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THE MAGAZINE OF THE AMERICAN INSTITUTE OF ARCHITECTS

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ANNUAL DESIGN REVIEW



*400 Fifth Avenue.
Architect: Robert Siegel,
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FEATURE

The Annual Design Review

For the third year, our jury—this year, made up of Ted Landsmark, Raymund Ryan, Hilary Sample, Trey Trahan, and Joe Valerio—selects the best in American architecture in the six categories seen below. **KATIE GERFEN, WITH KRISTON CAPPS, SARA HART, JEFFREY LEE, CHARLES LINN, VERNON MAYS, AND LINDSEY M. ROBERTS**

LIVE

Award: OS House, Racine, Wis.
Citation: C-Glass House, Marin, Calif.
Citation: Barrio Historico House, Tucson, Ariz.
Honorable Mention: R-House, Syracuse, N.Y.

PLAY

Award: Cité de l'Océan et du Surf, Biarritz, France

GROW

Award: Hinman Research Building Rehabilitation and Adaptive Reuse, Atlanta
Citation: University of Minnesota Duluth, Civil Engineering Building, Duluth, Minn.
Citation: Gary Comer College Prep, Chicago
Honorable Mention: L.B. Landry High School, New Orleans
Honorable Mention: NYC School Construction Authority: Mott Haven Campus, Bronx, N.Y.

BOND

Award: Chengdu Skycourts, Chengdu, China
Award: Herta and Paul Amir Building, Tel Aviv Museum of Art, Tel Aviv, Israel
Award: Ruth Lilly Visitors Pavilion, Indianapolis
Honorable Mention: The Los Angeles Museum of the Holocaust, Los Angeles
Honorable Mention: Forest Pavilion, Guangfu, Hualien, Taiwan

MOVE

Award: Riverview Park Visitor Service Building I, Louisville, Ky.

WORK

Citation: Centra at Metropark, Iselin, N.J.
Citation: Community Foundation Santa Cruz County, Aptos, Calif.
Citation: Coffee Plaza, Hamburg
Honorable Mention: 1st Avenue Commercial Office, Tucson, Ariz.

→ ONLINE

There's more online at architectmagazine.com:

You will find slide shows with more photographs and drawings for each of the Annual Design Awards winners.

Blaine Brownell's Mind & Matter blog looks at products and materials in development and on the market.

Aaron Betsky's Beyond Buildings blog comments on the impact that design has on our society and culture.

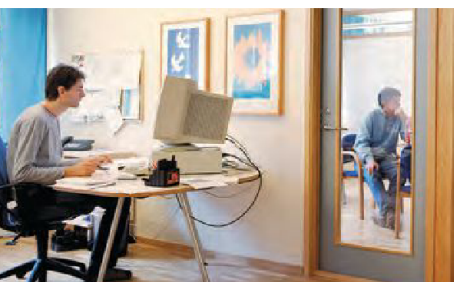
And there are constant updates: breaking news, new products, slide shows, extra images of the projects in the issue, and more ...

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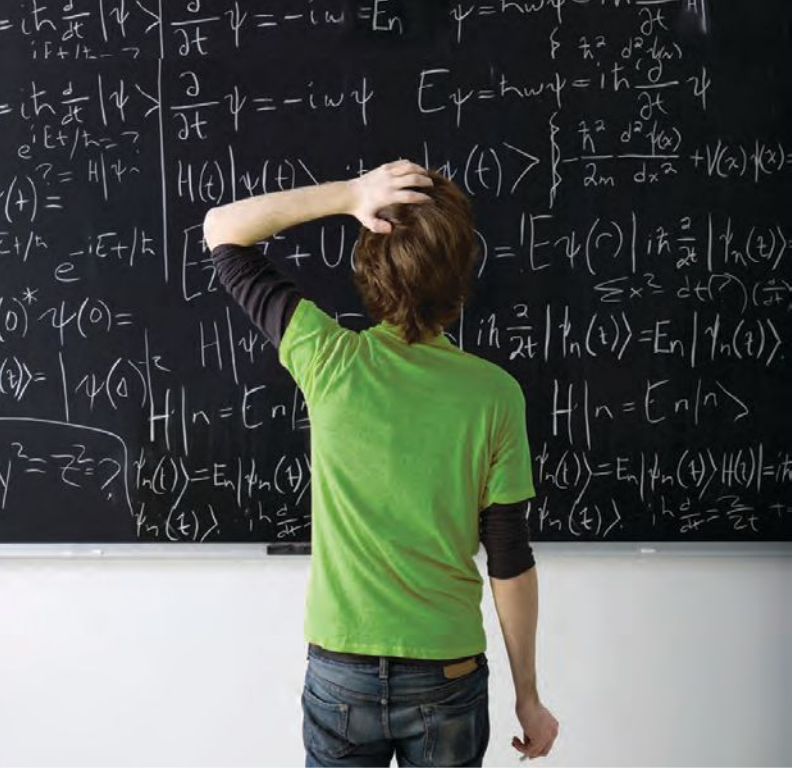
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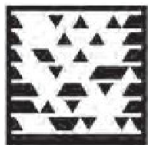
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FOR 2012, THE HOUSE APPROPRIATIONS COMMITTEE HAS PROPOSED NOTHING FOR NEW CONSTRUCTION. YES, YOU READ THAT RIGHT: ZERO.

AUSTERITY BITES

AT A SUSTAINABILITY CONFERENCE this fall, the head of the U.S. General Services Administration (GSA), Martha Johnson, observed that the agency may have to completely stop new construction of federal buildings if a U.S. House of Representatives budget proposal for 2012 becomes a reality. To put it mildly, this is very disappointing news for architects.

The GSA has been feeling the pinch for some time. According to the *Federal Times*, GSA funding for new construction has already plummeted 91 percent, from \$894 million in 2010 to \$82 million in 2011.

For 2012, the House Appropriations Committee has proposed nothing for new construction. Yes, you read that right: Zero. And this is despite the fact that material and labor costs are at historic lows, making it a great time to build. The Senate budget is a bit more generous toward new construction, allocating \$280 million. The president, in contrast to both, wants \$840 million.

Advocates of Keynesian economics should pause briefly before praising the president's efforts to stimulate the building design and construction industries, considering that the executive branch's proposal for 2012 is still lower than what the budget was in 2010.

And fans of small government should take a good long pause before condemning the president as a wanton spendthrift, given that the administration already has enacted major cutbacks where federal property is concerned—and the resulting savings outnumber the proposed expenses on new construction by a factor of about 10 to one.

Last year, the president ordered federal agencies to reduce building-lease and -maintenance costs by \$8 billion by the end of fiscal 2012. The closure and consolidation of military facilities accounts for \$5 billion of the cuts. As for the rest, each agency developed its own plan, using such cost-saving measures as energy-efficiency improvements, lease renegotiations, office consolidations, and work-at-home policies. In addition, some properties will be reassigned to agencies that need more space; others will be gifted to municipalities, schools, and hospitals; and some will be sold.

The government currently spends \$19 billion a year on a stock of some 1.2 million properties, which makes it far and away the nation's largest landlord. With such an enormous portfolio, it's fantastic to see the GSA and other agencies now taking steps toward efficiencies that have become standard in the private sector.

But what looks like efficiency to some people feels excruciatingly painful to others. "We ... are having our stomach stapled," GSA administrator Johnson said, in a moment of considerable candor, to attendees at the aforementioned conference.

While the GSA loses weight, developers have the chance to gobble up some seriously prime real

estate, in major markets and at recessionary prices. An inventory commissioned during the George W. Bush administration notes 14,000 vacant and 55,000 underutilized government structures just waiting for private investment.

Now, selling and leasing vacant and underutilized public properties is most likely a good thing, but there are ways to be smart about it. Is it wise to unload so much real estate right now, with the market still shaky? The government might see a better return in a couple of years, after the economy bounces back. Transfers of public wealth to private hands should be mutually beneficial, and taxpayers shouldn't lose money just because Congress is in a rush to tidy its balance sheet.

Two examples of this public-to-private transfer can be found in Washington, D.C. Here, developers are eyeing an abandoned Art Deco heating plant on a two-acre GSA property next door to the Georgetown Four Seasons Hotel (a very prime location, to say the least, in one of the busiest and trendiest parts of town). Also, GSA Public Buildings Service commissioner Robert Peck is considering bids for the Old Post Office, located in the heart of the downtown Federal Triangle. This 1899 Richardsonian Romanesque landmark currently houses the National Endowment for the Arts, the National Endowment for the Humanities, and the Advisory Council on Historic Preservation—plus a food pavilion and shops. At the moment, a team fronted by Donald Trump wants to convert the building into a 300-room luxury hotel. Peck will pick a winner early next year.

Will all this austerity lead to an economic lift for the profession? According to the more-conservative theories of economics, as the government taxes less and spends less, the private sector should then be free to step in and take up the slack. This, I guess, would be an adequate test of that theory.

Commissioner Peck won't be hiring any architects, but the Donald will. Or at least that's what the experiment should prove. Let's hope it's right, because right now, any job would be an improvement.

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The Appaloosa Branch Library in Scottsdale, Arizona is not just a LEED Gold-certified building, it's also a stunning example of how PPG's building products are helping to change the face of modern architecture. To enhance the beauty of the exterior and reduce cooling costs, the library's architect used PPG Duranar® VARI-Cool™ coatings, which reflect the sun's energy and dramatically shift color according to viewing angle. Our Solarban® 60 Atlantica™ low-e glass allowed him to incorporate vast areas of emerald-green glass while reducing the size of the library's HVAC system and its energy bills. These are just two from the wide array of innovative glass, metal coatings, and full line of architectural coating choices you'll find through PPG IdeaScapes™. From building materials to consumer products, automotive to aerospace, marine and protective industrial coatings, we're bringing innovation to the surface. Visit ppg.com to learn more.



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Correction

In the November issue, we misused the University of Illinois at Urbana-Champaign's entry in the Solar Decathlon, Re-home, to illustrate the text for Team Belgium's house. We regret the error. Above, find a photo of Belgium's E-Cube. For full coverage of all the decathlon houses, please visit architectmagazine.com.

LETTERS

THE 50-YEAR-OLD INTERN, October 2011

I was both appalled and dismayed at the trend toward not only practicing without a license but the acceptance of individuals teaching at our institutions without a license. Licensure safeguards the public by ensuring that the individuals practicing are competent and not endangering life, safety, or health by the structures and facilities we design. I take exception to the statement by Stephen Alesch that knowledge of the building codes takes priority or becomes the total focus of licensure. I am also dismayed that within our profession we have made the distinction between production, management, and designer a status issue. Many of those leading the design effort do not have a license and yet carry the responsibility of not only leading, but have final say over the design process and end result. This sends the message to the interns that having a license is not important. Yes, the time to become licensed can be lengthy, it can be expensive, and it does require a deep commitment because a lot is at stake. No less so than medicine or law. As a practicing architect for over 33 years who is licensed in Texas and other jurisdictions, I take great pride in being able to say I am an architect. *Oza Bouchard, AIA, Morris Architects, Houston*

Below are comments from our website:

Oct. 26, 2011—8:29 a.m.

We don't necessarily want to make it easier to get licensed, we just want to make students aware of the value of getting a license, and then make sure that that value actually exists when they begin practicing.

Oct. 26, 2011—8:33 a.m.

I received my license at the age of 28 (just last year). And yes, it was hard work, but it was a personal goal of mine. I went into architecture school and said to myself, "If I'm doing this, it's because I want to be a licensed architect."

Oct. 26, 2011—10:12 a.m.

Do you honestly think that by taking a licensing test you are a better architect? Get real! There are hacks on both sides. Oftentimes, it's an individual's desire to be great that makes them great, license or not.

Oct. 26, 2011—12:01 p.m.

There is a premise that licensure equals competency, and I've found that this is not necessarily the case. I have worked with many licensed architects who couldn't put together a decent set of drawings if their life depended

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on it. The problem with the licensing process is that it is too long, too costly, and too complicated. In Texas, in the residential market, you can operate freely as an architect, without the title, and just as competently as a licensed architect. Whether you call yourself a designer, home designer, interior designer, or home builder, it's still architecture.

Oct. 29, 2011—2:05 p.m.

The article says people are leaving the profession. But there are more and more competent, talented people in the profession than ever. The licensing process has alienated them. How can this be resolved?

Nov. 2, 2011—9:45 a.m.

The whole point of the architectural licensure process is to restrict the number of people who can (legally) call themselves architects. The process is overly lengthy, convoluted, and unnecessary ... as intended.

THE MAGAZINE

I'm sorry, but ARCHITECT kicks *Architectural Record's* ass. Keep up the great work! *Adam Ferrari, AIA, Rochester Area Foundation, Rochester, Minn.*

Contributors

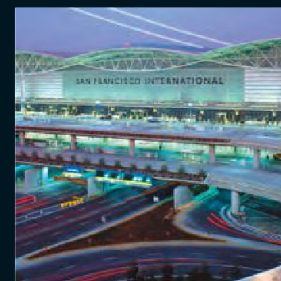
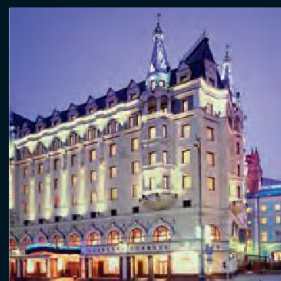
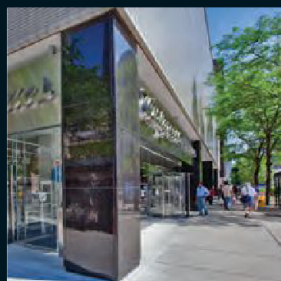


Jeffrey Lee

Jeffrey Lee, senior editor for ARCHITECT, has worked at a number of publications focused on the housing and construction industries. He has served as managing editor of fellow Hanley Wood magazines *Building Products* and *EcoHome*, and he has written for the Hanley Wood publications *Builder*, *Remodeling*, and *ProSales* as well as *Consumer's Digest*, *Nation's Restaurant News*, and other outlets. A native of Frederick, Md., Lee earned his bachelor's and master's degrees from Northwestern University's Medill School of Journalism. Reporting on the built environment is an easy subject to relate to, Lee says. "Whether or not you've worked in the building industry, we've all lived in a home, worked in an office building, or admired a well-designed civic space," he says. "So if I'm reporting on kitchen faucet trends or a building envelope system that improves comfort levels, I find it really simple to make a connection."



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NEWSWIRE

EDITED BY KRISTON CAPPS



LOS ANGELES TIMES

Gensler redesigns Farmers Field

The proposed National Football League stadium for Los Angeles, which would feature a deployable roof, follows in a long history of attempts to bring pro football to L.A.



CNET

Autodesk releases free 3D printing programs

Two programs by Autodesk, 123D Catch and 123D Make, will allow users to render, for free, 3D models of real-world objects that they can then, at a price, have printed for them.



HOUSTON CHRONICLE

Preston Bolton dies at 91

A noted supporter of the arts in Houston, residential architect Preston Bolton, FAIA, served as the AIA national secretary and president of the Texas Society of Architects.

AIA/AAF Treasure Trove

The Library of Congress announced in November that it has acquired tens of thousands of architectural drawings and photographs—a rare collection maintained by the American Institute of Architects (AIA) and the American Architectural Foundation (AAF).

The collection includes 160,000 drawings, 30,000 photographs, and rare books spanning the architectural history of the United States. The materials include technical drawings, sourcebooks, and even original works of art.

Some of the materials will appear in upcoming exhibitions. The National Building Museum—which will serve as the exhibition partner for the AIA/AAF collection—is showing two drawings by William Thornton in the museum's "Unbuilt Washington" exhibition. The drawings, which date from the 1790s, show the "Tortola Scheme" design for the U.S. Capitol.

Drawings and photographs in the collection will be made available for public use, in time. The Library of Congress will first prepare the archive of architect Richard Morris Hunt, for use by appointment. The Hunt archive includes more than 15,000 student and design drawings.

Other highlights include photographs by the French architectural photographer Charles Marville, drawings by AIA Gold Medal winners, and Statue of Liberty design drawings by Hunt and Gustave Eiffel.

The Library of Congress prints and photographs division includes more than 14 million photographs and drawings. KRISTON CAPPS

Bases for Humanity

ARCHITECTURE FOR HUMANITY, the San Francisco-based nonprofit design firm that focuses on humanitarian projects, is soliciting designs for the adaptive use of closed, decommissioned, or soon-to-be abandoned military sites in its 2011 Open Architecture Challenge.

This year's iteration of the biennial competition, "[Un]restricted Access," asks designers to envision the future of sites such as the Guantanamo Bay Detention Center, on Cuba's southeast tip, and the Marine Corps Air Station, in Tustin, Calif. Participants also may add their own sites, and they have posted over a dozen so far. Among these are Spitbank Fort, a 19th-century garrison off the coast of Portsmouth, England, and a 16th-century bunker in Diefdijk, the Netherlands, used during the Eighty Years' War.

In the U.S., there are currently 235 military sites scheduled for closing or redevelopment, many due to the 2005 Base Realignment and Closure act, which mandated that the Department of Defense downsize 5 percent of its

infrastructure by Sept. 15 of this year. Among the structures slated to close is Fort Monroe—located on the southern tip of the Virginia peninsula—a Union Civil War stronghold that became a beacon for escaped slaves.

For local economies, the closing of such bases means the divestment of millions in federal money, often accompanied by rising unemployment and urban blight. The competition hopes to generate ideas to bolster those failing economies. Architecture for Humanity co-founder Cameron Sinclair said in a statement, "Through this competition we have the opportunity to create strong anchors in communities that will generate thousands of jobs and bring economic stability to those who surround these sites."

Entrants can add sites to Architecture for Humanity's online map via Google Earth and Google SketchUp. The deadline for submissions is May 1, with winners announced on June 29. An exhibition of the winning designs will follow next fall. ALEX HOYT



BRICK ARCHITECTURE

From the Brick Industry Association



The 2011 Brick In Architecture Award Winners



BEST IN CLASS WINNERS

IN THIS ISSUE – DECEMBER 2011

Since 1989, the Brick In Architecture Awards have been one of the most prestigious national architectural award programs featuring clay brick. Architecture firms from around North America enter their best projects to be judged by a jury of their peers.

This year, architects from around the United States independently reviewed and scored each of the entries. Based on the technical and creative use of brick in meeting the aesthetic and functional design challenges, the Brick Industry Association is pleased to showcase the following projects which were chosen as the Best in Class in their respective categories.

Montana State Fund Building and Parking Garage Helena, Montana

Brick Brings Color to Big Sky Country

When the Montana State Fund needed to consolidate the operations from three existing leased buildings to a single facility, they worked closely with the City of Helena to identify a site that would keep the facility located downtown.

Early in the process, the architects established a series of guiding design principles for the new Montana State Fund Building and Parking Garage. First and foremost, the team sought to deliver a high-quality building that expresses strength and stability while reflecting its Montana surroundings. They also wanted a facility that could accommodate future growth. Lastly, they needed to design a contemporary building that was suitable to the scale and proportion of downtown Helena.

The use of clay brick and color played a key role in the building's design, and the architects used color

in a way that breaks up the expanses of wall into smaller interlocking volumes. By using two different shades of the same type of brick, the design team achieved the desired layered complexity, while maintaining a consistent bond pattern throughout.

A dry-pressed brick provided the appropriate color and texture as outlined in the design goals, and it also helped the project achieve the regional material credit for LEED® certification. Given the durability of brick, it also helped provide the image of the permanence and stability required by Montana State Fund.

In the end, the Montana State Fund Building achieved LEED Gold certification. The building stands as a leading example of sustainability for the State of Montana as well as the many business partners of the Montana State Fund. ■

A dry-pressed brick provided the appropriate color and texture that helped achieve the design goals as well as the regional material component of LEED certification.



Architect:

Mosaic Architecture, P.C.

Associate Architect:

CTA Architects & Engineers

Builder:

Dick Anderson Construction

Manufacturer:

I-XL Industries Ltd.

Mason Contractor:

Gruber Masonry

Photographers:

J K Lawrence Photography, Inc.

Mosaic Architecture, P.C.

Credits appear as submitted in entry form

Terasaki Life Science Building at UCLA Los Angeles, California

UCLA Makes a Seismic Shift While Maintaining Traditional Brick Heritage

As part of UCLA's massive renovation and replacement building program, the University has pledged to upgrade the seismic safety of its facilities. This was especially important for the 176,000-square-foot Terasaki Life Sciences Building, which plays a prominent role by presenting a public face to the surrounding community. The building is comprised of two seismically separate, five-story wings that each house an efficient pattern of flexible, modular, and open laboratory, support, and office space.

UCLA's campus has a rich tradition of brick architecture in the Northern Italian Romanesque style. To match this aesthetic, seven colors of brick were used in bands, bond patterns, and relief in the traditional UCLA brick blend of rose tan, red, dark red, purple, and peach. Extensive brick patterning, reveals, and detailing accentuate functional and aesthetic details. For example, shadow lines and special brick courses accent window placement



patterns, enhancing Terasaki's relationship to the older brick buildings nearby.

Adjacent to historic Mira Hershey Hall, Terasaki pays tribute to the older building's site, materials palette,

and scale. The building's use of a concrete frame as a shear wall eliminates 10 feet in height, opens the perimeter to light, creates new views, and provides inherent vibration control. Brick animates the façades with texture and pattern, creating shadows that contribute to the overall composition.

In response to a rigorous seismic engineering study that mapped force potential on the building's structure, the architects created a carefully calibrated layout of brick anchors placed behind the veneer. The anchor system controls differential movement between skin and structure, permitting varied movement across the façade in response to specific forces.

The project is currently in the process of obtaining LEED Silver certification. The architects used locally manufactured materials whenever possible, and all the brick used in the project was locally produced. ■



Brick animates the façades with texture and pattern, creating shadows that form an overall composition.



Architect:

Bohlin Cywinski Jackson

Associate Architect:

Stenfors Associates Architects

Landscape Architect:

Katherine Spitz Associates, Inc.

Builder:

PCL Construction Services, Inc.

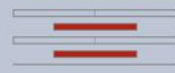
Mason Contractor:

Masonry Concepts, Inc.

Photographer:

David Lena Photography

Credits appear as submitted in entry form



HEALTH CARE FACILITIES DESIGN

Methodist Le Bonheur Women's and Children's Pavilion Germantown, Tennessee

New Health Care Facility Turns a Brownfield into LEED Gold

Guided by sustainable principles and the need for a dedicated women's center, the Women's and Children's Pavilion expands the current facilities at Methodist Germantown and sets the standard for all future facilities within the Methodist Healthcare System. Designed to achieve a LEED Gold rating, it is the largest LEED-certified facility in the Mid-South Region and the first LEED Gold health care facility in the region.

In addition to the LEED requirements, the facility adhered to Germantown's strict aesthetic guidelines and sought to blend in with the existing architecture of the campus. Therefore, scale, material, and building forms were all taken into account during the design process. Clay brick quickly became the exterior cladding material of choice in order to



produce a cohesive design aesthetic and to relate to pedestrians with its small-scale units. The pavilion features articulated and carefully proportioned brick façades, residential-scaled windows, and metal standing seam hip roofs with eaves—all elements incorporated with the surrounding residential aesthetic in mind.

As noted, LEED Gold certification played a dominant design role, and the brick exterior was a contributing design element by helping add points for energy efficiency. In addition, a manufacturer less than 500 miles away supplied the brick—a sustainable move that contributed to an innovation credit of exemplary performance for regional materials. Finally, the architects took advantage of a Brownfield site in an urban setting and recycled 90 percent of the construction waste. ■



Clay brick was the exterior cladding material of choice because of its cohesive design aesthetic and ability to relate to pedestrians with its small-scale units.



Architect:

TRO Jung|Brannen

Builder:

Flintco

Distributor:

Acme Brick Company

Mason Contractor:

EMB Quality Masonry

Photographer:

Gary Kessel

Credits appear as submitted in entry form



Sykes Chapel at University of Tampa Tampa, Florida

Careful Attention to Details Transforms Brick Chapel into Space of Inspiration

With a student body representing more than 100 countries, the University of Tampa conceived the new Sykes Chapel as a unifying space where diverse students can come to develop a sense of purpose and self-awareness. The new chapel will become a place for reflection where students can go to reflect and learn to make decisions based on principles, values, and a better understanding of the world.



To give form to the University's vision, the architects demonstrated the highest attention to detail and to the discerning use of quality materials. They designed the chapel to elicit spiritual, sensory, and emotional responses from the building's users. Simple curved forms create the space, like two cupped hands sheltering the space within, allowing sunlight to pass between them.

When it came to selecting building materials, clay brick was chosen for its long-term durability. The life of the building is anticipated to be well over 100 years, and the brick is expected to endure as well. In addition to providing a stunning visual connection to the campus, the materials were also selected for their ability to perform well in Florida's bright sunlight and severe weather.

To preserve the campus' architectural heritage, the architects employed brickwork on the lower portions of the building façade. They expressed sensitivity to human scale and divine proportions in the detailing of the arches and other building elements that resulted in an inspirational and contemporary classic design while maintaining a timeless aesthetic. They also intentionally reduced the scale of the exterior chapel's perimeter by designing an inviting brick arcade and human-scaled canopies.

Included in the brickwork are several subtle details providing depth to the work, including recessed brick on the West elevation, a Flemish bond detail with projected headers on the South elevation, and the use of a special shape employed as framework enhancing the truncated arch built with structural brick in true old-world craftsmanship and skill. Ultimately, the architect's uncompromised attention to detail created design subtleties and complexity that will inspire students for generations. ■



The life of the building is anticipated to be well over 100 years, and the brick is expected to endure as well.



Architect:

tvdesign

Builder:

Peter Brown Construction Inc.

Manufacturer:

Hanson Brick

Distributor:

Oldcastle Coastal COLOROC

Mason Contractor:

Red Brookshire of Florida

Photographer:

Mike Butler, Inc.

Credits appear as submitted in entry form



Village of Wheeling, IL, Fire Station 24 Wheeling, Illinois

Brick Creates New Fire Station on Budget and in Style



Surrounded by commercial and residential properties, the Village of Wheeling's Fire Station 24 encompasses a sizable 16,000-square-foot facility. The architects designed the facility to not only be a full-service fire station supporting the busy village of Wheeling, but to also provide living quarters for up to 12 firefighters who serve there.

The City of Wheeling wanted its firefighters focused on fighting fires and serving the community, so the City put a priority on designing a building that would require little maintenance, would protect the firefighters from noise, and could withstand the harsh weather. Careful attention was also paid to the building's exterior cladding to ensure that there was a seamless appearance with the surrounding architecture.

From the beginning, the client set a goal of designing a Prairie-style facility. Under this direction, the architects specified brick extensively for the facility due to the fact that brick's inherent qualities of warmth, solidity, and beauty dovetail well into the Prairie style. Brick's sustainable attributes and cost-effective qualities allowed

the project to meet all of the fire department's functional needs while remaining in budget.

The weather posed one of the design team's biggest challenges. To remain on schedule, the masonry work had to be completed during the winter months 30 miles outside of Chicago. By enclosing the scaffolding and using portable heaters, the builders were able to complete the exterior masonry on schedule.

The architects' decision to use brick was essential to the project's ultimate success. The community quickly embraced their new brick firehouse and approved of its beauty and durability. Upon completion, the citizens of Wheeling felt assured that the new firehouse would serve its citizens for decades to come. ■



Brick's sustainable attributes and cost-effective qualities allowed the project to meet all of the fire department's functional needs while remaining in budget.



Architect:

Williams Design Build

Manufacturer:

Glen-Gery Corporation

Distributor:

Illinois Brick Company

Mason Contractor:

Masonry Company Inc.

Photographers:

Steinkamp Photography

Williams Architects

Credits appear as submitted in entry form



PNC Triangle Park Pittsburgh, Pennsylvania

Clay Brick Pavers Transform a Small City Park into a Natural Urban Oasis

As the first new high-rise building in downtown Pittsburgh in 20 years, PNC Financial Services Group erected a Gold LEED-certified building that has become the signature green building for a company that has the most LEED-certified properties of any company in the world. Situated at its prominent front corner is the PNC Triangle Park.

This small triangular park is just over 10,000 square feet and provides a passive setting that not only serves as a public amenity but also as an extension of the company's corporate campus. From the pedestrian's perspective, the spine of the park and welcoming seating area under a custom shade structure lead the eye to the building's entrance.



The public park exploits a forced perspective to make the park look larger when viewing it from the building entry.

Linear patterns with increased spacing pull the pedestrian's eye into the park, and the long, narrow boardwalk clay pavers amplify this linear concept.



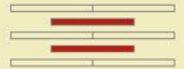
By using a pattern of three colors where at least three pavers in the same color are laid in a row, an elegant, elongated pattern is achieved. The colors of the pavers enhance the metal, concrete, and building materials. In short, the pavers tie the campus' ornate palette together.

The use of the clay brick in the center of the triangular park adds texture and rich color that will never fade. In addition, the quality of the material reflects the elegance of the building and makes the visitor feel like they've escaped from the busy city sidewalks.

To strengthen the park's sustainability, the architects employed a permeable brick pavement to reduce the amount of storm water run-off from more impervious hardscape surfaces. They were sourced from local origins, and their durability will ensure that the park endures for generations to come. ■



Linear patterns with increased spacing pull the pedestrian's eye into the park, and the long, narrow boardwalk clay pavers amplify this linear concept.



Landscape Architect:

LaQuatra Bonci Associates

Builder:

PJ Dick Incorporated

Manufacturer:

Whitacre-Greer

Mason Contractor:

Cost Construction

Photographers:

Haritan Photography

LaQuatra Bonci Associates

Credits appear as submitted in entry form



The Veridian Silver Spring, Maryland

A Brick Homage to Art Deco Style Proves Popular in Urban Setting

Situated in an emerging neighborhood and adjacent to a historic plant, the Veridian derives its form and choice of materials from the area's Art Deco/Art Moderne heritage and the formerly industrial district.

The apartment complex's primary elevation takes the form of a curve, echoing a nearby industrial plant's rounded front, and is recessed at regular intervals to provide balconies. The curve also has the added benefit of creating a large public plaza whose space energizes the streetscape and the building's ground level retail. The abundant use of orange-tone clay brick is one of the building's signature elements.

The architects chose a sophisticated palette of materials for the large apartment building, including a custom orange brick blend and a polychrome brick in 12-inch sizes. Given its large mass, the design team used a longer-than-standard brick to reinforce the horizontal lines. This larger, 12-inch brick also proved helpful in reaching the project's cost goals without having to resort to other materials.

Few people realize the multiplicity of colors, textures, and sizes that are available in clay brick. For



projects on a tight budget, brick's variety of colors and sizes gives the walls a pleasing visual depth while maintaining costs. By using brick on both the building's exterior as well as on the large plaza's main hardscape, the design teams successfully anchored the building to the site.

Brick—when paired with metal accents—lends itself to today's fashionable urban industrial aesthetic and is a popular style for young professionals seeking apartment living in an urban environment.

But brick is more than the style of the day. Brick provides a bridge between the past, present, and future. Unlike other materials, brick's enduring timelessness lends itself to a sense of authenticity and permanence. ■



For projects on a tight budget, brick's variety of colors and sizes give the walls a pleasing visual depth while maintaining costs.

Architect:

WDG

Manufacturers:

The Belden Brick Company

Taylor Clay Products Company

Distributor:

Potomac Valley Brick & Supply

Company

Mason Contractor:

United Masonry

Photographer:

Maxwell MacKenzie

Credits appear as submitted in entry form

Pierce/Lee House Cedartown, Georgia

170,000 Brick, 100 Structural Arches, Walls Three Brick Deep Make One Exceptional Home

The beauty of the Pierce/Lee house lies in its materials. Constructed almost entirely of structural clay brick masonry, the house demonstrates both the versatility of brick and the honesty of materials like few other buildings conceived and constructed in recent history.

The 3,500-square-foot house sits gracefully atop a small mountain in Georgia. The two-story house's exterior walls are three brick thick (12 inches) with interior walls two brick thick (8 inches). In addition, more than 100 structural arches span the openings of all windows, doors, and vaults throughout the home. By the end of construction, nearly 170,000 engineered modular brick were used.

The defining aspect of this design is that it is not replica-based or created from standard plans. While some may immediately assume that such custom craftsmanship would be cost prohibitive, both the human and material resources required for brick construction are a fraction of the cost for the less durable materials typically found in a conventional stick-built house.

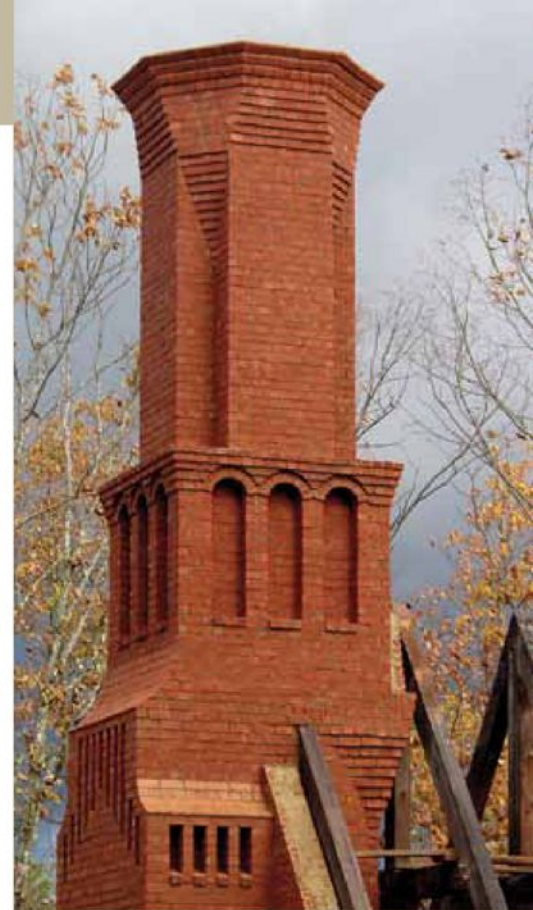
Seen from the designer's perspective, the rule of thumb applicable in their area is that one cubic foot of structural masonry costs approximately \$25.00 to build. For a 12-inch thick masonry wall, this cost can be measured in square feet—8-inch walls would be



$\frac{2}{3}$ of this. This approach to building makes obsolete the processes of framing, insulating, painting, and in many cases, trim. Therefore, the man hours and costs to manage the labor, logistics, and financing of these various elements are no longer required.

Finally, the projected lifespan of the house, which can be quantified in centuries rather than decades, has important sustainability and energy efficiency implications. The thermal mass of the brick structure and the partial sub-grade orientation of the terrace level account for significant heating and cooling advantages.

The end result is an honest structure, one that is made richer with age and can gracefully wear the passage of time. From aesthetics to functionality, nothing does what brick does so well. ■



The projected lifespan of the house is quantified in centuries rather than decades and has important sustainability and energy efficiency implications.



Designer:

Clay Chapman

Builder:

Period Architecture

Manufacturer:

General Shale Brick, Inc.

Distributor:

North Georgia Brick Company, Inc.

Mason Contractor:

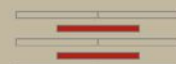
Period Architecture

Photographers:

Period Architecture

Mountain Photographics

Credits appear as submitted in entry form



The 2011 Brick in Architecture Award Winners

GOLD WINNERS

COMMERCIAL

Citi Field

Location: Flushing, New York
Architect: Populous
Manufacturer: General Shale Brick, Inc.
Distributor: Abbey Hart Brick Co.
Mason Contractor: International Concrete Products

EDUCATIONAL

George Washington Carver Academy

Location: Waterloo, Iowa
Architect: INVISION Architecture
Landscape Architect: Craig Ritland Landscape Architect
Builder: Larson Construction
Mason Contractor: Carl Schuler Masonry

Southern Polytechnic State University's Architectural Studio Addition (Building I)

Location: Marietta, Georgia
Architect: Cooper Carry
Associate Architect: Paul Cheeks Architects
Builder: DPR Construction, Inc.
Manufacturer: Endicott Clay Products Company
Distributor: Alley-Cassey Brick
Mason Contractor: O.L. Jollay, Inc.

STEPS Building, Lehigh University

Location: Bethlehem, Pennsylvania
Architect: Bohlin Cywinski Jackson
Landscape Architect: Lager Raabe Skafte Landscape Architects, Inc.
Builder: Alvin H. Butz, Inc.
Manufacturer: The Belden Brick Company
Mason Contractor: Caretti, Inc.

University of Notre Dame, Eck Hall of Law

Location: Notre Dame, Indiana
Architect: The S/L/A/M Collaborative
Manufacturer: The Belden Brick Company
Mason Contractor: Ziolkowski Construction, Inc.

HEALTH CARE FACILITIES

United Cerebral Palsy Diagnostic and Treatment Center

Location: Central Islip, New York
Architect: Perkins Eastman Architects
Manufacturer: Endicott Clay Products Company
Mason Contractor: Giaquinto Masonry, Inc.

HOUSES OF WORSHIP

Korean Central Presbyterian Church

Location: Centreville, Virginia
Architect: The Hughes Group
Manufacturer: The Belden Brick Company
Distributor: Potomac Valley Brick & Supply Co.
Mason Contractor: Calvert Masonry

MUNICIPAL/GOVERNMENT/CIVIC

City of Tolleson Fire Station + Administration

Location: Tolleson, Arizona
Architect: LEA-Architects, LLC
Landscape Architect: Colwell:Shelor
Associate Architect: LEA-Architects, LLC
Builder: Adolfsen & Peterson Construction
Mason Contractor: Huff & Sons Construction

PAVING & LANDSCAPE ARCHITECTURE

Portland Mall Revitalization

Location: Portland, Oregon
Architect: ZGF Architects LLP
Builder: Stacy and Witbeck / Kiewit Construction Group, Inc. (joint venture)
Mason Contractor: Schonert & Associates, Inc. / Raimore Construction LLC

RESIDENTIAL – MULTI-FAMILY

Mill District City Apartments

Location: Minneapolis, Minnesota
Architect: BKV Group
Builder: Frana Companies Inc.
Mason Contractor: Northland Concrete & Masonry, LLC

RESIDENTIAL – SINGLE FAMILY

Hudson Valley Georgian

Location: Dobbs Ferry, New York
Architect: Hilton-VanderHorn, Architects
Landscape Architect: Rutherford Associates, P.C.
Builder: Significant Homes LLC
Manufacturer: Redland Brick Inc.
Mason Contractor: V & Y Construction, LLC

SILVER WINNERS

COMMERCIAL

Harley-Davidson Museum

Location: Milwaukee, Wisconsin
Architect: Pentagram Architects/Biber Architects
Landscape Architect: Oslund + Associates Landscape Architects
Associate Architect: HGA
Builder: MA Mortenson
Manufacturer: Elgin Butler Company
Mason Contractor: Kinateder Masonry

EDUCATIONAL

Butler College Dormitories, Princeton University

Location: Princeton, New Jersey
Architect: PEI COBB FREED & PARTNERS Architects LLP
Landscape Architect: Michael Van Valkenburgh Associates Inc.
Builder: Turner Construction Company
Distributor: Belden Tri-State Building Materials
Mason Contractor: D. M. Sabia & CO

Cuisinart Center for Culinary Excellence

Location: Providence, Rhode Island
Architect: Tsoi/Kobus & Associates
Landscape Architect: Stephen Stimson Associates
Builder: Agostini Construction Company
Manufacturer: Endicott Clay Products Company
Distributor: Spaulding Brick Company, Inc.
Mason Contractor: Costa Brothers Masonry

George Dean Johnson, Jr. College of Business

Administration and Economics

Location: Spartanburg, South Carolina
Architect: McMillan Pazdan Smith Architecture
Landscape Architect: LandArt Design Group
Associate Architect: David M. Schwarz Architects
Builder: The Linbeck Group
Manufacturer: Boral Bricks, Inc.
Mason Contractor: Cherokee Masonry

Sherman and Gloria H. Cohen Career Center

Location: Williamsburg, Virginia
Architect: Cunningham | Quill Architects
Landscape Architect: Lila Fendrick Landscape Architecture
Builder: Whiting-Turner Contracting Company
Manufacturer: Old Virginia Brick Company
Distributor: Riverside Brick & Supply Co., Inc.
Mason Contractor: Chesapeake Masonry Corporation

University of Texas at Arlington - ERB Building

Location: Arlington, Texas
Architect: ZGF Architects LLP
Associate Architect: PageSoutherlandPage
Manufacturer: Acme Brick Company
Mason Contractor: Clayton Masonry

HEALTH CARE FACILITIES

Great Lakes Cancer Institute at Clarkston - McLaren Health Care

Location: Clarkston, Michigan
Architect: RTKL Associates Inc.
Landscape Architect: Professional Engineering Associates (PEA)
Builder: Cunningham-Limp, Inc.
Manufacturer: Glen-Gery Corporation
Mason Contractor: Pomponio Construction, Inc.

HOUSES OF WORSHIP

Community of the Holy Spirit Convent

Location: New York, New York
Architect: BKSK Architects
Landscape Architect: Denis Gray Horticulture
Builder: ICS Builders
Manufacturer: Jenkins Brick Company
Mason Contractor: MarinaRan Consulting, LLC

MUNICIPAL/GOVERNMENT/CIVIC

King's Fork Public Safety

Location: Suffolk, Virginia
Architect: RRMM Architects
Manufacturers: Taylor Clay Products Company & Carolina Ceramics Brick Co.
Distributor: Batchelder & Collins, Inc.
Mason Contractor: J.D. Hammond, Inc.

The 2011 Brick in Architecture Award Winners

PAVING & LANDSCAPE ARCHITECTURE

The Plaza at Kenan Hall/Flagler College
Location: St. Augustine, Florida
Landscape Architect: Hauber Fowler & Associates, LLC
Builder: A.D. Davis Construction
Manufacturer: Pine Hall Brick Company, Inc.
Distributor: Oldcastle Coastal - Jacksonville
Mason Contractor: Paverscape Inc.

RESIDENTIAL – MULTI-FAMILY

Roscoe C Brown Apartments
Location: Bronx, New York
Architect: Meltzer Mandl Architects
Builder: Mega Contracting
Manufacturer: Glen-Gery Corporation
Mason Contractor: Flagge Contracting

RESIDENTIAL – SINGLE FAMILY

French Manor Home
Location: Winnetka, Illinois
Architect: Melichar Architects
Builder: Tiedmann Enterprises
Manufacturer: Redland Brick Inc.
Distributor: Illinois Brick Company
Mason Contractor: Fontana Masonry

BRONZE WINNERS

COMMERCIAL

BB&T Ballpark
Location: Winston-Salem, North Carolina
Architect: CJMW Architecture
Landscape Architect: Stimmel Associates, PA
Associate Architect: 360 Architecture
Builder: Samet Corporation
Manufacturer: Pine Hall Brick Company, Inc.
Mason Contractor: Proffit Brick & Stone Work Inc.

Raleigh Convention Center
Location: Raleigh, North Carolina
Architects: O'Brien Atkins Associates,
PA and Clearscapes, &
PA in association with TVS Design
Mason Contractor: Brodie Contractors, Inc.

EDUCATIONAL

Barton College Studio Theater
Location: Wilson, North Carolina
Architect: Pearce Brinkley Cease + Lee
Manufacturer: Taylor Clay Products Company
Distributor: Custom Brick Company, Inc.
Mason Contractor: M. C. Masonry

CSM Wellness Center
Location: Leonardtown, Maryland
Architect: Grimm + Parker Architects
Manufacturer: Redland Brick Inc.
Distributor: Potomac Valley Brick & Supply Company
Mason Contractor: Guy & Guy Masonry

Hopkins School, Thompson Hall
Location: New Haven, Connecticut
Architect: The S/L/A/M Collaborative
Manufacturers: General Shale Brick, Inc. &
Redland Brick Inc.
Mason Contractor: Sebastian J. Damiata Masonry

MIT Ashdown House Graduate Student Housing
Location: Cambridge, Massachusetts
Architect: William Rawn Associates, Architects, Inc.
Landscape Architect: Richard Burck Associates, Inc.
Builder: Bovis Lend Lease
Manufacturer: Glen-Gery Corporation
Distributor: Spaulding Brick Company, Inc.
Mason Contractor: NER Construction Management, Inc.

Post Road School
Location: White Plains, New York
Architect: KG&D Architects & Engineers, PC
Manufacturer: The Belden Brick Company
Mason Contractor: MPCC Corporation

School of Education
Location: Williamsburg, Virginia
Architect: Sasaki Associates, Inc.
Landscape Architect: Sasaki Associates, Inc.
Associate Architect: Boynton-Rothschild-Rowland Architects PC
Builder: Barton Marlow Company
Manufacturer: The Belden Brick Company
Distributor: Batchelder & Collins, Inc.
Mason Contractor: Coastal Masonry

University of Michigan Stadium Expansion and Renovation
Location: Ann Arbor, Michigan
Architect: HNTB
Builder: Barton Malow Company
Manufacturer: The Belden Brick Company
Distributor: The Belden Brick Sales Company
Mason Contractors: Leidal and Hart Mason Contractors,
Boettcher Masonry, &
Baker Construction

Washington University Early Childhood Learning Center
Location: St. Louis, Missouri
Architect: Ross Barney Architects
Landscape Architect: Oslund Associates
Builder: United Construction Enterprise Co.
Distributor: Acme Brick Company
Mason Contractor: John J. Smith Masonry Company

HEALTH CARE FACILITIES

The Wilmer Eye Institute - Johns Hopkins Hospital
Location: Baltimore, Maryland
Architect: Ayers Saint Gross
Landscape Architect: Oasis Design Group
Associate Architect: Wilmot Sanz
Builder: Whiting Turner Contracting Company
Manufacturer: Glen-Gery Corporation
Distributor: L & L Supply Corporation
Mason Contractor: Manganaro

HOUSES OF WORSHIP

St. Patrick Catholic Church
Location: Iowa City, Iowa
Architect: Neumann Monson Architect
Landscape Architect: MMS Consultants
Associate Architect: BVH Architects
Builder: McComas Lacina Construction
Mason Contractor: Yoder Masonry

MUNICIPAL/GOVERNMENT/CIVIC

Alta Mesa Pump Station
Location: Dallas, Texas
Architect: CamargoCopeland Architects, LLP
Manufacturer: Acme Brick Company
Mason Contractor: Masonry and Stucco Services, Inc.

PAVING & LANDSCAPE ARCHITECTURE

Pack Square Park
Location: Asheville, North Carolina
Landscape Architect: LaQuatra Bonci Associates
Associate Architect: ColeJenest and Stone
Builder: ValleyCrest Landscape Development
Manufacturer: Pine Hall Brick Company, Inc.
Mason Contractor: ValleyCrest Landscape Development

RESIDENTIAL – MULTI-FAMILY

The Lyric at Carleton Place
Location: St. Paul, Minnesota
Architect: BKV Group
Builder: Jaeger Construction, LLC
Manufacturer: The Belden Brick Company
Mason Contractor: Hollenback & Nelson

RESIDENTIAL – SINGLE FAMILY

Lewisburg Residence
Location: Lewisburg, Pennsylvania
Architect: Archer & Buchanan Architecture, Ltd.
Landscape Architect: Landstudies Inc.
Builder: CWD Distinctive Homes, LLC
Manufacturer: Glen-Gery Corporation
Mason Contractor: Preston Boop

All credit information appears as it was provided in the entry by the architect or BIA member company.

A special thank you to this year's judges:

Eugenia Brieva – QPK Design
Bobby Eichholz – Rialto Studio, Inc.
Walter Jennings – Maurice Jennings Architect
Paul Matheny – Matheny Goldmon Architects, AIA



web

Scan the code to see more pictures in the Brick Photo Gallery. To download a free mobile application, go to <http://scan.mobi> on your mobile device or text 'SCAN' to 72267.

Review the following learning objectives to focus your study while reading the article below. To receive credit, follow the instructions found at the end of the article which direct you to complete the AIA questionnaire found at www.gobrick.com/ArchitectCredit.

Learning Objectives

After reading this article you should be able to:

1. Understand how brick manufacturing affects performance.
2. Better comprehend what influences brick durability and appearance.
3. Specify and distinguish between different kinds of brick.
4. Identify the primary details necessary to produce durable brickwork.

The beauty and inherent durability of brick and brickwork can be attributed to the raw materials and processes that are used to manufacture each unit, and to the detailing and construction integrating them into the structure. Each of these aspects is important and plays a critical role in the performance of the brickwork. Specifying that the brick comply with the proper standard and designation within that standard ensures the former. Proper detailing and construction along with minimal maintenance ensures the latter. Both are required.

Improper selection and specification of brick can affect the long-term durability of the brickwork in which they are installed, even though they may be detailed and installed correctly. Likewise, even though the brick provided are specified properly, if the brickwork in which they are installed is not detailed or constructed properly, the longevity of the brickwork can be compromised. Both proper specification of the brick and proper detailing and construction of the brickwork are required to ensure the durability and beauty of brick.

MANUFACTURING

To properly specify brick, it is important to understand the manufacturing process used to create them. A better comprehension of this process gives one more perspective on brick's appearance and inherent durability.

Materials. Brick are made from clay or shale, sometimes with additives included, and are often coated with sand or mineral oxides. In brick manufacturing, little is wasted; virtually each pound of clay or shale mined ends up in a brick. Clay and shale are sedimentary mineral deposits. As a result, the chemical composition of the raw materials in a pit or quarry changes with the depth of the deposit and its horizontal location. Manufacturers may blend raw materials from several pits in order to attain the best consistency and to maximize the productive life of each pit. In spite of all this care, however, some natural variation is unavoidable, and this is reflected in differences in color each time a brick is manufactured.

Chemical composition influences color along with the particle size of the material. Iron compounds yield red and orange hues. Manganese, often an additive, results in brown hues. Kaolin produces white/gray hues. Fire clay provides a buff or yellow hue. Oxides can be used to produce other colors. The saturation or intensity of the color is influenced by the firing temperatures and the level of oxygen in the kiln. Because color is inherent in the raw materials, there is no fading of the color over time.

Forming. There are two primary methods used by manufacturers in the United States to form brick: molding and extruding. Molded brick often have folds and imperfections on their surfaces and are characterized by soft, rounded edges and corners. The molds are filled with the prepared raw materials and "struck" to remove the excess clay or shale off the top.



Figure 1. Molded brick

The prepared clay or shale is kept from sticking to the surfaces of the molds by treating the molds with either sand or water. Sand-struck brick have a coating of sand on the surfaces that make contact with the mold. Some of this sand may come off during subsequent handling and cleaning. Water-struck brick have a slightly smooth, velvety texture. Molded brick are shown in Figure 1.

Approximately 90% of domestic brick production is extruded. In this process the prepared raw materials are forced through a die (like toothpaste from a tube) forming a continuous, rectangular "column." The dimensions coming out of the extruder, or die, typically establish the width and length of the brick. The brick height is set when the column is cut into brick-sized pieces by wires or knives. Since the green brick (just-formed brick) shrink when they are fired, they are made five to ten percent larger than the finished product.

As the extruded clay column exits the die, a variety of textures may be created, ranging from a smooth die-skin finish that receives no treatment to extremely rough surfaces. If a wire is used to remove the die-skin surface, as shown in Figure 2, a velour (wire-cut) texture results. This removed layer of clay may be placed back on the column in a random manner to add more texture or recycled back into the manufacturing process. Other surface treatment options include brushing, scratching, rolling, or tearing the surface of the brick. The process of cutting the column into brick-sized pieces with wires or knives may include placing paper under the wire or blade to create rounded edges. The brick may be tumbled prior to firing to soften the edges and corners or rumbled after firing to create chips along the edges. Both of these treatments create cuts and gouges in the brick that result in a used appearance.



Figure 2. Velour brick

Clay and shale mixtures have many characteristics which affect their ability to be formed into brick which affects their final appearance. Plasticity is the ability of a clay-water mass with proper water content to be shaped and to hold that shape indefinitely after the forming forces are removed.

In the extrusion process, the clay and shale mixtures should have a high plasticity. Extruded brick must not deform when they are stacked directly on kiln cars after they are formed and cut. Brick can be stacked up to 14 high on the kiln car. Extruded brick near the bottom of the stack must withstand the compressive and shear loads imposed on them from the green brick above without deforming. Adequately mixing and maintaining water content in the range of 10 to 15 percent helps achieve the desired plasticity. De-airing the clay or shale mixture in a vacuum immediately prior to extrusion removes air holes and bubbles, giving the clay increased density, resulting in greater strength.

Workability refers to the ease with which a moist clay mass conforms to the mold. The clay or shale mixture placed in molds to form molded brick must easily flow into all parts of the mold. Plasticity is not as important for molded brick since the molds are emptied onto a pallet where the brick are allowed to adequately dry before stacking for the kiln. Workability is more important and is typically achieved by increasing water content to 20 to 30 percent. This results in more shrinkage and results in the wider range of dimensions typically associated with molded brick.

Coatings. Many brick have coatings applied to the stretcher face and one or both ends during the manufacturing process. There are many types of coatings: sand, engobes, and glazes, and these can add both color and texture. Coatings may match or contrast the body color and may have full or partial coverage of the faces and ends of the brick. Typically, other than the sand in the mold box, the only coating applied to molded brick is a glaze, though this is rare. The application of a coating to extruded brick is shown in Figure 3.



Figure 3. Application of coating to extruded brick

Brick without coatings are said to be "through-body" brick. That is, the surface color is the same as the color of the materials inside of the brick.

Firing. Most brick are fired in either a tunnel or beehive kiln. Both are named for their shape. Tunnel kilns are typically around 400 feet or more long and, as their name implies, form a tunnel through which the brick move as they are fired. Such kilns typically operate around the clock, seven days a week. Brick stacked on kiln cars move through temperature zones inside the tunnel kiln. In the preheat zone of the tunnel, the temperature gradually increases as the brick-laden kiln cars progress through the kiln. Once they reach the soaking zone of the tunnel, the temperature is held steady for a certain period of time. The last portion of the kiln is the cooling zone where the temperature is slowly decreased. Usually the waste heat from cooling the brick is used to heat green brick in the dryers. Each zone in a kiln is important to the durability of the brick. Too little time in the soak zone and the clay does not meet maturity. Too little time in the cooling zone and the brick may break apart. Modern brick plants have computer controls that determine each step.



Figure 4. Brick exiting tunnel kiln



Figure 5. Brick being stacked in beehive kiln

Beehive kilns are circular in cross-section with a dome roof. The brick are loaded inside the beehive kiln manually when the kiln is cold. Once loaded, the openings are sealed and the entire stack of brick are heated and cooled over several days. Once cooled, the kiln is emptied manually. Brick exiting from a tunnel kiln are shown in Figure 4; brick being stacked in a beehive kiln are shown in Figure 5.

Two features of firing affect the color of the fired brick: temperature and amount of oxygen in the kiln. As a brick is subject to higher temperatures its color tends to darken. The absence of oxygen in the kiln (flashing) changes the chemical reaction of the iron oxides and results in darker surface colors; the red turns to black, as hematite turns to magnetite. Removing oxygen throughout the cycle produces blues and blacks. Adding oxygen back into the kiln during specific points of the cooling phase can change browns to yellows at higher temperatures and can produce brilliant reds at slightly lower temperatures. Removing oxygen near the middle of the cooling phase can produce pinks and grays.

The composition of a green, unfired brick changes as it is fired to give it the strength and durability associated with brick. Clay, unlike metal, softens slowly and melts or vitrifies gradually when subjected to rising temperatures. This physical change, referred to as vitrification, allows clay to become a hard, denser mass and occurs in the soak zone of the kiln. The melting of clay takes place in three stages: 1) incipient fusion, when clay particles become sufficiently soft to stick together in a mass when cooled; 2) vitrification, when extensive fluxing occurs and the mass becomes tight, solid, and nonabsorbent; and 3) viscous fusion, when the clay mass breaks down and becomes molten, leading to a deformed shape. The key to the firing process for brick is to control the temperature and the amount of time brick are exposed to a given temperature in the kiln so that incipient fusion and partial vitrification occur but viscous fusion is avoided. Doing so produces a structure in the brick which is a mixture of several types of glass mingled together with small new crystals that were formed during heating and with residual clay crystals that have not melted. Partially vitrified clay is what gives brick its compressive strength. The term clinker brick refers to a brick that has undergone some viscous fusion and has a warped final shape that is sometimes considered a desirable architectural feature.

In the cooling zone of the kiln, heat is slowly removed from the brick so that the cooler temperature on the outside of the brick does not outpace the warmer temperature on the inside of the brick. Air circulation causes convective heat transfer between the draft of the kiln and the exposed surfaces of the brick. Within the brick, heat is removed by conduction as it moves from the inside to the outside of the brick. The cooling zone allows conduction to occur at a controlled rate such that the brick is not over stressed and the particles maintain contact with each other.

Each of the processes in brickmaking results in brick that is aesthetically pleasing yet innately durable. The brick manufacturer controls each of these stages to create a unique product while still adhering to material standard requirements.

ASTM STANDARD SPECIFICATIONS FOR BRICK

Standards ensure that a product is sufficient for the market. The ASTM standards for brick used on buildings and other above-grade applications include:

- C62 Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale)
- C126 Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
- C216 Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)
- C652 Standard Specification for Hollow Brick (Hollow Masonry Units Made from Clay or Shale)
- C1088 Standard Specification for Thin Veneer Brick Units Made from Clay or Shale
- C1405 Standard Specification for Glazed Brick (Single-Fired, Solid Brick Units)

Each of these standards has multiple designations for both durability and for appearance. While the nomenclature may change from standard to standard, there is some consistency in the designations.

Durability. Table 1 indicates the durability designation associated with each standard. Durability is established by a series of tests which reveal physical properties.

ASTM Standard	Durability Designation	More Severe Exposure		Less Severe Exposure
C62 Building Brick	Grade	SW	MW	NW
C126 Glazed Brick	Established by C216, C652, or C1088			
C216 Facing Brick	Grade	SW	–	MW
C652 Hollow Brick	Grade	SW	–	MW
C1088 Thin Veneer Brick	Grade	Exterior	–	Interior
C1405 Glazed Brick, Single-fired	Class	Exterior	–	Interior

Table 1. Brick Durability Designations

The letters SW, MW, and NW indicate the following exposure conditions:

SW indicates **severe weathering**. SW is the default value. Brick used in exterior applications in all but the most southern parts of Florida, Texas, Arizona, and California should be specified as “Grade SW.”

MW indicates **moderate weathering**.

NW indicates negligible or **no weathering**.

There are three physical properties used to establish the durability designation of a brick: minimum compressive strength, maximum boiling water absorption, and maximum saturation coefficient. Table 2 indicates the values required for a brick to attain each durability designation. Both individual and average values are included because the sample is representative of all colors and sizes.

A brick’s compressive strength is determined by subjecting five dry half-brick samples to a compression load distributed across the bedding surface of the brick (the load is applied in the direction of the height of the brick). The load on each brick is increased until the maximum load supported by the brick is achieved. Typically the brick fails with

ASTM Standard	Durability Designation	Minimum Compressive Strength, Gross Area psi		Maximum Five-Hour Boiling Absorption, percent		Maximum Saturation Coefficient	
		Average of 5 brick	Individ.	Average of 5 brick	Individ.	Average of 5 brick	Individ.
C62 Building Brick	Grade SW	3000	2500	17.0	20.0	0.78	0.80
	Grade MW	2500	2200	22.0	25.0	0.88	0.90
	Grade NW	1500	1250	No Limit	No Limit	No Limit	No Limit
C216 Facing Brick	Grade SW	3000	2500	17.0	20.0	0.78	0.80
	Grade MW	2500	2200	22.0	25.0	0.88	0.90
C652 Hollow Brick	Grade SW	3000	2500	17.0	20.0	0.78	0.80
	Grade MW	2500	2200	22.0	25.0	0.88	0.90
C1088 Thin Veneer Brick	Grade Ext.	--	--	17.0	20.0	0.78	0.80
	Grade Int.	--	--	22.0	25.0	0.88	0.90
C1405 Glazed Brick, Single-fired	Class Ext.	6000	5600	--	--	0.78	0.80
	Class Int.	3000	2500	--	--	--	--

Table 2. Physical Properties of Brick Designations

the formation of vertical cracks. The compressive strength is the peak load divided by the area over which the load is applied. Except for thin brick, all brick must meet a minimum compressive strength requirement. While compressive strength is a measure used in structural applications, it is used here to determine that a brick has met some minimum level of partial vitrification. This property also is used in combination with absorption and saturation coefficient to assess durability. Specifying a very high compressive strength for a brick does not guarantee that it is durable; a combination of requirements determines this. In fact, limiting brick to a compression strength that is higher than required by the ASTM standards for brick eliminates a lot of very durable brick from consideration.

Water absorption by brick is a natural phenomenon. Boiling water absorption and saturation coefficient both are related to absorption. The amount of water a brick absorbs is related to the quantity of pores and the conditions of saturation. Pores in brick can range in size from a few tenths of one micron to several hundred microns. One inch is equal to about 25,400 microns. The measure of the amount of saturation is simply the percentage of weight gain of a dry brick on immersion in water for a defined period. These periods for saturation have been standardized as 24 hours in room temperature or “cold” water (CWA) and five hours in boiling water (BWA). The 24-hour CWA test saturates most of the “small” pores in the brick while the five-hour boiling test brings the brick to near 100 percent saturation. Small pores in the micron size range are called capillaries and exert a force or suction on water. A brick with small capillary pores will absorb water and wick up mortar more rapidly than a brick with larger pores. The ratio of cold to boiled water absorption (CWA/BWA) is referred to as the saturation coefficient. Since CWA represents absorption by “small” pores and BWA represents “total” absorption by both small and large pores, then the saturation coefficient is a number that reflects the fraction of small pores in the brick.

It is important to realize that the durability of some brick are established by means other than the absorption properties. Alternates and alternatives in ASTM standards qualify brick that are known to perform well in service. A brick qualifying for a designation by an alternate or alternative does not signify that it is of a lower quality. Saturation coefficient is not necessarily a good predictor of durability for brick with low absorption. Thus if such a brick meeting ASTM C216 has a CWA of no more than 8.0 percent, then it qualifies as a Grade SW brick. Likewise, if a brick qualifying for ASTM C216 can pass a 50-cycle freezing and thawing test, then it is designated as a Grade SW brick. In both cases, the brick also must meet the minimum compressive strength requirements established for Grade SW.

Appearance. Appearance attributes addressed in the standard include size variation, distortion (warpage of the exposed surface), out of square, chipping, and imperfections visible from a prescribed distance. Table 3 indicates the classification and nomenclature used in each standard. For the Type classification, the first two letters relate to the standard: FB for facing brick, HB for hollow brick, and TB for thin veneer brick. The letter suffixes

S, X, A, and B indicate the following control of appearance features:

S indicates brick for general use, the **standard** requirement for the industry. The S designation is the default when no Type is stipulated for the project.

X indicates a tighter control of appearance-related attributes: more stringent dimensional tolerances, fewer chips, smaller cracks. This is often referred to as **extreme** or **extra** stringent requirements.

A indicates a brick with a wider range of appearance requirements, usually including a desired non-uniformity in size and texture. These requirements cannot be more stringent than those for the S classification. The A implies an **aesthetic** or **architectural** component, a component that can only be established with a sample.

B indicates a **building** brick, where appearance attributes are not required.

ASTM Standard	Appearance Classification Name	More Stringent Requirements		Less Stringent Requirements	
C62 Building Brick	None	None			
C126 Glazed Brick	Grade	SS	-	S	
C216 Facing Brick	Type	FBX	FBS	FBA	
C652 Hollow Brick	Type	HBX	HBS HBA	HBB	
C1088 Thin Veneer Brick	Type	TBX	TBS	TBA	
C1405 Glazed Brick, Single-fired	Grade	SS	-	S	

Table 3. Brick Appearance Classifications

For the Grade designation in C1405, the letters S and SS indicate the following control of appearance features:

S indicates **select** and is the default requirement for general use.

SS indicates **select sized or ground edge** and has more stringent requirements for dimensional variation than S.

Examples of Brick and Appearance Designations. Type _BS brick are used for general masonry construction. Most bond patterns and mortar joint treatments can be used. Figure 6 shows an extruded brick with a wide color range that meets Type FBS.

Type _BX are used where the tighter dimensional tolerances are needed. This includes brickwork laid in stack bond, in soldier courses, or in intricate bond patterns, with raked joints and where sections of masonry have small dimensions. Figure 7 is an extruded brick, Type FBX, with a die skin laid with a raked joint.

Type _BA brick exhibit a unique appearance. They are most often used in residential construction, and are appropriate for commercial and institutional applications, especially when a colonial look is desired. Figure 8 shows a sand-struck, hand-molded Type FBA brick that is flashed.

Because tolerances for _BX brick are the most stringent, it is easy to assume that a Type _BX brick is “better” than a Type _BS brick or, certainly than a Type _BA brick. Type FBX



Figure 6. Extruded brick, Type FBS, with a velour texture



Figure 7. Extruded brick, Type FBX, with a die skin



Figure 8. Sand-struck, hand-molded Type FBA brick

brick typically have a “machined” look. If you were designing a facility adjacent to Independence Hall, would a brick that looked machined, a Type FBX brick, be architecturally and historically appropriate? Likely not, because the appearance of a Type FBX brick does not match the brick used to construct Independence Hall. What does match is a Type FBA brick. One “Type” is not better than another; one Type is more suitable for certain architectural styles than another. Designing a stack bond or Art Deco façade? Use Type FBX. Building next to Monticello? Use Type FBA. For most other architectural styles, Type FBS is usually the right choice.

SPECIFYING BRICK

Brick used in an exterior application should be specified as Grade SW or Class Exterior.

Appearance items to specify, in addition to the designation, include the color, color range, and texture. This is best done by identifying a particular brick by name from a manufacturer or by reference to a sample. Dimensions of the brick should also

be specified. The dimensions to be specified are not nominal dimensions, which include the addition of a mortar joint, but the size that is desired. The sequence for brick dimensions is width by height by length. Never use size names (modular, econo, closure) to specify size since the names vary from manufacturer to manufacturer.

The ASTM standards require that the stretcher face and one end have the specified color and texture. This is important to remember with brick that have coatings or textures. If other surfaces are to be exposed when the brick is in place, those surfaces must be identified and the finish specified. Of course, any shape other than that of a rectangular prism must be specified and likely must be specially manufactured as a shape.

ASTM standards define a solid masonry unit as one with up to 25 percent void area in the surface with voids (cores or deep frogs). The brick manufacturer has the option to include cores or frogs in the bed surface of the brick. If a brick without cores or frogs is needed, this should also be specified as an uncored, unfroged unit.

DETAILING AND INSTALLATION

While by no means exhaustive, the list below identifies the primary considerations for detailing and constructing durable, beautiful brickwork. These considerations are presented from the perspective of the architect. While each has been generally categorized as affecting either the durability or beauty of the brickwork, all will affect both to some extent. For more specific recommendations on a given consideration, the Brick Industry Association (BIA) *Technical Notes* cited should be consulted.

Durability

1. Detail top of brickwork to be covered or sloped. Where brickwork in a wall is not vertical, either other materials such as metal or precast concrete should cover the brick or the brick should be sloped no less than 15 degrees from horizontal. This protects the brick below and allows for fast drainage of water. This condition is typically found at copings and window sills but can also be found in reveals and setbacks. And don't forget flashing—see #6. Refer to BIA *Technical Notes* 7, 36, and 36A.
2. Specify to fill all mortar joints with mortar. All mortar joints that are designed to receive mortar should be filled. This avoids the formation of air pockets which can harbor water and result in leaks in brickwork. For head (vertical) joints, the ends of the brick should be completely buttered with mortar before shoving in place. Refer to BIA *Technical Note* 7B.
3. Specify appropriate mortar. Generally this means requiring a Type N mortar. Refer to BIA *Technical Notes* 8 and 8B.
4. Specify a clean air space. While no air space is completely void of mortar droppings, to

the greatest extent possible, they should be prevented from falling into the air space or cavity. Refer to BIA *Technical Note* 7B.

5. Specify appropriate masonry accessories. Where required, specify the proper size of lintels, shelf angles, veneer anchors, and reinforcement. Keep in mind the minimum spacing and clearances for these items. Refer to BIA *Technical Notes* 17A, 31B, and 44B.
6. Detail through-wall flashing and weeps. Flashing and weeps channel water out of the cavity and away from the brickwork. Flashing and weeps should be provided at wall bases, window sills, heads of openings, shelf angles, projections, recessed bay windows, chimneys, under coping, tops of walls, and roofs. Refer to BIA *Technical Notes* 7, 7A, and 7B.
7. Detail expansion joints. Incorporate vertical and horizontal expansion joints into the brickwork at the appropriate spacing and locations. Place at or near corners, offsets, setbacks, wall intersections, changes in wall height, and where the backing or support changes. Place below shelf angles. Refer to BIA *Technical Note* 18A.
8. Specify tooled mortar joints. When “thumbprint” hard, mortar joints should be tooled or struck with a jointer to consolidate the mortar. Concave, “V,” and grapevine joints are best to resist water penetration. Refer to BIA *Technical Note* 7B.
9. When necessary, specify hot or cold weather construction practices. When temperatures are below 40°F or above 100°F, preparation, construction, and protection requirements for brickwork may have to be altered. Refer to BIA *Technical Note* 1.
10. Specify that no impermeable coatings be applied to brickwork. In most cases, BIA advises against the use of coatings on brick. If coatings are applied, they should be vapor permeable to allow moisture out of the brickwork. Refer to BIA *Technical Notes* 6 and 6A.

Beauty

11. Use the brick module to design and layout buildings. Design and construct the building plans, elevations, and masonry openings using the brick module which is usually 8 in. (200 mm). Refer to BIA *Technical Note* 10.
12. Specify to store materials off the ground during construction. Brick and mortar materials stored directly on the ground can wick up salts and other contaminants. Refer to BIA *Technical Notes* 7B and 23A.
13. Specify to cover materials during construction. Brick, mortar, and sand should be covered during construction to prevent water absorption. Discolored mortar joints or brick often occur when not covered. Refer to BIA *Technical Notes* 7B and 23A.
14. Specify to cover top of brickwork during construction. The tops of unfinished brickwork should be covered during construction to prevent water entry and resulting efflorescence. Refer to BIA *Technical Notes* 7B and 23A.
15. Specify blending of brick as they are laid. The mason should blend the brick by using brick from different cubes of brick as they are placed in the wall. This minimizes a splotchy appearance in the finished brickwork. Refer to BIA *Technical Note* 7B.
16. Specify proper cleaning of brickwork. Only the brick manufacturer's recommended cleaning procedure should be specified. Do not specify unbuffered muriatic acid. Specify that the brickwork be thoroughly saturated before and thoroughly rinsed after application of any cleaner. Refer to BIA *Technical Note* 20.

Both Durability and Beauty

17. Construct and approve mock-up panel. A mock-up panel allows all parties to view a full-scale example of the brickwork prior to its construction. Through this, all of the above considerations can be agreed upon before construction proceeds. Refer to BIA *Technical Note* 9B.

Summary

Brickwork is renowned for its beauty as well as its durability. Achieving these results requires proper specifying of the brick in addition to proper detailing and construction. Both are required. Doing so ensures the durability and beauty of brickwork for generations to come.



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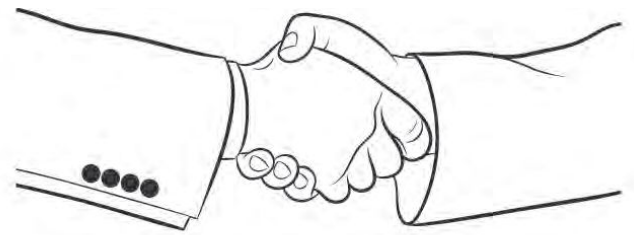
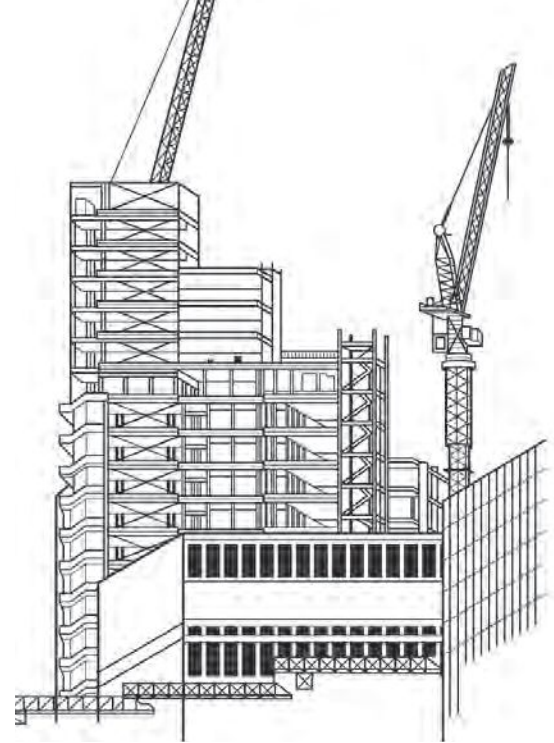
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→ NUMBERS

Missed Connections

THE NEW AIA STALLED PROJECTS DATABASE SEEKS TO INTRODUCE FRUSTRATED DEVELOPERS TO CAPITAL INVESTORS.

TEXT BY KRISTON CAPPS
ILLUSTRATIONS BY JAMESON SIMPSON



15

NUMBER OF STALLED-PROJECT PROFILES

SOURCE: AIA

19

NUMBER OF INVESTOR PROFILES

SOURCE: AIA

12

NUMBER OF STATES WHERE STALLED PROJECTS ARE FOUND

SOURCE: AIA

\$290,617,000

TOTAL LISTED FINANCING SOUGHT BY DATABASE PROJECTS

\$6,846,000,000

TOTAL LISTED FINANCING OFFERED BY DATABASE INVESTORS

THE LOFTS AT MARBURY VILLAGE, a mixed-use commercial and residential development planned for Augusta, Ga., is typical of new developments in this economy. It's a 42-unit apartment building designed with renters in mind. It's an urban-in-fill project intended to spark downtown revitalization. And currently, it's stalled.

The Stalled Projects Database, a project launched by the AIA in November, seeks to match investors with builders in an effort to make a deal. The goal is to pair the developers of projects such as the Lofts at Marbury Village—whose construction cannot begin without the equity to secure a construction loan—with investment firms holding capital.

The launch follows an announcement by the AIA in June at the Clinton Global Initiative America conference and subsequent buildout. The AIA then began soliciting projects on Nov. 4. Since that time, more than a dozen developers and owners have added stalled projects to the database, and almost 20 investors have posted their profiles.

The stalled projects hail from Florida to Minnesota and include new developments and retrofits. The projects range in size from a 1,800-square-foot residence to a 15.5 million-square-foot plot of land. The investors are similarly diverse, with capital firms based in New York but also San Francisco, Phoenix, and even China. Funds for construction financing, debt structuring, real-estate services, and other functions total nearly \$7 billion.

In a trying economy, the Stalled Projects Database may be just the matchmaker some developers need. □

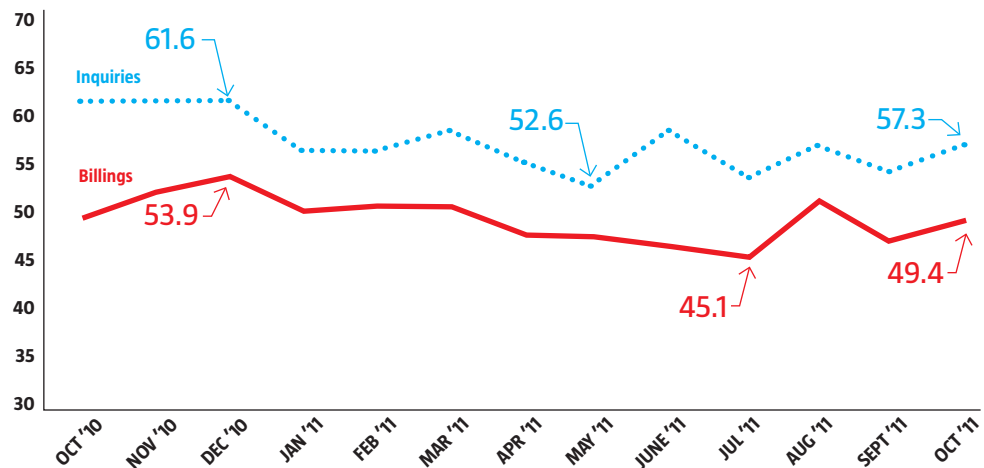
OCTOBER 2011 ARCHITECTURE BILLINGS INDEX

↑ 49.4

- ↑ 53.5 commercial
- ↓ 47.3 institutional
- ↓ 42.0 mixed practice
- ↑ 51.3 multifamily residential

SOURCE: AIA

BILLINGS AND INQUIRIES INDEXES



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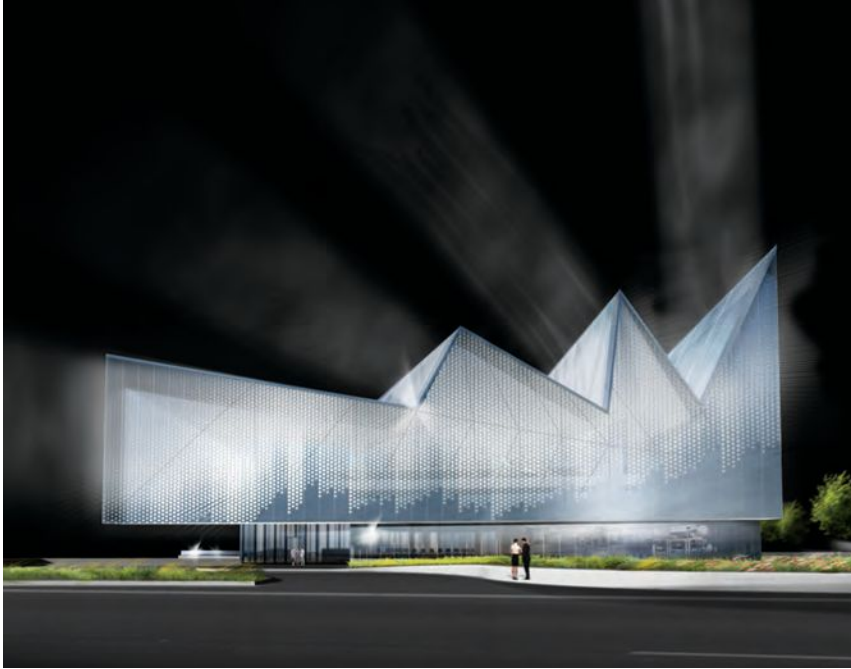
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On the Boards

TEXT BY WANDA LAU



Innovation and Technology Research Facility

BROOKS + SCARPA

In October, construction began on a two-story, 1,500-square-meter (16,146-square-foot) research laboratory, office, and testing facility in Monterrey, Mexico, for an automotive chassis design and manufacturing company. The \$3.5 million project “fuses the idea of a traditional factory with the mountains of Monterrey,” says Lawrence Scarpa, FAIA. A sawtooth roof allows natural light into the building through skylights and hosts photovoltaic panels. As a result, “the sky becomes a part of the building,” Scarpa says. A perforated and etched aluminum exterior skin—manufactured by the client—clads the upper story and features a pattern abstracted from the client’s logo. Strategic glazing on the lower level reveals portions of the laboratory and machine room to the public while protecting proprietary technologies. The facility, which boasts an underground heat exchanger and graywater recycling, has offices, meeting rooms, a library, and a mezzanine between engineers on the upper level and the warehouse below. When complete in mid-2012, the facility will become Mexico’s first newly constructed building to achieve a LEED Platinum certification.

Djavad Mowafaghian Centre for Brain Health

ANSHEN+ALLEN, A PART OF STANTEC ARCHITECTURE

The University of British Columbia (UBC) and Vancouver Coastal Health Research Institute have joined forces to form the Djavad Mowafaghian Centre for Brain Health in Vancouver, British Columbia, Canada. Designed by Anshen+Allen, a part of Stantec Architecture, the center aims to bring together neuroscience and psychological research into an integrated clinical and academic environment on UBC’s campus. Inspired by the idea of a synapse, the \$68.8 million project “collides” patients and researchers “into a singular building for mutual benefit,” says lead designer David Martin, AIA. The 135,000-square-foot project comprises two interlocking boxes, with clinical areas on the two lower levels, research areas on the two upper levels, and shared offices and meeting spaces on the middle level. A central atrium connects the building’s activities. Extensive high-performance glazing “puts science on display” to patients and the public while light-colored block walls enclose clinical areas to maintain patient privacy. Targeting a June 2013 completion and LEED Gold certification, the center will have a vegetated roof and be 50 to 60 percent more energy efficient than a baseline building.



TOP TO BOTTOM: COURTESY BROOKS + SCARPA; COURTESY STANTEC ARCHITECTURE



WE ARE SO SORRY.

Our apologies to architects past and present, but we needed to make a point.

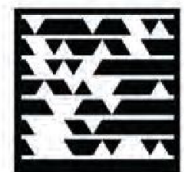
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PHOTO: STEPHEN SHERMAN

AIA VOICES

CULTURAL PRODUCTION | HISTORIC PRESERVATION MIGHT BE THE KEY TO CUBAN-AMERICAN RELATIONS

Bruner/Cott, founded in 1972 by Simeon Bruner and Leland Cott, FAIA, pioneered adaptive-use strategies. Based in Cambridge, Mass., it is a decidedly New England firm, with most of its projects located in and around Boston. Over the last decade, Lee Cott has consulted as a technical adviser on the restoration of Ernest Hemingway's Cuban home and workspace, Finca Vigía, originally designed by Catalan architect Miquel Pascual y Baguer in 1886. The National Trust for Historic Preservation still lists the building as an endangered property, but it's Cott and his team that have been instrumental to making sure that it stands at least a fighting chance.

Our practice here in Cambridge has its roots in adaptive use and preservation. In the early 1990s, I started teaching at Harvard and became interested in design studios using Havana sites. Havana represented many of the things I valued pedagogically: community development, housing, and the way architecture relates to those objectives. I had first been to Havana in 1977 as part of an early exploratory trip for possible U.S. business ties to Cuba. When I met Fidel Castro, he actually invited me to come back to Cuba to assist in its preservation efforts, but due to the U.S. economic embargo, it was an impossibility to do so.

By the late '90s, Cuban culture had again become popular in the U.S.—with the *Buena Vista Social Club* and the comparative ease of cultural travel permitted by the Clinton administration. I had also been lecturing on Cuban architecture, preservation, and urban design at the Museum of Fine Arts in Boston, the Graham Foundation, Harvard, and Yale with topics about my interest in Cuba and in preserving its midcentury Modernist structures.

Hemingway's house, Finca Vigía, was in dire need of repair and already the focus of Cuban preservation efforts. It is an important

tourist locale, but without adequate facilities to handle the crowds. The house was not getting the attention from the government that Old Havana was getting—it's 15 kilometers [9.3 miles] outside of the city. The Cubans thought they had stabilized Finca Vigía, but the roof leaked badly, it had a deteriorating structure, and there was evidence of mold growth on some of the interior walls. In one instance, the Cubans had built a wall over an existing exterior wall that trapped moisture.

The Cubans were skilled preservationists, but they didn't have access to modern preservation techniques and technology. So we—Henry Moss, AIA, from my office; William Dupont, AIA, at the National Trust; and I—were technical advisers with the U.S.-based Hemingway Preservation Foundation. We were able to secure approval from the Treasury Department and were granted a license to travel to Cuba to assist the Cubans in restoring the house.

They were guarded about our involvement at first. They've been fighting hard to control their culture, and the architecture community was guarded about publicity and receiving advice from North Americans. I speak Spanish fairly fluently; that helped. I understand Latin culture and was trusted by the Cubans; that helped. By mid-2005, I returned to Havana with an environmental design team to study the house and its site, and elected to begin our work that eventually culminated in a preservation report in 2007. It's fairly comprehensive and details the work that needed to be done, ways to restore the materials in the house, and so on. I had been in the Peace Corps from 1966-68 in Colombia—and the kind of roof that they used in school construction was the same roof that Hemingway used. I recognized it immediately.—As told to William Richards **AIA**

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HOUSTON

Hire Education

The Menil Collection in Houston's Museum District has commissioned the Rice Building Workshop, an annual studio at Rice University's School of Architecture, to design its café. Museum director Josef Helfenstein approached the school after seeing its ZeRow House entry in the 2009 Solar Decathlon. Based on the forms and openness of a taco truck, the café will engage the neighborhood and provide a quick bite for museum visitors. Construction is slated to begin next month.

➔ Learn more at arch.rice.edu.

DES MOINES, IOWA

Launchpad

At its annual convention in September, AIA Iowa released the new *Iowa Architect* magazine, with a fresh design, new editorial departments, and eight residential projects. "There are so many great things going on in our region," says Ben Hildebrandt, AIA Iowa's new executive director, "and I think we're in a better position now to amplify those things."

➔ Learn more at aiaiowa.org.

DAYTON, OHIO

Smackdown

Poetry slams are so '90s, but design slams are the new wave. AIA Ohio Valley Region kicked off its annual convention, Discover.Design.Dayton, at Dayton's car-themed function space, the Taj Ma Garaj, with a simple challenge: Design a one-Porsche garage and "man cave." Participants were required to use BIM and complete their design in 60 minutes or less in front of more than 200 attendees. At the checkered flag, it was Team Indiana's Megan Crites, AIA, and Jack Faber, AIA, who took home the trophy.

➔ Learn more at aiaohio.org.

WASHINGTON, D.C.

Diversity's Divide

In his 1968 AIA Convention keynote address, civil rights activist Whitney M. Young Jr. criticized architects for their "thunderous silence" on civil rights and social issues. Since then, the AIA has helped replace that silence with voices, but more work remains. This year, the AIA began an oral history and research project entitled AIA Diversity/Then+Now+NEXT to chronicle those voices. The project won't be complete until we've heard from you, so email diversity@aia.org to find out how you can participate.

RICHMOND, VA.

Ed is in the Details

When Edward Ford, AIA, writes books, people pay attention. Close attention. Ford covered craft, material, and tectonics with *The Details of Modern Architecture* (Vols. 1 and 2, 1990 and 1996), and this fall, the Virginia Society AIA recognized the University of Virginia professor with its Prize for Design Research and Scholarship for his most recent book, *The Architectural Detail* (\$40; Princeton Architectural Press, October 2011).

➔ Learn more at aiava.org.



The New Normal

ILLUSTRATION: MARK MCGUINNIS

Differentiation and diversification are part of the architect's DNA.

BY CAMILLE LEFEVRE

The last in a three-part series on residential architecture in today's economic climate.

IN JANUARY 2010, THE NEW YORK TIMES RAN AN ARTICLE headlined "Architect, or Whatever," about how a Seattle architect named John Morefield was surviving the recession. Out-of-work yet entrepreneurial, Morefield had set up a booth at Seattle's Ballard Farmers' Market in 2009 with a sign that read "Architecture 5¢." For a nickel he answered the architecture and design questions of curious passersby. After several weeks of manning his booth, Morefield

created the website Architecture 5¢ (architecture5cents.com) with the motto "No project is too small for big ideas." Eventually, and remarkably, Morefield received enough commissions to earn more than \$50,000 last year.

Morefield hasn't been the only one attempting to differentiate himself. As the economic recession and implosion of the real estate market continue with little relief, other residential architects have discovered that by being innovative and adaptable, they stand a better chance of surviving the persistent downturn.

Or, as James Walbridge, AIA, founder of Tekton Architecture in San Francisco says, "I think the 'new normal' is not to be normal. The status quo is gone." The question then becomes: How are you going to differentiate yourself and not be normal?

For Walbridge and his colleague Stuart Narofsky, AIA, founder of Narofsky Architecture in New York City, the answer has been to embrace the concept of architect as "master builder." To do so, both architects have created architect-led design/build firms to provide clients with the entire gamut of residential design and construction services. "Master builder is the gestalt of how I founded my firm," Walbridge says.



AIAFEATURE

He and Narofsky arrived at the same place from opposite points of origination: Walbridge was a licensed general contractor who later became a licensed architect; Narofsky was an architect who later became a builder. Both architects offer clients “a seamlessly integrated, 360-degree perspective because we’re building what we design,” Walbridge explains. “In terms of best practices, the ability to provide value and to demonstrate expertise—not just in design but during the entire process—is crucial in today’s business climate.”

Narofsky adds that clients “are embracing the idea that they can hire the master builder again, which is in a way a throwback to the way architects worked at the turn of the [20th] century.” The new paradigm eliminates the contractor-owner-architect triangle, and reinvents and broadens the architect’s responsibility. “We’re taking on a much greater role to make ourselves more relevant, but also to obtain a greater reward,” he says. “There’s more market share to grab.”

Narofsky and Walbridge’s master-builder paradigm also brings to residential architecture such 21st-century methodologies

as integrated project delivery (IPD) and technologies such as building information modeling (BIM). These strategies get all parties to the table from the start, resolve clashing and conflicts, improve project coordination, and increase construction accuracy.

Narofsky claims that in wearing two hats, he’s professionalizing builder and contractor services by bringing them under the umbrella of the architect-led project. The result, Walbridge adds, is greater value for clients “because they understand they’re getting the skill sets of all the entities involved on a project from a single point of responsibility,” he says. “We can be competitive—and competitive with far more value added.”

Another aspect of residential architects’ new normal is diversification. Doug Patt, AIA, a registered architect in Pennsylvania who began to diversify before the recession, now works as a consultant to other architectural firms, operates a product-development company, writes architecture books, and founded and runs the How to Architect website (howtoarchitect.com) and YouTube channel for students, clients, and architecture aficionados. While his primary income continues to come from project-managing high-end residential projects, he says, “when the economy tanked in 2008, I was busy doing other things.”

During the Custom Residential Architects Network symposium in October in Indianapolis, Patt delivered the keynote titled “Expanding the Field for Residential Architects and Architecture.” “Architects today have to use the tools at hand to expand their professional lives,” he says. “Architects are particularly well-positioned to expand their fields because of their experience, their education, and the Internet.”

Consider Kerrik Wessel, AIA, who founded the residential firm Wessel Design in St. Paul, Minn., and spent his downtime in 2009–10 creating a new product: Parasol Modular. One day, while playing with his kids’ Crystal Climbers—colored plastic pieces with cut-out slots that slip together into walls, sculptures, and structures—he got the idea to create solar panels of colorful polycarbonate that would fasten together like puzzle pieces. His prototype was a solar carport, which this year morphed into Parasol Modular (parasolmodular.com).

Wessel’s practice has picked up again, and Parasol Modular has provided a new way of marketing his inventiveness and problem solving. He also offers the panels, and their construction, as one of his residential-design services. Parasol Modular, he says, could be configured into a solar-powered lawn sculpture, “lean-to, garage, or pavilion in the backyard for a pool.”

Other entrepreneurial possibilities exist in the marketplace for architects willing to expand their expertise and design intelligence into new ventures. “The public has an insatiable desire to build things, and to change the built environment that already exists,” says Dale Mulfinger, FAIA, founder of SALA Architects in Minnesota and author of such books as *Cabinology: A Handbook to Your Private Hideaway* (Taunton Press, 2008) and *The Cabin: Inspiration for the Classic American Getaway* (Taunton Press, 2001).

“Architects have the unique knowledge and talents to meet that desire. Finding those connections is key to reaching out to the public and new clients,” he adds. While setting up shop inside an Ikea store or parking an “Architects’ RV” in a Home Depot parking lot may fall into the purview of younger, more daring architects, “people need and want help in making decisions about their home,” Mulfinger says.

“Before the recession, we had more architects per capita than before in the history of the U.S., nationally,” Mulfinger adds. “That meant we were serving up to the public more architecture, and the residential segment of the industry grew a lot. It’s still there. We just need to find more ways to reach out to more of the public.”

➔ To learn more about the AIA’s efforts on supplemental architectural services, visit aia.org/practicing/akr/AIAB089194.

At the conclusion of this three-part series on residential practice in today’s economy, author Camille LeFevre puts “The New Normal” series in perspective. LeFevre, an arts journalist and former editor of Architecture Minnesota (AIA Minnesota), has covered design and dance for Architectural Record, Metropolis, Minneapolis Star-Tribune, Dance Magazine, and MinnPost.com. LeFevre currently teaches arts criticism and journalism at the University of Minnesota.

One of my sources actually guffawed and said that “there is no normal” when I called him. It’s true. For most residential architects, the tectonic plates have shifted. They’ve had to reinvent what they’re doing and how they operate their businesses.



AIAFEATURE

People are still going to call architects, and there are still clients commissioning second and third homes. For the architects tapped into that market, second and third homes will still be lucrative. Remodeling, though, is also an expression of upward mobility. That idea has been accelerated by the recession, in tandem with the fact that people think about their homes differently: as places to reinvest.

We can't ignore the renters. For them, houses are no longer an investment as the adult thing you're "supposed to do." It's the loss of a fundamental perception that the home is the center of American life. More people are renting, which is a temporary investment by an occupier in an apartment, rather than an investment by an owner in the value of the place.

Residential architects still have this problem with how they're perceived: as elitist or as people who know what's best. I think a lot of them have already discovered that adaptability and flexibility are about survival as much as they are about working smarter. **AIA**

WHAT'S THE NEW NORMAL FOR DESIGN AND PRACTICE?

David Arkin, AIA, Arkin Tilt Architects, Berkeley, Calif.

It seems that clients are paying far greater attention to the project costs—at every phase—than in the past. We're being extra careful to ensure that our clients are receiving good value for our services.

We've also seen greater competition by the larger firms for the medium-size public projects that we've been doing lately. So we've upped our expertise in building-envelope efficiency and HVAC systems, and that's perhaps helped our marketing efforts. If anything, we've seen our ability to pitch efficiency savings and renewable-energy systems get a bit easier, now that economics are often driving the conversation.

Will Bruder, FAIA,
Will Bruder+PARTNERS LTD, Phoenix

The whole idea of density is being reinvestigated. We're making groupings, condominiums, and mixed-use, which is really more about efficiency. People are starting to reconsider the third place as the parks, streets, and cities, and their homes being these smaller respites.

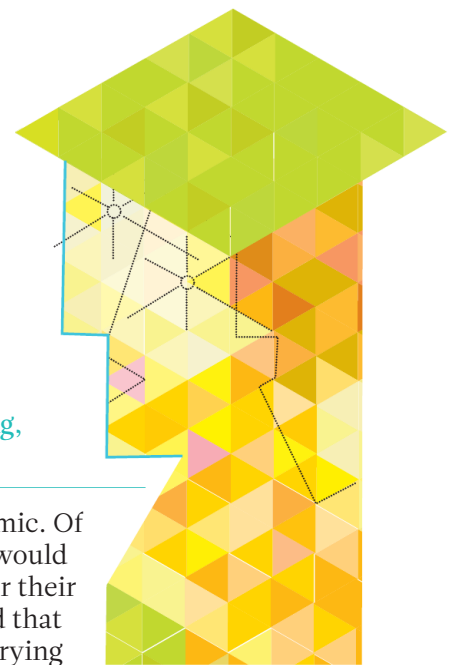
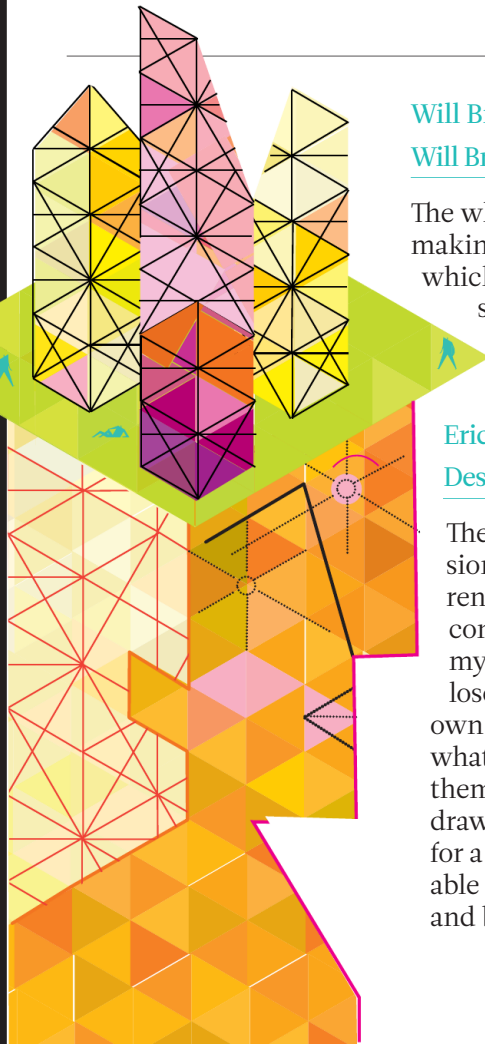
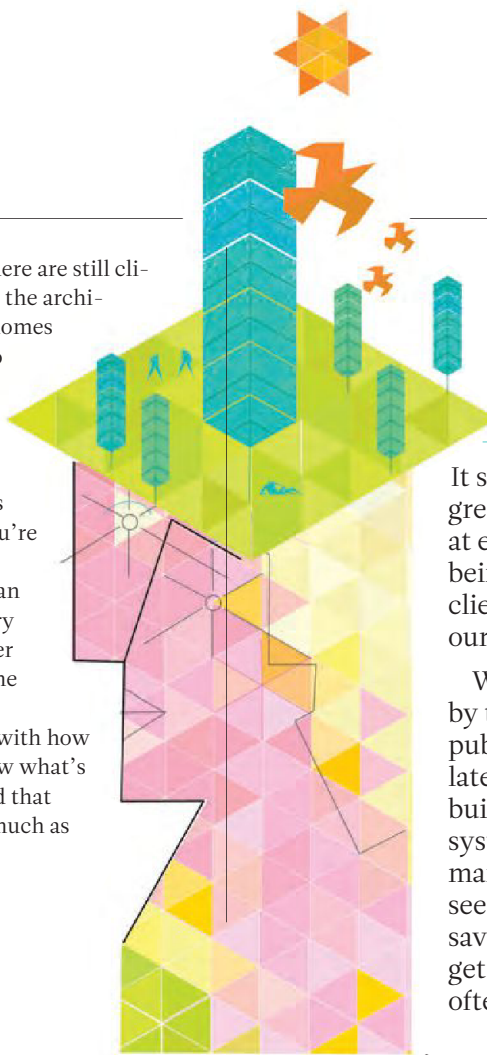
Eric Rawlings, AIA, Rawlings Design, Decatur, Ga.

The first two years of the recession, I was doing 90 percent renovations, rather than new construction. I learned to tailor my services so that I wouldn't lose work. Instead of cutting my own arm off, I gave clients exactly what they needed. By providing them with an idea and a set of drawings that is just good enough for a building permit, I was still able to participate in these projects and be affordable to the client.

Gregory La Vardera,
LamiDesign Building,
Merchantville, N.J.

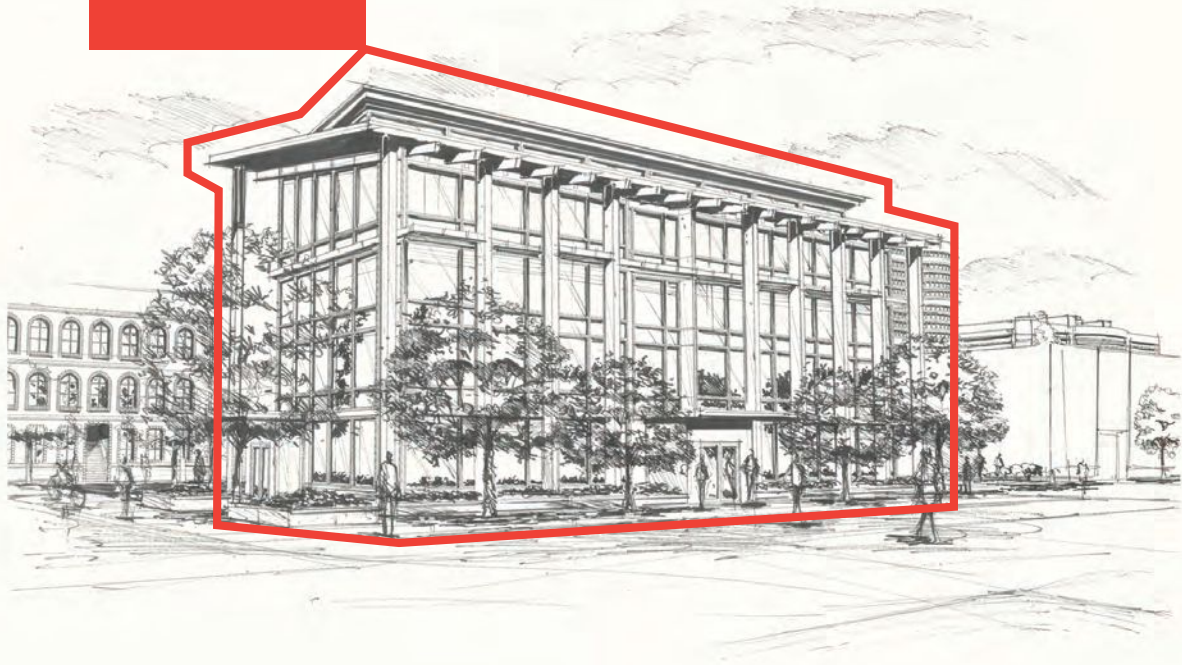
It's a strange dynamic. Of those people who would have bought a lot or their dream house, I find that they are, instead, trying to find their dream house in the place they already live. People are saying, "Let's try to make this place what we want." They were going to build something from scratch, so it's an unusual roundabout.

—As told to Leigh Franke



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AIAPERPECTIVE

A HEALTHY FUTURE



PHOTO: WILLIAM STEWART

IN 1945, AT THE AGE OF NINE, ROBERT LYNCH, FAIA, CONTRACTED polio. Later, while receiving daily therapy, his parents arranged for him to go back to school by hiring a full-time attendant. He dressed the boy, carried him to breakfast, drove him to school, carried him to class, drove him home for aquatic therapy and exercises, then put him to bed. This was Lynch's routine from fifth grade until he graduated from high school. Wheelchair accessibility in public buildings was virtually nonexistent, especially in public schools, so being carried was essential.

By the time he was ready for college, Lynch could lift himself up and down stairs by wearing hip-length steel braces and using crutches. Yet it was a daily struggle. This influenced his decision to go to Notre Dame in Indiana. After all, the Midwest was flat, wasn't it?

Not so. The architecture, not the land, was his Everest. Most of Lynch's classes were on the second and third floors of buildings that had no elevators or ramps. Even getting to the front door meant painfully negotiating a flight of stairs.

I've begun this final Perspective column as AIA President with a story about one person's heroic struggle to lead a mobile and productive life. Lynch's story is not unique. His narrative belongs to all of us. We all began life by being carried and cared for. It's also the future that many of us are headed for. Architecture can help us into that future, or it can be our hell.

Thanks to modern medicine, we live longer. This means that more of us are likely to be struck by one of the illnesses that befall the elderly. The good news: We'll most likely be kept alive. The not-so-good news: An increasing number of us who do pull through will no longer be able to live in our homes. The only choice—if we can afford it—is assisted living or a nursing home. Otherwise, it's move in with the kids—if they have the space.

And what about those lucky enough to stay healthy?

We'll work longer. That's already happening. Retirement at 60 or 65—who can afford it? (But how will we get to the workplace?

And what will we find when we get there?) These are questions about how we embrace the whole community; these are questions about architecture. They reveal another aspect of how design either facilitates or obstructs inclusiveness.

For as long as I can remember, conversations about inclusiveness have focused on gender and race. These issues are important. Despite a lot of talk at every level of the profession—from the schools to the workplace to our own initiatives at the AIA—we still have a long way to go to embrace the gifts of talented men and women who could have a tremendous impact on how our profession is perceived and how it serves our clients.

Yet issues of race and gender are not the complete picture of what it means to be inclusive, whether as a society or a profession. They are important, yes, but are arguably subsets of what should be a much broader discussion of how we as a profession accommodate all of those who have the will and the talent to lead meaningful lives that contribute, such as Lynch's, to the good of the community, however those contributions are made.

Inclusiveness, whether it has to do with the ability to enter a profession or navigate a steep flight of stairs, is not an act of charity or a gift we give to others; it's something we do for ourselves. At some point in all of our lives, we literally or figuratively arrive at the bottom of a steep flight of stairs. The only way forward will be to go up. But what if we can't begin that climb? Who will carry us?

Our work, and who we are as a profession, should and must be an example to others. Whether it's extending the life of architecture already built, committing ourselves to a model of the profession that mirrors the society we serve, or using our experience and skills to shape welcoming environments that celebrate the dignity of each one of us—old, young, male, female, straight, gay, the physically challenged, the economically disadvantaged, and those of different ethnicities—architects and architecture have a unique role to play in bringing us together.

If we choose to fully engage the world as it is, if we grasp the privilege and responsibility of a profession dedicated to service, a great future lies before us.

I want to show my gratitude to you, the members of this great organization, for the honor of serving you this past year as president. What I have learned has been life changing. In the midst of one of the greatest economic challenges most of us have ever experienced, your courage, talent, and compassion inspire respect and great hope. Thank you. **AIA**

Clark D. Manus, FAIA, 2011 President



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KNOW WHAT TO EXPECT, SAYS ZWEIGWHITE'S **HOBSON HOGAN**, TO GET THE BEST OUT OF MERGERS AND ACQUISITIONS.

INTERVIEW BY ERNEST BECK
PHOTO BY SIOUX NESI





FOR MANY COMPANIES navigating a down economy, mergers and acquisitions can provide a viable solution to financial woes, a new future, or an exit strategy. For the past year, Hobson Hogan, a principal at consultant, advisory, and publishing firm ZweigWhite, has been guiding firms—from small architecture studios to multinational public entities—through the complex merger process, representing both buy and sell sides. From his Durham, N.C., office, Hogan discusses how to approach each situation.

Toss the keys.

Many firms are selling because they have to. Life doesn't follow economic cycles, Hogan says. Some firms need

“THE MORE FLEXIBLE YOU ARE WITH M&A TERMS, THE MORE CANDIDATES YOU WILL HAVE. ... ARCHITECTS ATTACH A LOT OF IMPORTANCE TO THEIR BRAND NAME.”

to get out. Their owners walk away and toss the keys to maintain the jobs of the staff or to reduce future liabilities, not for a premium or extraction of wealth. Although a few blockbuster M&A deals have grabbed headlines, the overall number of deals has been flat over the recession. There were also a lot of distressed deals.

Stuck in the middle.

Midsized firms are the main M&A drivers today. In this economy, midsized isn't good. These firms can't compete with the big boys and are not as nimble as small firms. So either they buy smaller firms or cozy up to a big brother or sister, Hogan says. “M&A has to be the part of the conversation that midsized firms are having about competing in the ‘new normal’ environment.”

Bigger is better.

Large firms, either public or private, can make good deals in today's market. Large firms are always looking to buy, especially among firms with highly specialized clientele or markets. “In most cases, larger firms buy smaller targets at a lower multiple of earnings than they are

valued”—and more earnings per share adds to the firm's overall valuation.

Make a date.

M&A is not an easy process: A transaction can take up to 15 months to complete. Approach mergers like dating, Hogan says. Look around to see who's interesting, then go on a few dates. The terms have to be right, of course, but so do the timing and personalities. “If you don't get along professionally and personally, the deal isn't likely to work, even if the numbers look good,” Hogan says.

Know yourself ...

As a buyer, first think about what direction you want to go. When thinking about mergers, know whether your firm wants to do more of what it is already doing or things it doesn't presently do. Not in the healthcare sector? Find the firms that are. Then decide what you can afford and what size firm you can buy for the money.

... and market yourself.

At this point be ready to answer questions from the seller. Put together a package of information that “conveys the benefits of being a member of the family,” Hogan says. You won't get to the numbers unless those questions are answered up front. “There needs to be an element of sweeping them off their feet as opposed to being passive and just saying, ‘We have the money.’”

Worth the money.

Firm values are certainly down from where they were before the recession—but value follows from a firm's specialty. If you offer your firm for sale and buyers won't expect another firm like it to be on the market for five years, expect a bigger premium. Specialization provides a huge competitive advantage to the seller.

Make nice.

Often a merger can seem like a good fit, but after all is said and done, there are culture clashes. What happens post-deal depends on the buyer. Some big buyers want a quick integration of staff and firm name. Other firms are more flexible, keeping the name and running it as a subsidiary. Buyers should discuss all of these issues beforehand, Hobson says, with an open mind. “The more flexible you are with M&A terms, the more candidates you will have” amenable to a merger, he says. “Architects attach a lot of importance to their brand name.”

Adjust expectations.

If you are considering selling, carefully weigh the risks. Consider your personal balance sheet and where you are in your career to decide whether the time is right. Some owners have expectations that are way beyond what they will ever get. If they believe an offer they got back in 2006 will come around again, Hobson says, that might not happen in their lifetimes. The reality is, he adds, “the market may not return to that level for the time they are still in the firm.” □

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WITH SOARING HEALTHCARE COSTS, TODAY'S
CRISIS-RESPONSE CENTERS MUST BE BUILT TO LAST.

TEXT BY KRISTON CAPPS



James Cancer Hospital, and Solove Research Institute, and Critical Care Tower • Columbus, Ohio •

HOK • The hospital expansion, part of the Ohio State University Medical Center, features separate emergency-department entrances for ambulances and walk-in patients as well as a dedicated immediate cancer-care facility for cancer patients.

TO DESCRIBE THE SOARING COSTS of healthcare in the U.S. as a crisis would be to put it mildly. A survey released in November illustrated the problem to dramatic effect. Using data provided by the Organisation for Economic Co-operation and Development, the Commonwealth Fund found that between 1980 and 2009, average U.S. health spending per capita rose from roughly \$1,000 to almost \$8,000. That's 16 percent of gross domestic product for 2008. The same report finds that U.S. spending on healthcare greatly exceeds that of the next highest spender, Norway, where spending amounts to roughly \$5,000 per person.

The diagnosis gets grimmer. In September, *The Washington Post* reported on a separate study that found that income gains among middle-income American families over the last decade had been almost completely wiped out by rising healthcare costs.

Hospital care accounts for 31 percent of the \$2.3 trillion Americans paid in healthcare expenditures in 2008. One way that these costs can be reduced is by increasing efficiency. The Henry J. Kaiser Family Foundation notes that policy experts estimate that some 30 percent of healthcare is unnecessary. While many if not most factors driving healthcare costs are beyond the reach of the designers creating healthcare facilities,

efficiency is a primary concern of designers who build crisis-response centers—to cut costs and to save lives.

"The best way to control costs is to reduce waste. Waste comes from medical error. Your best bet is to create the best care in the first go-round," says Henry Chao, AIA, principal at HOK, which is the design architect and architect of record for a significant expansion to the Ohio State University Medical Center (HOK is working with local firm Moody Nolan on the project). "You reduce the chances for medical errors, you reach better outcomes, you minimize the number of patients who return."

HOK's work for the \$1.1 billion expansion at Ohio State includes the design of the new James Cancer Center Hospital, and Solove Research Institute, and Critical Care Tower, which will be completed in 2014 for more than \$500 million. The Medical Center's emergency department is a Level I trauma center that provides presidential-level services—meaning that if the president were to befall an emergency in Columbus, Ohio, he would be ushered there.

Chao says that the trend in crisis-response-center design has moved from an open-cubicle format to individual rooms that promote acoustic privacy. But the



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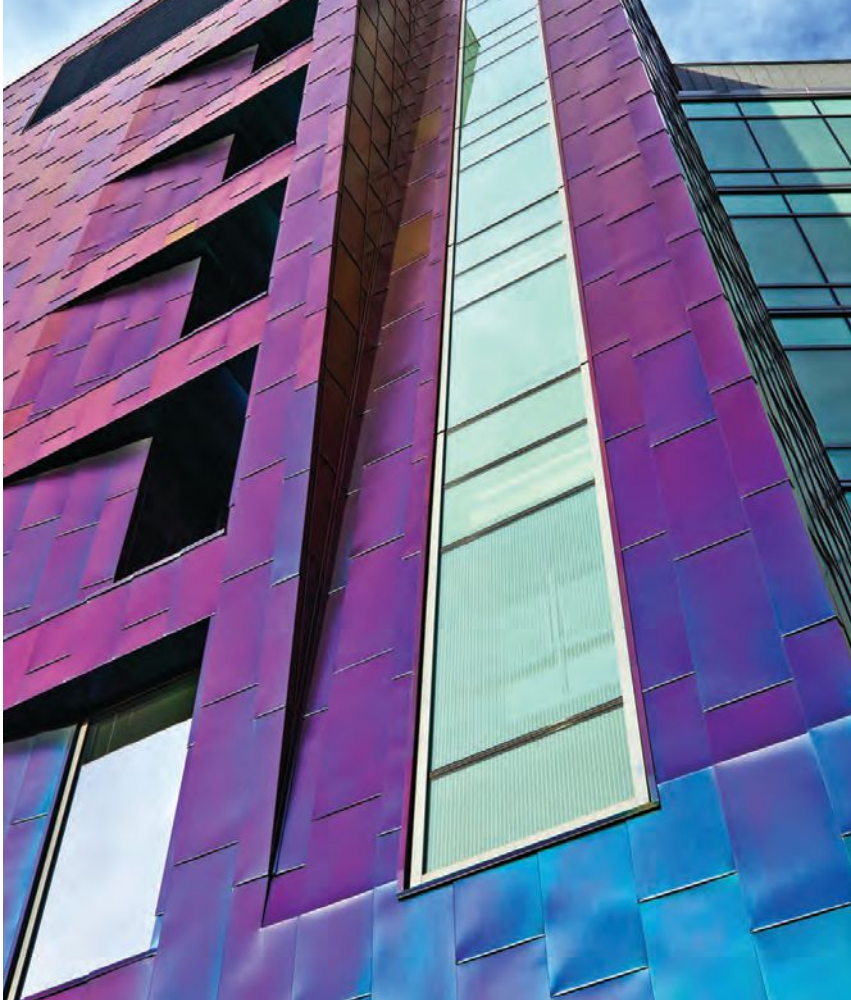
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**University of
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The colored, mirrored, stainless-steel panels used to clad the hospital's exterior are dichroic, meaning the color appears to change depending on light and shadow. The panels, which are clipped into place by way of a channel system, may be easily removed for maintenance.



most important factor mitigating the design of Ohio State's three critical-care floors, which feature 48 beds per floor, is visual connectivity.

"Nurses need to be able to see the patients as quickly as possible. At that moment, every single minute matters," Chao says. He notes that nurses at each attendant station have visual access to three patients. "We have a corridor that allows nurses to see from one end to the other end. They can hear a commotion and come to help. From an architect's perspective, I don't typically like this big box thing. But at this floor, function absolutely drives the design."

Flexible free space is crucial for anticipating future medical technologies and requirements. The facility's lower portion's 90,000-square-foot floor plate features a riser-free area 400 feet long and 120 feet deep. With no ductwork, mechanical shaft, or stairs, this "podium" can be rearranged to accommodate future needs.

HOK's design for the critical-response center takes the clinical staff's experience into account. The "off-stage" aspects of the floor—spaces away from patients and families where staff confer, transport soiled materials, and access equipment—include rooms lit by natural daylighting to help alleviate staff stress. "We're all familiar with the drama for the patients and families," Chao says, "but if you're working in the critical care area, day in and day out, that's stressful."

Building in redundancies in crisis-response centers is the main way that designers can help to eliminate waste. Sandra Hagstrom, the advanced-practice nurse leader for the pediatric intensive-care unit (PICU) at the University of Minnesota Amplatz Children's Hospital in Minneapolis,



says that some up-front costs pay for themselves in terms of the improved efficiency for medical staff.

"There is a cost downside when you're building same-handed rooms that don't use headwalls. You can't plumb your walls with electrical and have two rooms with the headwall running between them," Hagstrom says. The hospital, which was designed by Tsoi/Kobus & Associates (TK&A) with HGA as the local partner, opened in April. It features identical, same-handed children's critical-care rooms. "You don't have to stop and think, 'Is this on the right or left side of the room?' You can walk in, and you can just intervene."

In lieu of mounting medical equipment on headwalls, the same-handed rooms employ movable boom mounting to suspend the medical equipment and supplies over the patient—which gives medical staff 360-degree access to patients. The beds are situated in the center of the PICU rooms. Some procedures, such as intubating a patient, are easier to perform from over a patient's head, Hagstrom says.

The PICU rooms at the new 231,500-square-foot Amplatz Children's Hospital are larger than those at the old University of Minnesota children's hospital. At 390 square feet each, the rooms boast almost twice the square footage, but they feature the same number of beds. Hagstrom says that the larger room design has staff running around much less.

"A huge cost is for the nurse not to have to run back and forth. When we received a critically ill patient back from the operating room, there would be a lot of running

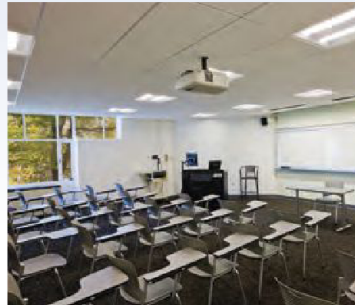


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Pima County Behavioral Health Pavilion and Crisis Response Center

• Tucson, Ariz. • Cannon Design • The two-story Crisis Response Center, which is connected to the Behavioral Health Pavilion by a breezeway, features a sub-acute inpatient unit as well as separate facilities for adults and youths.



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to get things [in the old PICU]," Hagstrom says. "That's a critical time for the patient."

By stationing supplies and equipment in readily and consistently available places in the PICU—and by using glass walls to promote visibility between pediatric units—TK&A's design saves time for nurses. According to senior principal Rick Kobus, AIA, nurses who walked an average of 9 miles per day at the old children's hospital now walk an average of 5 miles per day.

Cannon Design, who designed the Pima County Behavioral Health Pavilion and Crisis Response Center in Tucson, Ariz., worked with an in-house cost-estimation group from the very start of the design stage. "Any design team is going to look at capital costs and work with an owner to come to the right resolution for that particular owner's circumstances," says Tim Rommel, AIA, principal at Cannon Design in Los Angeles. The final project cost was a modest \$54 million. "We also look at it in terms of operational costs. We looked at it even down to the staffing within the facility itself."

The 96-bed acute psychiatric hospital, which opened in August, differs from other crisis-response centers by its emphasis on patient and staff safety. "We consider everything from the type of screws or fasteners used all the way down to the layout and efficiency of the room itself," Rommel says. "The patient's bedroom is the most dangerous location in a behavioral healthcare unit. That's where it's to be expected that a patient will be by herself for an extended period of time."

Illuminating hiding spaces and providing clear views for staff from the door into the full interior of a

room helps to prevent patients from acting out through violence. "When a patient's in crisis, they're reaching out. They can injure themselves or others, whether it's attempting suicide or something else."

Serenity is another crucial aspect of a behavioral healthcare facility's interdisciplinary program, and the Pima County Behavioral Health Pavilion and Crisis Response Center buildings face out onto multiple gardens, providing daylight and views to all patients.

The county had specific requirements for different in-patient units. Cannon Design focused on the common denominators between the units to make them as universal as possible. Regularizing the units controls design costs, but it also enhances the value of the Crisis Response Center, whose needs will invariably change.

Crisis-response centers—in particular those providing mental-health services—face rising healthcare costs as well as dwindling public support. As the National Alliance on Mental Illness reported in March, states slashed non-Medicaid funding for mental health services by more than \$1.6 billion between 2009 and 2011. Deeper cuts projected for 2011 through 2012 mean that projects today must be designed with the future in mind.

"As those diagnosis groups change over time over the lifetime of the building—whether it's an adolescent group or geriatric group or forensic group—if we've been successful, those units are going to serve the owner satisfactorily or even really well as they change diagnosis groups," Rommel says, "without having to make changes to the physical environment." □

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SYRACUSE UNIVERSITY IS POSITIONING ITS SCHOOL OF ARCHITECTURE UNDER MARK ROBBINS AS AN INCUBATOR FOR DEVELOPMENT IN THE CITY OF SYRACUSE.

TEXT BY ADAM MAZMANIAN
PHOTOS BY IAN ALLEN



Adam Mazmanian is a writer living in Washington, D.C. He is the editor of the daily international development news publication *UN Wire* and reviews movies for *The Washington Times*.

“Never ask a dean about his numbers,” says Mark Robbins, dean of the School of Architecture at New York’s Syracuse University. He then proceeds to cite chapter and verse from the school’s admissions statistics. In 2005, a year after Robbins started, the school received 550 applications. This year, it attracted 1,300 applicants from 55 countries. The school’s admission rate used to hover just under 50 percent; now it’s a competitive 24 percent. The aspiring architects at Syracuse boast a 3.8 median high school GPA, score high on standardized tests, and hail from all over the country.

The numbers chart an alternative narrative to the story of decline presented in an Oct. 2 article of *The Chronicle of Higher Education* that raised hackles at Syracuse. Headlined “Syracuse’s Slide,” the story contrasts efforts by university chancellor Nancy Cantor to position the school as an agent of change in the “sagging Rust Belt city” with its drop in the rankings of national universities as measured by *U.S. News & World Report*.

Cantor’s critics suggest that the university is devoting too many resources to projects designed to help

revitalize the city of Syracuse at the expense of university programs. Yet the counternarrative would have it that the fate of the school and city of Syracuse are intimately linked. Whether or not this affirming connection between the city of Syracuse is good for the university of Syracuse, it’s been a boon to its School of Architecture—which, under Mark Robbins, has spearheaded the efforts to save the struggling city.

Robbins credits chancellor Cantor with much of the intellectual underpinnings of the drive to reimagine the city of Syracuse. She “understands the city as a layered event,” he says, with social, political, and economic elements. Many of Cantor’s themes—the notion of scholarship in action and the university as a community of experts—can be seen in the Syracuse projects.

The School of Architecture has positioned itself as a center for development of Syracuse’s decaying urban core and as an intellectual laboratory for imagining the reinvigoration of shrinking postindustrial cities. While

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Link Hall addition by Toshiko Mori

JUST VISITING, by Brad Lynch

To be a visiting critic at Syracuse's School of Architecture is a process of immersion. More than teaching a design studio, it is about being included in a larger pedagogical experience, one that blurs the distinctions between theory and practice. For a visiting critic, Syracuse provides an innovative environment for interaction between other visiting critics and faculty through lectures, exhibitions, projects, studio reviews, and cocktails. This kind of academic environment isn't foreign to other architecture programs, but at Syracuse, there is a dynamic that allows the interest of the school to flow into the surrounding community and beyond—to be holistic and inclusive.

The city of Syracuse is still suffering the transition from a postindustrial economy to one that is diversified in business type, smaller in skilled labor force, and far less reliant on manufacturing for commercial success. Yet Syracuse is fortunate. The university has become an incubator for long-term economic growth through a variety of community-based initiatives and programs—specifically channeled through the School of Architecture.

The Near Westside Initiative, for example, exists “to combine the power of art, technology and innovation with neighborhood values and culture to revitalize Syracuse's Near Westside neighborhood.” The visiting critics' designs include studios, conceptual ideas for economical and sustainable housing, mixed-use developments, and historic building renovations. These designs slowly developed into actual building projects over just a few years in the Near Westside neighborhood. My own firm designed the renovation of the Lincoln Building into live-work apartments and office space. And the “From the Ground Up” competition led to the construction of three innovative green homes by Cook + Fox Architects and Terrapin Bright Green; Onion Flats, Andropogon Associates, Rivera Structural Design, and MaGrann Associates; and Architecture Research Office and Della Valle Bernheimer. [See an honorable mention for the R-House in the Annual Design Review on page 84.]

Mark Robbins has set an inspired tone for architects working on campus and throughout the city: in particular by helping to bring about the Warehouse by Gluckman Mayner Architects downtown, the Slocum Hall renovation by Garrison Architects on campus, and the SyracuseCoE by Toshiko Mori Architect, to name but a few. It should not be a surprise that Robbins has championed design innovation and experimentation for many of the community initiatives associated with the university—nor that he continues to have a rare ability to attract emerging and established talent for the visiting critics program, a brilliant faculty, and of course, good students.

Brad Lynch is a principal at Chicago firm Brininstool + Lynch and served as a visiting critic at Syracuse University's School of Architecture in 2006 and 2008.



individual projects proceed on different paths, and are funded by different sources (some public, some private, some nonprofit), many offer opportunities for students and recent graduates to participate. The school has developed a center called Upstate, which acts as a kind of thought leadership incubator for projects and research.

The rehabilitation of a downtown site known as the Warehouse was one of the first of Syracuse's development projects. Once a cold-storage warehouse and then a furniture showroom for the Dunk & Bright Furniture Co., the rehabbed 1924 building became the interim home of the School of Architecture itself after it was renovated by Syracuse grad Richard Gluckman, FAIA, of Gluckman Mayner Architects, in 2006. The building now houses the design department of the College of Visual and Performing Arts and the School of Architecture's visiting critic studios, as well as a café and gallery on the ground floor. Garrison Architects completed a renovation of the main School of Architecture building, in 2008.

The presence of the 140,000-square-foot Warehouse space as an anchor of the Armory Square section of downtown Syracuse is an example of what Robbins calls “optimistic urbanism.” While it might seem as though nonprofit institutions gobbling up downtown real estate in a city that is starved for tax revenue is counter-intuitive, Robbins notes that the move turned out to be a catalyst for other development. Parcels have been bought up by private developers. A 300-person engineering firm, O'Brien & Gere, moved into a purpose-built building nearby that was developed by Pioneer Partners in 2010.

King + King Architects moved into a renovated building across the street from the Warehouse. For public TV and radio station WCNY, King + King Architects, working with KoningEizenberg Architecture, is renovating a 56,000-square-foot space in a former warehouse—a \$20 million project that is funded by grants from the state of New York, Syracuse University, private donors, and foundations. Robbins calls this “textbook reweaving,” saying that “within a very small area, in the past four or five years, we've seen new construction that hasn't happened in decades in the city of Syracuse.”

On a smaller scale, the university is also taking a hand in trying to redevelop some of the neighborhoods directly around the main campus. There is the Near Westside neighborhood, an intermittently blighted district that has been targeted for a kind of collaborative redevelopment partnership between the university and the community. Whereas some large private universities acquire more and more land for student housing, academic buildings, and other facilities, there seems to be a sense of civic opportunity in Syracuse, where property is inexpensive and where the university is the city's second-largest employer. “This is the most reciprocal relationship in a city I've ever witnessed between the community and an academic institution,” Robbins says. “Rapprochement isn't an easy thing—it takes a lot of trust on both sides.”

Syracuse University was able to invest \$13.8 million in community development beginning in 2007, thanks



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The SyracuseCoE Headquarters Building by Toshiko Mori Architect



R-House by Architecture Research Office and Della Valle Bernheimer



to a targeted loan forgiveness program from the New York State Foundation for Science, Technology and Innovation and Empire State Development. Much of that was directed toward the the Near Westside Initiative—a multipronged program that includes single-family home starts, historic renovations, and new developments.

The Syracuse Art, Literacy, and Technology District is a section of the neighborhood that abuts the downtown Armory District. It's the site of an aggressive effort to accelerate the forces that attract artists and creative professionals to emerging neighborhoods. In October of last year, the mixed-use Lincoln Apartments by Brininstool + Lynch opened—a renovation of a 100-year-old warehouse into a 30,000-square-foot development that includes live-work spaces for artists. Older, decrepit housing stock is available for a song through the “dollar homes” program, which lets would-be homeowners purchase tax-delinquent homes for \$1, provided they plan to live in the house, can qualify for a loan (typically \$50,000 or above) for the renovations, and can finish the project in 18 months. Just last month, the city of Syracuse put more than 3,500 tax-delinquent properties in an online database for the public, in order to make sure that neighborhood residents have a chance to acquire properties made available by nonprofits and developers.

On Nov. 11, the Near Westside Initiative celebrated the LEED certification of three new homes. The house designs were the winning entrants in an international design competition called “From the Ground Up: Innovative Green Homes.” This competition is an example of the kind of partnership Robbins talks about: It was jointly sponsored by the architecture school, housing nonprofit Home HeadQuarters, and the Syracuse Center of Excellence in Environmental and Energy Systems (SyracuseCoE). Robbins is eager to share credit with partners and stakeholders, saying that these efforts to reactivate the city’s urban core are “in and of themselves not all that novel. What I find interesting in Syracuse is that multiple methods are being brought to bear at the same time on multiple strategic levels.”

For the architecture student, one attraction has to be the way that Syracuse is exploring new approaches to urbanism, by using architecture as a way to alter the prevailing narrative of urban decline. By involving the school and Upstate as an engine for growth, Robbins believes that the projects have been able to attain a “higher level of design and a higher level of design exploration than would have otherwise been possible,” by luring innovative architectural firms to design and complete single-family homes in a transitional neighborhood in a small city.

At the same time, Robbins points out that the small size of Syracuse means that projects that would lack impact in a larger city’s downtown, such as Detroit or St. Louis, have more influence on the economy here. Scale is a factor that works in Syracuse’s favor. “We’ve been able to spark the market,” he says. In Syracuse, Robbins points out that “moving 500 people downtown has a big effect,” and that “there are bigger holes to fill in other places.” □

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NEW PROJECTS

1. MOANA DIAMOND HEAD TOWER

Architect: WCIT Architecture, Honolulu
Total Cost: To be determined
Completion: 2014–15

2. HANAHAU'OLI SCHOOL PO'E CLASSROOM AND ADMINISTRATION BUILDING

Architect: Urban Works, Honolulu (architect of record); Geoffrey Lewis Architect, Honolulu
Total Cost: \$6 million
Completion: 2009

3. UNIVERSITY OF HAWAII WEST OAHU CAMPUS

Architect: John Hara Associates, Honolulu
Total Cost: \$100 million
Completion: 2012

MARKET STATS

2.82

EXPANSION INDEX VALUE, HONOLULU METRO AREA

The Expansion Index from Reed Construction Data is a 12- to 18-month look ahead at the construction marketplace. A value of 1.0 or higher signifies growth.

SOURCE: REED CONSTRUCTION DATA

953,207

METRO POPULATION, 2010

SOURCE: U.S. CENSUS

969,462

PROJECTED METRO POPULATION, 2020

SOURCE: ENTERPRISE HONOLULU

5.4%

UNEMPLOYMENT, SEPTEMBER 2011

SOURCE: HAWAII DEPARTMENT OF NUMBERS

4.7 MILLION S.F.

CLASS A OFFICE INVENTORY

SOURCE: COLLIER'S MONROE FRIEDLANDER

14.2%

CLASS A OFFICE VACANCY Q3 2011

SOURCE: COLLIER'S MONROE FRIEDLANDER

LOCAL MARKET

Honolulu, Hawaii



TEXT BY MARGOT CARMICHAEL LESTER AND CLAIRE PARKER

FOR MANY, Honolulu conjures images of *Hawaii Five-O*, the *Brady Bunch* “idol” episodes, or picture postcards of Diamond Head and the Royal Hawaiian Hotel. “But it’s not Waikiki and tourist spots” alone, says *sansei* (or “native”) Lorrin Matsunaga, AIA, partner at local firm Urban Works. “The city is a collection of interesting neighborhoods that are trying to find some kind of authenticity with regards to culture and place.”

The county’s population has grown 8.8 percent since 2000, fueling demand for developments such as the 26-story, 86-condo, 60-room Moana Diamond Head Tower, designed by WCIT Architecture, a local firm. As the first hotel development built on the beach in more than 30 years, the new structure will allow access to the ocean and open new views that are currently obstructed.

Tension between preservation and demand affects many projects. “Finding a respectable balance is a major challenge,” says Robert K. Iopa, AIA, WCIT’s president, who was born and raised in Hawaii. “Open and respectful dialogue has begun and needs to continue.”

There’s more support for projects that embrace organic architecture. “The term ‘Hawaiian sense of place’ is a blend of cultural ideas into a design concept that’s specific to the islands,” explains third-generation *kama’aina* (“resident”) Benjamin Woo, AIA, president of Benjamin Woo Architects. Features such as deep eaves, hip roofs, large operable windows, and natural ventilation are hallmarks of the local style.

“What we try to do is retain what is distinctive about this place and design architecture accordingly,” says John Hara, FAIA, who was born and raised in Honolulu. One example: The 35-acre University of Hawaii West Oahu Campus by John Hara Associates. The exterior walls feature custom-size concrete masonry manufactured locally, and the buildings form outdoor gathering spaces (appropriate, since “Oahu” means “gathering place”).

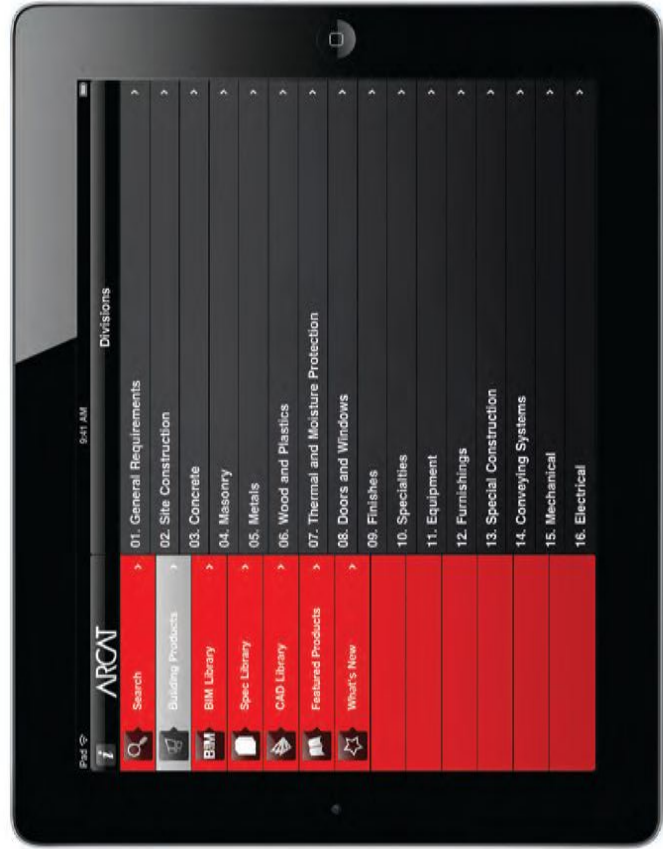
With capital still scarce, meeting demand is a challenge. A lot of work has involved renovations with smaller financial requirements. Consider the Hanahau’oli School Po’e Classroom and Administration Building (Urban Works and Geoffrey Lewis Architect), which is an update to a school founded in 1918.

To spur development, the state legislature funded a Public Land Development Corp. earlier this year to spur public-private development and income-producing opportunities on state lands. Most locals are cautious. “Most economic forecasts indicate a slow long lull period with limited growth,” says Mike Hamasu, director of the research and consulting division of Colliers Monroe Friedlander, a local commercial real estate firm.

That’s in part because of the city’s reliance on tourism and government services. Therefore, Hamasu says, “Construction is likely to remain limited with a heavy focus on infill redevelopment, transit-oriented development, spot retail development, and hotel renovation activity.” □

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TECHNOLOGY



→ PRODUCTS

Brick

TEXT BY WANDA LAU
PHOTOS BY NOAH KALINA

The art of hand-making brick continues at **Old Carolina Brick Co.** where each **Hand Moulded Brick** bears unique characteristics due to distinctive folds, finger marks, and other surface irregularities that occur during the molding process. A modernized firing process produces consistent brick quality and durability while the traditional use of coal in firing creates the hues similar to bricks of past centuries. Bricks are available in 14 colors (Georgetowne is shown above) and in many shapes, including edgers, pavers, and coping. Bricks can also be customized to match existing masonry. • handmadebrick.com • Circle 100

At 8.2 pounds per square foot, **VAST Composite Permeable Pavers** can be used in parking lots, landscaping, and walkways, as well as on flat and green roofs. Available in five colors, the 4"-by-8", ADA-compliant pavers resist staining, cracking and UV damage. The pavers comprise up to 95% post-consumer recycled material and can contribute to LEED points. A 16"-by-16" grid-base system can reduce installation time and help in paver setting and alignment. • vastpavers.com • Circle 101

Trikeenan Tileworks, a division of Elgin Butler Co., combines salvaged thin brick from Metropolitan Ceramics with its own recycled glazes to create **Boneyard Brick**. Suitable for interior and exterior use, the commercial-grade, glazed thin brick contains 95% recycled content and no VOCs, and can contribute to LEED points. The 5/8"-thick brick comes in 15 colors and three sizes: modular (2 1/4" by 7 5/8"), Norman (2 1/4" by 11 5/8") and utility (3 5/8" by 11 5/8"). Custom colors as well as edge cap and corner pieces are available. • trikeenan.com • Circle 102



The **Freedom Collection** in **Boral Bricks'** Architectural Design Series features wire-cut commercial bricks made from 100% clay and shale. The bricks have a long life cycle, do not emit chlorofluorocarbons (CFCs) or chlorodifluoromethanes (HCFCs), and can be manufactured virtually waste free. Available in modular size (7 5/8" long by 2 1/4" high) and eight colors in a variety of creams, grays, reds, and browns (Manhattan, Wheat, and Varsity are shown, from top to bottom), the Freedom Collection meets or exceeds ASTM standards and can contribute to LEED points. • boralbricks.com • Circle 103

ThinBrik by **Acme Brick Co.** is a 1/2"-thick, modular brick suitable for creating masonry veneers in commercial and residential projects. For interior applications, ThinBrik uses the Tabs Wall System, in which the bricks are adhered to metal panels and secured with traditional mortar. The lightweight system does not require additional wall support and can be installed in days. For exterior applications, ThinBrik can be installed with the Tabs II Heavy Duty Panels, which have been tested to 400' high at wind loads of 150 mph. The product is available in a variety of colors. • brick.com • Circle 104

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→ LIGHTING

Let There Be Light

ENGINEERS DISCUSS THE LIGHTING-CONTROL SYSTEMS THAT ENABLE THEIR CLIENTS AND USERS TO FOCUS ON DIFFERENT ASPECTS OF EXPERIENCING A BUILDING.

TEXT BY BRIAN LIBBY
ILLUSTRATIONS BY PETER ARKLE

In the *Book of Genesis*, after creating the world God makes introducing light a first order of business—even before creating anyone to take notice. It's just as high a priority in designing buildings. Studies have shown that schoolchildren achieve higher average test scores in naturally lit classrooms, that office employees near windows take fewer breaks, and even that cash registers under skylights reap higher sales. But the way that designers balance natural and artificial light, and especially how they modulate between them, is constantly being fine-tuned.



Mark Williams, HKS Sports & Entertainment Group

Most sustainable-building projects are offices, schools, libraries, and healthcare facilities. But for architect and principal Mark Williams, AIA, and his Dallas firm, HKS, the new Apogee Stadium at the University of North Texas in Denton, Texas—which in October became the first LEED Platinum-rated outdoor sports venue—presented a different kind of sustainable structure. For Williams, who is part of the HKS Sports & Entertainment Group, it was an opportunity to build in advanced lighting controls.

The stadium relies on natural light to illuminate 90 percent of the building's occupied indoor spaces. "The design team utilized **MechoShade** shading devices to create an extremely efficient mechanical system," Williams says. With three on-site wind turbines under construction, the stadium that hosts North Texas's Mean Green athletics teams is 25 percent more efficient than code. "The design relies on receiving a signal from a **Crestron Electronics** central building-automation system, which monitors weather conditions and either opens or closes the shades to minimize the energy consumed."



Jason Hukill, LWPB Architecture

The lighting controls that serve the Oklahoma City-based LWPB Architecture's LEED for Commercial Interiors Silver-certified satellite office in Norman, Okla., are the same dimmable ballasts that the firm employs for clients. "If you have a light being switched on and off, if it's in that moderate daylight condition, it can flicker on and off," says director of sustainability Jason Hukill, AIA. "We integrate them with an **Intermatic** time clock that also shuts off the lights at night."

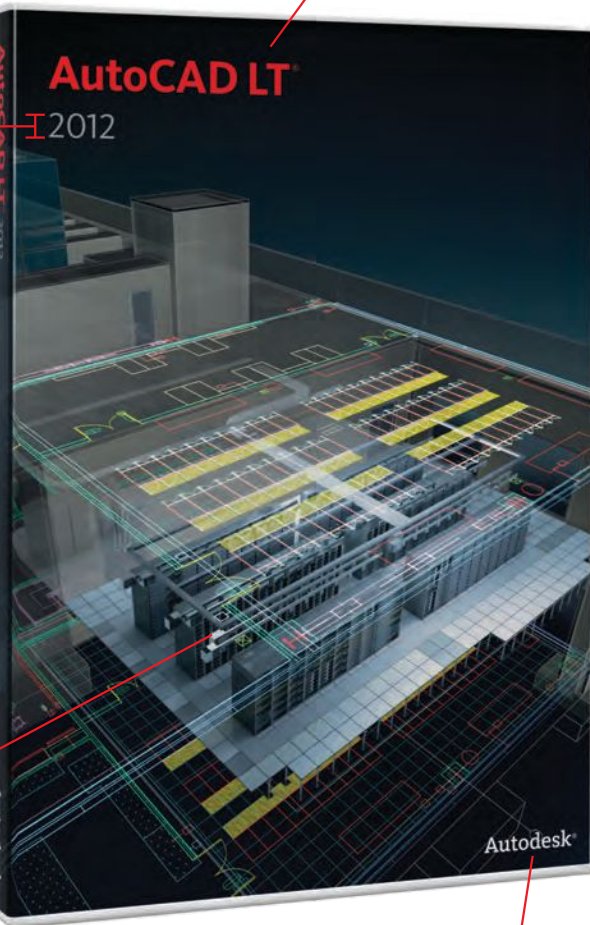
Hukill emphasizes the importance of creating multiple zones within architectural spaces. "It increases flexibility. In this library we're doing now with skylights and a perimeter curtainwall, we did not go for the Walmart approach, with lights in the ceiling, one big ambient cloud of light," he says. "We used a layer approach: lights on the stacks, on an access floor, that can move at will." The shades can be connected or controlled separately. "I believe **MechoShade** and **Draper** have that capability, if you want to spend the money on the controls."

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**Source: Autodesk Professional User Discovery Research, July 19, 2011

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technology

90

PERCENT OF APOGEE STADIUM'S REGULARLY OCCUPIED INDOOR SPACE ILLUMINATED BY NATURAL DAYLIGHTING

SOURCE: HKS SPORTS & ENTERTAINMENT GROUP



Joseph "Jody" Good, Spectrum Engineers

"I'm actually a fan of the photocell dimming system, where the photocell's built into the luminaire," explains Jody Good, principal lighting designer for Spectrum Engineers in Salt Lake City. "It lets us have daylighting and not pay a contractor extra money to install a control system."

WattStopper, Good explains, makes a handheld infrared device that works like a remote control—one that's less expensive than building a browser interface. "It's like a channel changer. There are two of them," he says. "One's for building commissioning. Then the maintenance worker gets the other."

It's crucial to set up any design before the users move in, the engineer explains. If not, they often "get used to bad lighting," he says, "and no matter what we do to make things right, they will resort to the crude personal interventions like lamps to achieve their own personal level of lighting comfort."



Ron Smits, Interface Engineering

Working in California means designing within Title 24 energy code strictures such as mandatory shutoff requirements for commercial buildings. "We just did a northern California project with a **Lutron Quantum** system where each ballast had an address," explains Ron Smits, senior lighting designer at Interface Engineering in San Francisco. "From a central control point you could tell the status of that fixture: whether it was on, off, or dimmed. Individual users could control the fixtures directly."

On that same project, the building's lighting system was integrated with the local utility. "This client gave authorization to reduce their electrical lighting load by a certain percentage. That amount is really not that noticeable to the average user," Smits says, "but because this was a huge building with people occupying five stories of open office, you can imagine that a percentage reduction would lead to a lot of kilowatt-hours saved." □



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Learning Objectives

1. Describe why architects have options when selecting materials to be used in fire-rated assemblies.
2. List the three different building codes that combined to become the International Building Code.
3. Describe basic testing requirements for fire-rated assemblies.
4. List three different testing standards for fire-rated assemblies.

→ CONTINUING EDUCATION

Burn Notice

CODE COUNCILS AND TESTING LABORATORIES LAY DOWN THE PARAMETERS OF FIRE-RATED CONSTRUCTION, BUT AT THE END OF THE DAY, ARCHITECTS ARE RESPONSIBLE FOR KEEPING US SAFE.

TEXT BY AARON SEWARD

WHEN THE TRIANGLE Shirtwaist Factory caught fire in New York in 1911, padlocked doors and a lack of proper egress from the upper floors of the 10-story Asch Building contributed to the deaths of 146 garment workers. This watershed moment launched a massive reform movement in occupational safety and health standards, as well as fire safety. Over the intervening 100 years, prescriptions for fire-resistive construction have become a matter of law in the form of municipal and state building codes. And as every architect who has ever shepherded a design through the approval and permitting process knows, meeting these codes requires a fairly simple formula: The larger and taller a building is, and the greater the number of people who will occupy it, the more fire-resistive measures must be built into the structure. The basic concept is to compartmentalize the building into smaller spaces through fire-rated construction so as to limit the spread of a potential fire, to allow egress from the building, and to give firefighters time to put the fire out.

Yet, within this formula, there is room for quite a lot of variation. "The code doesn't set specific requirements in terms of what the construction of walls and ceilings should be. It sets requirements of fire performance and continuity," explains Richard Walke, a senior regulatory engineer at Underwriters Laboratories, the nation's largest product-testing and certification organization. "It's up to design professionals to make judgments of what types of materials they want to use and then to find a way of using those materials in wall assemblies that meet the performance criteria of the code."

For architects, arriving at a code-compliant design that satisfies their aesthetic and functional goals may

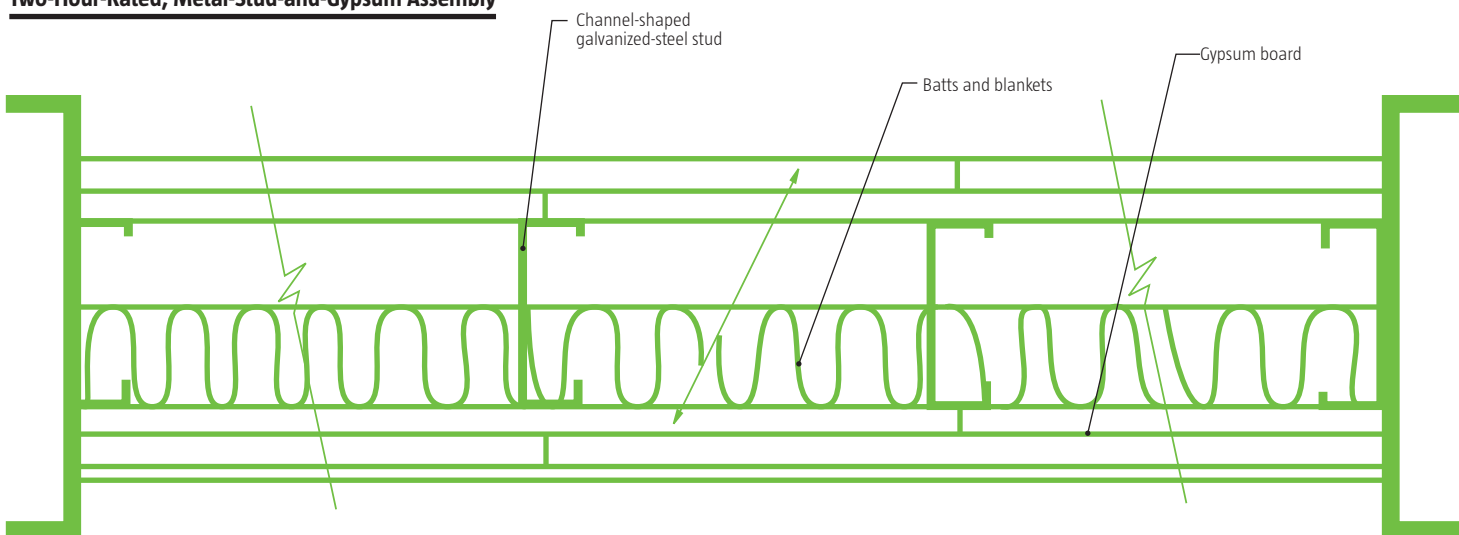
seem like a very dry process. But, especially on larger projects, going into the permitting process with a clear understanding of the code—and how to satisfy it—can save valuable time, not to mention millions of dollars.

From Model Code to Law

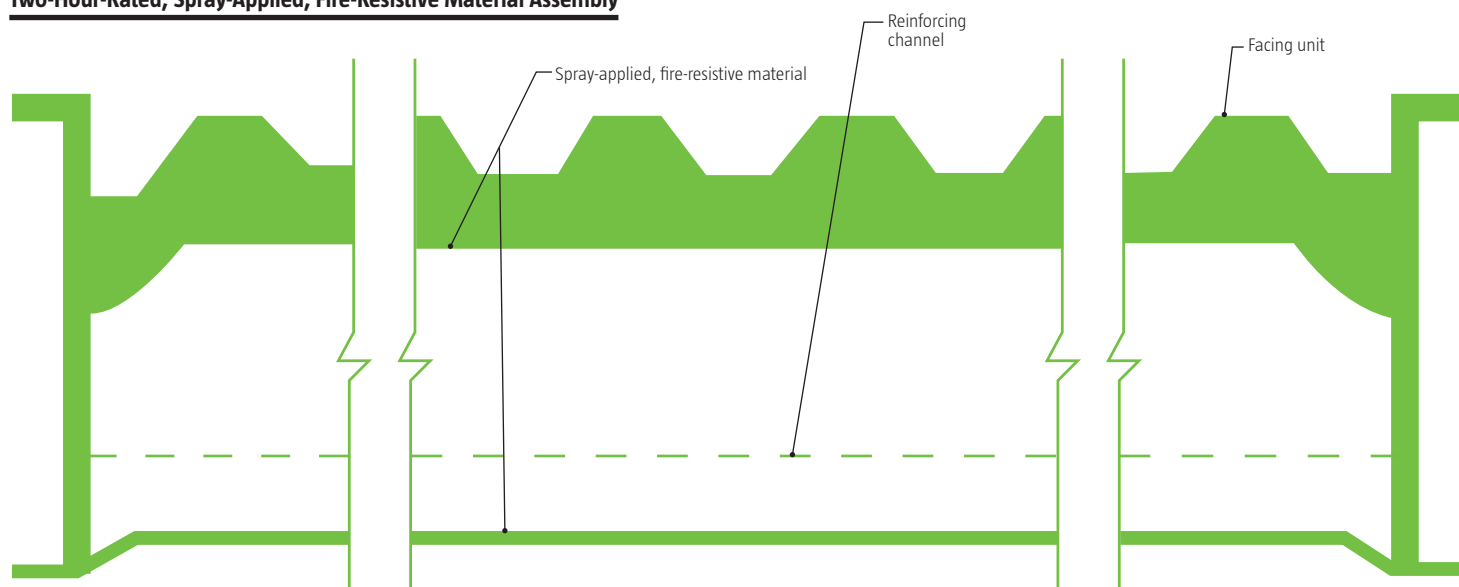
At the end of the day, state legislatures and municipalities vote building codes into law and take on the burden of enforcement. Before becoming law, however, codes begin life as model codes. Until recently, there were three different model codes in the U.S. developed by three separate organizations: the Building Officials and Code Administrators International, the International Conference of Building Officials, and the Southern Building Code Congress International. In 1994, these organizations created the International Code Council (ICC) as a joint effort to take on the monumental task of melding the three codes into one coordinated national model construction code. In 2000, the ICC released the fruit of this process, the International Building Code (IBC).

"ICC is a membership organization that generates the provisions of the IBC through a consensus process," says Chris Reeves, manager of plan review services at the ICC. "Anybody can propose a code change, but final decisions are made by ICC governmental member voting representatives and honorary members." The ICC's membership includes state, county, and municipal code enforcement and fire officials, architects, engineers, builders, contractors, elected officials, manufacturers and others in the construction industry. Committees hear code-change proposals from anyone who cares to make them and then pass them on to the organization's

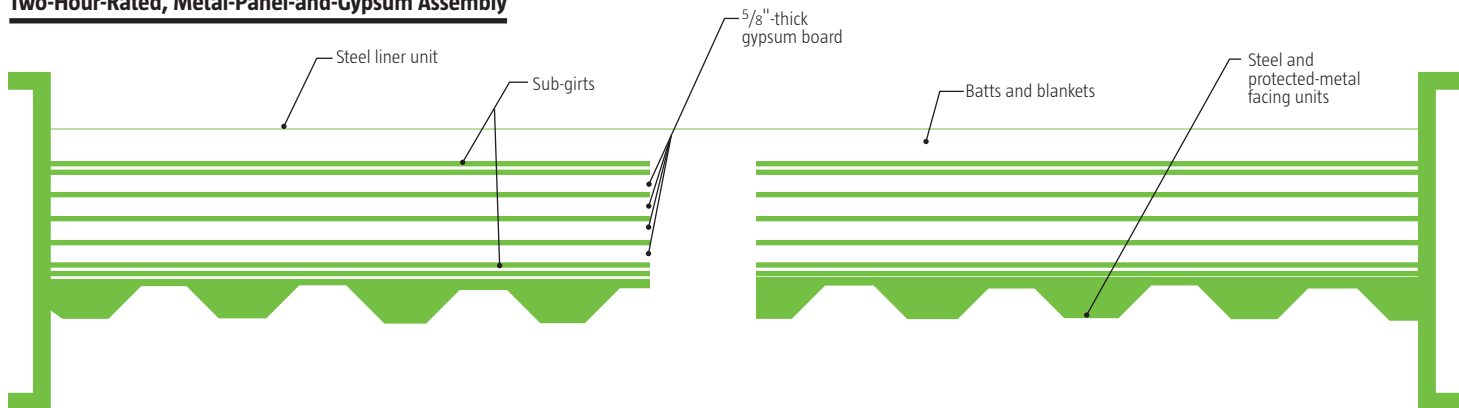
Two-Hour-Rated, Metal-Stud-and-Gypsum Assembly



Two-Hour-Rated, Spray-Applied, Fire-Resistive Material Assembly



Two-Hour-Rated, Metal-Panel-and-Gypsum Assembly



UL's testing process involves placing test assemblies in a furnace and exposing one face to fire to determine the fire rating. In the case of glass assemblies (left), the fire is evident during the testing process. But in the case of opaque assemblies, the testers must rely more on temperatures collected by thermocouples inside the furnace. After the test fire is extinguished, UL technicians can compile the temperature data, along with information such as roof-deck deformation (middle) and material failure (right) to help determine the rating (in hours) that each assembly receives.



voting members, who are governmental member voting representatives and honorary members.

A model code such as the IBC has no legal standing until it is adopted as law by a legislative body. This is done at the local level by a state legislature, county board, or city council. Sometimes the federal government will mandate certain code requirements. (For example, codes may be mandated in order to secure Medicare and Medicaid financing for a healthcare facility.) While legislative bodies are not compelled to adopt model building-safety or fire-prevention codes, at the moment, all 50 states and the District of Columbia have adopted the IBC. Nonetheless, sometimes local governments will draft their own amendments—as California is known to do—though the practice is discouraged. While the main goal of the IBC is to establish the minimum requirements necessary to provide safety, guard public health, and reduce property losses, it also manages to keep construction costs down. It does so by encouraging uniformity in the construction industry, allowing building and material manufacturers to do business at a larger scale that leads to reductions in cost. Excessive amendments to the model code erode this uniformity.

When adopted as law, all owners of property within the boundaries of the adopting jurisdiction are required to comply with the codes. Since codes are updated regularly, an existing structure need only meet the code that was enforced when it was built. However, reconstruction, rehabilitation, or alteration of the existing structure, or a change in occupancy as defined by the building code, all require that the structure be brought up to date to meet the most current version. There are exceptions: Certain code revisions are deemed essential to life safety and can require retroactive provisions for existing buildings. While the ICC updates the IBC every three years, it is not always immediately adopted by every legislative body. In fact, there are some states that are still using the 2000 version of the code.

There are chapters in the IBC that relate to fire alarms, sprinklers, ingress and egress, and other life-safety measures related to a possible fire event, but it is chapters five, six, and seven that pertain specifically to fire-resistive-rated construction. "Our code tells you how big you can build depending on occupancy and type of

construction," Reeves says. "The point is, the more fire resistance you put into a building, the bigger you can build. For example, a Type IIB building, which is light non-combustible construction with no fire protection on the main structure, allows you 23,000 square feet per floor. If you build a IIA, which is the same type of construction but with one-hour protective ratings on all structural members, you can increase that to 37,500 square feet per floor."

Testing and Fire Rating

The building code mandates the type of construction for the desired building height, number of stories above grade, floor area per story, and occupancy group—but is silent in terms of the actual materials and assemblies that make up the fire-resistive construction. To find systems that meet the code's requirements, architects must often refer to manufacturers' specifications. Manufacturers, in turn, get their products rated by approved testing laboratories, including Nationally Recognized Testing Laboratories (NRTLs). NRTLs are private-sector organizations that the Occupational Safety & Health Administration (OSHA) has deemed capable of determining whether products meet consensus-based standards. There are 16 NRTLs currently recognized by OSHA that test and approve everything from toasters to solar panels. The largest of these, and one of the few with the equipment necessary to fire-rate building assemblies, is Underwriters Laboratories (UL).

UL uses "Fire Tests of Building Construction and Materials," also known as ANSI/UL 263. The standard spells out the procedure to determine the hourly fire rating of a construction assembly. "Typically, material manufacturers will contract with our agency to run the test," UL's Walke says. "They determine the materials and design the assembly—say they want to use type XYZ gypsum over wood studs with certain fastening tips. We then construct the assembly according to their specifications and run the test."

ANSI/UL 263 requires that the wall and partition assemblies being tested meet a minimum size of 100 square feet and a minimum length and width of 9 feet. UL builds the assembly and allows it to cure.

WHILE THE INTERNATIONAL CODE COUNCIL UPDATES THE INTERNATIONAL BUILDING CODE EVERY THREE YEARS, IT'S NOT ALWAYS IMMEDIATELY ADOPTED BY EVERY LEGISLATIVE BODY. IN FACT, THERE ARE SOME STATES THAT ARE STILL USING THE 2000 VERSION.

Based on the requirements of the materials used, the test assembly may be conditioned until it reaches an equilibrium moisture content before being placed next to the test furnace. Inside the furnace, fire—intended to mimic conditions after the flashover or spontaneous ignition stage of a fire—is applied to one side of the test assembly. The furnace reaches increasing temperature benchmarks over the course of four hours—1,000 F at 5 minutes, 1,700 F at 60 minutes, 1,850 F at 120 minutes, and 2,000 F at 240 minutes, and the temperature of the fire and the assembly is recorded through a series of thermocouples inside the furnace. During the test, technicians look for flame passage through the assembly, temperature rise on the unexposed side, and whether the assembly can continue to support a load (if it's a load-bearing assembly). An assembly's rating is determined by one of several criteria: the time during the test when flames pass through; an overall temperature rise of 250 F (determined by the average temperature of all of thermocouples); a rise of 325 F at one of the thermocouples; or structural collapse.

After the fire-exposure test, technicians conduct what is known as the hose-stream test, which entails spraying the assembly with a high-pressure water hose to measure structural integrity. ANSI/UL 263 requires that the assembly withstand this final test without permitting water to project through. Also, if an assembly is not symmetrical—if one side is gypsum and the other masonry, for example—then two fire tests must be done, one from each side. The entire assembly is then given the lesser of the two performance ratings.

Innovations in fire-rated construction happen all the time. New fire-resisting materials come out, and existing products can be used in different ways to achieve different ratings. The versatility of the testing method leaves it up to the individual manufacturers to develop materials that meet industry needs and creates a situation where architects can motivate new systems that satisfy both codes and aesthetics.

UL publishes all of its testing results in its printed Fire Resistance Directory and makes it available online free of charge via the Online Certifications Directory and its Ultimate Fire Wizard database tool. "As time has gone on, the number of designs increases by about 10 percent

per year," Walke says. "Our directory has 1,750 individual designs now." The Ultimate Fire Wizard allows architects to input details on a project through a series of pull-down menus and keyword searches, and then searches the UL database for matching designs.

Code in Bricks and Mortar

While the unitizing efforts of the ICC and tools such as UL's Fire Wizard are making it easier for architects to understand the building codes as they apply to fire-resistive construction, and to find assemblies that comply with them, designing an efficient fire-protected building still requires a degree of subtlety. There are still many variations in the code from jurisdiction to jurisdiction, and even when the code is uniform it leaves much to interpretation. "There's a table in the building code that mandates the type of fire-rated construction for use and size. It's pretty plug-and-chug," says Greg Miller, president of Code Consultants, a fire-protection engineering and life-safety consulting firm headquartered in St. Louis. "Then there are certain special options permitted under the code that you need to weigh thoroughly. If you don't analyze the problems properly, it can mean millions of dollars."

Code Consultants has made a practice out of understanding architects' design goals and finding applicable construction options that meet the code from the start of the design process. While such consulting is commonplace in large projects, even small-time architects working on minor buildings can benefit from the type of close analysis that such firms conduct. Since the code only mandates fire-performance characteristics, designers can search out unique material solutions. There is also tinkering that can be done to stay within the code, while reducing the cost of the construction.

Perhaps the most important benefit of closely understanding the code and how to meet it at an early stage in the design process is the possibility of getting preliminary approval of the concept and direction. "When we go to meet with officials, we want them to sign off so that we can proceed with confidence that we won't get any surprises when we come in with permit drawings," Smith says. "If there's no delay for permitting, you can avoid adding more cost to the project." □



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→ PRODUCTS

Editor's Choice



TEXT BY WANDA LAU

Designed by longtime Alessi collaborator David Chipperfield, the folding **Alessi Piana** chair is made of fiberglass-reinforced polypropylene and is suitable for indoor and outdoor use. Manufactured in Italy by **Lamm** out of 100% recyclable materials, Piana measures 78cm tall, 46cm wide, and 52cm deep when open, but folds to 7cm deep. Piana comes in six colors: white, gray, black, green, yellow, and red. Trolley or wall-hung storage options are available. • alessi.com • Circle 120

EuroLite Slate recycled-rubber roofing by **G.E.M.** creates the look of slate roofing at a price comparable to that of premium asphalt shingles. Containing more than 75% recycled content, it weighs approximately 2 pounds per square foot and comes in 40"-wide-by-17"-high panels comprising four tabs. Hip or ridge caps and valley, rake, or eave starter strips are available. EuroLite Slate comes in gray, black, or brown. • euroshieldroofing.com • Circle 121

Designed for installation in drop ceilings, **Direct-Lit LED Flat Panels** from **MaxLite** provide even illumination with minimal glare. The dimmable lights offer a potential life of 50,000 hours and are compatible with building controls, motion sensors, and timers. Available in 1'-by-4', 2'-by-2', and 2'-by-4' configurations, and in 3,500 K or 5,000 K models, the panels operate on 120-277V systems. • maxlite.com • Circle 122

Symmetry, the latest architectural glass series by **Nathan Allan Glass Studios**, features five different patterns of embossed and debossed shapes. The clear and textured glass is available in 1/4" to 3/4" thicknesses and in sheets up to 7' by 12' annealed or 6' by 10' tempered. It can also be laminated for safety. Finish options include firefrost opacity and lucent, gemstone, or metallic colors. • nathanallan.com • Circle 123

Cast-iron **Architectural Tree Grates** by **HessAmerica** are available in eight models with different perforation designs. Each square or circular model comes in up to three sizes ranging from 39.4" to 78.7" wide nominally. The two-piece grates include a powdercoated black matte finish, antislip detailing on the surface, and a hot-dip galvanized steel frame for installation. Removable plugs in the grates can accommodate watering hoses. • hessamerica.com • Circle 124

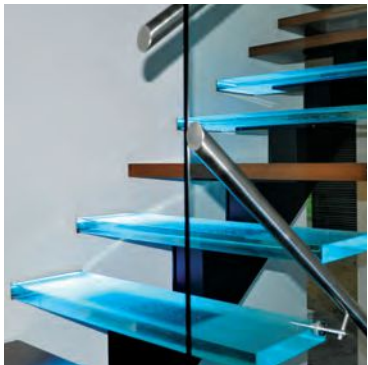
For indoor or outdoor gardens in tight spaces, the **Minigarden** modular plant container system by **QuizCamp** can connect side by side and top to bottom in a freestanding or wall-mounted assembly. Made from a polypropylene copolymer treated for protection from ultraviolet rays, the recyclable containers are available in white, black, green, terra-cotta, or gray. A three-by-three assembly measures 64cm long by 14cm deep by 57cm high. • mini-garden.com • Circle 125

8,238

The number of participants at the beginning of the world's largest game of musical chairs. Held on Aug. 5, 1989, at the Anglo-Chinese School in Singapore, the game was three-and-a-half hours long.

SOURCE: GUINNESS WORLD RECORDS

Brilliant Design.



The **Plush Flock** wallpaper collection designed by Laurence Llewelyn-Bowen for **Graham & Brown** offers four design patterns: Flock Star Stripe, Kinky Vintage, Swirly Wurly, and Velvet Undergrowth. Available in widths of 20.5", the wallpaper features real flock detailing on a nonwoven paper substrate and two or three color options for each pattern. Plush Flock can be washed by sponge. • grahambrown.com • Circle 126

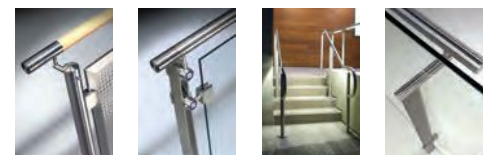
Strata, the latest collection of tables and benches by Brooklyn, N.Y.-based **André Joyau**, combines reclaimed hardwood or industrial-steel bases with high-strength cementitious surfaces. Available in natural gray, driftwood, off-white, or black, the surfaces are imprinted with nature-inspired patterns, including lotus leaf, snakeskin (shown), and ostrich skin. Tabletops are round, rectangular, or square; benches are 15" wide and 36" to 120" long. Custom sizes are available. • andrejoyau.com • Circle 127

Solid-glass stair treads and risers by **ThinkGlass** are cast in one solid piece from 100% recyclable glass with thicknesses ranging from 1½" to 4". Each step has a textured, slip-resistant surface and the stairs are available in eight textures, two colors—crystal or aqua—and with polished, textured, or brushed edges. ThinkGlass designers can embed the steps with LEDs in eight different colors—including true white, cold white, amber, and red—to create a glowing effect. • thinkglass.com • Circle 128

AAF-HermanNelson self-contained unit ventilators by **McQuay International** can fit into existing ventilator space in classrooms and operate on electric heat or air- and water-source heat pump configurations. A two-stage compressor reduces noise and energy usage and helps provide consistent HVAC conditions. The unit uses non-ozone-depleting R-410A refrigerant. • mcquay.com • Circle 129



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NUMBER OF MAJOR U.S. CITIES TO ADOPT A CONSUMPTION TAX ON PAPER AND PLASTIC BAGS (WASHINGTON, D.C.)

SOURCE: ANACOSTIA RIVER CLEAN UP AND PROTECTION ACT

TEXT BY BLAINE BROWNELL, AIA
ILLUSTRATIONS BY PETER ARKLE

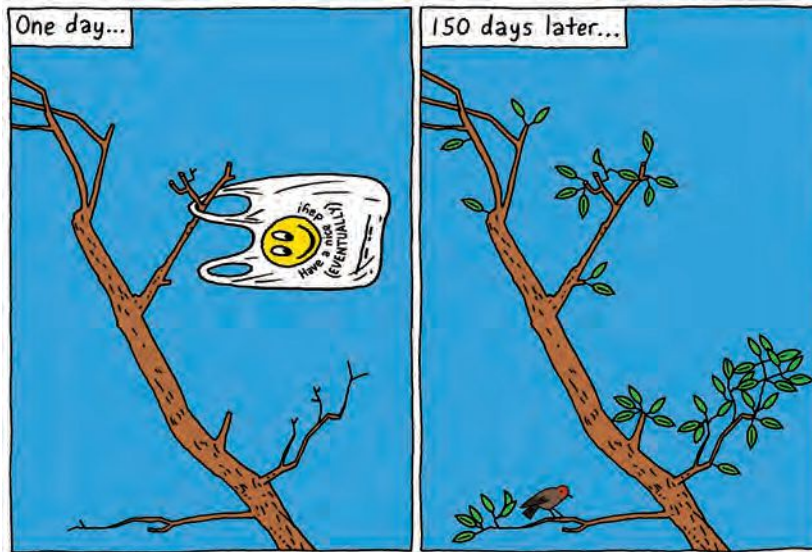


→ Read more of Blaine's reports on cutting-edge tech at ARCHITECT'S Mind & Matter blog: go.hw.net/brownell.

→ MIND & MATTER

Bag the Bags

IS A BIODEGRADABLE ALTERNATIVE TO THE PLASTIC BAG AN ALTERNATIVE TO THE CULTURE OF CONSUMPTION THAT PLASTIC BAGS REPRESENT?



CONVENIENT, CHEAP, AND DISPOSABLE—the ubiquitous plastic shopping bag is one of the most flagrant examples of our modern throwaway culture. Made from petroleum, between 500 billion and 1 trillion plastic bags are produced annually, consuming valuable energy and nonrenewable resources in both their manufacture and transport. Anything but free, plastic bags are estimated to cost retailers in the U.S. alone some \$4 billion, a hidden cost passed on to the consumer. Plastic bags also take up to 1,000 years to biodegrade, so they persist in landfills and in gyres of refuse in the world's oceans.

Seeking an alternative to conventional plastic bags, a team of University of Arkansas students recently started a company to manufacture biodegradable plastic bags, utilizing a lignin-based bioplastic technology developed by University of Minnesota scientist Simo Sarkanen and licensed through the school's Office for Technology Commercialization. Nhiem Cao, the president and CEO of the new company—called CycleWood Solutions—estimates that 1 million plastic bags are used every minute worldwide. The new biodegradable “Xylobags” would biodegrade after 150 days.

The growing fervor for bioplastics development was evident at the BioEnvironmental Polymer Society (BEPS) annual meeting held this September in Vienna. At the conference, BASF head of research Andreas Kunkel indicated that the commercial sector is now willing to invest significantly in biopolymers for a wide array of commercial products—including shopping bags. Kunkel

made a pitch for BASF's Ecoflex, a family of aliphatic-aromatic polyesters made from renewable raw materials that are completely biodegradable.

Biodegradable bags will still require material and energy resources for their manufacture and transportation, and they threaten to increase competition for renewable feedstocks. Moreover, biodegradable bags will still add to the global plastic litter problem, albeit temporarily. The substitution of a more environmentally friendly material makes for exciting news, but ultimately the expendable bag is a design problem, not a material problem.

One of the most profound critiques of plastic as a persistent material of convenience may be found in Toyo Ito's 1991 essay “Architecture in a Simulated City,” in which he bemoans the negative consequences brought about by the material culture of plastic in contemporary society—privileging homogeneity over difference, and expedience over thoughtfulness.

Sixteen years after “Architecture in a Simulated City” was published, I asked Toyo Ito if environmental concerns would lead people to recognize the drawbacks of our culture of convenience. He said no, that the situation won't change—although he did acknowledge the possibility of a gradual transformation. While recent developments suggest a powerful change of course for plastic, it remains to be seen whether biopolymers will affirm or challenge humanity's seemingly incessant desire for consumption and disposal. □

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CULTURE

→ EXHIBIT

It's a well-known irony that the founder of the Nobel Peace Prize invented dynamite. But did you know that his father, Immanuel Nobel, developed the log-peeling rotary lathe used to manufacture plywood? An upcoming exhibition at the Museum of Modern Art, **Plywood: Material, Process, Form**, traces the history of the material that *Popular Science* once dubbed "a layer cake of lumber and glue." The installation includes furniture designs by Eero Saarinen, Sori Yanagi, and the Eameses, whose 1944 lounge chair is shown below. Lesser known are plywood's applications for the aeronautics industry, examples of which are also on display. Through Feb. 27. • moma.org

EDITED BY LINDSEY M. ROBERTS



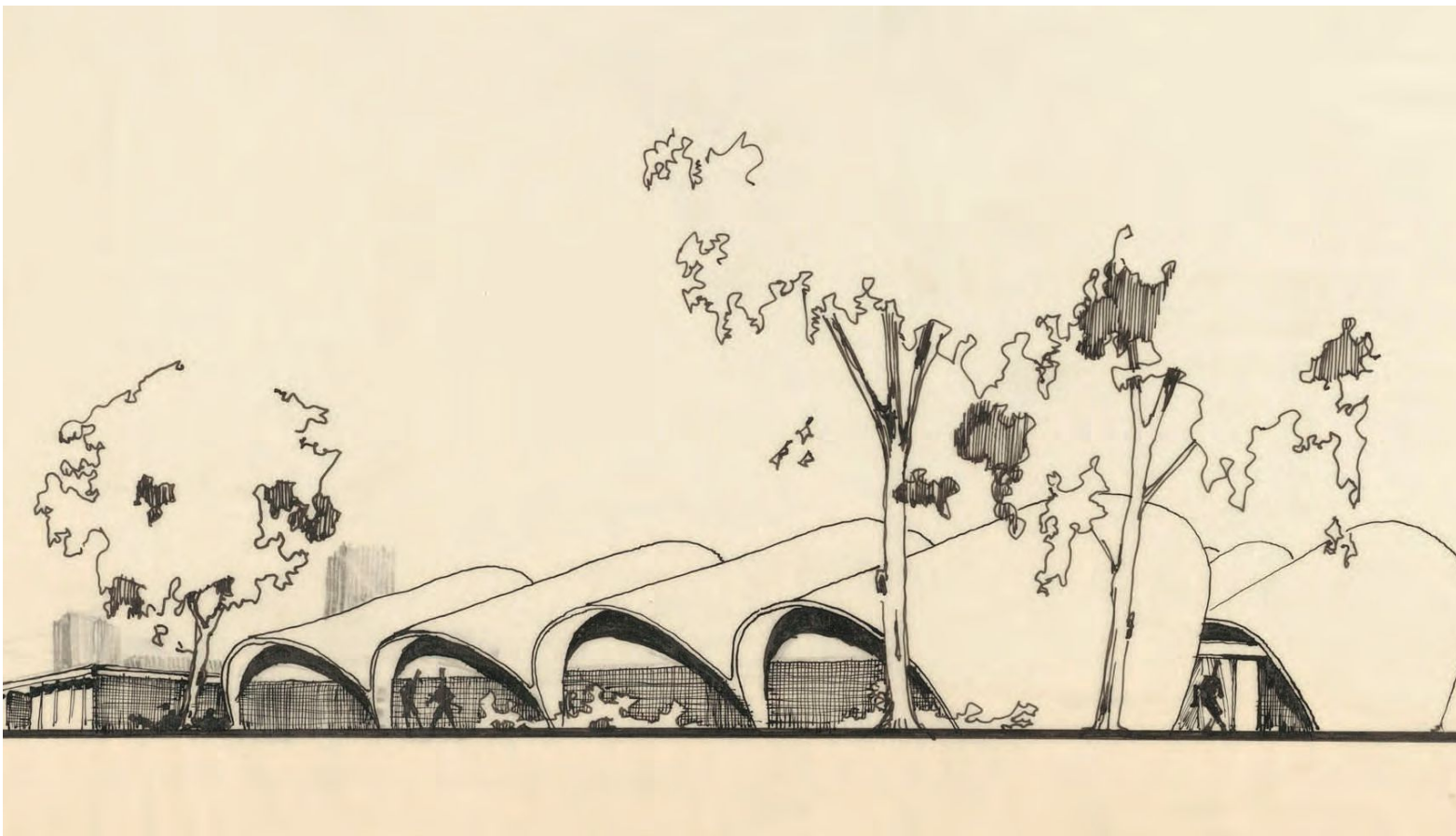


→ **OBJECT**

In "Poema da Curva," Brazilian architect Oscar Niemeyer writes, "What attracts me is the free and sensual curve—the curve that I find in the mountains of my country, in the sinuous course of its rivers, in the body of the beloved woman." These curves, perhaps best evidenced in his 1970 Cathedral de Brasília, have come full circle: Brazilian jeweler H. Stern has launched the **Oscar Niemeyer Collection**, six lines of jewelry inspired—and approved—by the 103-year-old master. Among the trove is the yellow-gold Copan bracelet, which mimics the undulating façade of Niemeyer's 1950s 38-story São Paulo skyscraper. Such curves both shaped Brazilian Modernism and won Niemeyer the Pritzker Prize in 1988. Now they can be returned—repurposed and gift-wrapped—to their muses. • hstern.net

→ **EXHIBIT**

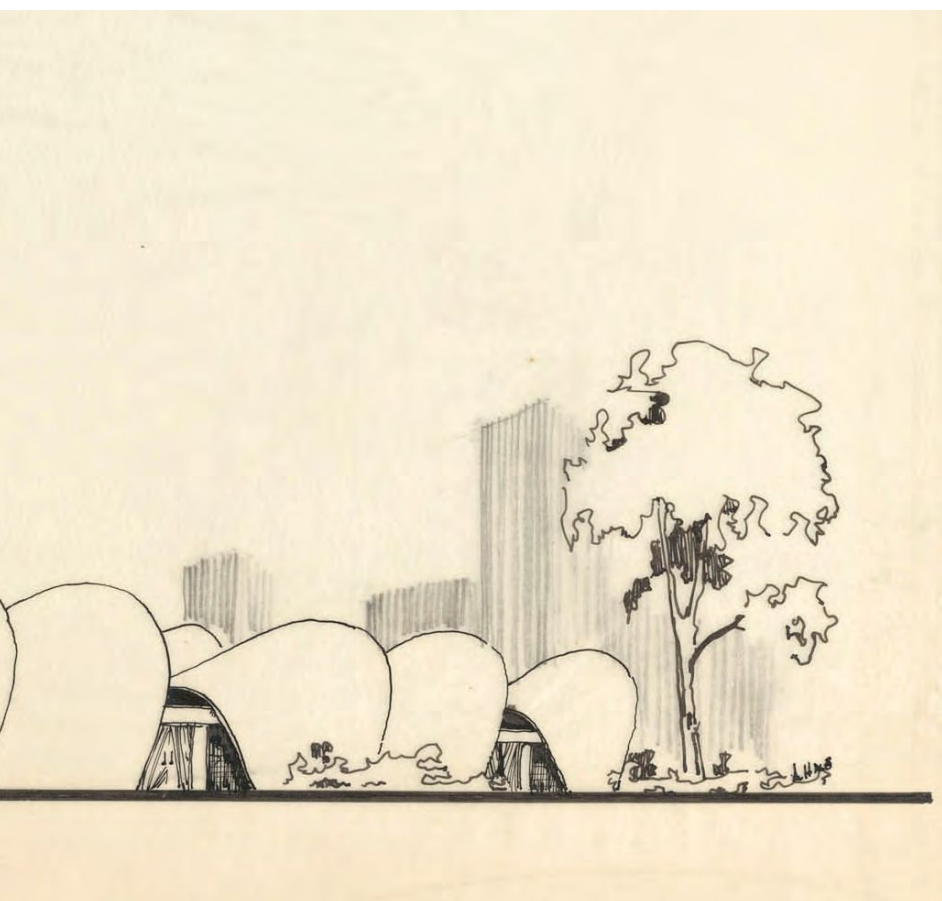
Bertrand Goldberg, designer of the famous 1967 corn-cob Marina City towers, falls somewhere between Louis Sullivan and Jeanne Gang on the family tree of great Chicago architects. Goldberg died in 1997, so it's high time that his idiosyncratic midcentury modernism got the full monographic treatment. The Art Institute of Chicago's **Bertrand Goldberg: Architecture of Invention** (with the installation designed by Chicago's John Ronan Architects), illuminates the full scope of the architect's vision—which encompassed furniture, public housing, gas stations, and modular hospital units—with over 100 models, photos, and drawings. Shown is a drawing of the 1963 Joseph Brennehan Elementary School. Through Jan. 15. • artic.edu





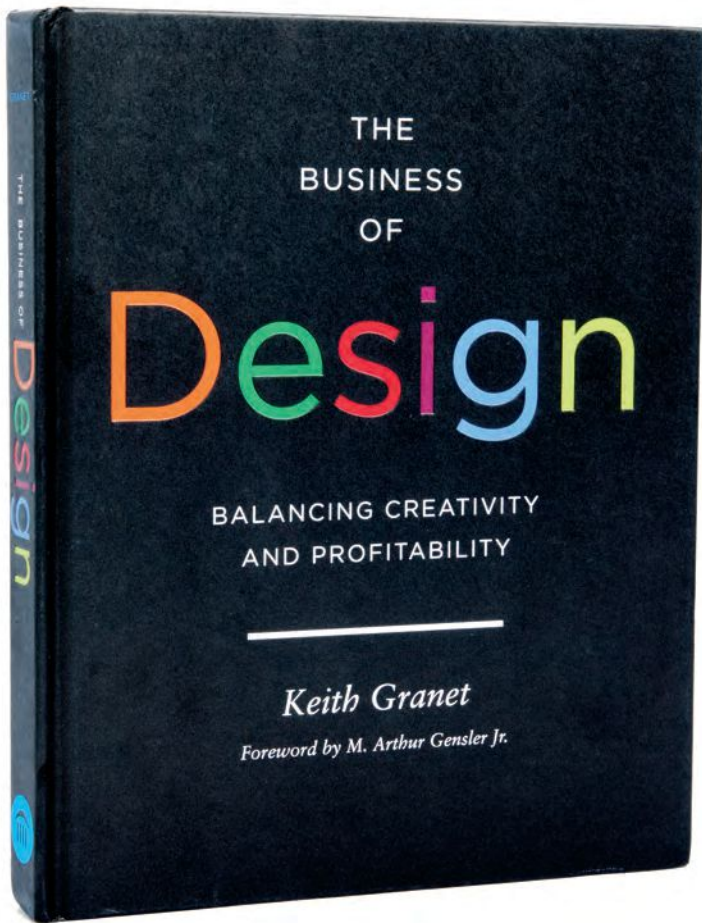
→ FILM

You might not notice light until it's dark, but many are noticing the disappearance of the dark due to light. Filmmaker Ian Cheney features astrophotographic shots of the Earth lit up at night in **The City Dark: A Search for Night on a Planet that Never Sleeps**, which is currently screening around the country. He interviews scientists, philosophers, historians, and lighting designers to investigate the negative consequences of light abundance—one being the disorientation and death of hatching sea turtles due to Florida's lights, shown. He also looks at the positives—namely crime deterrence. • thecitydark.com



→ EXHIBIT

What distinguishes the rarefied supertall building from the merely very tall? In its enthusiastically titled exhibition **Supertall!**, New York's Skyscraper Museum set the highest-of-high benchmark at 380 meters (1,250 feet, the height of the Empire State Building, and higher than the usual 300 meters). A total of 48 such mammoth towers, including the Burj, shown—all built since 2001 or expected to top out by 2016—are featured in the global census. Hasty post-9/11 predictions about the skyscraper's death have given way not only to two new supertall towers planned for ground zero, but to a forest of cloud busters in the Middle East, South Korea, and China. A 7-foot-tall model of Hong Kong's tallest, the International Commerce Centre, is one prominent high point. Through January 2012. • skyscraper.org



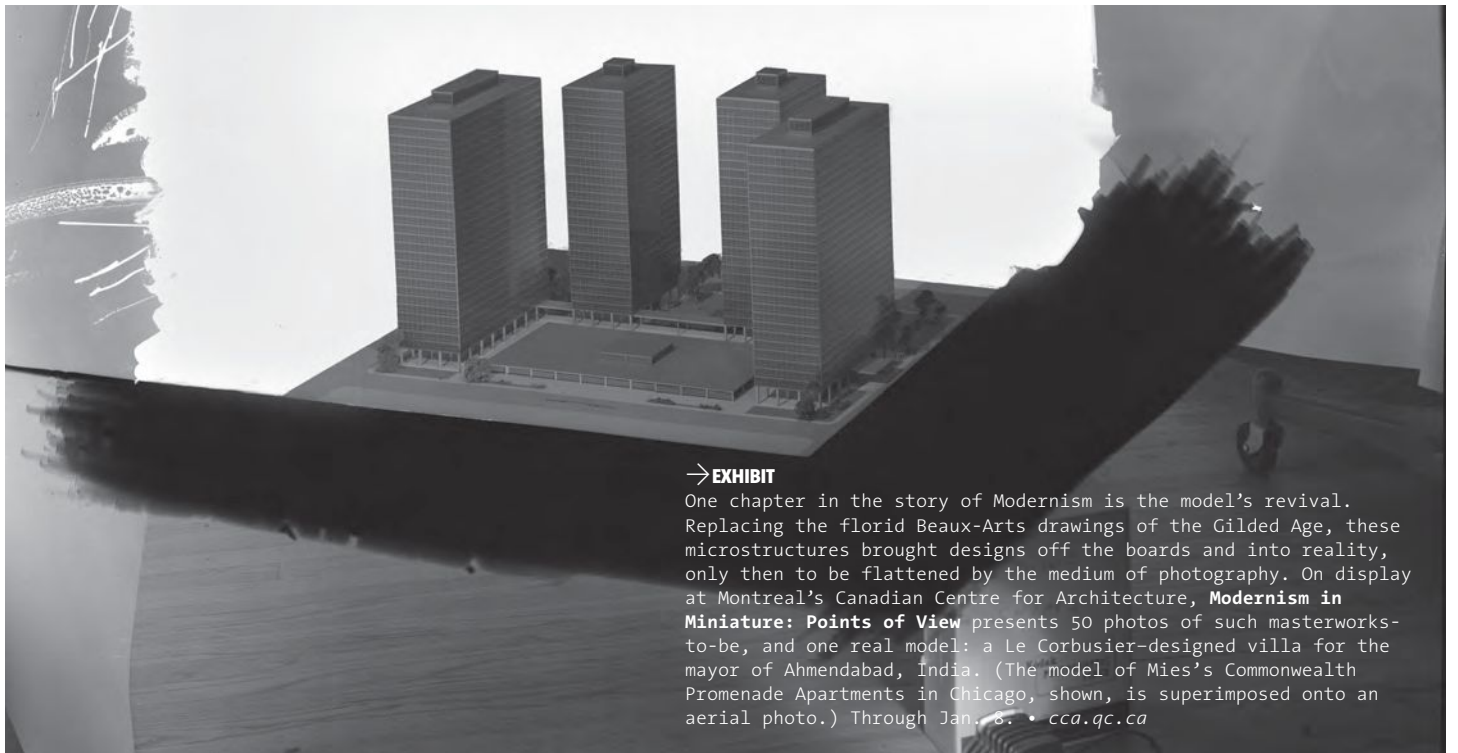
→BOOK

Asking yourself what you would do for work if you didn't need money can help you choose a career. But keeping your business afloat necessitates financial savvy. In **The Business of Design**, Keith Granet interviews architects Michael Graves, A. Eugene Kohn, Richard Meier, and John Merrill to supplement his own years of business knowledge, first as associate for M. Arthur Gensler Jr., and now as 20-year owner of Granet & Associates. Sections focus on finances, marketing, human resources, and project management. • \$40; Princeton Architectural Press, September 2011.



→EXHIBIT

Louise Blanchard Bethune was a drafting apprentice at 25 for a Buffalo, N.Y., architect before becoming the first woman to open a firm (in 1881), join the AIA, and become a fellow. (Bethune's 1904 Lafayette Hotel, shown, is part of the Buffalo and Erie County Historical Society's exhibit **America's First Professional Woman Architect**.) By 1920, there were more than 200 female architects. Today, they are estimated to be 26 percent of U.S. architecture-firm staff. Through March 2012. • buffalohistory.org



→EXHIBIT

One chapter in the story of Modernism is the model's revival. Replacing the florid Beaux-Arts drawings of the Gilded Age, these microstructures brought designs off the boards and into reality, only then to be flattened by the medium of photography. On display at Montreal's Canadian Centre for Architecture, **Modernism in Miniature: Points of View** presents 50 photos of such masterworks-to-be, and one real model: a Le Corbusier-designed villa for the mayor of Ahmedabad, India. (The model of Mies's Commonwealth Promenade Apartments in Chicago, shown, is superimposed onto an aerial photo.) Through Jan. 8. • cca.qc.ca

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TEXT BY KIERAN LONG
PHOTO BY DYLAN COLLARD

→ CRIT

The ArcelorMittal Orbit Tower

THE TWISTED LOGIC BEHIND THE TOTEM OF THE UPCOMING LONDON OLYMPICS, A MONUMENT THAT MEANS ALL THINGS TO SOME PEOPLE.

THE NAME OF THE ARCELORMITTAL ORBIT TOWER is a real mouthful, a hybrid title for a mongrel artwork. The contorted steel “sculpture-cum-tower-cum-engineering feat,” in the inelegant phrase of Tate director Nicholas Serota, is the totem of our Olympic games, rising more than 375 feet out of the central plaza of the park, on former light industrial land equidistant between Stratford and Hackney Wick in east London.

Its \$35.5 million price conveys significance, but no one is exactly sure what it is or what it means. It is an image, a placeholder, an attraction in a field of attractions. It is a signpost to an absence, a Hitchcockian MacGuffin. In short, it is what you build when you don't

know what the public realm is any more.

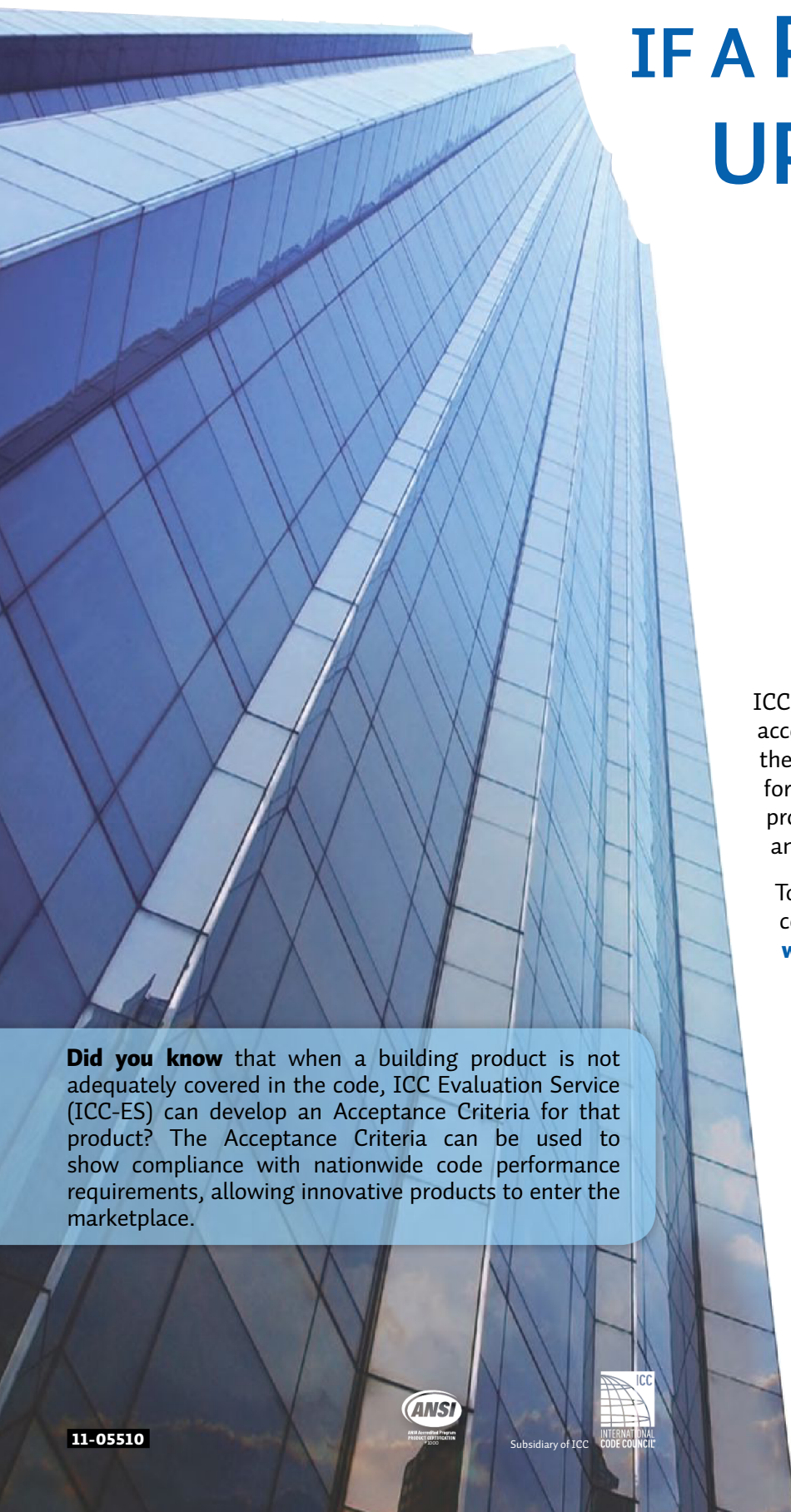
Working backwards through its ungainly name describes its genesis.

The “tower” part was dreamed up by London mayor Boris Johnson, who decided in 2008 that the city's Olympic plans, conceived before his mayoralty, needed a little extra pizzazz: a sprig of parsley on a soup that, despite costing \$14.5 billion, was being discussed as an “austerity Olympics.” The majority of the sporting venues were to be temporary, and the permanent ones—the demountable, Meccano-like stadium; Zaha



Kieran Long is the architecture critic for the *Evening Standard*.

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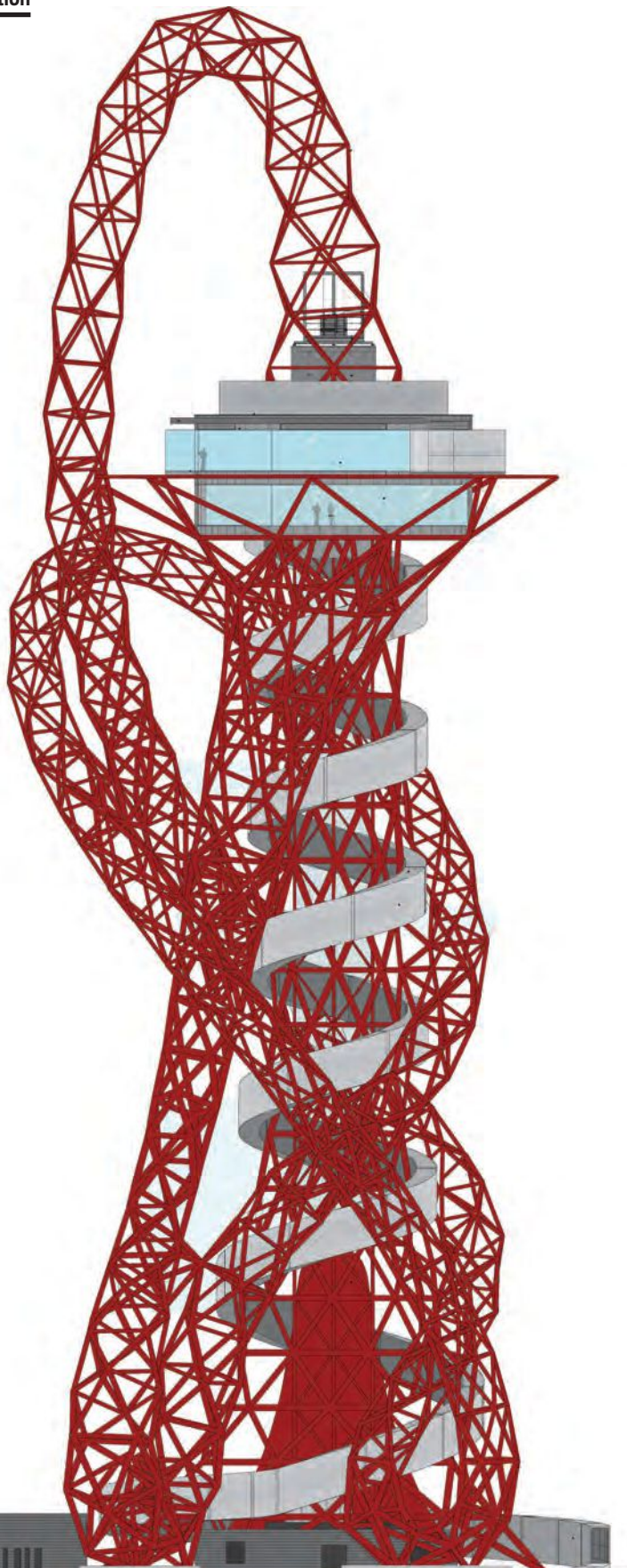
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Elevation



Hadid's aquatics center with its disfiguring temporary "wings" of seating—were looking comparatively underwhelming after the excesses of Beijing.

The mayor writes in the promotional literature for the tower: "I thought we might have a kind of 21st century Trajan's Column, with a winding frieze of modern Londoners, perhaps done by primary school children. That was soon left on the drawing board, eclipsed by the daring suggestions of some of the greatest artists in the world." While our mayor modestly dreamed of emulating a Roman emperor, the art world had still bigger ideas.

The "Orbit" part of the moniker was the culture industry's answer. It was invented by British sculptor Anish Kapoor and Arup engineer Cecil Balmond, the self-styled creative genius of structural engineering who runs Arup's Advanced Geometry Unit. Kapoor and Balmond were announced as winners of a design competition in 2010, and still haven't really cleared up for us what their motivations are. Kapoor has said that he wants the tower to have a sense of "instability" and continual movement. They also talk a lot about the Orbit as a kind of anti-tower, a nonlinear structure that is emphatically not what they call a "traditional, pyramidal" tower of building components stacked one on top of the other. There is something contorted about it, but the thing doesn't look particularly unstable. The spiraling, silver, galvanized-steel staircase serves as its core, with twisting steel red ribbons as decoration.

In its references, Kapoor suggests that the building sits somewhere between the towers of Babel, Eiffel, and Tatlin. He describes visitors' journeys up and down the tower (it has a double-decker viewing platform near the top, capable of holding 300 visitors) as a "procession." But when Kapoor says that all this "has something mythic about it," it is less obvious that he has any particular myth in mind. It's an atmosphere he's after, a generalization. The orbit is an overgrown maypole in a world that has replaced magic with spectacle. As for Balmond, he utters the commonplaces of the engineer: "We want people to forget the engineering, the construction, the materials and simply 'experience' it." He could have said the same about a roller coaster.

But experience it they will, at least according to Mayor Johnson. For this is not just an artwork, it is intended to contribute to the regeneration of east London. "This is a very hard-headed venture, because we need to justify the huge sums of money that we are investing in east London," he told the Australian Broadcasting Company. "And so we need to make sure people come to east London for generations to come." The Orbit will be a paying visitor attraction in the post-games park. In that sense, this is an urban proposal, one that decorates east London in order to make it worthy of a visit by tourists. This is part of the "legacy" of the Olympics—the price east London must pay for the Olympic bounty bestowed on it.

The final part of a trinity that combines politics, art, and wealth is the "ArcelorMittal" part of the sculpture's title. ArcelorMittal is a global steel company that employs less than 1 percent of its 263,000 employees

in the UK, and is headquartered in the tax haven of Luxembourg. Its owner, Lakshmi Mittal, is the richest man in Britain; he last appeared in public life when he was embroiled in a cash-for-influence scandal during Tony Blair's premiership. Johnson approached Mittal in a coat-check room at the World Economic Forum in Davos, Switzerland, in 2009, and got \$30 million out of him in return for naming rights and, presumably, Mittal's public rehabilitation as a grand patron of contemporary art.

What we know of Mittal's architectural taste is best evidenced by the "Taj Mittal," a London palace outfitted with marble from the same quarry that supplied the Taj Mahal. His Scottish holiday home is reportedly furnished by Ralph Lauren. It would be easy to ascribe similar gaucheness in this multi-billionaire paying to name a monument after himself. But the truth is that

THE ORBIT WILL BE A PAYING VISITOR ATTRACTION IN THE POST-GAMES PARK. IN THAT SENSE, THIS IS AN URBAN PROPOSAL, ONE THAT DECORATES EAST LONDON IN ORDER TO MAKE IT WORTHY OF A VISIT BY TOURISTS.

the corporate sponsorship of the project is key to its meaning. The name of this tower was sold off like a football stadium's—and just as the Emirates replaced Highbury, and Etihad replaced the City of Manchester, so the ArcelorMittal Orbit tower sublimates geography into the placelessness of today's corporations. (With all due respect to Luxembourg.)

The ArcelorMittal Orbit tower's scale and nonspecific character means, though, that criticism just slides off it. The promotional literature—which reads like a bunch of rich men, including Johnson, Mittal, Kapoor, Balmond, and Serota, furiously backslapping each other—shows how a piece of public art this big and this political can more or less be all things to all people. It is a self-proclaimed regeneration tool, moneymaking visitor attraction, corporate logo, monument to sporting achievement, "icon," piece of structural innovation, steel catalog, and monument that its authors hope will rival the Statue of Liberty, the Eiffel Tower, and so on.

But what it really points to is that the thing we understand best about urbanism today is how to attract people to a place and how to take money off them on the way. Seventy percent of spectators at the London Olympics will pass through the massive new Westfield shopping mall on the way to see their sporting heroes perform. This relationship between Europe's biggest urban mall and the Olympic Park is the real reason for the ArcelorMittal Orbit. Minister for the Olympics Tessa Jowell said, at the project's unveiling, that it "will be like honey to bees for the millions of tourists that visit London each year." Like an anchor tenant on the scale of the whole city, Kapoor's twisting tower will see tourists sweep through, and east London will benefit from the coffee they buy on the way. □



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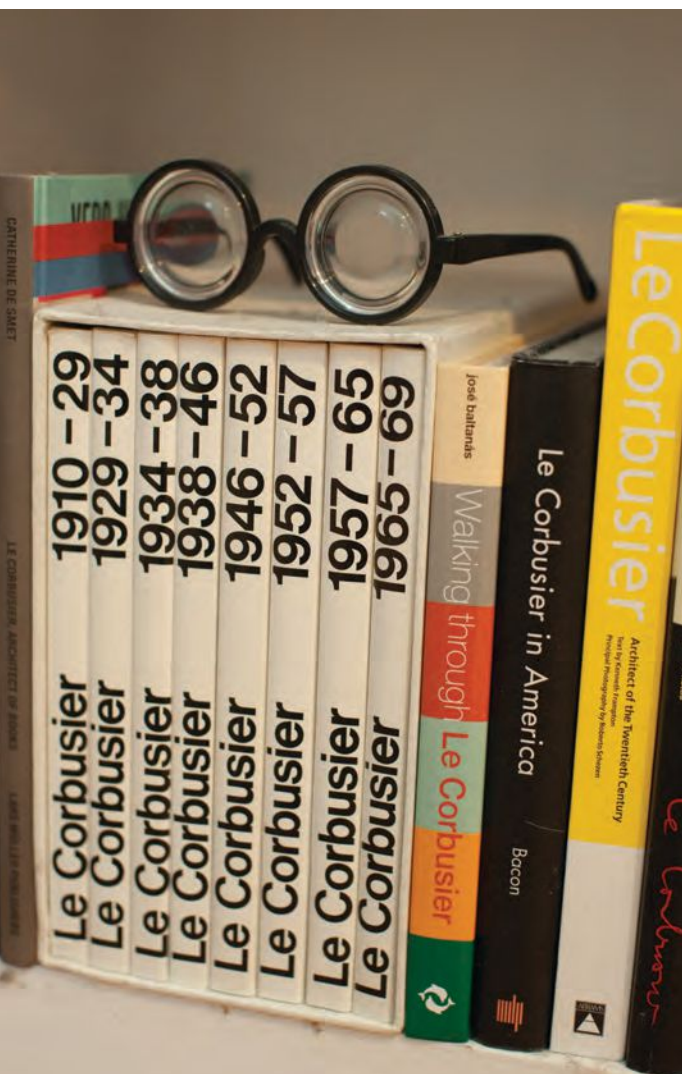
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TEXT BY KRISTON CAPPS
PHOTOS BY JASON FULFORD





Carlos Jiménez, AIA, began building his Houston studio in 1983. "I opened my own studio very precociously," he says. "I wanted my first project to be my own house." Jiménez has been working on it ever since, he says, adding or subtracting buildings and elements every three years or so. "It never gets completed," he says. "I've really never left it."

In the nearly 35 years he has lived in Houston, Jiménez, 52, has witnessed the city's growth and transformation. The Montrose neighborhood where both his studio and home are located, he says, has grown from a "rather suspect area" to one of the most walkable urban areas in the city. The Museum of Fine Arts, Houston, where Jiménez completed an expansion in 1994, is located in Montrose.

His studio is "how I make sense of a city like Houston," Jiménez says. "It's not that I dislike the way Houston has developed, but I'm not as interested in being in this kind of maelstrom. I avoid driving as much as I can."

To say that the studio space is personal for Jiménez is to understate his feelings for it. "I have lived here and worked here," he says. "It's a place where I've developed my life. It's not a place where I go to work." He presently works with two other designers, and the studio does not typically employ more than five. "It's an atmosphere I need to be able to work in," Jiménez says. "So I've really made this place to fit a very personal view of what architecture is and can do. Right across the street I have built my house."

Jiménez says that he searches for clients, not projects, and establishes relationships with them. He is working today on a photography studio for his first client, for whom he first worked in 1982.



"I really believe in the radical power of basic forms. I think today we can practically make any shape at whim. But I really believe in the power of very simple shapes," Jiménez says. "When I say radical, it's because they still remain the most amazing to me. Because they are so easy to alter, or to modify, or to include. The more complex the formal expression, the more difficult it is to transform it—it becomes highly singular, too individualistic. I prefer the anonymity of form."

Jiménez says that he takes his time and has never been overburdened by projects. "I've always been able to control and maintain the right amount of work."

His elemental designs reflect his work process and design philosophy. "I don't like to produce works where the architecture is on 24 hours a day," he says. "I don't feel comfortable doing that work. I don't know how to."





"Most of my studio buildings exist like a tree or like a cloud. They're there, and they're hardly noticed," Jiménez says. "That's what I'm interested in in my architecture. You know that they're there, but they're not always claiming authority or their presence. They get slightly softened or expanded by landscape."

Jiménez acknowledges Alvar Aalto's Villa Mairea as an influence, but he says that he is keen on film, fiction, and poetry, in particular Spanish, Latin American, and North American artists. "I like the way artists use form to transcend form," he says. "They're interested in the spaces between words, how the images become narrative."

"I would like the architecture to be like an invitation," Jiménez says. He believes that his architecture only works over time. "You're invited to enter a world that is not yet totally there. It has to be discovered."

Raymond Loewy designed the grille-less Avanti in Palm Springs, Calif., eschewing Detroit for his own design team.



→ BEYOND BUILDINGS

Golden State of Mind

“PACIFIC STANDARD TIME” SWEEPS CALIFORNIA WITH SUNNY WEST-COAST MODERNISM.

WITH CALIFORNIA, nature and humans have conspired to create one of the most extraordinary environments ever. It is not always a refined or good place—nature shakes things up with earthquakes, droughts, floods, and plagues of pests of almost biblical proportions, and humans have contributed sprawl, pollution, and social iniquity. Yet even in its ugliness and injustice, its violence and its inhuman scale, it can be a place of great beauty, with exhilarating vistas that are both natural and social.

Now, 82 different institutions and galleries around Southern California are celebrating the art that has sought to represent this place, especially in the era after World War II. A collaboration between the Getty Foundation and the Getty Research Institute, “Pacific Standard Time” (PST) will encompass 193 events by the time it closes next spring. It was during the period on which PST focuses that the utopian dreams that have fueled the state’s growth brought millions to its beaches, valleys, and deserts, and that a truly Californian culture took shape.

The Los Angeles County Museum of Art’s “Living in a Modern Way” represents the best California design: an open wave made of metal studs energizes the staid environments of the Renzo Piano, Hon. FAIA–designed Resnick Pavilion, with objects floating on and above simple, white platforms. My favorite touch is the jewelry, displayed in little bubbles on a high table. Toward the far end of the gallery, Dick Van Dyke’s mint-

condition Avanti sports coupé, designed by Raymond Loewy for Studebaker-Packard in 1963, points the way toward a reconstruction, in the best Hollywood stage-set tradition, of the Eames House.

The show makes the argument for living in Southern California as inhabiting a set: Life here is a thin artifice, created by a great deal of technology, floating over a landscape from which it does not have to close itself off. That all this design might hide how things are made, or the costs of making them, or the fact that there are people out there who could not afford this new American Dream, is all part of the price of the completeness and optimism of the vision.

The strength of “Living in a Modern Way” is in its concentration on that domestic set, and how everything from the furniture in the home (an amazing stereo cabinet Craig Ellwood designed for the 1961–1963 Rosen House) to the clothes (an Addie Masters “Hostess pajamas” outfit from 1940) all contributed to that play of modern manners.

The delights of this exhibition are myriad, including the graphics of Alvin Lustig, the bathing suits of Rudi Gernreich, and the ceramics of Edith Heath. The importance and the beauty of midcentury modern design is by now something most of us recognize. “Living in a Modern Way” lets us see why and how it happened, how it all worked together, and how it proposed a whole new way of living called California. □

TEXT BY AARON BETSKY
ILLUSTRATION BY PETER ARKLE

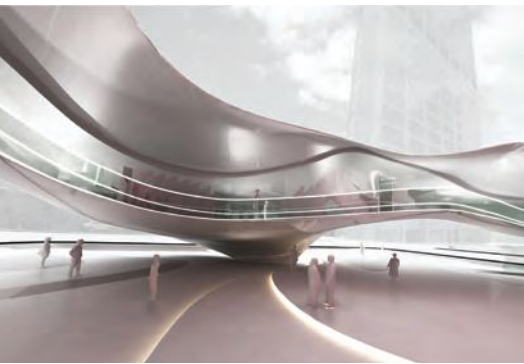


→ Read more of Aaron’s design observations at ARCHITECT’s Beyond Buildings blog: go.hw.net/betsky.



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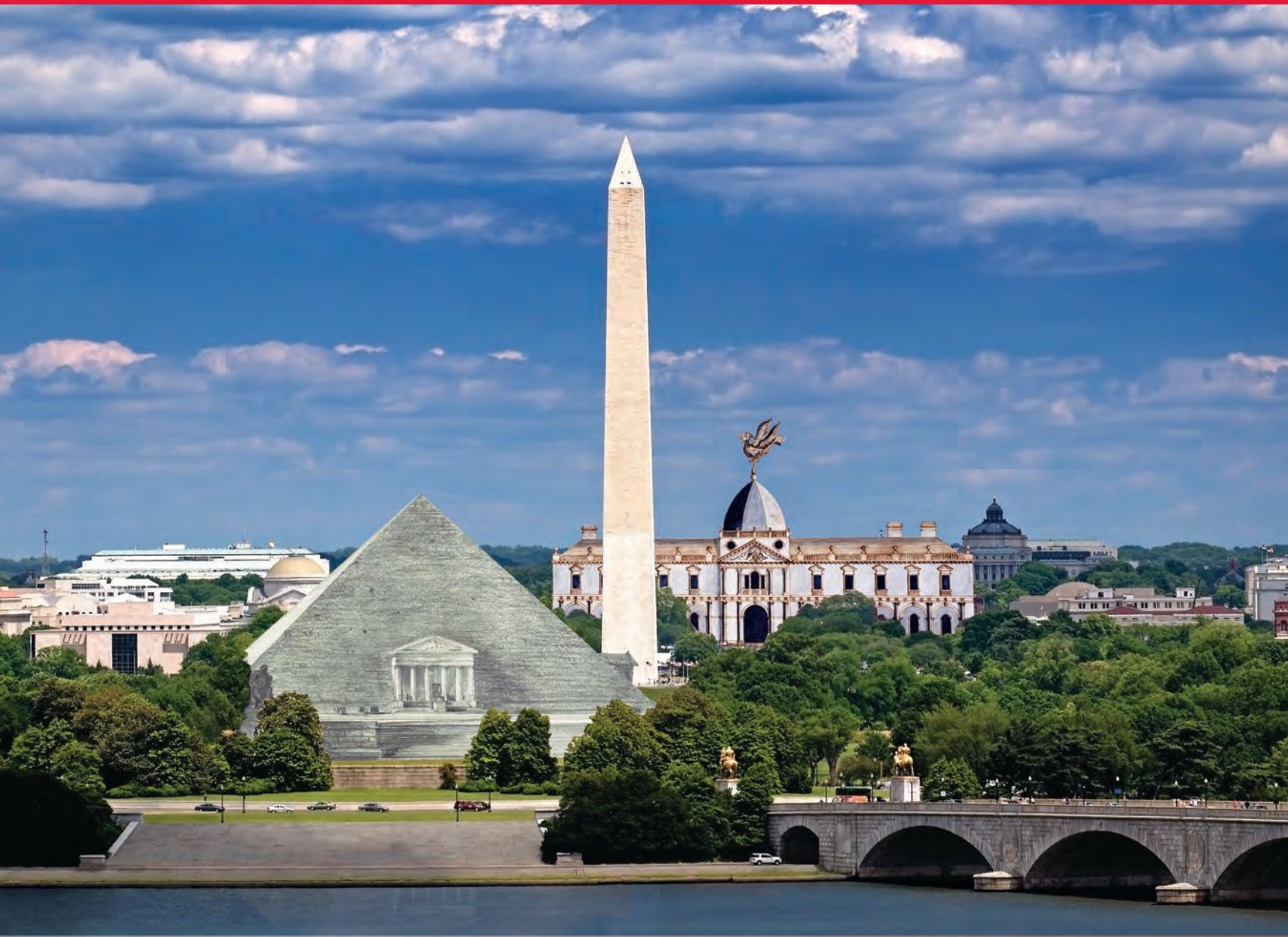
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NATIONAL BUILDING MUSEUM



Proposal for the Lincoln Memorial by John Russell Pope, 1912, National Archives and Records Administration, Washington, DC
Main elevation of Capitol competition entry by James Diamond, 1792. Courtesy of the Maryland Historical Society, 1976,88,51

Original photo by Scott D. Spagnoli

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WITH 20 PROJECTS ACROSS SIX CATEGORIES, THE 2011 ANNUAL DESIGN REVIEW WINNERS REFLECT EXCEPTIONAL DESIGN IN A VARIETY OF BUILDING TYPOLOGIES.

SOMEDAY (HOPEFULLY SOON), it will be possible to talk about an awards program without referencing the still-lingering recession. But the Annual Design Review's requirement that submitted projects must have been completed in the previous year makes the ADR a unique economic and aesthetic barometer of the industry, both good and bad.

The good news is that when the jury—which comprised Ted Landsmark, Assoc. AIA; Raymund Ryan; Hilary Sample, AIA; Trey Trahan, FAIA; and Joe Valerio, FAIA—convened in the ARCHITECT offices in October, it discovered that while the state of the economy may still be weak, the state of design is strong. “I was struck by the fact that there is really good work going on all across the United States,” Landsmark said, “in both urban and rural areas, both publicly and privately funded.”

After two days of deliberation, the jury selected 20 winners, representing some of the best work that American architects have completed at home and abroad this year. They range from a highly anticipated new

wing for a museum in Tel Aviv, Israel, to a New Orleans school rebuilt after Hurricane Katrina; an inspired renovation of an office park in New Jersey to a brightly accented in-fill house in Wisconsin; a surfing museum in France to a park-services building housing restrooms in Louisville, Ky. Of “the work that we really got excited about,” Valerio said, “there’s kind of a wonderful spectrum. ... You think of museums as the subject of great architecture. You don’t think of bathrooms as the subject of great architecture.”

As a whole, the jury applauded the innovation and invention in the projects submitted, but there was a call for more of a focus on designing for the vast majority of Americans, not merely for the well-off. “We need to see more architect-designed work for American families,” Landsmark said, lamenting a lack of affordable multifamily housing. But he was heartened by the possibility of what can happen “if there’s a will on the part of a range of clients to retain architects who are committed to making great designs.”

TEXT BY KATIE GERFEN, WITH KRISTON CAPPS; SARA HART; JEFFREY LEE; CHARLES LINN, FAIA; VERNON MAYS; AND LINDSEY M. ROBERTS

LIVE PLAY GROW BOND MOVE WORK

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ARCHITECT DECEMBER 2011



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JOHNSEN SCHMALING ARCHITECTS

AWARD

OS HOUSE

Racine, Wis.

WITH A THREE-STORY brick mansion to the north and a midcentury ranch to the south, the candy-colored accents and unabashedly modern form of the OS House bring a new flavor to its Racine, Wis., neighborhood. Designed by Milwaukee's Johnsen Schmaling Architects [JSA], the 1,940-square-foot house occupies an infill lot that completes a row of houses built on the shore of Lake Michigan over the last century.

JSA was charged by their clients to design a house that respected, but didn't submit to, its historic environs. The architects began the design process with a solid, rectilinear mass and a plan for three bedrooms, two bathrooms, and a one-car garage. Volumes were subtracted from the mass to accommodate an entry court and terrace on the ground level and two elevated patios on the second; horizontal aluminum-rod balustrades on the patios define the border of the initial blocky form. Floor-to-ceiling apertures on the façade are outlined in vibrant lime, red, yellow, and orange, referencing colorful Victorian houses nearby. "What they did," juror Joe Valerio said, "is say, 'OK, we're going to do this modernist piece, but it's going to have all the scale and texture and color that you would see in the neighborhood.'" Ground-floor glazing allows for sight lines from street to lake, and sliding doors open onto the lakeside terrace.

As one of the first LEED Platinum residences in the Upper Midwest, the house uses geothermal heat pumps, natural ventilation, a 4.3-kilowatt photovoltaic system, and a solar water heater. Window distribution allows for penetration of winter sun and reflection of summer sun.

Juror Raymund Ryan said, "It reminded me of the Eames House, rethinking what a house could be in today's world with new technologies and a less-formal kind of family structure." And it may be an enticing taste of neighborhood's future. As juror Hilary Sample said, "The kind of delight and playfulness with which we can think about living today is extraordinary." **LINDSEY M. ROBERTS**

→ For more on each of the winning projects shown on this page and the subsequent pages, including slide shows with additional images and drawings, visit architectmagazine.com.

DEEGAN DAY DESIGN

CITATION

C-GLASS HOUSE

Marin, Calif.

THE 2,100-SQUARE-FOOT C-Glass House in northern California rests on a spectacular site with a panoramic view of Tomales Bay and the Pacific Ocean. Los Angeles-based Deegan Day Design made the building's historical precedents clear, referencing Philip Johnson's Glass House and the Farnsworth House by Ludwig Mies van der Rohe, as well as the noted California legacies of Craig Ellwood and Pierre Koenig. Juror Hilary Sample thought the solution was elegant and serene. "I like the simplicity of the project and the way it meets the ground on this gravel path or plane. It's in contrast to the grassy, slippery hillside leading down to the ocean," she said.

To withstand up to 100-mile-per-hour winds from multiple directions, the house was designed to be tough. The glazing strategy follows a diagonal division of the house: transparent windows and sliders set in steel framing on the northern and western façades open to water views; on the south- and east-facing façades, views are blurred with channel glass overlaying the steel frame. Juror Raymond Ryan thought the channel glass "was an interesting way of developing the particular historical trajectory [of the glass house]." While acknowledging that channel glass is associated with institutional buildings, Sample thought its material toughness was appropriate, "For this landscape, which does seem barren, the channel glass provides another kind of surface, or screen, that seems to play up the quality of light." **SARA HART**







HK ASSOCIATES

CITATION

BARRIO HISTORICO HOUSE

Tucson, Ariz.

THE FRONT OF the residence designed by Kathy Hancox and Michael Kothke takes its cues from period homes in Tucson, Ariz.'s Barrio Historico. Lots are small here, and houses push right up to the street. Neighborhood design guidelines require front façades be stoically devoid of detail, and this one is pared down enough to be nearly unnoticeable.

The architects focused their care on what happens inside the front gates, resulting in a house that is smartly planned, filled with light, and far more International Style than Barrio Moderne. "It creates a subtle elegance in the middle of a neighborhood, where opening the door creates this Alice in Wonderland-like surprise of unexpected response to ... [the] community," juror Ted Landsmark said.

The house is composed of insulated concrete form walls, which are

not as massive as traditional Southwestern masonry. Eschewing the local penchant for keeping buildings cool by shutting out the sun, this home embraces the daylight.

The sky can be glimpsed from most rooms either through slit skylights or, in the cases of the kitchen, living room, and master bedroom, floor-to-ceiling glass. These openings allow the house's white-cement-plaster walls to capture the ever-changing hues of the Sonoran sun. High-performance, low-E-coated IGUs and generous overhangs protect the interior in the summer, while allowing the floors to be passively warmed in the winter. Tankless hot water, prewiring for photovoltaic panels, and rainwater collection are also part of the suite of resource-conserving technologies. **CHARLES LINN**



DELLA VALLE BERNHEIMER AND
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HONORABLE MENTION

R-HOUSE

Syracuse, N.Y.

THE WINNER OF a competition to create a single-family prototype home for Syracuse, N.Y., R-House, designed by Brooklyn, N.Y.-based Della Valle Bernheimer and New York-based Architecture Research Office, reflects the scale and character of the existing housing stock in the city's Near Westside neighborhood. But in terms of efficiency, the 1,100-square-foot home outshines its peers: R-House uses 71 percent less energy than an average home in Syracuse.

Built to Passivhaus standards, R-House has a well-insulated envelope, high-performance windows, and an air-circulation system for heating and ventilation. The silver-toned corrugated-aluminum cladding will stand out during snowy winters. The jurors appreciated that this project—at a cost of about \$180 per square foot—demonstrates that 21st-century design belongs to lower-income residents, too. “We need to see more architects design work for American families,” juror Ted Landsmark said. **KRISTON CAPPS**

STEVEN HOLL ARCHITECTS IN COLLABORATION WITH SOLANGE FABIÃO

AWARD

CITÉ DE L'OCÉAN ET DU SURF

Biarritz, France

BIARRITZ, FRANCE, is said to be the birthplace of surfing, after screenwriter Peter Viertel—in town to work on a film adaptation of *The Sun Also Rises*—effectively invented the sport on the Côte-des-Basques in 1957. Biarritz has since developed an intellectual interest in the ecology of surf, and the Cité de l'Océan et du Surf museum examines the significance of the sea from a civic and scientific perspective. Where surf meets turf at the new museum—designed by New York-based Steven Holl Architects, working in collaboration with Brazilian artist Solange Fabião—it's made to look like sea meeting sky.

The museum building frames two program spaces: its convex interior space features “under the sea” exhibition areas, whereas its concave exterior shape serves as an “under the sky” plaza. The museum's sloping concrete roof serves as an outdoor plaza, and, lined in Portuguese cobblestones and natural vegetation, allows for rainwater to seep into the ground. The plaza also features two “glass boulders”: distinguished by their high-performance glass façades, these forms

hold a surfing kiosk and a restaurant. Just across the plaza is a shallow concrete pool that serves as a skatepark for those who prefer to surf on dry land.

The museum, which can be accessed via a street-level lobby, features an auditorium, restaurant, cafeteria, and offices as well as exhibition spaces and even a surfer's kiosk. The interiors of the museum offer dynamic curved surfaces that reference the waves of the nearby Bay of Biscay.

The jurors appreciated the fact that the light at the roughly 50,859-square-foot museum appears to change over the course of the day, and that the differentiated spaces reflect the notion of a wave as water suspended in air.

“The thing that is beautiful about this is the idea that it's about the surf. You take an architectonic form and you make it roll like the ocean, and then the function slips underneath,” juror Joe Valerio said. “To connect the surf with the function underneath, you have this lantern, this white, glass lantern that runs through it.” K.C.





LORD AECK & SARGENT IN COLLABORATION WITH OFFICE dA

AWARD

**HINMAN RESEARCH BUILDING
REHABILITATION AND ADAPTIVE REUSE**

Atlanta

THE GEORGIA INSTITUTE OF TECHNOLOGY'S Hinman Research Building in Atlanta has endured several major renovations since it opened in 1939. The latest is an \$8.5 million restoration and rehabilitation of the facility to bring graduate architectural studies—which had been scattered in multiple buildings on campus—under one roof. The Atlanta office of Lord Aeck & Sargent collaborated with Boston-based Office dA (which has since been renamed NADAAA) to retrofit and rehabilitate Hinman to accommodate studios, computer and research labs, galleries, offices, and classrooms.

The building's focal point is a 50-foot-tall high-bay shed, which originally contained a large gantry crane, capable of moving several tons at a time from side to side and one end to the other. The architects repurposed the crane's beams to support a mezzanine suspended by 5/8-inch-diameter steel rods and T-beams. Designated the "Crib," this intervention is intended to reinforce the studio culture and stimulate

collaboration. Jurors were unanimous in their praise of the architectural solution. "To take over this big, mundane space, and then launch this thing into it really changes the game," juror Raymund Ryan said. "The fact that it's an architecture school I think is fantastic, because it's a little essay in how to build something."

The architects expanded the circulation, according to the building's original logic, to create new experiences with discrete punctures, access points, and paths. Circulation between levels around the high bay is now enabled by both new and renovated stairs. The south wing has a new spiral staircase linking new administrative offices with the student body, which caught the eye of juror Ted Landsmark. "You don't arrive at that beauty and simplicity in engineering without a lot of investigation," he said. Ryan summed up the jury's consensus by noting: "Of all the projects we've seen, this is one that stands out in terms of attention to detail, just taking pleasure in how things go together." s.h.



LIVE PLAY **GROW** BOND **MOVE** WORK

ARCHITECT DECEMBER 2011





ROSS BARNEY ARCHITECTS

CITATION

UNIVERSITY OF MINNESOTA DULUTH, CIVIL ENGINEERING BUILDING

Duluth, Minn.

IF YOU WANT to teach someone, total immersion in a lab is often better than lectures in the classroom, and the LEED Gold Civil Engineering Building at the University of Minnesota Duluth campus is the very embodiment of this idea. It gave the team at Chicago-based Ross Barney Architects many opportunities to design teaching moments into the 35,300-square-foot building, allowing it to serve as a living laboratory for students.

Steel members and mechanical systems are left exposed throughout. The structural and hydraulics labs—which are enclosed in glass so that students can observe experiments even when not in class—are more than 30 feet high, and equipped with gantry cranes. These rooms use thermal-displacement ventilation, so little of the volume of the room is actively conditioned.

“It’s a very bold project for what is a very simple building,” juror Joe Valerio said, “and a lot of engineering schools are building buildings like this.”

Sustainability has also become a core part of the curriculum, and there is much here for the budding engineer to observe. For example, the building’s oversized scuppers are made from cypress recycled from pickle vats. These are not just for show. After a rain, water pours from them into Cor-Ten steel drums. The water is filtered through taconite, a local stone used in iron-ore production, and stored for use as graywater. c.l.

JOHN RONAN ARCHITECTS

CITATION

GARY COMER COLLEGE PREP

Chicago

THERE ARE TWO KINDS of vital statistics at Gary Comer College Prep. First, the building's: 45,000 square feet; \$11.7 million. Second, the school's: 650 students in grades 9–12; 96 percent black; 4 percent Hispanic; 80 percent of graduates are the first in their families to go to college.

The LEED Silver school—named for the late founder of Lands' End—is part of Chicago's Noble Network of Charter Schools, which aims to enroll more than 10,000 low-income students across 16 campuses.

Local firm John Ronan Architects designed the school as a follow-up to its 2006 Gary Comer Youth Center next door. The two buildings share a gymnasium, cafeteria, music rooms, art rooms, and computer labs; the school has its own classrooms,

lecture hall, and green roof. The projects are both clad in corrugated stainless steel siding and aluminum composite panels, but each has its own distinct color palettes.

These materials are partially motivated by the project's South Side location. "One of the reasons why there's perforated metal that extends all the way across the street façade is literally because they were worried about bullets," juror Joe Valerio said. But the design is also a call to openness and transparency. A large glazed lobby welcomes students and, as Valerio notes, "all the classrooms have glass walls between the corridors and the classrooms ... so that these children see other children learning." And it's working: this year, 98 percent of graduates went to college. L.M.R.







ESKEW+DUMEZ+RIPPLE

HONORABLE MENTION

L.B. LANDRY HIGH SCHOOL

New Orleans

IN THE AFTERMATH of Hurricane Katrina, five damaged New Orleans schools were fast-tracked for reconstruction. Local firm Eskew+Dumez+Ripple designed one of these “quick start” projects, L.B. Landry High School, to withstand both the Gulf Coast’s frequent hurricanes and everyday humidity. With a high-reflectance roof, insulated metal-panel cladding, and a glass curtainwall, the 236,000-square-foot building targets energy performance 32 percent below baseline. Three wings of the building

wrap around a central courtyard, which admits daylight and captures runoff. Even with a tight time frame—six months for design, 20 months for construction—and the relative lack of energy-efficient construction expertise in the area, the architects anticipate LEED Silver certification. The school itself serves as a classroom, juror Ted Landsmark said: “I think some of the young people attending this school will consider a career in architecture because they’ve experienced this kind of good design.” k.c.





PERKINS EASTMAN

HONORABLE MENTION
**NYC SCHOOL
CONSTRUCTION
AUTHORITY: MOTT
HAVEN CAMPUS**

Bronx, N.Y.

IN NEW YORK, space is always at a premium. So when faced with high demand for classrooms, the New York City Department of Education turned to an old rail yard—17 to 30 feet below grade—for additional space. Perkins Eastman designed the \$137 million Mott Haven Campus to accommodate four distinct schools on the brownfield site, clustered around a shared 600-seat performing arts space and sports field. Each school (all of which have grades 9–12, and one of which also has K–4 students) has its own identity, with a separate color scheme, entry, classrooms, and dining facilities.

The jury lauded the campus for creating a sense of place for the students, especially in light of “all the issues that come up with being in that kind of densely compacted area,” said juror Ted Landsmark, who also noted that projects like the Mott Haven Campus can create incentive for public authorities to follow the example. “Urbanistically it does some good things,” juror Raymund Ryan said. “it creates a kind of haven inside with this shared space.” **KATIE GERFEN**

HÖWELER + YOON ARCHITECTURE

AWARD

CHENGDU SKYCOURTS

Chengdu, China

THE SKYCOURTS Exhibition Hall, designed by Boston-based Höweler + Yoon Architecture, is sited in the International Intangible Cultural Heritage Exposition in Chengdu, China. Constructed from locally produced gray brick, the 67,000-square-foot building's façades range from 36 feet to 49 feet tall, and push in and pull out to create a varied perimeter that is a reflection of the site's non-orthogonal boundaries. Windows and doors are clustered on the various façades and integrated into recessed Cor-Ten window surrounds that break up the cool tones of the masonry. Careful attention to the detailing of these materials won universal praise from the jurors, including Raymund Ryan: "There's something about the materiality of this I think is very attractive."

Though the structure's exterior makes it seem monolithic, inside the form is quite porous. The architects took their cue from traditional Chinese courtyard houses and clustered exhibition galleries and public spaces around seven outdoor courtyards. The roof planes slope in toward these voids, creating a varied surface clad in ceramic roof tiles; the gap tolerance between each tile was used to help accommodate the nonplanar surface. "I think ... it [the detailing] is extraordinary for this project, and I love the volumetric quality of the building ... it's not just a surface," juror Hilary Sample said. "Here some faceting goes further into the roof as well, so that it becomes very much a ... three-dimensional sort of object."

The interior environment is kept temperate in the winter with the aid of the building's high thermal mass, and cool in the summer with cross ventilation that enters through the operable windows on the exterior walls. Fully glazed courtyard-facing walls admit ample daylight into the gallery spaces. Because of the courtyard voids, the remaining building mass is divided into thin profiles, allowing visitors to see through to multiple courtyards at once, creating a layered view of the structure. "This is a beautiful project," juror Trey Trahan said. "I think it's going to age beautifully." K.G.





PRESTON SCOTT COHEN

AWARD

HERTA AND PAUL AMIR BUILDING, TEL AVIV MUSEUM OF ART

Tel Aviv, Israel

IN DESIGNING the Herta and Paul Amir Building, an expansion to the Tel Aviv Museum of Art, Preston Scott Cohen of Cambridge, Mass., had to solve a tricky geometry problem. The program called for several rectangular galleries to display diverse collections of work to be situated on a distinctly triangular parcel in Tel Aviv's cultural district.

The building's resulting shape—defined by its angular, precast concrete and glass façade—looks as though the architect simply folded and creased the corners of a cube until it complied with the lines of the site. Cohen made use of extensive digital and physical modeling in order to create the façade, whose parabolic shape derives from 460 shaped, precast concrete panels. The façade is supported by an extensive steel structure, which integrates the mechanical systems.

The designer squared another circle by fitting 195,000 square feet of building space onto a 43,600-square-foot area. The museum includes three galleries dedicated to architecture and design, three galleries that chronologically detail the history of modern and contemporary Israeli art, and galleries for special exhibitions as well as prints and drawings—all stacked over five floors, three of which are below grade.

Cohen built the individual galleries around a central “lightfall”—an 87-foot-tall winding atrium—the construction of which also required parabolic modeling. Stairs, escalators, and elevators convey visitors through the stacked, independent galleries, with circulation paths leading back to and around the lightfall at every level.

As if the space constraints weren't enough, Cohen also had to contend with Israeli architect Dan Eytan's Brutalist design for the original, neighboring Tel Aviv Museum of Art building. He did so primarily by working with concrete panels, which were poured on site.

The jurors considered the way that the building expresses its own condition. “I wonder whether the assembly of this complex set of geometric forms rationally impedes or encourages the exhibition of the materials and the nature of the visitor's experience in this space, in relation to what the intended narrative of the museum is expected to be,” juror Ted Landsmark said.

“It does reveal the process of construction,” juror Trey Trahan said. “That is one of its strengths.” Juror Raymund Ryan lauded the work as “a very interesting new kind of voice that's in American architecture.” K.C.



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MARLON BLACKWELL ARCHITECT

AWARD

RUTH LILLY VISITORS PAVILION

Indianapolis

ISOLATED IN THE HEART of an urban forest, with a light touch on the land, Fayetteville, Ark.-based Marlon Blackwell Architect's design for the 1,290-square-foot Ruth Lilly Visitors Pavilion draws inspiration from the structure and form of a fallen leaf. It serves as both threshold and destination within the Indianapolis Museum of Art's 100-acre Virginia B. Fairbanks Art & Nature Park. Jurors admired the way the pavilion subtly engages visitors by extending long ramps toward the walking paths and gradually lifting people above the forest floor onto the main deck. "The way it slips into the landscape is really gorgeous," juror Joe Valerio said. The angular deck of ipe wood slats folds back on itself to form an overhead canopy, allowing sunlight and rain to penetrate while enveloping a multipurpose room and support spaces such as a kitchen, restrooms, and office. A glass curtainwall exposes the teaching and event space to the landscape; support spaces are clustered in a fire-resistant core, clad in a charred cedar rainscreen.

Prone to flooding from the adjacent White River, the park offered barely a half-acre of buildable land for the pavilion. Blackwell flanked the pavilion with earth berms, and lifted the deck ever so slightly on columns painted to match the color of the local fauna, giving the impression that it hovers just above the ground. "I really appreciate the change in perception and views as you walk around it ... it has a picturesque quality," juror Hilary Sample said. As a whole, the jury praised the design as "a mature work"—citing examples of the refinement of the design such as the exposed steel exoskeleton and the detailing of the wood deck with alternating strips of clear acrylic. "The architect has taken a comparatively small spatial requirement and made it into something much bigger," juror Raymond Ryan said. **VERNON MAYS**

BELZBERG ARCHITECTS

HONORABLE MENTION
**THE LOS ANGELES
 MUSEUM OF THE
 HOLOCAUST**

Los Angeles

THE NEW BUILDING for the Los Angeles Museum of the Holocaust by local firm Belzberg Architects is located within L.A.'s Pan Pacific Park, the site of the existing Los Angeles Holocaust Monument. The 32,000-square-foot, LEED Gold museum was designed as an educational institution, which anticipates 40,000 students each year. Much of the building is submerged to integrate it quietly into the park setting, with the landscape extending over the roof. "I think there's an interesting concept here," juror Joe Valerio said. "You descend into the earth, into the darkness of the Holocaust, and then you come back from that experience, which is poetic." A supple shotcrete wall traces the museum's footprint and announces its presence while minimally disrupting the park's landscape. Existing park pathways are used as connective elements to integrate the site's pedestrian flow with new circulation for museum visitors. s.H.



nARCHITECTS



HONORABLE MENTION

FOREST PAVILION

Guangfu, Hualien, Taiwan

CONCEIVED AS PART of the Masadi Art Festival—an event funded by Taiwan’s Forestry Bureau to raise public awareness of a new-growth forest threatened by development—Forest Pavilion is a shaded meeting and performance space for visitors to the Da Nong Da Fu Forest and Eco-Park in Hualien. Designed by Brooklyn, N.Y.–based nArchitects, the temporary pavilion is composed of 11 vaults constructed from freshly cut bamboo, organized in two rings around a small outdoor theater, with a loop of wood decking serving as seating or a circular stage.

While juror Raymund Ryan appreciated the thoughtful design process that went through several iterations before settling on its final form, he and the other jurors hoped to acknowledge the project’s recognition and inclusion of the province’s aboriginal Amis tribe. Masters of bamboo construction, the Amis fabricated bamboo for the project and became personally invested in the completion of the pavilion. “It’s not an expensive project, but it’s something that can give communities a certain sense of self-respect,” Ryan says. **JEFFREY LEE**

LIVE PLAY GROW BOND **MOVE** WORK





DE LEON & PRIMMER ARCHITECTURE WORKSHOP

AWARD

RIVERVIEW PARK VISITOR SERVICE BUILDING I

Louisville, Ky.

LOCATED ON THE banks of the Ohio River in southwest Louisville, Ky., Riverview Park has been a local destination for decades. But the success of the revitalization of other city parks prompted the development of a master plan to recast the 70-acre site as a full-service recreational venue. The first phase of the project called for a structure to house restrooms, drinking fountains, and mechanical rooms for parkwide utilities. The client's functional criteria were simple—durability, minimum upkeep, and the ability to withstand yearly flooding. The challenge for local firm de Leon & Primmer Architecture Workshop was to create a signature identity for the 505-square-foot building, specific to the historic character of the area. The jury was impressed with the playfulness of the architectural references to the regional tobacco barns and river barges, which are often visible from the park. It's "elegant," juror Joe Valerio said. "It's surprising, and I think great architecture always surprises you."

A simple materials palette of Cor-Ten steel (in corrugated panel and louver applications), galvanized metal-plank grating, and poured-in-place concrete provides a durable kit-of-parts that is easily cleaned through power-washing (graffiti can simply be sanded off the Cor-Ten with steel wool and the rusted patina naturally returns). A raised-wall detail at the building base facilitates the hosing down of all interior spaces. Perforated wall surfaces provide visual and acoustical porosity in certain building areas for public safety and natural ventilation. "Typically you go into these spaces and they're dead," juror Trey Trahan said. "I like that you would get air moving through."

The vertical integration of modular metal-plank grating (typically used for industrial stair treads) facilitates the replacement of wall panels as needed, and the restrooms are outfitted with stainless steel prison-grade fixtures. Daylight filters into all interior spaces and eliminates the need for artificial lighting during daylight hours. At night, gel-sleeved fluorescent strip lights transform the building into a colorful "park lantern" to illuminate surrounding paths. s.h.

KOHN PEDERSEN FOX ASSOCIATES

CITATION

CENTRA AT METROPARK

Iselin, N.J.

CENTRA AT METROPARK could very well be the model for resurrecting the world's overabundance of functionally obsolete, decades-old suburban office buildings. This L-shaped building in Iselin, N.J., lay vacant and was sheathed in a dated curtainwall. But Kohn Pedersen Fox Associates saw its potential and dissuaded its client from doing a complete teardown.

The building was stripped down to its structural frame, and a new floor was added to the top, which effectively expands the footprint at that level into a square. The additional 10,000 square feet is supported by a monumental "tree" column, and the wood-slat-clad overhang shelters a new entry plaza. "I thought this project was important as a radical transformation that also makes an effort to address sustainable issues," juror Ted Landsmark said. "There's so much banality in those office parks that I think it's important ... to bring a higher design sense to them." In addition to improving the building's overall efficiency with a new double-glazed, low-E curtainwall, a high-albedo roof, low-flow fixtures, and tunable office lighting, the architects also sought to improve the site with water-efficient landscaping.

Users enter the reimagined building via a bridge that spans a large sunken-garden lightwell. This void allows daylight to flood a previously dormant 20,000-square-foot basement, which is now used as office space. "It seems like a fun place to work, for sure," juror Hilary Sample said, "and really sort of challenging its context." Hopefully, the improvements will inspire other developers to bring new life to other rundown suburban structures in the area. c.l.





LIVE PLAY GROW BOND MOVE WORK





MARK CAVAGNERO ASSOCIATES

CITATION

**COMMUNITY
FOUNDATION
SANTA CRUZ COUNTY**

Aptos, Calif.

THE COMMUNITY FOUNDATION Santa Cruz County in Aptos, Calif., has a new permanent home in a \$9.3 million center designed by San Francisco-based Mark Cavagnero Associates. The client wanted the 10,000-square-foot building—which houses offices, conference rooms, a resource library, and large community meeting room—to be both flexible and to embody the group’s commitment to sustainable design.

Sited on a steeply sloped and non-orthogonal site, the LEED Gold building consists of two wings, connected by a steel bridge structure. The two-story north wing is a concrete parallelogram housing the foundation’s offices; the volume’s form is a result of the required setbacks and maximizes the allowable square footage. The south wing, which houses the community meeting rooms and is topped by a roof terrace, is a single-story box clad in FSC-certified cedar siding. The complex backs into the apex of the natural slope of the site, creating a single-story façade along the street—consistent with the massing of its retail neighbors—while the building’s full elevation is revealed on its east façade, where the public parking and main entry are located. The lobby occupies the first level of the connector bridge. “It’s really a well-done and interesting project in terms of its proportion and consideration of the relationship to the street,” juror Hilary Sample said.

Inside, exposed concrete walls and ceilings are tempered by wood paneling in the library and some meeting rooms. “There’s a real continuity between exterior and interior,” juror Trey Trahan said. Bringing the outside in was important to the architects: Ninety percent of the building employs natural ventilation and daylight. s.h.

RICHARD MEIER & PARTNERS ARCHITECTS

CITATION

COFFEE PLAZA

Hamburg

HAMBURG'S COFFEE PLAZA is a 291,500-square-foot center for international coffee trade that includes the ovoid headquarters for Neumann Kaffee Gruppe, along with two additional office buildings and a large public plaza. The site is key to ambitious redevelopment efforts seeking to reinvent Hamburg's once-industrial port as a business and cultural center.

Raised on a podium overlooking nearby Sandtorpark, the oval-shaped tower mediates the separation between the park and plaza. Inside, behind a ventilated façade, the oval configuration improves visual and physical connections between the office workers, resulting in greater collaboration. "This project is potentially a new take on a minimal floor plate with an emphasis on minimizing circulation," juror Hilary Sample said, noting that the project speaks "to a new idea about scale in the workplace. It's more intimate."

Some jurors questioned the efficiency of building three buildings, with three costly elevator cores, instead of one. But overall, the jury lauded the project's accomplishment as an urban design gesture, creating relationships between three discrete elements—and the surrounding neighborhood—rather than introducing one massive tower to the area. "The oval building ... is scaled to fit very nicely in that part of Hamburg," juror Raymund Ryan said. "It makes for a civilized city." v.m.



REPP DESIGN + CONSTRUCTION



HONORABLE MENTION

1ST AVENUE COMMERCIAL OFFICE

Tucson, Ariz.

IT WAS THE TYPE of building that presents an emerging design challenge around the gritty edges of cities all over the country: the big vacant retail space. Repp Design + Construction's transformation of a Tucson, Ariz., eyesore into its own 5,400-square-foot office is an adaptive reuse that is tuned to its Sonoran Desert environs. An open studio, filled with natural, indirect light from new glazing and a skylight, requires no artificial light during the day and is cooled with cross ventilation, enhanced with ceiling fans, to minimize dependence on air-conditioning in the late spring and early fall. The studio flows into a private courtyard, fashioned into

a desert garden, that welcomes visitors and is shaded by a 5.5-kilowatt photovoltaic array. A large steel-and-concrete screen wall blocks both the blazing western sun and the traffic noise from nearby 1st Avenue from entering the studio. "In our communities, there are so many buildings like this that ... you wish someone would decide to spend a little bit of money and make some contribution to the city by elevating this really old and ugly building, and that's what they did," juror Trey Trahan said. "It's not the singular iconic building that creates a city; it's all of these, what we think of as secondary background buildings." J.L.

JURY



Joe Valerio, FAIA

Joseph M. Valerio, FAIA, is a founding partner of Chicago-based Valerio Dewalt Train Associates, which has received the Firm Award from both AIA Chicago and AIA Illinois. The firm's award-winning work includes such projects as the Kresge Foundation in Troy, Mich. Valerio is a member of the National Board of Peer Reviewers for the General Services Administration's Design Excellence Program.



Ted Landmark, Assoc. AIA

Theodore C. "Ted" Landmark, Assoc. AIA, is president of the Boston Architectural College. He holds a B.A. and J.D. from Yale University, a Ph.D. from Boston University, and previously served as dean of graduate and continuing education at the Massachusetts College of Art and Design. Landmark received the AIA's Whitney M. Young Jr. Award in 2006, and has remained active in the AIA and ASCA.



Raymund Ryan

Raymund Ryan is co-curator of the Heinz Architectural Center at the Carnegie Museum of Art in Pittsburgh and holds degrees in architecture from the University College Dublin and Yale University. Ryan was the Irish commissioner for the Venice Architecture Biennale in 2000 and 2002. His next exhibition—"White Cube, Green Maze: New Art Landscapes"—opens in September 2012.



Hilary Sample, AIA

Hilary Sample is a founding partner (with Michael Meredith) of New York-based design firm MOS. Current notable projects include the Sterling Opera House in Derby, Conn., and an orphanage in Kathmandu, Nepal. Sample is an associate professor at the Columbia University Graduate School of Architecture, Planning and Preservation, and she has taught at Yale University and the University of Toronto.



Trey Trahan, FAIA

Victor F. "Trey" Trahan, III, FAIA, is president and principal-in-charge of Baton Rouge, La.-based Trahan Architects. The firm's work includes the post-Hurricane Katrina restoration of the New Orleans Superdome and a house for the Make It Right Foundation. Trahan received the 2005 Architectural Review Award for Emerging Architecture in London and was elected to the AIA College of Fellows in 2006.

BUILDING: INTERACTION

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hanley wood



CREDITS

LIVE

OS House, Racine, Wis.

Client Robert Osborne and Vera Scekcic
Architect Johnsen Schmalig Architects, Milwaukee—Brian Johnsen, AIA, Sebastian Schmalig, AIA (principals-in-charge); Nick Woods (project architect)
Landscape Architect Milaeger's Landscape Design
Structural Engineering Larson Engineering—Matt Christianson (principal-in-charge)
Photovoltaic Solar Consultant Harvestar Energy—Dean Wolff
LEED and Energy Star Rater North Star Energy Consulting—James Maletta
LEED Provider Alliance for Environmental Sustainability—Emily Aleman
General Contractor Beggi Construction
Size 1,940 square feet
Cost \$273 per square foot
Photograph John J. Macaulay

C-Glass House, Marin, Calif.

Client Margarete Hachigian
Design Deegan-Day Design, Los Angeles—Joe Day (design principal); Taiyo Watanabe, Bonnie Carlson, Mark Lyons, Felicia Martin, Yo Oshima, Noel Williams (project designers)
Structural Engineer Gordon Polan Engineering—Greg Marin (project engineer)
Executive Architect Dave Maynard Architecture
Builder Morita Construction
Structural Steel Banks Steel
Glass Glass & Sash
Size 2,100 square feet
Cost Withheld
Photograph Taiyo Watanabe

Barrio Historico House, Tucson, Ariz.

Client Withheld
Architect HK Associates, Tucson, Ariz—Kathy Hancox, Michael Kothke
Contractor Saavy—Luis Ibarra
Millwork DaVinci Designs—Ben Schmitt
Steel Parsons Steel Erectors—Tom Glenn
Glazing Columbus Glass + Screen—Mike Hither
Structural Harris Engineering Services—Mike Harris
Mechanical KC Mechanical Engineering—Ken Cawthorne
Electrical Matthews Consulting and Design—Jeff Matthews
Size 2,100 square feet
Cost Withheld
Photograph Bill Timmerman

R-House, Syracuse, N.Y.

Client Syracuse University School of Architecture and Syracuse Center of Excellence with Home Headquarters
Architect Della Valle Bernheimer, Brooklyn, N.Y.—Jared Della Valle, AIA, Andrew Bernheimer, AIA, and Architecture Research Office, New York—Stephen Cassell, AIA, Adam Yarinsky, FAIA, Kim Yao, AIA

Structural Engineer Guy Nordenson Associates—Brett Schneider
Environmental/M/E/P Engineer Right Environments—David White
LEED Consultant Northeast Green Building Consulting—Kevin Stack
Cost Estimator Stuart-Lynn Company—Breck Perkins and Victoria Cabanos
Landscape Architect Coen+Partners—Shane Coen
Size 1,100 square feet
Cost \$180 per square foot
Photograph Richard Barnes Photography

PLAY

Cité de l'Océan et du Surf, Biarritz, France

Client SNC Biarritz Ocean
Architect Steven Holl Architects, New York, with Solange Fabião—Steven Holl, AIA, Solange Fabião (design architects); Rodolfo Dias (project architect); Chris Mcvoy (project adviser); Filipe Taboada (assistant project architect); Francesco Bartolozzi, Christopher Brokaw, Cosimo Caggiola, Florence Guiraud, Richard Liu, Ernest Ng, Alessandro Orsini, Nelson Wilmotte, Ebbie Wisecarver, Lan Wu, Christina Yessio (project team)
Associate Architect Leibar&Seigneurin
Consultants/Engineering Vinci-Marseille (roof); Betec (structure); Elithis (mechanical); Avel (acoustical); Apave; Quality Control Office
Lighting Design L'Observatoire International
Contractor Faure Silva—Gtm
Exhibition Engineering Cesma
Exhibition Contractor Geroari
Size 50,859 gross square feet (building); 376,740 square feet (site area)
Cost €20.9 million (\$30.1 million U.S.) building, €1.5 million (\$2.2 million U.S.) landscape
Photograph Iwan Baan

GROW

Hinman Research Building Rehabilitation and Adaptive Use, Atlanta

Client Georgia Institute of Technology College of Architecture
Architect Lord Aeck & Sargent, Atlanta in collaboration with Office dA, Boston—Jack Pyburn, FAIA (principal, Lord Aeck & Sargent); Nader Tehrani (principal, Office dA); John Kisner, AIA (project manager, Lord Aeck & Sargent); Daniel Gallagher (project manager, Office dA); Karen Gravel, AIA (project architect, Lord Aeck & Sargent); Tom Beresford (project coordinator, Office dA); Tom Butler, Seth Hammonds, Jim Nicolow, AIA, Claire Oviatt, Cobb Quarles, Ben Ridderbos, Benjamin Scott, Jihan Stanford (design team, Lord Aeck & Sargent); Remon Alberts, Yousif J. Alsalem, Marzouq A. Al-Mutairi, Arthur Chang, Brandon Clifford, Jeff Dee, Sarah Dunbar, John Houser, Pepe Giner Ivars, Samuel Ray Jacobson, Harry Lowd, Jonathan Palazzolo (design team, Office dA)
Structural Engineer Uzun & Case Engineers—James Case, John Hutton

M/E/P/FP Engineer EMC Engineers—Douglas Gray, Chip Tabor
Cable-Mesh Systems Consultant Officium Design Engineering—David Bradley, AIA
Concrete Repair and Rehabilitation Wiss, Janney, Elstner Associates—Paul Gaudette
Civil Engineer Haines Gipson & Associates—Robert McCann
Acoustics The Sextant Group—Brian Patrick
Construction Manager The Beck Group (millwork contractor and custom furniture contractor)—Bill Hicks (project executive); Brad Oliva (project manager); Troy Nixon (project engineer); Steve Wheeler (superintendent)
Structural Steel Subcontractor SteelFab
Masonry and Concrete Rehabilitation Subcontractor Southeast Restoration & Fireproofing Co.
Steel Window Fabrication and Repair Subcontractor Southern Machine Specialists
Glazing Subcontractor Trainor Glass Co.
Framing and Drywall Subcontractor Mulkey Enterprises
Mechanical Subcontractor Ragan Mechanical Contractors
Electrical Subcontractor MetroPower
Fire Protection Subcontractor Century Fire Protection
Size 35,826 square feet
Construction Cost \$8.5 million
Photograph Jonathan Hillier

University of Minnesota Duluth, Civil Engineering Building, Duluth, Minn.

Client University of Minnesota Duluth—Gregory Fox (vice chancellor)
Architect Ross Barney Architects, Chicago—Carol Ross Barney, FAIA (design principal); Michael Ross, AIA (principal-in-charge); Jonathan Graves (project manager); Kimberley Patten, AIA (project architect); Ricardo Nabholz (interiors)
Architect of Record SJA Architects
Contractor Stahl Construction Co.
Landscape Architect Oslund and Associates
M/E/P Engineer Dunham Associates
Structural Engineer MJB Consulting Structural Engineers
Civil Engineer MSA Professional Services
Size 35,300 square feet
Cost \$12.1 million
Photograph Kate Joyce Studios

Gary Comer College Prep, Chicago

Owner Comer Science and Education Foundation—Guy Comer (president)
School Operator Noble Network of Charter Schools—James Troupis (principal, Gary Comer College Prep)
Architect John Ronan Architects, Chicago—John Ronan (principal); Josh Bergman (project architect); Evan Menk (senior technical coordinator); Marcin Szeff, Anna Ninoyu, Lane Van Buren, Ed Blumer, Sam Zeller (project team)
General Contractor Norcon—Jeff Jozwiak (principal); Robin Rieck (senior project manager); Dan Westermann (project manager)

Structural Engineer Goodfriend Magruder Structure—Kurt Goodfriend, Bob Magruder (principals)
M/E/P Engineer WMA Consulting Engineers—Deirdre McDaniel (vice president); John Marcheschi (managing engineer)
Civil Engineer Terra Engineering—Karen Steingraber (president); Danielle Kowalewski (project manager); Danny Park (project engineer)
Landscape Architect Hoerr Schaudt Landscape Architects—Peter Schaudt (partner); John Ridenour
Acoustical Consultant Kirkegaard Associates—Anthony Shou (associate); Shimby McCreery (acoustician)
Security Schirmer Engineering Corp.—Louis Caravelli (senior security consultant); Sean Ahrens (project manager); Jordan Ferrantelli (consultant)
Size 45,000 square feet
Cost \$260 per square foot (building); \$40 per square foot (site development)
Photograph Steve Hall/Hedrich Blessing

L.B. Landry High School, New Orleans

Owner Louisiana Recovery School District
Program Manager CSRS
Architect of Record Eskew+Dumez+Ripple, New Orleans—Steve Dumez, FAIA, Tracy Lea, AIA, Randy Hutchison, Cynthia Dubberley, Jenny Pelc, AIA, Amanda Rivera, AIA, Robert Kleinpeter, Jason Richards, AIA, Dru Lamb, David Demsey, Thaddeus Zarse (project team)
Associate Architect SHW Group, Houston
General Contractor Satterfield and Pontikes Construction
Structural and Civil Engineer Schrenk and Peterson Consulting Engineers
Mechanical and Electrical Engineer Moses Engineers
Landscape Architect Daly Sublette
Acoustic Design Gracenote Consulting
Food Facilities Design Futch Design Associates
Geotechnical Engineers Eustis Engineering Co.
Program Manager CSRS/Jacobs Engineering
Size 236,000 square feet
Cost \$232 per square foot
Photograph Timothy Hursley

NYC School Construction Authority: Mott Haven Campus, Bronx, N.Y.

Client New York City School Construction Authority
Architect Perkins Eastman, New York—Aaron Schwarz, FAIA (principal-in-charge); Perry Nunez, Christine Schlendorf (project managers); Ernesto Vela, Joseph Iannucci, Melissa Schroeder, Kate Hanenberg (design team)
Associate Architect Alexander Gorlin Architects—Alexander Gorlin, FAIA
M/E/P Engineers WSP Flack + Kurtz—Sheldon M. Steiner (senior vice president)
Structural Engineer Leslie E. Robertson Associates—Rick Zottola (partner)
Civil Engineer Langan Engineering and Environmental Services—Alan Poeppl (senior associate)

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ARCHITECTURAL LIGHTING | Best Single Article

AQUATICS INTERNATIONAL | Best News Coverage,
Best Use of Social Media, Grand Neal

RESIDENTIAL ARCHITECT | Best Profile

CREDITS

Landscape Architect RGR Landscape—Geoffrey Roesch (principal)

Food Service Romano Gatland Food Service Consultants—John LaBarbera

Theater Acoustics Harvey Marshall Berling Associates—Todd Berling (principal consultant)

General Contractor The DeMatteis Organization

Size 286,651 square feet

Cost \$157.82 million (including site work)

Photograph Chris Cooper

BOND

Chengdu Skycourts, Chengdu, China

Client Chengdu Quingyang SCD

Architect Höweler + Yoon Architecture, Boston—Meejin Yoon, Eric Höweler (principals); Meredith Miller, Ryan Murphy, Parker Lee, Jennifer Chuong, Casey Renner, Chua Matthew, Nerijus Petrokas, Zi Liu, Saran Oki, Cyrus Dochow, Thena Tak, Yushiro Okamoto, Jeremy Jih, Buck Sleeper, Lisa Pauli, Lizzie Krasner (project team)

Associate Architect Archi-Union—Philip Yuan (collaborator)

Participating Architect NanSha—Doreen Liu (collaborator)

Size 67,000 square feet

Cost Withheld

Photograph Yihuai Hu

Herta and Paul Amir Building, Tel Aviv Museum of Art, Tel Aviv, Israel

Client Tel Aviv Museum of Art

Architect Preston Scott Cohen, Cambridge, Mass.—Preston Scott Cohen (principal in charge of design); Amit Nemlich (project architect); Tobias Nolte, Bohsung Kong (project team); Steven Christensen, Guy Re Moor (project assistants); Cameron Wu, Andrew Saunders, Janny Baek (competition team)

Project Manager CPM Construction Management
Structural Engineer YSS Consulting Engineers—Dani Shacham

HVAC Engineer I. Shahar & Co. Consulting Engineers—M. Doron

Lighting Consultant Suzan Tillotson

Glazing Consultant Landman Aluminum
Concrete Façade and Lightfall Contractor Hezkelevitch Engineering

General Contractor Danya-Minrav

Size 195,000 square feet (building area); 43,600 square feet (site area)

Cost \$55 million (total project cost)

Photograph ©Amit Geron, Courtesy Tel Aviv Museum of Art

Ruth Lilly Visitors Pavilion, Indianapolis

Client The Indianapolis Museum of Art

Architect Marlon Blackwell Architect, Fayetteville, Ark.—Marlon Blackwell, FAIA (principal-in-charge); Jonathan Boelkins, Assoc. AIA (project manager); Chris M. Baribeau, AIA, Gail Shepherd, AIA, Meriyati Johari Blackwell, Assoc. AIA, Mark Rukamathu, Matt Griffith, AIA, Mark Wise, Bradford Payne, Stephen Reyenga, Michael Pope, Angela Carpenter, David Tanner, Ignacio Gonzalez (project team)

Structural Engineer Guy Nordenson & Associates Structural Engineers

M/E/P Engineer L'Acquis Consulting Engineers

Civil Engineer Cripe Architects & Engineers

Curtainwall Consultant Kate Kulpa, AIA

Landscape The Landscape Studio—Ed Blake; NINEbark—Eric Fulford, Ann Reed

Acoustical University of Arkansas—Dr. Tahar Messadi

Building Codes and Fire Safety Ralph Gerdes Consultants

General Contractor Geupel DeMars Hagerman

Size 1,290 square feet

Cost \$892 per square foot

Photograph Timothy Hursley

The Los Angeles Museum of the Holocaust, Los Angeles

Client Los Angeles Museum of the Holocaust—Randy Schoenberg (president); Mark Rothman (director)

Design Architect Belzberg Architects, Santa Monica, Calif.—Hagy Belzberg, FAIA (principal); Aaron Leppanen (project manager); Andrew Atwood, Barry Gartin, Brock DeSmit, Carina Bien-Wilner, Christopher Arntzen, Cory Taylor, Daniel Rentsch, David Cheung, Eric Stimmel, Erik Sollom, Justin Brechtel, Philip Lee, Lauren Zuzack (project team)

Structural Consultant William Koh & Associates
Mechanical Consultant John Dorius & Associates

Electrical Consultant A&F Consulting Engineers

Plumbing Consultant Tom Nasrollahi & Associates

Soils Engineer Irvine Geotechnical

Methane Engineer Carlin Environmental

Environmental Engineer Enviropro

General Contractor Winters-Schram

Technology Consultant Potion Design

Special Fabrication Spectrum Oak Products; Swiss Woodworking

Size 32,000 square feet

Cost \$462 per square foot (includes interior displays and media)

Photograph Hagy Belzberg

Forest Pavilion, Guangfu, Hualien, Taiwan

Curator and Client Artfield, for the Forestry Bureau of Taiwan—Huichen Wu

Architect nArchitects, Brooklyn, N.Y.—Eric Bunge, AIA, Mimi Hoang (principals); Ammr Vandal (project architect); Julia Chapman, Tiago Barros, Jack Hudspeth, Alana Flick (design team)

Project Management Consultant Frankie Su

Structural Engineer Yan Shi-Feng

Bamboo Fabricator Amis tribe (aboriginal Taiwanese people)

Size 300 square meters (3,229 square feet)

Cost \$20.89 per square foot

Photograph Iwan Baan

MOVE

Riverview Park Visitor Service Building I, Louisville, Ky.

Client Waterfront Development Corp.

Architect de Leon & Primmer Architecture Workshop, Louisville, Ky.—Roberto de Leon, AIA, Ross Primmer, AIA (principals-in-charge); Dave Mayo, Lindsey Stoughton (project managers)

Construction Manager Construction Solutions—Clinton Deckard (principal-in-charge); Steven Lund (construction manager)

Size 505 square feet

Cost \$495 per square foot (includes park irrigation and lighting controls)

Photograph de Leon & Primmer Architecture Workshop

WORK

Centra at Metropark, Iselin, N.J.

Client The Hampshire Cos.

Architect Kohn Pedersen Fox Associates, New York—Lloyd Sigal, AIA (managing principal-in-charge); Eugene Kohn, FAIA (principal-in-charge); Devin Ratliff, AIA (project manager); Hugh Trumbull, AIA (senior designer); Alex Adarichev, Sam Leung, Gregory Mell, AIA, Allison Weinstein (project team)

Structural Engineer DeSimone Consulting Engineers

M/E/P/FP Engineer AMA Consulting Engineers

Landscape Architect Towers Golde

Lighting Designer S + S Lighting Design

Contractor Tishman Construction

Size 110,000 gross square feet

Cost Withheld

Photograph Michael Moran Photography

Community Foundation Santa Cruz County, Aptos, Calif.

Client Community Foundation Santa Cruz

Architect Mark Cavagnero Associates, San Francisco—Mark Cavagnero, FAIA (principal-in-charge, lead designer); Kang Kiang, AIA (project director); Brandon Joo (project architect)

General Contractor Devcon Construction—Doug Maher (project manager)

Project and Construction Manager Nova Partners—Chris Thompson (project manager)

Civil Engineering Ifland Engineers—Glen Ifland (vice president)

Structural Engineering Jon Brody Structural Engineers—Jon Brody (principal)

Mechanical Engineering (Design/Build) Airtec Services—Dave Olson (president)

Electrical Engineering, Lighting, and A/V (Design/Build) Triad Electric—Michael Termini (president)

Plumbing Engineering Castro Plumbing Services—Steve Hanson (project manager)

Landscape Architecture Joni L Janecki & Associates—Joni Janecki (principal)

Acoustical Design Charles M. Salter Associates—Tom Schindler (vice president)

LEED Consulting Enovity—Greg Cunningham (principal)

Size 10,000 square feet

Cost Withheld

Photograph Tim Griffith Photographer

Coffee Plaza, Hamburg

Clients Neumann Gruppe & DS-Bauconcept

Architect Richard Meier & Partners Architects, New York—Richard Meier, FAIA, Bernhard Karpf, AIA (design team); Ringo Offermann, AIA (project architect); Christian Tschoeke, Eva Held, Gabriel McKinney, Gil Even-Tsur, Hyungsok Moon, Anne Strüwing, Jonathan Bell, Matt Krajewski, Quang Truong, Kevin Lee, Reja Bakh, Warren Kim (collaborators)

Project Management Drees & Sommer; Salzuber und Frühling

Associate Architect Architekten Ingenieure PSP
Structural Engineer Weber Poll Ingenieurbüro für Bauwesen

Mechanical & Electrical Engineer, Building

Physics, and Façade Consultant DS-Plan Ingenieuresellschaft für Ganzheitliche Bauberatung und Generalfachplanung

Acoustical Consultant Taubert und Ruhe Beratungsbüro für Akustik und Thermische Bauphysik

Fire and Code Consultant Kersken & Kirchner Beratende Ingenieure VBI Sachverständige für baulichen Brandschutz

Lighting Consultant Peter Andres Beratende Ingenieure für Lichtplanung

Signage Piscatello Design Centre

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Parking Consultant Masuch+Olbrisch

Wind Consultant I.F.I. Institut für Industrieaerodynamik

Façade Cleaning Consultant TAW Weisse International

Size 27,100 square meters (291,702 square feet)

Cost Withheld

Photograph Klaus Frahm, courtesy Richard Meier & Partners Architects

1st Avenue Commercial Office, Tucson, Ariz.

Client Repp Design + Construction

Architect and Contractor Repp Design + Construction, Tucson, Ariz.—Page W. Repp Jr., AIA, Rick McLain, AIA, Stacy Burnett, AIA, Jenni Van Brocklin, Julie Glass

Structural Engineer Caruso Turley Scott

Mechanical Engineer KC Mechanical

Electrical Engineer Balda Electrical Consulting

Steel Fabrication Repp Design + Construction

Concrete Subcontractor Luciano Concrete

Electrical Subcontractor Major Electric

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Size 5,400 square feet

Cost Withheld

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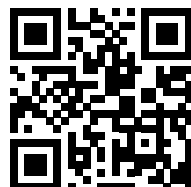
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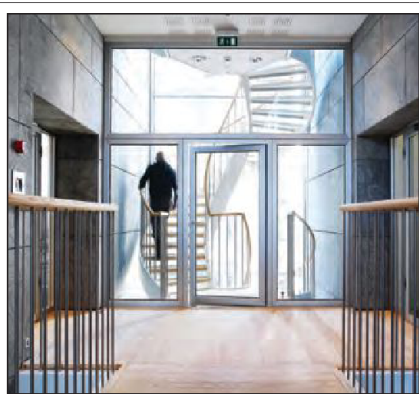


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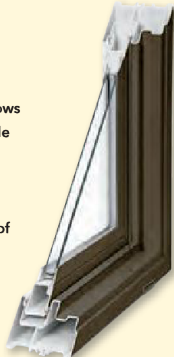
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→1979 P/A AWARD

A BRIDGE TOO FAR

AS ARCHITECTS HAVE SHOWN INCREASING INTEREST IN INFRASTRUCTURE, MICHAEL GRAVES'S FARGO-MOORHEAD PROJECT OFFERS ONE MODEL OF WHAT ARCHITECTS CAN CONTRIBUTE TO BRIDGE DESIGN.

TEXT BY THOMAS FISHER, ASSOC. AIA



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IN HONOR OF their 1975 centennial, Fargo, N.D., and Moorhead, Minn., decided to build a “heritage and cultural bridge” over the Red River, which separates the two cities. Organizers envisioned not only a vehicular bridge, but also a Red River Valley heritage interpretative center, an art museum, a concert hall, a public radio station, and offices. A task force selected Michael Graves, FAIA, to design the bridge in 1976, and his scheme won a P/A award in 1979.

At the time, its postmodern aesthetic received most of the attention. The art museum “cornice” bridged performing arts facilities in Fargo and the interpretive center in Moorhead, displaying the richly allusive Classicism and highly sensitive urbanism characteristic of Graves’s mature work. What excited the architectural

community, however, may have gone too far for Fargo.

In a November 1978 referendum, 53 percent of Fargo’s voters opposed funding the project. Moorhead continued to work with Graves on the design for the interpretive center, but that too was halted. A utilitarian bridge was built, and it stands there today, seemingly ready to take the building it was designed to support.

More than 30 years later, what seems most significant about the project was not its form and aesthetic, but instead its hybrid, infrastructural nature. In an economy in which cities will need to do more with less, using infrastructure to help fund civic projects, leveraging support from two different states and municipalities, and turning a bridge into a major public gathering place all seem like ideas we can build on. □



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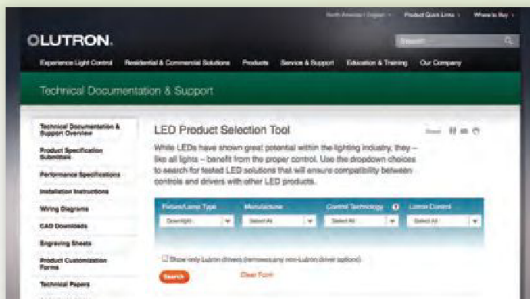
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