in the landscaping. A loggia extends around a central courtyard, connecting three buildings, the central most of which is the Hancock Building. Distinguished by a rounded entryway that stands out from the rest of the south facade, the Hancock Building is the focus of the site.

Designed to demonstrate the LCRA's water conservation and water quality standards, the landscaping features xeriscaping and terraces that provide detention and infiltration beds. In the courtyard, the design is formal, emphasizing the waterwall, which provides not only visual and acoustic interest, but is a symbol of the LCRA itself, whose public duty is to oversee water control and the generation of hydroelectric power throughout the Highland Lakes region of Central Texas.

Johanna Rowe
A Complex Life

FRANK LLOYD WRIGHT
by Meryl Secrest
Alfred A. Knopf, Inc.,
New York, 1992
654 pages; $30.00
hardcover

BOOKS In this admirable biography, Meryl Secrest examines the forces that transformed Frank Wright from a Wisconsin farm boy into an American genius, and the unmatchable form-maker throughout his feverishly productive 60-year professional career. She also tackles the reasons for Wright's most likable traits, which included a penchant for dividing the world into servants and enemies, along with the ability to desert his wife and six children and then to explain it away by saying he shouldn't be bound by common morality.

Secrest tells the story of Wright's Welsh grandparents, the Lloyd Joneses, whose family motto was "Truth against the World!" They were people who thrived on and expected social ostracism, the author says, and Wright inherited this attitude.

But it is in the story of the loveless marriage between William Wright, a charming ne'er-do-well minister with three children by a previous marriage, to Anna Lloyd Jones, that Secrest sees the main clues to Frank Lloyd Wright's later difficulties. The marriage ended in divorce when Frank, the first of their three children, was 18. For years, Secrest concludes, Wright had been a pawn the struggles between his parents, and the experience left him condemned to spend his later life reenacting warped family patterns.

Set against the backdrop of Wright's long and often lurid life is his amazing architectural output, from his earliest apprentice work in Chicago to his transformation from mere architect to folk hero in the 1950s, when he won his crowning commission, the Guggenheim Museum in New York. Emblematic of the architect's achievements and problems, the Guggenheim was designed to display art that Wright despised, and he feared fiercely with James Johnson Sweeney, the museum's director, over everything from color and lighting to the angle at which paintings would be displayed. The resulting building is at once a great sculpture, a compelling architectural space, and a largely unsatisfactory art gallery.

Secrest hits the other highlights of Wright's architectural career (little more would be possible, even in a book that runs 600 pages), illuminating them with the recollections of clients and collaborators, and she succeeds in showing that many of the shifts in Wright's interests as a designer were connected with the struggles of his private life.

The question of what made Wright great may be unanswerable. But Secrest's ability to humanize her often exasperating subject makes for an enjoyable book.

Miss the Convention?

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Twenty-three seminars at the 1992 TSA Annual Meeting have been recorded on audio cassette tapes for your use. Tapes are $9.00 each. Add $2.50 per order for postage and handling. Select the tapes you want, then send name, address, number and quantity of each tape, and check or money order to:

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- ADA Requirements  Randolph Tucker, PE
- Saving Money on Payroll Costs  Thomas D.S. Rand
- Becoming a Trend Watcher  John McMurphy, PhD
- Marketing to Government Clients  Panel
- Opportunities on Value Management  Michael S. Adams, AIA
- Programming/Back to the Basics  Kevin A. Kelly, AIA
- Establishing Credibility over the Competition  Rick Wilcoxson
- Investing for the Long Term
- The Texas Medical Center Development  Panel
- Opportunities in Eastern Europe  Mary Schulist, Galina Zorina
- Project Management-from the Client's Perspective  Panel
- Fire Protection and Building Code Issues for the '90s  Michael A. Crowley
- Selective Executive Fringe Benefits  Deborah Rose
- Design Awards Round Table  Doss Mabe, AIA
- Total Quality Management  Ed Davis, Chuck Dolce
- Changing Team Structures  Panel
- Alternative Dispute Resolution  Theresa Tiley
- Texas State Capitol Renovation and Expansion  Carolyn Peterson, FAIA; Kirby Keahey, FAIA
- Alternative Career Paths for Architects  Panel
- Building Better Business Solutions  Deborah Rose
- What it Takes to Become an Architect
- Driving Fear out of the Workplace  Daniel Oestreicht
- Trial Strategies for Architects  Alan Fleishacker, AIA
PRODUCTS AND INFORMATION

The new F39 and F39C Series compact fluorescent fixtures from Lighting Services, Inc., are especially engineered to created soft, shadow-free fill and ambient light. Both of the 18-inch, 39-watt fixtures are available in three different white color temperatures—3000 K, 3500 K, and 4100 K—that create warm, neutral, and cool illuminance.

Circle 177 on reader inquiry card

Chelsea Decorative Metal Co., has introduced another design in its inventory of pressed-tin ceilings. The new style is a six-inch repeat pattern available in two-foot-by-four-foot sheets. The panels are made of rust-resistant tin-plated steel.

Circle 178 on reader inquiry card

In places where a swinging door would waste space and a door in the wall cannot be installed, a hardware set from Johnson Hardware allows easy installation of an open pocket door surface mounted outside the wall. The hardware can be adapted for different installations and can support solid-core doors of up to 100 pounds.

Circle 179 on reader inquiry card

SPI Lighting offers a four-wire mounting method for the pendant fixtures in its new Options series. Suspended from stainless steel wires, the fixture appears to float. The ultra-thin Options pendant is ideal for low-ceiling applications. Stem mounting is also available.

Circle 180 on reader inquiry card

The Aurora Quick-Lok® Shelving System from Richards-Wilcox uses less floor space than conventional file cabinets. The design is comprised of three modular components—vertical upright, shelf support, and shelf. With no additional hardware required, installation is a one-person operation, quick and easy to complete.

Circle 182 on reader inquiry card

A new glass-block flooring system based on the IBP Grid System™ design from Acme Brick is now available for residential and commercial applications. The new system is based on the aluminum grid framework used in the company's IBP Grid System windows, skylights, doors, and partitions, but incorporates a patented rubber “boot” that encases and cushions the glass block pavers.

Circle 183 on reader inquiry card

An updated 16-page illustrated manual, Tax Incentives for Accessibility Improvements, is now available from Von Duprin, a manufacturer of door-exit devices. The manual, which outlines three specific business tax provisions related to improved access for the disabled and shows ways to accomplish these improvements, is available for no charge.

Circle 184 on reader inquiry card

Innerface offers a complete line of interior and exterior signage, including the new ADAPT™ line, which meets ADA specifications for raised graphics and Braille.

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THE READER INQUIRY CARD

SUMMAGRAPHICS CORP. has introduced the new generation of its desktop graphics tablet, the Summa-Sketch III, which features improvements for the CAD market. The tablet is available in two sizes: Summa-Sketch III 12" by 12" and Summa-Sketch III Professional 18" by 12".

CIRCLE 186 ON THE READER INQUIRY CARD

VIBRANT GRAPHICS has announced Soft Engine 2.1, a display list processor that speeds up AutoCAD Release 12's functions by up to 25 times. Soft Engine accelerates all AutoCAD functions, including regens, moves, erases, copies, rotates, layer commands, and explodes.

CIRCLE 187 ON THE READER INQUIRY CARD

New features of MiniCad+ 4, CAD software for the Macintosh from GRAPHSOFT, include tolerancing, 3-D walkthroughs and flyovers, automatic section generation, hybrid symbols, automatic roof, floor, and wall cavities, on-screen chamfers, a 3-D Smart Cursor, and more.

CIRCLE 189 ON THE READER INQUIRY CARD

ISICAD, INC., a developer of graphics-based information management solutions, has released CAVANCE 5.0, the latest version of its PC-CAD software package designed specifically to take advantage of the Windows environment. CAVANCE implements the Microsoft Windows graphical user interface and data exchange capabilities, and can read and write AutoCAD native.DWG files.

CIRCLE 185 ON THE READER INQUIRY CARD

FORESIGHT RESOURCES CORP. has released DrafFix Windows CAD 2.0, which features a new user interface including icons, an "Intelligent Cursor" feature, user-definable buttons, and full compatibility with Windows 3.1.

CIRCLE 187 ON THE READER INQUIRY CARD
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53rd Annual Meeting
Texas Society of Architects
November 11-14, 1992
Houston, Texas

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We are proud to announce that Devoe & Raynolds was paint supplier for three of the Texas Society of Architects’ Design Award-winning projects in 1992: Austin Convention Center, Eve France clothing store in Houston, and the Hutchings-Sealy Building renovation in Galveston.

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Advertising in Marketplace is available for $80 per column inch (2-1/2" wide), one-inch minimum; business cards are $240. Ads may be line or display. Design and typesetting available at $10 per column inch for each service. Rates net, not commissionable. Closing date is the 13th of the second month preceding publication date (January 13 for the March/April 1993 issue).
### LEADING INDICATORS: September and October

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<tr>
<th>Indicator</th>
<th>Latest Month</th>
<th>Previous Month</th>
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**September 1992; other figures are October 1992

### TOTAL NONAGRICULTURAL JOB GROWTH: AUG. 1992 FOR TEXAS AND BORDER STATES

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<th>State</th>
<th>Rank</th>
<th>Percent Change</th>
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<td>Louisiana</td>
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<td>New Mexico</td>
<td>19</td>
<td>0.8</td>
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*In thousands

### TEXAS POPULATION CHANGE: July 1st

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Annual Change</th>
<th>Amt.</th>
<th>%</th>
</tr>
</thead>
</table>
| 1990 | 17,058,400 | 251,400       | 1.5  | 1.1%
| 1991 | 17,349,000 | 290,600       | 1.7  | 1.1%
| 1992*| 17,669,960 | 320,960       | 1.9  | 1.1%
| 1993*| 17,951,490 | 281,530       | 1.6  | 1.4%

*Projected

### TEXAS NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT

<table>
<thead>
<tr>
<th>Oct. '92</th>
<th>Sept. '92</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Nonagricultural Employment</td>
<td>7,319,200</td>
<td>7,272,300</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>992,700</td>
<td>990,900</td>
</tr>
<tr>
<td>Durable Goods</td>
<td>553,400</td>
<td>553,800</td>
</tr>
<tr>
<td>Nondurable Goods</td>
<td>439,300</td>
<td>437,100</td>
</tr>
<tr>
<td>Nonmanufacturing</td>
<td>6,326,500</td>
<td>6,281,400</td>
</tr>
<tr>
<td>Mining</td>
<td>172,700</td>
<td>171,300</td>
</tr>
<tr>
<td>Construction</td>
<td>356,000</td>
<td>356,100</td>
</tr>
<tr>
<td>Transportation and Public Utilities</td>
<td>436,700</td>
<td>437,100</td>
</tr>
<tr>
<td>Wholesale and Retail</td>
<td>1,752,800</td>
<td>1,749,700</td>
</tr>
<tr>
<td>Trade</td>
<td>431,900</td>
<td>431,000</td>
</tr>
<tr>
<td>Finance, Insurance, and Real Estate</td>
<td>1,854,100</td>
<td>1,841,900</td>
</tr>
<tr>
<td>Services</td>
<td>1,322,300</td>
<td>1,294,300</td>
</tr>
</tbody>
</table>

### TEXAS ECONOMIC OUTLOOK FOR 1991-1992

#### Texas Forecasts

<table>
<thead>
<tr>
<th>1991</th>
<th>1992*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross State Product (in billions of 1987$)</td>
<td>300.3</td>
</tr>
<tr>
<td>Annual % Change</td>
<td>2.6</td>
</tr>
<tr>
<td>Personal Income (in billions)</td>
<td>300.3</td>
</tr>
<tr>
<td>Annual % Change</td>
<td>6.0</td>
</tr>
<tr>
<td>Nonfarm Employment (in thousands)</td>
<td>7,167.2</td>
</tr>
<tr>
<td>Annual % Change</td>
<td>1.3</td>
</tr>
<tr>
<td>Resident Population (in thousands)</td>
<td>17,390.6</td>
</tr>
<tr>
<td>Annual % Change</td>
<td>1.8</td>
</tr>
<tr>
<td>Unemployment Rate (%)</td>
<td>6.6</td>
</tr>
<tr>
<td>Oil Price ($ per Barrel)</td>
<td>19.1</td>
</tr>
<tr>
<td>Natural Gas Price (in $ per thousand cubic feet)</td>
<td>1.4</td>
</tr>
<tr>
<td>Oil/Gas Drilling Rig Count</td>
<td>316.0</td>
</tr>
</tbody>
</table>

#### U. S. Economy

<table>
<thead>
<tr>
<th>1991</th>
<th>1992*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Domestic Product (in billions of 1987$)</td>
<td>4,821.0</td>
</tr>
<tr>
<td>Annual % Change</td>
<td>1.8</td>
</tr>
<tr>
<td>Construction Price Index (1982-84=100)</td>
<td>136.3</td>
</tr>
<tr>
<td>Annual % Change</td>
<td>3.0</td>
</tr>
<tr>
<td>Prime Interest Rate</td>
<td>8.5</td>
</tr>
</tbody>
</table>

*All 1992 figures projected

Compiled by Johanna Rowe

from Texas Economic Outlook, November 25, 1992

Published by John Sharp, Comptroller of Public Accounts
Over 99% of all water leakage in masonry walls occurs in microscopic gaps just .0001" thick: At the interface where mortar meets unit, not from the mortar joint itself or the masonry unit. Mortars made with portland cement and Chemstar Type S Lime cure masonry leaks. Portland cement-lime mortar has twice the bond strength of standard masonry cement—and independent tests prove that high bond strength equals low water leakage and a more workable mortar.
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Tune into the Kroin Commercial Products Division for a program of competitively-priced Lavatory Faucets that provide years of continuous service.

These faucets incorporate varying functions within the classic Kroin design with models featuring volume and/or temperature control, time release mechanisms and pre-set GPM for energy conservation. All are approved by ANSI (American National Standards Institute) and select faucets are available with long lever handles for the physically challenged.

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