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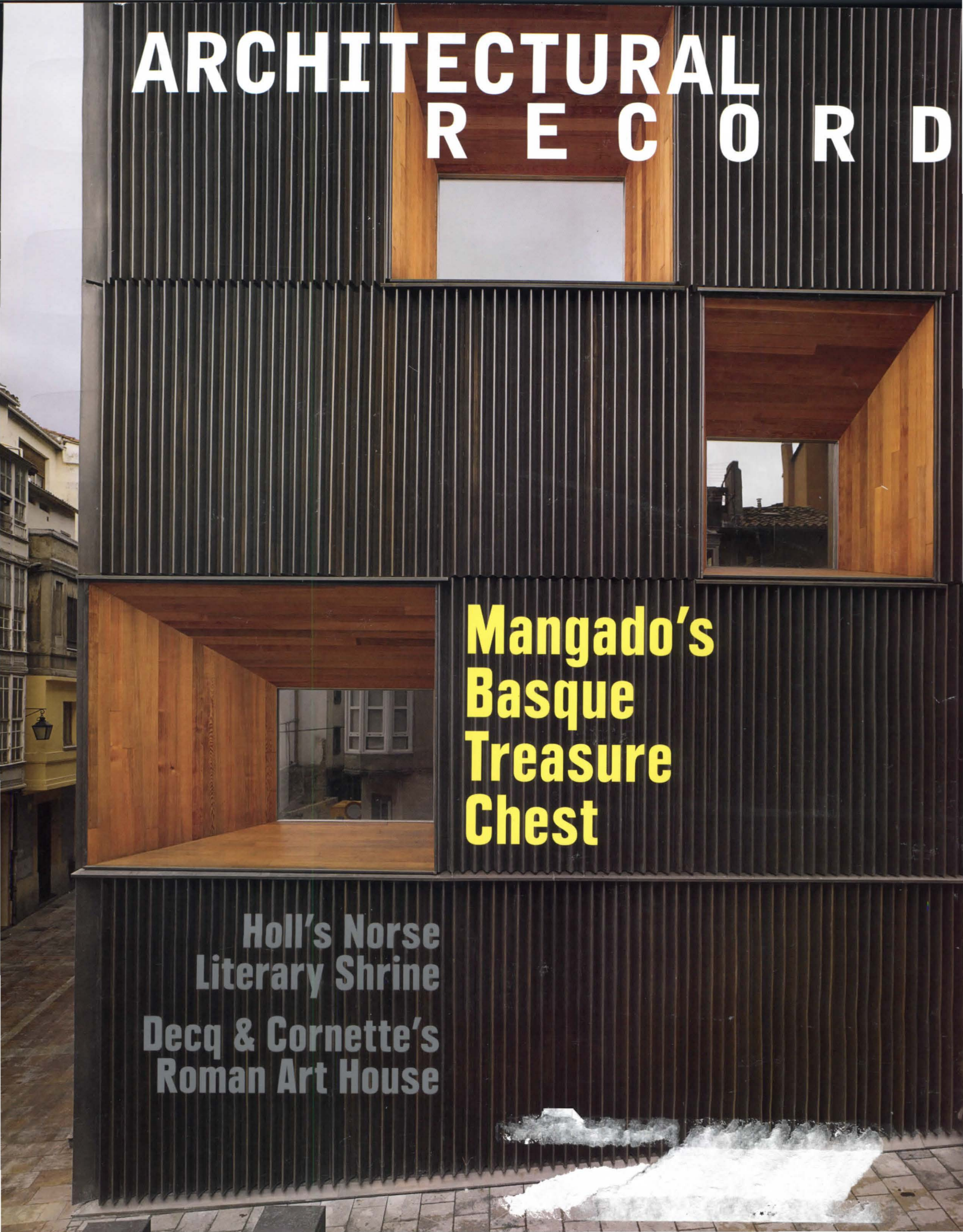

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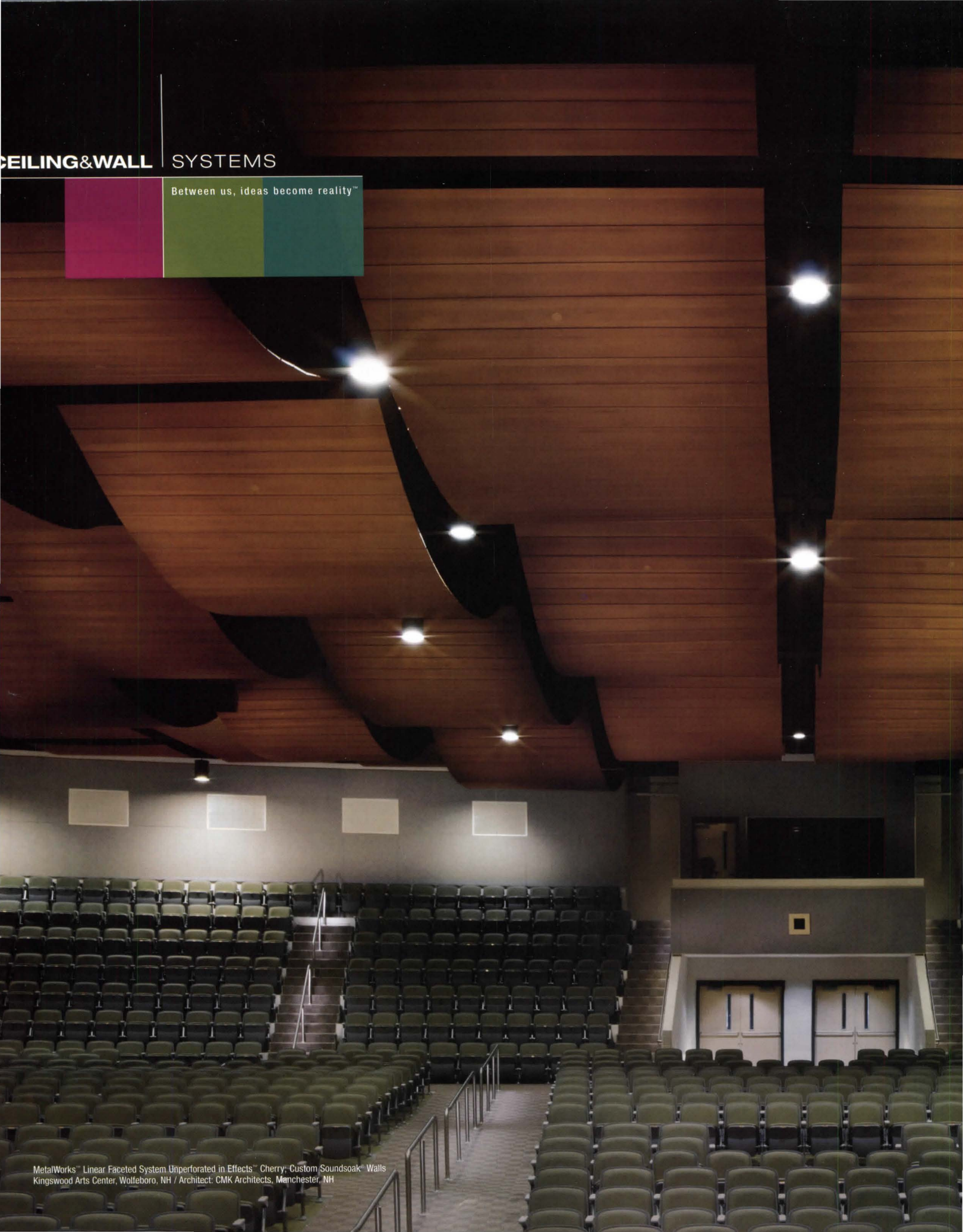

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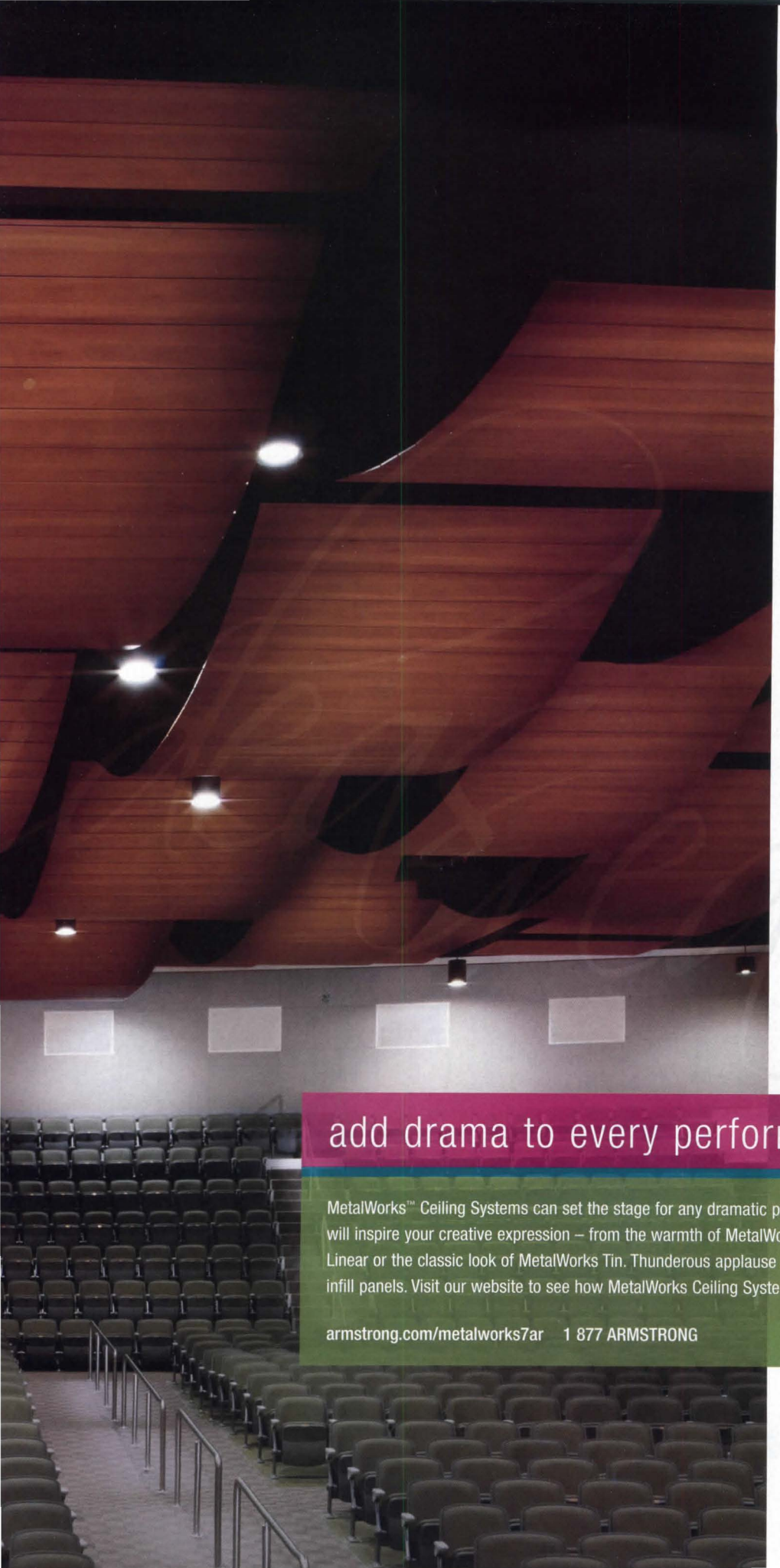

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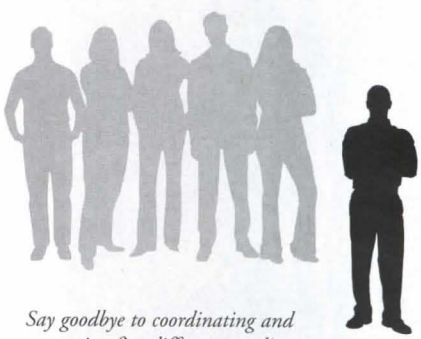

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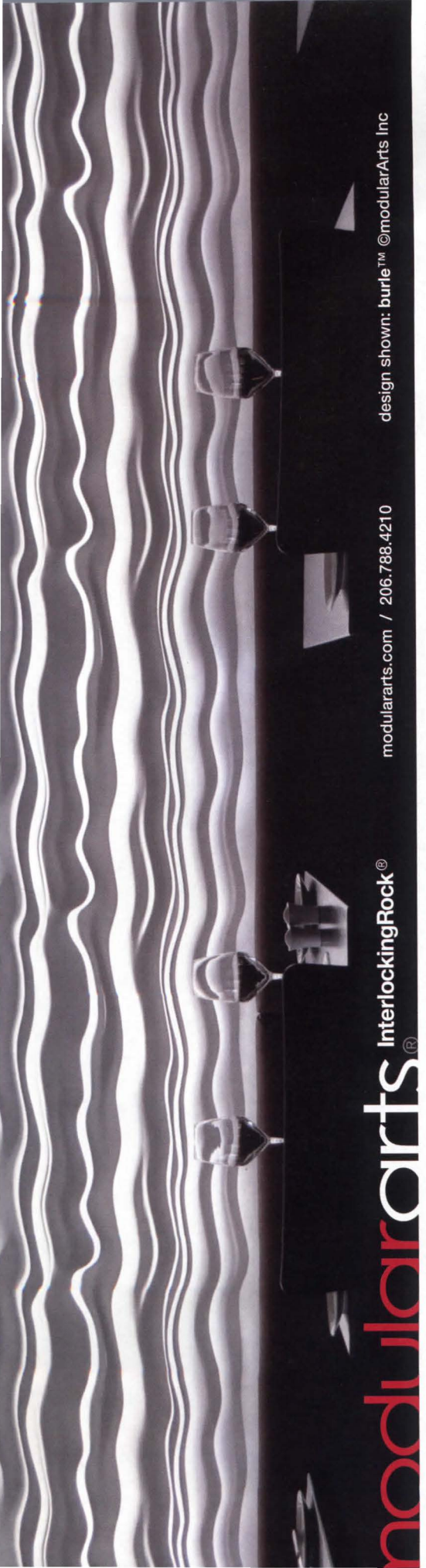

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ABOVE: Conference Room at the Museum of Contemporary Art of Rome, by Odile Decq and Benoit Cornette Architectes Urbanistes. Photo by Roland Halbe.

ON THE COVER: Archaeology Museum of Álava, Vitoria, Spain, by Mangado and Associates. Photo by Roland Halbe.

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NSG Group Flat Glass Business

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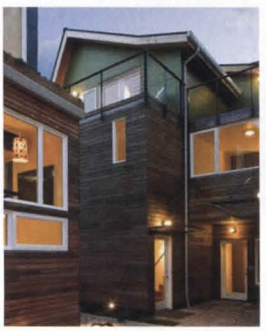

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[READER PHOTOS]

We spotlight the best of our reader photography galleries – including this image of David Chipperfield's Rockbund Art Museum in Shanghai – in our monthly Top Ten Reader Photos column. Visit architecturalrecord.com to submit your work.

Continuing the elevated urban park on a former railway viaduct designed by James Corner Field Operations with Diller Scofidio + Renfro, the second phase of New York City's High Line opened in June. The widely praised project also found some detractors in the comment thread on our report about the opening.

[COMMENTS AND LETTERS]

As far as I can determine, the High Line costs $30,000 per linear foot. Nicely equipped with sidewalks, light standards, and plantings, a neighborhood street costs about $700 per linear foot. The cost of the High Line would have provided streets for about 10 neighborhoods (with pedestrian sheds of 160 acres each). The High Line is superb, but it is what it is: a hyper-refined public park. This has always been the case with Landscape Urbanism's projects. The claim that it is a complete urban theory is a responsibility it cannot bear. It is not even close to engagement with an everyday reality.
—Andres Duany, FAIA, CNU

I have to both agree and disagree with Mr. Duany's comment. Yes, it is a hyper-refined public park. You say that "It is not even close to engagement with an everyday reality," but that depends on what reality is. New York City has an unreal quality to it and a project like this, which adds to the layering and sublime qualities of the city, is very much a theory worth testing. We are not talking about a pre-planned, pretty New Urbanism project here. While I respect Mr. Duany's general concepts on urban planning, I think he is out of his element on this one.
—Stephen Korbich, Portland, Oregon

View looking south from near Twenty-fifth street along the recently completed second section of the High Line.

The High Line Park appears to be a very pleasing project. But at what cost? The equivalencies that Andres Duany pointed out are real and must be confronted in this age of depleted public works budgets. One hundred fifty-two million dollars invested in green-infrastructure street retrofits could have put a huge dent in the 27 billion gallons of raw sewage that NYC dumps into its harbors annually.
—Paul Crabtree, PE, CNU

Stephen, you refer to "a pre-planned, pretty New Urbanism project here" as if that's supposed to undermine the relevance of Duany's comment. The design offers several delightful reasons to walk the length; I see no need to defend what I consider a rich amenity. However, in a post-meltdown economy, for the money, NYC or any other place that intends to spend $30,000 per linear foot could provide multiple benefits across multiple blocks in the form of complete, walkable, shaded streets. Enjoy the High Line, yes, but consider what we need now: to improve the livability and resilience of our cash-strapped cities through good, affordable design.
—Stephen Coyle, AIA, LEED

All degrees of urbanism are relative. NYC is a hyper-urban environment, exceeding the density and scale of any suburban (new) town urbanism. The benefit of the High Line as a pedestrian intervention amid the grit of Hell's Kitchen and the West Side Highway is the recreational experience of traversing the city from a rare position — above and weaving through. It may be a one-trick pony, but it does live up to the Landscape Urbanists' position of interjecting an extraordinary form of infrastructure into the fabric of the city. Pedestrian experience at the street level is but one way of experiencing NYC. The High Line adds yet another dimension to the splendor of the city. Yes, $30,000 per foot is unbelievable — ridiculous, even — but worth it.
—Anonymous

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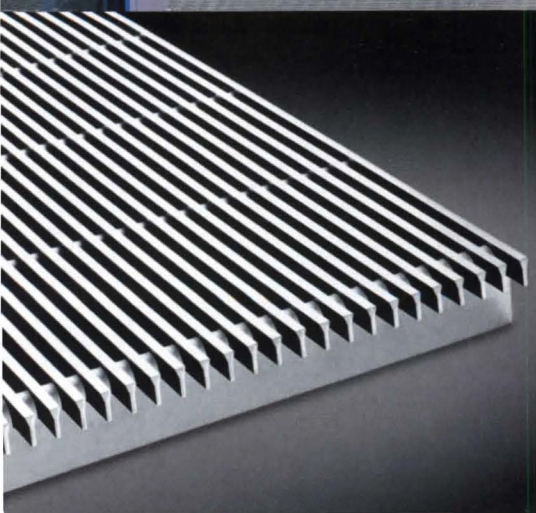

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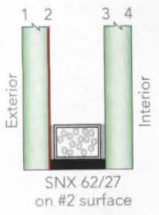

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Back to Basics

Ideas about place, craft, and community inspire a summer camp for architects.

EVERY SUMMER FOR the last dozen years, architect Brian MacKay-Lyons has hosted a design-build workshop at his weekend farm, which sits along a spectacular stretch of rugged coastline in his native Nova Scotia. The point of "Ghost Lab," so named for the stone ruins of a long-abandoned settlement on the property, is to get architecture students to pick up a hammer and actually make a structure with their own hands, a disappearing skill set in design education today, where "building" is largely virtual.

But this year, MacKay-Lyons transformed his annual Ghost Lab into a far more ambitious summer camp: a three-day conference for nearly 200 architects, students, and academics [RECORD, March 2011, page 26]. This was not your average 21st-century confab. We were off the grid, literally, after the electricity went out the first morning following an epic rainstorm. No worries: A temporary generator was up and running within 30 minutes to fuel the speakers' PowerPoint presentations of their work. Naturally, we weren't meeting in a windowless hotel conference room but in an octagonal horse barn from the 1880s that Ghost Lab students restored a few summers back. Daylight seeped in through the ornate cupola and, as Internet connection was spotty, most of the tweeting was carried on by actual birds. A pair of enormous Leonberger dogs and an errant lamb named Darwin occasionally wandered among the rows of seated conference-goers. Lunch was served inside festive white-and-red canvas yurts pitched in a meadow.

If the ambience felt ad hoc, the theme of the conference was sharply focused on three architectural ideals: design that's rooted in a specific place; in the craft and inventiveness of construction; and in the connection to community. The drawing card for the conference attendees, who came from as far away as Hong Kong and South Africa, was the stellar lineup of speakers. MacKay-Lyons's own acclaimed work is a Modernist twist on local building types – barns, fishing shacks, and boats. The like-minded regional Modernists he rounded up for the conference – many are his close friends – included Rick Joy of Tucson, whose desert houses of rammed earth and glass are land-hugging forms with infinite views; Marlon Blackwell of Fayetteville, Arkansas, who translates vernacular building types into contemporary forms in such projects as the post-Katrina Porchdog House; and Seattle's Tom Kundig, whose powerful dwellings appear rooted in the earth and rock of the Pacific Northwest.

Sustainability for these architects isn't about "greening" but rather taking a back-to-basics approach, using local materials when possible, and siting structures to address prevailing winds and solar gain. Ted Flato of San Antonio is a big recycler, who borrows from the traditional local buildings of industry and agriculture, or reworks materials such as oil-field pipes.

The headliners at the conference were a trio of elder statesmen. The Pritzker Prize–winning Australian architect Glenn Murcutt, the Finnish architect and writer Juhani Pallasmaa, and the critic Kenneth Frampton of Columbia University each gave an evening lecture, held in a 19th-century Carpenter Gothic church in the picturesque nearby town of Lunenburg.

While the younger conference speakers once practiced under the radar, they're no longer architectural outsiders but sought-after designers. And now they've become a small but authentic movement – a counterweight to the anonymous globalization of design and to architectural education that's divorced from knowledge of building. As a group, they're fiercely anti-ideological, deploring a design culture where "concept has been elevated over craft," as another conference speaker, the critic Peter Buchanan, put it.

Still, there are significant differences among them, in part because of the varied regions where they practice. Patricia Patkau of Vancouver questioned whether they were really a cohesive group, pointing to the small civic projects – schools and libraries – that have dominated her firm's work, rather than the residential projects that have been the design laboratory for most of the cohort. And there was disagreement over what constituted "craft": Did it apply only to the work of hands-on architect-builders such as Rick Joy or Peter Stutchbury of Australia? Or does the notion of craft extend to the more abstract creations of architects?

The projects presented at the conference ranged vastly in terms of budget, too, from the luxurious Amangiri Resort in Canyon Point, Utah – a design collaboration of Marwan Al-Sayed, Wendell Burnette, and Rick Joy – to a prototype for a $20,000 house, developed by the Rural Studio under the direction of Andrew Freear, in Hale County, Alabama.

Despite their differences, that impressive roster of architects made the pilgrimage to a corner of Nova Scotia, to push shared values that, while rooted in the past, have fresh relevance in a world of increasing dislocation and uncertainty. MacKay-Lyons, the impresario whose quiet yet determined demeanor provides the glue for this loose collective, likened the spirit of the conference to the Sun Records sessions in Memphis in the 1950s, where a small but nimble group of musicians outside the center of fashion changed rock and roll forever. A bit romantic? Well, yes. But it's refreshing to see architects wrestle unabashedly with some of the most essential issues in the profession, as they seek a balance between the pragmatic and the poetic. ■

Cathleen McGuigan

Cathleen McGuigan, Editor in Chief

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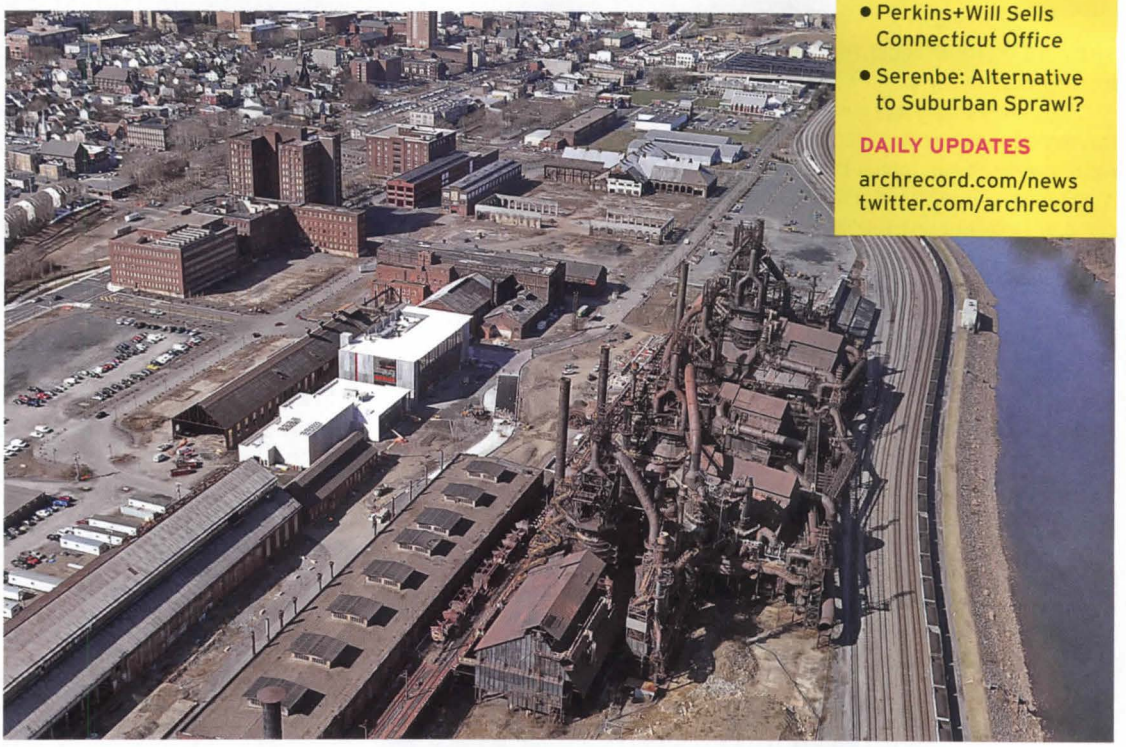


BETHLEHEM STEEL'S FIVE blast furnaces, with their 285-foot-tall smokestacks wrapped in tangles of metal pipes, embodied the very idea of industry for generations. Beginning in the late 1850s, the company fabricated structural material for a long list of monumental projects, including the Golden Gate Bridge and the Chrysler Building. But by the time I was growing up near Bethlehem in the 1980s, the furnaces stood as emblems – for eastern Pennsylvanians and, thanks to a Billy Joel song about my native Allentown, for the rest of the country as well – of the economic and cultural fallout from the decline of U.S. manufacturing. In November 1995, Bethlehem Steel shut down the last operations at its sprawling campus along the Lehigh River.

Looming ruins from an industrial antiquity, the furnaces now form a dramatic backdrop for the ArtsQuest Center. The $26.6 million project was designed by local firm Spillman Farmer Architects to house performance spaces for an eclectic program ranging from pop music to comedy, as well as two art house movie theaters. The center opened in early May, with final stages of construction slated for completion this month.

The 65,000-square-foot, new-construction building stands directly across from the furnaces, orienting its performance halls toward the towering stacks, and bringing life back into a section of Bethlehem that was once the city's economic heart. "We made it very clear that the most important buildings on the site had already been constructed," says Jeffrey A. Parks, director of ArtsQuest, the nonprofit that operates the center as well as Musikfest, a summer concert series now in its 28th year. "The [performance] spaces had to have great sound, but they also had to have a great view of the furnaces."

Spillman Farmer designed the center as a simple, four-story box clad in gray precast concrete panels and separated into two conjoined volumes. On the ground floor, a ticketing counter and a pair of 100- and 200-seat movie theaters occupy the south side, while a double-height lobby with concessions and a gift shop looks through the building's glazed north facade across a public plaza to the foot of the steel stacks.

Steel is everywhere inside the project, from exposed supports to finishes, all painted a bright international orange – the color of the Golden Gate Bridge. Ironically, the material was fabricated in Erie, on the other side of Pennsylvania. Occupying half of the top two floors, the main performance venue accommodates 450 at cabaret-style tables, or 900 standing. Backed up against the glazed facade, the stage hovers in front of the steel stacks. A rough but elegant version of a theater's grand stair, a 40-foot-high steel spiral with concrete treads, provides circulation from the performance space down to a mezzanine and an exterior balcony.

In 2007, the Las Vegas Sands Corporation acquired 126 acres of Bethlehem Steel property, and when a garish casino and a bland hotel tower went up on the east side of the site, some locals worried that a place that seemed inseparable from the city it forged was becoming utterly detached from its context and history. But the new ArtsQuest building is only the first of several projects, including a public television studio adjacent to the center, planned for 10 acres on the western side of the site, which the owners have donated as a cultural campus. With nightly performances, as well as a weekly farmers' market and other community programming, it already draws residents (in addition to bussed-in gamblers) to the industrial hub where many of their parents and grandparents once worked.

The planners have also left the entire site very raw. The honesty of the treatment gives a sense of history to the environment. Buildings from various eras of the site's manufacturing past – some intact, some skeletal – ring the project. "This is the Rust Belt. Let's celebrate that," says Parks. "Let's have some fun with it." ■

ABOVE: **The four-story ArtsQuest Center and an adjacent structure housing a television studio face hulking blast furnaces on the former Bethlehem Steel campus.**

LEFT: **A steel-and-concrete spiral stair connects the project's main performance venue to its lobby and a terrace.**

PHOTOGRAPHY: © KEVIN MINGORA/THE MORNING CALL (TOP); JENNA M. MCKNIGHT (BOTTOM)

To see more images of the ArtsQuest Center, visit us online at architecturalrecord.com/news.

[RANKINGS]

Titans Maintain Lead While Industry Suffers

THEY'VE DONE IT again. For the fourth straight year, heavyweights AECOM and Gensler have landed at the number one and two spots, respectively, on our annual Top 250 Architecture Firms list, which ranks companies according to architectural revenue in the prior year. Here, we present an excerpt from that list, with the full version available online.

In 2010, AECOM garnered $666.4 million in architectural revenue, and Gensler, with $656.9 million, wasn't far behind. Perkins+Will, at $400.3 million, came in third – its highest position yet. P+W has steadily ascended our list over the last few years, placing sixth in 2008 and 2009 and fourth last year.

While Gensler's 2010 architectural revenue rose $107 million over 2009, most firms saw their incomes shrink. Overall, the top 250 firms earned $9.4 billion in architectural revenue in 2010, down from $10.2 billion in 2009, and nearly a quarter less than two years before.

Our ranking is based on surveys that McGraw-Hill Construction distributed this year, from January to March, to architecture and engineering firms countrywide. Foreign companies with American offices could participate, but only if they reported revenue generated by their U.S. outposts. Readers may note the absence of high-profile firms such as Foster & Partners and Gehry Partners. Our team contacted these firms but received no response.

On the web, in addition to the full list we showcase data we collected about each firm, such as domestic-versus-overseas revenue and percentage of total income generated from architecture. These supplementary details can be revealing: URS Corp., for instance, derived only 6 percent of its total 2010 revenue from architecture, yet it still ranked number six on our list.

As our findings attest, the profession remains in the economic doldrums. Since climbing to $12.5 billion in 2008, architectural revenue among the top 250 firms has continued its downward slide. The recession officially ended in June 2009, but designers haven't felt much relief. "Any anticipated recovery has not materialized," says Gary Tulacz, manager of surveys for McGraw-Hill Construction.

While a few sectors, such as health care and higher education, are somewhat active, forecasters don't expect the architectural market to bounce back this year. After rising into positive territory in early 2011, the Architectural Billings Index has sunk below 50 for the past two months, signaling depressed conditions. Moreover, *Engineering News-Record*'s Construction Industry Confidence Index – based on surveys sent to contractors, subcontractors, engineers, and architects – dropped from 51 to 46 in the second quarter of 2011.

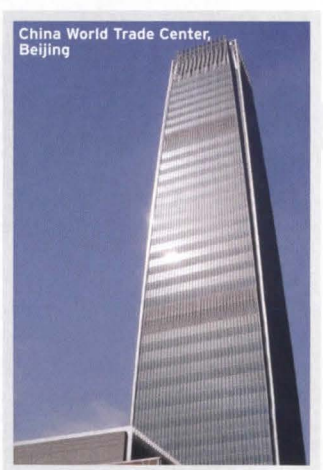
Foreign projects are helping make up for the loss of work at home. Of the top 250 firms, 117 reported activity overseas, with international revenue totaling $1.8 billion. That said, $557.8 million of the *full* sum – nearly a third – was earned by AECOM, Gensler, and HOK.

Acquisitions also figure into the rankings. Most notably, Canada-based Stantec bought two sizable U.S. firms in the second half of 2010: Pennsylvania's Burt Hill and California's Anshen+Allen. In turn, Stantec's ranking skyrocketed, from 51 to 24. CEO Robert Gomes aims to land even higher next year. "We are not done growing," he says. "Our goal is to be one of the top 10 firms." ■

TOP 25 U.S. ARCHITECTURE FIRMS OF 2011

Companies are ranked by revenue (in $ million) for architectural services performed in 2010. This data also appears in *Engineering News-Record*'s Top 500 Design Firms list, which, unlike our ranking, includes engineering-exclusive firms.

Chervon International Trading Company Headquarters, Nanjing, China



China World Trade Center, Beijing

Laguna Honda Hospital, San Francisco

RANK 2011	2010	FIRMS, U.S. HEADQUARTERS	TYPE OF FIRM	TOTAL ARCHITECTURE REVENUE
1	1	**AECOM Technologies,** Los Angeles	EA	666.40
2	2	**Gensler,** San Francisco	A	656.86
3	4	**Perkins+Will,** Chicago	A	400.30
4	5	**HDR Architecture Inc.,** Omaha	EA	336.90
5	6	**HOK,** St. Louis	AE	334.16
6	3	**URS Corp.,** San Francisco	EAC	282.80
7	9	**NBBJ,** Seattle	A	193.80
8	7	**HKS Inc.,** Dallas	AE	190.50
9	12	**RTKL,** Baltimore	EA	176.00
10	8	**Skidmore, Owings & Merrill LLP,** New York City	AE	169.90
11	10	**Leo A Daly,** Omaha	AE	157.89
12	11	**Cannon Design,** Grand Island, N.Y.	AE	155.80
13	16	**Bechtel,** San Francisco	EC	134.00
14	17	**ZGF Architects LLP,** Portland, Ore.	A	124.60
15	18	**Perkins Eastman,** New York City	A	110.00
16	15	**SmithGroup Inc.,** Detroit	AE	105.00
17	22	**Rafael Viñoly Architects PC,** New York City	AE	104.72
18	13	**Populous,** Kansas City, Mo.	A	99.00
19	14	**Callison,** Seattle	A	92.50
20	20	**Kohn Pedersen Fox Associates PC,** New York City	A	89.80
21	23	**HMC Architects,** Ontario, Calif.	A	88.04
22	31	**DLR Group,** Omaha	AE	87.00
23	27	**HNTB Cos.,** Kansas City, Mo.	EA	76.22
24	51	**Stantec Inc.,** Irvine, Calif.	EAL	75.75
25	25	**Corgan Associates Inc,** Dallas	A	73.80

Key to firm types

A Architect
AE Architect Engineer
AP Architect Planner
EAL Engineer Architect Landscape
AEC Architect Engineer Contractor
(not all combinations listed)

See the entire Top 250 Architecture Firms list at architecturalrecord.com/practice.

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CIRCLE 21

ON THE BOARDS

Project SFMOMA
Location San Francisco
Architect Snøhetta

The San Francisco Museum of Modern Art has released preliminary exterior designs for a roughly 225,000-square-foot expansion. The wedge-shaped building, by Norwegian firm Snøhetta, will sit behind the institution's 1995 brick home by Mario Botta. Doubling SFMOMA's exhibition and educational space, the facility will feature the contemporary art collection of late Gap founder Donald Fisher. Interior plans will be unveiled in November. Project completion is slated for 2016.

Project DePaul University Theatre School
Location Chicago
Architect Pelli Clarke Pelli

In June, DePaul University broke ground on a new, 165,000-square-foot home for the Theatre School by Pelli Clarke Pelli Architects. The five-story limestone building features a rectangular box that will house a 100-seat theater, partly visible from behind a glazed curtain wall. The facility will also contain classrooms, rehearsal areas, a scene shop, and lounge. An opening is planned for 2013.

Project Brady Arts Center
Location Tulsa
Architect Gluckman Mayner; Kinslow Keith & Todd

The Philbrook Museum of Art has unveiled plans for the Brady Arts Center, a 30,000-square-foot satellite facility it will open in a cultural district in downtown Tulsa. The project entails the conversion of an industrial warehouse; New York-based Gluckman Mayner Architects has been tapped to design the interior, while Oklahoma-based Kinslow Keith & Todd will renovate the exterior. Completion is scheduled for fall 2012.

IMAGES: COURTESY SFMOMA (LEFT); PELLI CLARKE PELLI (TOP); GLUCKMAN MAYNER (BOTTOM)

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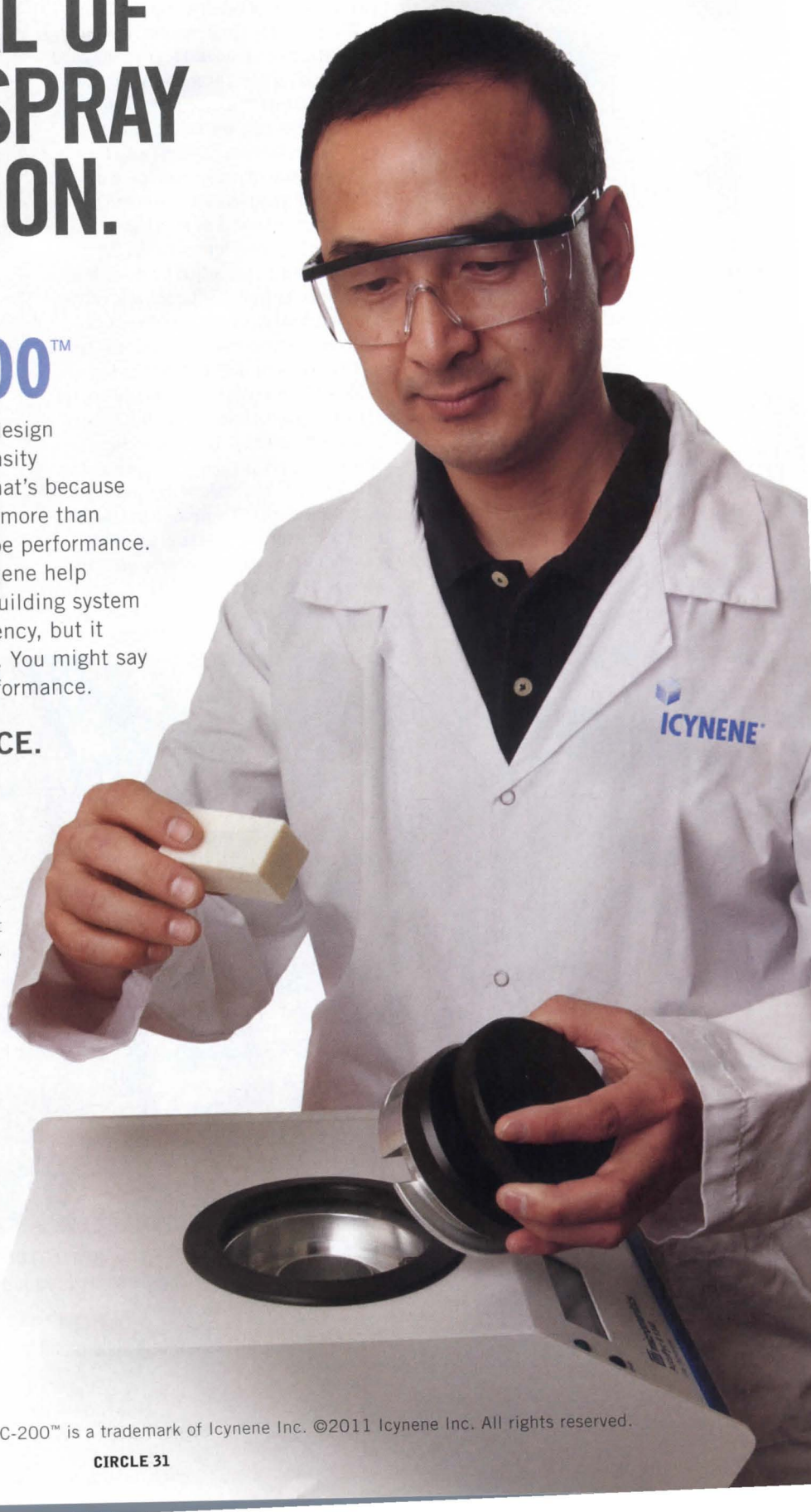

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CIRCLE 31

Obama Lauds Pritzker Winner

The annual Pritzker Prize ceremony always attracts an elite crowd. This year's guest list, however, included two special dignitaries: President Barack Obama and First Lady Michelle Obama, friends of the Pritzker family.

The fete, which honored 2011 laureate Eduardo Souto de Moura, was held June 2 in Washington, D.C., at the Andrew W. Mellon Auditorium, designed by Arthur Brown Jr. and inaugurated in 1935. Nearly 400 attendees gathered in the grand lobby of the Neoclassical limestone building for a cocktail hour, followed by an elegant dinner in the main hall.

The Obamas appeared only briefly: With the First Lady at his side, the president delivered a five-minute speech in which he congratulated Souto de Moura and described his own childhood aspirations to be an architect. "I expected to be more creative than I turned out, so I had to go into politics instead," Obama joked.

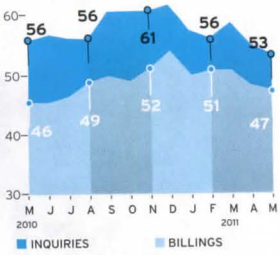
The president noted that Souto de Moura has designed a mix of projects, "all in a style that seems as effortless as it is beautiful." He highlighted Braga Stadium (2004) in Portugal, which Souto de Moura positioned so that spectators who couldn't afford tickets to soccer matches could watch them from the surrounding hillsides.

Obama, in closing, commended all architects for creating "timeless works of art – not only to bring us joy, but to help make this world a better place." He is only the second U.S. president to speak at the Pritzker Prize event since the award was established in 1979. Former President Bill Clinton delivered remarks at the 1998 ceremony honoring winner Renzo Piano.

Jenna M. McKnight

Design Award Winners Announced

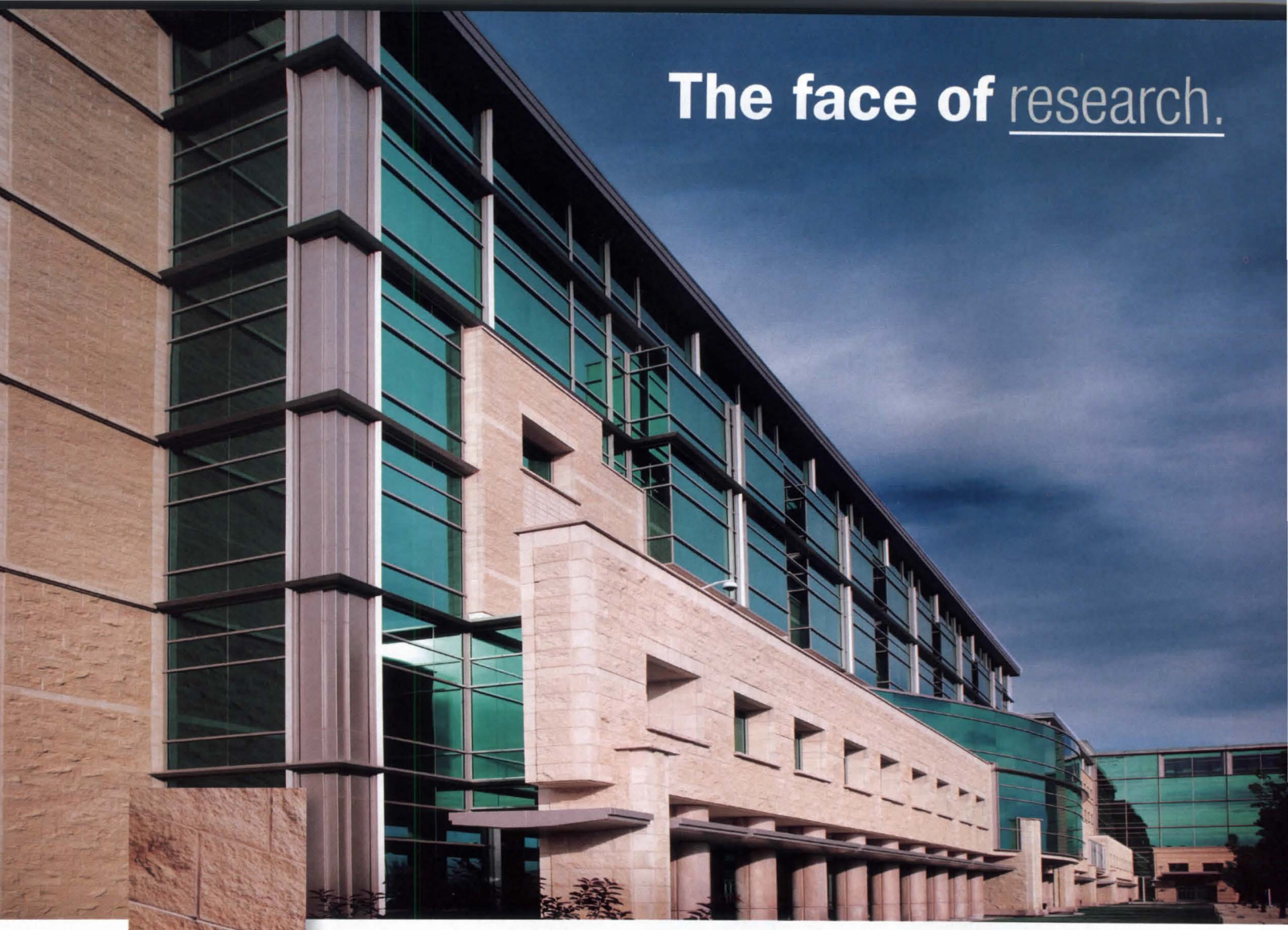
The Smithsonian's Cooper-Hewitt, National Design Museum recently named the winners of the 2011 National Design Awards, which recognize excellence across several disciplines. Among the winners are Architecture Research Office (architecture; pictured); Shelton, Mindel & Associates (interior design); Gustafson Guthrie Nichol (landscape architecture); Continuum (product design); and Knoll (corporate achievement). The recipients will be honored during an October 20 gala in New York.



Billings Fall Again

Following a steep drop to 47.6 in April, the Architectural Billings Index fell further to 47.2 in May. The inquiries score hit 52.6, its lowest mark since February 2010. Kermit Baker, AIA chief economist, noted that the slide was consistent with the general economic downturn, and that "the prolonged credit freeze from lenders for financing commercial projects is the number one challenge to a recovery."

PHOTOGRAPHY: COURTESY KEITH WALKER (LEFT); COOPER-HEWITT (CENTER)



- *Project: The Huntsman Cancer Institute, Salt Lake City, UT.*

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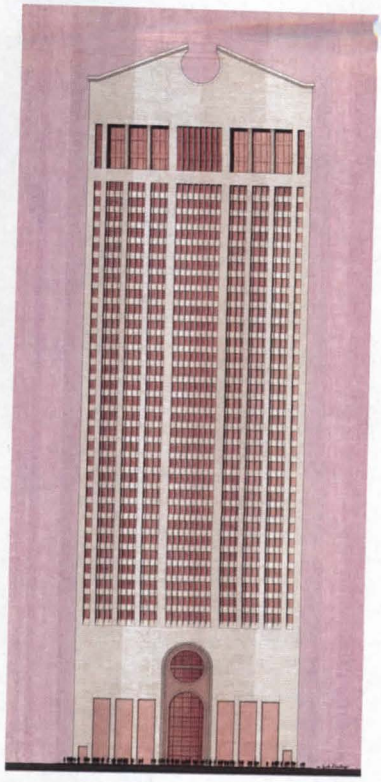
CIRCLE 34

Seems Like Old Times

Reassessing the rise and fall of Postmodern architecture



ABOVE: **The house Robert Venturi designed for his mother Vanna in Chestnut Hill, Pennsylvania (1964).**
RIGHT: **Johnson/Burgee's AT&T presentation drawing (1978).**

IT IS NOW NEARLY A QUARTER of a century since Postmodern architecture – which proposed to make historical references respectable once again – was declared officially dead by none other than its most capricious establishment advocate, Philip Johnson. His exhibition *Deconstructivist Architecture* (co-curated in 1988 with Mark Wigley) at New York's Museum of Modern Art brought an abrupt end to a trend that had lasted just over two decades.

In hindsight, Postmodernism at its worst can seem like a bad dream, or a bad joke. Yet during its brief heyday, PoMo possessed such potent commercial allure that even the mighty Skidmore, Owings & Merrill, high priests of Modernism, precipitously recanted the long-held faith and converted to beliefs once deemed heretical.

The backwash of revulsion that follows a troubling artistic phase has finally abated, as indicated by the conjunction of several new books that reassess Postmodern architecture, and by exhibitions that open this September on opposite sides of the Atlantic: *Postmodernism: Style and Subversion 1970-1990* at London's Victoria and Albert Museum, and *Parabolas to Post-Modern: Selections of Post-War Architecture from the Academy's Collection* at the National Academy of Design in New York.

A star of the V&A show is certain to be its recently acquired 1978 presentation drawing for Johnson/Burgee's AT&T corporate headquarters in New York. It will be interesting to see whether the museum acknowledges the actual source of that instantly controversial building's superscale split-pediment roof.

Johnson, who often paraphrased Stravinsky's famous crack that "Good composers don't borrow, they steal," lifted AT&T's bifurcated crowning motif not from a Chippendale highboy, as he claimed, but straight from Robert Venturi's Vanna Venturi house. Johnson was bravely called out by Venturi's partner and wife, Denise Scott Brown, in her scathing 1979 *Saturday Review* essay "High Boy: The Making of an Eclectic," a definitive dissection of Johnson's inherent weaknesses that won her the subject's undying enmity.

The V&A's 7.5-foot-high, flat-frontal AT&T drawing is only tenuously connected to Johnson, however. By his own admission he was no draftsman, and wont to hand off a crudely scrawled conceptual sketch to be worked up by colleagues. The museum's purchase of this lifeless image for $70,000 [RECORD, September 2010, page 38] seems especially ironic given the exhilarating resurgence of architectural drawing by the Postmodernists, exemplified in the lyrical arcadian fantasies of Michael Graves and the haunting de Chirico–like cityscapes of Aldo Rossi.

But the AT&T drawing signifies the pivotal role Johnson played in transforming Postmodern architecture from an earnest intellectual investigation of historical motifs in contemporary design into a cynical marketing ploy for status-obsessed tycoons in the Age of Reagan.

Connecting the architectural language of American corporate culture with global economic and political forces is a strong suit of Reinhold Martin, director of Columbia University's Buell Center and author of *Utopia's Ghost: Architecture and Postmodernism, Again* (Minnesota, 2010). Martin's disquisition on mirror-glass buildings (including Johnson/Burgee's IDS Center, Transco Headquarters, PPG Place, and Crystal Cathedral) is particularly suggestive, or at least those portions of it that are intelligible, since about every fifth sentence stubbornly resists parsing.

Widening the discourse internationally is *Neo-avant-garde and Postmodern: Postwar Architecture in Britain and Beyond* (Yale, 2011), a lively anthology edited by Mark Crinson and Claire Zimmerman. It includes Martin's characteristically sharp analysis of the neo-imperialist "Great Seal Order" dreamed up by Allen Greenberg for his historicizing interior revamp of the U.S. State Department's Modernist headquarters in Washington.

In *Architecture's Historical Turn: Phenomenology and the Rise of the Postmodern* (Minnesota, 2010), Martin's Columbia colleague Jorge Otero-Pailos attempts to weave profiles of four important figures – professor Jean Labatut, architect Charles Moore, theoretician Christian Norberg-Schulz, and historian Kenneth Frampton – into a continuous narrative on the emergence of Postmodernism, explained through phenomenology (the study of experiential perception). However, the only unquestionable link among these men is the well-known influence exerted by the Classically oriented Labatut on his Princeton pupil Moore.

The book's most riveting revelation is that Moore's peripatetic career and inclusive outlook were by-products of his outsider status. In a stunning discovery, Otero-Pailos found a smoking-gun letter from a university official in Moore's Princeton personnel file that (in thinly veiled language) recommended against his receiving a permanent teaching post because he was gay.

Otero-Pailos draws convincing parallels between Moore's emphasis on a more richly diverse architecture and his acute distaste for the profession's restrictive, conformist mind-set at mid-century. Such illuminating interpretations make it clear that it's time to revisit that transitional period with fresh eyes and open minds (but let's leave it consigned to the Ninth Circle of Architectural Hell). ■

Martin Filler writes for the New York Review of Books.

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Hollenbeck Police Station

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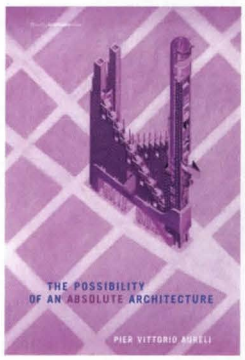
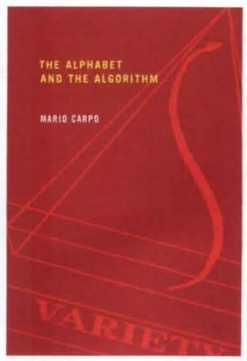
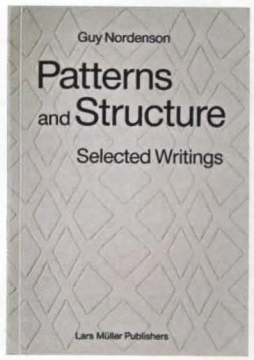
CIRCLE 22

When theory, history, and technology collide







The Possibility of an Absolute Architecture, *by Pier Vittorio Aureli. MIT Press, 2011, 230 pages, $25.*
The Alphabet and the Algorithm, *by Mario Carpo. MIT Press, 2011, 190 pages, $22.*

Two recent books thwart conventional wisdom and show how valuable architectural history and theory continue to be. In approach, Pier Vittorio Aureli is more theoretical and speculative; Mario Carpo, more historical and scholarly.

For Aureli, an absolute architecture is one that has the capacity, conceptually and symbolically, to separate itself off from the surrounding urban entity, so as to withstand the political and economic pressures of urbanization. He cites the plinth Mies van der Rohe typically employed to set off so many of his buildings as a case in point. Pursuing the idea of such an architecture with considerable imagination and insight, Aureli offers original and informative interpretations of the work of such figures as Palladio, Piranesi, and Boullée, concluding in our own period with a discussion of the work and teaching of O. M. Ungers. Intriguingly, he argues that Ungers was an important early influence on his younger colleagues, Rem Koolhaas and Elia Zenghelis.

Carpo tracks the fascinating history of the relationship of designing to making, beginning with Alberti, and concluding in the contemporary professional context of BIM and CAD/CAM. Like Aureli, he documents fascinating historical episodes, such as Alberti's own early "digitization" of images, and his insistence on ensuring the production of "identical" series of building elements. For Carpo, Alberti's separation of "designing" and "making" introduced the concept of professional "authorship" into architecture. Later, he points out how the recent digitization of building design and the increasing tendency to share digital files are having the profound effect of reversing Alberti's 15th-century innovation, leading in turn to reduced individual architectural "authorship," and to a Wikilike process of collaborative participation.

These two books are provocative contributions to current professional and academic discourse, and valuable additions to editor Cynthia Davidson's "Writing Architecture" series. *George Baird*

Patterns and Structure: Selected Writings, *by Guy Nordenson. Lars Müller, 2010, 463 pages, $60.*

A poetry-spouting, bolo-tie-sporting polymath, engineer Guy Nordenson floats above the design scene like some beneficent genie, dropping in to offer insights that cut at once to the structural and human problems at the heart of architecture. As a Princeton professor and a sometime member of New York's Public Design Commission, he is a citizen-scholar, as well as the founder of his own firm.

Patterns and Structure is an eclectic scrapbook of essays from a nearly 40-year career, going back to his college days at MIT when he was a founding editor of *Rune*, an undergraduate literary magazine.

Langston Hughes was a poet-engineer, as was Buckminster Fuller; Nordenson worked for the latter, briefly, before heading off to Berkeley. Working in and around the Bay Area, he became involved in the earthquake-preparedness community, where the "sound ethical underpinning of the field" rhymed with his own philosophical sensibility. The landmark seismic studies in this book, though short on stylistic bravura, are fascinating artifacts.

More important, this book is a testament to and exercise in Nordenson's preferred mode of practice. In a piece for *Perspecta* from 2000, he describes three types of engineers: "the technician," an adjunct to the architect; "the artist," who merely elaborates structural conceits; and, his chosen role, "the collaborator," who both enriches and simplifies, using his critical acumen to interpolate between the architect's design and the laws of physics. *Ian Volner*

Composites Surfaces and Software: High Performance Architecture, *edited by Greg Lynn and Mark Foster Gage. W. W. Norton, 2011, 210 pages, $45.*

Based on Greg Lynn and Mark Foster Gage's Yale design studio, this book reads as 90 percent coda to the excesses of the recently collapsed building boom, with its language of supersmooth, nonlinear envelopes and surfaces, parametric modeling extravaganzas, and otherwise impossible forms. The remaining 10 percent reads as foreword to the long-held promise of digital design and fabrication technologies to push materials science toward more economical, sustainable, and inventive architecture. Though a good start to a desperately needed conversation, the book is less a resource than a record of what was surely an intense studio.

The book divides along its title – composites, surfaces, and software – and includes examples of work by some clearly talented students. The composites and software sections make for lively reading, but the surfaces chapter detours toward dry essays on branding and marketing. The book's fascination with the "fusion" of architectural materials into a single element of structure and envelope seems to miss the boat when it comes to reducing waste and making architecture less dependent on compounds, toxic resins, and glues. Much of the built and rendered work shown appears tortured into achieving this singularity of surface without quite achieving it, suggesting a limit to this approach.

More promising is Gage's hope for scripting in software, which has attracted a fringe element to collaborative design using open-source platforms and more robust, external sources of design intelligence (e.g., climate files). As the software industry continues to consolidate and standardize processes – especially in sustainability – a rogue effort between architects and programmers makes increasing sense. What's unclear from this book is whether this software in service to new materials can actually make architecture better, or just less boring. *Russell Fortmeyer*

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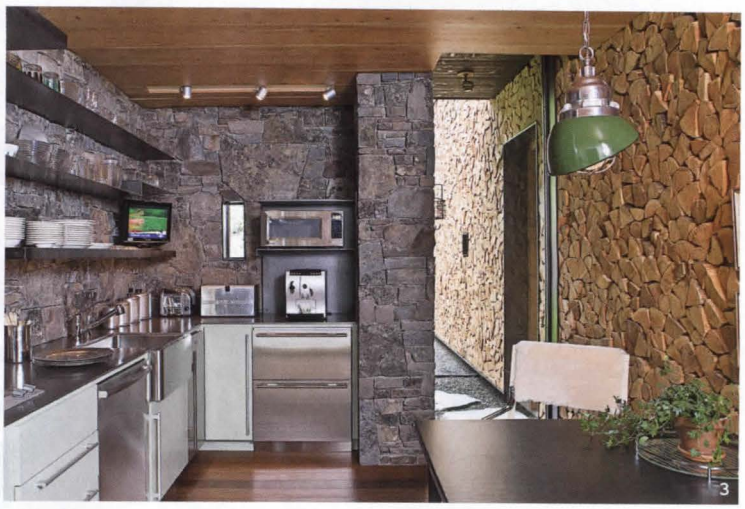
HOUSE OF THE MONTH INGRID SPENCER

ANDERSSON-WISE ARCHITECTS CREATES A SCULPTURAL LAKESIDE REFUGE THAT BALANCES THE WILD WITH THE REFINED.

1. **Two-foot thick cordwood walls roll on tracks to open the master house to mountain views. The green roof was created with a series of loosely set planting trays.**
2. **The wood was milled to a standard size so that it can be easily replaced.**
3. **The house has no central heating – only radiant heating in the floors. Granite walls help trap heat within.**



PEOPLE HAVE AN inherent craving for an unimpeded prospect, coupled with a need to find refuge, as the British geographer Jay Appleton noted in his 1975 book *The Experience of Landscape*. In other words, humans want to have a view and a place to hide. Appleton's theories inspired architects Arthur Andersson and Chris Wise of Austin, Texas, in their design of a four-building compound in northwestern Montana.

Their clients, Connie and Martin Stone, for whom Andersson-Wise Architects had designed a house in Tucson, Arizona, wanted both prospect and refuge in their camp on Flathead Lake, Montana. As Connie Stone says, the couple felt that the firm would create "a completely unique place where we would feel both protected and in nature."

Descending a narrow gravel path through dense forest, you encounter first the compound's 1,859-square-foot gatehouse, then a 5,358-square-foot lodge, a 2,073-square-foot guesthouse, and, closest to the lake, a 3,231-square-foot "master" house. Here the clients have their bedroom, *baths, sitting room, and two offices.*

Each of the buildings possesses its own personality, yet all have intimate, cavelike spaces and expansive porches. Movable walls provide seamless connections between the inside and outside, plus dramatic views of the lake.

While the gatehouse, guesthouse, and lodge are all clad in black-stained cedar with pitched Corten steel roofs, the master house stands out as the pièce de résistance. Designed as a sculptural object in the landscape, it provides a separate place for the clients to retreat from family and guests.

On the upper side of the house, the architects built walls of reused Douglas fir, larch, and grand fir trees that were cleared on the site. Milled to standard cordwood size, the logs are dry-stacked on either side of an insulated, waterproof layer, and secured with blind fasteners.

In addition, rock walls of locally quarried granite and a planted roof make this house feel refined yet humble – civilized with a natural roughness that fits its setting.

The master house, as well as the other three buildings on the site, was strategically placed to avoid impeding the path of a series of underground streams that flow to the lake.

These streams help irrigate other, more civilized spaces carved out of the wilderness – most notably a lawn that slopes down to the water. "If I could pick one word to describe the spaces, both inside and out," says Connie Stone, "I'd call them 'pure.' Everything is resolved, everything is correct." And the spaces achieve their intended dual role. ■

For a video tour of the project see our website or iPad edition.

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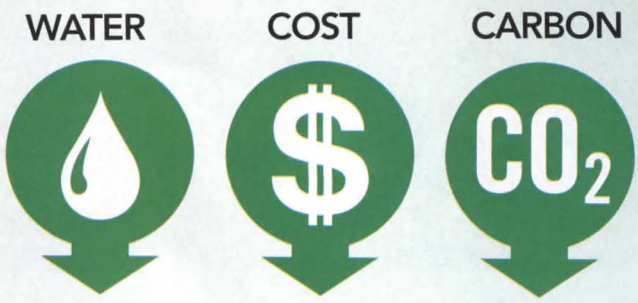

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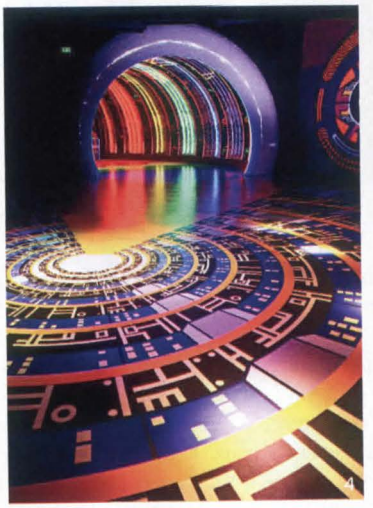
CIRCLE 45

Flooring maker's big launch responds to growing demand

LAST APRIL, U.K.-BASED flooring manufacturer Amtico International launched the largest product introduction in the company's 47-year history, adding a total of 70 new luxury vinyl tile (LVT) products to its two main brands. Despite the current construction slowdown and an ongoing debate about vinyl's role as a building material, the timing was right for the company to commit to such a launch. "Industry-wide, there has been a growing demand in the 20-mil product category," says Amtico marketing director Amanda Utz. "We recognized this growth, listened to our customers when developing our new designs, and opted to double the range of Spacia, our 20-mil line." The expanded collections offer new designs and finishes, and for the the luxury 40-mil-thick Amtico line, more tile and plank sizes and new cutting options.

While vinyl remains a controversial building material concerning the health effects of its manufacture, product life, and disposal, the material's price point, design options, and durability continue to keep up industry demand. As part of Amtico's current sustainability story, Utz cites the products' long life cycle, Floor Score–certification for low VOCs, easy maintenance (reducing need for cleaners), and postindustrial recycled content.

With Amtico's custom-design program, architects and specifiers can use virtually any image in the flooring, including corporate logos, thematic icons, and wayfinding motifs. A combination of standard and custom Spacia- and Amtico-brand flooring was selected for the new six-story Crane Creek Medical Center in Melbourne, Florida. While ceramic tile and VCT (vinyl composition tile) were originally specified for the center, interior designer Cinda Yandell, of American Business Interiors in Melbourne, decided Amtico's LVT would wear better and require less maintenance. The designer has used Amtico for a decade on projects including health care, corporate, higher education facilities, and grade schools.



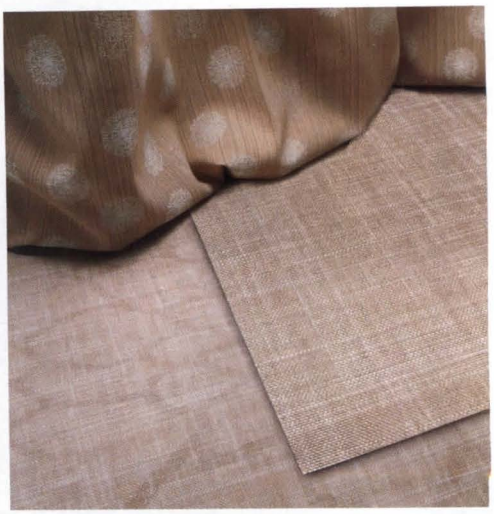
Amtico's custom process starts when a CAD design, photograph, or rough sketch is submitted to the manufacturer. To create the two unique logos for the Crane Creek Medical Center, including the Back Center's "spine" motif shown here (top, right), Yandell interpreted the logo into an AutoCAD design that would work as a flooring pattern. The final result arrived "like a ready-made product," says Yandell.

Amtico also provides comprehensive installation drawings, and can work with the installer to ensure a smooth process from inception through installation. Occasionally, during a custom-request process, the size of the elements of a desired logo fall beneath Amtico's minimum tolerance. "When this happens," says Utz, "we work with the architect or designer to modify the design so that it meets our performance criteria and projects the images they are looking for."

Amtico International, Atlanta.
amtico.com **CIRCLE 200**

1. **Urban Marble, a new faux-stone pattern, is part of the resilient flooring manufacturer's biggest launch in company history.**

2, 3, 4. **Examples of the manufacturer's custom design program include (clockwise from top right): a custom logo for the Crane Creek Medical Center in Melbourne, Florida; a flower motif mock-up; and a colorful floor for the now-defunct Sega World indoor amusement park in Sidney, Australia.**



Interface Hospitality

InterfaceFlor interfacehospitality.com
InterfaceFLOR's new Interface Hospitality division adds dozens of new modular carpet designs to the current line that are specifically designed for guest rooms, corridors, or public spaces in hospitality projects. Styles run from densely decorated geometrics to large-scale stylized florals, and are available in 20"-square or 1-meter-square tiles that can be installed nondirectionally. **CIRCLE 201**

FSC-certified PlybooStrand

Smith & Fong Co. plyboo.com
Smith & Fong recently introduced a new range of FSC-certified PlybooStrand bamboo flooring and plywood to ensure managed forestry. The urea-formaldehyde-free flooring is also SCS/FloorScore-certified and available in 3/8" and 9/16" thicknesses in three finishes. The flooring planks and panels are manufactured through a process in which bamboo strips are first compressed into a superdense composite block before they are cut to size. **CIRCLE 202**

Floorometry

Construction Specialties c-sgroup.com
Floorometry, a dirt- and water-trapping entrance-flooring solution, was part of the recent renovation of the SugarHouse Casino in Pennsylvania. The project required a total of 160 precision-cut, stainless steel modular tiles installed diagonally to complement the 18"-square ceramic and rectangular Italian glass accents for the casino's main entrance. **CIRCLE 203**

Color Essence & Azterra

Johnsonite johnsonite.com
Color Essence and Azterra are two new options in Johnsonite's Azrock Collection of vinyl-enhanced tile. Color Essence is available in a tone-on-tone palette of 51 colors with six coordinating slip-resistant tiles. It pairs with Azterra tiles, which combine the look of granite particles with soft, flowing marble in 14 colors. Both styles contain a minimum of 6 percent postconsumer- and up to 23 percent preconsumer-recycled content. **CIRCLE 204**

The Vivendi Collection

Mannington Commercial
mannington.com
Vivendi is a coordinating flooring and textile collection for health care facilities that Mannington and Pallas Textiles created in collaboration with HOK Product Design. The heterogeneous resilient sheet flooring features a proprietary aluminum oxide, UV-coated wearlayer to reduce maintenance. It comes in 6', 9', and 12' widths to meet health-care facility needs. **CIRCLE 205**

AktivPro

Regupol America regupol.com
AktivPro is a patent-pending, modular tile for sports and fitness surfaces made of 100 percent recycled SBR rubber backing and either a recycled SBR or EPDM top wearlayer. The tile's composite structure offers durability and wear-resistance, and the waffle bottom design provides shock absorption, drainage, and cable routing. The extra-thick, 24"-square tiles weigh 18 pounds each and come in a range of 19 standard color options. **CIRCLE 206**

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CIRCLE 27

PRODUCTS IN BRIEF AIA SHOW ROUNDUP

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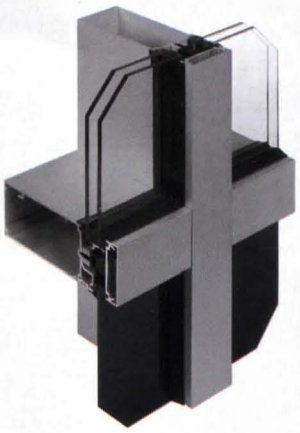

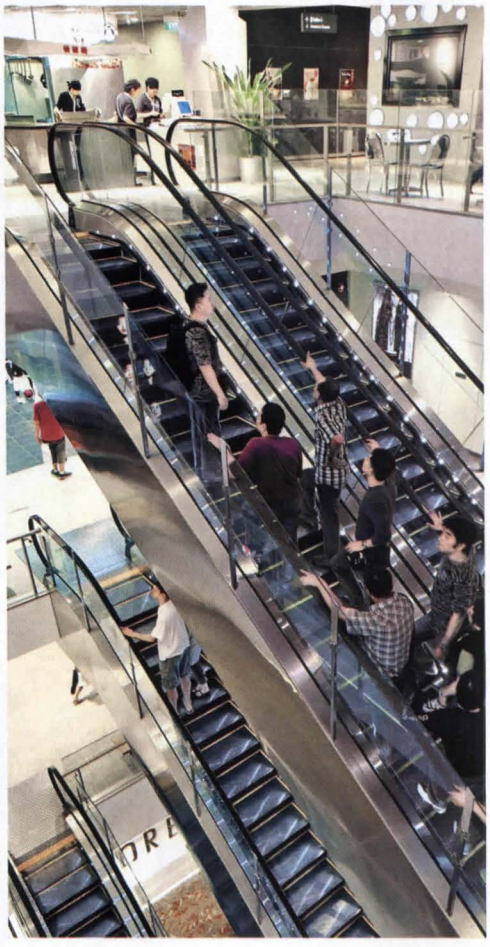

StoEnergy Guard

Sto Corp. stocorp.com

Used for protection under cladding such as stone and stucco, the StoEnergy Guard system integrates multiple components, including a fluid-applied waterproof air barrier, sheathing joint and rough opening protection, Sto Drain-Screen mat (shown), and continuous insulation, into one system. All components help meet individual climate-zone and building-code requirements. **CIRCLE 207**

Parkway Square Family

Architectural Area Lighting aal.net

The Parkway Square family of luminaires features a square body construction with a decorative, yet functional, square hood available in three styles. The line offers a variety of Dark-Sky-friendly options, four optical systems, and *multiple* energy-efficient light sources including LED, metal halide, induction, and compact fluorescent. The fixture has a matching bollard and can be post-top-mounted, wall-mounted, or pole-mounted in two housing scales. **CIRCLE 208**

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Kawneer kawneer.com

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TOTO totousa.com

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KONE us.kone.com

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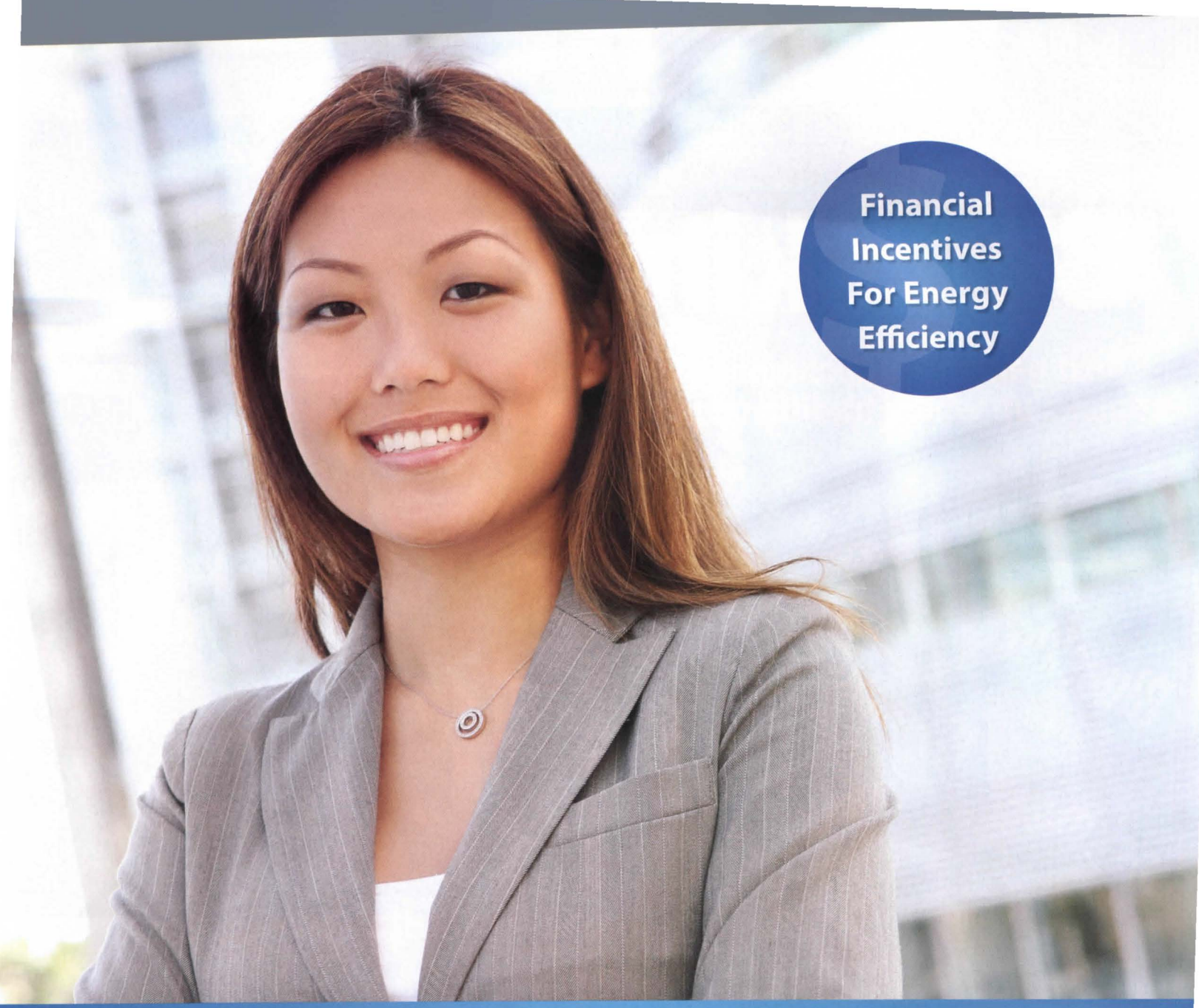

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CIRCLE 49

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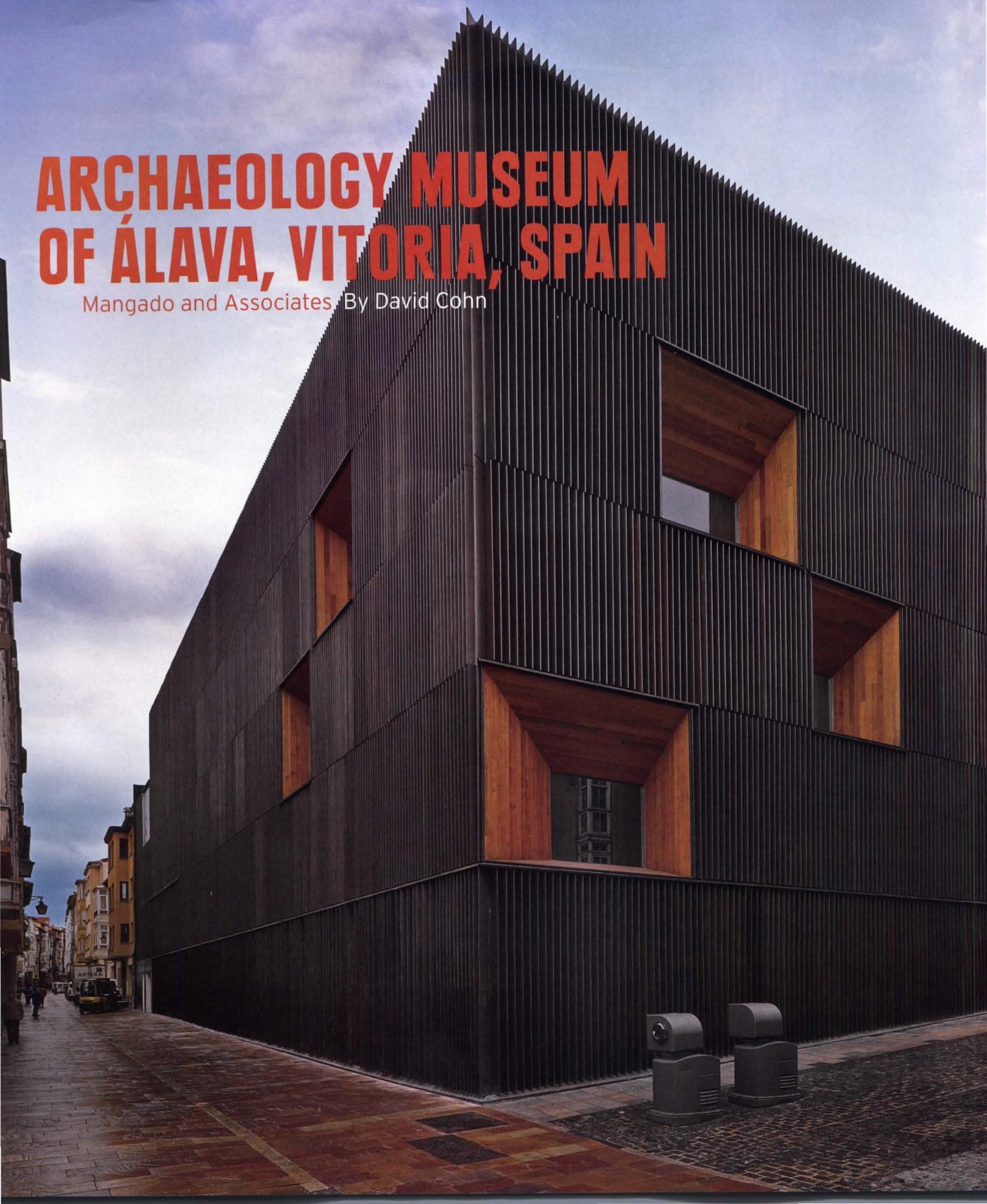
CIRCLE 35

ARCHAEOLOGY MUSEUM OF ÁLAVA, VITORIA, SPAIN

Mangado and Associates By David Cohn



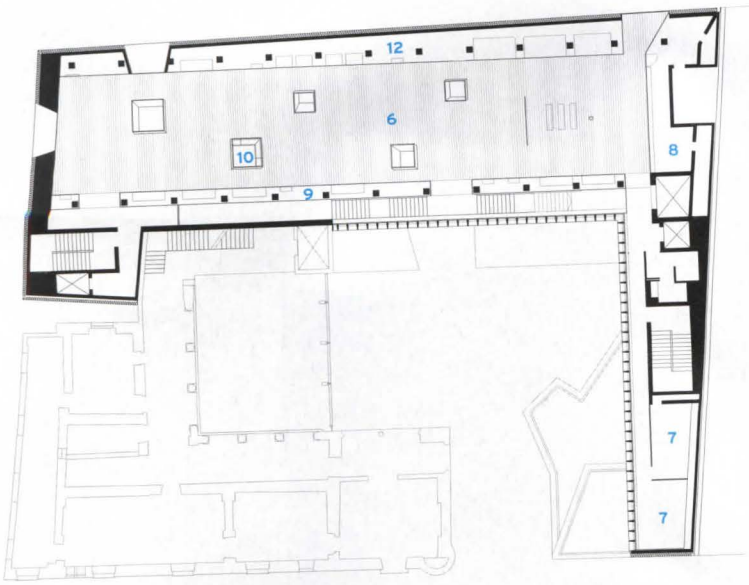
The courtyard entrance to the museum is shared with that of the Fournier Museum of Playing Cards, housed in the renovated 16th-century Bendaña Place.

OPPOSITE: **Windows reflecting the cityscape have deep reveals punched in the bronze-clad surface of the museum's concrete-and-steel structure.**

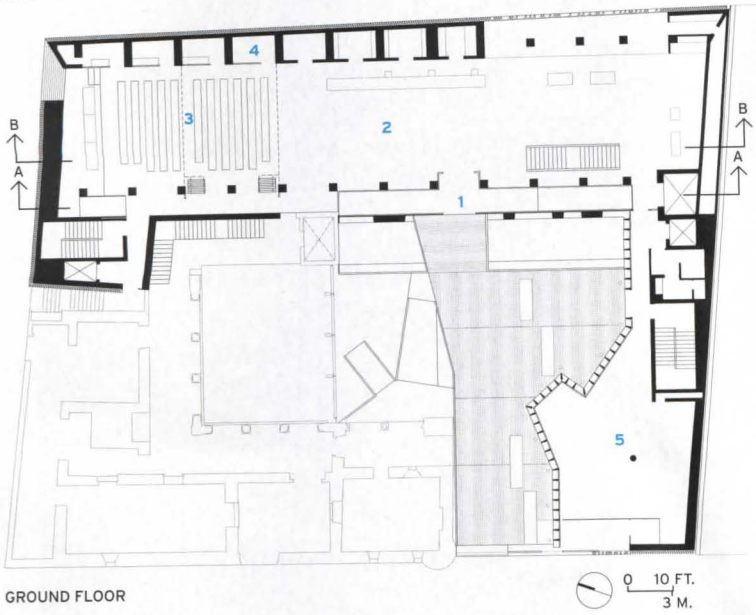
FRANCISCO "PATXI" MANGADO, the 54-year-old Spanish architect, compares his bronze-clad Archaeological Museum of Álava in Vitoria, Spain, to a "coffer guarding a treasure." He has developed this apparently simple conceit at a number of different levels in the work, so that it acquires a sensual resonance that reaches beyond words to convey his poetic intent.

The "coffer" is composed of three gallery levels housing the permanent collection, with floors, walls, and ceilings finished in dark wenge wood. Five narrow glass shafts bring in daylight, descending from the roof to pierce all three floors at different angles. The galleries, featuring regional relics from prehistoric times to the Middle Ages, evoke an unexplored archaeological site, an underground mine, or a sunken ship. As visitors wander among the translucent shafts, spotlights tripped by movement sensors illuminate objects and vitrines. "The interior couldn't simply be a well-organized space or a handsome play of forms," Mangado explains. "It had to be capable of suggesting places and people with, say, a small fragment of clay that speaks to us of fragility and time."

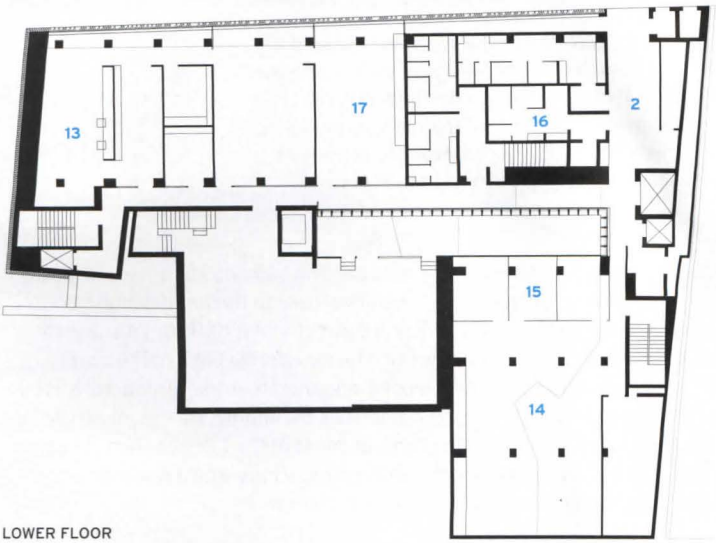
The architect uses the contrast between the building's bronze and glass skin and its setting within Vitoria's medieval core to further develop his evocation of archaeological layering. A quiet city of 230,000, Vitoria is the capital of the Basque region, with a rich history dating back to the sixth century AD. The museum, a mixed concrete-and-steel-frame structure, is part of an ongoing effort by local authorities to rehabilitate the medieval center, which has been in decline through most of the 20th century. Located on one of its livelier streets lined with bars, old shops, and a few monumental buildings, the museum adjoins the 16th-century Bendaña Palace. In 1994



THIRD FLOOR



GROUND FLOOR



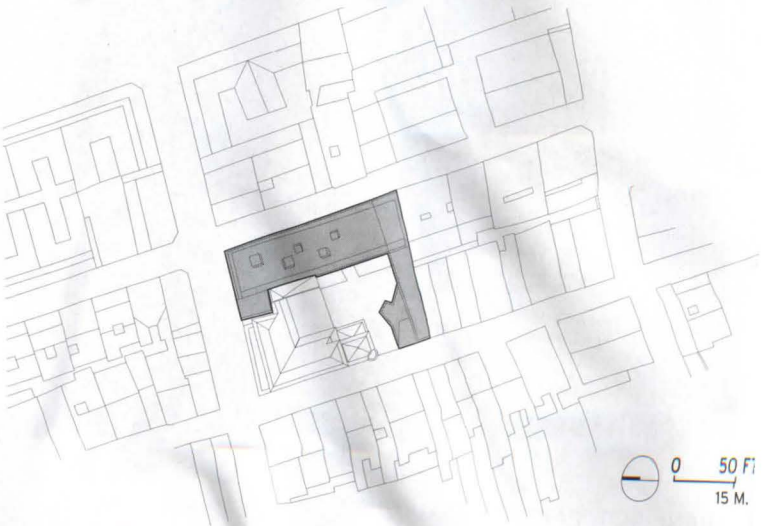
LOWER FLOOR

the palace was renovated to house the Fournier Museum of Playing Cards as the town's homage to a well-known local industry. The two museums now share a common entry court.

The Archaeological Museum stands out in a respectful yet contemporary manner in the stone-and-brick neighborhood. The vertical vanes of bronze convey solidity and depth despite the fact that the cladding is a nonstructural skin. The luxurious industrial material subtly harks back to the ancient civilizations of the Bronze Age, while the patina that bronze acquires through the years offers yet another mark of time.

This skin is not uniform. The two sides of the entry court – the main facade and a side wing that houses temporary exhibitions and offices – are sheathed in a glass curtain wall, luminous and open in contrast to the bronze-clad walls facing the surrounding streets. The burnished coffer seems to glow from within, particularly when approached from the entry courtyard. Here visitors see an interior stair with clear glass balustrades that floats up past the three gallery levels. The wall between the stair and the galleries is finished in translucent glass backed by mirrored glass so that the core appears to be a void of light held within a bronze cage.

On the two sides of the building facing back streets, the skin presents a virtually closed surface of bronze vanes (designed in part for their resistance to graffiti). Large windows deeply set in handsome cedar surrounds puncture the bronze; the thick exterior walls contain interior display cases. Inside the galleries, these windows, boring through the walls, offer a counterpoint to the vertical light shafts. The windows frame surprisingly intimate glimpses of rundown buildings across the narrow streets of the old neighborhood.



1 ENTRY VESTIBULE
2 RECEPTION
3 AUDITORIUM
4 OFFICES
5 TEMPORARY EXHIBITION
6 PERMANENT EXHIBITION
7 ADMINISTRATION
8 MECHANICAL
9 DISPLAY
10 LIGHT SHAFT
11 TECHNICAL ACCESS
12 LABORATORY
13 LIBRARY
14 OFFICES
15 SHOP
16 RESTROOM / CLOAKROOM
17 CLASSROOM

The Archaeological Museum of Álava is embedded within the medieval core of Vitoria. Francisco Mangado conceived the 64,583-square-foot space as a bronze-clad "coffer" for archaeological treasures. Galleries receive daylight through the vertical glass shafts puncturing the roof.

CREDITS

ARCHITECT: Mangado and Associates–Francisco Mangado, principal in charge; José Gastaldo, Richard Královic, Eduardo Pérez de Arenaza, project team

ENGINEERS: NB 35 SL Engineers (structural); Iturralde y Sagüés Engineers (mechanical)

CONSULTANTS: Laura Montoya López de Heredia (quantity surveyor)

CLIENT: Provincial Government of Álava

SIZE: 64,583 square feet

COST: $13.4 million

COMPLETION DATE: July 2009

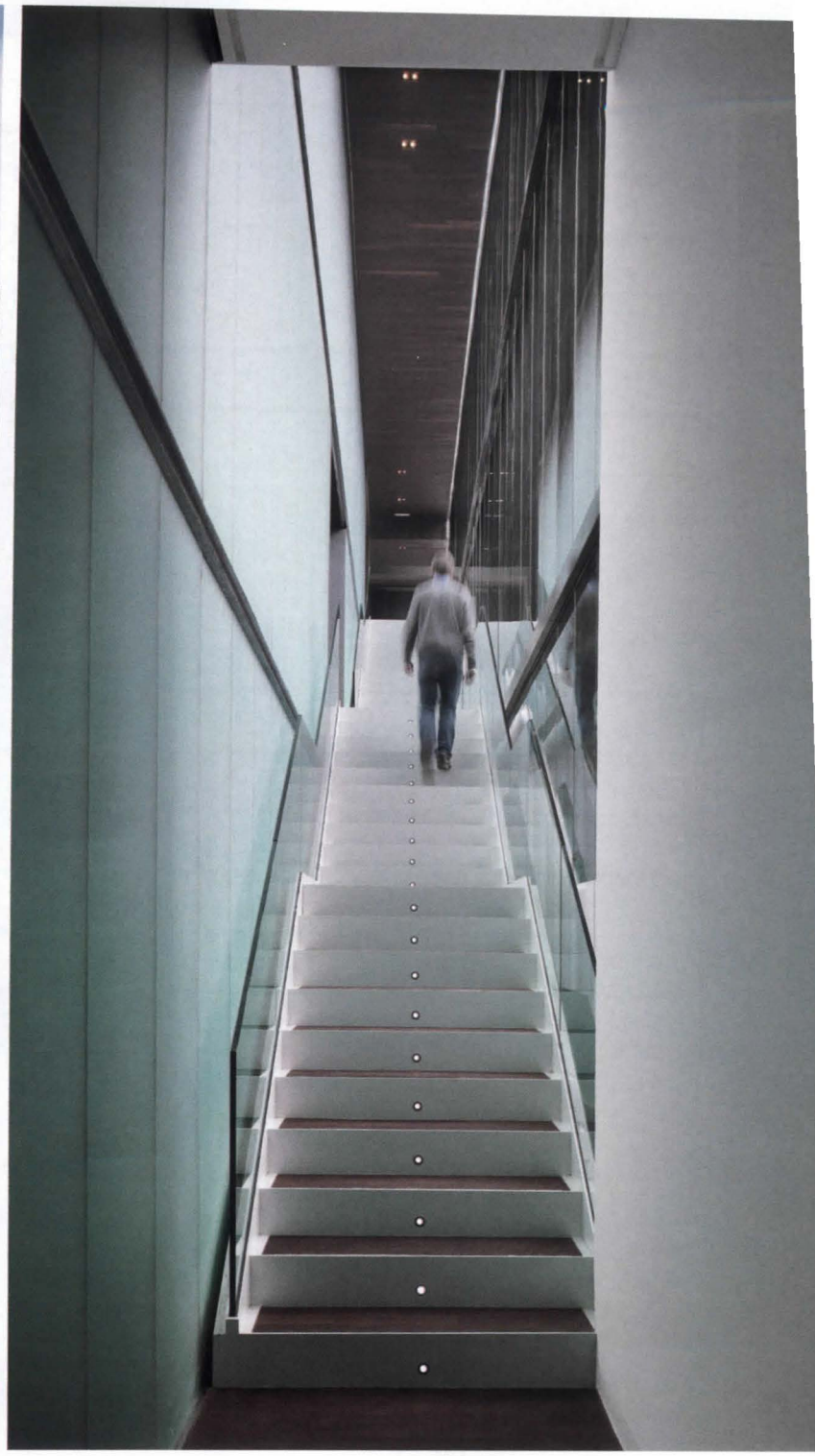
SOURCES

BRONZE PANELS AND CLADDING: Connectic

GLASS: Etxeglass

GLASS FOR SKYLIGHT: Secrisa

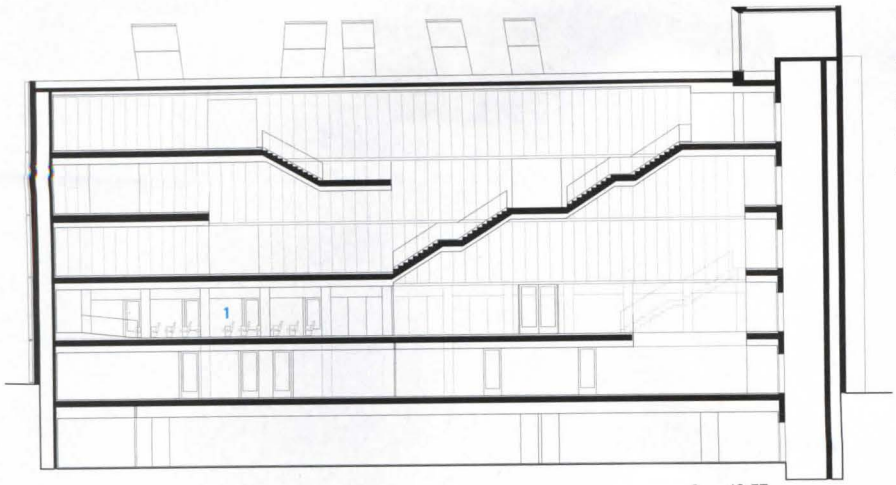
WOOD-FRAME WINDOWS, WALL COVERINGS, CEILINGS: Tarimas y Parquets Gámiz



OPPOSITE: **The jagged wing of the museum shapes the space at the entrance court to make the approach more intimate.**

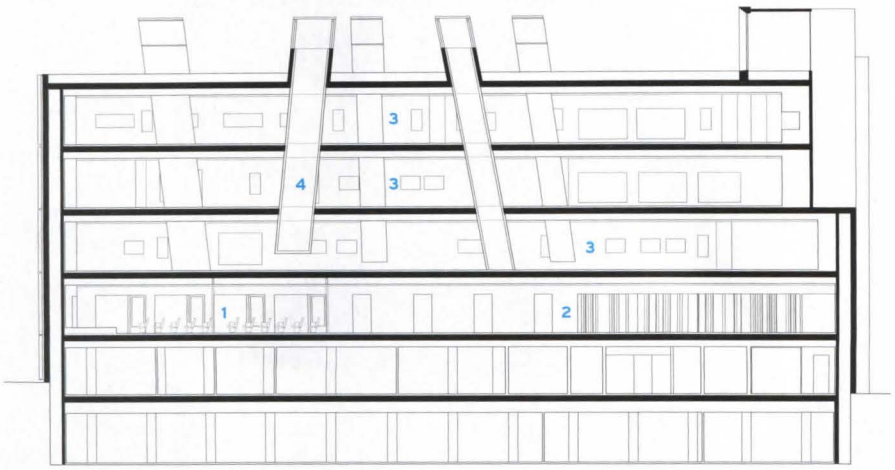
ABOVE LEFT: **The main entrance from the courtyard provides glimpses of the cascading stair along the west elevation. Glass planks admit light to the research areas below.**

ABOVE RIGHT: **The major stair rises across the glazed court elevation, while a translucent and mirrored-glass wall separates the stair from the galleries.**

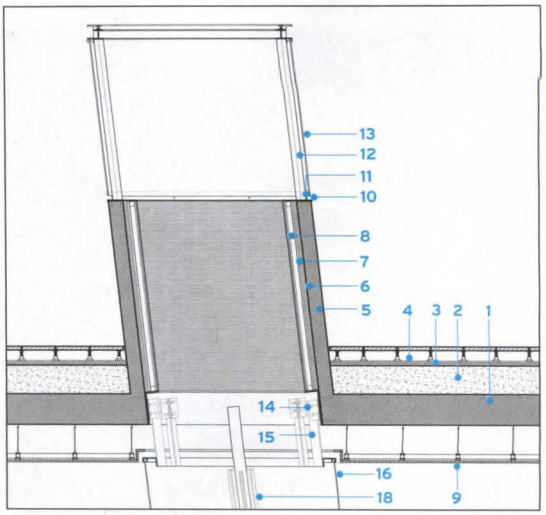


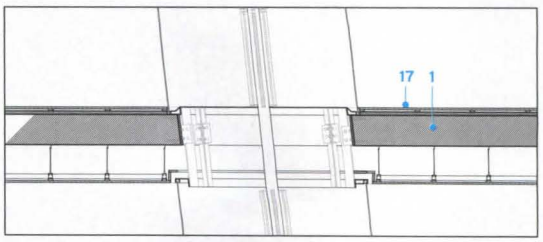
SECTION A-A

1 AUDITORIUM
2 RECEPTION
3 PERMANENT EXHIBITION
4 LIGHT SHAFT



SECTION B-B





LIGHT SHAFT DETAIL

0 3 FT.
1 M.

Mangado's mastery of spatial organization reveals itself in other details, such as the light trench that separates the entry from the court. It brings light into the underground research library, and is spanned, like a castle moat, by a wood-paved entry bridge. The irregular jogs of the side wing help modulate the spatial experience of entering the building from the street.

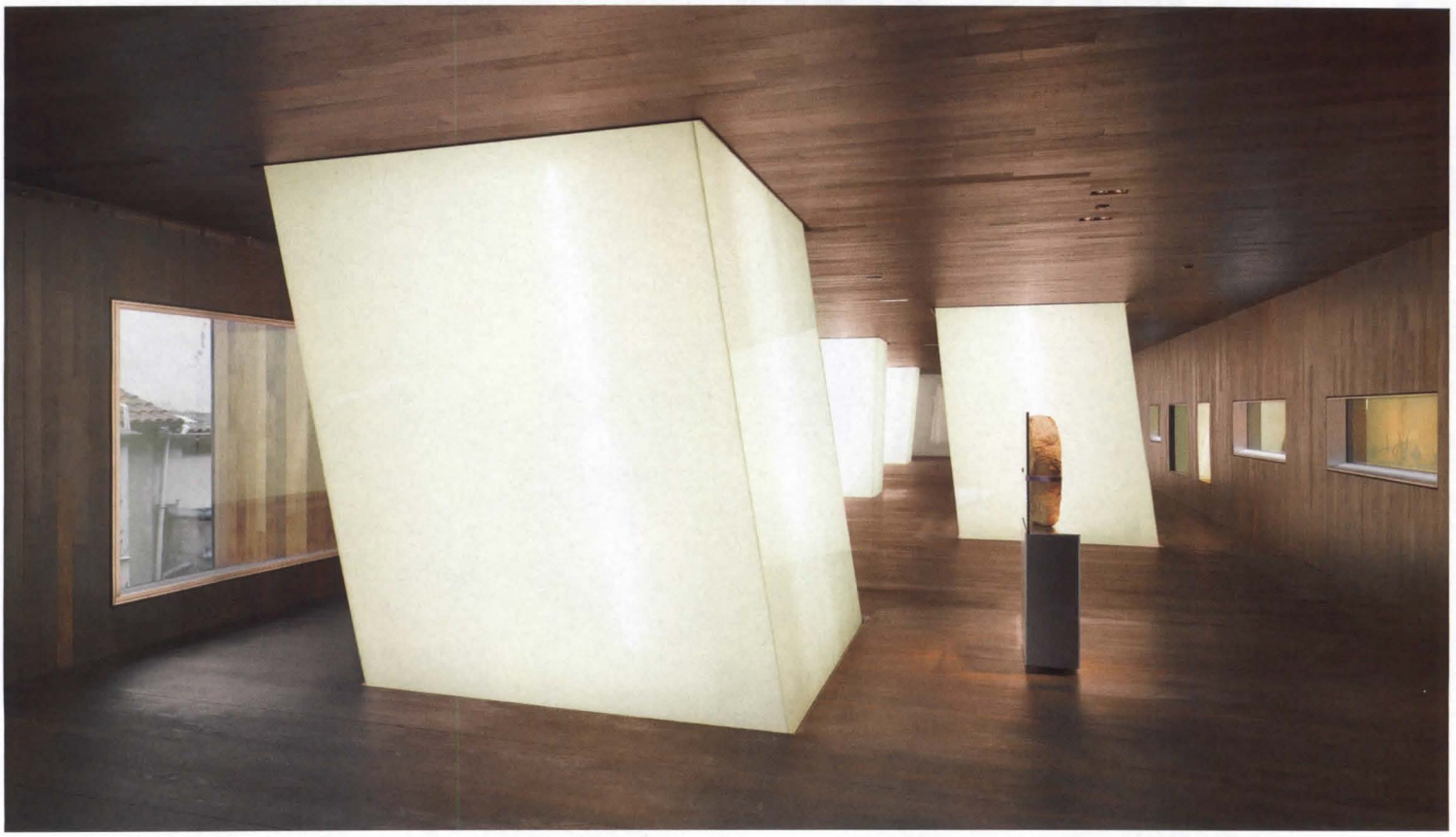
Based in nearby Pamplona, Patxi Mangado has achieved prominence in Spain for civic works such as his Baluarte Auditorium and Congress Center in his native city [RECORD, March 2005, page 78] or his Spanish Pavilion at the *Expo Zaragosa* of 2008. Like his other projects, the Archaeological Museum exemplifies Mangado's identification with the Modern movement that many Spanish architects have maintained with great vitality over the last few decades. In all of his work Mangado upholds the ideals of a functional layout and structural logic of 20th-century masters, and applies them to expressive ends chiefly through the sensual qualities of the materials he chooses and his manipulation of volumes in space. ■

David Cohn, who received his M.Arch. from Columbia University, is a Madrid-based correspondent for RECORD.

1 REINFORCED CONCRETE SLAB
2 LIGHTWEIGHT CONCRETE ROOF SLOPE
3 EPDM MEMBRANE
4 INSULATION
5 CONCRETE WALL
6 THERMAL INSULATION
7 STEEL STUD
8 GYPSUM BOARD
9 WENGE WOOD SUSPENDED CEILING
10 STAINLESS STEEL GUTTER
11 STEEL PROFILE FOR GLASS
12 HEB 100 PROFILE
13 THERMAL SAFETY GLAZIN
14 ANGLE STEEL PLATES
15 T PROFILE SKYLIGHT STRUCTURE
16 LAMINATED GLASS
17 WENGE WOOD FLOOR PLANK
18 LINEAR LIGHTING

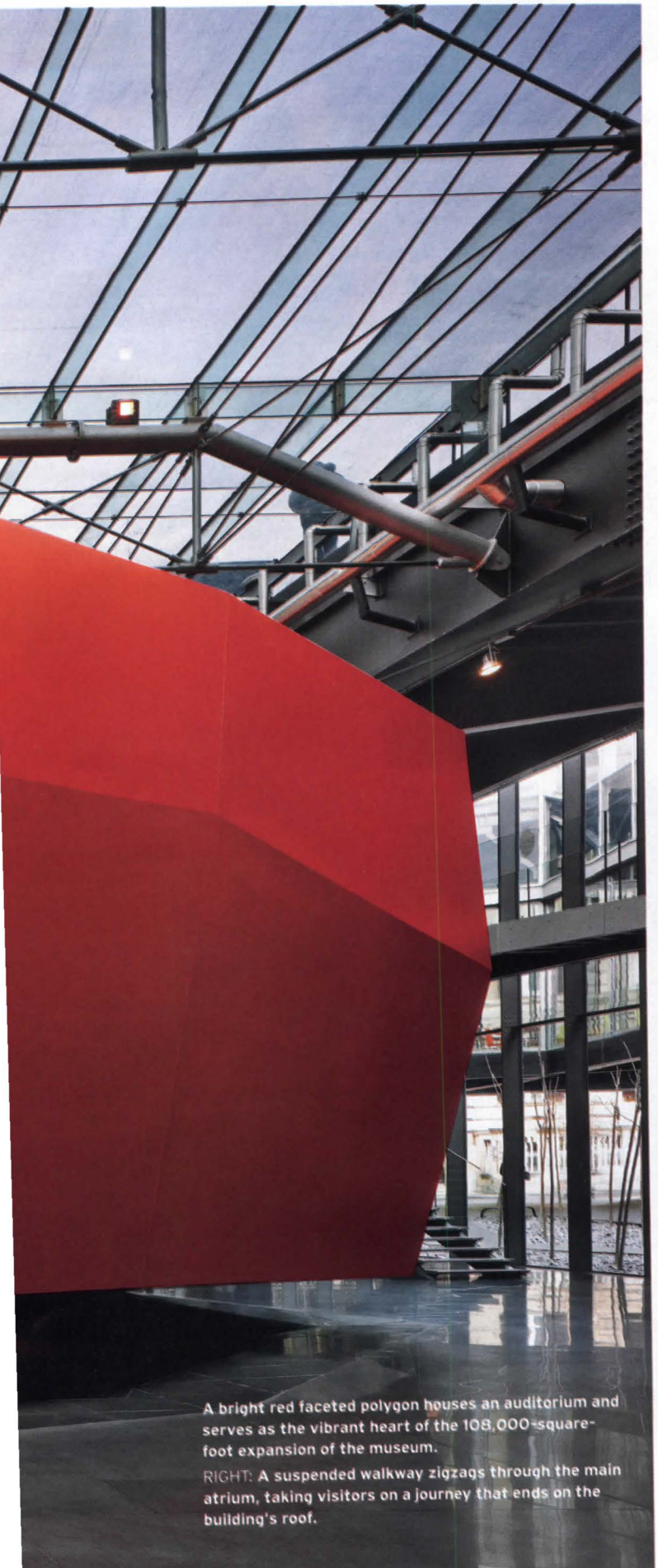
Mangado has inserted five glazed light shafts that project like periscopes above the roof and descend through three levels of the galleries.

BELOW: **The light shafts provide luminescent backdrops for the archaeological contents of the museum, further dramatized by the dark wenge wood floors and ceilings.**



MUSEUM OF CONTEMPORARY ART OF ROME (MACRO)

Odile Decq & Benoit Cornette Architectes Urbanistes / By Paul Bennett



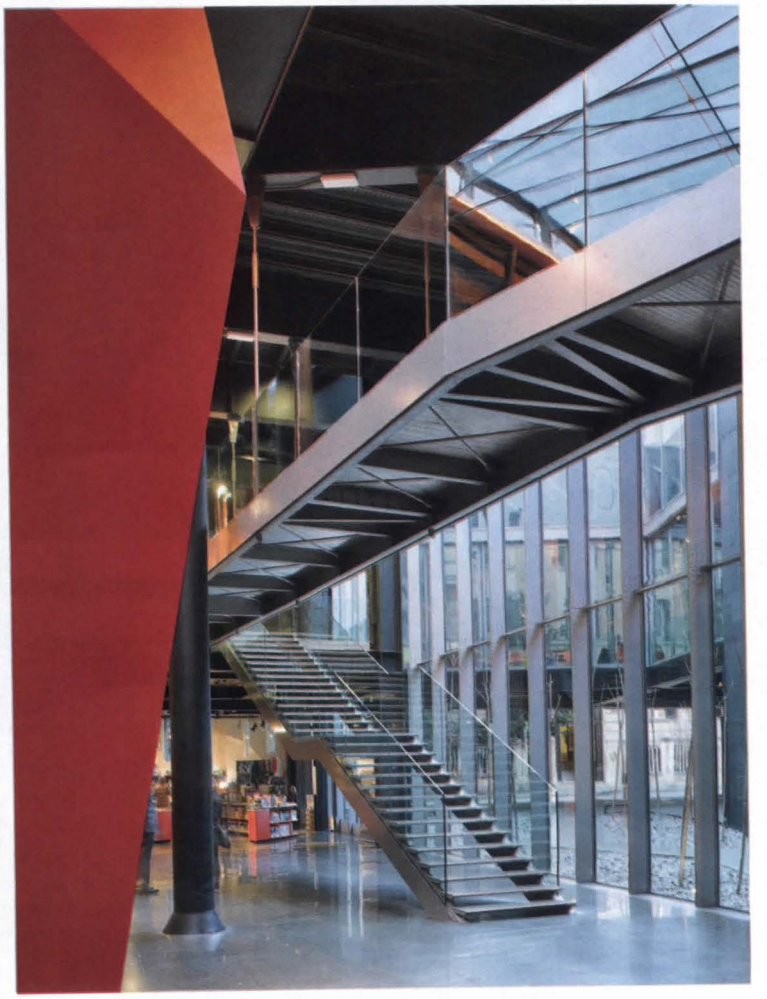
A bright red faceted polygon houses an auditorium and serves as the vibrant heart of the 108,000-square-foot expansion of the museum.

RIGHT: A suspended walkway zigzags through the main atrium, taking visitors on a journey that ends on the building's roof.

FOR THE HORDES of tourists stuck in lines for the Colosseum or queuing up to enter the Sistine Chapel, Rome's 2,000-year history acts as a powerful magnet. But for contemporary architects working in the city, this same history can be a heavy weight. Purveyors of the new quickly feel hamstrung and defeated, with old battles between modernity and tradition waging on forever.

Odile Decq & Benoit Cornette's extension of the Museo d'Arte Contemporanea di Roma (MACRO), one of the city's two contemporary art museums (along with Zaha Hadid's MAXXI [RECORD, October 2010, page 82]), enters this conversation very much on the side of the modernists. Set in a converted 19th-century Peroni brewery in the Via Nomentana area, MACRO occupies a significant piece of the city's industrial archaeology. (Part of Decq's mandate was to leave the exterior walls untouched.) But once inside the building, Decq turns her back on history, not deeply engaging the past nor the specific context of the conserved structure.

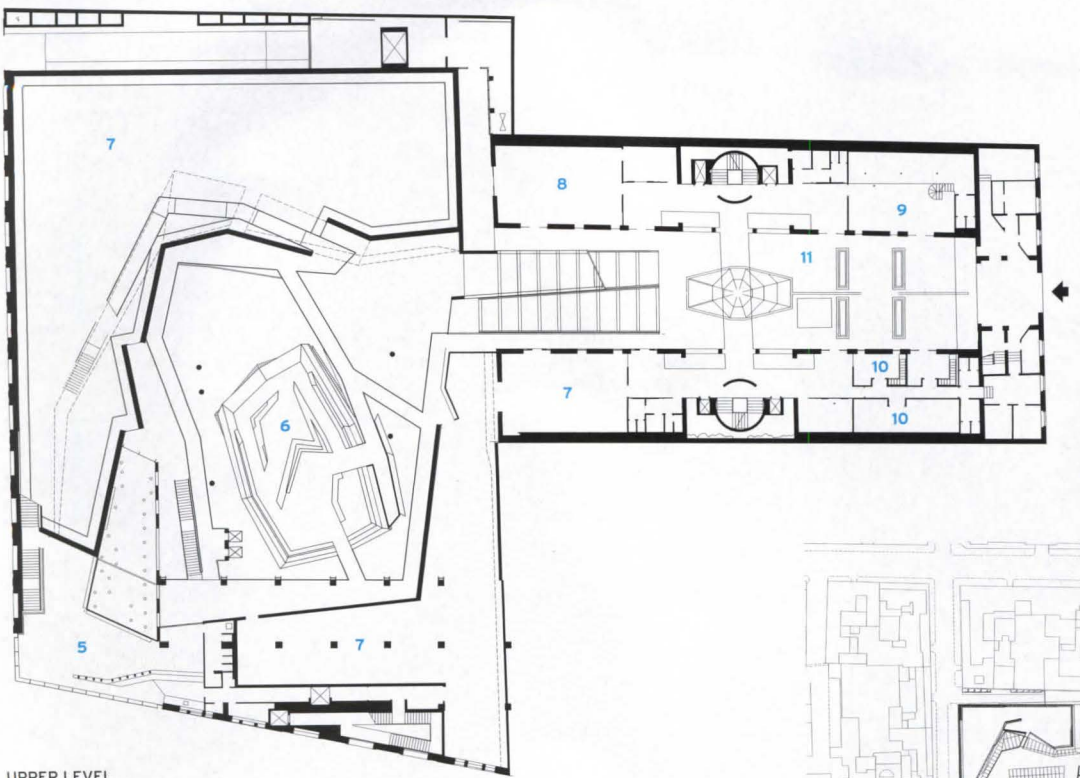
From the street, the museum addition appears as a glass box suspended within the old industrial building and set one story above ground. Visitors enter under a raised glass corner, through a small outdoor courtyard, then into a grand atrium sheathed in glass and black-painted masonry and framed by an elevated walkway that zigzags through the building on its way to the roof. Decq's main move was carving out a series of twisting voids in the center of the building, having gutted the old interior and cleaned and



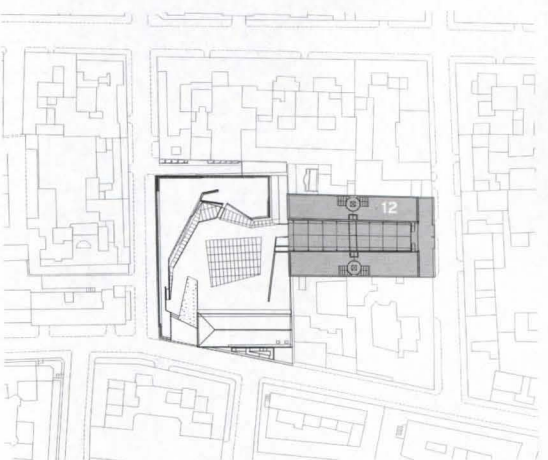
1 and 2. **The architects created an artificial landscape on the museum's roof, placing a piazza there to connect the building to its historic context. The large skylight in the center of the piazza was designed to serve as a fountain with a sheet of water sliding over its surface, but it does not always work.**

3. **Decq and her team gutted the interior of an old Peroni brewery, cleaned up a pair of corner facades, and inserted their glass-and-steel structure within the existing fabric. Visitors enter the museum under the new raised glass box, through a small courtyard, and then into the grand atrium.**


MACRO
MACRO
MACRO

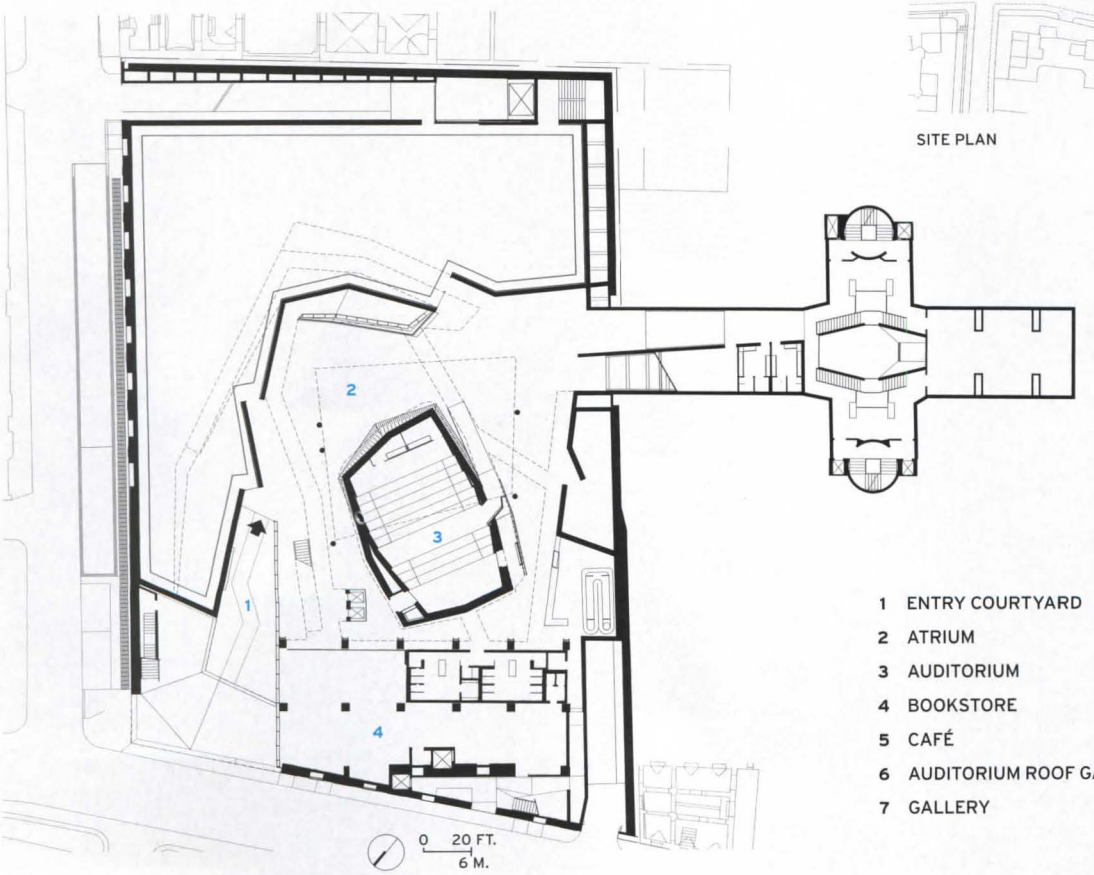


UPPER LEVEL



SITE PLAN

0 50 FT.
15 M.



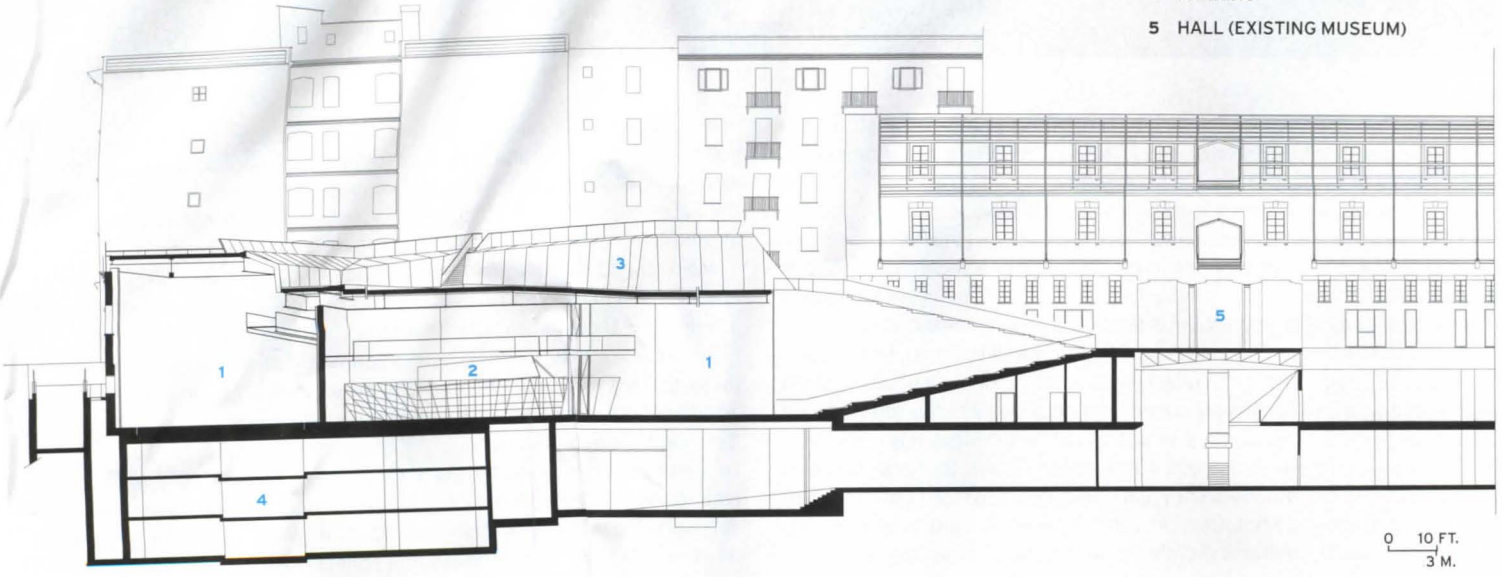
0 20 FT.
6 M.

STREET LEVEL

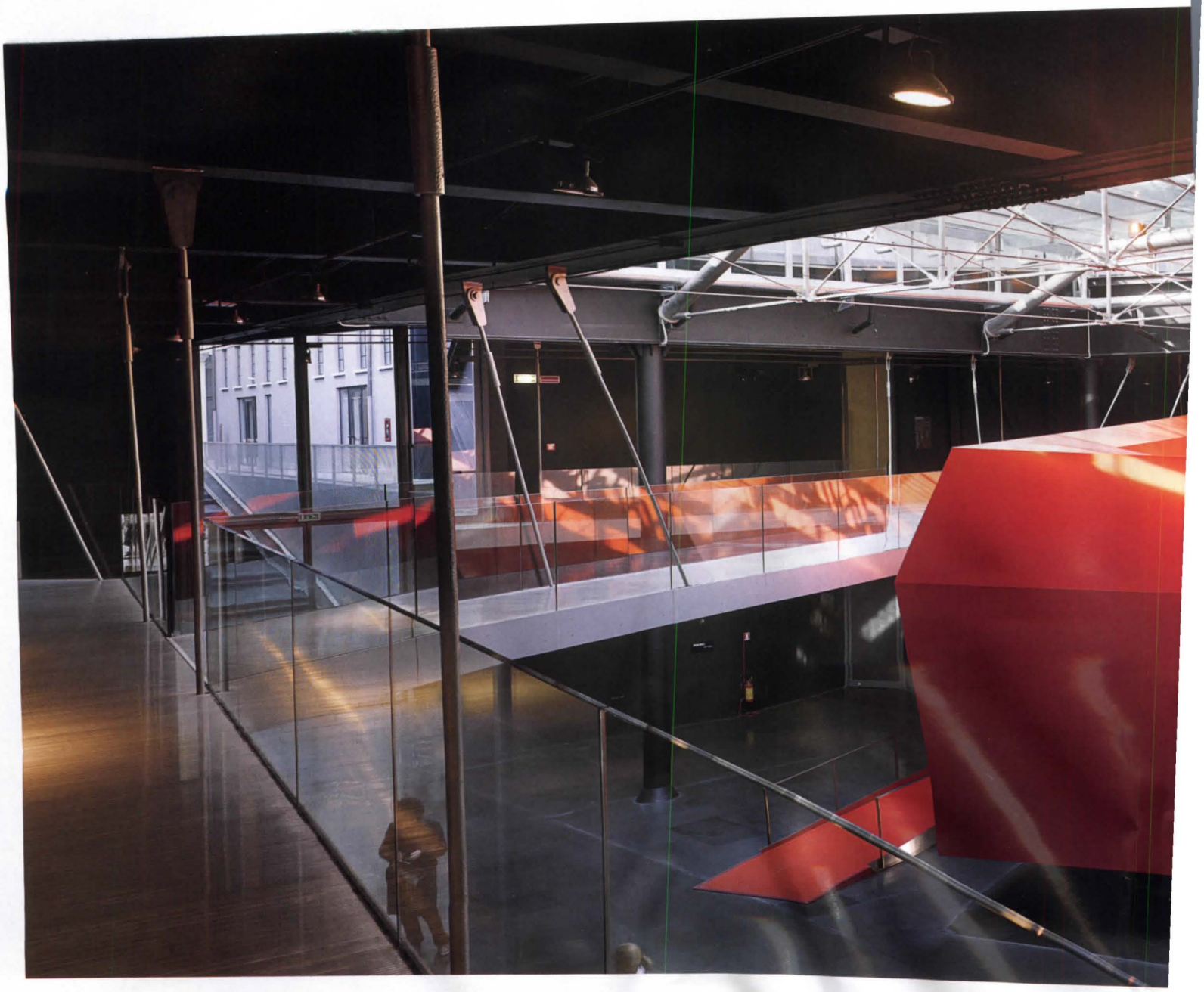
1 ENTRY COURTYARD
2 ATRIUM
3 AUDITORIUM
4 BOOKSTORE
5 CAFÉ
6 AUDITORIUM ROOF GALLERY
7 GALLERY
8 PERIODICALS
9 MEDIATHEQUE
10 OFFICE
11 HALL
12 EXISTING MUSEUM

Decq's expansion adds 31,000 square feet of new exhibition space to the 16,000 square feet of galleries in the existing museum. Visitors enter the addition from Via Nizza, one level below the entrance to the existing museum on Via Reggio Emilia. Decq fixed up, but did not radically alter, the entry hall to the existing museum (right).

1 GALLERY
2 AUDITORIUM
3 ROOF PLAZA
4 PARKING
5 HALL (EXISTING MUSEUM)



SECTION A-A

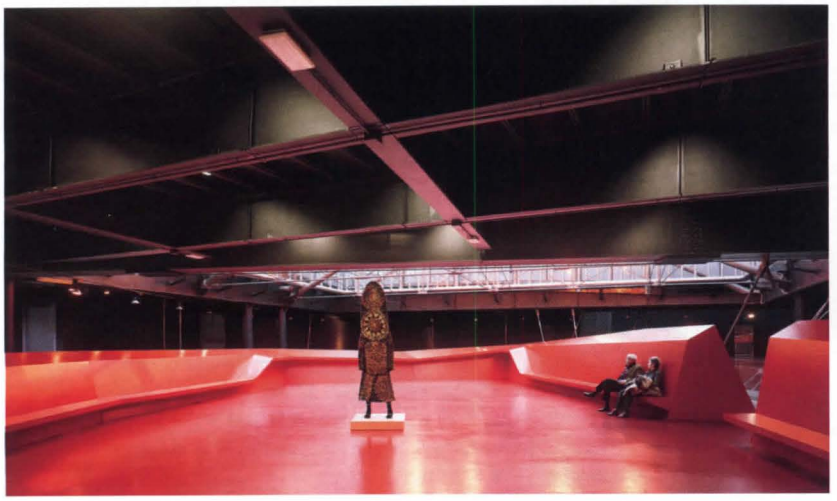


stabilized the corner facades. "We did tests with gray during construction but chose black [for the interior walls]," says Decq. "For a museum you always think of white. But black is truly neutral."

In the middle of the atrium, a bright red (nearly orange) polygon houses a small auditorium. With its lacquered-wood envelope cut into large facets and a red entry ramp extended like a tongue, this structure within a structure has a kinetic quality that animates the entire project. Decq admits to literalism: The color of blood, the auditorium is the pulsing heart of the building.

Despite the focus on unusual geometries and modern forms, Decq displays an interest in Rome and its architectural traditions. Her use of basalt pavers on the walkway through the structure refers obviously to the cobblestones, called *san pietrini* (little Saint Peter's), that define the cityscape of Rome. But it's the roof, an elevated piazza accessible to visitors, that truly connects to the city. Here we find the archetypal Italian space, wrought in hardscape and arranged around a fountain. Decq's fountain is, in theory, an interpretation of this Roman symbol: a slightly inclined plane of glass over which a thin sheath of water runs – reflecting the sky, the light, and the surrounding buildings. The glass is also a skylight for the cavernous atrium below and refracts daylight into this large, black space. Unfortunately, after half a year, the water doesn't run, much to the chagrin of the architect. The horizontal glazing is left to gather the red dust of Rome's scirroco winds.

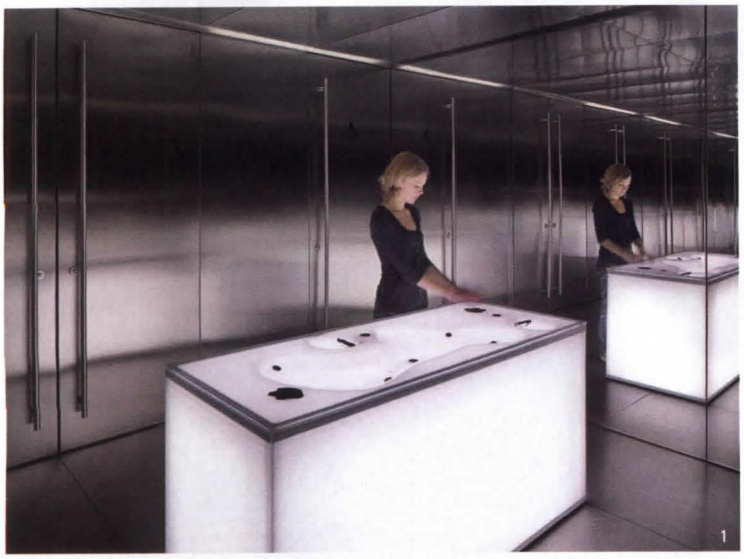
Inside the 108,000-square-foot addition, the architects surrounded the atrium with a ring of rooms, beginning with a café and proceeding through a series of orthogonal galleries that were renovated from the original 19th-century structure. These spaces connect visually and conceptually with the areas that were restored when the museum first opened in the 1990s in an adjacent building. However, while those spaces work as generic galleries, Decq kept the industrial remnants of the old brewery in place. Exposed concrete beams and pillars in the 31,000 square feet of new galleries establish a stronger connection to the past, though the white walls and ceilings bring us back to the modern era. The gallery expansion provides much-needed space for the museum's collection of postwar Italian art.



ABOVE: **Moving through and around the atrium on the suspended walkways is an important part of the visitor experience, with the auditorium serving as a bold orienting device.**

LEFT: **The roof of the lacquered-wood auditorium structure serves as a small sculpture gallery with built-in seating along the perimeter.**

1. **Translucent lavatories in the restrooms glow from within and can change color, making the simple act of washing one's hands a memorable experience.**
2. **A café on the upper level offers views of the Via Nizza and Via Cagliari, the corner where people enter the museum addition.**
3. **A large space occupying the southeast corner of the addition serves as the main exhibition area for temporary shows and large pieces of art.**
4. **Galleries in the existing museum provide a neutral backdrop for a range of contemporary art.**



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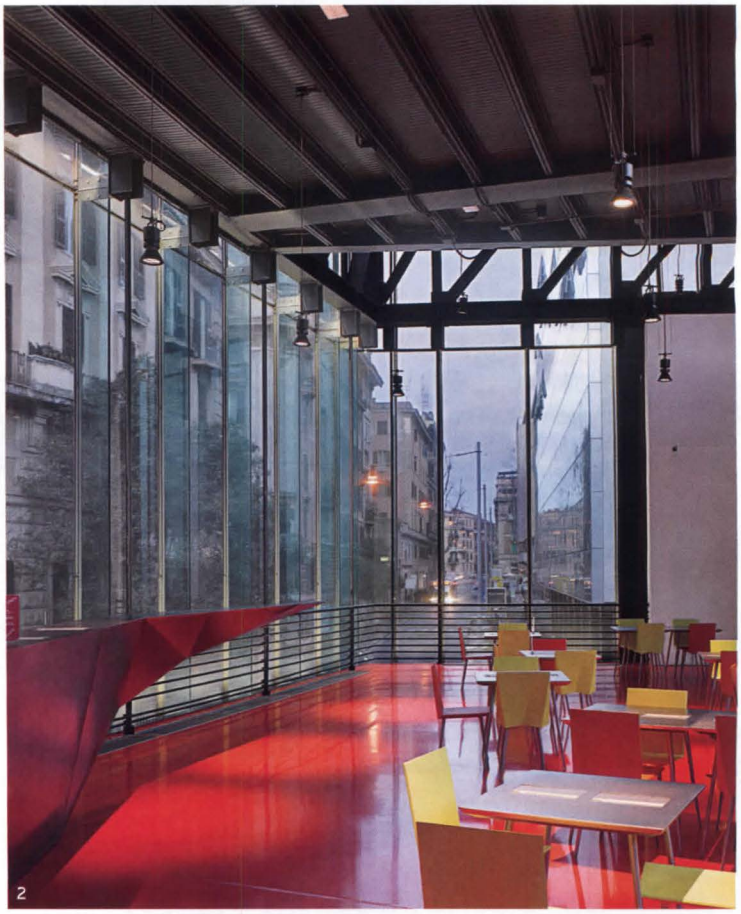


2

CREDITS

ARCHITECT: Odile Decq & Benoit Cornette Architectes Urbanistes – Odile Decq, design partner; Giuseppe Savarese, project architect

CLIENT: MACRO (Museo d'Arte Contemporanea Roma)

SIZE: 108,000 square feet (addition); 42,000 square feet (existing)

COST: $34 million

COMPLETION DATE: December 2010

SOURCES

GLASS: Vuelle

LAMINATED GLASS: AGC

STAINLESS-STEEL NET: Maille Inox

LIGHTING: I Guzzini and Luce Plan

CHAIRS AND TABLES: Poltrona Frau

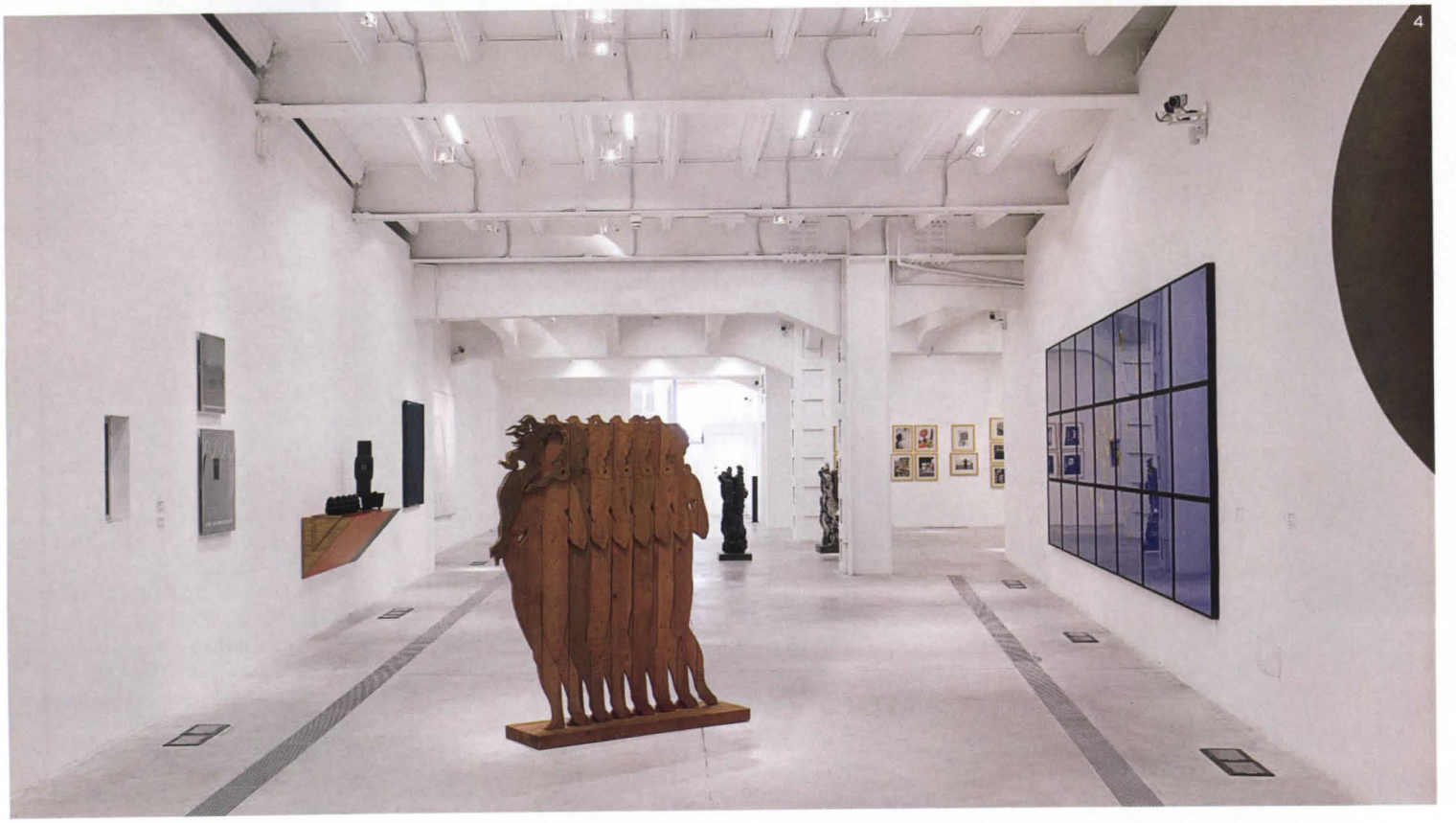
Paul Bennett is a journalist whose work has appeared in Smithsonian Magazine, National Geographic, *and other publications.*

Perhaps the most exciting part of the entire building – save the fountain should it ever run again – is the walkway that hangs from the atrium roof. Critics have mused about the similarity with Hadid's design for MAXXI, which opened shortly before MACRO and also features myriad elevated walkways. But Decq's scheme holds a surprise: visitors zigzag through the foyer, catching views of artwork and the red auditorium from different perspectives, until stepping around a sharp corner and through a massive door into a giant back room, which is actually the main exhibition space for major installations. Though large, the space defies regularity as it wraps around the outside of the foyer, giving us the impression we've discovered something hidden.

Decq's expansion of MACRO is the latest in a string of major projects that the government of Rome hopes will breathe new life into the Eternal City. The trend began a decade ago with Richard Meier's Jubilee Church built for the millennium, and continues now with Rem Koolhaas's plan for the Mercati Generali, Massimilliano Fuksas's Congress Center Rome-EUR, and Renzo Piano's EUR housing. With Rome launching an active bid for the 2020 Olympics, these projects represent a desire for big-name, big-budget works to make a statement about Rome in the 21st century.

Decq's work is certainly big and important. But its budget was modest: about $34 million. In fact, a proletarian element runs through the project and grounds it. Nearly half of the new structure is open space that, although architecturally part of the museum, is accessible to the public and belongs to the city. Symbolically, at the entry courtyard we thread between a grove of scraggly trees. These are paradise trees, an invasive weed that crowds Rome's abandoned spaces, but arrayed here in a grid and given pride of place. They're a gesture to the everyday and the public and they stabilize an otherwise soaring work. ■

3



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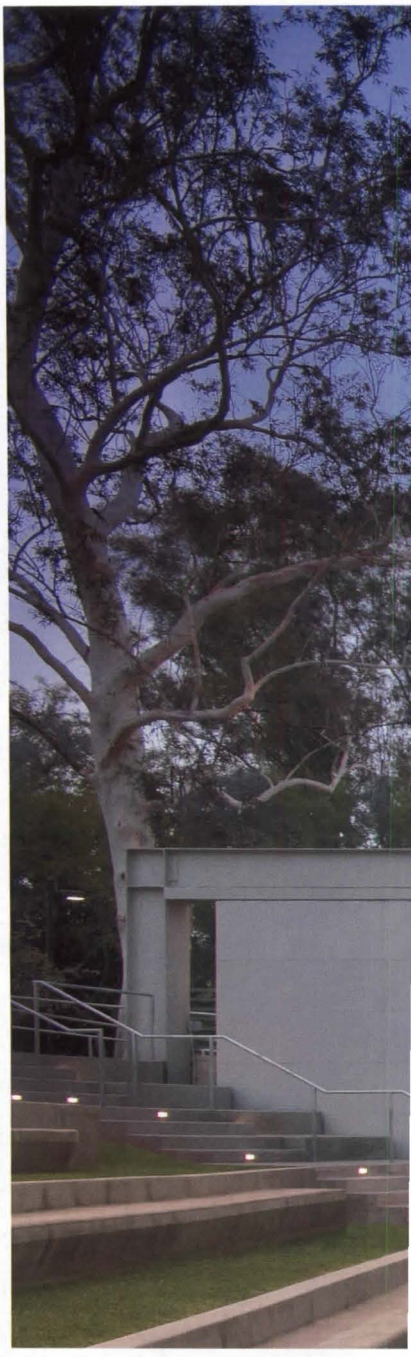
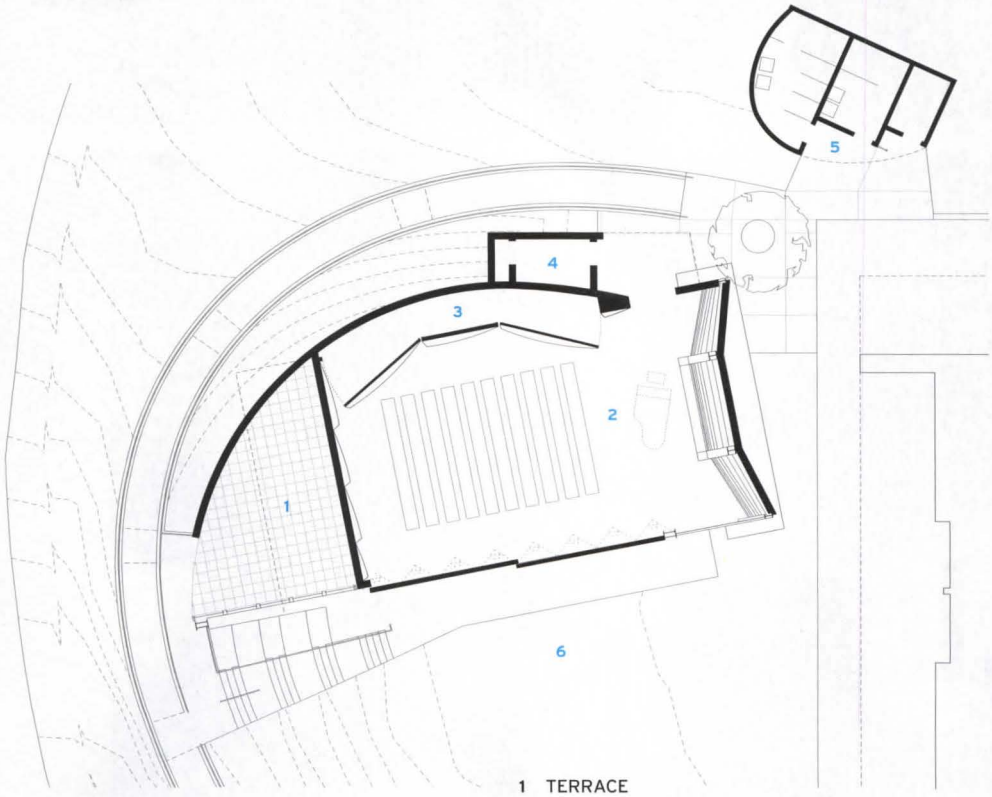




1 TERRACE
2 PERFORMANCE
3 STORAGE
4 MECHANICAL
5 RESTROOMS
6 LAWN

0 10 FT.
3 M.

ABOVE: **A 60-foot-long cantilevered metal roof wraps around the multifunctional performance space. When its 30-foot-wide cement-board doors are open, the space serves as a band shell for outdoor concerts.**

TOP LEFT: **The fluid geometry and small size of the pavilion contrast with the heavy rectilinear form of the institute's enormous main building erected in the early 1970s.**

THE WILD BEAST AT CAL ARTS VALENCIA, CALIFORNIA

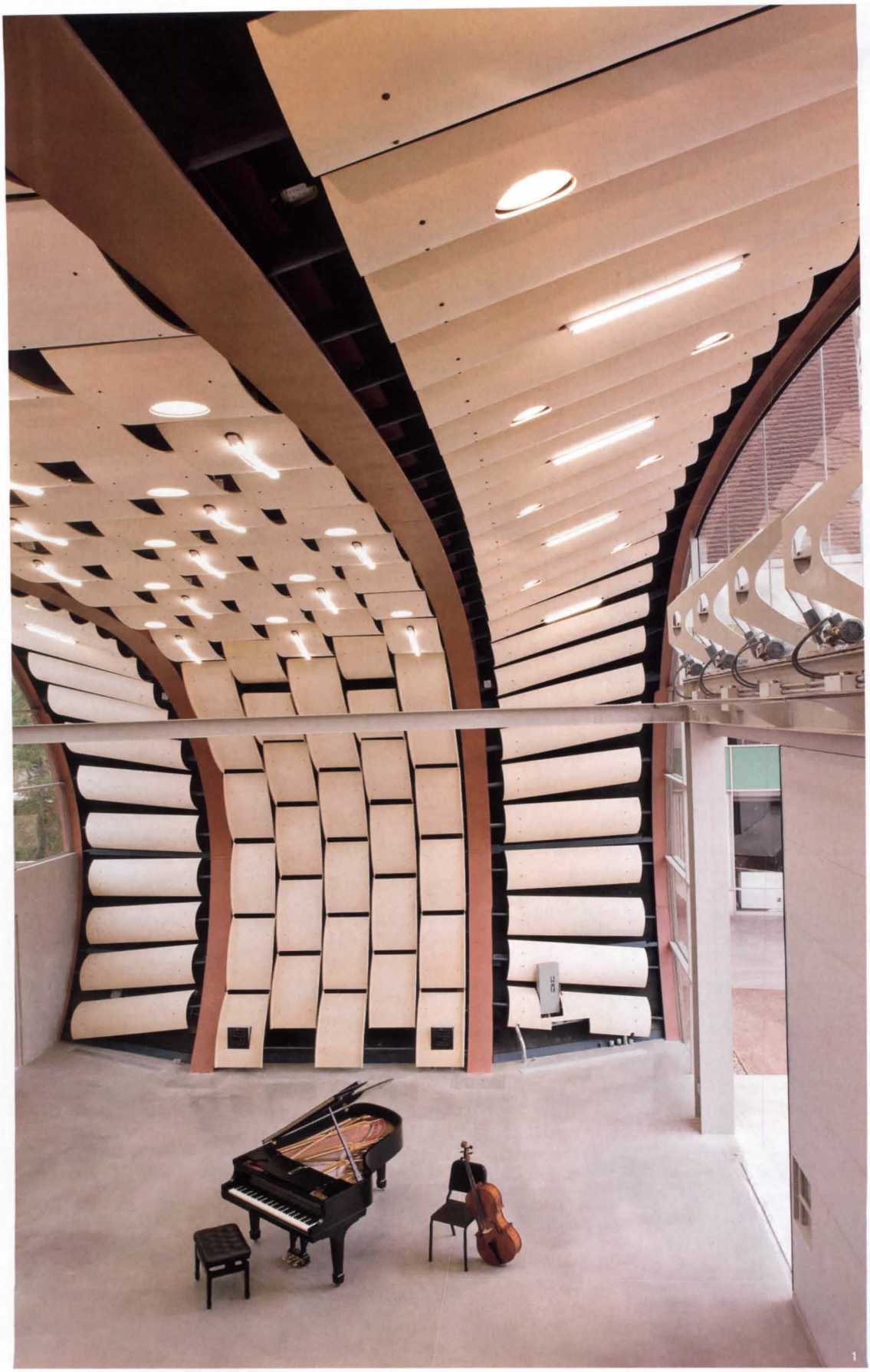
Hodgetts+Fung / By Clifford A. Pearson

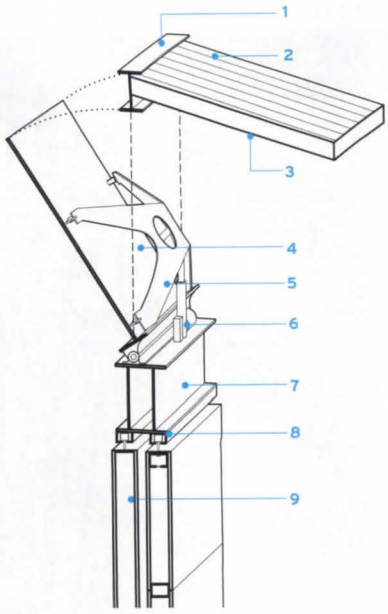
DESIGNING A SMALL performing arts building that would work for both indoor recitals and outdoor concerts, Craig Hodgetts and Hsinming Fung drew inspiration from musical instruments. "We wanted a building in which performance and shape are inextricably linked," explains Hodgetts, who trained as a musician before studying automotive design and then architecture. "So we looked at violins and guitars and how they work." Such explorations informed the architects' strategy for the Wild Beast, a 3,400-square-foot facility at the California Institute of the Arts (CalArts) in Valencia, California.

The project's name pairs it in a kind of artistic bestiary with CalArts' downtown Los Angeles venue known as REDCAT (Roy and Edna Disney/CalArts Theater) in Frank Gehry's Disney Concert Hall complex about 30 miles away. It stems from a quote, etched on one of its glass panels, by avant-garde composer Morton Feldman, who said, "I am interested in how the wild beast lives in the jungle, not in the zoo." Visitors to the school can read the project's name and its energetic form as retorts to the heavy, brick-and-concrete architecture of the Valencia campus's enormous main building. Light on its feet and curvaceous in elevation, the Wild Beast serves as an agile counterpoint to the rectilinear mass of its much larger neighbor.

Hodgetts+Fung was a logical choice for the job, having developed a reputation for performing arts projects (such as the renovation of the Hollywood Bowl) and temporary structures (especially Towell Library at UCLA, an aluminum-and-fabric-roofed building used for two-and-a-half years in the late 1990s while the school's permanent library received a seismic upgrade). Hodgetts also brought a bit of history with him, having served as a founding associate dean of CalArts' short-lived School of Design

For a video tour of the project see our website or iPad edition.





ACTUATOR DETAIL

1 WIDE-FLANGE EDGE BEAM
2 METAL ROOFING
3 GUNITE OVER STEEL DECK
4 GLAZING
5 PIVOTING WINDOW SUPPORT
6 MAXI BALL SCREW ACTUATOR
7 STEEL BEAM
8 HANGING DOOR TRACK
9 SLIDING DOOR

CREDITS

ARCHITECT: Hodgetts+Fung Design and Architecture – Craig Hodgetts, creative director; Hsinming Fung, director of design; Amber Langlois, project manager

ENGINEERS: Thornton Thomasetti (structural); KPFF (civil); Lucci and Associates (electrical); Design Build (mechanical)

CONSULTANTS: Salt Landscape Architects (landscape); McKay Conant Hoover (acoustics)

CLIENT: California Institute of the Arts

SIZE: 3,400 square feet (total); 2,800 square feet (performance pavilion); 600 square feet (restroom building)

COST: $2.35 million

COMPLETION DATE: August 2009

SOURCES

FIBER-CEMENT CLADDING: Hardie Board

GLAZING: Visual Glass Concepts

METAL ROOF SHINGLES: Infinity Metal

MOTORIZED-WINDOWS CONTROL BOX: Techniflex

2

in the early 1970s. Although the Wild Beast was conceived as a permanent facility, the client and architects wanted it to "have the feeling of something temporary," says Fung. So the initial designs envisioned a tentlike fabric structure. But noise from a nearby highway and an adjacent parking lot made such a strategy untenable.

Instead, the architects developed a lightweight monocoque roof that cantilevers 60 feet and curves in two directions. A large 30-by-16-by-3-foot block of concrete anchors the structure on the east and is buried out of sight. Hodgetts and Fung kept the roof profile as thin as possible (just 8 inches), rested it on a curved steel beam, and wrapped it around half-inch-thick frameless glass so the building appears to be all shell and no support.

A pair of 23-by-16-foot fiber-cement doors slides open for outdoor performances when roughly 800 people can sit on the adjacent lawn and in the amphitheater. When the doors are closed, the building serves as a small recital and rehearsal space accommodating about 140 people on folding chairs. Making the building work for both modes was a big challenge, especially since its axis rotates 90 degrees when switching from one configuration to another. Alternating between a long narrow volume and a shell open to the outdoors "drove the acoustician crazy," admits Hodgetts.

The solution was to design the building as a piece of kinetic architecture in which MDF panels on the north side of the space move and clerestory windows on the south elevation pivot out to redirect and adjust the sound. Water-jet-cut aluminum "spiders" hold the glass panels in place, while an actuator (typically used on airplanes to control wing flaps) moves them in or out. Hodgetts and Fung love to adapt elements from other industries in their projects; here they took recycled wood drums used in printing and employed them as curved, fixed-in-place panels dispersing sound in the Wild Beast's interior. "What we learned from our work on the Hollywood Bowl was to establish an absorptive shell, then line it with reflective surfaces," explains Fung. To light the space, the architects recessed standard fluorescent tubes within the curved wood panels.

Since the building sits below a spacious parking lot, the architects needed to provide a long, universally accessible ramp, which they refer to as "the tail of the beast." A small masonry building on the northeast portion of the site houses restrooms and was added after the performance pavilion was completed.

Of the building's form, Hodgetts says, "We were trying to find the right gesture, one that could handle a polyfunctional space and work with a tricky site." He and Fung weren't thinking of anything zoomorphic, he states, and the name of the project came much later than the design. Talking about the building's curvy east elevation, Fung forgoes any animal references in favor of one with a Hollywood provenance. "I think of it as the building's Jayne Mansfield moment," she laughs.

Working with a tight budget ($2.35 million), the architects didn't get everything they wanted. For example, they lost the battle to install radiant heating and cooling instead of a forced-air system. And masonry block ended up on the north facade, creating a less graceful elevation. But the building's fluid geometry and excellent acoustics strike the right notes overall. ■

3

1. **The architects created an absorptive shell for the building and then attached curved wood panels to reflect the sound. The panels are made from large drums used in the printing industry.**

2. **Glass clerestory panels are held in place by aluminum "spiders" and can pivot out to project sound for outdoor performances. An actuator used in airplanes puts the glass panels in motion.**

3. **Fung likes to call the east facade with its double-curved metal panels and its sex appeal the building's "Jayne Mansfield moment."**

450 WEST 37TH STREET, NEW YORK CITY

Jerome Robbins Theater: WASA/Studio A
The DiMenna Center for Classical Music: H³ Hardy Collaboration Architecture

By Linda C. Lentz

In the high-stakes real-estate environment of New York City every square foot counts – especially for space- and cash-starved arts organizations. So when Mikhail Baryshnikov, artistic director of the Baryshnikov Arts Center (BAC), teamed with a consortium of off-Broadway theater producers to build a new 46,000-square-foot building at 450 West Thirty-seventh Street in Manhattan's Hell's Kitchen neighborhood, expectations were high. Indeed, the six-story, concrete-and-glass structure was designed by the late architect John Averitt (who died a year before its completion) to be a versatile, column-free performing-arts hub. When it opened in 2005, a trio of stacked, "for-rent" theaters operated by the producers occupied the three lower levels. Baryshnikov built out the upper floors for the offices and studios of the nonprofit BAC. But, while the theaters were outfitted with stages and seating, they were left spare for visiting companies to equip as needed, and ultimately lacked the necessary acoustics and theatrical gear to make them marketable. Long story short, the theaters were sold after three years. BAC purchased one, and Orchestra of St. Luke's, another nonprofit, bought the other two – each owner with its own plans to tap the city's top theatrical consultants and architects for extensive renovations.

Framed with Corten steel, the seating structure central to the Jerome Robbins Theater has a distinct balcony supported by a thick tube running through its core and from discrete ceiling hangers on top of the control booth.

BELOW: **The steep rake provides excellent sight lines to the open, flat-floor stage, a configuration that reinforces an intimate relationship between performer and audience.**

For a video tour of the DiMenna Center see our website or iPad edition.

JEROME ROBBINS THEATRE The rapid demise of the original theaters turned out to be a blessing for the Baryshnikov Arts Center (BAC). Established as a creative laboratory and performance space, the center comprised four daylight-filled dance studios, a studio theater, and offices when it opened in 2005. By purchasing the 5,200-square-foot theater beneath it, BAC acquired a 42-by-72-by-36-foot box that would provide an ideal volume within which to create a state-of-the-art venue for more fully realized dance, music, and theater events. The potential to boost its programming and revenue stream was strong, but first the space had to be gutted.

"They basically hated everything except the four walls," recalls architect Martin Kapell, WASA/Studio A design partner-in-charge of the project. "They liked the shape, proportion, and materiality of the room, which is all-concrete. But everything inside it was either wrong or insufficient." Sight lines, egress, seat alignment, lighting, sound, and noise all had to be addressed. Plus, he adds, "They wanted a more complete technical theater."

Having worked as a stage manager prior to becoming an architect, Kapell understood that the job's primary focus was to support the experience and relationship of the performer and audience. With this in mind, he and his associates collaborated closely with other members of the design and construction team, in particular the theater consultants and acoustician from Arup, to develop a scheme that would integrate the high-performance specifications the client was after.

The new theater is a textural juxtaposition of refined and rough surfaces in which the architects exposed the concrete walls and mechanicals, painting them a warm black-brown to make them "disappear." Kapell wanted to express the full potential, and rawness, of the space. So the crew stripped the

Acrylic-resin-lined stairs at the top of the orchestra seating have LED-lit hand rails and lead to the balcony and a second-level exit, or down behind the rear of the structure to the lobby lounge.

room, then isolated the box from external noise and rumblings by segregating the plant, silencing ductwork, and underpinning a resilient sprung floor with a floating reinforced-concrete slab 4 inches above the existing slab.

According to acoustician Rachid Abu-Hassan, the building's dense concrete walls are good sound insulators. However, as the dense concrete is also highly reflective, introducing soft, absorbing finishes was required. To achieve the flawless acoustics desired, he installed perforated, sound-absorbing wood-veneer panels on the back wall, and bass absorbing insulation along the uppermost section of the longitudinal walls. For additional reverberation control in the event of amplified sound, the acousticians applied large steel grids that receive modular sound-absorbing panels along the same walls, and hung movable velour drapes on either side of the stage.

The heart of the project is Kapell's stadium seating, an ingenious structure centered in the space so that the lobby lounge could be tucked behind it. Framed in thin, pre-finished Corten steel and fitted with 238 plush, bench-style seats, it is configured to bolster sound quality and sight lines, improve circulation, and accommodate stage lighting and a balcony control room.

"The idea was to maximize the size of the room," admits Kapell. But then, he says, "The thing I find most satisfying and aesthetically pleasing about the project results from solving technical issues." ■

CREDITS

ARCHITECT: WASA/Studio A – Martin Kapell, architecture and design partner-in-charge; Laura Boynton, project architect

ENGINEERS: WASA/Studio A (mep/sp/fa); Gilsanz Murray Steficek (structural)

CONSULTANTS: Arup – David Taylor, project director; Rachid Abu-Hassan (acoustics); Jim Niesel (theater, a/v); Richard Fisher (lighting)

CLIENT: Baryshnikov Arts Center

SIZE: 11,451 gross square feet; 5,200 square feet (theater box)

COST: $6 million

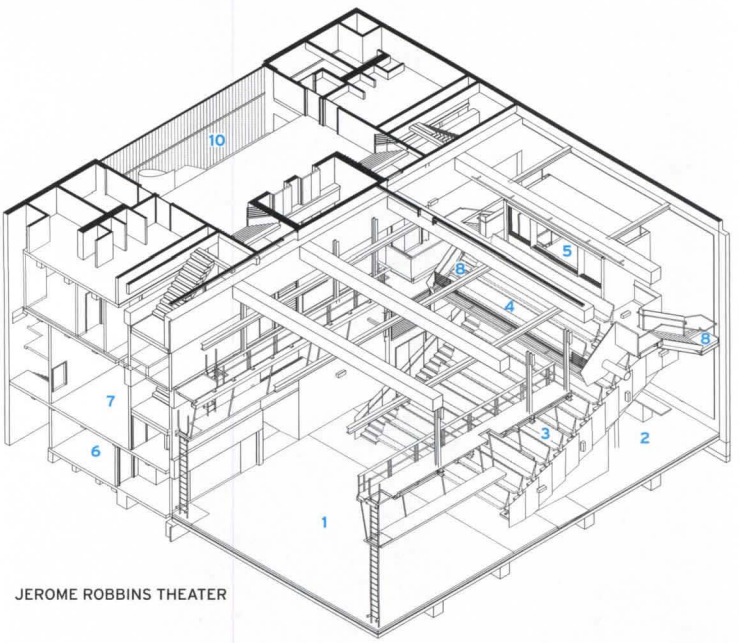
COMPLETION DATE: January 2010

SOURCES

ACOUSTIC WALL PANELS: Rulon (slotted wood veneer); Decoustics (fiberglass)

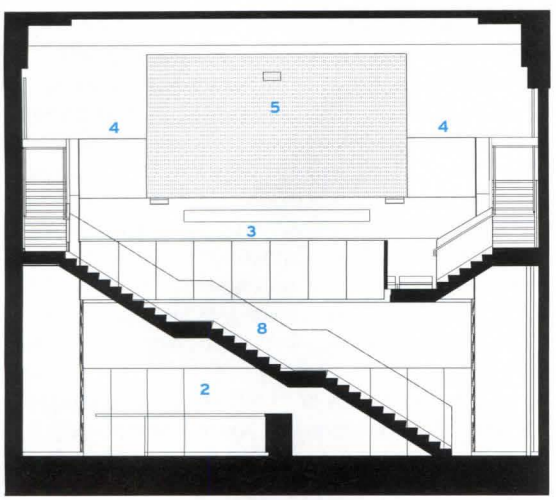
STAIR GUARDRAIL: LightBlocks (acrylic)

CORTEN STEEL: Thyssen Krupp



1 STAGE
2 LOUNGE
3 ORCHESTRA SEATING
4 BALCONY
5 CONTROL ROOM
6 DRESSING ROOM
7 MECHANICAL ROOM
8 BALCONY STAIR
9 VARIABLE ACOUSTIC GRID
10 CURTAIN WALL

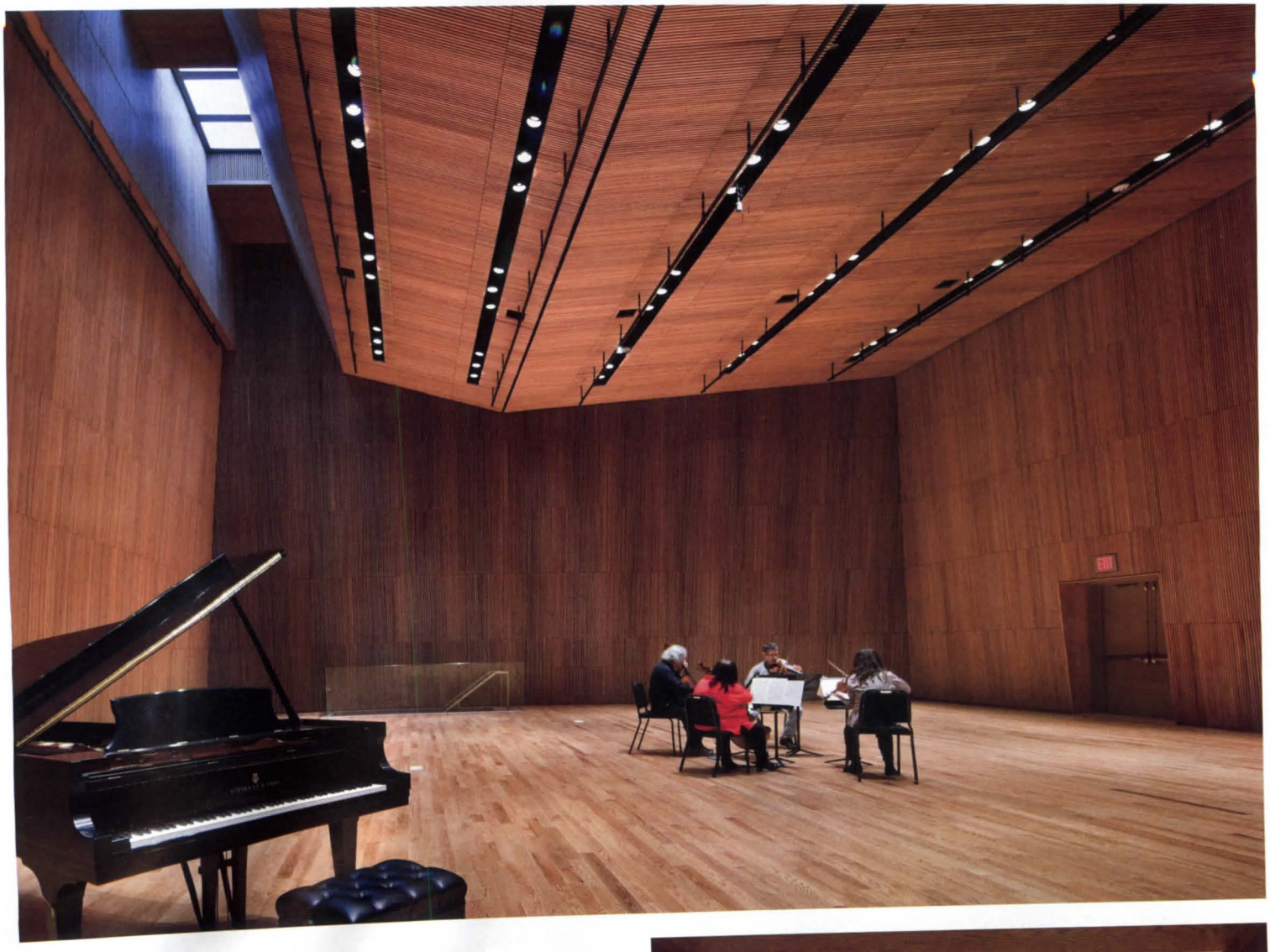
JEROME ROBBINS THEATER



JEROME ROBBINS THEATER LOUNGE SECTION

JEROME ROBBINS THEATER / SECTION THROUGH RISERS

0 10 FT.
3 M.



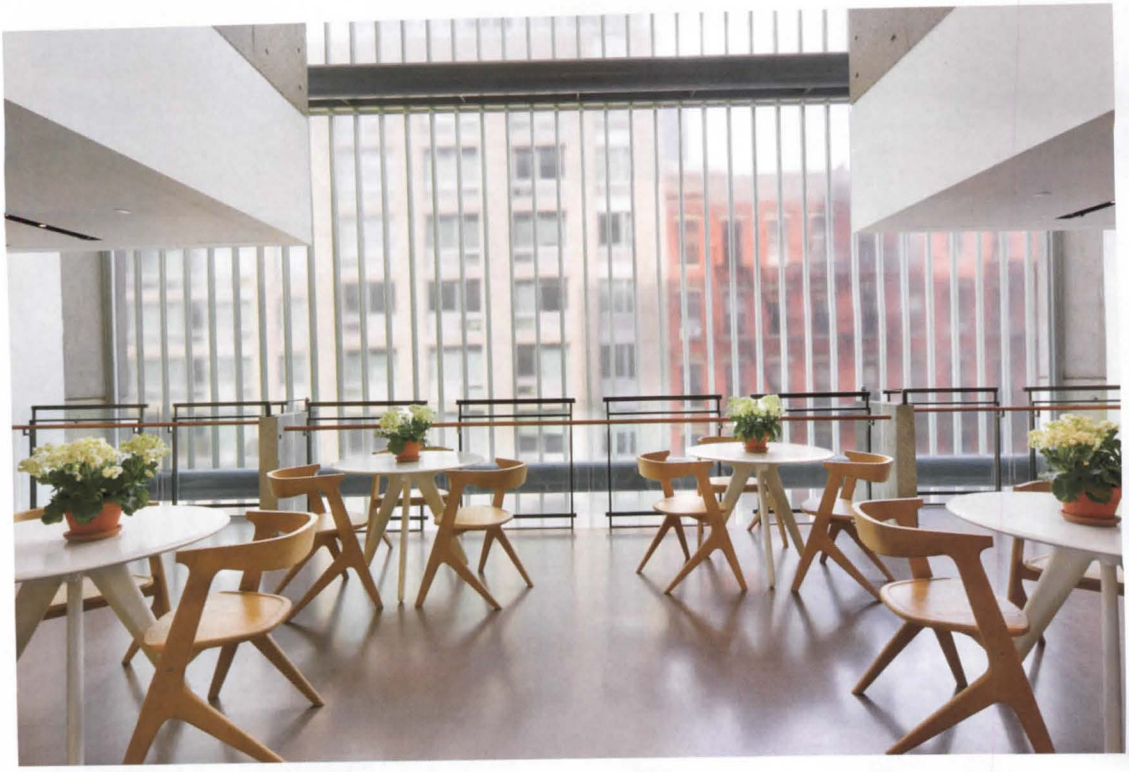
THE DIMENNA CENTER FOR CLASSICAL MUSIC Orchestra of St. Luke's (OSL) had been searching for a home, the first in its 37-year history, when cofounder Marianne Lockwood learned that Baryshnikov was looking for a like-minded partner to share his building. In November 2008, after years of strategic analysis, OSL bought the lower 20,000-square-foot space that included the two theaters – sealing the deal at a dual closing with BAC.

OSL retained H³ Hardy Collaboration Architecture and the acousticians at Akustiks to transform the two large volumes into topflight rehearsal and recording studios, for its own needs, as well as for rental by local and touring ensembles. And because the musicians spend so much time rehearsing, says project architect Geoff Lynch, OSL's brief stipulated warm, homey environments with concert-hall-quality lighting and no rough concrete in view.

After demolishing the existing theaters, the two firms worked in tandem to realize the project's acoustic objectives: to isolate the stacked rooms from street noise, the building's mechanical system vibrations, and each other, as well as the Jerome Robbins Theater above; then to replicate the aural experience of the concert halls in which the musicians perform.

Implementing box-in-a-box construction, the H³ and Akustiks teams separated the two main halls with floating concrete-slab floors on neoprene pads and springs, and fiberglass-packed concrete-block or gypsum sound-control walls and ceilings within the existing structural envelope. The architects divided the remaining space into a recording/media studio and

TOP: More salon than rehearsal space, Cary Hall features bamboolike red oak panels, comfortable red oak sprung floors, and daylight that filters through soundproof skylights to provide a soothing environment for musical groups as large as a full-size orchestra and chorus. ABOVE: Likewise, in Benzaquen Hall – sized for smaller chamber ensembles – the architects concealed a complex cacophony of acoustic trappings with custom-hued, sound-transparent stretch scrim, inset with ribs of red oak, carefully placed for acoustic performance.



LEFT: H3 Hardy Collaboration created a series of stylish and comfortable meeting/lounge spaces throughout the DiMenna Center, such as the Grossman Cafe Lounge illuminated by abundant north light from the building's existing glazed facade.

BELOW: The building's common lobby provides access to both the Baryshnikov Arts Center and the Jerome Robbins Theater by elevator, while musicians can reach the DiMenna Center for Classical Music via elevator or stair. The entrance to Cary Hall is one flight down and Benzaquen Hall is one flight up.

1 CARY HALL
2 BENZAQUEN HALL
3 MAIN LOBBY
4 MUSICIAN'S LOUNGE
5 CAFÉ
6 PRACTICE ROOM
7 OFFICE
8 SKYLIGHT

small practice rooms (all isolated to a lesser degree), plus a music library with compact shelving, offices, lounges, a café, and showers.

The 3,395-square-foot Cary Hall, on the lower level, accommodates a full orchestra and chorus, while the 1,649-square-foot Benzaquen Hall above it fits smaller chamber ensembles. From an acoustic point of view, Akustiks principal Russell Todd says, the challenge was that "in small spaces like these, a fraction of the size of Carnegie Hall, the music can sound harsh and too loud, so that the musicians can't hear themselves or the other sections." To recreate the dynamics and breadth of an actual performance without overpowering them, he applied a series of acoustic surfaces and interventions to diffuse and balance the sound in varying degrees for each space. Guided by Todd's rigorous criteria, Lynch and H³ interior designer Margaret Sullivan shaped the spaces and camouflaged the visual cacophony of acoustic paraphernalia with rich, acoustically transparent materials. They added soundproof skylights to the sub-grade Cary Hall and enveloped the room in a modular screen of red oak strips rounded and spaced to Todd's specifications. Likewise, they wrapped Benzaquen Hall in a stretch scrim, inset with carefully placed red oak ribs. And they lined the practice and media rooms with an oatmeal-hued sound-absorbing felt offset by decorative, reflective ribbons of gypsum, positioned to avoid flutter echo.

At an early preview OSL played the overture to Mozart's *The Magic Flute* in Cary Hall. The sound was lush and even, the room intimate. "The success of the project is a result of many things coming together," says Lynch. Along with the BAC, the DiMenna Center illustrates how distinct artistic, administrative, and architectural teams can coalesce to turn a struggling entity into a successful venue through thoughtful planning and reconstruction. ■

CREDITS

ARCHITECT: H³ Hardy Collaboration – Hugh Hardy, Geoff Lynch, principals; Margaret Sullivan, interior design director

ENGINEERS: ICOR Associates (mep/fp); Gilsanz Murray Steficek (structural)

CONSULTANTS: Akustiks (acoustics); Auerbach Pollock Friedlander (theater planner); George Sexton Associates (lighting)

CLIENT: Orchestra of St. Luke's

SIZE: 20,000 gross square feet

COST: $37 million

COMPLETION DATE: March 2011

SOURCES

SKYLIGHTS: Wasco

CEILINGS: USG (acoustic, suspension grid)

TEXTILE WALL PANELS: Steeletex

SHADES: MechoShade (skylights)

LIGHTING: Zumtobel, Se'Lux, Kurt Versen, Insight, Lucifer (downlights); Lutron (controls)

KNUT HAMSUN CENTER HAMARØY, NORWAY

Steven Holl Architects / By Beth Broome

STEVEN HOLL MADE his first sketches for the Knut Hamsun Center, in the municipality of Hamarøy, Norway, in 1994. But it was not until 2008, 14 years later, that construction started. During this long gestation period the building entered the collective consciousness to the point that it was as if it really existed – it is said that tourists ventured to the site to find no building at all. Seventeen years on, the center is complete, installed, and is being used for its intended purposes. But it's what has happened in the intervening years, since Holl's first visit, that has shaped the building into the important cultural center it is today.

The physical journey to Hamarøy, 125 miles north of the Arctic Circle, is also arduous. The passage, involving hours of air, sea, and road travel through breath-taking scenery, is a singular one. And the arrival to this awe-inspiring place, with its wooded hills leading down to the water's edge and its sharp mountainous back-drop, is deeply rewarding. An obvious response to the natural beauty would be to make a humble gesture with a quiet building. However, the challenge of designing a museum dedicated to one person is that it must not simply serve as a vessel for objects, but also evoke the spirit of that person and his work. Knut Hamsun is a troubled figure in the Norwegian memory. A modernist author who won the Nobel Prize in Literature in 1920, he was celebrated as a hero. But in his later years he sympathized with Hitler, provoking national feelings of betrayal. On Holl's first site visit he made a series of sketches. "It was a kind of project that comes to you all at once, almost like an intuition," he says. Envisioning a tower in the forest, Holl based his ideas on the author's first four novels and developed the concept for the center as "Building as a Body: Battleground of Invisible Forces," a reference to Hamsun's 1890 novel, *Hunger*, which chronicles a starving man's descent into madness. With this project the architect was interested in depicting all dimensions of the author (who himself wrote about human imperfection) – both his unfettered creativity and his profound weakness.

Indeed, actual conflict started brewing the moment the head of Cultural Affairs in Nordland County contacted Holl, who was working on the Kiasma museum in Helsinki, to create drawings to help launch the project. "In a way it was a very naïve and spontaneous series of events," recounts Holl (who has Norwegian roots).

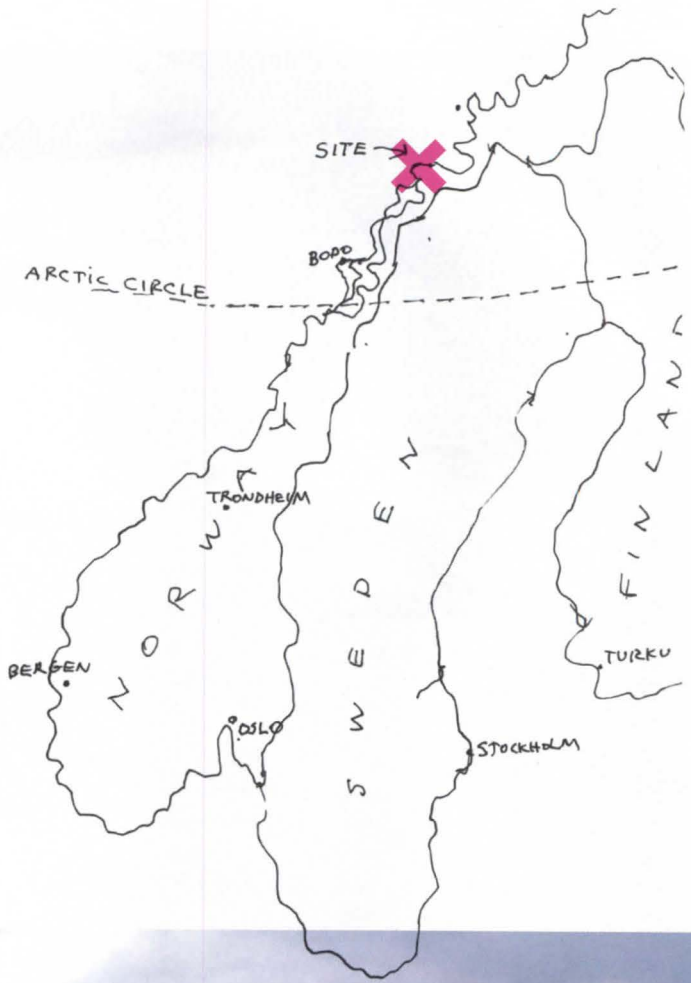
PHOTOGRAPHY: © IWAN BAAN (THIS SPREAD)

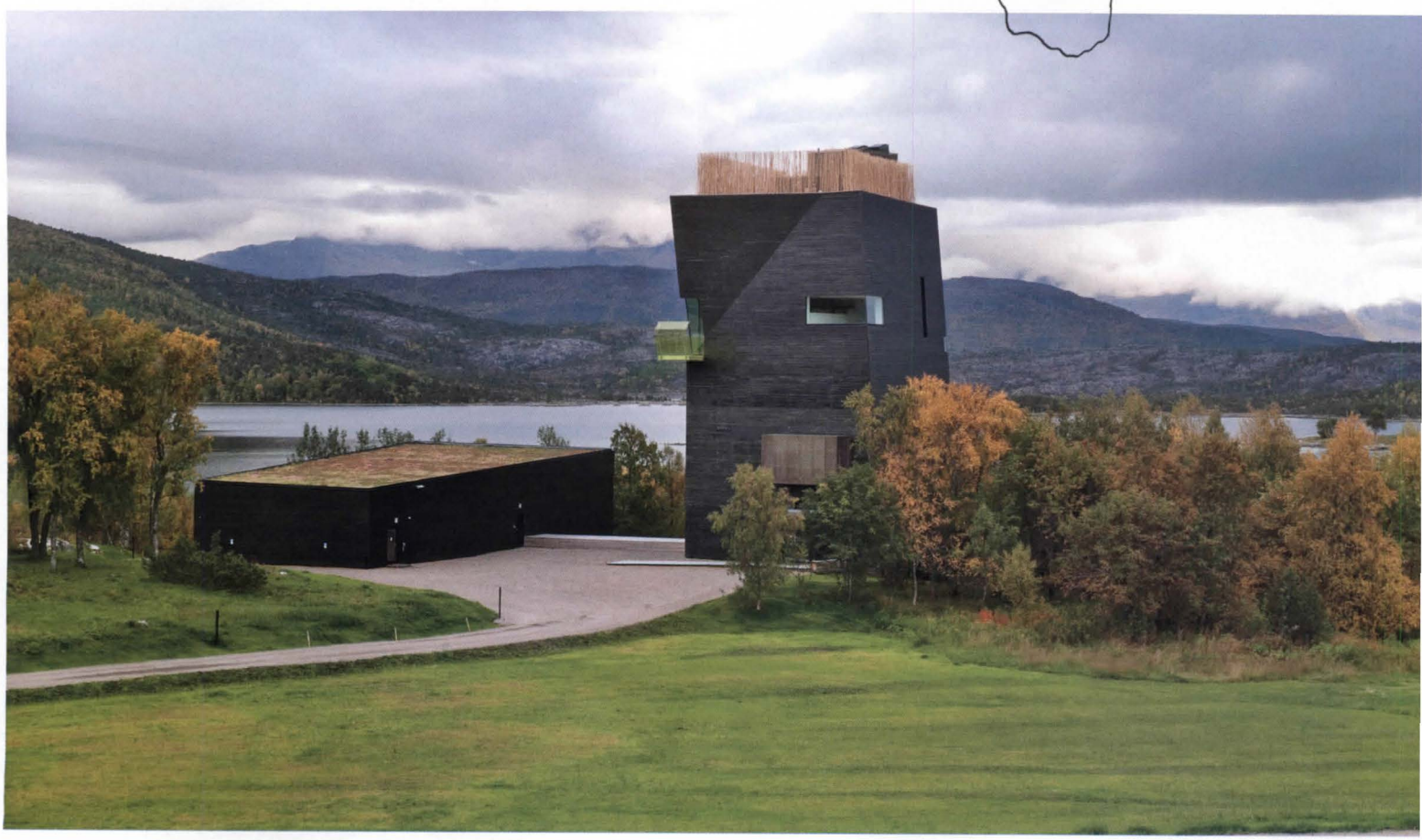
This unusual little museum, which some affectionately call "the hairy guy," is helping serve the national goal of promoting heritage and culture in Norway's more remote precincts.

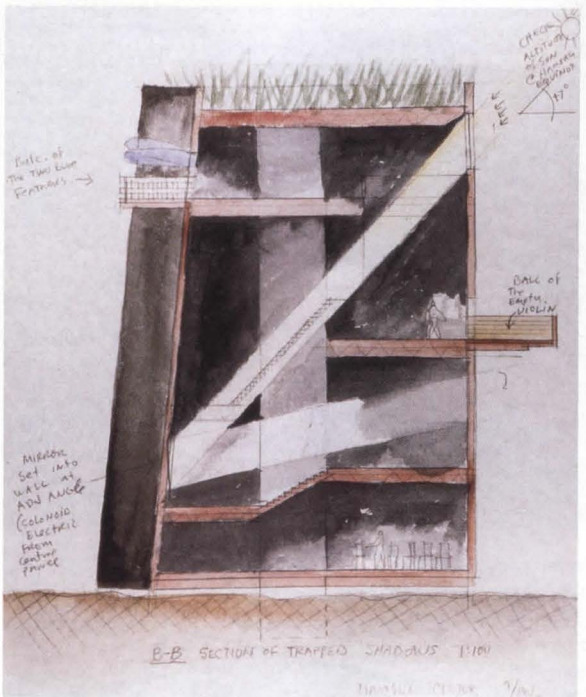
First was the opposition to erecting a monument to this controversial figure. Additionally, some considered the proposed site next to Hamsun's childhood farmstead too sensitive. There were questions about spending large sums in an area with a population of only about 2,000, and whether the building was in sync with Hamsun's connection to nature and Norwegian tradition. And then there was concern over the design's "weirdness" factor. The Norwegian press went wild. The attention caused a Hamsun Center frenzy – schoolchildren asked to depict local architecture drew the building, and a tavern installed a tap in its form.

But internationally the museum was widely praised; in 1996 MoMA acquired a model, and in 1997 Holl received a Progressive Architecture award for it. Soon after, the County Council accepted a new proposal from Holl that included moving the site to the hamlet of Presteid, where the young Hamsun had worked with his uncle, and adding a low, horizontal auditorium. It took another 10 years to secure financing from the government, but when the project was revived, Holl and his team were brought back. "I always say architecture is about the site, circumstance, and program," the architect says. "It's not about fashion and trend. So I was excited that nothing really was changed from the time these sketches were made until the time we opened the building. The idea-driven design held well and stayed fresh. It still has that kind of energy that is particular to the place and to that literary figure."

The 27,000-square-foot center, like Hamsun's writings, has a quirky humor, as well as human qualities. At its most literal, it is a stout little man with an elevator shaft spine of perforated brass, a skin of stained wood, and a jaunty flattop of bamboo "hair." It is essentially a concrete shear-wall tube (a parallelogram in plan) that supports thin, post-tensioned slab floors and is clad with black wood, inspired by traditional







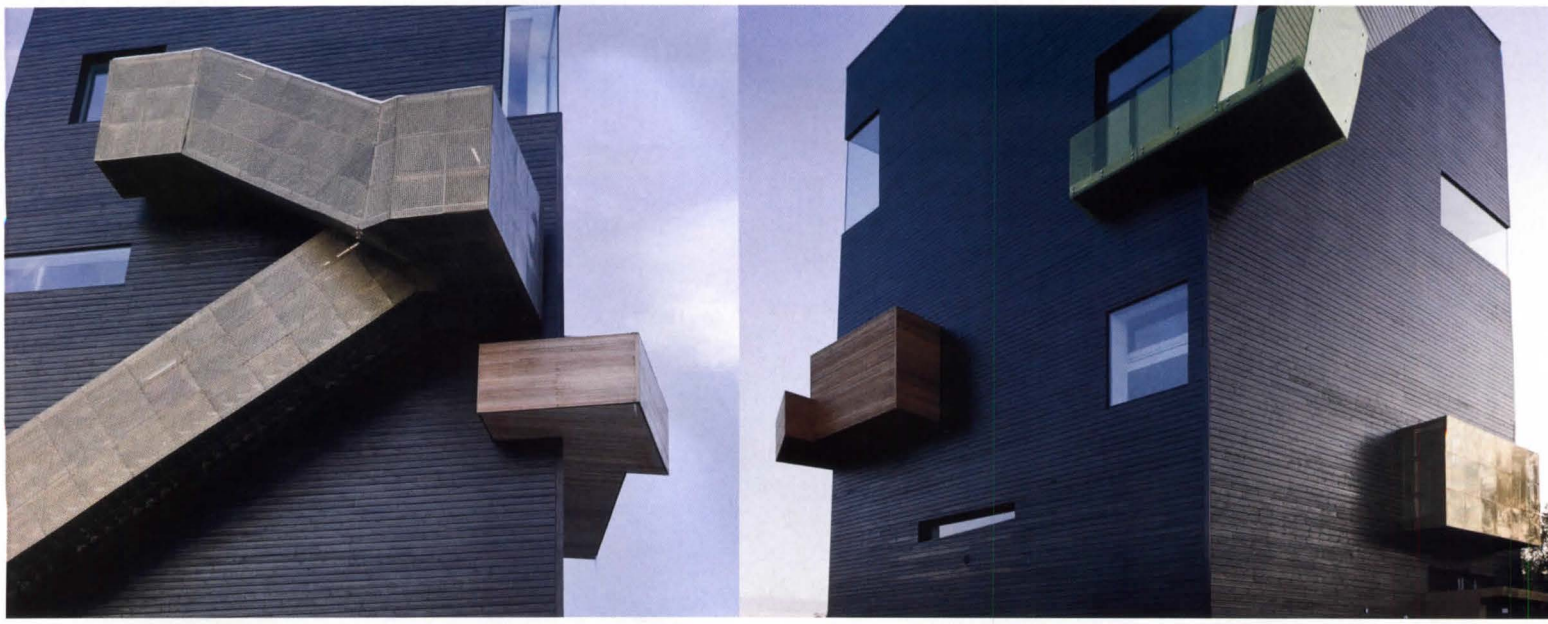
1. **As the project progressed, locals requested an auditorium (left) to accommodate the biannual "Hamsun Days" literary festival and provide a community *gathering place.* "The tower has a silent partner lying down," says Holl. "Together they form a public space."**

2. **Holl's first drawings laid out the equation, or concept, for the project: "Building = A Body – battleground of invisible forces" – a reference to Hamsun's novel *Hunger*.**

3. **Another drawing addresses the unique light conditions above the Arctic Circle. The building acts as a kind of clock, says the architect, reflecting the measurement of time in the seasons and the measurement of the time of day.**

4. **The museum's neighbors include a small fish camp that caters to vacationers.**

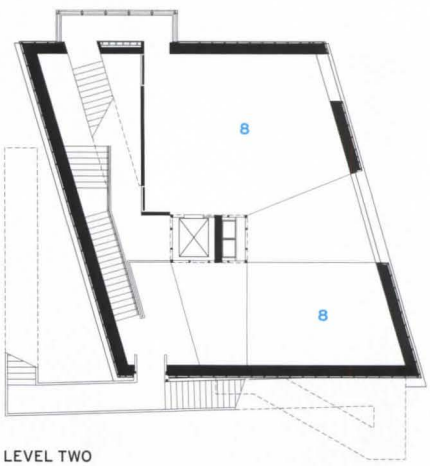
For a video tour of the project see our website or iPad edition.



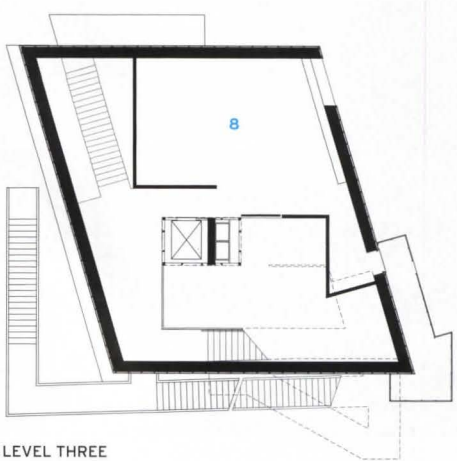
ABOVE: **Projecting elements make direct references to Hamsun's writings – for example, a yellow glass balcony called "girl with her sleeves rolled up polishing glass" and a cedar balcony housing a sound installation and looking out to the water that Holl calls "empty violin case" (in reference to the one carried by Nagel, the central character in *Mysteries*).**

OPPOSITE: **A brass cage bursts through to a rooftop terrace with panoramic views and a bamboo garden running around its periphery.**

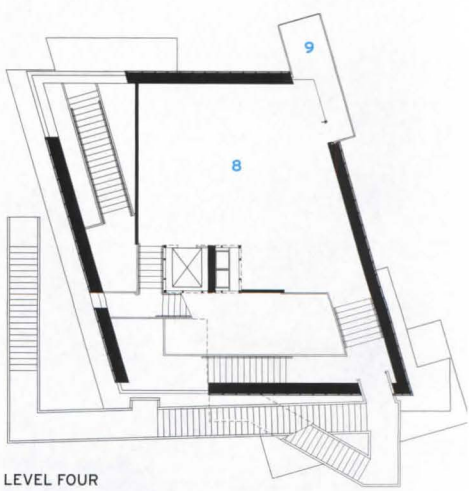
LEVEL ONE



LEVEL TWO



LEVEL THREE



LEVEL FOUR

1 ENTRY
2 LOBBY
3 RECEPTION
4 CAFÉ
5 KITCHEN
6 *AUDITORIUM*
7 OFFICES
8 EXHIBITION
9 BALCONY

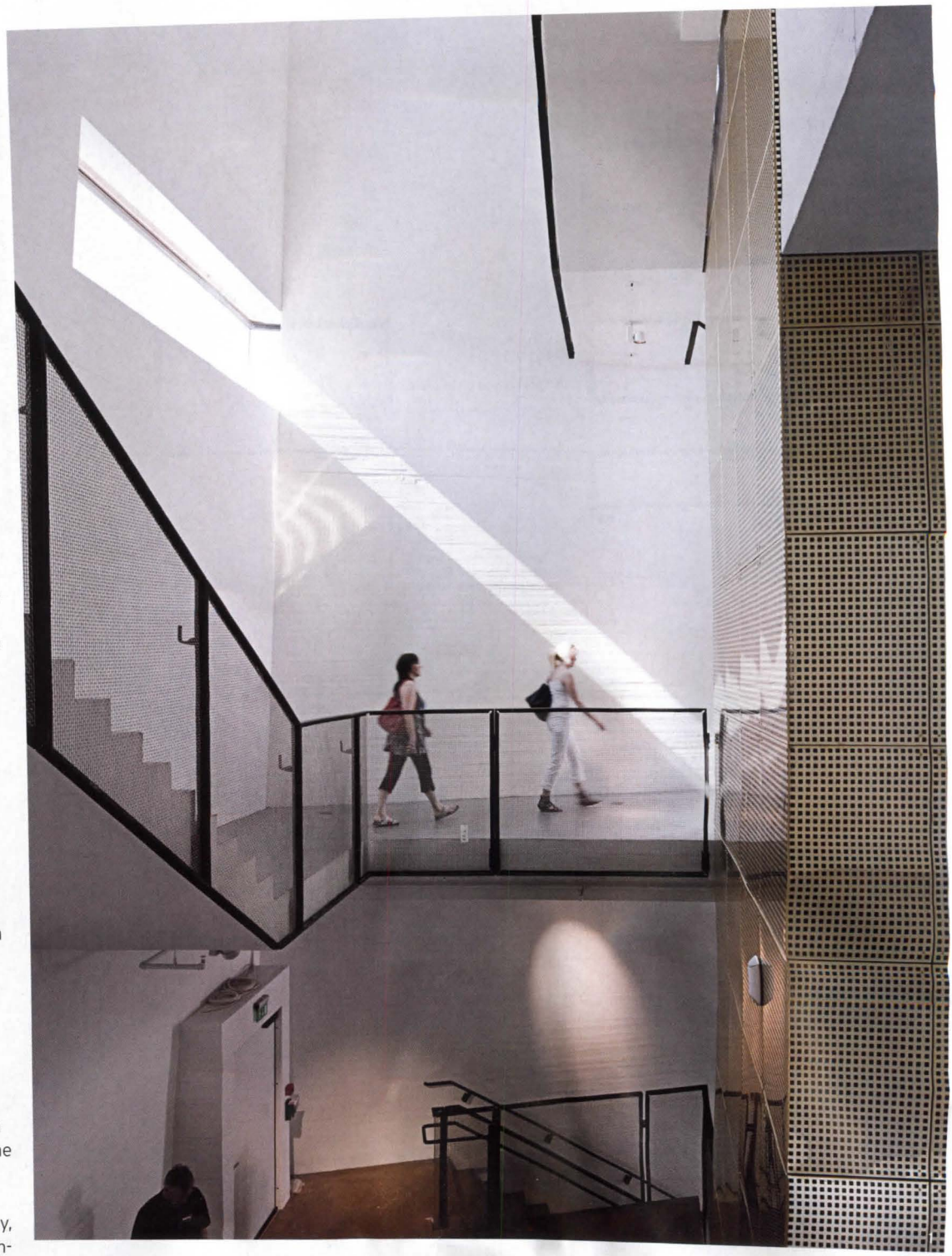
SECTION A-A

0 10 FT.
3 M.

SECTION B-B

Norse stave churches. Drawing again from the vernacular, and completing the anthropomorphic form, the architect created an expressive interpretation of a sod roof by making the "fringe" at the top. Inside, two white, board-formed concrete walls slope just enough to make you sense something is not quite right, and winding circulation is interrupted by surprise encounters with "invisible forces" – balconies and other elements – that puncture the torqued body, pulling you outside. It's a tour through a somber funhouse. The experience is destabilizing, notes museum director Bodil Børset. "It puts us in an awkward position, which is what Hamsun does with his books, and it speaks to the tensions within the author himself."

In recent years there has been a national drive to preserve culture in Norway, particularly in some of the country's remote regions that have been experiencing depopulation. The government offers financial incentives for settling in some places. And design has played an important role: 18 National Tourist Routes are being developed to showcase art and architecture against backdrops of stunning natural beauty. The museum, which was hard to realize and is hard to reach, has a goal of 20,000 visitors a year. Clearly, it is not a commercial enterprise or a mass experience (though it has been gaining more widespread acceptance, most recently by winning Norway's prestigious Byggeskikk Prize for architecture on June 7). In all its incarnations over the last 17 years – as a controversial idea, provocative architecture, an installed museum, a community center, and a catalyst for helping the country come to terms with the national trauma that was Hamsun – the center has woven itself into the regional identity, and has served as a conduit for defining and preserving the local heritage. Tellingly, when the project began there wasn't a written program per se – it developed as the community inserted itself into the process, says the architect. "The thing became much more than it started out being," says Holl. The building took hold of the community and then the community took hold of it. ■



1. **The architect did model studies to explore how the building could engage the unique lighting conditions above the Arctic Circle, where the sun never gets above 47 degrees on the horizon, and for periods does not rise or set.**

2. **Visitors wend through four levels of exhibition space, which present nine different subjects, such as childhood and critique of modern society. Narrating with text, video and artifacts, the exhibits tell the story of Hamsun's life.**

3. **The central brass elevator shaft penetrates the building from top to bottom, visible from the lobby and exhibition areas as well as the library (center).**

4. **Platforms step up through the 65-foot-high space and, at times, the cast-concrete stairs become free of the walls, leaving you feeling suspended.**

2


3


4

CREDITS

ARCHITECT: Steven Holl Architects – Steven Holl, design architect; Noah Yaffe (associate in charge – construction documents); Erik Fenstad Langdalen (project architect – design development); Francesco Bartolozzi, Peter Englaender, Chris McVoy, Ebbie Wisecarver (project team); Gabriela Barman-Kraemer, Yoh Hanaoka, Justin Korhammer, Anna Müller, Audra Tuskes (project team – design development)

ASSOCIATE ARCHITECTS: LY Arkitekter (construction document phase)

EXHIBITION DESIGN: Hybris

CLIENT: Nordland Fylkeskommune; Hamsunsenteret, Nordlandsmuseet (museum organization)

STRUCTURAL ENGINEERS: Guy Nordenson and Associates (U.S.); Byggcon (Norway)

SIZE: 27,000 square feet

COST: $11 million

COMPLETION DATE: August 2009

SOURCES

WINDOW SYSTEMS: Schüco International

ELEVATOR: Schindler

ACOUSTIC PANELS: Cembrit

STEEL DOORS: Jansen

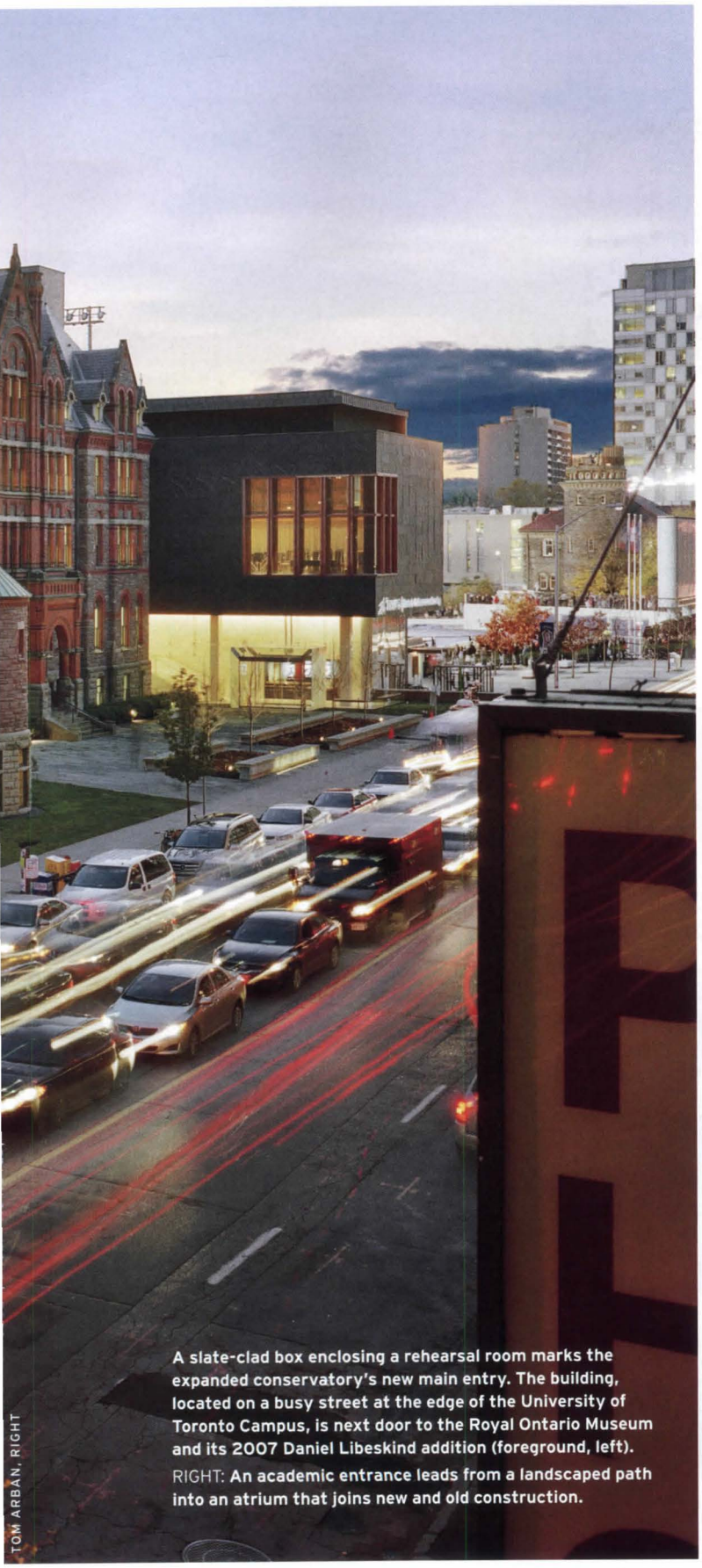
WOOD DOORS: Skallevold

PAINT: Jotun

THE ROYAL CONSERVATORY, TORONTO

Kuwabara Payne McKenna Blumberg Architects

By Joann Gonchar, AIA



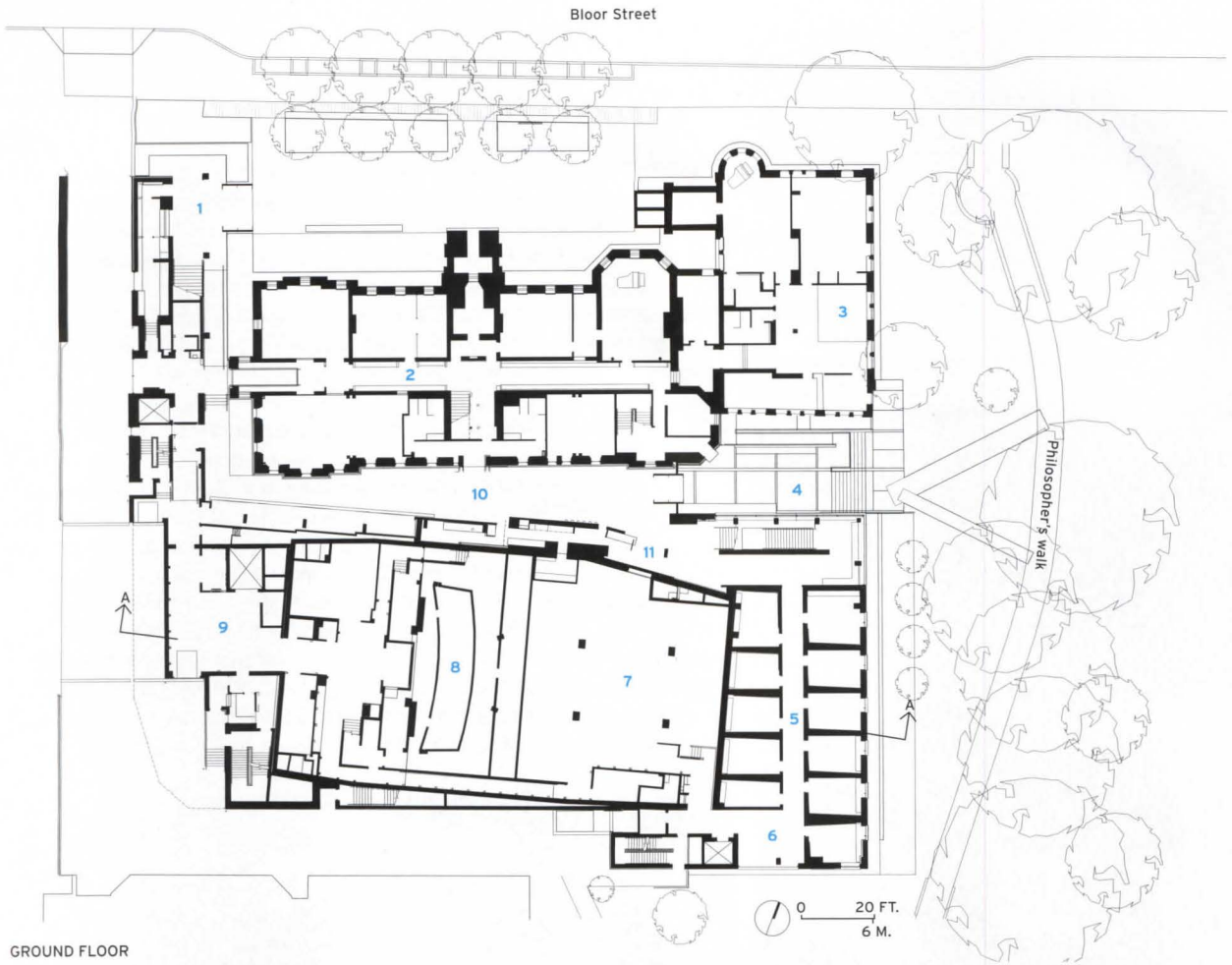
A slate-clad box enclosing a rehearsal room marks the expanded conservatory's new main entry. The building, located on a busy street at the edge of the University of Toronto Campus, is next door to the Royal Ontario Museum and its 2007 Daniel Libeskind addition (foreground, left).

RIGHT: An academic entrance leads from a landscaped path into an atrium that joins new and old construction.

TOM ARBAN, RIGHT

FOR NEARLY HALF a century, the Royal Conservatory, Canada's venerable music education institution, has occupied a distinctive late-19th-century masonry building at the northern edge of the University of Toronto campus on Bloor Street, one of the city's major east-west thoroughfares. But in 1991, simultaneous with an administrative split from the university, the conservatory began an ambitious master-planning exercise, led by Toronto's own Kuwabara Payne McKenna Blumberg Architects (KPMB), developing a scheme that included renovating McMaster Hall – its deteriorating 50,000-square-foot Victorian home – and expanding it to accommodate the school's aspirations to both enhance its academic programs and play a greater role in the cultural life of the city.

For the centerpiece of its new complex, the client desired an approximately 1,100-seat concert hall that would serve the institution's primary mission of training musicians. It wanted the space to have acoustics suitable for a wide variety of musical presentations, including vocal soloists, small ensembles, and full orchestras. But the conservatory also envisioned Koerner Hall, as it is now called, as a state-of-the-art venue that would attract international-caliber talent. And it appears that the room has more than met these aspirations. Since opening in late 2009, Koerner's acoustics have been widely praised and it has featured such artists as mezzo-soprano Frederica von Stade, cellist Yo-Yo Ma, and jazz pianist Chick Corea.



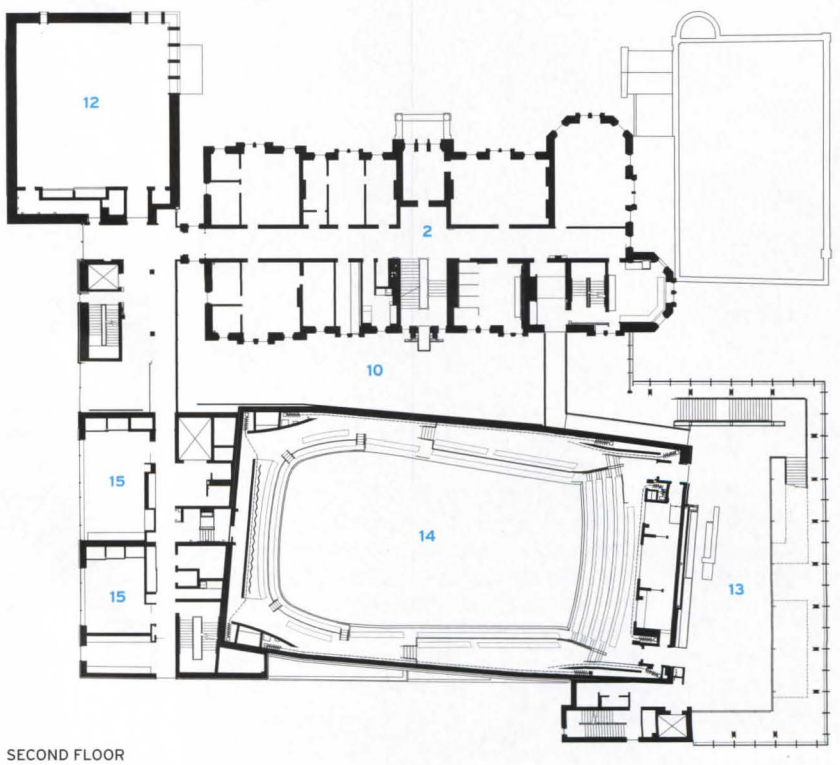
GROUND FLOOR

SECTION OPPOSITE

1 KOERNER HALL
2 KOERNER HALL LOBBY
3 VIP ROOM
4 PRACTICE STUDIO
5 LIBRARY
6 MECHANICAL
7 BACK OF HOUSE
8 CLASSROOM

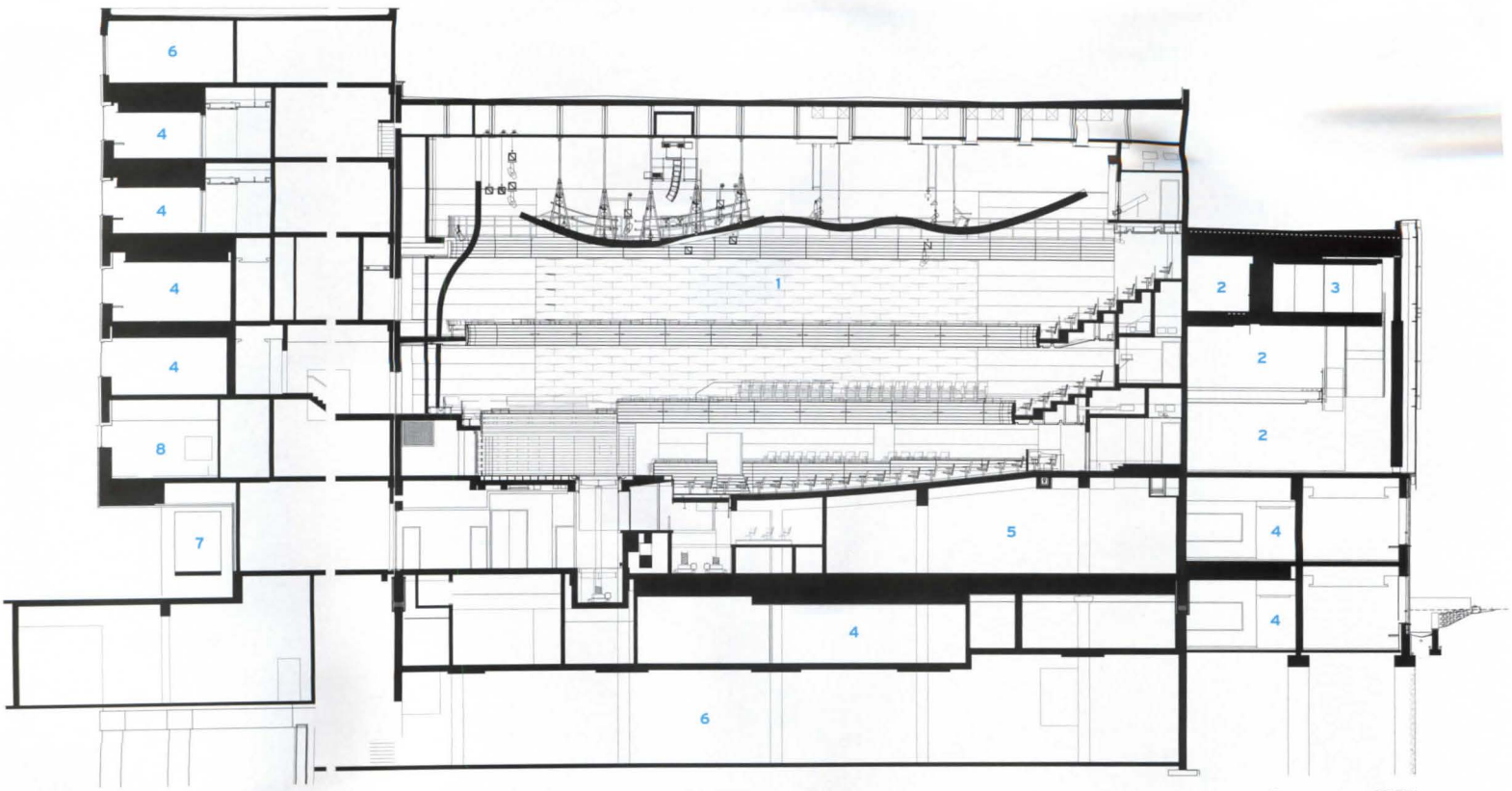
PLANS

1 BOX OFFICE / ENTRANCE
2 IHNATOWYCZ HALL
3 CHILDREN'S PROGRAM
4 PHILOSOPHER'S WALK COURT
5 PRACTICE STUDIOS
6 LOUNGE
7 LIBRARY
8 ORCHESTRA LIFT
9 BACK OF HOUSE
10 GALLERIA
11 CAFÉ
12 REHEARSAL HALL
13 KOERNER HALL LOBBY
14 KOERNER HALL
15 CLASSROOMS



SECOND FLOOR

PHOTOGRAPHY: © TOM ARBAN



SECTION A-A

Koerner, as well as other new facilities – practice studios, a library, rehearsal space, and classrooms – needed to fit into a hemmed-in parcel of land defined by the historically designated Victorian structure, a sports arena, and a picturesque pedestrian path known as Philosopher's Walk that runs through the university campus. Without overpowering McMaster, which was originally built to house a Baptist college, the architects needed to squeeze 140,000 square feet of new construction into only 25,000 square feet of buildable area. Their solution involved layering functions and wrapping the expansion around two sides of the existing building. The programmatic elements are "essentially friction-fit," says Marianne McKenna, a KPMB partner.

Although most of the new construction is tucked behind McMaster (recently renamed Ihnatowycz Hall), the configuration allowed KPMB to establish a public and modern presence on Bloor with a glazed main entry and box office and a slate-clad boxlike volume that houses a rehearsal room hovering above it.

For the part of the expanded conservatory that faces the pedestrian path, the architects reversed the arrangement of solid over transparent. Here they surrounded Koerner's multitiered lobby with a glass curtain wall, pristinely detailed with glass fins, seemingly slipping it over a brick base containing practice rooms. And between the new construction and the historic building, they inserted an academic entrance that leads to a glass-topped atrium. The long and narrow space, trapezoidal in plan, is defined by McMaster's highly textured and polychromatic masonry and a sleek new wall clad in black, smooth stone. The atrium has a café, open from the early morning to late at night, helping make it the school's social hub. A slightly meandering route, via an overhanging walkway, leads performance-goers from the box office, through this dynamic space, to Koerner's column-free main lobby floor. From here, or from either of

The atrium houses a café, open from early in the morning to late at night, which helps make the space the conservatory's social hub.

Continuing Education

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Learning Objectives

1 Understand and define terminology relevant to acoustics.

2 Discuss acoustical qualities considered desirable for concert halls.

3 Explain strategies and methods for achieving such qualities.

4 Discuss how acoustical concerns can affect the design of mechanical systems.

AIA/CES Course #K1107A

ABOVE: **The glass-enclosed lobby for the conservatory's main performance venue has three tiers. The upper two are suspended from the roof structure.**
OPPOSITE: **The atrium is defined on one side by the historic building's colorful and highly textured masonry and a sleek stone-clad wall on the other. The route to the new hall from the main entry and box office takes performance-goers through this space on a bridgelike walkway.**

two upper lobby levels suspended from above with steel hangers, guests are rewarded with views out over the footpath and the university campus.

Once inside Koerner, the audience finds an astonishingly sensual environment. Overhead is an undulant canopy, or what McKenna refers to as a "veil" of timber "strings." The ribbonlike elements of laminated oak strips twisted with jigs serve as the backdrop for the chorus at the first balcony level. The strings extend over the whole room, but above the stage and orchestra they support a walking surface for technical staff and conceal equipment and rigging, helping satisfy the client's mandate for a visually uncluttered hall.

Although the basic geometry, modeled after famed shoebox halls such as Vienna's Musikvereinssaal (1870), was chosen primarily for its ability to create immersive sound, the tall and compact volume associated with this type provided an added benefit, given the difficult site constraints. To take advantage of this height for seating while preserving the hall's intimate feel, the perimeter walls and the outlines of balcony levels have been subtly sculpted. The room tapers toward the back, but then the balconies kick out in a slight reverse fan shape to provide a comfortable viewing position for people seated at the room's sides, explains Anne Minors, principal of the eponymous London-based theater-planning firm.

Almost every surface in the room performs an acoustical function, helping deliver sound to the audience "like extensions of the instruments," says Bob Essert, director of Sound Space Design. The firm, also based in London, acted as the project's lead acoustician. Essert explains that the canopy's walking surface reflects sound toward the seating area and also back to the stage, so that the musicians can hear themselves as they perform.

The sidewalls and the balcony fronts work in conjunction with the canopy. Chocolate-colored plaster tiles, 16 inches tall and 6.5 feet long, with a shallow radius in plan, are adhered directly to the perimeter walls' foot-thick, poured-in-place concrete substrate, creating a basket-weave surface. The balconies, meanwhile, have oak-plank fronts and are slightly convex in section. These elements' curved profiles make them ideal for scattering and blending mid-frequency sounds between 300 and 2,000 hertz, like those fundamental to notes played on a violin, says Essert. And to address higher frequencies, both the tiles and the oak cladding have been raked with a wire brush. The resulting small-scale texture provides warmth for classical music, but ensures that the environment is not too harsh for amplified performances. For such instances, the room also includes a system of retractable curtains that can be extended to fully or partially cover the perimeter walls and make the room "drier," or less reverberant. A highly reverberant room – one where sound persists or lingers long after the source has stopped – is preferred for unamplified music, but is undesirable for performances that depend on amplification.

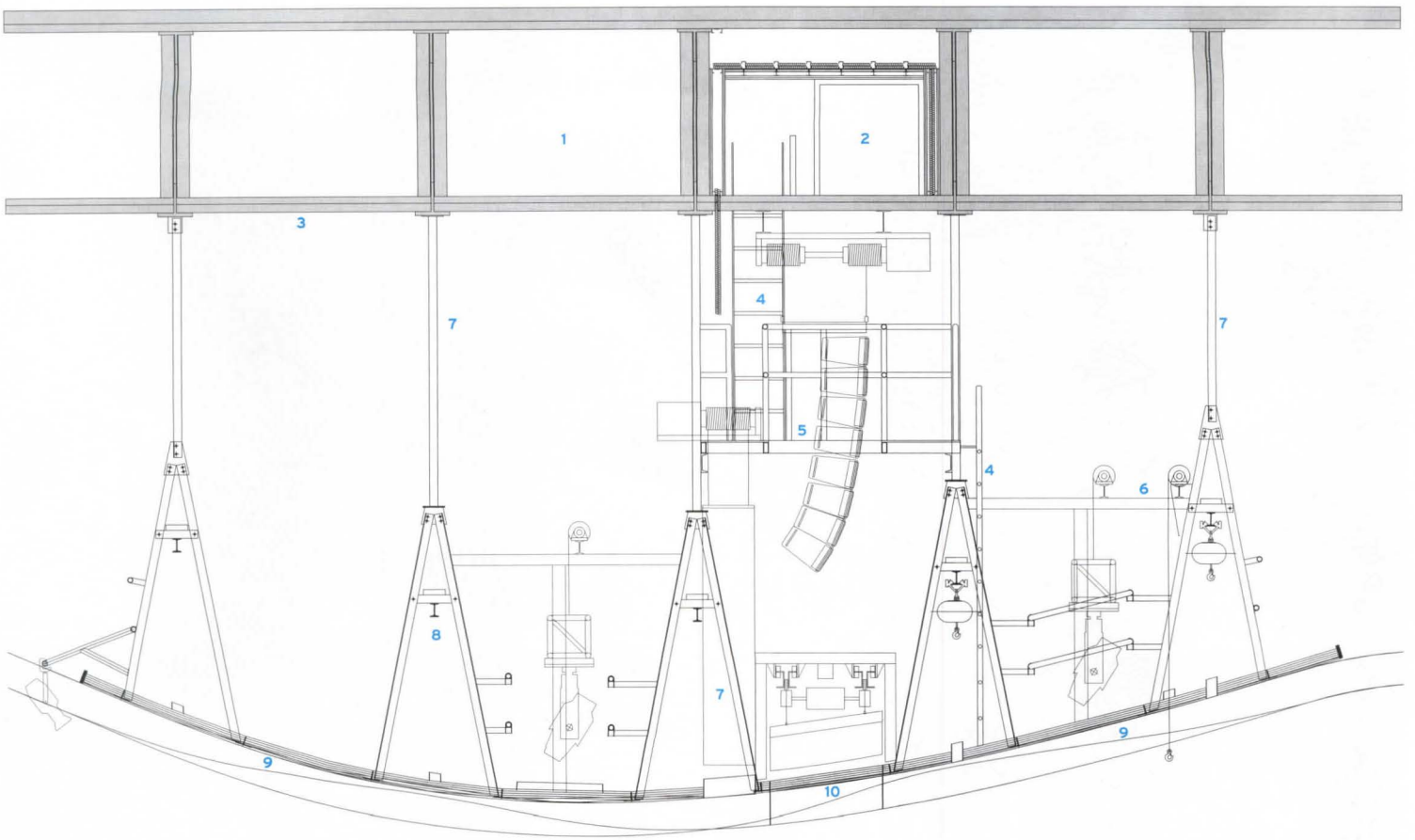
Just as critical as the techniques intended to distribute music throughout a room are the measures taken to keep potentially disruptive sounds, like the hum of the ventilation system and the buzz of lighting, or the din of traffic, to a minimum. To

CEU

BUILDING TYPES STUDY CULTURAL FACILITIES

ABOVE: **The convex shape of the oak balcony fronts and of the plaster tiles on the sidewalls in Koerner Hall, the conservatory's new 1,000-seat performance space, help scatter and blend mid-frequency sounds.**

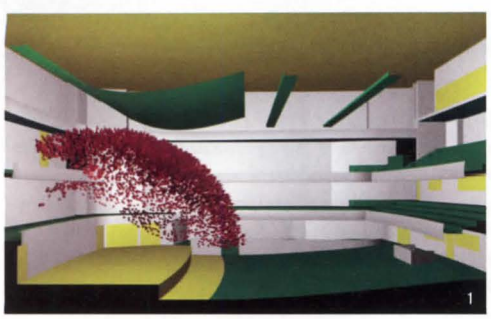
OPPOSITE: **A canopy of ribbonlike laminated oak strips twisted in jigs provides the room's defining element and helps conceal speakers, lighting, and other equipment. It serves as the backdrop for the chorus, then extends across the hall, over the stage and the seating area.**

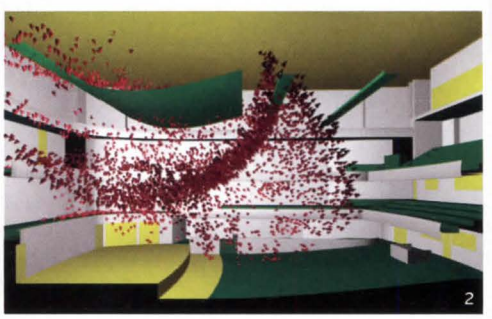


SECTION THROUGH KOERNER HALL REFLECTOR STRUCTURE

1 ATTIC
2 DOGHOUSE
3 CONCRETE ON STEEL DECK
4 SERVICE LADDER
5 SERVICE PLATFORM
6 LINE-SHAFT WINCH DRUM
7 STEEL HANGER
8 CONTINUOUS TROLLEY BEAM
9 PLYWOOD REFLECTOR
10 SPEAKER HATCH

With a computer model, acousticians investigated the path of sound waves in Koerner Hall: As the sound leaves the performers it expands toward the room boundaries (1); some of the sound is reflected from the timber platform suspended above the stage back toward the musicians and out to the audience, while other parts of the wave are reflected off the side balconies and adjacent walls (2); the walls, balconies, platform, and ceiling reflect some of the waves back and forth to generate the impression of envelopment, as other parts of the wave remain above the canopy, creating reverberance (3).



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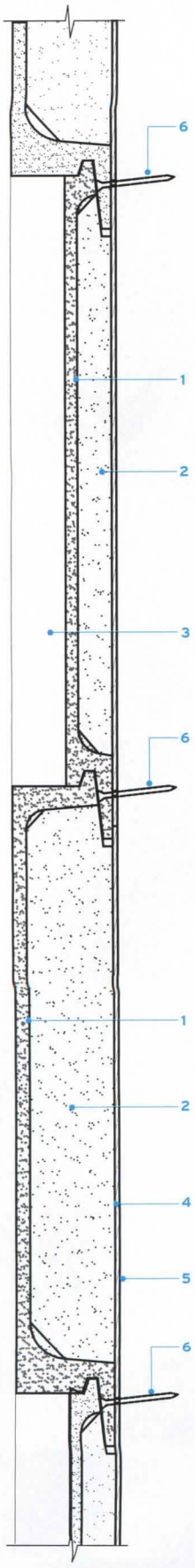
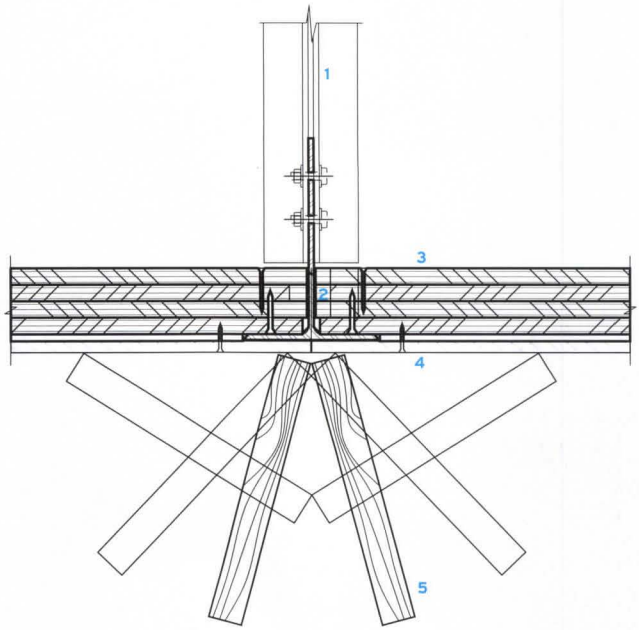


KOERNER HALL WALL TILE SECTION

0 3 INCH.
10 CM.

1 PLASTER FACE SHELL
2 PLASTER INFILL
3 CURVED FACE BEYOND
4 MASTIC
5 CONCRETE WALL
6 CONCRETE SCREW



KOERNER HALL REFLECTOR SECTION

0 3 INCH.
10 CM.

1 STEEL HANGER
2 STEEL FRAMING
3 CURVED PLYWOOD WALKING SURFACE
4 OAK VENEER
5 LAMINATED OAK VEIL STRINGS

that end, the client wanted what is referred to as an "N1" performance space – one where background noise is kept at or below the threshold of human hearing.

The strategies for eliminating sources from within the building were fairly straightforward. For the mechanical system, for example, designers located rooms containing air-handling units, chillers, and other noise-producing equipment in locations remote from the hall. They also specified attenuation in ducts, and carefully detailed them so they wouldn't act as bridges, carrying sound from adjacent spaces into Koerner. In addition, the team briefly considered displacement ventilation. This type of system – which is increasingly common in performance spaces where background noise, and also energy conservation, are concerns – distributes cool air through diffusers in the floor, allowing it to slowly and silently rise as it warms. However, when cost estimators deemed the necessary underfloor plenum too expensive, mechanical designers opted for a more traditional approach, creating a scheme with large-diameter supply ducts that introduce air into Koerner from the ceiling above the veil. Return grilles are located in the floor in and around the lowest rows of seating. Because the ducts are large, the system operates at a very low velocity, and is therefore extremely quiet, explains Joseph Merber, president of Toronto-based Merber Corporation, the project's mechanical consultant. "It creates a gentle 'rainfall' of air," he says.

Controlling the intrusion of sound from outside the conservatory building presented the project team with a bigger challenge – one complicated by a subway running under Bloor Street and by outdated ice-making equipment housed inside the sports arena and less than 20 feet from where the design team planned to place the stage.

To better understand how much of a problem these sources posed, early in the design process acousticians placed accelerometers around the site to measure the ground's vibration. Since this survey was performed before excavation had begun, it provided an estimate, rather than a precise assessment, of structure-borne sound that would travel from the soil to the building's foundation and ultimately to the hall's interior, explains Marc Bracken, a principal at Aercoustics, the project's local acoustician. Nevertheless, the study's results indicated that without mitigation, the vibrations would be perceptible inside the performance space. Then, through an acoustical simulation process called auralization, which allows project teams and clients to listen to the sound of an unbuilt room, acousticians demonstrated that the hall should be designed as its own concrete box, structurally independent from adjacent steel-framed portions of the expansion. They recommended that 12-inch-thick rubber isolators be inserted at the tops of columns supporting the level just below the hall. The resilient pads, which deflect about ¾ inch under the hall's weight, allow the portion of the building below the

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CIRCLE 30

The 900-square-foot rehearsal hall that marks the conservatory's new main entrance also serves as a space for small-scale performances and for special events, such as formal dinners. Like Koerner Hall, the room has variable acoustics, with curtains that can be extended to make it less reverberant.

CREDITS

ARCHITECT: Kuwabara Payne McKenna Blumberg Architects – Marianne McKenna, design partner; Robert Sims, associate in charge; Dave Smythe, Meika McCunn, project architects

CONSULTANTS: Halcrow Yolles (structural); Merber Corporation (m/e/p); Crossey Engineering (electrical); Sound Space Design, Aercoustics (acoustics); Anne Minors Performance Consultants (theater planning); Goldsmith Borgal & Company (preservation); Martin Conboy (architectural lighting)

CLIENT: Royal Conservatory

SIZE: 190,000 square feet

COST: $110 million

COMPLETION DATE: September 2009

SOURCES

BRICK: Sioux City Brick

CURTAIN WALL: Ferguson Neudorf

TIMBER VEIL: Art Magic Carpentry

PRECAST ACOUSTIC PANELS: Balmer Plaster Moldings

isolators to move in response to ground's vibrations, but prevent their transmission to the superstructure above.

Acousticians devised a similar system for the rehearsal hall. Here acoustic isolation was considered necessary because the room hovers over the main entry on the part of the site closest to the subway line, and also because the space, which can seat up to 200 people, doubles as a venue for small-scale performances, along with a 230-seat hall in the historic building.

For the new 900-square-foot, 33-foot-tall practice and performance space, the project team created a "box within a box" with a shell of steel and concrete surrounding an interior steel-framed structure sitting on isolation pads. Designers provided a connection to the urban environment with a generous double-walled corner window, elegantly framed in mahogany. A 2-foot gap between the interior and exterior insulated glazing units prevents the intrusion of unwanted sounds.

Vibrations were less of a concern for the two floors of small practice studios stacked under Koerner's lobby. Instead, the worry was that rehearsing musicians would disturb each other. So to address transmission between horizontally or vertically adjacent studios, designers incorporated such elements as ceilings suspended with isolation hangers, and carefully detailed the ceilings to keep them separate from sound-isolating walls between studios. They also worked with the mechanical engineers to ensure that the ventilation system wouldn't act as a conduit for sound from one room to the other.

The measures do not prevent sound from traveling into the corridors, since such transmission was not considered disruptive. This feature could even be considered a bonus, since it allows anyone walking through the hallway (including visiting journalists) to hear what the musicians are playing. And in mild weather, when the windows of the practice studios are likely to be open, sounds of an instrumentalist rehearsing a technical passage or of a singer vocalizing drift out onto Philosopher's Walk, creating an acoustical connection to the surrounding environment. Along with KPMB's thoughtful and elegant architecture, these sounds help broadcast the conservatory's cultural and educational mission. ■

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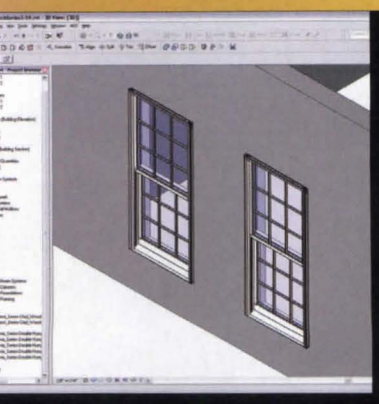

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CIRCLE 38

INNOVATIONS
ENCOURAGE GREEN RENOVATIONS

Green components help meet renovation goals for both energy efficiency and modernization.

By Celeste Allen Novak, AIA, LEED AP

CONTINUING EDUCATION

EARN ONE AIA/CES HSW/SD LEARNING UNIT

Use the learning objectives below to focus your study as you read **Innovations Encourage Green Renovations**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare and sustainable design credit, answer the questions on page 104, then follow the reporting instructions or go to **ce.architecturalrecord.com** and follow the reporting instructions.

Learning Objectives

After reading this article, you should be able to:

- Investigate alternatives for high-performance window replacements and design treatments that promote healthy indoor air quality.
- Evaluate and select waterproofing systems to renovate plaza deck applications that meet tight schedules and reduce construction waste.
- Discuss environmental advantages of engineered limestone and manufactured stone products that reduce waste and require less energy to ship.
- State the advantages of using movable sliding doors as a daylight strategy and to promote flexibility in open office planning.

New lightweight stone veneer clad GFRC (glass fiber reinforced concrete) cabinets make this 12-story-high balcony retrofit possible.

Photo courtesy of Eldorado Stone

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CIRCLE 48

Innovations Encourage Green Renovations

According to the *Green Outlook 2011* report, building owners cited three business benefits as the main drivers for building green: reduction in operating costs of 13.6 percent on average for new buildings and 8.5 percent for retrofits; increase in building values of 10.9 precent for new buildings and 6.8 percent for retrofits; and increase in return on investment (ROI) of 9.9 percent for new buildings and 19.2 percent for retrofits.[1]

By 2012, forecasters predict as much as a 17 percent increase in commercial green renovations.[2] Green construction currently represents approximately one third of all nonresidential construction and by 2015, from $14 to 18 billion will be spent on major retrofits and renovations to make buildings more sustainable. Designers are finding that as credit is tightening for new projects, opportunities to evaluate and improve on the design potential of existing buildings are creating new markets for sustainable development. This article will review opportunities to use a variety of materials that have green components to meet renovation goals for both energy efficiency and modernization.

GREEN OPPORTUNITIES

The following descriptions of new windows and window treatments, waterproofing, manufactured stone and sliding glass doors demonstrate just some opportunities to use innovative products in sustainable renovations.

Energy-Saving Window Options

Maximum energy savings can be achieved by renovating an existing building through the replacement of older windows. As Terry Zeimetz, AIA, CSI, CCPR, commercial marketing manager at Pella Commercial, comments, "The sustainable renovation of an existing building often includes improving energy efficiency so heating and cooling costs are reduced. Replacing the existing windows with new aluminum-clad wood, fiberglass or vinyl windows with a broad variety of glass options can help architects fine tune the energy efficiency of the building envelope by greatly reducing air infiltration, improving insulating value, and managing solar heat gain."

A case study discussed later in the article will show how new fiberglass windows with high-performance insulating glass have replaced steel frames and single-pane glass at the University of New Mexico. Another will demonstrate how the use of aluminum-clad wood windows with blinds in-between the glass can increase daylight and air quality while minimizing cleaning and maintenance in a New Jersey school.

These examples and others will demonstrate the versatility of new products that can be used to replace even historic windows as part of projects going for high green rating certifications as well as historic tax credits.

Window replacement for the William C. McGinnis Middle School in Perth Amboy, New Jersey, used operable aluminum clad wood double-hung windows with high-performance low-E glass. These windows also included a between-the-glass window blind treatment as a method to enhance daylight and reduce allergens in classrooms.

Self-Sealing Waterproofing

This thermoplastic roofing membrane was chosen as the best solution for cost and time saving for the roof renovation of the City of LA Police Department.

A new waterproofing product that has met even the most stringent review of the City of Los Angeles allows the contractor to retain large portions of adhered roof surfaces as part of a roofing replacement system that reduces waste removal. This welded thermal-plastic membrane is lightweight, easy to apply and can reduce the construction schedule by as much as 30 percent. According to Stacy Byrd, national products manager for the Building Materials Group of CETCO, "It has become a common trend for many building departments to encourage or require adherence to new green practices and principles using ASHRAE standards as a guideline for energy efficiency and performance. Manufacturers are increasing the performance values of new products to meet these guidelines." This product with its hydrophilic, water-activated self-sealing membrane is engineered as a high-performance waterproofing system.

Lightweight Manufactured Stone

Manufactured stone products are being used in interior and exterior applications in many new and highly creative ways. The designer can take advantages of products that are

lightweight, environmentally friendly and combine luxury with affordability to increase design opportunities in both residential and commercial settings. These products include a unique engineered limestone fireplace surround and the use of manufactured stone in outdoor cabinetry.

An authentic limestone appearance is achieved through a multi-step hand-finished process as shown in this close-up of a fireplace surround.

Fireplaces create a sense of home and place, but often are removed from a project budget because of additional costs for structure and installation. An innovative, engineered limestone fireplace surround allows the designer to re-insert the hearth into homes, multifamily housing, restaurants and hotel lobbies. An authentic limestone appearance is developed through a multi-step hand-finished process and the completed fireplace surround is lightweight and easily installed.

A new product line made of glass fiber reinforced concrete (GFRC) cabinets featuring manufactured stone veneer provides opportunities to design outdoor rooms. Design professionals who want to use the natural look of stone but are limited by structural weight and budget restraints can create new outdoor living spaces in both residential and commercial settings with a combination of GFRC cabinets and lightweight manufactured stone. These products make it possible to transform backyard gardens or high-rise balconies with seating walls, barbecue islands, fireplaces, fire pits and kitchens with products that look and feel like stone. A lighter product requires less energy to ship, as well as allows installation even on high-rise apartment balconies. They are light enough so that the contractor can even bring them up to the site on an ordinary elevator.

An office can be easily added to an existing office plan using glass sliding partitions and doors.

Flexibility and Sliding Doors

Modernization, rebranding and creating a new business image can drive major renovations. In fact, the refresh rate for new images for hotels, restaurants and offices is often part of a 5- to 10-year facility plan. New research in work styles has driven new configurations for old office floor plans. To maintain and recruit new staff, business owners and management are requesting interiors that provide healthier air quality, increased access to daylight, use less toxic finishes and allow for flexible work spaces that can be configured to a variety of work options.

Workspaces created from sliding glass doors can provide flexibility for shared workplaces, satellite offices, as well as group conference nodes. Glass sliding doors create a larger sense of space and can be used in daylight harvesting strategies for greater access to views of nature. These modular components replace traditional drywall partitions and promote change.

As Todd Schwarz, sales manager, Commercial Division of The Sliding Door Company notes, "Sustainability is not just a checklist of materials, healthy finishes or certified products. It is problem solving that affects design in a cost-effective manner. For an office setting, modularity allows for flexible configurations for growing businesses as well as businesses looking to downsize."

A private conference room created with a frosted sliding glass door wall with upper transparent window glazing shares daylight with the hallway.

REUSE, REDUCE, RECYCLE: CONSERVING RESOURCES

Building reuse is a strategy for the conservation of resources. Renovating an existing building rather than building new can reduce the environmental impact on the environment of materials transport and manufacturing and reduce waste.

Brent Spann, vice president of marketing of Eldorado Stone, comments: "Whenever possible, specified building products should have sustainable attributes. Some products that are lighter weight

are better in a life-cycle analysis because they can be transported over longer distances for less fuel and less impact on infrastructure. Products designed to reduce labor and waste during installation can also be considered sustainable."

Renovations using products, processes and materials that have green attributes can add substantial value to projects. The following is a continued discussion of windows, waterproofing, engineered and manufactured stone, as well as the use of glass sliding doors for maximizing the benefits of green renovations:

WINDOWS

New fixed fiberglass exterior window glazing systems offer the design flexibility of fixed aluminum glazing systems while providing greater energy efficiency at a lower cost. The result is lower energy bills, better U-factors, greater resistance to condensation and superior thermal comfort. Fiberglass frames provide thermal expansion at the same rate as the window glazing, assuring a weather-tight seal between the frame and the glass. Glazing gaskets required with aluminum systems are not needed, thus reducing maintenance. Fiberglass is inherently a good insulator, and unlike aluminum, a fixed fiberglass frame will not need to have a thermal break. The frames can also be filled with foam insulation to provide some of the highest frame insulation values possible.

Improving Indoor Air Quality

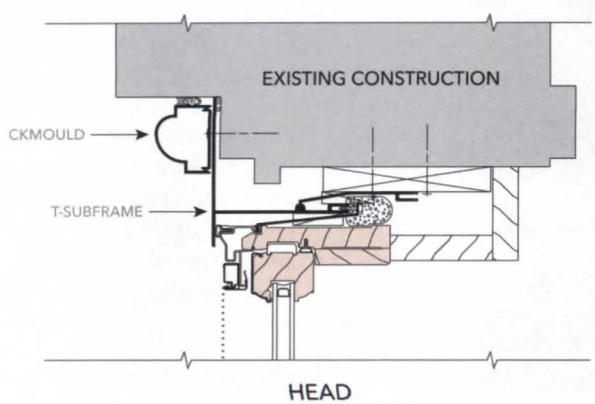
Poor air quality and high levels of indoor and outdoor air pollutants have been linked to the increase in asthma cases in school-age children over the past 30 years.[3] To reduce indoor air pollution, the EPA recommends controlling the sources of pollution, providing adequate ventilation and clean indoor air. Windows with ordinary room side blinds accumulate 200 times more of certain airborne allergens. Windows with integral between-the-glass blinds control the source of pollution by reducing the exposed surfaces for dust collection. They are easier to maintain and also provide sun controls to prevent glare and increase usable daylight in the classroom.

WATERPROOFING

The advantages of a new thermoplastic waterproofing membrane are that they reduce substrate preparation work and disposal, can be installed over damp concrete and that they provide superior moisture proofing. This unique thermoplastic waterproofing membrane incorporates a hydrophilic composite layer engineered to swell when exposed to water ingress through a breach in the thick thermoplastic membrane. This waterproofing membrane is installed with heat-welded seams and is reinforced with 5.0-ounce weft polyester knit fabric. This dual-composite membrane is puncture resistant, dimensionally stable

Speedy Construction and Preservation Tax Credits

In order to reduce energy loss, a major part of the Hotel Andaluz renovation in Albuquerque, New Mexico included replacement of the building's 192 historic wood windows with low-maintenance aluminum-clad wood double-hung windows—with a finely detailed sash profile, simulated divided lights and authentic spoon hardware. To save installation time as well as to allow for historic tax credits, the manufacturer devised an installation procedure using a T-subframe and brickmould that allowed for the installation of the new windows without removing the existing wood frame. Although the existing sash was removed, the existing frames were left in place and covered by the new subframe with brickmould.



This detail shows how the T-subframe and brickmould were used to cover the existing wood frame.

Images courtesy of Pella Commercial

Historic Hotel Andaluz replaced 192 historic windows with aluminum-clad wood double-hung windows. The architect is pursuing preservation and sustainable building tax credits for this project as well as LEED® certification.

Photo courtesy of CETCO

A unique waterproofing membrane composite with a 60-ml-thick thermoplastic membrane reinforced with a weft polyester knit fabric and a hydrophilic polymer layer that will activate and swell at any breach in the thermoplastic membrane to stop water ingress.

and has tested for both good tensile and tear strengths. This product is engineered to resist ground water contaminants typical of below-grade conditions and is chemically resistant to oils, chemicals, salt and other contaminants. The membrane has an extremely low water vapor transmission that qualifies it as a Class "A" Vapor Retarder per ASTM E1745 and can be used as a methane barrier.

This waterproofing system provides both active and passive moisture protection. Each membrane overlap seam utilizes both a conventional weld and an overlap assembly of the membrane system with hydrophilic properties to assure water-tightness eliminating reliance on seam integrity based on adhesives or installation labor.

Roof Replacements and Waste Reduction

This high-performance waterproofing can be used both for new building construction and remedial work such as plaza and podium deck renovations, as well as roof replacements. In the online portion of this article, you will find a case study describing a roof replacement for the City of Los Angeles Police Department Heliport that met stringent code requirements. New construction applications include property line construction, backfilled walls, under slabs, tunnels and greenroofs. For remedial projects, an advantage of this system is that it can be applied directly on top of the existing membrane. This can greatly reduce the time and money spent removing the existing waterproofing membrane to the structural deck as preparation for a new membrane. Specifications for remedial projects should include proper removal of old, loose waterproofing, and any flashing materials around penetrations, drains and perimeters. For this application, the waterproofing consultant should provide a field assessment of the remaining membrane and upon review and verification.

Photo courtesy of CETCO

Workers installing thermoplastic membrane waterproofing system over the existing failed rubberized asphalt membrane on the split-slab deck of this hospital.

MANUFACTURED STONE PRODUCTS

Engineered Fireplace Surrounds

The fireplace is often the most coveted space in the home with a lot of attention put on its look and feel. It can add to the sales value of any home or condominium project as a premium. Historically, people had to ship stone mantels from Europe to achieve the look of hand-carved limestone but some manufacturers now engineer this product to provide it locally. Partnered with modern environmentally friendly fireplaces like these, designers can expand their offerings for new green construction and renovation.

Engineered limestone fireplace surrounds are lightweight, more affordable and still hand-carved. To create this handcrafted look, a blend of natural limestone and other minerals and materials are used.

An authentic limestone appearance is developed through a multi-step hand-finished process. After being placed in the mold, the cementitious product containing a stone aggregate is hand-packed allowing undulations to be exposed on the surface of the fireplace surround. In the factory, the surround is sanded and ground to expose the aggregate. Each surround is unique and typically come in various color options and finishes. Bonded with glass fiber reinforced concrete (GFRC), these fireplace surrounds provide a lighter alternative to the traditional stone fireplace surround.

Installation of the surround around a fireplace requires the use of standard hand tools, not special equipment. They can be installed on top of standard wood framing. The items included in an installation kit are a mantel and legs, trim kit, ledger board, screws, color-matched caulk, shims and polyurethane adhesive. The installer will carefully measure the area, cut hearthstones and riser blocks with wet tile saws, attach the surround to a ledger board, drill and caulk. The weight of the surround will vary depending upon the profile chosen and the mortar, grout technique, lath and lath accessories used.

▶Continues at ce.architecturalrecord.com

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To receive AIA/CES credit, you are required to read the entire article and pass the test. Go to **ce.architecturalrecord.com** for complete text and to take the test. The quiz questions below include information from this online reading.

Program title: **"Innovations Encourage Green Renovations" (07/11, page 97)**. AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare/sustainable design (HSW/SD) credit. (Valid for credit through July 2013). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online and avoid handling charge, go to ce.architecturalrecord.com**

1. **Building owners cite these benefits as the main drivers for building green.**
   - ❑ **a.** Reduction in operating costs, employee benefits, increase in ROI.
   - ❑ **b.** Reduction in transportation costs, increase in employee welfare, market value.
   - ❑ **c.** Reduction in operating costs, increase in market value, increase in ROI.
   - ❑ **d.** Reduction in VOC emissions, increase in daylight, marketing a new brand.

2. **Fiberglass frames provide thermal expansion at the same rate as the window glazing, assuring a weather-tight seal between the frame and the glass.**
   - ❑ **a.** True
   - ❑ **b.** False

3. **The main advantages of providing integral between-the-glass blinds are to:**
   - ❑ **a.** provide sun control.
   - ❑ **b.** control the source of pollution.
   - ❑ **c.** provide historic tax credits.
   - ❑ **d.** a. and b.

4. **A unique, welded thermoplastic waterproofing membrane composite provides:**
   - ❑ **a.** access to nature.
   - ❑ **b.** protection from water.
   - ❑ **c.** protection from methane gas.
   - ❑ **d.** solar reflectance.

5. **The advantages of a thermoplastic waterproofing membrane include:**
   - ❑ **a.** reduce substrate preparation work and disposal.
   - ❑ **b.** the fact that it can be installed over damp concrete.
   - ❑ **c.** superior moisture proofing.
   - ❑ **d.** All of the above

6. **GFRC cabinets reduce installation time and costs as well as shipping weights making them less expensive to transport.**
   - ❑ **a.** True
   - ❑ **b.** False

7. **In comparison to other stone products, manufactured stone has what percent waste factor?**
   - ❑ **a.** 50 percent
   - ❑ **b.** 30 percent
   - ❑ **c.** 10 percent
   - ❑ **d.** 2 percent

8. **Sliding glass doors and partitions:**
   - ❑ **a.** are demountable.
   - ❑ **b.** are recyclable.
   - ❑ **c.** promote daylight sharing.
   - ❑ **d.** All of the above

9. **Using drywall instead of a glass movable partition:**
   - ❑ **a.** increases construction time.
   - ❑ **b.** requires code-compliant electrical wiring.
   - ❑ **c.** allows for flexibility.
   - ❑ **d.** a. and b.

10. **Innovative green products should be evaluated for their environmental make-up that includes:**
    - ❑ **a.** LEED® rating.
    - ❑ **b.** Los Angeles Building Approval.
    - ❑ **c.** Life-cycle Analysis.
    - ❑ **d.** ASHRAE Approval.

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Material resources used: This article addresses issues concerning health and safety and sustainable design.

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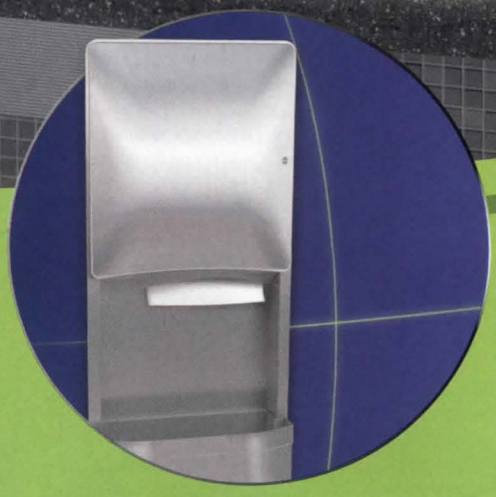
See endnotes in online portion of this article.

Elevate your restroom's look with DIPLOMAT™ accessories



New roll towel dispenser accommodates virtually any brand.

With unique dual-curve geometry, Bradley's latest commercial-grade accessories are a sleek and elegant finishing touch to any restroom. With the most models available in this class, Diplomat Accessories complete the look of the restroom – don't settle for less. Experience the modern refinement of Diplomat Accessories by Bradley.

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CIRCLE 10

INNOVATIONS ENCOURAGE GREEN RENOVATIONS

PRODUCT REVIEW

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ROOM DIVIDERS

Room dividers are a sliding door system separating one part of a room from another, using a proprietary panel-clamp smooth-glide system. Design is customizable with choice of finishes and highly safe glass types (tempered or laminated). Shown here: 3-inch, trio frame design, in black finish with combination-laminated clear and semi translucent glass.

www.slidingdoorco.com circle 1

2. PELLA COMMERCIAL

WOOD AND ALUMINUM-CLAD WOOD WINDOWS

Often used in historic renovation projects, Pella® Architect Series® wood and aluminum-clad wood windows are available in a broad range of sizes, shapes, wood types (pine, douglas fir, alder, & mahogany) and include many custom glass options and muntin patterns. Sustainable product attributes include recycled aluminum and glass, renewable wood, and energy efficient design.

www.pellacommercial.com circle 2

3. BRADLEY CORP.

CONTEMPORARY WASHROOM ACCESSORIES SERIES

Bradley's new Diplomat™ Series offers a contemporary alternative to boxy-looking washroom accessories. The unique, dual-curve geometry design offers a sleek and elegant touch to any restroom. The roll towel dispenser accepts any brand of paper allowing the designer to maintain restroom aesthetics. The Diplomat series is manufactured with renewable energy.

www.bradleycorp.com/diplomat/ circle 3

4. ELDORADO STONE

FIREPLACE SURROUNDS

Eldorado offers a collection of beautifully hand-crafted engineered limestone fireplace surrounds in nine distinctive styles. They come in a variety of colors and sizes from traditional, transitional to contemporary. The surrounds are lightweight, easy to install and more affordable than natural limestone. Installation kit included.

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5. CETCO

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CIRCLE 14

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DATES & EVENTS

New and Upcoming Exhibitions

Talk to Me
New York City
July 24–November 7, 2011
This exhibition by the Department of Architecture and Design at the Museum of Modern Art investigates the communication between people and objects, which range from interfaces and products to diagrams, visualizations, and furniture by designers, students, and scientists – all created in the past few years or under development. For more information, visit www.moma.org.

Because You Saw This Face and Painted It
Cortona, Italy
July 30–August 7, 2011
Part of the Tuscan Sun Festival, this exhibition features architect Alberto Alfonso's paintings and Edward Mayes's poetry. Alfonso and Mayes live in both America and Italy and their collaboration is inspired by their conversations and observations about the concepts of time in the two countries. The multiple meanings of the Samuel Beckett quote for which the exhibit is titled allude to a faceted sense of past, present, and future in both a cultural and deeply personal connection to time. For more information, visit www.tuscansunfestival.com.

Ongoing Exhibitions

Wendy Heldmann: You Are So Beautiful and I Am a Fool
Los Angeles
Through July 29, 2011
Los Angeles–based artist and SCI-Arc public programs coordinator Wendy Heldmann's paintings depict the architectural studio culture replete with cluttered desks, overturned chairs, site models, books, coffee cups, and the materials and tools of the trade such as spray cans, rolls of paper and tape, stacks of foam and plywood, computer peripherals, X-Acto knives, and pens. The paintings reveal the process of distinguishing the private in a communal space and act as portraits of the students who occupy these spaces. For more information, visit www.sciarc.edu.

It's Different
New York City
Through July 29, 2011
This exhibition features work by the 2011 winners of the Architectural League's Prize for Young Architects and Designers. The annual competition, series of lectures, and exhibition was established to recognize specific works of high quality and to encourage the exchange of ideas among young people who might otherwise not have a forum. This year's winners are Ajmal Aqtash, Richard Sarrach, and Tamaki Uchikawa; Jason Kelly Johnson and Nataly Gattegno; Kiel Moe; Unchung Na and Sorae Yoo; Catie Newell; and William O'Brien Jr. For more information, visit archleague.org.

Painting Urbanism: Learning from Rio
New York City
Through July 30, 2011
This exhibition showcases paintings, documentary footage, photographs, sketches, and plans of past, present, and future projects developed by Dutch artists Haas&Hahn. Featured past projects include the favela paintings in Praça Cantão in Santa Marta and "Rio Cruzeiro" on the stairs of Rua Santa Helena, all in Rio de Janeiro. Present projects include proposals for two New York interventions. Future projects are planned throughout the world. For more information, visit www.storefrontnews.org.

Light Pavilion
West Hollywood, California
Through August 6, 2011
The MAK Center for Art & Architecture presents Lebbeus Woods's and Christoph a. Kumpusch's most recent project, an experimental space designed for Steven Holl's building currently under construction in Chengdu, China. Construction drawings, in-process photographs, and a model are on view at the Garage Top at the Mackey Apartments. Created in collaboration with Kumpusch, Light Pavilion will be Woods's first built piece of architecture. Visit www.makcenter.org.

Jaume Plensa: Echo
New York City
Through August 14, 2011
A towering 44-foot-tall sculpture of a young girl's face in a dream state, inspired by Greek mythology, is the largest monolithic work of art presented in the history of Mad. Sq. Art, the free contemporary public art program of the Madison Square Park Conservancy. Situated on Madison Square Park's Oval Lawn, "Echo" marks Spanish artist Jaume Plensa's New York City public art debut. For more information, visit www.madisonsquarepark.org.

Glimpses of New York and Amsterdam in 2040
New York City
Through September 10, 2011
New York and Amsterdam are affected by shifting demographics, changes in climate, energy transitions, and global economic patterns. They share extensive waterfronts, a strong entrepreneurial spirit, and a long tradition of international collaboration and cultural diversity. The cities' plans focus on creating vibrant and sustainable urban environments. This exhibition presents an exchange program between the Center for Architecture in New York and the Amsterdam Centre for Architecture.

The organizations commissioned architects and landscape architects in both cities to contemplate the "future of the future," with an emphasis on five basic necessities for living: breathing, eating, making, moving, and dwelling. Visit cfa.aiany.org.

New Olds: Design Between Tradition and Innovation
Holon, Israel
Through September 10, 2011
Curated by Volker Albus, this exhibition at the Design Museum Holon presents works by over 60 Israeli and international artists. They are inspired by historical references and symbols ranging from deer antlers to cuckoo clocks, traditional porcelain, and the history of the Bauhaus. The works are produced through a variety of techniques including weaving, glass-blowing, wood-carving, and 3-D software. Visit www.dhm.org.il.

Daniel Buren: Echos, Work in Situ
Metz, France
Through September 12, 2011
Contemporary artist Daniel Buren created a site-specific installation at the Centre Pompidou-Metz, which will take up the entire exhibition space in Galerie 3. This commission was initiated in collaboration with Mudam - Musée d'art moderne Grand-Duc Jean, Luxembourg, where Buren created another installation, "Architecture, contrearchitecture: transposition." The project at the Centre Pompidou-Metz will echo this installation with a new intervention that responds to the space and architecture of the museum. Visit www.centrepompidou-metz.fr.

Charlotte Perriand: De la Photographie au Design
Paris
Through September 18, 2011
This exhibition examines the photography of French architect and designer Charlotte Perriand (1903–1999). Her work focused on the nature of living spaces and how good design can contribute to the betterment of society. Her design work ranged from European embassies to model kitchens and distinctive yet functional furniture. Many of Perriand's furniture designs are currently being manufactured by Cassina, which is one of the sponsors of this exhibition. Visit petitpalais.paris.fr.

Michael Singer: Projects in Art, Design, and Environmental Regeneration
Aalborg, Denmark
Through October 31, 2011
This exhibition of sculpture, collages, gardens, architectural projects, infrastructure design, and urban planning by artist and designer Michael Singer shows how artists, architects, and landscape architects are increasingly collaborating. Singer is at the forefront of this integrated design movement. His works are part of public collections in the United States and abroad. Throughout the 1970s and 1980s Singer's work opened new possibilities for outdoor and indoor sculpture and the development of public places. His most recent work has been instrumental in transforming public art, architecture, landscape, and planning projects into successful models for urban and ecological renewal. For more information, visit www.utzoncenter.dk/en/welcome.htm.

ColorForms
Washington, D.C.
Through Fall 2011
ColorForms presents works from the Hirshhorn's collection, dating from the postwar era to the present, that explore the ways in which color has been an essential tool for artists, regardless of medium. Although different in aesthetics and composition, all of the works in the exhibition reveal a blend of color and abstract form. Highlights range from an architectural light installation by James Turrell to Olafur Eliasson's Round Rainbow and a selection of Larry Poons's signature "dot paintings." For more information, visit hirshhorn.si.edu.

Sol LeWitt: Structures, 1965–2006
New York City
Through December 2, 2011
The first-ever outdoor career survey of Sol LeWitt's sculptures will be on view at City Hall Park. The exhibition will include 27 works from the seminal

artist's modular, serial, geometric, and irregular structures series attesting to his lifelong engagement with the medium and showcasing his most important ideas about sculpture. Two works will be installed inside City Hall and accessible by tour. For more information, visit www.publicartfund.org.

Lectures, Conferences, and Symposia

Making Cities Livable
Noosa QLD, Australia
July 27-29, 2011
This conference will be a platform for government and industry sector professionals to discuss causes, effects, and solutions that relate to population health, sustainability, natural resource management, transportation, climate change, urban design, and more. Delegates will examine the impact of urban and transportation planning on the health and well-being of the population and the planet. For more information, visit www.healthycities.com/au.

International Marble and Granite Fair
Espírito Santo, Brazil
August 23-26, 2011
The Cachoeiro de Itapemirim region, where this fair takes place, contains the largest quarries of marble in Brazil; shelters large, medium, and small extraction; and processes dimensional stone companies. For its 20th year, this fair highlights the evolution of dimensional stone marketing, technology, and innovation. Visit www.cachoeirostonefair.com.

UIA2011 TOKYO Youth Jamboree
New York City
September 22-29, 2011
Representing the international community, 160 young architectural professionals and students will work together at this workshop to reflect on architecture and the city of Tokyo in 2050, as well as to present their practical visions for the future. The workshop theme will encourage participants to think about cultural and sports facilities, as well as the many institutions that support the functions of a city. For more information, visit www.yj2011.com.

In Wright's Drafting Room: Architecture Fantasy Camp
Oak Park, Illinois
October 2-5, 2011
This workshop at the Frank Lloyd Wright Home and Studio offers amateur design enthusiasts the chance-of-a-lifetime opportunity to create unique designs with the assistance of a professional architect. No architecture experience is necessary, as the skilled designers will help participants create a new addition to their home, remodel part of their residence, or design a picturesque dream home. Visit www.gowright.org.

Made Expo
October 5-8, 2011
Milan
The Made Expo will focus on cutting-edge, high-tech innovations in design materials. The show takes a holistic approach to building design and construction, examining all the steps of the building process, from initial design and planning through construction and fit-out. A returning event this year will be the Building Technology Forum, which provides an opportunity for trade associations and federations, design institutions, professionals, and universities to meet in a collaborative setting and exchange ideas on the building process. Visit www.madeexpo.it/en.

CTBUH 2011 World Conference
Seoul
October 10-12, 2011
This conference will focus on the significant value of high-rise buildings in modern society from three perspectives: sustainability, safety, and livability. The goal of the conference is to provide an opportunity to share information with top industrial and academic experts in the field of high-rise buildings as well as to experience dynamic aspects of Seoul. For more information, visit www.ctbuh2011.org.

American Society of Landscape Architects Expo 2011
San Diego
October 30-November 2, 2011
More than 6,000 landscape architecture professionals from across the United States and around the world will gather for this annual expo to earn up to 21 professional development hours and to reconnect with the fundamental elements of design. For more information, visit www.asla.org.

Future Cities 2011
London
December 15-16, 2011
Future Cities is an annual conference series dedicated to the sustainable development of England's cities and urban areas. During the two-day event, more than 700 delegates from across the globe will listen to a range of presentations. They will discuss key issues and topics. Visit www.rantrad.co.uk.

Competitions

2011 Cleveland Design Competition
Registration Deadline: July 8, 2011
The 2011 Cleveland Design Competition invites professionals, students, firms and designers from all over the world to submit visions for a new kinder-

garten-through-12th-grade (K–12) public school in downtown Cleveland. The competition presents an opportunity to reimagine the school and explore how educational facilities must evolve to provide world-class opportunities for learning. Visit www.clevelandcompetition.com.

Architectural Record Cocktail Napkin Sketch Contest

Deadline: July 21, 2011

All you need is a white cocktail napkin and a pen to demonstrate that the art of sketching is still alive. Licensed architects and related professionals who practice in the United States are invited to enter this contest. Two grand-prize winners will be published in the October issue of ARCHITECTURAL RECORD, and winners will receive a box of napkins with their sketch printed on it. The grand-prize winners and up to 10 finalists will also receive a collection of Pentel Arts writing instruments. Winners and finalists will be exhibited in the online gallery. To enter, go to www.architecturalrecord.com/call4entries.

2011 AECOM Student Competition

Deadline: July 29, 2011

AECOM's "Urban SOS: Water" competition seeks creative design, planning, and engineering responses to urban sites facing water-based challenges. Responses can range from a strategic framework to a surgical micro-response, or from a whole landscape system to a single piece of architecture or infrastructure. The competition is open to teams of up to four students each for a $15,000 cash prize. A further award of up to $25,000 in value will be made available to a charitable/relief organization to help make the project possible. For more information, visit www.aecom.com/urbansos.

Zerofootprint Re-Skinning Awards

Deadline: August 31, 2011

This annual competition celebrates the year's most successful holistic retrofitting projects from around the world. The Zerofootprint Re-Skinning Awards invites the best minds in architecture, design, building, and engineering to submit green building projects that demonstrate the innovative use of energy-retrofitting technologies. Retrofitting and re-skinning involve the use of design solutions to dramatically reduce the environmental footprint of older, energy-inefficient buildings. Visit thezeroprize.com.

Close the Gap

Registration Deadline: September 1, 2011

This international design competition, sponsored by Transportation Alternatives and d3, invites architects, landscape architects, urban designers, engineers, and students to broaden the dialogue of alternative solutions for sustainable urban living. The competition focuses on the Midtown sector of New York City's East River Greenway, a critical missing link in Manhattan's alternative transportation infrastructure. Entrants are asked to critically examine the relationship of pedestrians and cyclists to public space, opportunities for merging the city with nature, as well as reengagement of the individual with social environments in a Midtown Manhattan context. Visit www.d3space.org/closethegap.

Symbiosis With the Landscape: Green Building in the Humid Tropics of Costa Rica

Submission Deadline: October 10, 2011

This competition offers architects the opportunity to propose cutting-edge, responsible environmental design solutions for the headquarters of FUNDECOR, a Costa Rican NGO dedicated to the preservation of the natural environment. As an environmentalist institution, the new building must be exemplary in green architectural design and construction. The project is to be located in a rural area in hot and humid Puerto Viejo de Sarapiquí, in the Caribbean region of Costa Rica. The jury includes architects Carlos Jiménez, Thomas Spiegelhalter, and Mauricio Quirós of the CCA in Montreal. Visit www.fundercor.org on or after July 18, 2011.

E-mail information two months in advance to recordevents@mcgraw-hill.com. For more listings, visit architecturalrecord.com/news/events.

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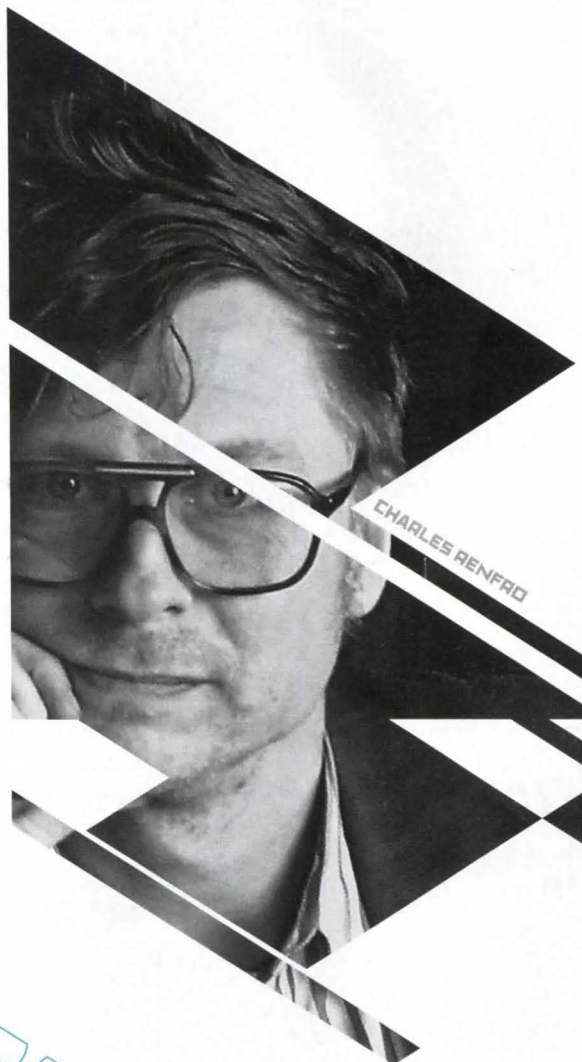

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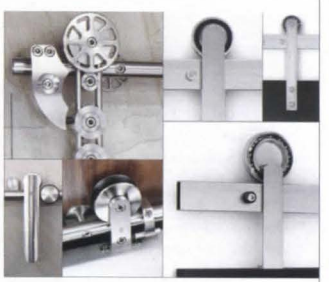

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Circle 157

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WR = Wide range of price points | **NC**= No charge | **G** = Product marketed as green | **NEW** = Released in the past 12 months

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Performance Data:
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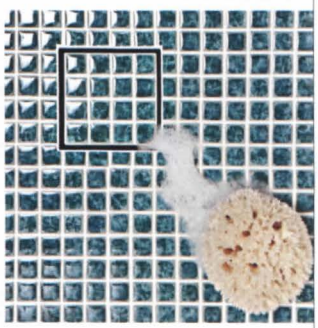
Circle 160

MECHANICAL SYSTEMS, HVAC, PLUMBING

MAKE THE DRAIN DISAPPEAR

WR | NEW

Infinity Drain



Made to obscure centrally placed waste outlets, the TileDrain makes the drain virtually disappear with a tile-inside frame.

Product Application:
- Incorporate tile into the grate frame
- Use with traditional four-way pitched floor
- Any type waterproofing, including hot mop

Performance Data:
- Stainless steel frame and channel
- Complete assembly kit in three sizes

www.InfinityDrain.com
516.767.6798 | **Contact:** info@InfinityDrain.com

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Circle 161

ROOFING, SIDING, THERMAL & MOISTURE PROTECTION

ARCHITECTURAL TERRA COTTA

$$$ | G

Boston Valley Terra Cotta

The TerraClad™ product line is a ceramic material formed into high-performance rainscreen panels, baguettes, and louvers.

Product Application:
- Harrah's Ak-Chin Casino, Maricopa, AZ (shown)
- McKinley High School, Buffalo, NY
- Virginia G. Piper Sports & Fitness Center, Phoenix, AZ

Performance Data:
- Miami-Dade NOA No. 08-1014-03; NYC MEA 1220-07M; TerraClad™: potential 10 LEED™ credits

www.bostonvalley.com
888.214.3655 | **Contact:** Tricia Aubrecht

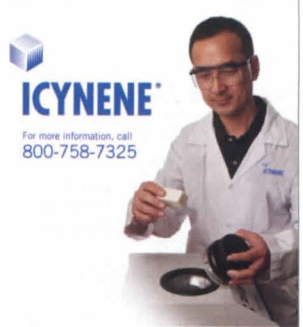
Circle 162

ROOFING, SIDING, THERMAL & MOISTURE PROTECTION

CLOSED-CELL SPRAY FOAM

$$$ | NEW

Icynene Inc.



ICYNENE MD-C-200™ is a 2.0-lb. medium-density closed-cell spray foam insulation and air barrier material.

Product Application:
- Commercial and residential applications
- Seamless integration with HVAC and other building system elements for total building performance

Performance Data:
- Validated by ICC-ES report ESR 3199
- Optimizes energy efficiency and design flexibility
- Improves durability and moisture management

www.icynene.com/icynene-md-c-200
800.758.7325

Circle 163

ROOFING, SIDING, THERMAL & MOISTURE PROTECTION

FIRE-RESISTANT INSULATED METAL PANEL

Metl-Span

ThermalSafe® fire-resistant insulated panel is engineered around a structural mineral wool core.

Product Application:
- Manufacturing plants, auxiliary buildings at refineries, and other at-risk-for-fire building installations
- High-occupancy structures

Performance Data:
- UL fire resistance ratings of the finished panel for nonbearing walls are: 1 hr in a 4-in. thickness; 2 hr in a 7-in., and 3 hr in an 8-in.

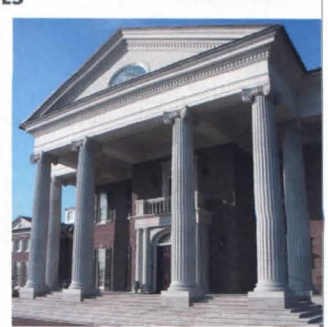
www.metlspan.com
877.585.9969

Circle 164

SPECIALTY PRODUCTS

ARCHITECTURAL COLUMNS & BALUSTRADES

Architectural Columns & Balustrades by Melton Classics



Melton Classics provides the design professional with an extensive palate of architectural columns, balustrades, cornices, and millwork. They invite you to call their experienced product specialists to assist you with the ideal products for your design, application, and budget. Columns are available in fiberglass, synthetic stone, GFRC, and wood. Their 80+ durable maintenance-free balustrades feel substantial yet have reduced weight. Also, ask about their low-maintenance fiberglass and polyurethane cornices and millwork.

www.MeltonClassics.com
800.963.3060 | **Contact:** Mike Grimmett

Circle 165

POSITIONS VACANT

ARCHITECT

Job as Designer/Project Manager in New Orleans, LA. Responsible for master planning and building design; hand and computer drawings of construction documents. Administration of contracts, codes, regulations (federal & local) as well as permits. Coordination and supervision of projects. Client Liaison. The employee may work alone or with a team of other technical employees on large scale and complex projects. Employee may work as supervisor or co-manager on certain projects. Autodesk AutoCAD 2011 and Autodesk Revit 2011. Licensure is preferred, but not required. $43,410.00/Yr. 40 hrs/wk. Requires a Bachelor's Degree or its equivalent in Architecture with three (3) years experience in Urban Design. Send Resumes/Inquiries to Verges Rome Architects, Attn: Trinity Bergeron, 320 N. Carrollton Ave., Ste. 100, New Orleans, LA 70119, Tel: 504-488-7739, Fax: 504-488-7743.

ARCHITECT

Master s in Architecture or foreign degree equiv. + 2 yrs. exp. with public sector projects such as renovations to public occupied buildings; write specifications; work with AutoCad; liaise with engineers re: engineering issues such as structural, mechanical, electrical, plumbing designs; prepare construction cost estimate for budget control. Mail resume: J.W. Piersol, Princ., M.C. Harry and Associates, 2780 SW Douglas Rd., #302, Miami, FL 33133.

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SNAPSHOT

PROJECT SUBDIVIDED COLUMNS
LOCATION VARIOUS
DESIGNER MICHAEL HANSMEYER

EVOKING THE CREATIONS of a brilliant, futuristic insect, architect Michael Hansmeyer's fantastical extrapolation of classical columns leaves no smooth surface untouched. Hansmeyer's intention, he says, was "to start with as little as possible and arrive at something procedurally." After subdividing a basic cylindrical shape, that "something" turned out to have 16 million faces – too many for even the most gigantic 3-D printer or robotic drill. Instead, an industrial mill cuts 3,000 individual layers of 1-millimeter-thick cardboard. The 3-meter-high columns pictured here are held together by their sheer weight. Newer versions will be made of a thermoplastic and stacked around a steel core to improve load-bearing capacity.

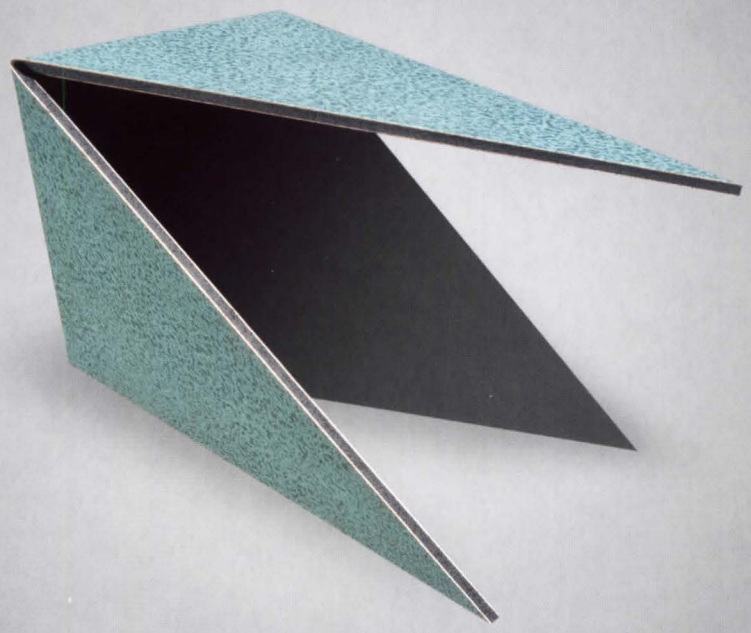
With this project Hansmeyer hoped to answer the question, "If one moves away from these additive processes in architecture and moves to something that's purely procedural, what kind of forms and shapes are possible?" The architect, who teaches at the Swiss Federal Institute of Technology in Zurich, used Java to write the computer program employed to generate the shapes. "I don't see an entire house being made of the columns, or at least not one I'd like to live in," says Hansmeyer. "But I would like to see what else is possible."

The columns will be on display at the Gwangju Biennale in South Korea from September 2 through October 23, 2011. *Laura Raskin*

View a slideshow on our website or in our iPad edition.

PHOTOGRAPHY COURTESY MICHAEL HANSMEYER/HOCHPARTERRE

natural metals series | integrating vision and reality



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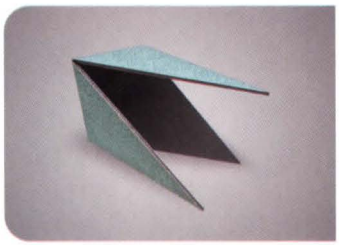

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MATERIALS

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INTEGRATING VISION AND REALITY

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