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ON THE COVER
Schwartz Residence, El Paso, by Jon Anderson Architect, AIA; photo by Kirk Gittings.

DEPARTMENTS

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Urban Space

Austin decides on development options for a prime downtown block

IMAGINE a modern city blessed with the opportunity to carve out a large public plaza in the middle of its downtown. Now imagine that city is Austin, with a city center invigorated by a growing number of residents who live downtown, work downtown, and shop downtown, but have no central outdoor place where they can gather. That last piece of the urban mixed-use puzzle represents the Austin City Council's latest quandary.

By early May the City Council is expected to decide among three proposals for the development of an entire city-owned downtown block. Located on the north side of the new Austin City Hall, the tract is known as Block 21 (so named on the city's original 1839 plat map) and comprises the heart of the nascent nine-block Second Street District on which city leaders are hanging their hopes for a resurgent economic boom for downtown. With the completion of City Hall late last year and the ink recently dried on numerous leases for nearby restaurants and retail shops, the momentum has built to this moment when all eyes are on the City Council. Council members haven't given themselves a deadline, but the general consensus is that they will decide before elections are held on May 7.

Proposals submitted earlier this year by three development teams, each including a different local architectural firm, respond to a City of Austin RFP that set the price for the dirt at a minimum of $9.2 million. The RFP also called for at least 42,000 square feet for ground-floor retail and space dedicated for a local cultural institution (to be determined). Otherwise, the skyline's the limit, with all of the proposals envisioning residential towers that would continue the city's amazingly rapid transition toward becoming a bustling live/work urban center. As a focal point of the Second Street District, the successful development of Block 21 is critical to the city's plans for accommodating the influx of downtown residents with amenities and entertainments.

Of the three proposals being considered, two offer large outdoor areas for the public to gather. And of those two, one is exceptional in that it proposes to give downtown Austin a grand public plaza encompassing more than 27,000 square feet. That proposal by Zydeco Development is the brainchild of Miró Rivera Architects. The architects envision 35 percent of the block being given over to a public plaza that could also connect seamlessly with the sidewalks and south-side plaza of City Hall. As they stated in their proposal: "The urban plaza element of our design creates a magnet and a reason to congregate in the Second Street District outside of shopping opportunities."

Austin stands at a historic juncture, and the City Council's decision will set the course for downtown development for the remainder of this century. Maximizing the amount of open space seems a natural choice for a city that is poised to make the most of its future.

STEPHEN SHARPE

From top, renderings for by Nelson Architects with Endeavor Real Estate Group and AMLI Residential Properties Trust; Andersson Wise Architects with Stratus Properties and Trammel Crow Co.; and Miró Rivera Architects with Zydeco Development.

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Austin City Hall a 'Visual Mess'

To see the pictures of the new Austin City Hall ("Keeping Austin Weird," p. 24) and read the belabored defense of its indefensible design was sad—sad for Austin that they have a non-descript jumble of forms; sad for Antoine Predock as there is none of his strong, clear geometry; and sad for the literary and visual skills of our profession that we would lend praise, if faint, to this project and not see that the Emperor has no clothes.

Predock's "holistic approach" is totally absent: strange unrelated copper forms and odd strip windows jammed on top of the limestone-clad base. [Project architect Phil] Reed's attempt to describe it as a "more dynamic composition" is a quaint way of saying it is a visual mess.

With the fine standard set by Elijah Myers in the State Capitol, and the last half century of O'Neil Ford's fabulous Texas style, it is a shame the design team working in collaboration with the citizens and client could not find the inspiration – which is there – to give a City Hall commensurate with Austin's architectural heritage.

Scott Danielson, AIA
Burlingame, Calif.

Bold Design Tipped To Confusion

In the March/April 2005 issue, I appreciated the feature on the new Austin City Hall. I believe that Antoine Predock's team actually designed a dramatic and strikingly beautiful structure were it not for the frustrating and confusing south elevation. The use of native limestone, glass, and copper in the canyon-like interior lobby is breathtaking and conveys the spirit of openness and accessibility that all Austinites seek in the political process. East, north, and west exterior elevations possess the drama of edgy angles and protrusions, which in no way mar the building's clean horizontality.

But the coherence, cohesion, and iconic presence that one would expect in a major civic structure yields to a diffraction of focus and ultimately chaos in the south elevation, which is the front of the structure. Less would have been more, and clarity might have prevailed had the architects chosen not to add the exterior mezzanine.

The design architects of Austin's new City Hall are to be congratulated for their bold vision. There are many beautiful aspects to this remarkable building. One wishes that they would have known the tipping point where one more element of complexity gives way to confusion.

Robert Dunnam
Austin

Johnson Tribute Insightful (Despite Errors)

Re: March/April "Backpage," p. 64: I noticed with chagrin the errors in the bio on Philip Johnson—the wrong birth date in the headline, and then a mathematical error in the text that my fifth

Letters continued on page 51

CORRECTIONS

To correct errors in the March/April edition, please note:

- (p. 26) Southwest Concrete Products supplied the unit masonry wall assemblies for theAustin City Hall.
- (p. 16) The UT Health Science Center–Houston School of Nursing was a collaboration between BNIM Architects and Lake/Flato Architects.
- (p. 64) Philip Johnson was born in 1906 and died at age 98.

Preservation Texas Adds Endangered Sites

AUSTIN When Preservation Texas made public its second annual Texas' Most Endangered Historic Places list in February, the group chose a fitting site for its announcement—the steps of the State Capitol. The Capitol sits at the top of Austin's Congress Avenue Historic District, which sits at the top of Preservation Texas' 2005 list. The 13 sites comprise the second annual list put together by Preservation Texas along the lines of the National Trust for Historic Preservation's annual list of endangered places in the U.S.

Despite its designation as a National Register Historic District in 1978, newer buildings are creeping closer and closer to the curb, increasingly narrowing the canyon-like view of the Capitol. The historic structures still surviving are being dwarf by the newer—and much larger—new buildings. The result is gradually eroding the identity of the Congress Avenue, according to the Texas Historical Commission, which nominated Congress Avenue this year and last.

With the publication of the annual list, Preservation Texas is taking the fight to the people. Serving more as a catalyst than a solution, the aim is to "enable grassroots organizations to do their own preservation," says executive director Julianne Fletcher. "Preservation happens locally. You can have all the federal attention you want, but if the local people aren't interested, it won't get protected. It's their history, their community." A committee met in December to review 22 applications, and, based on threat and historical significance, selected 13 sites.

Already, successes are emerging. Zedler's Mill (1874) in Luling once supplied the central Texas town with waterpower, a sawmill, a gristmill, and a cotton gin. The city purchased the abandoned mill in 2003, and a Zedler's Mill Steering Committee recently agreed on a basic plan to restore the site, which will include a bed and breakfast, a water garden, and an artisan village. The Winkler House (c. 1845) in Castroville, one of the immigrant Alsatian community's last original homes, has been abandoned since the 1960s. In December, the city purchased an option to buy the $50,000 house. Since then, city administrator Jack Yeats and a handful of volunteers have been scraping together donations and grant proposals needed to cover the purchase price and long-term repairs, which could run as high as $220,000. "While it's disappointing to have anything on the [endangered] list, it will probably help us save the structure," Yeats says.

"That's ideal," Fletcher says, of the actions of Luling and Castroville. "We want you to fix the problem, and you have to have a plan."

In larger cities, however, negative momentum is harder to stop. Inner-city teardowns threaten early twentieth-century Dallas neighborhoods like Vickery Place, North Preston Hollow, and Lakewood Heights, which have lost as many as one-third of their older houses to newer and much larger residences. Fort Worth's Wayside Church (c. 1930) at Trezevant Hill, a last remaining vestige of an early African American community, suffers from encroaching development and neglect. Houston freeway and light rail expansions are demolishing the Near North Side Neighborhood (c. 1880), which recently sustained fire damage as well. In El Paso, St. George Antiochian Orthodox Church (1910) is the last Mission Revival-style building designed by Henry Trost, but even that cannot stop urban sprawl and "big box" churches. But urbanization is not just an urban problem. The few remaining WWI-era iron bridges in Collin County also are slated for demolition, presumably to provide access to the last undeveloped areas along Sister Grove Creek, says Fletcher.

While urbanization determines the fate of many historic places, neglect is close behind. Both the San Jacinto School House (1948) in Walker County and the Sanderson Railroad Depot (1883) in Terrell County, once important nexuses of their respective counties, now sit abandoned and vandalized. Even structures that have been purchased are not out of the woods yet. Citizens bought the Bloomburg State Bank Building (1916) from the city for one dollar, but have yet to raise enough money to stop its deterioration. Likewise, though Rancho San Francisco (c. 1850) in Zapata County still stands, long-term stabilization is needed to protect the Hispanic ranching landmark. Even Mother Nature can get in on the act. Once the cultural centerpiece of the largest city in Texas, the Jefferson Playhouse (1866) in Marion County was closed in 2004 after unusually high winds buckled the façade.

Whether the culprit is urbanization, neglect, abuse, or natural decay, Fletcher says the effects are reversible and those efforts to preserve local heritage will pay off, both literally in tourist dollars and culturally by sustaining a community's history. "We need education to make people aware of how saving their historic property is a way for economic development to happen," Fletcher says. "How it increases heritage tourism; how it teaches our children about who we are by what we have built around us."

FORD GUNTER

The Jefferson Playhouse in Marion County (St. Mary's Catholic School, c. 1860 structure at right; Sinai Hebrew Synagogue, c. 1876 addition at left) in the Jefferson Historic District. Sketch from the 1965 HABS drawings, courtesy the Library of Congress, Prints and Photographs Division, Historic American Buildings Survey.

TEXAS SOCIETY OF ARCHITECTS

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Keynote speakers have been carefully chosen to inspire and motivate:

Dr. Freeman Hrabowski
PRESIDENT, UNIVERSITY OF MARYLAND, BALTIMORE COUNTY
Born in 1950 in Birmingham, Alabama, Hrabowski graduated at 19 from Hampton Institute with highest honors; at age 24, he received his Ph.D. He is co-author of *Beating the Odds* and *Overcoming the Odds* focusing on successful African Americans in science. His research and publications focus on science and math education, with a special emphasis on issues involving minority participation.

The Honorable Jeremy Harris, Hon. AIA
FORMER MAYOR OF HONOLULU
Harris won a special election to become Mayor of the City and County of Honolulu in September 1994 and was re-elected Mayor in 1996 and 2000. Due to term limits, he was ineligible for re-election in 2004. Harris' legacy is the first government system overhaul in Honolulu history, with reorganized municipal departments and streamlined services provided by the city and county. He also curtailed urban sprawl by reforming the system of land use planning to preserve open spaces and agricultural districts. Harris currently serves as the AIA Board's Public Member.

The ever-expanding line-up of optional events will offer a range of exceptional, creative tour destinations featuring venues all contributing to The Good Life in and around San Antonio.

Sunset Station, the site for the Host Chapter Party, is part of a multi-million dollar restoration and development program. The Station is the original 1903 Southern Pacific Depot and was one of the main stops along the famous Sunset Limited Route to California. Listed on the National Register of Historic Places, the Station was called "the building of 1,000 lights" because of the many electric lights installed during construction (see *Texas Architect*, July/August 1999 issue).

For more information, call 512.478.7386

September 15-17, 2005 • Henry B. Gonzalez Convention Center • San Antonio

Seton Medical Center Expansion and Renovation by Page Southerland Page

Wilde Haire Ranch by Mell Lawrence Architects

PHOTOS COURTESY AIA AUSTIN

AIA Austin Awards 8 Projects

AUSTIN AIA Austin announced its 2005 Design Awards in late February. Whittling down a field of 76 entries, jurors Max Levy, FAIA, of Max Levy Architects in Dallas; Harry Teague, AIA, of Harry Teague Architects in Aspen, Colo.; and Michael Willis, FAIA, of Michael Willis Architects in San Francisco selected eight outstanding architectural projects by AIA members from local firms. The highest level of recognition is the Honor Award, followed by Citation of Honor and Merit Award. Awards were presented Feb. 25 during the chapter's Awards Gala.

Mell Lawrence Architects earned two of the three Honor Awards. Top awards went to his Foshee Corral, a three-building farmhouse compound in Fayette that blends modern design and traditional rural architecture, and Wilde Haire Ranch, another rural dwelling that supplies all of its water by harvesting rainfall. Page Southerland Page's Austin office rounded out the Honor Award for the Seton Medical Center Expansion and Renovation, which uses light and glass to create a delicate and welcoming atmosphere.

Three Citations of Honor were awarded. One went to Page Southerland Page for the Prothro Residence Remodel and Addition in Dallas. The firm took the deteriorating structure from the 1970s (originally designed by Bud Oglesby) and added glass curtain wall to both ends to open up the house to extraordinary views of Turtle Creek. A second was presented to Furman + Keil Architects for its Mission Ridge House Remodel and Addition. The firm opened up the 58-year-old bungalow to its own backyard while discretely closing it off from public view. The third Citation of Honor went to TWC Architects for the Milam County Courthouse Restoration, which included removal of hazardous materials and the precise restoration or reconstruction of historic materials more than a century old.

AIA Austin also awarded two Merit Awards. Susman Tisdale Gayle received one for the 4,000-sf Lakeway Swim Center, notable for its two contrasting structural systems that merge to create an entry point for the complex. The second went to alterstudio for its Hidden Cove Residential Renovation, which turned an unremarkable home inside-out by opening it almost entirely to the out-of-doors.

Also during the Awards Gala the chapter honored several individuals for their work within the profession and the community. Girard Kinney, AIA, received the Community Service Award; Michele L. Van Hyfte, AIA, received the Young Architectural Professional; Herman Thun, AIA, received the Edwin Waller Award for Public Architecture; Lisa Tipps was given an Honorary Membership; Heather McKinney, AIA, received the President's Award from 2004 President Jane Stansfeld, FAIA; Graeber Simmons and Cowan was presented with the Firm Achievement Award; and Fehr and Granger was recognized with the 25 Year Award for the firm's body of work.

Foshee Corral by Mell Lawrence Architects

AIA Houston Awards 18 Projects

HOUSTON The 18 winning projects in AIA Houston's 2005 Design Awards were announced on Feb. 7. The three members of the jury were Kevin Kennon of Kevin Kennon Architect in New York; Gail Lindsey, FAIA, of Design Harmony in Wake Forest, N.C.; and Richard Stacy, AIA, of Leddy Maytum Stacy Architects in San Francisco. The winning firms were formally honored at the Celebrate Architecture 2005 gala on April 30.

De Santos Gallery by Brave/Architecture

Six Honor Awards were presented in six different categories. BNIM Architects and Lake/Flato Architects earned two Honor Awards, each in the categories of architecture and sustainable design, for their collaboration on the School of Nursing and Student Community Center at the University of Texas Health Science Center at Houston. The 194,000-sf building is a model of efficiency and utility, capturing natural light and rainwater (for plumbing and landscaping) while providing state of the art facilities for students and faculty. Also receiving Honor Awards in the architecture category were Nonya Grenader Architect for the House for Jim Love, a Houston sculptor who desired merging public and private spaces in an open interior, and Brave/Architecture, for the 4,200-sf De Santos Gallery, a three-story art gallery and studio complete with a reflection pool, terrace, and sculpture garden.

In the interior category, DMJM Rottet received a Honor Award for the Royal Bank of Scotland Groups' new offices, which provide a collaborative, communal space with simple planes and no doors. Stern and Bucek Architects received a Honor Award in the restoration/renovation category for the Menil House Renovation and Conservation, in which the architects took great care to protect original paint colors on failing plaster walls and unobtrusively add the necessary mechanical and electrical system upgrades to the 55-year-old Philip Johnson design.

Other recipients are listed below:

Merit Awards – Architecture

- "An Exploded Box" by Peter Jay Zweig, FAIA, Philip Johnson, FAIA, and Jorge Castillo
- Baldwin-Sussman Residence by Wittenberg Oberholzer Architects
- John P. McGovern-Stella Link Branch Library by Bailey Architects
- "Toolbox" by Bruce B. Roadcap, AIA

Merit Awards – Interior Architecture

- Houston Visitors' Center (exploreHOUSTON at the George R. Brown Convention Center) by Morris Architects
- BP WOW! by Gensler

Merit Awards – Restoration/Renovation

- Weiss House by W.O. Neuhaus Associates
- Awty International Lower School by Bailey Architects

Merit Awards – Urban Design

- Heritage Place – Page Southerland Page

On the Board Awards

- Fayez S. Sarofim Research Building
- Brown Foundation Institute of Molecular Medicine for the Prevention of Human Diseases
- The University of Texas Health Science Center at Houston

School of Nursing by BNIM and Lake/Flato

House for Jim Love by Nonya Grenader Architect

PHOTOS COURTESY AIA HOUSTON

New Braunfels Is National 'Destination'

NEW BRAUNFELS Founded in 1845 by German immigrants seeking a new life in the Texas Hill Country, New Braunfels (pop. 36,500) today balances Old World charm with modern amenities.

Located between San Antonio and Austin, New Braunfels attracts weekenders and day-trippers who stroll its expansive National Register Historic District and enjoy an variety of shops, galleries, and eateries, many housed in restored historic buildings. Beloved local landmarks include the Comal County Courthouse, a rugged Romanesque Revival masterpiece built in 1898; the Stephen Klein House (c. 1846), an example of stone-and-timber fachwerk construction; the Sophienburg Museum & Archives, with thousands of documents and artifacts in its collections; and Landa Park, a 196-acre oasis.

Recognizing the significance of its unique cultural and architectural heritage, the National Trust for Historic Preservation, the country's largest private, nonprofit preservation organization, has named New Braunfels as one of America's 2005 Dozen Distinctive Destinations. It was selected from nearly 80 destinations in 44 states that were nominated by individuals, preservation organizations and local communities.

"New Braunfels is a unique town that prides itself on rich culture and tradition," said Richard Moe, president of the National Trust, when the 2005 list was announced on March 2. "Visitors of all ages will enjoy the lively spirit, southern hospitality and host of interesting activities offered here."

Other cities and towns on the 2005 list of America's Dozen Distinctive Destinations are:

Annapolis, Maryland (pop. 35,800); Bath, Maine (pop. 10,000); Bisbee, Arizona (pop. 6,400); Columbus, Ind. (pop. 39,000); Dubuque, Iowa (pop. 58,000); Helena, Mont. (pop. 26,500); Jonesborough, Tenn. (pop. 4,200); Key West, Florida (pop. 25,500); Natchitoches, Louisiana (pop. 18,500); Oak Park, Illinois (pop. 52,500); and Salem, Massachusetts (pop. 40,400).

The 2005 list is the sixth compiled by the National Trust. To date, 72 towns and cities located in 36 states have been named. In each community, residents have taken forceful action to protect their town's character and sense of place. Visit the National Trust's Web site at *www.nationaltrust.org* for more information.

STEPHEN SHARPE

Austin Homes Tour Spotlights Travis Heights

The Heritage Society of Austin's 13th annual Heritage Homes Tour will feature seven residences in the historic Travis Heights neighborhood. The tour's headquarters will be located on the grounds of the Mabel Davis House (1308 Alta Vista), with walking tours scheduled from 10 a.m. to 6 p.m. Call (512) 474-5198 or visit *www.heritagesocietyaustin.org*. MAY 7

Galveston Hosts Historic Homes Tour

For two weekends the Galveston Historical Foundation opens the doors to nine private homes during the 30th anniversary of its annual Historic Homes Tour. For more information, call (409) 765-7834 or visit *www.galvestonhistory.org*. MAY 7-8, 14-15

AIA National Convention in Las Vegas

AIA Las Vegas hosts the 2005 AIA national convention with more than 160 continuing education sessions offered and an expo with 800-plus exhibitors. Register online at *www.aiaconvention.com*, or call (800) 242-3837 for information. MAY 19-21

TSA Design Awards Deadline

TSA Design Awards entries must be submitted in a digital format and received by 5 p.m. in the TSA offices. The competition will include the TSA Studio Awards for unbuilt projects. Guidelines are available online at *www.texasarchitect.org*. JUNE 3

AIA's Sandcastle Competition

Hundreds of architects and architectural students are expected to compete in the 19th Annual AIA Sandcastle Competition. Free to the public (with a $5 parking fee), the competition begins at 10 a.m. and judging starts at 3 p.m. Visit *www.aiasandcastle.com* for more information or call AIA Houston at (713) 520-0155. JUNE 4

Plug-In City (Houston) at Blaffer Gallery

Photographer and conceptual artist Alain Bublex visited Houston in 2004 to study and document the city's unique urban environment. On exhibit in the Museum of Fine Art, Houston's Blaffer Gallery, his first chapter of *Plug-In City* is an ongoing exploration of American cities. Call (713) 743-9530 or visit *www.blaffergallery.org*. THROUGH JUNE 11

Dallas AIA Features Sloan's *Notations*

An exhibition of local landscape architect Kevin Sloan's notational drawings and travel journals is on display in the AIA Dallas offices, 1444 Oak Lawn Avenue. For more information visit *www.dallasaia.org* or call (214) 742-3242. THROUGH JULY 1

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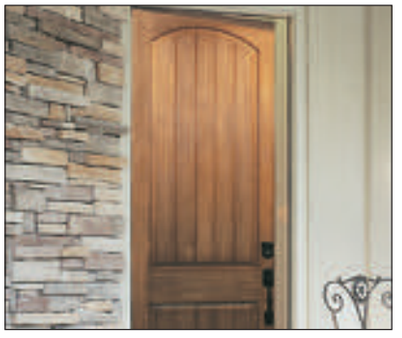

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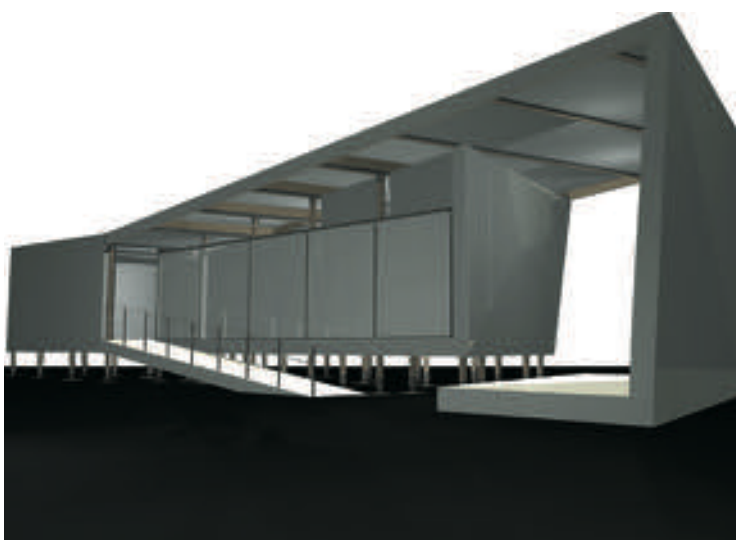
Chickasaw Nation Cultural Center

San Antonio-based Overland Partners Architects is designing two separate projects in south-central Oklahoma to introduce visitors to the Chickasaw Nation. Conceived as a museum, library, archive and research center, the $45 million, 104,000-sf Chickasaw Nation Cultural Center near Sulphur will comprise a series of buildings nestled around plazas and outdoors areas. Funded by the Chickasaw Nation and encompassing 109 acres, the cultural center is designed to embrace the natural features of the site and thereby signifies the relationship between Native Americans and nature. Another project just a few miles away is the $2.3 million, 3,800-sf Chickasaw National Recreation Area Visitor Center commissioned by the National Park Service. Designed around a historic natural spring, the facility will serve as the gateway to one of the nation's oldest national parks. The architecture will incorporate the themes of history, water, cultural landscape, and the local climate.

Texas A&M–Texarkana Master Plan

Aiming to become the only four-year university in the area, Texas A&M-Texarkana has unveiled an ambitious 20-year expansion plan designed by Gensler's Houston office. The new campus, situated on 400 acres of undeveloped woodland, will incorporate water in virtually every exterior aspect. The centerpiece will be a newly created lake that will be expanded in phases and lined with academic buildings on its south shore and student housing on the north, all connected by a system of crosswalks and weirs. Planned in five phases, the project will result in construction of 1,485,000 square feet of buildings, 7,300 parking spaces, an athletic complex, and an arena/convocation center. Plazas, quadrangles, and courtyards will be flanked by buildings composed of dark red brick and Texas limestone. A lone access road, to be supplemented by a campus boulevard, will ensure a quiet, low-traffic area.



Temporary Art Pavilion

Dallas Community Studio, an advanced graduate architectural design/build studio at the University of Texas at Arlington School of Architecture, has designed a temporary open-air art pavilion in a collaborative project with South Side on Lamar, a residential development located in the former Sears, Roebuck & Co.'s Catalog Merchandise Center just south of downtown Dallas. Under the direction of Heath C. MacDonald, the UT Arlington students conceived the project as a temporary, modular structure incorporating timber frame and simple bolt connections for ease of assembly and portability. Tensile canvas will make up the exterior skin, and as well as interior partitions. The site is being off ered by South Side on Lamar to provide exhibit space for the Dallas' burgeoning south-side arts district and a stage for the performing arts. Construction is scheduled to begin May 31 and continue through the summer, culminating in an exhibition to celebrate the opening.

'Smart Growth' Initiatives Benefit All Citizens, Even Architects

Livable communities are cleaner, healthier, more equitable, and better for business

by ROBERT MECKFESSEL, AIA

THE terms "livable communities" and "smart growth" are used often these days by architects, planners, civic leaders, and activists. While they can mean different things to different people, the core idea behind the terms is clear—growing a community in a manner that is economically and environmentally sound over the long haul, eschewing short-term gains for long-term benefits. These benefits accrue to all citizens, including architects.

Livable communities can succeed in a wide range of criteria, including urban planning, urban design, preservation, beautification, parks and open spaces, environmental concerns, sustainable architecture, and transportation. That said, there is no such thing as the perfect livable community. Even those U.S. cities with fervent smart growth movements are generally strong on some initiatives and weak on others. For example, our own state's beloved Austin has enacted tough sustainability regulations and has enjoyed successful results in its urban revitalization. But at the same time, however, the Austin area endures some of the worst traffic and sprawl problems in Texas. Still, as with the design of any good building, the first step in the design of a good community is creating a vision of what it could be.

Our theoretical livable community, fundamentally, is a better place to live because:

• The air is cleaner. Cars are fewer with transit widespread, convenient, and affordable.

• The water is cleaner. There is less runoff from city streets into streams and rivers because there are fewer cars. There is less pavement, and what pavement remains is permeable. Sewage treatment plants are less burdened due to lower-water use by plumbing fixtures and increased recycling of grey water for irrigation.

• The community is more equitable to its citizenry. More housing types are offered throughout the city with easy access to mass transit. The elderly are not isolated in retirement communities; low-income families are not relegated to the edges of the city; and the handicapped are more closely integrated into the life of the city.

• The citizens are healthier. They walk or bicycle more and drive less. Outdoor activities are plentiful because parks, trails, and community gardens are nearby.

• More money is devoted to quality of life. The cheapest car in the U.S. costs more than $6,000 per year to operate. If a family can do with one fewer car, it can afford a better home or pay for half of a college education at a state university or take better vacations or give more to charity or work less or save more retirement.

• The residents have greater pride in their community. There will be more community involvement from citizens who truly care about their cities. As a result, rather than relying on one-size-fits-all solutions (like more and bigger freeways, and more of the same big-box retailers and fast food outlets), the community will have planning, architectural, and environmental solutions tailored to its own history, values, climate, and culture.

The above qualitative benefits can translate into quantitative benefits for communities. They look better, are healthier, offer more choices in lifestyles and activities, and are more interesting places to live and to visit. Simply put, attractive communities attract. First of all, they attract new residents, who are also taxpayers, consumers, and employees—all good things. And, the better quality of life a community offers, the more educated and talented these new residents tend to be, since they can choose to live almost anywhere. The more educated and talented these residents are, the more attractive they are to businesses seeking such talent, and those businesses bring with them jobs, taxes, growth, and other businesses.

Beyond investment and growth, there are a number of other quantitative benefits to livable communities. Infrastructure costs are lower as denser development, sustainable planning, recycling, and other programs result in less traffic, less runoff, lower water and sewer demand, and lower energy consumption. All that leads to lower costs for cities, with potential for lower taxes. Further, healthy cities tend to have growing property values and healthier tax bases.

Aside from the benefits to the citizens of a community (including architects) the architectural profession also has much to gain from smart growth initiatives. To borrow an expression from Molly Ivins, livable communities are good places to do "bidness," and us architects do "bidness," too. Because they have strong tax bases, healthy communities build schools, libraries, police stations, community centers, transit facilities, improved streets, and other public projects. They attract corporations, which need to house their employees in attractive, well-designed facilities; they attract investment and development, which leads to new residential and mixed-use complexes, as well as revitalization, renovation, and preservation projects; and they attract more affluent residents, who often build architect-designed homes.

Healthy communities, especially those with strong sustainability regulations, demand higher quality in their construction, both in the private and public sectors. While builders and building designers may be able to compete with architects at the most basic levels of construction, they cannot match the architect's level of training, knowledge, and expertise when the required construction quality or complexity rises. Architects practicing in cutting-edge communities gain cutting–edge skills that are exportable to other communities. (It is not coincidental that the City of Dallas recently hired a planner from Portland, Ore., to develop the city's new comprehensive plan.)

The concepts of livable communities and smart growth initiatives transcend aesthetic or "lifestyle" issues. Increasingly, our nation's most livable communities will be our most successful. Both as citizens and businesspeople, architects will benefit from that success and, as citizens and businesspeople, we should do all we can to bring that future about.

Robert Meckfessel, AIA, is a principal of dsgn associates in Dallas and TSA vice president for practice.

Field Education

by INGRID SPENCER

Taking architecture into their own hands, students at UT Austin

PHOTOS BY RICE BUILDING WORKSHOP

PHOTO BY PAUL BARDAGIY

PHOTO BY MEGAN HANNON

and Rice complete two distinctly different design/build projects

WHEN speaking about university-based design/build programs in the U.S., two names come up again and again—Charles Moore, FAIA, who in 1967 started the Yale Building Project, the country's oldest design/build program, and Samuel Mockbee, FAIA, who in 1992 co-founded Auburn University's Rural Studio where students build homes for the most impoverished residents of rural Alabama. Earlier in the twentieth century, European schools such as the Bauhaus in Weimar influenced a generation of architecture students by taking them outside the classroom to experience the realities of what it meant to create buildings. Innovative teachers, among them Walter Gropius and Josef Albers of the Bauhaus, knew that to really understand architecture, students had to build with their own hands.

Despite the many virtues of a design/build curriculum, only a few U.S. universities have active programs. The reasons are varied and valid. Designing and building is complicated and time-consuming, and semesters are short. Finding a willing client is not always easy. Construction is expensive, and liability issues can get in the way.

Nonetheless, interest is growing on campuses across the U.S. According to William Carpenter, associate professor of architecture at the Southern Polytechnic State University in Marietta, Ga., and author of the book *Building: Design and Construction in Architectural Education*, student demand and community willingness is driving the growth. "When I wrote the book, in 1997, there were about 10 universities with such programs," says Carpenter, a former student of Mockbee. "Now there are nearly 40. The design/build studio is moving from a more marginalized form of study to one more within the pedagogy of a normal architectural education. With this type of study, students have the opportunity to express their own strengths and weaknesses. There's no doubt that it makes for better architects."

With both rural and urban programs flourishing in academia, the future looks promising for university design/build studios. In Texas at least four programs take students off campus to build what they've designed. Founded in 1990, the University of Houston's Graduate Design/Build Studio may be the state's oldest, and among the youngest is UT Arlington's Dallas Community Studio. Texas Architect visited two recent projects designed and built by students from UT Austin and Rice University.

(top, from left) The UT Austin team sited the ranch house to take advantage of prevailing winds and incorporated energy-saving strategies, such as a roof that overhangs porches on three sides and a central breezeway. The students fine-tuned their plans through a series of classroom critiques. (bottom of opposite page) Students from Rice University researched Houston's Third Ward before beginning work on the XS House. The 500-square-foot project updates the community's traditional shotgun-style layout.

PHOTO BY PAUL BARDAGJY

R.M. 2766 by Design Build Texas

The University of Texas at Austin School of Architecture

Simple finishes maximize the economy of the design while helping to soften the sometimes harsh conditions of life out on the range.

This spring will mark the completion of the UT Austin School of Architecture's first Design Build Texas design/build studio, called R.M. 2766 after the rural road that leads to the project. The 1,200-square-foot, two-bedroom, two-bath home was designed and constructed by 16 students – eight undergraduate and eight graduate students – on a privately owned 1,000-acre ranch near Johnson City, about an hour's drive west of Austin.

According to Louise Harpman, the professor who oversaw the project, the house is a study in environmentally conscious building on an extreme site. The arid and unforgiving Hill Country terrain required the students to take every possible advantage the landscape offered, including orientation to benefit from prevailing winds and seasonal rainfall to collect 20,000 gallons of water. "We tried to balance buildability and sustainability," says Harpman.

Formerly the studio director for the Yale Building Project, Harpman came to Austin in 2003 and later inaugurated UT's design/build program. The program had a successful lift-off, thanks to one donor who offered access to the land plus $120,000, as well as several businesses that donated goods and services. "Most programs are building for a local not-for-profit, an agency, or a developer," she says. "For us, the demand of trying to 'sell' the house has been lifted from us. This is a real academic, experimental project where the students can put all those things they've learned in class to the practical test."

"R.M. 2766" continued on page 50

PHOTOS BY RICE BUILDING WORKSHOP

XS House by Rice Building Workshop

Rice University School of Architecture

Since 1997, students with the Rice Building Workshop (RBW) have been designing and building housing for an inner-city area in Houston known as the Third Ward—a traditionally African-American neighborhood rich in heritage but poor in resources for needed revitalization. For its fourth affordable housing project, RBW teamed with Project Row Houses, a non-profit group that assists single mothers with housing and offers after-school programs for their children. Organized in 1993 as a response to the demolition of many of the community's original small shotgun-style houses built in the 1930s, Project Row Houses has addressed the problem to some extent by renovating 22 abandoned dwellings. However, the idea of using modern materials and technologies to build a new house eventually proved more powerful than simply renovating existing structures. "There was a hunger and a need for this type of house," says Antoine Bryant of Project Row Houses. "And since our bond with RBW is very strong by now, the process was easy and incredibly architecturally compatible with the neighborhood." According to RBW co-director Nonya Grenader, FAIA, the Rice design/build program obtained $25,000 through grants (as well as donated materials and services) to design and build a 500-square-foot house.

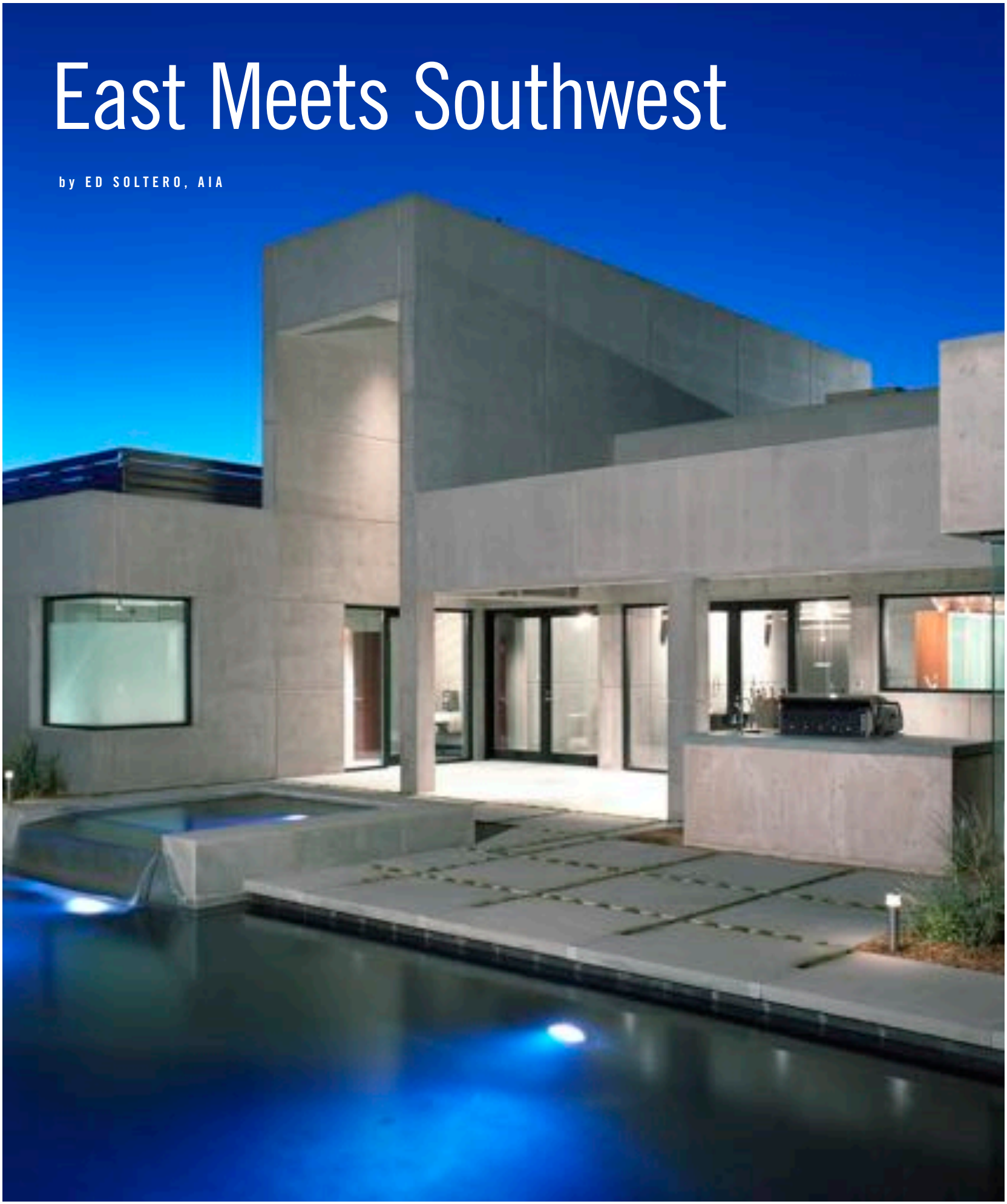
To be architecturally compatible meant designing a small house with elements that functioned like those around it, such as generous porches and deep overhangs, but the students employed other features in the design. They aligned windows and doors to maximize cross ventilation and installed adjustable footings at the foundation piers to allow for easy leveling if needed in the future. Other low-

"XS House" continued on page 50

Built-in cabinets along the west wall harbor mechanical systems and counteract solar gain. While staying true to its neighborhood context, the house benefits from low-cost materials, such as translucent panels in the bathroom.

East Meets Southwest

by ED SOLTERO, AIA



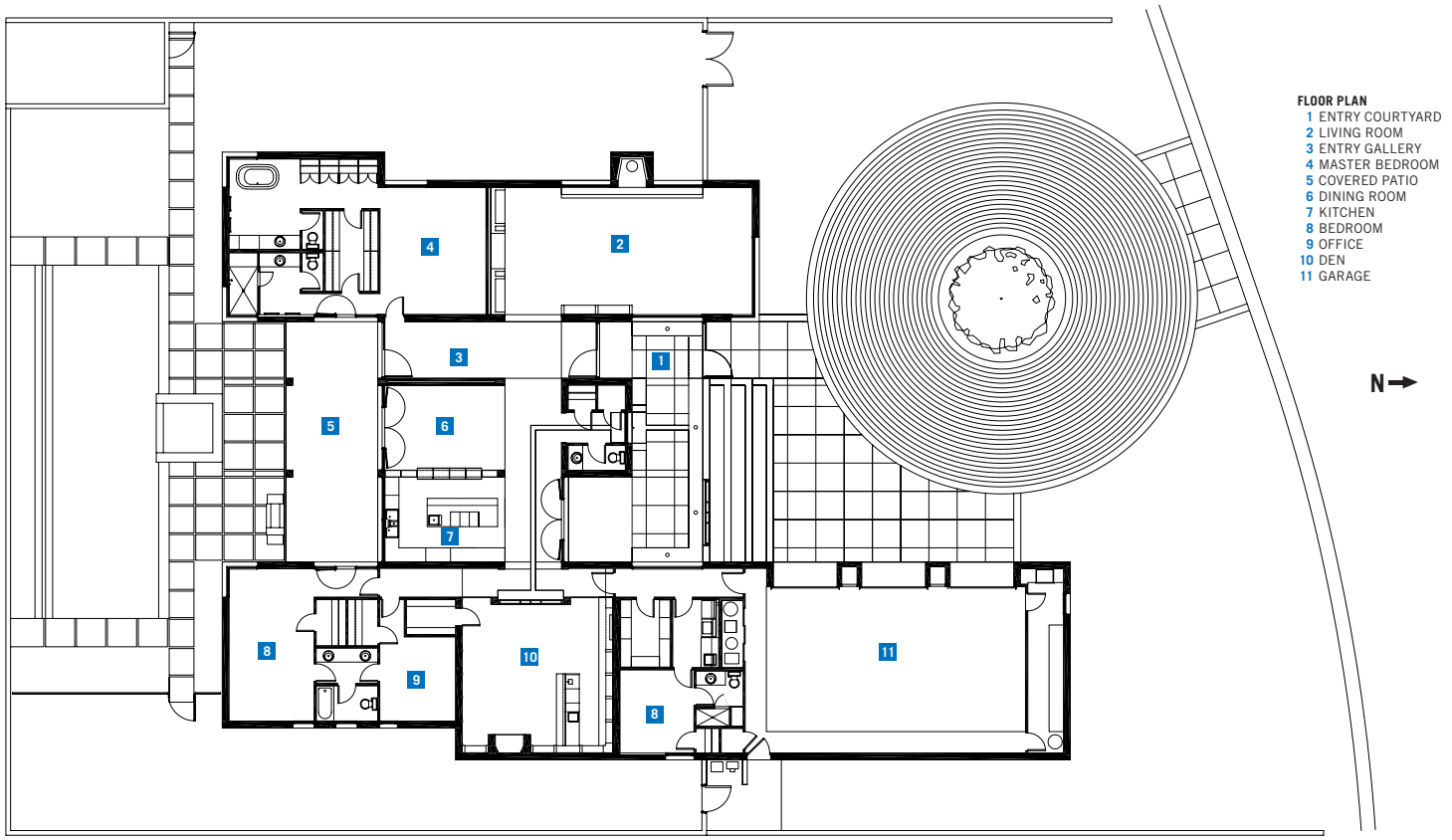
A FASCINATION with the abstract concrete forms and minimalist philosophy of modern Japanese architecture prompted this young owner to build his new abode in a manner that departed significantly from the typical residential prototypes available in the established neighborhood. As a real estate developer, he often travels to nearby Albuquerque where he chanced upon the architecture of Jon Anderson, AIA. He immediately contacted Anderson, and over the following year they discussed the wonderful forms and spirituality of modern masters, the likes of architects Tadao Ando and Louis Kahn.

Incorporating the attributes of modern Japanese architecture – outwardly fortified, inwardly focused, and in harmony with nature – within the surrounding Western-style context was a daunting challenge. Nevertheless, the architect quickly embarked on identifying the elements integral to creating "moments of silence and spirituality" within the home.

El Paso's climate – a scarcity of water combined with abundant sunlight – set the overall tone for the 5,800-square-foot residence. The element of water is introduced at the small entry courtyard (the main distribution spine organizing the house) via a fantastic cascading wall of water that then flows down a carefully striated granite mass concealing the den beyond. In addition, the rear of the house opens onto a long rectangular pool. By contrast, natural light enters poetically through clerestory windows and large expanses of glass trained on courtyard gardens evoking the nearby Rio Grande bosque (forest). Despite the emphasis on an "inner-world," the architect tempered what could have been a harsh concrete shell by introducing a few large windows opening onto adjacent residences in a neighborly gesture. Furthermore, the liberal use of glass gives the spaces a sense of transparency and thereby offers the illusion of a larger house.

PROJECT Schwartz Residence , El Paso
CLIENT Douglas Schwartz
ARCHITECT Jon Anderson Architect AIA
DESIGN TEAM Jon Anderson, AIA; Angel Cantu (project manager); Martina Lorey Architect (interiors); Donna Bone (landscape)
CONTRACTOR Joe Nowell Builder
CONSULTANTS Crossno Engineering (structural); Robinet & Associates (mechanical/electrical); Tech2 Systems (low voltage consultant); Design with Nature (landscape)
PHOTOGRAPHER Kirk Gittings

Inspired by modern Japanese architecture, the design focuses inward and presents an austere front entrance to the outside world.



The sensitive composition of masses encloses a living area, three bedrooms, kitchen, dining, a large den and guest quarters, a small office, and a three-car garage. Interiors are rendered in materials chosen specifically for the "warm" feeling they convey. While many of the interior walls were left as exposed concrete, others are covered with a skim coat of plaster, which looks like velour and is almost identical to the color of the concrete. Exotic woods such as Honduran mahogany, Brazilian and American cherry, and African purple heart contrast nicely against the beautifully finished concrete and plaster interior walls. In addition, stained concrete floors are juxtaposed with sea grass carpets. Also, small instances of stainless steel are part of the distinct palette of materials.

The deliberate contradictory nature of the house, both in terms of its inward focus and its contextual "fit" within the environs, provides the owner his greatest satisfaction. Nearby residents too have welcomed the house, which received the blessing of the neighborhood's strict architectural review committee.

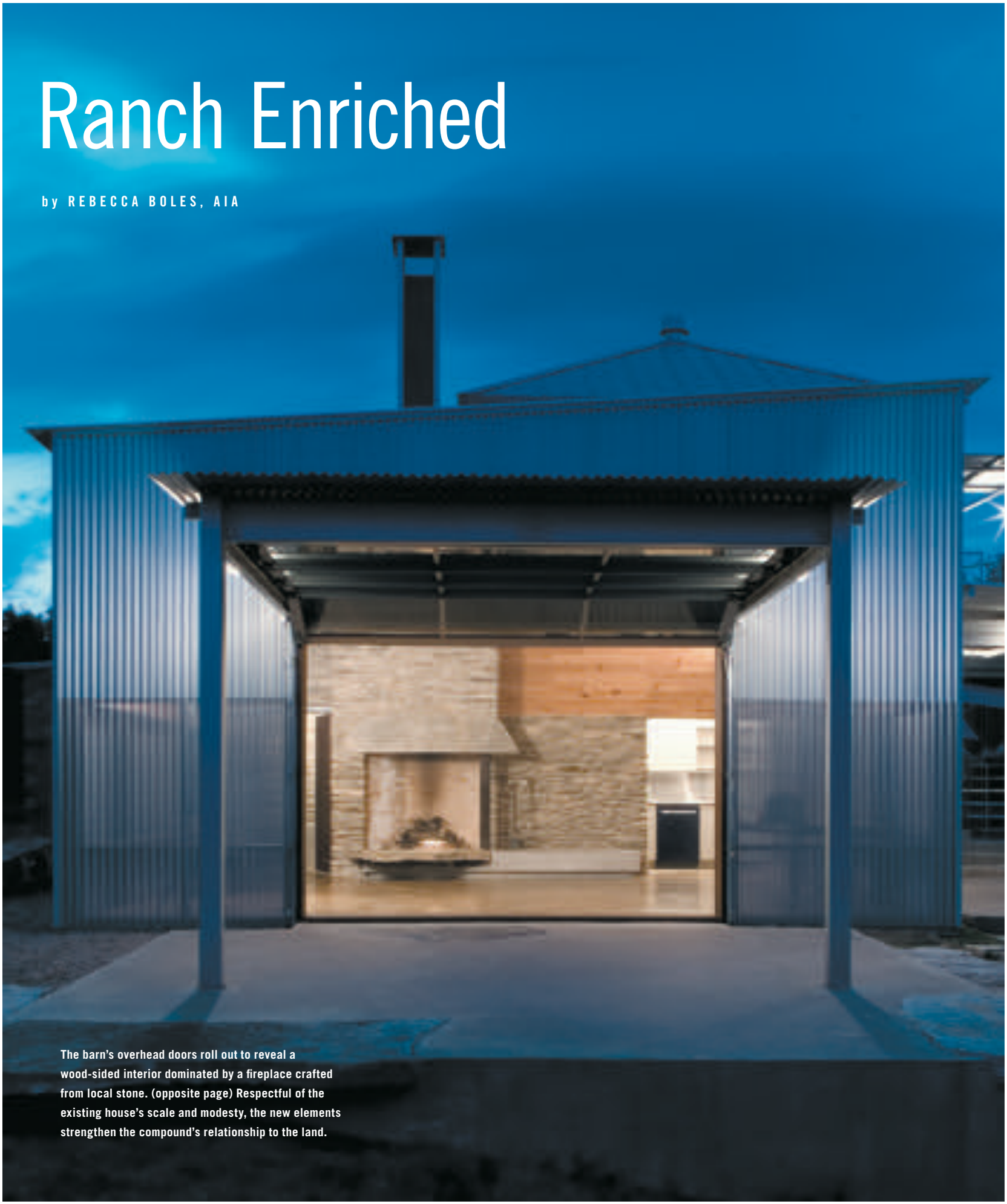
A contributing editor of *Texas Architect*, Ed Soltero, AIA, practices with Dimensions Architects International in El Paso.

RESOURCES UNIT PAVERS: American Brick; **FOUNTAINS, POOLS, AND WATER DISPLAYS:** Roman Fountains; **CONCRETE MATERIALS:** Jobe Concrete; **ARCHITECTURAL CONCRETE:** Cambro Construction; **LIMESTONE:** William Slate; **GRANITE COUNTERTOPS:** Natural Stone Works; **STAINLESS STEEL FENCES, GATES, AND TRELLIS:** Joe Nowell Builder; **ARCHITECTURAL WOODWORK (CUSTOM CABINETS):** Supreme Cabinets; **MEMBRANE ROOFING:** Carlisle EPDM; **METAL DOORS AND FRAMES:** Forms and Surfaces; **FLUSH MAHOGANY DOORS:** Desert Construction Specialties; **ENTRANCES AND STOREFRONTS/ METAL WINDOWS :** American Aluminum; **KITCHEN CABINETS:** Bulthaup

The element of water channels through the entry gallery to enliven the interior spaces.

Ranch Enriched

by REBECCA BOLES, AIA



The barn's overhead doors roll out to reveal a wood-sided interior dominated by a fireplace crafted from local stone. (opposite page) Respectful of the existing house's scale and modesty, the new elements strengthen the compound's relationship to the land.

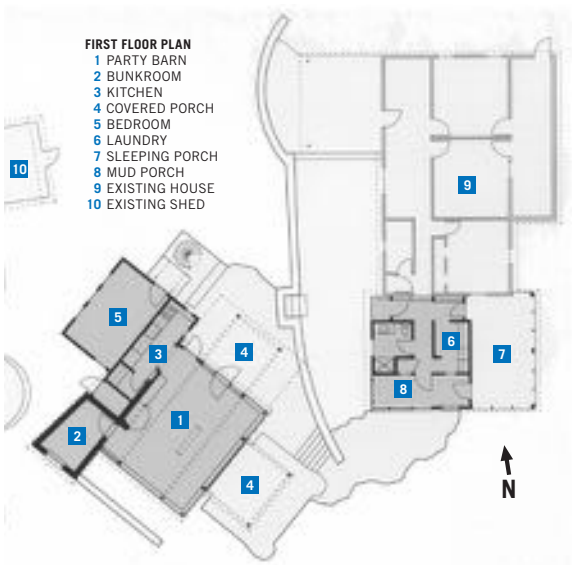
IN rural Hamilton County, southwest of Fort Worth, near the town of Hico and not far from where Fall Creek flows into the Bosque River, Dan Shipley, FAIA, has reinvigorated an existing ranch compound for his long-standing clients Martin and Laurie Cox. The Cox's asked Shipley to expand the old clapboard house, add a separate residential unit, and create a "party barn" that would take full advantage of the hardscrabble setting. The architect responded with improvements that enrich the property and enhance its relationship to the land.

The first challenge was to incorporate a long, curving 30-inch-high stone wall built to divert runoff from the original dwelling, which Shipley used to divide the two new structures from the main house and its addition. By siting the new elements to the west of the wall and rotating them slightly, he also effectively defined an outdoor space between the two houses.

To accommodate expanded functions for the main house, the architect added an adjoining structure for a sleeping porch, bathroom, laundry room, and a slatted mud porch. The addition unobtrusively slips beneath the eaves of the older building to seamlessly merge the two forms based on the vernacular archetype. Shipley likewise drew from the region's ranch idiom to configure the new house. Two stories tall and clad in cement boards, its square floor plan contains three simple volumes that serve as two bedrooms and a kitchen.

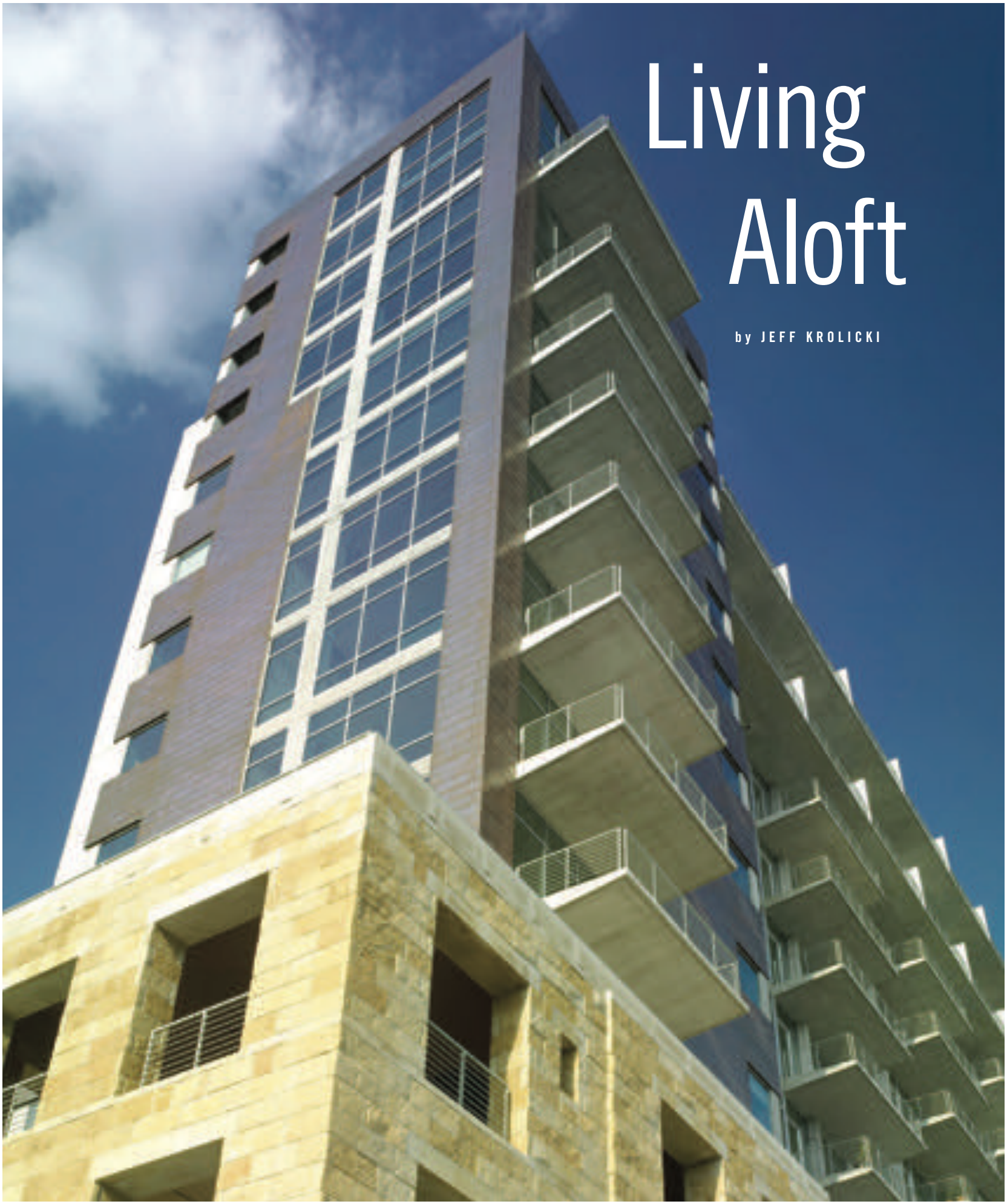
Abutting the new house is the heart of the compound, the metal-clad barn outfitted on two sides with customized garage doors that open to exterior terraces. Square steel tubes comprise the rigid frame structure, with two steel trusses crossing the enclosed space. Shipley desired a sense of transparency for the barn's walls but knew that clear glazing would flood (and overheat) the interior with sunlight during the day and its reflections at night would obliterate exterior views. Instead, Shipley devised a scrim wall of perforated, corrugated metal panels seated with sheets of corrugated PVC. The composite filters and scatters daylight, creating a dot matrix of shadow and light on the interior surfaces. Inside, a fireplace is set asymmetrically within a stone wall at the center of the barn. Stone slabs quarried on site form the fireplace's lintel and its cantilevered hearth, and others were cast into the barn's concrete terraces. The southeast terrace aligns with the end of the compound's original stone wall in a harmonious gesture that fuses the new elements with the original.

Rebecca Boles, AIA, teaches at the University of Texas at Arlington.



PROJECT Guest House & Party Barn, Hamilton County
CLIENT Martin and Laurie Cox
ARCHITECT Shipley Architects, Inc.
DESIGN TEAM Dan Shipley, FAIA; Aida Latorre, AIA
CONTRACTOR Alex Moore
CONSULTANTS Patrick Moore (structural)
PHOTOGRAPHER Charles Davis Smith, AIA

RESOURCES CONCRETE FLOOR STAIN: Kemiko; **METAL ROOFING:** MBCI; **OVERHEAD DOORS:** Overhead Door Co.; **ENTRANCES AND STOREFRONTS/WOOD WINDOWS:** Pella; **PLASTIC GLAZING:** H+F Manufacturing; **PAINTS:** Sherwin-Williams; **RUMFORD FIREPLACE COMPONENTS:** Superior Clay Products



Living Aloft

by JEFF KROLICKI

AUSTIN thrives on its double identity—both sleepy college town and emerging metropolis. The challenge faced by the architects of the Austin City Lofts was to design a landmark building that would claim its own place in Austin's laidback cultural landscape while also responding to the needs of its sophisticated residents. The design team from Page Southerland Page's Austin office responded with a mid-rise building that blends a familiar palette of local materials (mainly limestone block and copper shingles) with sleek detailing.

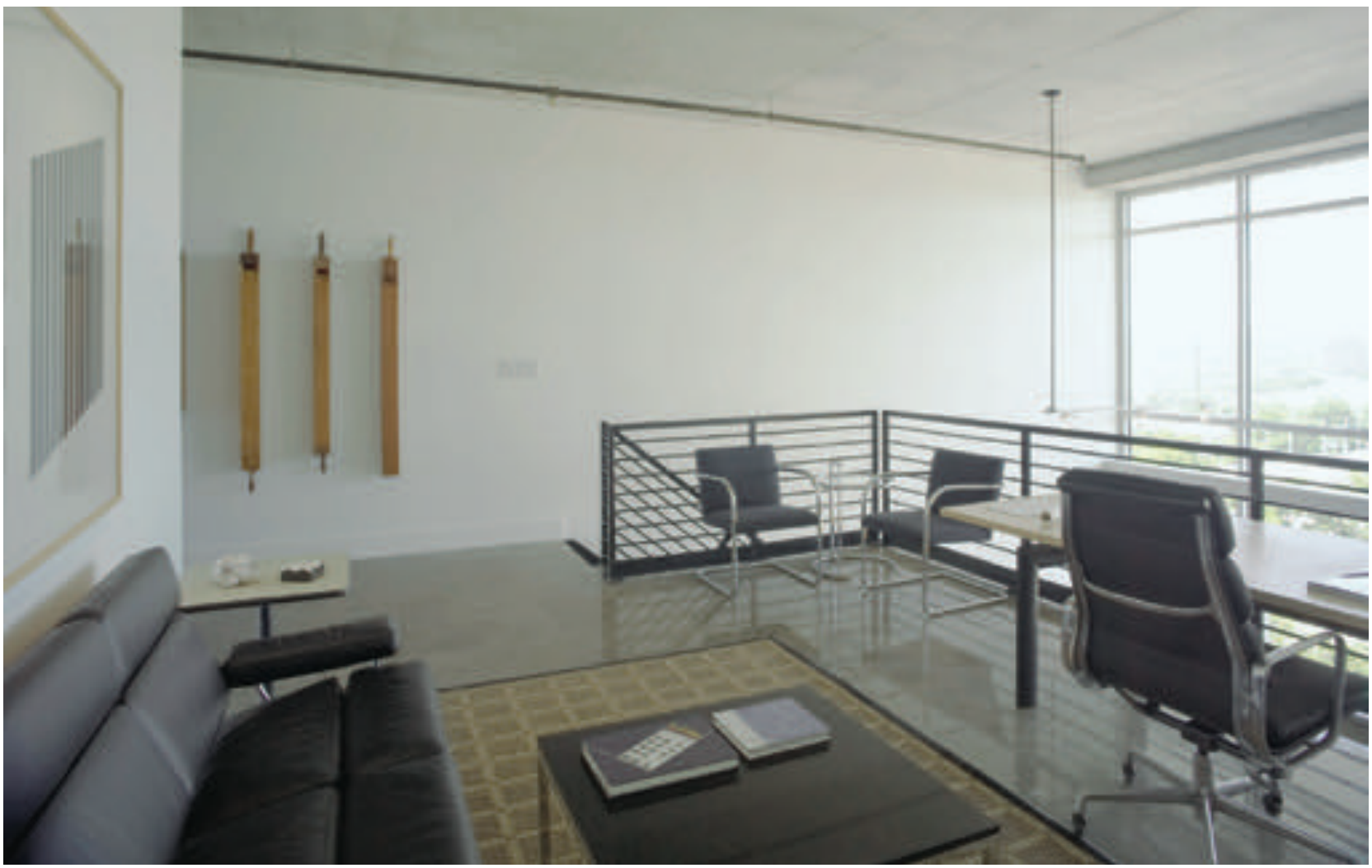
Another challenge was to maintain a residential scale for the 14-story project. The team reduced its overall massing by creating three volumes designed to fulfill specific programmatic requirements. Distinct exterior materials demarcate each of these volumes. Lueder's limestone on the first five levels defines the parking and retail areas; copper cladding brackets the residential tower; and concrete and glass represent the vertical circulation. As common exterior finishes for high-end custom homes, limestone and copper also help distinguish the building as a residential complex. (To allay the concerns of an initially skeptical client, the design team constructed a sample wall to demonstrate how the cladding would look in place. By coincidence, a temporary delay on the project allowed the copper shingles to weather and the patinated result won the client over.) Generous use of lightly tinted glass infuses the interior spaces with lots of natural light. Exposed concrete columns and ceilings, smooth plaster walls, and wood flooring comprise the interior finishes.

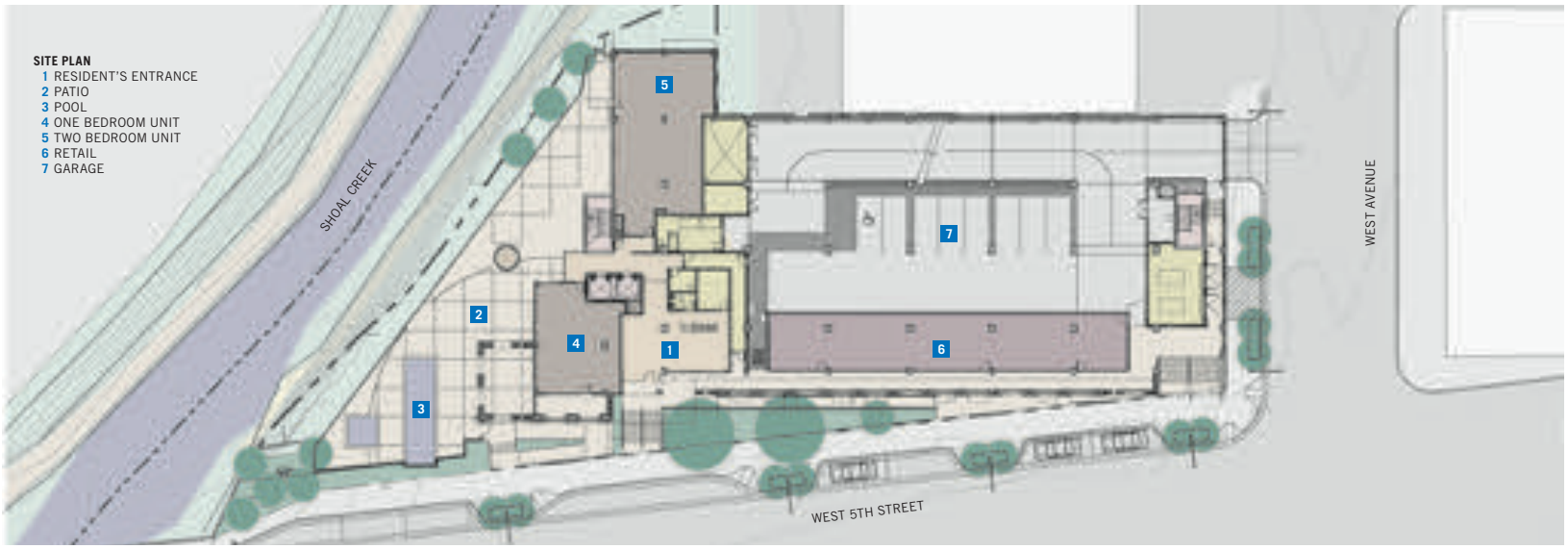
The site is both relatively small and complex, bordered on the south by a one-way street that serves as main eastbound artery into downtown and on the west by Shoal Creek. Because part of the site sits in the creek's flood plain, a specially constructed steel flood door was installed to allow the developer to maximize residential density and amenities for occupants (such as a communal garden area with a lap pool and spa) while also observing municipal zoning restrictions. However, despite the challenges posed by the problematic siting, proximity to Shoal Creek benefits the project

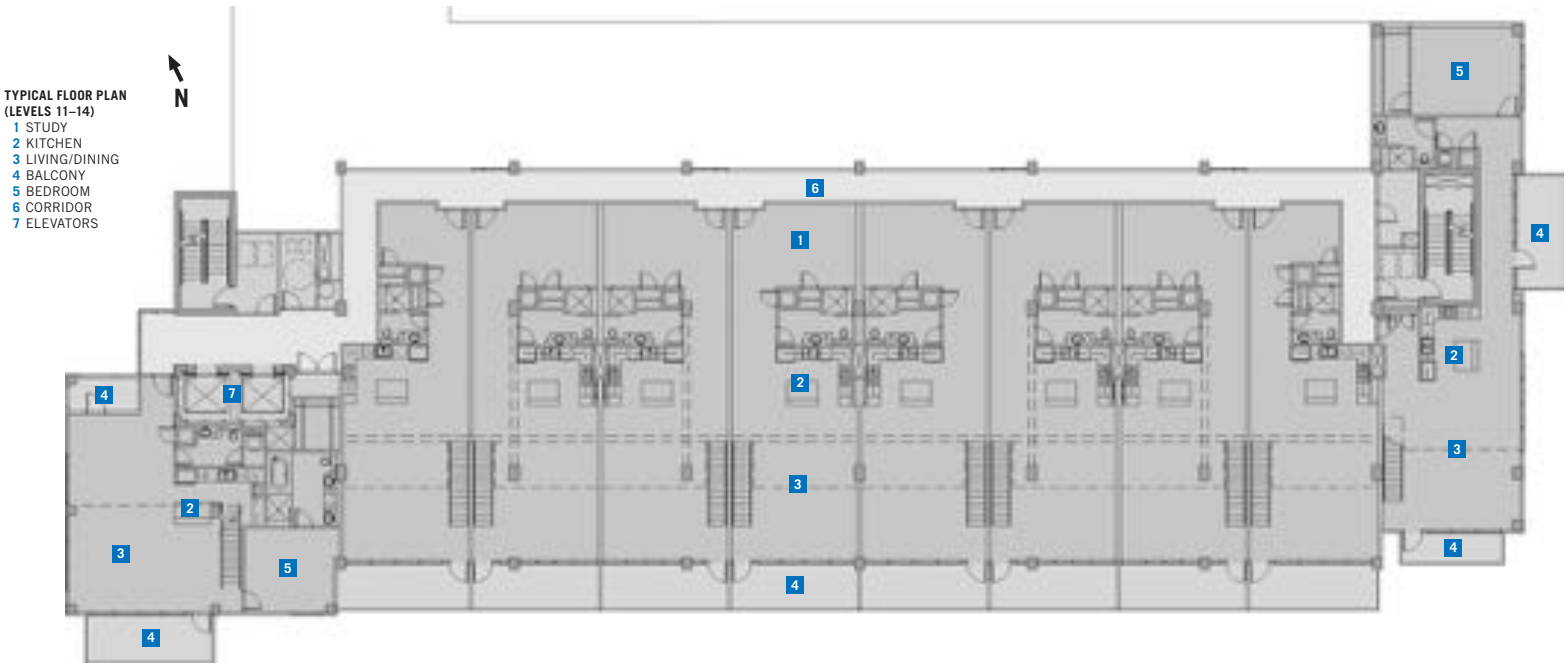
PROJECT Austin City Lofts, Austin
CLIENT CLB Partners
ARCHITECT Page Southerland Page
DESIGN TEAM Lawrence W. Speck, FAIA; Matthew F. Kreisle III, AIA; Brett Rhode, AIA; Ken McCinn, AIA; Ricardo Solis; Tanya Berry
CONTRACTOR Faulkner Residential
CONSULTANTS Architectural Engineers Collaborative (structural); Johnson Consulting Engineers (electrical & plumbing); Bury + Partners (civil); Fox Mechanical (mechanical); Henderson Group (interior design); JEAcoustics (acoustics); Big Red Sun (landscape & irrigation)
PHOTOGRAPHER Tim Griffith Photography

(opposite page) Bracketed by copper shingles, the residential tower rises from a limestone-clad base comprising parking and ground-floor retail spaces. (above) Double-height glazing commands broad views on the south wall of the uppermost units.


LIQUOR







in several ways. The trees that grow along the creek softly girdle the project and the greenbelt path that follows the creek connects with the hike-and-bike trail around the central Town Lake park system located only five blocks away. Also within easy walking distance are restaurants, shops, and a gourmet grocery store.

The 14-story building includes retail spaces at ground level and six floors of parking (including one basement level). Floors 6 through 10 contain single-floor condominiums, arranged along a double-loaded corridor, direct views northward to the state capitol or southward to distant hills. Floors 11 through 14 are divided into two-story units that offer views both to the north and south. Other units on the building's north side are positioned on floors 2 through 5 just above Shoal Creek's canopy of trees. Also, by locating the elevators on the building's extreme west side rather than in its central core, residents on each floor are presented with a Hill Country view while they wait.

The views from the upper floors are spectacular. Larry Speck, FAIA, the design architect of the project, originally did not intend to buy one of the condominiums, but one day during a site visit the magnificient panorama changed his mind. From where he stood he could see downtown, Town Lake, all the rest of Austin, and the sublime space beyond – stretched out under a breathtaking sky. That moment convinced him to call the place home. T

Jeff Krolicki works with Dick Clark Architecture in Austin.

RESOURCES LUEDERS LIMESTONE: Mezger Enterprises; **MASONRY UNITS:** Featherlite; **PRECAST ARCHITECTURAL CONCRETE:** North American Precast; **MASONRY ANCHORS:** Hohmann & Barnard; **COPPER SHINGLES:** D.R. Kidd Co.; **METAL ROOFING:**Petersen Aluminum; **METAL DOORS AND FRAMES:** Curries; **FLOOR BARRIER DOORS:** The Presray Corp.; **TERRACE DOORS:** Graham Architectural Products, Deansteel Standard Door Frames; **WOOD AND PLASTIC DOORS AND FRAMES:** DoorCraft; **METAL WINDOWS:** Kawneer; **SMOKE CONTAINMENT SYSTEM:** Smoke Guard (Ed Flume Building Specialties, dist,); **GLASS:** Viracon Insulating Glass; **WOOD FLOORING:** Bruce; **PAINTS:** Sherwin-Williams; **ARCHITECTURAL MODEL:** Flying Fish Designs

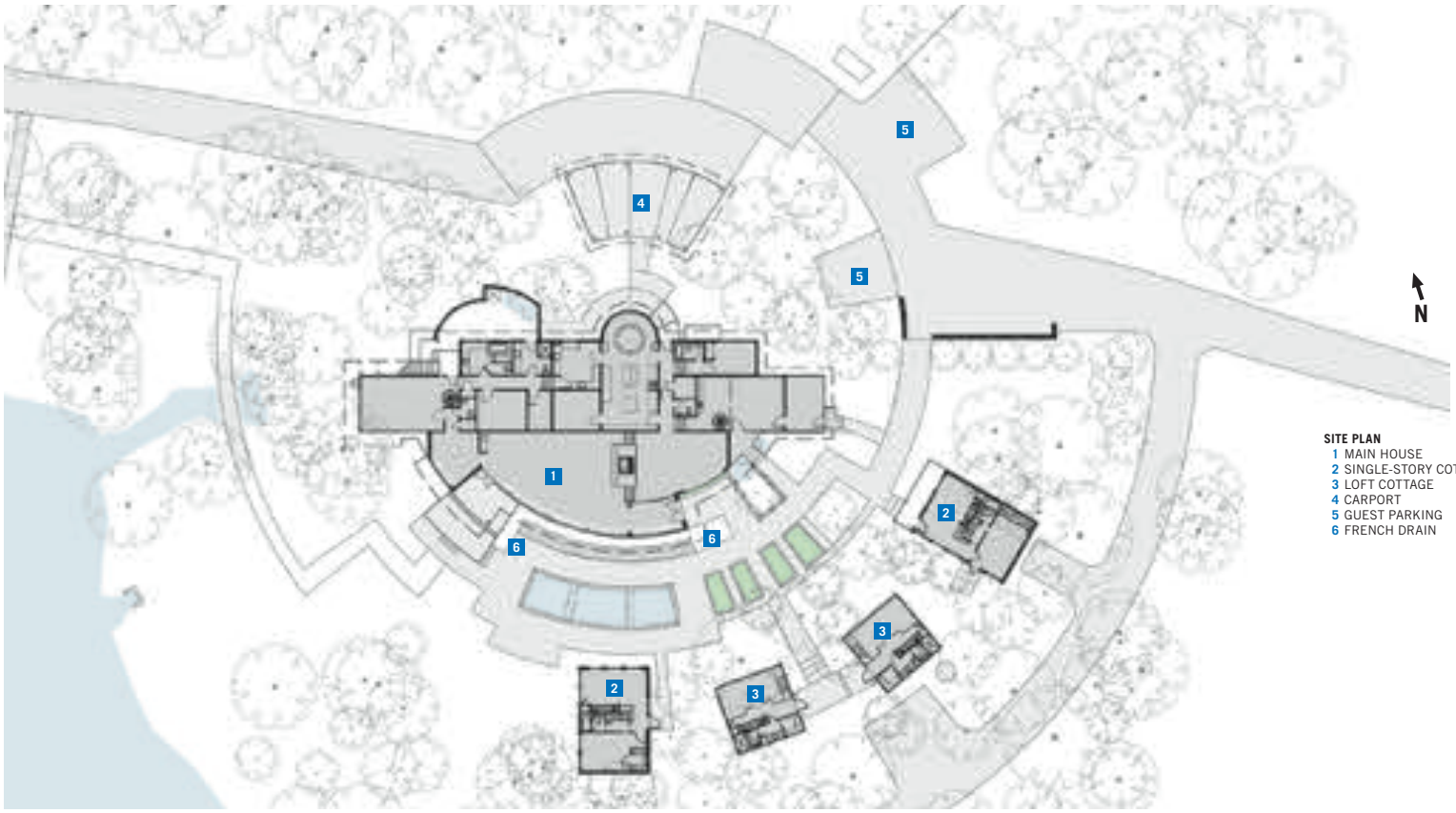
(opposite page, clockwise from top left) The neighborhood, although just a few blocks west of downtown, retains a decidedly easygoing character. A balcony view illustrates the proximity to the city center. Windows to the ceiling create an ideal interior setting.

Family Circle

by DAVID WOODCOCK, FAIA

PHOTO BY CHARLES DAVID SMITH, AIA

PHOTO BY STEPHANIE SALE



SITE PLAN
1 MAIN HOUSE
2 SINGLE-STORY COTTAGE
3 LOFT COTTAGE
4 CARPORT
5 GUEST PARKING
6 FRENCH DRAIN

THAT a house might be "a machine for living " suggests a design ethic focused on issues such as sun angles, low energy use, minimal maintenance, and repetitive parts assembled for convenience which interact only as needed to ensure functional efficiency. The Turkey Creek residence has all of these attributes, but it is a "machine" with an extraordinary soul. The designer/clients—an architect with a long history of school building and an artist with meticulous attention to detail—share a passion for nature, a love of horses and of productive gardening, and commitment to being part of the landscape. Accessed by an existing gravel road, replete with tantalizing curves to ensure the privacy of the 74-acre property, their site is heavily wooded and slopes steadily toward a two-acre dammed pond that provides water for deer, birds, and other wildlife.

The designer/clients spent months visiting the site, primarily to tend to their horses, but always with a view to assessing ways to finesse a complex program onto a sensitive site. The site plan reveals a highly structured geometry that might have overwhelmed the natural beauty, but the starting point for the radial arms of the plan demonstrates the essence of their relation between people and place. The focus is that quintessential element of family life—a circular kitchen table that they describe as "the center of our world." From that point the sweeping radial plan embraces broad entertaining spaces with views to the lake, including a raised dining area separated from the living room by a large open fireplace. The complex also allows private places for the owners, as well as for their four grown children who enjoy separate quarters firmly linked to the radial arms (and therefore clearly identified as part of the family). The exterior spaces flow through the residences, uniting nature with everyday life.

The entry road passes a horse barn that captures the spirit of contemporary Texas farm buildings, and ends at discrete parking areas. Visitors approach the house along an arced garden spine. Two cast iron columns, originally intended for a Victorian-style bank and salvaged from a foundry field, celebrate the house entry. The living area's curved glass wall is shaded by an exterior metal brow that keeps the summer sun at bay yet allows the polished black concrete floor to capture winter heat. The ceiling's exposed steel bar joists and the standard materials used for interior cabinetry, walls, and floors speak to the owners' determination to avoid expensive finishes, but the detailing and craftsmanship are of the highest order. This is a "machine for living" as the Rolls-Royce is a car for driving.

David Woodcock, FAIA, is a *TA* contributing editor and teaches architecture at Texas A&M University in College Station.

PROJECT Turkey Creek Residence, Bryan
CLIENT Stephanie Sale and Jim Singleton
ARCHITECT Jim Singleton Architects
DESIGN TEAM Jim Singleton, AIA; Stephanie Sale
CONTRACTOR Jim Singleton, AIA
CONSULTANTS Jim Beaver & Associates (structural); Hawkes & Associates (MEP)
PHOTOGRAPHERS Charles David Smith, AIA; Stephanie Sale

RESOURCES **PRECAST ARCHITECTURAL CONCRETE:** Gate Concrete Products; **MASONRY UNITS:** Oldcastle-Jewell Concrete Products; **CAST STONE:** Kakco Precast Concrete; **METAL MATERIALS/METAL DECKING:** Dietrich Industries; **RAILINGS AND HANDRAILS:** Cable-Rail; **BAR JOISTS:** Nucor Vulcraft Group; **STEEL BEAMS/COLUMNS:** Alamo Steel; **SPIRAL STAIRS:** Spiral Manufacturing Inc.; **LAMINATES:** Wilsonart; **VAPOR RETARDERS :** Tyvek; **ROOF AND WALL PANELS/SIDING/METAL ROOFING/PRE-FABRICATED ROOF SPECIALTIES/FASCIA AND SOFFIT PANELS/ROOF ACCESSORIES/METAL CEILINGS:** Insulated Panel Systems; **METAL DOORS AND FRAMES:** Ceco; **PLASTIC LAMINATE DOORS:** Oshkosh; **ENTRANCES AND STOREFRONTS/GLAZED CURTAINWALL:** Acme Glass Bryan; **METAL WINDOWS:** New Alenco Windows Inc.; **GLASS:** Oldcastle Glass; **TILE:** American Olean; **BAMBOO FLOORING:** Timbergrass

(opposite page) Elegantly appointed with family heirlooms and original artwork, the living room enjoys expansive views to the entry court and separate quarters for other family members. The sweeping curve of the entry passes raised vegetable and flower beds and a cascaded reflecting pool, and draws the eye to a two-acre pond.

Natural Seclusion

by KATIE NEWMAN, AIA

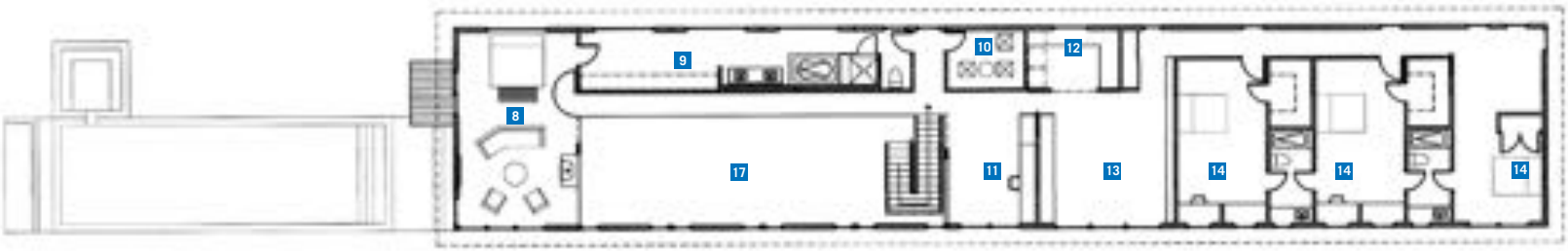
A CASUAL observer probably would not even know it was there. Casa Angosta is certainly not a place one would happen upon unless they were trespassing or lost. When Dean Nottestad invited his friend of 20 years, Gary Cunningham, FAIA, to visit the 44-foot-wide rectangular tract, it was almost inaccessible—sited at the back of another property and without street frontage. With the Southern Pacific rail line bordering one edge of the lot and a spring-fed creek running along the other, there was very little room to build a 4,300-square-foot house for Nottestad, his wife Sandra, and teen-aged daughters Alexa and Taylor. The rigid site considerations became the very essence of Casa Angosta, or "Skinny House." The design phase lasted only two weeks, and the basic form and diagram of the house remained virtually unchanged through its completion.

Rarely is this kind of privacy available in any North Dallas neighborhood. Little about the approach signals that one is meant to be in this place. The only indication of the house on the street is a lone mailbox with an address that seems out of place. But on further approach, the view opens up to the front façade of the house and the attractive landscaping of the site. The narrow geometry of the site cuts the house off from any broad view angle, forcing the visitor to experience it in a different way. One moves through the project but is never able to view it from afar. The materials blend well into the surroundings: Cor-ten steel match the railroad, yellow face-brick continues the crushed granite driveway, and green Hardi-panel picks up the vegetation that covers the site. Also, the abundance of glazing reflects the environment, further camouflaging the exterior of the house. The granite drive connects granite pathways to the spa, accentuated with flagstone paving and a limestone-clad pool. Water quietly streams to the swimming pool through a single stainless steel pipe, the only ornamentation in this simple and serene setting. The owners resisted the temptation to over-groom the lot, using indigenous plant materials, including buffalo grass and an expanse of wildflowers between the house and the railroad.

The driveway crosses underneath the house, separating the four-car garage from the public space on the first level. A second level, clad in Cor-ten steel, bridges the two volumes, providing a covered carport and entrance. Once inside, the house reads simply, like the diagram that initiated it. Far more

PROJECT Casa Angosta, Dallas
CLIENT Nottestad Family
ARCHITECT Cunningham Architects
DESIGN TEAM Gary M. Cunningham, FAIA; Paul D. Field
CONTRACTOR Finn Custom Builders
CONSULTANTS Jim Smith (structural); MEP Systems (MEP); PHW Lighting Design (lighting)
PHOTOGRAPHER James F. Wilson

(opposite page) A private balcony off the master bedroom overlooks the backyard pool. (above) Abundant glazing at ground level suffuses the interior spaces with natural light.

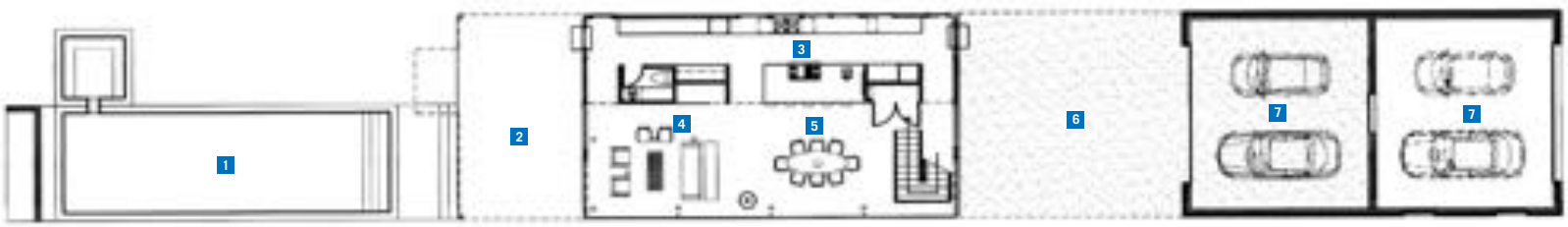


SECOND FLOOR

N

FLOOR PLAN

1 POOL
2 PORCH
3 KITCHEN
4 LIVING
5 DINING
6 MOTOR COURT
7 GARAGE
8 MASTER BEDROOM
9 MASTER BATHROOM
10 MECHANICAL
11 OFFICE
12 UTILITY
13 DEN
14 BEDROOM



FIRST FLOOR

attention is paid to the craft of the details than to perpetuating a complicated plan, which will come as no surprise to anyone familiar with the architect's work. The interior of the house gathers around an immense two-story volume of living and dining space punctuated by a Poulsen lamp suspended dramatically from the 19-foot ceiling. All mechanical service is neatly collected within an axial bar that runs alongside the volume to encompasses the kitchen, powder room, office, and pantry storage. Removing the clutter focuses attention on the room's detailing, including an impeccably designed stair featuring clear-sealed Glu-lam beam treads. Overlooking the volume from above is the private program of the house. A transparent master bedroom anchors one end of the top floor, linked by a long catwalk/gallery to a seemingly never-ending procession of three bedrooms, a den, and a study. The axis that organizes the first level continues upstairs to enclose a large master bath and closet area. The bedrooms are masterpieces of simple and beautiful detailing, each with multidirectional views and suitably oriented for the North Texas climate.

Visually, it is a $300-per-square-foot house. In reality, Casa Angosta cost just under $150 per square foot to build. A "converted" home builder completed the project in roughly one year, using pre-engineered truss framing, wood framing between steel columns, low-cost cladding material, off-the-shelf windows, and some labor from Cunningham's own office. The structural engineer was Jim Smith, a common fixture on many of Cunningham's projects. Casa Angosta is immortalized as Smith's last project, as he died shortly after its completion.

The dynamic moments of Casa Angosta are big and small. Rivaling in interest the grand entertaining room is a small ledge placed at the front door expecting a flower pot in the near future. The affection for the house, both by architect and client, is inspiring. After all, Mr. Nottestad washes all of the floor-to-ceiling butt-glazed windows himself. Perhaps that is what makes this project a real rarity: the perfect matching of the client to the architect to the site, each appreciating the other equally. In the end, they are the ones who feel most at home in this place.

Katie Newman, AIA, practices with the Beck Group in Dallas and is a freelance writer.

RESOURCES FENCES, GATES AND HARDWARE: McNichols Co.; **FACE BRICK:** Endicott Clay Products; **METAL MATERIALS:** Corrugated Metals, Inc.; **PRE-FABRICATED WOOD JOISTS AND TRUSSES/GLUE-LAMINATED TIMBER:** Boise, Inc.; **SHINGLES:** Tamko Roofing Products; **SIDING/FASCIA AND SOFFIT PANELS:** James Hardie Building Products; **METAL DOORS AND FRAMES:** Raynor Garage Doors; **WOOD AND PLASTIC DOORS AND FRAMES/WOOD WINDOWS:** Pella; **GLASS:** Viracon Glass, Inc.; **PAINTS:** Benjamin Moore, Pittsburgh Paints

(opposite page, clockwise from top) K-braces support pre-fabricated wood trusses in the roof. The covered carport shelters the front door. A custom stair of Glu-lam beams and glass panels exemplifies the architect's attention to detail.

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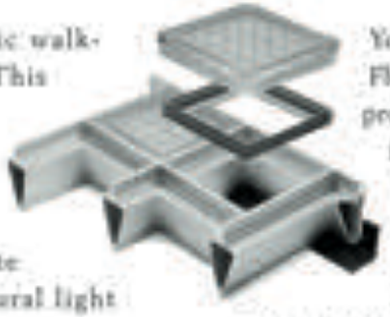

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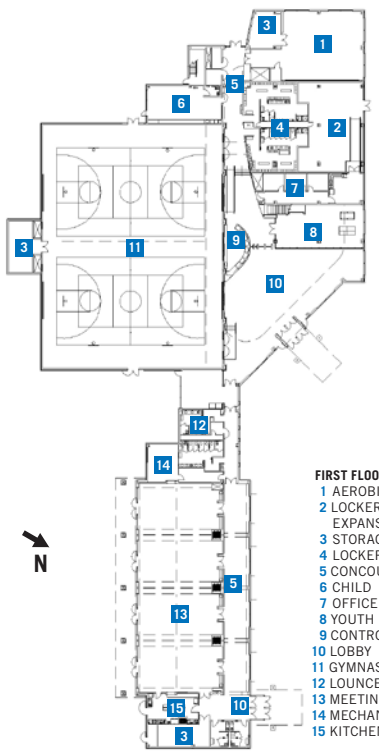
Cedar Hill Recreation Center

PROJECT Cedar Hill Recreation Center, Cedar Hill
CLIENT City of Ceder Hill
ARCHITECT F&S Partners Incorporated
CONTRACTOR Cadence McShane
CONSULTANTS Blum Consulting Engineers (MEP); Brockette Davis Drake (structural); Halff Associates (civil); H.G. Rice & Company (food service); Dunkin Sims Stoffels Inc. (landscape)
PHOTOGRAPHER Craig Blackmon, FAIA

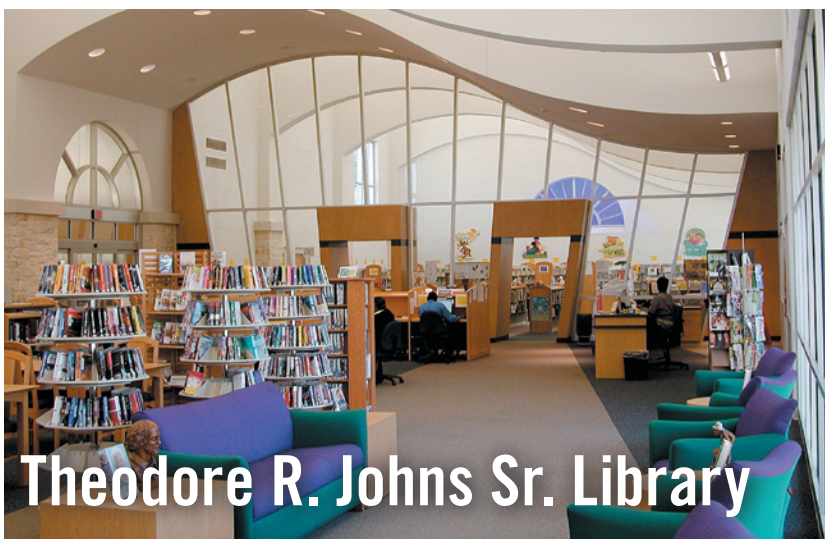
The Cedar Hill Recreation Center is designed to be open and inviting. With approximately 60,000-sf, the center includes a two court basketball gymnasium, a weight/fitness room, a three lane jogging track, an aerobic/dance room, youth activity room, locker rooms, lounge, meeting rooms and a commercial kitchen. As the building is approached, the large window openings in the two-story entry lobby provide glimpses into activity spaces. The building is designed to have two entries to serve very different needs. The primary entry faces the plaza and is intended to be the access point into the recreation center while a second entry permits the meeting room wing to function independently of the recreation component. Wood roof canopies are used to articulate the two entries to the building. The recreation center design is influenced by the regional architectural style of the Texas hill country. The exterior of the building is light in color with a beige brick to match Texas limestone accents. Galvanized metal roof wall panels add to the rural aesthetic of the building and glass window walls and translucent wall panels are used to maximize natural light within the facility. The primary structural system is composed of steel columns, steel beams, and exposed steel trusses.

JENNIFER MAGIDS

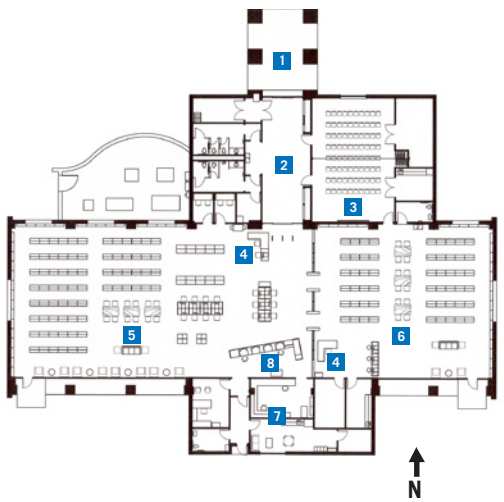
RESOURCES **MASONRY UNITS:** Acme Brick, Featherbright; **METAL ROOFING:** MBCI; **ENTRANCES AND STOREFRONTS:** U.S, Aluminum; **WINDOWS:** Kalwall; **TILE:** Daltile; **ACOUSTICAL CEILINGS:** Armstrong; **ATHLETIC SURFACING - INDOOR:** Mondo; **ATHLETIC WOOD FLOORING:** Connor; **ACOUSTICAL TREATMENTS:** Conwed; **PAINTS:** Sherwin-Williams; **HIGH PERFORMANCE COATINGS:** Dura-Plex; **OPERABLE PARTITIONS:** Hufcor; **EXTERIOR SUN CONTROL DEVICES:** Ruskin; **VISUAL DISPLAY BOARDS:** Claridge; **SPORTS EQUIPMENT:** Draper; **BLINDS, SHUTTERS, AND SHADES:** Mecho Shades



FIRST FLOOR PLAN
1 AEROBICS/DANCE
2 LOCKER ROOM EXPANSION
3 STORAGE
4 LOCKER
5 CONCOURSE
6 CHILD
7 OFFICE
8 YOUTH
9 CONTROL DESK
10 LOBBY
11 GYMNASIUM
12 LOUNCE
13 MEETING
14 MECHANICAL
15 KITCHEN



Theodore R. Johns Sr. Library



FLOOR PLAN
1 PORCH
2 FOYER
3 COMMUNITY ROOM
4 INFORMATION DESK
5 ADULT STACKS
6 CHILDREN'S STACKS
7 STAFF LOUNGE/OFFICES
8 CHECKOUT

PROJECT Theodore R. Johns Sr. Library, Beaumont
CLIENT City of Beaumont
ARCHITECT Architectural Alliance, Inc.
CONTRACTOR N&T Construction
CONSULTANTS Fittz and Shipman (structural); Taylor-Spaulding (ME)
PHOTOGRAPHERS Jana Fulbright, J. Rob Clark, AIA

Crafted from limestone and glass, the Theodore R. Johns Sr. Library not only marks a permanent yet translucent gateway to a redeveloping portion of the Beaumont community, but also stands in stark defiance to the predominantly metal buildings of the area. Named after a local civil rights leader who helped end segregation at Beaumont's Lamar University, the 12,000-sf structure is appropriately awash in natural light. Different glass exposures on all four elevations allow public areas to function on 60-70 percent natural light for most of the day. Cobalt blue windows on the east and west facades cut down on morning and afternoon glare, and curved, repetitive beams allow for a soft, elongated surface to diffuse the fluorescent lighting, which only comes on when outside lighting is insufficient. The City of Beaumont thought it "critical to make a statement on all four elevations," says principal architect J. Rob Clark, AIA. Completed in September 2003, and opened to the public the following January, the $1.4 million cruciform-plan library incorporates a 360-degree view of the surrounding area, and serves as a fitting tribute to the struggle for social enlightenment.

FORD GUNTER

RESOURCES **PRECAST ARCHITECTURAL CONCRETE:** PCS-Precast Concrete; **UNIT MASONRY WALL ASSEMBLIES:** Featherlite; **ARCHITECTURAL WOODWORK:** Quality Casework; **LAMINATES:** Wilsonart; **WATERPROOFING AND DAMPPROOFING/GYPSUM BOARD FRAMING AND ACCESSORIES:** USG; **METAL WINDOWS/GLAZED CURTAINWALL:** Vistawall; **COBALT BLUE ART GLASS WINDOWS:** Armstrong Glass; **TILE:** Daltile; **ACOUSTICAL CEILINGS:** Armstrong; **METAL CEILINGS:** Chicago Metallic; **PAINTS:** Pittsburgh Paints; **LETTERS AND PLAQUES:** ARK Ramos; **OPERABLE PARTITIONS:** TRW Modernfold; **LIBRARY EQUIPMENT:** Cultural Surroundings; **PRE-ENGINEERED BUILDINGS:** Rigid Building Systems.

Drawing the Line

Why the architect's documents alone are insufficient for construction

by JAMES B. ATKINS, FAIA
AND GRANT A. SIMPSON, FAIA

ILLUSTRATION BY CSAIMAGES.COM

IT may surprise some people to hear that the architect's documents cannot be used for construction. Many are of the opinion that the architect prepares the documents and gives them to the contractor, and the contractor takes them and builds the building from the information contained therein. But nothing could be farther from the truth.

Then why does the architect place on the documents "Issued for Construction"? Although common practice, this phrase, when affixed to the architect's drawings, can be misunderstood. Nevertheless, this phrase is better than labeling them "100% CD Set," "Final Construction Documents," or something equally misleading. The documents are not issued for construction per se, but instead, they are issued to facilitate construction by expressing the design concept. The documents do not contain sufficient information to construct the project, and much more information is required before the work can be done. In fact, the architect's documents only represent information sufficient for the contractor to begin "the contractor's required work." The contractor's work includes the preparation of detailed construction documents, more commonly known as shop drawings and submittals, coordination drawings, and alternate sketches, all of which set out the specific and final details required for procuring and placing the finished work. By contrast, drawings by architects merely reflect the finished design of the work.

This article will examine the role contractor-provided construction documents play in the construction process, along with the other information that is required to complete a project. It will examine why the design professional's documents cannot be used as the actual

documents for implementing construction, and it will explore what information is actually used, why it is used, and from where it originates.

The Design Concept

As defined by Webster's, the term "concept" is "an abstract or generic idea." This definition makes it clear that a concept is not a specific or finite solution with tangible parameters.

The limited content of the architect's drawings is more explicitly addressed in *The Architect's Handbook of Professional Practice*, 13th Ed., in Section 13.4, "Construction Documents Production" wherein it states: "It is important that all parties understand that construction documents are not intended to be a complete set of instructions on how to construct a building. Construction means, methods, techniques, sequences, procedures, and site safety precautions are customarily assigned as responsibilities of the contractor to give the contractor full latitude in preparing bids and carrying out the construction phase."

Similarly, Section 3.12.4 of AIA document A201, *General Conditions of the Contract for Construction* states that the inherently conceptual nature of construction documents prepared by architects and the related responsibilities of the contractor/construction manager for detailed submittals and shop drawings: "Shop Drawings, Product Data, Samples and similar submittals are not contract documents. The purpose of their submittal is to demonstrate for those portions of the work for which submittals are required by the contract documents the way by which the contractor proposes to conform to the information given and the design concept expressed in the contract documents."

Moreover, Section 3.12.6 of A201 addresses the relationship of the contractor's submittals and shop drawings to the contractor's plan for procuring and placing the work: "By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents."

This powerful language explicitly requires the contractor to first check each submittal and coordinate it with field conditions and the requirements of the work before submitting it to the architect or engineer to review for conformance with "the information given and the design concept expressed in the contract documents." MasterSpec, a product of the AIA and the industry standard for construction specifications, devotes an entire section on project management and coordination (Section 01310, "Project Management and Coordination"). This description of the content of coordination drawings explicitly requires them to be original, detailed comparisons of the various trades, and it recognizes that the architect's drawings will likely be in conflict with selected equipment and required clearances to the extent that coordination is necessary and advisable. The contractor is specifically directed to provide sketches for resolution of such predictable conflicts.

> Many are of the opinion that the architect prepares the documents and gives them to the contractor, and the contractor takes them and builds the building from the information contained therein. But nothing could be farther from the truth.

Furthermore, A201 places the contractor in charge of determining how the work will be divided into separate trades, how the work will be bid and purchased, and how the purchased products and systems will be coordinated and incorporated into the completed work. A201 also charges the contractor with ensuring that the work will be in conformance with the design concept expressed in the contract documents.

Although AIA document A201 makes the lines of responsibility for planning the implementation of the work abundantly clear, and MasterSpec sets out specific requirements for accomplishing the task, some assert that a contractor's change order is justified whenever information is not specifically expressed in the architect's documents. As a result, contractors routinely make these assertions through the RFI process and inevitably write change orders to add information to the architect's documents—information never rightfully required or intended to be there in the first place.

For example, an architect has indicated "recessed fire extinguisher cabinet" on an interior wall elevation in the architectural drawings. While no specific dimensions are indicated for the cabinet location, the specifications list several acceptable manufacturers for the cabinet. Still, the contractor submits an RFI: "Please provide detail for cabinet framing in wall."

In this instance the contractor should provide the final answer since the size and mounting detail of a recessed fire extinguisher cabinet varies with the manufacturer. The architect could not have precisely detailed the installation without knowing which manufacturer's cabinet was to be used. Also, it is not necessary for the architect to provide a framing detail because the manufacturer's literature describes how the cabinet is to be installed. If the architect answers the RFI with a framing detail, it is likely that the contractor will ask for additional money for the newly detailed framing, alleging that scope was added to the drawings. If the architect doesn't answer the RFI he risks being accused of not being responsive. One appropriate response is to suggest that the contractor honor the manufacturer's instructions for the product they have selected.

Benefits of Conceptual Design Drawings

AIA documents have expressly indicated for many years that the architect's drawings are conceptual, and they have required contractors to represent through their review of shop drawings that they have "determined and verified materials, field measurements and field construction criteria." These actions naturally preclude "scaling" the design drawing directly by attempting to determine dimensions from the drawings with the use of an architect's ruler.

In the 1980s, Gio Obata, FAIA, one of the founding fathers of Helmuth Obata and Kassenbaum Architects (HOK), decided to produce construction drawings in freehand, thus emphasizing their conceptual nature. This forced the contractors to rely on their work plan and the skills of their trades to produce shop drawings to demonstrate how they intended to "conform to the information given and the design concept expressed in the contract documents."

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Although considered by some to be extreme at the time, Obata did not remove any usable information from his documents. He merely added a human factor to his line work that expressed the information in its simplest and most obvious form, while at the same time underscoring the reality that the architect's documents are conceptual. By contrast, today's computerized document production does little to reinforce the conceptual nature of design drawings. While computers bring a high level of consistency and efficiency to the architect's work, design drawings rendered via computer are so crisp and precise as to appear to have the precision of a shop drawing.

As is obvious to most architects, there are many benefits to the use of conceptual design drawings in the construction process. Some of these benefits are:

• Promotes competition. Multiple acceptable manufacturers allow the contractor to obtain the best price or best delivery schedule. It is generally acknowledged that a single source specified product will be more expensive because of the lack of competition, and that is why it is unlawful on public projects in many states.

• Provides for the latest technology. A manufacturer's product may undergo model and specification changes after the project is designed and before the work is installed. A good example is radiology equipment where specifications and features change almost monthly and medical technologists and radiologists desire the latest model for their facility. The architect's conceptual design allows for product procurement with more recent upgrades and developments.

• Allows the trade to determine the final configuration. While architects have a general familiarity with many products, the trade contractor is the expert, knows the product best and is more capable of determining its ultimate design configuration.

• Places responsibility for means and methods with an experienced provider. Much like the designer's expertise that is accrued from years of experience, the contractor's expertise in the latest construction techniques and how products and buildings go together is a career endeavor. The contractor knows best how to develop a plan for making the design concept a built reality.

The Contractor's Plan

The contractor's plan for procuring and placing the work is not always entirely visible to the project team. Although the contractor is required by the construction contract to submit shop drawings, produce coordination drawings, provide sketches to resolve dimensional conflicts, along with being required to hold pre-installation conferences – all of which the architect should be aware of and may attend – for the most part the contractor's work plan is transparent.

Components of the contractor's plan for the work are addressed in *Guidelines for a Successful Construction Project*, a joint publication of The Associated General Contractors of America, the American Subcontractors Association, and the American Specialty Contractors. Pre-

installation conferences and coordination of subcontractors are addressed in Section D.2.a ("Guideline on Communications"): "Coordination should be assured through regular on-the-job meetings of the general contractor's authorized project representative and the on-site subcontractors' authorized project representatives. Additional meetings may be required for subcontractors whose work might interfere with another at a given time."

This publication – formerly known as the *Construction Industry Survival Kit* – also includes shop drawings and submittal data and coordination drawings as primary topics for discussion during the preconstruction conference. In Section 6.1 ("Guideline on Preconstruction Conferences"), under Topics for Discussion is Item 4: "Shop drawing and sample submittal data including procedures for submittal, review and approval…" And, Item 5 mentions coordination drawings, which are referred to as interference and composite drawings: "Requirements, if any, for interference and/or composite drawings. Who initiates them and what will be the order of progression of these drawings; what is the impact on time for performing the work if composite drawings are required?"

Through such publications, these major construction trade associations acknowledge the role of the contractor in developing and managing the work of coordinating the subcontractors and providing composite coordination drawings. They also recognize that time and planning will be required to coordinate the subcontractors and prepare the drawings necessary to facilitate constructing the work.

The contractor's plan is critical to the success of a project, and it is developed and implemented by the contractor's staff. Yet contractors sometimes reduce staff as they seek to control general conditions costs or because of pressure from owners to reduce expenses. Owners often view these temporary facilities and services as transient, with no sustaining benefit to the project. However, efforts to reduce these costs can be misguided and may adversely affect the project. Staff reductions are not made because planning the work is not required, and consequently the work must be provided by an alternate source. For survey and layout services a common practice today is to buy layout work from the individual trades performing the work. For example, the plumber may be contracted to measure and layout the locations of plumbing fixtures and equipment, and the drywall contractor may be contracted to measure and layout the walls. Under this scenario, where layout is not provided as a general conditions service, the ability of the contractor to confirm that the plumber's layouts are compatible with the drywall contractor's layouts is reduced. Typically, there are issues of coordination that must be worked through between the two subcontractors. Since the layout process has essentially bypassed the contractor's supervision and control, it is not a part of the work plan, and the subcontractor's source for layout information apparently becomes only the architect's drawings. Consequently, if there is a problem with coordinating the layout between the subcontractors, the architect is often mistakenly viewed as the responsible party.

However, according to Section 3.3.2 of AIA document A201, the general contractor is solely responsible for the acts of subcontractors and the coordination of their work: "The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract…"

Coordination of the subcontractors by the contractor is contractually required, and it is necessary for producing properly placed work. Attempting to transfer the responsibility for coordinating the work to the architect is in conflict with the general conditions, the recommendations of the leading trade associations, and although it may be a common occurrence, it is not good construction practice.

The issue of pressuring contractors to reduce their general conditions costs has seemingly played a part in causing layout and coordination of the work by the contractors in the field to become a vanishing art. The act of developing a work plan, working with and coordinating subcontractors and answering their questions has instead evolved into an intensive RFI exchange often designed to force the architect to provide some or all of the contractor's field coordination services under duress. This act of conscripting the architect or engineer is inherently unsuccessful because they do not possess the contractor's skills or contractual authority, and they do not provide supervision. In the construction process there is simply no substitute for the contractor's work plan.

The following RFI reflects the occasional passive nature of how a contractor might attempt to conscript the services of a architect: "Embeds for the roof screen wall support column bases were set per unapproved shop drawings in the interest of schedule. Please provide a detail for attaching the column base plates with drilled epoxy inserts."

The contractor should have engaged an engineer to design a correction to his placement mistake and proposed an alternate sketch for the engineer of record to review as MasterSpec requires. Nevertheless, the design team, in an effort to assist in resolving the problem, responded by sending an Architect's Supplemental Instruction (ASI) with a detail for the inserts as requested. At the end of the project, adding insult to injury, the contractor submitted additional costs in a change order request for "providing inserts per the architect's revised detail" that was attached to the ASI, alleging that the detail was not the most cost effective solution.

Conceptually Equal but Nominally Different

Both the architect's drawings and the contractor's procurement and placement plan, which includes submittals and shop drawings, are affected by the proprietary nature of the specific materials and systems that the contractor decides to purchase. In the absence of a sole source specification, the architect cannot be expected to know exactly which suppliers, manufacturers, or subcontractors the contractor will select to include in the project. The

proprietary nature of today's market dictates that one vendor's product will not exactly match another vendor's product. Thus, the architect details the concept of an installation and specifies the products or systems advertised or known to be conceptually equal in quality. The contractor is responsible for determining and defining specifically how the conceptually equal but nominally different products or systems that have been chosen for use in the project will be incorporated into the work.

An example of a conceptually equal but nominally different product can be found in the case of two popular manufacturers of metal clad wood windows. Both Pella and Andersen manufacture a wood window nominally sized 3' wide by 5' high. However, the actual window provided by Pella is 3' 1" wide by 4' 11" high, and the window provided by Andersen is 2' 11½" wide by 4' 11½" high.

Although the windows are of slightly different sizes, the differences do not invalidate the concept of a 3' by 5' window. Thus, without advance knowledge of exactly which window the contractor will propose to buy, the architect can approximately, but not exactly, represent in the design documents what is required for the project. The subcontractor then indicates in a submitted shop drawing exactly how the selected window will be incorporated into the work. The shop drawing, although it is not a "contract document," becomes the document that is actually used for construction. The architect's documents, since they are conceptual, are not and cannot be the actual documents from which construction is performed.

In another example, the conceptually equal but nominally different nature of the final product to be provided is actually of little concern to the architect, provided the contractor coordinates the work of the subcontractors.

RFI Question: Fire/smoke dampers have been approved as 120 volt. The security system subcontractor has requested permission to change these dampers to 24 volt. Will this change be acceptable?

Engineer's Response: 120 volt or 24 volt is acceptable. Subcontractors shall coordinate per contract.

As long as the dampers are coordinated and function with all related systems, they will be in compliance with the design concept.

The Purpose of the Architect's Dimensions

The purpose of the dimensions given in the architect's drawings is to define the limits of and provide guidance for placement of the elements of the work. If there is a category of information provided in an architect's drawings that must be used directly during the construction process, it is likely to be dimensional information. Nevertheless, the architect's dimensions must be thoroughly examined and verified by the contractor preparing the plan for procuring and placing the work because of the variables in available products and construction techniques.

Therefore, the dimensions provided by the architect are presented only in support of the design concept. Column grids and building limits may be presented and used literally as long as they have been confirmed by the con-

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tractor's surveyor. However, standard convention dictates that the architect may use certain nominal dimensions that the contractor must interpret in actual terms. For example, an 8" concrete masonry unit is actually 7⅝" tall, and a 2x4 wood framing member is actually 1½" by 3½".

Dimensions are also impacted by nominal proprietary differences as in the case of the window size example given above, or in the case of small differences in the actual dimensions of kitchen appliances, plumbing fixtures and accessories, floor tile, elevators and many other products. These nominally differing dimensions, when they have a critical impact on the layout of the building must be highlighted in submittals, resolved through the RFI process, or in most cases merely coordinated by the contractor or subcontractor on site.

A good example of such a condition is pipe penetrations in the building structural frame. The specifications often require "sleeve layout drawings" to be submitted with the structural shop drawings. The contractor is in the best position to determine specifically where the sleeves for the piping can be placed so as to not interfere with critical structural members such as reinforcing steel or post-tensioning tendons, or with the contractor's provisions for constructability. The architect need not be concerned about the precise location of the sleeve as long as it falls within a wall or chase and meets the requirements of the design concept.

Convention and common sense also allows that some building elements may simply be "conceptually indicated" but not actually dimensioned. Building elements often indicated without dimensions commonly include doors occurring in a long run of wall, electrical outlets whose specific location is not critical, and other such elements. The final "nominal" location of these building elements is rightfully left to the discretion of the contractor.

How It Is Supposed To Work

When things go the way they are supposed to, the architect's interaction is essentially one of answering questions about design intent and possibly issuing a few supplemental instructions. The contractor significantly marks up submittals, and pre-installation conferences are held at the contractor's request instead of because they are required in the specifications. If all went as intended, a project would go something like this:

- architect designs project and issues design drawings (drawings locate, specifications establish quality);
- contractor develops plan for procuring the work and allocates work among trades;
- contractor and trades develop a plan for placing the work and prepare composite coordination drawings and alternate sketches;
- trades prepare submittals and submit to contractor;
- contractor coordinates trade submittals with the plan for the work, marks up and approves submittals and submits to architect;
- architect reviews submittals for conformance with design concept;
- contractor and trades construct with approved submittals;
- contractor issues RFIs for questions that cannot be answered from the information given or for questions about discrepancies in the architect's documents; and
- the architect responds to RFIs with answers to questions.

If a project was indeed constructed as the AIA documents anticipate, there would be less paperwork, fewer meetings, and fewer conflicts and disagreements. There may be higher general conditions costs to cover the contractor's necessary labor, but there would be fewer coordination issues, fewer reimbursable expenses for the owner to pay, and a shorter period to close out the project. Although the contractor's plan for

Emerging Technology: The Building Information Model

The development of information technology and the difficulties experienced in typical construction projects has fostered broad interest in an improved construction process based on shared information. The new approach is based on Building Information Model (BIM) technology an emerging technology that allows a designer to depict the project in a digital model. BIM tools replace traditional computerized drafting with a database that can be shared by an integrated design and construction team.

Research suggests that as much as 30 percent of building construction costs is wasted in the field due to coordination errors, wasted materials, labor inefficiencies, and other related problems. One cause of these inefficiencies is the re-creation of project information, usually on paper, at each transition in the project's lifecycle. The new BIM tools, the technological successor to the industry standard AutoCAD, consolidate project data in a three-dimensional parametric model where information can be shared and manipulated by each member of the project team. Various data, including cost estimation, can be generated from designs depicted using BIM tools. Contractor's submittals, as well as manufacturer's fabrication data, will then be developed from this data. The resulting information will help integrate design processes, accelerate delivery, and facilitate coordination of the work.

Adoption of an integrated process supported by BIM may take years to develop, but all indications point to better, faster, and more cost-effective projects. The AIA Documents Committee is among several groups representing owners, contractors, and design professionals that are committed to the advancement of new approaches supported by BIM. The committee has made digital practice and BIM an integral part of future contract documents development.

A white paper published by the Construction Users Roundtable in August 2004 titled *Collaboration, Integrated Information, and the Project Life Cycle in Building Design, Construction and Operation* describes (from an owner's point of view) the opportunities afforded by BIM technology and makes recommendations for its implementation. Also, a provocative discussion of the subject – including a comparison of the construction and manufacturing processes – is part of a recent book based on research funded by the Latrobe Fellowship. Published in 2004 by McGraw-Hill, the book is *Refabricating Architecture* by Stephen Kiernan and James Timberlake.

PHILLIP G. BERNSTEIN, FAIA

The author is vice president of Autodesk's Building Solutions Division and chair of the AIA Documents Committee.

procuring and placing the work is not a frequent topic of conversation around the job site or in the project meeting, there are contractors that actually prepare such a plan and execute it as the AIA and the leading construction trade associations recommend. The telltale signs are marked-up trade submittals, detailed coordination drawings, fewer RFIs, more installation conferences, and less correspondence in general.

Conclusion

Contractor-provided construction documents are essential for constructing a project, and it is evident that the architect's drawings alone cannot be used because they are conceptual in nature and inherently inadequate for that purpose. If design drawings were sufficiently complete and adequate for construction, there would be no need for the general contractor. The architect would be providing the plan for putting the work in place. The manufacturer and model along with the precise specifications and physical characteristics of all products and systems in the building would be known and detailed in the drawings in advance. In developing "a complete set of instructions for building the building" the architect would already have determined the means and methods for placing the work. There would be no submittals because all data would be fully anticipated and addressed in the contract documents. There would be no RFIs, no ASIs, and much less correspondence overall. Moreover, project costs would likely increase due to the absence of competition.

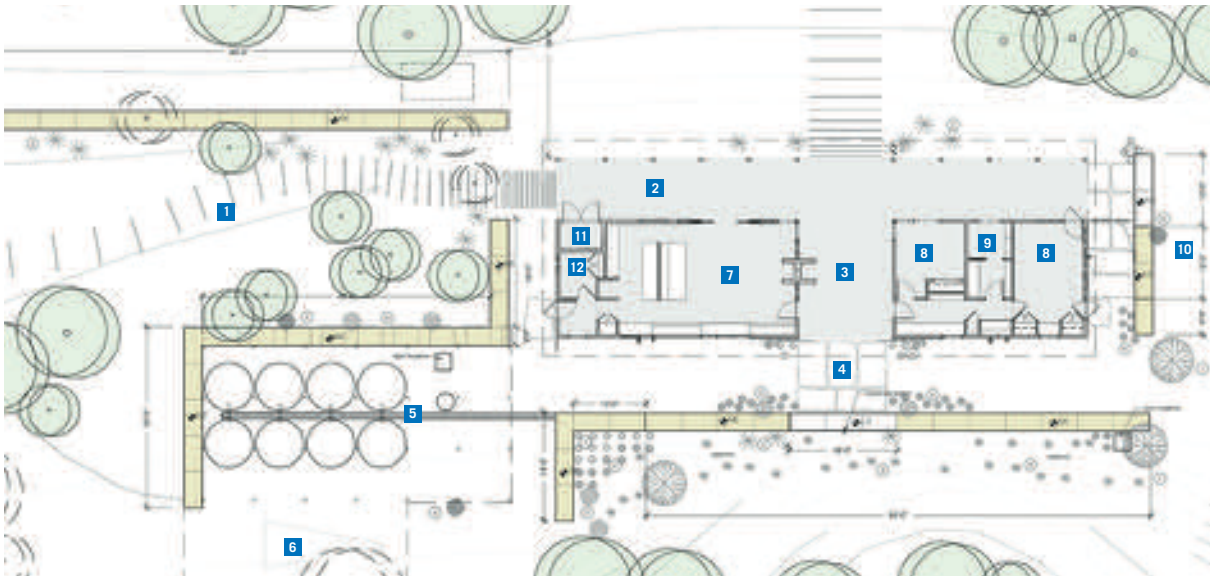
While the Building Information Model may improve the coordination process in the future, the need for a contractor's work plan will never go away. Graphically illustrated concepts, desires, and intentions will never precisely match constructed fact. By its very nature, the construction process requires that someone plan, schedule, coordinate, and direct the means and methods necessary for project construction and completion.

Architects will continue to design projects and produce conceptual drawings for the contractor's use. However, until the industry acknowledges the need and demands that contractors plan and coordinate the work, architects will continue to be prevailed upon to coordinate both the contractor and the work of the trades. Until owners become more aware as to the contractor's responsibilities under the AIA documents, the misguided expectation that the architect is responsible for coordinating the work will remain. The legal industry will continue to attempt to hold the architect's conceptual drawings to shop drawing standards, and the number of claims against architects will continue to rise.

James B. Atkins, FAIA, is a principal with HKS in Dallas. He serves on the AIA Documents Committee and the AIA Risk Management Committee.

Grant A. Simpson, FAIA, manages project delivery for RTKL Associates in Dallas. He serves on the AIA's Practice Management Advisory Group.

The authors write a regular monthly column for AIArchitect *that explores aspects of risk management.* AIArchitect *is available at* www.aia.org. *This article is intended for general information purposes only and does not constitute legal advice. The reader should consult with legal counsel to determine how laws, suggestions and illustrations apply to specific situations.*



FLOOR PLAN
1 ENTRY COURT
2 ENTRY PORCH
3 DOGTROT
4 SERVICE COURT
5 RAINWATER COLLECTION
6 CARPORT
7 LIVING/DINING
8 BEDROOM
9 BATHROOM
10 OUTDOOR SHOWER
11 UTILITY ROOM
12 MUDROOM/HALF BATH

"R.M. 2766" continued from page 20

While the students initially researched various design strategies (including rammed earth, straw bale construction, and other experimental building technologies), the team chose to follow a more traditional model using wood framing, poured-in-place concrete, and wood cladding. They broke ground in May 2004.

Because of the rural context of the project, the students didn't have to deal with city bureaucracy to design the house. Still, that didn't remove them from internal hierarchies of authority. Students juried their own internal competition for the final design, and elected candidates for each necessary job. "A whole management structure was created," says Harpman, "and an important part of the process was for students to actually find their place within the structure. I don't think students should be insulated from that process." In this case, "finding their place" meant that the students had to learn how to solve unforeseen problems, and the project provided several real-world challenges. "We didn't anticipate the difficulty of building slab on grade," says undergraduate Dale Buehler, the project's field coordinator. "And weather really slowed the process. Issues like that bring home the reality that when you're out in the field the design process is not linear, and never really ends."

Following the success of the Johnson City project, Harpman plans to instigate a new program, which may be more urban in nature and could involve teaming up with a local elementary or high school to build a classroom wing or other school building. "It's exciting to see how much interest this project has generated," says Harpman. "It's encouraging."

To find out more information about Design Build Texas, go to *www.designbuildtexas.com.*

FLOOR PLAN
1 KITCHEN
2 BATHROOM
3 LIVE/WORK SPACE
4 FRONT PORCH
5 BACK PORCH
6 DRIVEWAY

"XS House" continued from page 21

maintenance, environmentally sound building techniques include Hardiplank walls and metal windows, translucent polygal core walls, and a thickened west wall to provide places for storage and to shield against harsh sun.

Designed and built over three semesters, the XS House project involved some 60 students throughout its development. Teams of 20 at a time focused on the project one semester at a time, leaving the classroom to confront genuine design problems that otherwise might have remained hypothetical situations. "The coordinating and choreography of a build-out is a real art that is often overlooked," says Christopher Mechaley, who worked on the project for two semesters. "That, and the value of seeing the effect your work can have on a community, really inspired me." There is additional value, says RBW co-director Danny Samuels, FAIA, in the Rice design/build program's objective to get as many students' hands "dirty" as possible. "Our relationship with Project Row Houses allows us to be doing several things simultaneously," he says, "and building is just one real-world way for students to participate."

Concurrent with the XS House, another RBW project was just completed in that same Third Ward neighborhood—a series of four duplexes designed by students several years ago but only built recently by Project Row Houses in conjunction with an outside contractor. "That process went so smoothly," says Samuels, "that we will soon be having the students design more duplexes." Other projects on the drawing board are RBW's "home away from campus" in the neighborhood and nearby live/work spaces.

More information on the Rice Building Workshop is available online at *www.arch.rice.edu.*

Ingrid Spencer is a freelance writer in Austin.

Index to Advertisers

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grader wouldn't have made on a bad day. [Editor: The headline misstated his year of birth as 1903. He was born in 1906. Also, he was 98 when he died rather than 92 as misstated in the text.

Thank you for the snippets of insights into the persona of Philip Johnson. It was fun to read the different ways people remembered him! What a wonderful alternative to the usual obligatory bio about his schooling, his mentors, his notable buildings, etc. We learned all that way back in college. You printed the fun stuff.

Kate B. McLean
Baton Rouge, La.

Setting Right 'Leonardo's Bridge'

Thank you for the article on the Leonardo Bridge Project at the University of Texas of the Permian Basin. (See March/April "News," p. 9.) However, I wish to correct some misleading points.

1. The original Da Vinci design was to span the "Golden Horn" rather than the Bosphorus River as stated in the article. The Golden Horn waterway is an inlet off the Bosphorus Strait.

2. Leonardo da Vinci designed the bridge originally for the Sultan of Constantinople. This history puts it in the unique and coincidental position of being a "bridge" between the Muslim and Christian worlds. This is a worthy coincidence, but it is not the purpose of the current global Leonardo Bridge Project, which is a global goodwill arts project intended to open a dialogue between artists, architects, engineers, scientists, educators, and scholars all over the world about the science of art and the art of science.

3. The Leonardo Bridge Project team is working very hard to develop sites around the world. We are involved in a number of discussions, but the projects are not yet site specific. It is misleading to say that Odessa is "one of four cities planning to build the bridge…" [One of those cited] Vinci, Italy, Leonardo's birthplace, would love to build the bridge but recent budget cuts prevent it.

4. The Leonardo Bridge Project team supports fundraising efforts in any way possible but does not coordinate those efforts nor do we "accept material donations." Our charter states clearly that funding for the construction of each project comes from private donations, public transportation allocations, and/or corporate underwriting.

UTPB has a vision for the synergy between the arts and sciences that I believe will impact not only its students but all of Odessa/Midland. We are very proud to be a part of that vision.

Melinda Iverson
Leonardo Bridge Project, Seattle, Wash.

TRENDS OF THE TRADE

Softwood Plywood Industry Marks Centennial

One hundred years ago, a small wooden box company in Portland, Ore., produced the first commercial softwood plywood, launching what would become a thriving international industry. To celebrate the industry's first centennial, the trade organization APA–The Engineered Wood Association is sponsoring a series of special events and offering for sale reprints of *The Plywood Age*, published in 1955 to commemorate the industry's first 50 years. Information is available at *www.apawood.org*. The industry now boasts U.S. production of almost 15 billion square feet, with about 10 billion square feet produced in southern states and the remaining 4.8 billion square feet produced in Oregon, Washington, Idaho, and Montana.

The U.S. currently imports about 2.1 billion square feet of plywood, primarily from South America. Although oriented strand board (OSB) has since 1980 largely displaced plywood as a structural sheathing in housing construction, the residential construction market still accounts for about one-third of plywood market demand in the U.S.—an estimated 5.4 billion square feet in 2005.

The largest single U.S. market for softwood plywood today – some 5.6 billion square feet – is the industrial sector, including such applications as furniture frames, truck trailer linings, RV floors, agricultural bins, shipping containers, and pallets. Remodeling is another major market, consuming approximately 3.4 billion square feet. Nonresidential construction, including panels for concrete forming, consumes approximately 1.4 billion feet.

Plywood is widely regarded as the original "engineered wood product" because it was one of the first – and the most commercially successful – to be made by bonding together cut or refashioned pieces of wood to form a larger and integral composite unit.

Roofing Certification Program Expanded

Having launched a roofing certification program in 2004 to test acceptability and processes, the Metal Construction Association is now broadening the range of participation to train architects and contractors how to specify products for consumers.

"The growth in our industry and the rapid increase in the number of products and choice of finishes for metal have become confusing not just for building owners, but contractors and architects who purchase or specify the products," says Todd Miller, a member of the MCA certification committee. "This program helps them sort through information and gives them confidence that these products meet the high-level criteria set forth by an industry association." Adding to the challenge of specifying metal roofing is the rising cost of materials. "The need for this program is higher today than when we began working on it two or three years ago because a rise in materials cost tends to steer purchasers toward lower cost, lower performance materials," adds Harold Schroth, market manager building products for Columbus, Ohio-based Akzo Nobel Coatings. "For those who aren't aware of the difference between materials, whether owners, architects, or even contractors, they may not recognize quality differences in the basic metals, metal pretreatment or paint system. So, a certification program goes a long way to sort all that out."

For more information or to apply to participate in the program, visit the MCA Web site at *www.metalconstruction.org*.

TRENDS OF THE TRADE

Trans-Texas Corridor to Stretch 4,000 Miles

The State of Texas is planning and developing a futuristic highway system that will include 4,000 miles of expressways, mostly toll lanes. The Trans-Texas Corridor, almost a quarter-mile wide, would carry cars, trucks, trains, and pipelines for water, oil, natural gas, electricity, and fiber optics. The roads would be built over the next 50 years at a cost of up to $185 billion, funded mostly by private money according to *USA Today*.

The network eventually would crisscross the state, diverting long-distance traffic onto superhighways designed to skirt crowded urban centers. The state's ultimate goal is to relieve some of the nation's worst traffic congestion, caused by Texas' rapidly growing population and the exchange of goods with Mexico that has been accelerated in recent years due to the North American Free Trade Agreement.

Governor Rick Perry, creator of the Trans-Texas Corridor, calls it a "visionary transporation plan that could become a national model."

"We looked at our interstate system and thought, 'This system is 50 or 60 years old.' At the choke points in our cities, it has basically reached the end of its useful life," says state Rep. Mike Krusee, an Austin Republican and author of the legislation authorizing the corridor.

The state is holding 640 public meetings and initial federal approval is expected in the spring of 2006.

Cooper-Hewitt's *Extreme Textiles* Imagines 40-Story Woven Structure

An exhibition *Extreme Textiles: Designing for High Performance* now on display at the Smithsonian Cooper-Hewitt National Design Museum in New York City explores the extraordinary innovations occurring in "technical textiles" that are revolutionizing the fields of architecture, apparel, medicine, transportation, aerospace, and the environment. To illustrate potential architectural applications the exhibition features the Carbon Tower Prototype conceived by Testa Architecture and Design in Los Angeles.

This prototype 40-story office building is built of carbon fiber and composite materials. The main structure is woven together, rather than assembled from a series of distinct parts as in traditional construction methods, and has a double facade of transparent and translucent membranes. The building's structure consists of 40 helical bands of carbon fiber, hundreds of feet long, winding in both directions around the cylindrical volume. Instead of relying on a rigid internal core and a series of columns for stability, these thin bands, each a foot wide and an inch thick, run continuously from the bottom to the top of the building and take the entire vertical compressive load.

The 40 floor plates, each 125 feet in diameter, are tied in to the external structure, acting in tension. The floors keep the helix from collapsing while the helix, in turn, supports the floors. A network of sensors, monitoring the integrity of all structural members, is woven into the matrix of the building.

A new construction method called pultrusion is used for making the structural cables from impregnated carbon fibers. Carbon-fiber composite is formed by passing raw strands of material through a resin impregnation bath and then through a die to shape it into the appropriate cross-section. The resin cures while the material is passing through the die, and the final product emerges immediately.

Visit *www.ndm.si.edu* to view images of the Carbon Tower Prototype and to learn more about the *Extreme Textiles* exhibition on display through Oct. 30.

'Us vs. Them'

The public perceives architects as out of touch. We can change that.

IN the prosperity of post-war America, architects embraced modernism, urban renewal, and the rise of a corporate society. They wished to wipe the slate clean in order to create a new architecture and a new urban fabric. Their experiments sometimes resulted in dramatic failures, and numerous examples still scar our country today. Along the way, many American architects became singularly focused and began to isolate themselves from the views of the general public. Nowhere is that deliberate separation more apparent than in the field of residential architecture.

Within the profession, architects often have been marginalized – sometimes ostracized – for refusing to dismiss the general public's notions of domestic architecture. At the same time the profession has abandoned a large segment of the building industry, leaving it to be shaped by others.

Magazine covers illustrate the chasm dividing the architecture profession and the American middle class.

Magazines today illustrate the ideological chasm between the architectural profession and the general public on the subject of the American home. Professional journals, if they publish houses at all, feature only residential projects that are novel or experimental. These houses by architects for architects ultimately have very little impact on the development of the house as an archetype because they ignore the human aspect of architectural design in lieu of novelty.

Ignored by the professional journals, residential architects instead find exposure in shelter magazines. While these publications tend to focus on idealistic lifestyles rather than progress in the development of the American home, they are devoured by the public and therefore largely shape the average American's view of what a home should be. Consequently, since their editors have little interest in covering more esoteric topics facing housing, shelter magazines – and the architects whose work they publish – are considered irrelevant to the architectural profession. The result is the "us vs. them" predicament in which residential architects find themselves today, with the architectural profession turning a blind eye to the huge need for middle class housing and the homebuilding industry's subsequent labeling of architects as irrelevant. Then there's the public perception of architects as out-of-touch and their service as a luxury, which further skews the residential construction market for residential construction ($551 billion in 2004) toward the non-architects who build houses.

How can architects change this self-defeating scenario? We can affect change through educational training, which is surprisingly lacking at most universities despite the high percentage of educators who work as residential architects. Also, we must begin sharing knowledge through a professional continuing education program that coordinates efforts among our various professional associations, including the American Institute of Architects, the Congress of Residential Architects, the American Institute of Building Design, the Institute of Classical Architecture, and the Congress of New Urbanism. Going even further, the profession must forge ties with organizations that represent other specialists, including the Association of General Contractors, the National Association of Home Builders, and the Urban Land Institute.

Above all, we must communicate directly with the general public to demonstrate how architects can improve the average American's lifestyle. Homes tours, public presentations, and articles in the mainstream media can inform the public about good design and show the positive impact good design has on individuals and entire communities. Such means can ultimately change the negative perceptions and help us rid our profession of the "us vs. them" stigma.

MICHAEL G. IMBER, AIA

The writer is a residential architect in San Antonio and a founding counselor of the Congress of Residential Architects. This article was adapted from a presentation Imber gave during a CORA forum, "The State of Residential Architecture," held in Los Angeles on Dec. 8, 2004.

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— Ed Reh, AIA, Austin

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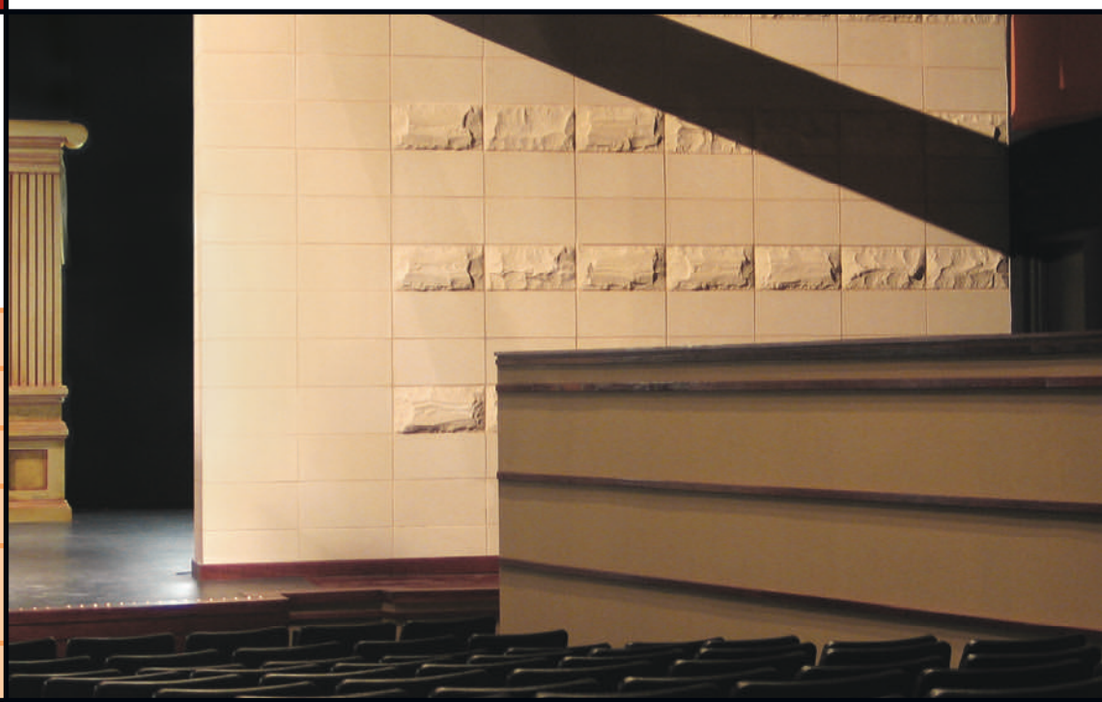

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