ARCHITECTURAL NEWS + PRODUCTS VOLUME 8, ISSUE 6

HANDS-ON APPROACH

CARRIER'S TOUCHSCREEN 33CONNECTSTAT THERMOSTAT PAGE 26



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CHANGE SERVICE REQUESTED

EARTH FIRST BuildingGreen announces its top products for 2017 PAGE 38

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<u>contents</u>





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NEWS

8 IN BRIEF

ARCHITECTURAL RECORD names its 2016 Products of the Year winners. Santa Monica adopts zero net energy requirements for new homes.

56 DATES + EVENTS

57 | **TRADE SHOW NEWS** The London Design Festival takes over the British capital, offering a cornucopia of fresh ideas and unexpected visual treats.

DEPARTMENTS

5 EDITOR'S LETTER

MIX IT UP

finishing materials.

10 NEW PRODUCT ROUNDUP

60 | PARTNERS IN DESIGN Architecture Research Office pairs

Plumen's 6-watt 003 bulb (top left)

spotlight with the ambient glow of candlelight. The SoftFold acoustic ceiling

combines the functional benefits of a

by Arktura (top right) has a parametric

design and an NRC of 0.75. Doimo Cucine's

Soho kitchen (left) incorporates multiple

up with Knoll sister company FilzFelt on a line of wool-felt acoustic tiles.

14 DOWNTOWN STYLE

FEATURES

Found Associates adds a youthful flair to Saks Fifth Avenue's latest New York location.

18 SHOW-AND-TELL

Architects discreetly work the details to create trade showrooms that convey a brand's DNA.

36 | MADE IN THE U.S.A. Transportation products and building goods are fueling manufacturing growth in Iowa, Kansas, Missouri, and Nebraska.

38 GREENSOURCE

Sustainable design resource BuildingGreen announces the winners of its annual top 10 building products awards.

PRODUCT SPECS

- 22 HARDWARE
- 26 HVAC
- 30 KITCHEN
- 32 | STAIRS + ELEVATORS
- 34 STOREFRONTS + ENTRANCES

CONTINUING EDUCATION

42 | MOVABLE FEASTS

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SNAP: (ISSN: Print 1947-2374 Digital 2470-1505) is published 6 times annually, bi-monthly by BNP Media II, L.L.C., 2401 W. Big Beaver Rd., Suite 700, Troy, MI 48084-3333. Telephone: (248) 362-3700, Fax: (248) 362-0317. No charge for subscriptions to qualified individuals.

Subscriptions to quamiera incursuas. Annual rate for subscriptions to nonqualified individuals in the U.S.A.: \$132.00 USD. Annual rate for subscriptions to nonqualified individuals in Canada: \$169.00 USD (includes GST & postage); all other countries: \$187.00 (int? Imail) payable in U.S. funds. Printed in the U.S.A. Copyright 2016, by BNP Media II, L.L.C. All rights reserved. The contents of this publication may not be reproduced in whole or in part without the consent of the publisher. The publisher is not responsible for product claims and representations.

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CANADA POST: Publications Mail Agreement #40612608. GST account: 131263923, Send returns (Canada) to IMEX Global Solutions, P.O. Box 25542, London, ON, NGC 682. POR SUBSCRIPTION INFORMATION OR SERVICE, PLEASE CONTACT CUSTOMER SERVICE AT: (847) 763-9534



Doorbusters? No Thanks.



I DON'T LIKE TO SHOP. I never have and expect I never will. But when I was five or six, I used to beg to go to one furniture store. It spanned all three floors of a converted Victorian home, with each room set up in vignettes. For me, it was like moving through a giant dollhouse, one where I could imagine a different life: the parties I'd have with my friends around that dining room table, the fun I'd have sleeping on the top bunk rather than in my twin bed, and how great my back would feel if we had a big massaging recliner.

That marketing technique of appealing to fantasy and aspiration is commonplace now, but it was new to me then. Perhaps I've grown immune to it as I've aged—or just become more time-pressed and distracted. But retail continues to be about creating an alternate world. Presentation is key, with visual displays and messaging becoming increasingly sophisticated.

In this issue, we examine how this plays out. The case study "Downtown Style" (page 14) delves into how **Saks Fifth Avenue**'s latest New York store fashioned a more youthful image for the brand. The feature "Show-and-Tell" (page 18) concentrates on trade showrooms and the ways they highlight the products for industry buyers.

Elsewhere, we look at advances in stairs and elevators (page 32) as well as in storefronts and entrances (page 34). We also include the top 10 green building products for 2017 (page 38) and a recap of the always provocative **London Design Festival** (page 57).

Wishing you a very happy holiday season,

ulie Taraska

JULIE TARASKA Editor

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SNAP 141

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Products that Are Worth Celebrating

BUILDING GOODS, lighting, and furnishings that benefited from engineering breakthroughs as well as those produced via digital technology dominated ARCHITECTURAL RECORD'S Products of the Year, the magazine's annual award competition for the best and brightest offerings in the industry. A jury of six architects, lighting designers, and interiors experts—most with extensive knowledge in both engineering and production methods—judged the contest, which this year added a ninth category, Hardware, Software, & Control Systems, to address the growing role of sensors and connected devices.

FRESH IDEAS

ARCHITECTURAL **RECORD's Products of** the Year winners include the SoftFold acoustic ceiling by Arktura (left) and the Fabrikachitectural mesh system (below). Brooks + Scarpa's Colorado Court (right), an affordable housing project built in Santa Monica, California, in 2000, has become a national model for energy efficiency.

Each juror rated hundreds of entries according to their usefulness, aesthetics, and degree of innovation. The winners, ranging from **Arktura**'s SoftFold parametrically designed acoustic ceiling to **Shildan Group**'s Fabrik dry-joint architectural mesh system, can be viewed in their entirety at architectural record.com/ 2016-record-products. —Julie Taraska

Santa Monica Adopts Zero Net Energy Requirements for New Homes

IN OCTOBER, the city council of Santa Monica, California, approved a sweeping ordinance requiring all newly built singlefamily homes, duplexes, and low-rise multifamily buildings to have zero net energy (ZNE) consumption. According to the 2016 California Green Building Standards Code (CALGreen), whose definition was adopted for the ordinance, a ZNE home is one that produces as much renewable energy on-site as it consumes annually. The ordinance is the first of its kind in the world, according to officials.

The state of California already had an upcoming code requirement on the books for all new residential construction to achieve ZNE by 2020. But Santa Monica has often adopted its own ambitious policies on environmental issues as a way to drive change elsewhere, says Dean Kubani, the city's chief sustainability officer. "Many practitioners and cities in California aren't aware this code change is coming in 2020 or they don't believe the state will be ready," he says. "Taking this action now gives us a



pathway toward this goal, helps us raise awareness, and drives home the importance of the issue."

The ordinance must be given the green light by the California Energy Commission (CEC) through a process that includes a public comment period. Kubani estimates that the guidelines could officially go into effect as soon as late February 2017.

Once the ordinance passes, all permit applications for new residential construction in Santa Monica will need to comply with ZNE. Projects in schematic design when the ordinance passes but not in compliance would have to be modified, while those with approved permits would be grandfathered in. The new measure will be enforced via the city's existing building code, the same process the state intends to use in 2020.

Attaining ZNE status for newly built homes in sunshine-abundant California is "absolutely achievable" by 2020, says Kubani. The prices of solar electric and solar thermal systems have been steadily decreasing for years, as Santa Monica officials also worked closely with the CEC, local utilities, and local design and construction firms to assess the ordinance's technical and cost feasibility. Furthermore, several energy-efficient affordable housing projects already exist in Santa Monica, such as Colorado Court and Pico Place, built, respectively, in 2000 and 2014 by Los Angeles firm **Brooks + Scarpa**.

The ZNE ordinance is just one of the city's strategies for achieving its long-term goals for climate change mitigation; another is releasing zero carbon by 2050. "Ideally, we'll show the country and world that ZNE buildings are practical and affordable," says Kubani, "and eventually they'll become the new normal." —Deborah Snoonian Glenn

Fresh Design

Mariano's Fresh Market, Oak Lawn, IL Owner: Stony Creek LLC, Itasca, IL Architect: Camburas & Theodore, Des Plaines, IL General contractor: J. Divita & Associates, Spring Grove, IL Installing contractor: WBR Roofing, Wauconda, IL Profiles: Corrugated, Flat sheet **Color: Silver Metallic**

"The design flexibility and economic value of PAC-CLAD metal panels contributed to the design vision in a way other materials couldn't."

Domenic Pezzuto, senior project architect, Camburas & Theodore Ltd.

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NEW PRODUCT ROUNDUP









Bright options for contract, public, and residential spaces



MANUFACTURER: Boyd Lighting

PERFORMANCE: This linear pendant featuring etched white glass between parallel lengths of extruded aluminum contains two 3000K LED strips that can be dimmed separately. PRICE RANGE: \$\$\$

APPLICATIONS: The pendant comes in three lengths and nine powder-coat options. BOYDLIGHTING.COM (SNAP #200)



MANUFACTURER: Lutron **PERFORMANCE:** This system of dimmers, switches, and controllers works with a wireless hub that lets facility managers monitor and adjust fixtures from any smart device.

PRICE RANGE: \$-\$\$ **APPLICATIONS:** The scalable Vive integrates via BACnet with other HVAC, IT, audiovisual, and energy-management systems.

LUTRON.COM (SNAP #201)

BEVELED BLOCK

MANUFACTURER: USAI Lighting

PERFORMANCE: This ceiling-mount LED fixture with an enclosed junction box comes in two styles and four wattages. PRICE RANGE: \$\$\$

APPLICATIONS: Ideal for industrial or exposed concrete ceilings, the dimmable 53/16inch-square units offer 25- to 90-degree beam spreads. USAILIGHTING.COM (SNAP #202)



LINILED RGB

MANUFACTURER: Organic Lighting Systems **PERFORMANCE:** These specification-grade, colorchanging light strips, measuring 1/2 inch wide by 1/4 inch high, have a

bend radius of 11/4 inches. PRICE RANGE: \$\$

APPLICATIONS: The dimmable strips work indoors and out, including in wet locations, and use fewer than 2 watts per foot. ORGANICLIGHTING.COM (SNAP #203)

KEY \$=value, \$\$=mid-range, \$\$\$=High-end

10 | SNAP | NOVEMBER/DECEMBER 2016 | ARCHITECTURALRECORD.COM

ECO-FRIENDLY ATTRIBUTES





MANUFACTURER: Troy Lighting

PERFORMANCE: An angular, hand-worked iron frame surrounds a frosted-glass globe encasing a 12-watt LED.

PRICE RANGE: \$\$-\$\$\$ APPLICATIONS: Available as a

wall sconce and a landscape pendant plus three vertical options, Origami comes in a bronze or graphite finish. TROY-LIGHTING.COM (SNAP #204)

6. LIGHTOLIER CALCULITE LED

MANUFACTURER: Philips PERFORMANCE: You can upgrade the driver and light engine of these LED downlights without replacing the frame. PRICE RANGE: \$\$

APPLICATIONS: A mounted spring secures the reflector to the luminaire, which comes in a range of trims, aperture sizes, and beam spreads. LIGHTING.PHILIPS.COM (SNAP #205)



MANUFACTURER: Plumen **PERFORMANCE:** The lamp's faceted gold element combines the functional benefits of a spotlight with the ambient glow of candlelight.

PRICE RANGE: \$\$

APPLICATIONS: Plumen's glass and anodized-aluminum 6-watt LED bulb provides 250 lumens and lasts 10,000 hours. PLUMEN.COM

(SNAP #206)

8. LUMENALPHA SPOT LARGE

MANUFACTURER: Lumen Pulse Group

PERFORMANCE: Delivering up to 3000 lumens, this adjustable LED spotlight offers superior color stability.

PRICE RANGE: \$\$-\$\$\$ **APPLICATIONS:** The fixture can be specified with Lumentalk, which allows for digital dimming of individual luminaires. LUMENPULSEGROUP.COM

(SNAP #207)

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SNAP 50

CASE STUDY: DEPARTMENT STORE



SAKS FIFTH AVENUE, NEW YORK

Downtown Style

PROBLEM: Create a youthful retail image for a storied brand. **SOLUTION:** Craft an open-plan space with an effervescent palette, contemporary finishes, and designer furnishings. ACROSS THE STREET from the 9/11 Memorial in New York City, Brookfield Place, the former World Financial Center designed by César Pelli in the 1980s, is undergoing a transformation. Located near the World Trade Center site and Santiago Calatrava's Fulton Street transit hub, the office-building complex is luring not only corporate tenants like Time Inc. but also a spate of upscale food and retail businesses. Among them, a new Saks Fifth Avenue satellite is notable for its elegant yet hip boutique style—a fresh take for the iconic department store.

Designed by the London-based firm Found Associates, Saks Fifth Avenue Downtown is tucked into the first two stories of an octagonal pavilion at the base of one of the complex's towers. Departing from the sharp edges of the building's exterior, principal Richard Found stacked a pair of glazed rotundas behind the faceted facade, wrapping the glass on the inside with fixed, brushed-brass louvers that filter sunlight into the sales areas. "This allows views out to the World Trade Center," says Found. "At the same time, it provides a backdrop for the merchandise."

Throughout the store, color and material choices are subtle, serene, and surprisingly consistent for a multibrand retail establishment. The soft brass returns on garment racks and low-profile casework. Elsewhere, pastel upholstery wraps seating from Fritz Hansen and Hay, champagne-hued carpeting alternates with terrazzo floors, and handfinished polished plaster coats the walls.

An open plan maximizes the quirky 65,000square-foot space with avenues that branch from the rotundas back toward the building's core. Whenever possible, Found fused structural, mechanical, and decorative elements. Escalators at the center of the rotundas bisect circular sales hubs, which are in turn ringed by

YOUNG AT HEART

A 220-foot-long mural follows a corridor into Saks Fifth Avenue Downtown's shoe department, where a spectacular light installation hovers over a custom settee designed by Found Associates, the project architects.



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CASE STUDY: DEPARTMENT STORE



clothing and accessories. Tall mirrored modular displays fade into the scenery and serve as storage units and full-length mirrors.

The warm LED lighting is equally discreet. The fixtures are concealed in ceiling coves that follow the lines of the architectural elements, with the lights' glow creating halos around columns and above the rotundas. The lighting also delineates a long corridor leading to the shoe department, where sits Found's one touch of bling: a 15-foot-wide, half-spherical chandelier with 50 globes. Mounted on a polished-metal ceiling, it's a glittering orb—a dazzling effect, and all the more so in a Saks that offers an understated alternative to the usual luxury experience.

IN THE DETAILS

Polished plaster walls and poured terrazzo floors lend a quietly luxurious feel to the space.

Found Associates TYPE Retail
Retail
PRODUCT
EcoSpec Linear HP INT WW Warm Cove
MANUFACTURER
EcoSense Lighting
PERFORMANCE
This interior, wall-washing fixture is available

= ECO-FRIENDLY ATTRIBUTES

in 2300K and 2500K color temperatures and can be smoothly dimmed to zero.

APPLICATIONS

Ideal for retail and hospitality spaces where a warm hue will complement the environment, the cove light comes in two lumen outputs and in standard and low-power versions.

ECOSENSELIGHTING.COM (SNAP #208)

KEY \$= VALUE, \$\$= MID-RANGE, \$\$\$= HIGH-END

IN THIS PROJECT



RO LOUNGE CHAIR

MANUFACTURER: Fritz Hansen PERFORMANCE: Spanish designer Jaime Hayon created this oversize armchair that mixes two fabrics—one on the seat shell and one on the cushions.

PRICE RANGE: \$\$\$

APPLICATIONS: This chair for residential and hospitality use comes in nine colors, with oak or brushed-aluminum legs. A matching footstool is also available.

FRITZHANSEN.COM (SNAP #209)



REGAL SELECT

MANUFACTURER: Benjamin Moore **PERFORMANCE:** This low-odor, no-VOC interior paint has a mildew-resistant coating. **PRICE RANGE: \$\$**

APPLICATIONS: Available in five finishes and dozens of colors, this 100 percent acrylic paint for high-traffic areas such as corridors and kids' rooms is durable and easily cleaned. It also offers excellent coverage for problem areas. BENJAMINMOORE.COM (SNAP #210)



SEDUCTION

MANUFACTURER: Fabrica **PERFORMANCE:** This dense cut-pile carpet made of 100 percent Stainmaster TruSoft BCF nylon type 6,6 has a velvety finish.

PRICE RANGE: \$\$

APPLICATIONS: Stain protection and static control make Seduction ideal for busy areas, while its 60 neutral colorways help it fit into nearly any interior scheme.

FABRICA.COM (SNAP #211)



TRAVELMASTER 110

MANUFACTURER: Kone PERFORMANCE: This escalator with a 30-degree incline and 31-foot vertical rise offers numerous energy-saving options, including reduced operating speed, a standby mode, and LED lighting.

PRICE RANGE: \$\$-\$\$\$

APPLICATIONS: With its streamlined appearance and duty cycle of 12 to 16 hours a day, TravelMaster 110 suits indoor retail uses. KONE.US (SNAP #212)

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TRADE SHOWROOMS



STRIPPED DOWN Montalba Architects opted for visually light materials and furnishings—such as canvas walls and plywood desks—at Citizens of Humanity's L.A. showroom (above). A linear skylight offers natural illumination (right).

Show-and-Tell

Architects discreetly work the details to create spaces that convey a brand's DNA.

BY ALEX KLIMOSKI

FOR CLOTHING AND furniture retailers, showrooms offer inviting spaces where visitors can be immersed in their brands. More akin to galleries than retail storefronts, these appointment-only places are intended to cultivate a rapport with seasoned buyers, not provide eye candy to walk-in customers. To achieve their unique goals, designers of the following trio of showrooms combined a muted palette, targeted lighting, and a flexible floor plan to create interiors that allow products to shine.

CITIZENS OF HUMANITY, LOS ANGELES

Montalba Architects had specific aims for the showroom of premium denim brand Citizens of Humanity: The space needed to enhance the clothings' quiet color palette, function as a work studio for company designers, and serve as a venue for PR events and fashion shows. "We had to create a simple backdrop that wouldn't compete with the product," explains principal David Montalba, "but rather let it be about the product."

To achieve this, the Santa Monica, California-based firm stripped the heavy wood and rusted steel from the 4,000square-foot industrial space, located on the top floor of a former piano factory. In its stead, a white-box gallery was fashioned from simple, straightforward materials.

The team opened up the European oak floor by placing three evenly spaced canvas walls along both lengths of the main showroom. The rectangular surfaces, finished with **Benjamin Moore** Super White matte paint, appear to float off of the original brick





walls. Detachable stainless-steel rails for merchandise display punctuate each wall, creating visually quiet alcoves in which to examine the clothing.

At the floor's center, custom desks and Eames molded-plywood dining chairs form individual—and easily moved—workstations. More steel rails holding clothing separate each desk. A 40-inch linear skylight bathes the space in natural illumination. **Lytespan**'s 22 MC6 track lighting supplements the efforts, adding spots of brightness as well as creating, according to Montalba, a soothing, "lightly spiritual" feel.

BERNHARDT DESIGN, NEW YORK

Bernhardt Design specializes in high-end contract furnishings and textiles. To welcome visitors and allow them to visualize how the products could fit various interiors, architect **Lauren Rottet** employed a milky-white palette, luxurious materials, and a spectrum of discreet lighting. The goal in this "gracious living space," as she describes it, was to achieve a background that was "almost invisible."

Upon entering the 20,000-square-foot showroom, located in New York's NoMad neighborhood, guests step into a serene reception area with a front desk and ceiling-height posterior wall both fashioned from Calacatta Lincoln marble. The marble appears again within the showroom's bar area, whose backlit, 20-foot-long overhang was made with Krion solid surfacing from **Porcelanosa**.

Custom cut walls by **Chelsea Carpenters** guide visitors through the space, framing products from multiple vantage points; lit from below with mounted linear cove lights, they appear to float. **Contech's** RAH/CTL130 and LT/CTL130 recessed track lighting illuminates the Bernhardt seating, table, and casegoods collections, which are arranged in vignettes. Thirdparty products including **Flos** table lamps, **Jake Dyson** task lights, and



Alessi accessories are interspersed throughout. "We wanted to show how Bernhardt's pieces work both as a collection and in concert with other items you might have in your home or office," says Rottet.

The brand's extensive textile collection—displayed along a 30-foot wall by the bar area—lends a pop of color. The high-gloss, reflective terrazzo floor by **Amadeus Marble & Granite** serves to heighten the showroom's ethereal atmosphere.

KNOLL, HOUSTON

Manufacturer of iconic furnishings by Marcel Breuer, Mies van der Rohe, and Charles and Ray Eames, Knoll has a venerable history.



LINEUP

Vignettes pepper Bernhardt Design's 20,000-square-foot New York showroom (top), where designer Lauren Rottet framed views (above) and created spaces for receptions, like the bar and back wall made of Calacatta Lincoln marble (left).



A FAMILY AFFAIR Architecture Research Office threaded the storied history of Knoll throughout the brand's Houston showroom, adding a timeline and black-and-white images of its designers (top). The space features numerous products from Knoll sister companies, such as acoustic panels by FilzFelt and space dividers made with Spinneybeck leather (left).

For its Houston showroom, the company wanted **Architecture Research Office** to highlight that legacy while imbuing the space with local flavor. The design team then worked with regional sales teams to understand the area's culture and clientele and determined that rather than, say, having a casual feel and stocking products popular with tech companies (as Knoll's San Francisco showroom does), the Houston site needed to be "dressy," according to ARO principal Kim Yao, and reflect the largely corporate market there.

"We played up details that were Texas-oriented and addressed the Knoll brand," says Yao of her team's approach. In the reception area, a wall made with leather by Knoll sister company **Spinneybeck** provides a backdrop for a corporate timeline. Other walls are stamped with Knoll's historic Circle K logo; brass versions serve as door handles and are even inlaid intermittently in the white epoxy terrazzo flooring.

Vaulted ceiling panels and acoustic baffles—designed by ARO and manufactured by **FilzFelt**, another Knoll subsidiary—line the 8,000-square-foot showroom. "The space allows you to draw connections between different parts of the brand," explains Yao. The same could be said of the nearly seamless mix of staged vignettes and work areas, all featuring Knoll furnishings in various applications.

The result is a showroom that guides the visitor and highlights products but leaves open the possibilities for their uses. It is only through the careful coordination of color, materials, and spatial organization that these goals are achieved—and that designers create interiors that are bright and inviting and, in the end, capture the brand.

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Finishing Touches

MARION CAGE MCCOLLAM's cabinetry hardware is angular and oblique. That design direction makes sense when you learn that the New Orleans-based artisan is not only a licensed architect but also a former employee of **Gensler**, **Zaha Hadid**, and **Bernard Tschumi Architects**. "Much of what I do, whether it's a design for a building or a drawer pull, is problem-solve," she says. Her proclivity for finding—and creating answers led her first to crafting jewelry and later to hardware and tabletop accessories.

The Peak collection—designed under the brand name **Marion Cage**—is composed of six faceted pulls and knobs handcrafted via lost-wax casting. The method, repopularized by jewelry design, involves creating a mold around a wax shape. Once the mold is made, the wax model is melted away so molten metal can be poured inside to form the desired shape. Transitioning from jewelry to bronze hardware was "a very natural evolution," says McCollam. She also works with Rhino, a 3-D modeling software that helps her shift between scale and material.

Although every stage of her work demands intense focus, McCollam says the final product is almost always unexpected. "It's very much about creating the right environment for happy accidents," she says. Look for more of those soon, as she is introducing drapery hardware next. —Ashleigh VanHouten

RIGHT ANGLES

Marion Cage McCollam utilizes old-school casting techniques and 3-D modeling software to create her Peak hardware, including (from top left) Hedron pulls, Ingot knobs, and an Elongated Shard #1 pull.



ODEN

MANUFACTURER: Krownlab

PERFORMANCE: This architectural slidingdoor hardware system with customextruded track has no visible fasteners, creating the illusion of a floating door. PRICE RANGE: \$\$\$

APPLICATIONS: Available in a brushed or black stainless-steel finish, Oden can support panels up to 400 pounds and comes in single, bi-part, and bypass door configurations with adjustable stops. KROWNLAB.COM

(SNAP #213)

KEY \$= VALUE, \$\$= MID-RANGE, \$\$\$= HIGH-END



UNDULATE SUITE

MANUFACTURER: SA Baxter PERFORMANCE: Created via lost-wax casting, this comprehensive collection of knobs, levers, rosettes, and pulls possess graceful curves and organic shapes. PRICE RANGE: \$\$-\$\$\$

APPLICATIONS: Cast in bronze, white

bronze, and solid brass, this hardware suits hospitality and high-end residential use. The pieces, available in 30 finishes, incorporate recycled material. SABAXTER.COM (SNAP #214)

ECO-FRIENDLY ATTRIBUTES



TABLEAU COLLECTION

MANUFACTURER: Atlas Hardware PERFORMANCE: The round and square base and handle components of these door and drawer pulls ship unassembled, so they can be combined for a custom look. PRICE RANGE: \$

APPLICATIONS: This zinc-alloy collection for furniture and kitchen and bath cabinetry is offered in four finishes. Sizes range from 17/16 to 3 inches.

ATLASTOTHETRADE.COM (SNAP #215)



SATURN

MANUFACTURER: Manital

PERFORMANCE: This roughly 7-by-6-inch metal rosette doorknob set by Mario Mazzer and Giovanni Crosera has an inner disc that's customizable and removable.

PRICE RANGE: \$\$\$

APPLICATIONS: Designed for use with Manital's Ratio lever, the door fixture comes in three finishes and multiple metal and leather disc options. The disc also can be laser-engraved. MANITAL.COM

(SNAP #216)

Mixed Media

FOR NEARLY 40 years, Waterworks

has been crafting metal bath and kitchen fixtures, bringing elegance to everyday fittings. In light of that mastery, it might come as a surprise that luxury leather goods inspired the Danbury, Connecticutbased company's latest collection of hardware and accessories.

The nearly 80 offerings feature uncommon material pairings: Pulls are fashioned from saddle-stitched Italian leather, and knobs are made of solid walnut and polished brass. For direction, the team looked to "the decorative elements of antique furniture and steamer trunks, which balance wood and metal in a beautiful yet protective way," according to Peter Sallick, CEO and creative director of Waterworks. Other pieces are sculptural and organic, incorporating horn and onyx. "Mixing materials and finishes is very on-trend with designers right now," explains Sallick. "We're also seeing more interest in this from our clients." - Dina Hampton





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A Fan of the Arts

IN ADDITION TO eliciting chuckles with its cheeky name, Big Ass Fans drew much attention when it debuted its first collection of attractive, efficient, and, well, big-ass commercial fans in 1999. But in 2012, the Lexington, Kentuckybased company—now known as Big Ass Solutions—made even bigger waves with a modern and sculptural line called Haiku. In the latest twist, the manufacturer has updated these bestselling ceiling fans by turning their airfoils into triptych canvases. screenprinted versions of seven original works created by local artists. Available on the 60- and 84-inch-diameter models, the reproductions boast all the functionality that the company's fans afford, including an integrated motion sensor and mobile-app control. Each artwork exudes a different character to suit a range of residential and commercial interiors. Hunter and Amelia Stamps's Flying Machine, for instance, with its Leonardo da Vinci–inspired drawings of old-fashioned airplanes, hot-air balloons, and bird's wings, would suit a child's room. Luke Achterberg's Dapper Delineation, whose red racing lines reference tricked-out hot rods, would lend a splash of color to a restaurant or office space. The artists receive royalties on the sales of their fans as well as greater public exposure.

"The Artisan collection is our flagship method for inspiring people to think about their ceiling as the fifth wall," explains company spokesperson Josh Kegley. The fans provide ways to "bring works of kinetic art into homes and businesses," he adds. —*Sharon Katz*

EASY, BREEZY

The Artisan collection by Big Ass Solutions features seven original designs screenprinted onto the company's energy-efficient ceiling fans. The options, including Dapper Delineation (above), suit commercial and residential interiors.

The Artisan collection features



33CONNECTSTAT

MANUFACTURER: Carrier PERFORMANCE: This wi-fi thermostat lets facility managers monitor and control HVAC systems on a computer or smart device. PRICE RANGE: \$\$

APPLICATIONS: Featuring a built-in

humidity sensor, the touchscreen unit can be paired with a remote sensor for reading the temperature in another space or outside the building. The web portal and app include free cloud access and are password-protected. CARRIER.COM

(SNAP #217)

KEY \$=VALUE, \$\$=MID-RANGE, \$\$\$=HIGH-END



FOUR-WAY BLACK CEILING CASSETTE

MANUFACTURER: LG

PERFORMANCE: The sleek black grille blends into darker ceilings, offering a better fit for modern commercial interiors. **PRICE RANGE: \$\$**

RIGE RANGE, WW

APPLICATIONS: Measuring 3' square, the grille can be user-adjusted in four sections to customize comfort. For interior applications, the cassette is ceiling-recessed; as an architectural grille, it is flush-mounted. LG.COM

(SNAP #218)

= ECO-FRIENDLY ATTRIBUTES



CITY MULTI L-GENERATION AIR SOURCE

MANUFACTURER: Mitsubishi Electric PERFORMANCE: This outdoor heat pump unit utilizes a zinc-aluminum flat tube exchanger to maximize heat transfer capability and improve efficiency. PRICE RANGE: \$\$-\$\$\$

APPLICATIONS: Ideal for commercial and multifamily building projects, the unit has a 30% smaller footprint than prior models. It operates more quietly, too, at 58 to 65 dBA. MITSUBISHIPRO.COM (SNAP #219)



HEAT-ONLY THERMOSTAT WITH TOUCHSCREEN

MANUFACTURER: Uponor PERFORMANCE: Controlling home hydronic radiant-heating systems is easy with Uponor's first-ever touchscreen thermostat. PRICE RANGE: \$\$

APPLICATIONS: The thermostat utilizes operative temperature readings from an air or floor sensor, or both. The floor sensor purchased separately—also protects surfaces from overheating. UPONORPRO.COM (SNAP #220)

Every Breath You Take

TODAY'S SMART-HOME market is flooded with connected security and HVAC automation solutions, so it was only a matter of time before these two categories merged. That's the idea behind Panasonic's Smart Home IAQ system. Expanding on the brand's existing Connected Home security-monitoring system, this new component, which debuted in November at **Greenbuild**, will use the same wi-fi communication hub for ventilation and fresh-air systems, too.

At press time, Smart Home IAQ was beginning a multiphase rollout starting with Panasonic's customizable Whisper-Green Select ventilation fans. Eventually the system will include a smart module; additional fresh-air and HVAC products; and a package of sensors for detecting moisture levels, temperature, and pollutants. The latter will work in concert with the hub to monitor and control airflow as well as expel airborne toxins. The manufacturer is even planning to incorporate kitchen exhaust systems at a future date.

In a statement, Jim Shelton, vice president of **Panasonic Eco Solutions North America**, said, "This platform will ultimately evolve to include other integrated systems such as smart lighting, appliances, solar, and energy storage." For homeowners and businesses, such a holistic wellness and security solution would be a breath of fresh air. —SK

BLOWN AWAY

Panasonic's nascent Smart Home IAQ system will eventually serve as a platform for monitoring and controlling a building's security, lighting, temperature, and fresh-air intake, among other things (graphic at left). The company's WhisperGreen Select ventilation fan (above) is the first item to be integrated into the system.

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Alumiline - Top View



Alumiline - Bottom View













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SNAP 150

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Mix and Match

THESE DAYS, kitchen systems are taking a bolder approach to combining materials, marrying a variety of surface treatments in statement-making proportions. In the past, diverse options such as a metal panel inset in a wooden doorframe—only served as accents. Now, contrasting materials can comprise an entire door or drawer front.

Exemplifying the mix-it-up trend is Alno's Attract kitchen, which pairs distressed oak with black-glass panels and bronzed-metal drawers. **Doimo Cucine**'s SoHo kitchen, conceived by **Imago Design**'s Willy Dalto and Antonella di Nuzzo, blends aged wood, copper, and brass on cabinet runs; it also offers glass doors. And the Miuccia kitchen, by **TM Italia**, unites rose-copper hardware and stone countertops with lacquered midnightblue cabinet boxes.

The enhanced palette offers designers an alternative to the "kitchen as antiseptic laboratory" approach, says architect Christopher Rawlins. He continues, "I appreciate the more expansive notion that a kitchen can be as rich, warm, and tactile as one of our bespoke living rooms." —Leslie Clagett



OPPOSITES ATTRACT Today's kitchens are incorporating multiple finishing materials like wood, copper, and brass, as in Doimo Cucine's Soho kitchen (top) and oak, black glass, and bronzed metal, as in Alno's Attract kitchen (above).



K2005 FAUCET

MANUFACTURER: Cinaton **PERFORMANCE:** This single-hole faucet offers hands-free control of 13 functions, including temperature, flow rate, pause, and three user-defined presets.

PRICE RANGE: \$\$

APPLICATIONS: ADA-compliant and WaterSense-certified, the fixture can pivot 150 degrees. It is available in brushed or polished nickel and comes with a 120/240 AC adapter and four AA backup batteries to ensure use in the event of a power outage. CINATON.COM

(SNAP #221)

KEY \$=VALUE, \$\$=MID-RANGE, \$\$\$=HIGH-END



36-INCH INDUCTION COOKTOP

MANUFACTURER: Verona

PERFORMANCE: The electric induction cooktop features an easy-to-clean black ceramic surface and soft-touch digital controls that sit at the front of the unit. PRICE RANGE: \$\$

APPLICATIONS: All five burners can detect a pan's presence, while a fast-boil setting can be used on three at a time. An alarm signals accidental spills; there is also a hot-surface and residual-heat indicator. VERONAAPPLIANCES.COM (SNAP #222)



CHEF CENTER SINK

MANUFACTURER: Franke PERFORMANCE: Made of 18-gauge

stainless steel, this undermount sink comes with a full line of accessories—colander. cutting board, and drain board-that lie flush with the counter.

PRICE RANGE: \$\$

APPLICATIONS: The sink is available in 28- and 34-inch widths that suit 30- and 36-inch cabinets. One lidded compartment flanking the bowl connects to the drain line to facilitate composting. FRANKE.US

(SNAP #223)



UPR 503 UNDERCOUNTER REFRIGERATOR

MANUFACTURER: Liebherr PERFORMANCE: This 4 1/s-cubic-foot appliance, which has pull-out glass shelves and full-extension storage drawers, can be fitted with a custom panel to coordinate with the cabinetry.

PRICE RANGE: \$\$\$

APPLICATIONS: The 24-inch, Energy Starrated fridge needs no swing-out space. Its height and depth can be adjusted to align with counters up to 34 inches. LIEBHERR-APPLIANCES.COM (SNAP #224)

= ECO-FRIENDLY ATTRIBUTES

A Growing Concern

CAN A KITCHEN LAYOUT change how we eat? Mario Zeppetzauer, a managing director of Austrian industrial-design firm Formquadrat, thinks so. With the Voking kitchen, he says, "We aim to show that design can make vegetarian cooks' lives easier." Currently in prototype, the kitchen features seven freestanding units that support the preparation of meat-free meals through specialized appliances, fixtures, and storage areas. The unit, which features active and passive zones, includes a module devoted to spice making-complete with a mortar carved into the counter and a bank of ceramic storage containers. Voking's double-bowl sink accommodates seedsprouting trays, while its glass-front cabinets incorporate Urban Cultivator's indoor gardening system, which allows the user to grow microgreens and herbs.

Although there are no firm plans to produce the Voking, the project's wide range of backers-including such kitchen, food, and furniture purveyors as Gaggenau, Dornbracht, Team 7, Cosentino, Eisinger Swiss/Franke, and Pfeffersack & Soehne-indicates there is interest in the subject. But Zeppetzauer says the aim is simple: "We want to have a positive impact on the future of nutrition and cooking." -LC

GREEN LIVING Formquadrat's concept design for a kitchen that supports vegetarian cooking features an indoor gardening system, a spice-making station, and a bank of ceramic storage containers.



SNAP BACK



DILLON KYLE Principal Dillon Kyle Architects Houston

"Our clients want appliances where they want them, not where they 'have' to be. Individual column-style freezers, refrigerators, and wine coolers can be positioned at any location: in the kitchen or even beyond it."

SNAP FACT

U.S. homeowners remodel a total of



SOURCE: SIZE OF INDUSTRY REPORT, JUNE 2016, NATIONAL KITCHEN AND BATH ASSOCIATION



Access Granted

THE LATEST ITERATION of Schindler's destination-dispatch elevator technology, myPORT creates a smart-building access system with users' cellphones. "What started out as a way to get better performance from elevators has become a sophisticated interface," says Jeff Blain, manager of destination products for the company. The free iPhone and Android app employs Bluetooth technology to summon an elevator. But it's able to unlock and open doors, too: a boon for disabled users.

The myPORT app serves as a building key, allowing registered residents to pass security; it then calls an elevator for them. Residents can also send visitors a text message with a unique color video that can be used at a myPORT terminal for onetime entry. Schindler tried QR codes for this feature, says Blain, but the images' geometry tended to misalign; the video works no matter how a phone screen is held to the scanner. "We couldn't find the right technology," he notes, so Schindler developed its own.

Introduced stateside last spring, myPORT is in use at the new ground-floor headquarters of the Independent Living **Resource Center of San Francisco** (ILRCSF), a disability-rights advocacy organization Schindler had previously partnered with on product development. All ILRCSF employees have some sort of physical or mental challenge, and the system assists them with entry and office doors. The partnership offers the manufacturer an intimate opportunity to "understand those with special needs," says Blain. It also gives Schindler a chance to study how myPORT can facilitate independence and seamless movement for all. -Braulio Agnese



GOING UP Designed for use in buildings equipped with Schindler products, the myPORT app (above) can call an elevator, lock doors, and provide security access to guests. It can also serve as a building-entry key (top).



WENTWORTH

MANUFACTURER: House of Forgings PERFORMANCE: These %-inch-thick solid-iron stair and railing balusters, available in smooth and hammered textures, stand 44 inches tall.

PRICE RANGE: \$\$

APPLICATIONS: Offered in a trio of round and square styles, the balusters for residential and hospitality use come in three finishes: satin black, satin clear, and oilrubbed bronze. The two newel options are 47 inches high.

HOUSEOFFORGINGS.NET (SNAP #225)

KEY \$=VALUE, \$\$=MID-RANGE, \$\$\$=HIGH-END



MONOSPACE 500

MANUFACTURER: Kone Corp. PERFORMANCE: Besides not requiring the usual central machine room for operation, the MonoSpace 500 features a regenerative-drive technology that reduces energy consumption by up to 20 percent. PRICE RANGE: \$\$

APPLICATIONS: Suitable for residential and commercial applications, the elevator is available with four door options, eight signalization series, and 52 car interiors in six design themes. KONE.US

(SNAP #226)

= ECO-FRIENDLY ATTRIBUTES



SKYBUILD

MANUFACTURER: Otis Elevator Co. **PERFORMANCE:** This interior construction elevator rises with a tower's elevator shaft, hoisting itself one story as each floor is completed. When construction ends, the entire system remains in place to serve the building's users.

PRICE RANGE: \$\$

APPLICATIONS: Suitable for any tower project specifying an Otis SkyRise elevator, this seven-story system with 3,500-pound capacity can climb 985 feet. OTIS.COM

(SNAP #227)



P7 POSTA

MANUFACTURER: C.R. Laurence PERFORMANCE: This post railing comes in four configurations: end, center, 90-degree corner, and 135-degree angled. Each can adjust up to 3/4 inches in height to compensate for uneven surfaces. PRICE RANGE: \$\$

APPLICATIONS: Designed for commercial, institutional, and hospitality spaces, the P7 comes in two standard heights and two stainless-steel finishes. Custom powdercoated colors are also available. CRL-ARCH.COM (SNAP #228)

History Lesson

WHEN PRESENT ARCHITECTURE

undertook the revitalization of 660 Congress Street in Portland, Maine, the boarded-up 1886 building came with a landmarked facade and a burnedout interior. Given this blank slate, firm cofounders Andre Guimond and Evan Erlebacher took every opportunity to showcase their proclivity for subdued modernism throughout the building, most notably in the custom-designed, blackened-steel interior stairway connecting the residences on the second and third floors.

The New York City-based architects settled on a metal balustrade early in the design process. Guimond said their initial ideas, which ranged from "opaque and solid to organic or algorithmic," reflected the partners' earlier stints at Toyo Ito (Guimond) and Zaha Hadid (Erlebacher). Yet the final, understated solution-thin but wide balusters that alternate between fine and solid vertical

lines-embodies the evolving style of the pair's five-year-old studio.

Guimond credits the fabricators at Cumberland Ironworks and Larry Wichroski of Engineering Design Professionals with helping Present Architecture understand what was technically and structurally feasible within the client's \$52,000 stair budget (\$29,000 of it went to metalwork). Cumberland shop-fabricated the staircase in four pieces, which were then trucked to the jobsite and threaded through the front-door opening. The entire process, completed in one day, proved faster and more accurate than on-site fabrication would have been.

With the stairway, Guimond explains, "we wanted to be sensitive to the existing building." But the journey to the winning design, he adds, helped Erlebacher and him "better understand where [the firm] was headed "both stylistically and intellectually. -BA



MODERN MARVEL Present Architecture's revitalization of an 1880s building in Portland, Maine, included a custom blackened-steel interior stairway whose design alternates between fine and solid forms (from above).



STOREFRONTS + ENTRANCES



Among the Trees

ARCHITECT JEFFERSON BROWNE says "awesome" a lot when discussing Space Crab, a treehouse he built for Camp Southern Ground in Peachtree City, Georgia. One look at the 1,000-square-foot domed space reveals why. The structure a cross between a spaceship and a horseshoe crab—is a stunning addition to the camp, which is devoted to the educational and emotional growth of children, especially those with disabilities.

Originally envisioned as a 300-squarefoot retreat, the treehouse grew in response to calls for "maximum accessibility and a barrier-free experience of the outdoors," says Browne. To that end, the structure's entrance features two 9-foothigh, nearly 10-foot-wide doorways from **C.R. Laurence**'s S80 Series Monterey bifold glass wall system. The black-frame doors, which tuck into exterior nooks, offer an expansive view of the surrounding woods, creating a seamless indoor/outdoor connection to the 300-square-foot deck. The doors also facilitate access to the uncovered ADA-compliant ramp that winds from the deck to ground level, at 14 feet below.

Monterey's top-hung doors and flush threshold, as well as the doors' ability to disappear, proved essential to the treehouse's final design. To allow for the largest capacity possible, "we needed to ensure the doors cleared an exterior cantilevered roof beam," says Browne. So they did. The structure can now accommodate a group of 49 when its entryways are fully open.

The camp currently welcomes children in the fall on a weekend-only basis; the plan is to expand to weeklong summer sessions by 2018. The treehouse, however, is already providing a regular gathering place for adults, whether they're attending corporate events or training sessions for veterans wrestling with posttraumatic stress disorder. It's a peaceful, airy retreat for all that is, in a word, awesome. —Braulio Agnese



THE GREAT OUTDOORS

Tasked to design a treehouse for Camp Southern Ground, which concentrates on children's academic and emotional health, architect Jefferson Browne opted for the S8o Series Monterey bifold glass wall system by C.R. Laurence. The doors offer unobstructed exterior views (top) along with easy access to and from the ADA-compliant ramp (above).


FALLBROOK

MANUFACTURER: C.R. Laurence **PERFORMANCE:** This front-loaded, dry-glaze interior partition system with a minimal profile can accommodate ½- and 3⁄4-inch-thick monolithic tempered glass. PRICE RANGE: \$\$

APPLICATIONS: With its ultrathin door frame and sidelight channels, this officespace system comes in a choice of two stainless-steel finishes and door hardware in round and square formats.

CRL-ARCH.COM (SNAP #229)

KEY \$= VALUE, \$\$= MID-RANGE, \$\$\$= HIGH-END



149 SERIES SWITCH

MANUFACTURER: DeltrexUSA **PERFORMANCE:** Designed to withstand vandalism, bad weather, and heavy use, this stainless-steel switch for standard and custom electric mounting boxes has a lifespan of up to 1 million cycles. PRICE RANGE: \$

APPLICATIONS: Suited to exterior, hightraffic, and public-access uses, the product has an actuator plate mounted flush with the base for easy maintenance. DELTREXUSA.COM

(SNAP #230)



YHS 50 FS/FI

MANUFACTURER: YKK AP America **PERFORMANCE:** The latest addition to the ProTek line of hurricane- and blast-mitigation storefront systems spans up to 12 feet and can withstand pressure up to 90 PSF. PRICE RANGE: \$\$\$

APPLICATIONS: Especially useful in hurricane-prone zones, the YHS 50 FS/FI features inside-glazed construction that allows developers to opt for a storefront solution rather than a curtain wall. YKKAP.COM

(SNAP #231)



ALUMAGRIL

MANUFACTURER: Babcock Davis PERFORMANCE: This modular 1-inchdeep aluminum entryway grille, usable in level-bed and deep-pit installations, has a 1,200-pound rolling load. PRICE RANGE: \$\$

APPLICATIONS: Offering a stainless-steel look at a lower cost, the grille comes in plank, waffle, and rectangular configurations in sizes up to 48 inches square. BABCOCKDAVIS.COM

(SNAP #232)

Superior Court

BECAUSE LEGAL proceedings frequently induce stress, designers of court buildings strive to soothe visitors' agitated minds through a variety of architectural and interior solutions. For HOK and Michiganbased TowerPinkster, that strategy translated into letting natural light—and plenty of it—into the pair's Gull Road Justice Complex in Kalamazoo, Michigan.

To achieve their aim, the firms opted to make the north face of the low-slung, 81,200-square-foot building, which houses the county's family courts, almost entirely glass. The structure's strategically placed rooftop clerestories also bring illumination deep into the structure, courtrooms included. "The concept was to put public and hearing-room entries along that facade," says Jason Novotny, director of design at TowerPinkster. That way, he continues, instead of being a dark,

double-loaded space, the corridor along the facade "would be filled with diffuse light."

The firm turned to Tubelite when it came to the requisite transparency and security, specifying more than 14,000 square feet of storefront, framing, and other products. The manufacturer's 400 Series curtain wall, in particular, helped the team realize its design vision, in which the north facade was composed of a series of differently sized rectangles and squares.

Aside from letting the sunshine in, these varied glass shapes mitigate the imposing presence that court buildings traditionally possess. "Since this was a family court," TowerPinkster's Novotny explains, "we wanted to get away from [the usual] daunting hierarchy and provide a softer feel and a sense of clarity and individuality." You'll find no objection here. -BA



RAYS OF LIGHT

Tubelite's glass store front and framing products-its 400 Series curtain wall among them-helped architectural firms HOK and TowerPinkster flood the Gull Road Justice Complex in Kalamazoo, Michigan, with soothing natural light (above). Rooftop clerestories allow sunlight to flow into the courtrooms (right).



Trains, Planes, and Pickups

Midwestern manufacturers are driving their states' economies.

BY J. MICHAEL WELTON



PEOPLE ASSUME agriculture fuels the Midwest's fortunes, but manufacturing plays a key role, too. The latter is the largest industry in lowa, making up

17 percent of the state's GDP. "We added 16,000 manufacturing jobs in 2014," says Tina Hoffman, marketing and communications director at the state's Economic Development Authority in Des Moines. As with agriculture, the market "has been contracting a bit" in the past two years, she notes. Nonetheless, building companies account for about 10 percent of Iowa's 216,167 manufacturing jobs.

Though best known for aviation products, Kansas also has a thriving manufacturing industry. At Versaflex in Kansas City, sales of polyurea-based items are up by 10 percent in five years. President Dave Cercie expects more of the same in the future. "A large part of that will be based on continued infrastructure improvements on bridges and tunnels," he explains. "We have good solutions for those types of problems."

As for Missouri, "we're a truck state," says director Mike Downing of the Missouri Department of Economic Development in Jefferson City. He's referencing a Ford F-150 plant in Kansas City and a GM plant in Wentzville. "Since 2009, we've created 16,200 automotive jobs, with over \$2 billion in capital investment."

Agriculture has declined in Nebraska thanks to corn's plummeting prices. Manufacturing represents \$14 billion of the state's GDP, with building products accounting for less than a tenth of that. Bright spots are Kawasaki, which is making railcars for Washington, D.C.'s Metro, and Hastings HVAC, a leader in commercial heating and cooling goods. "We're doing 10 to 15 percent better than last year," says Hastings vice president Shawn Hartman, pointing out that this July was the best in the company's 15-year history. You can't ask for more than that.

lowa, Kansas, Missouri, and Nebraska



MANUFACTURER: MP Global Products LOCATION: Norfolk, Nebraska PRODUCTS: Radiant-heat film and systems, thermal packaging, vinyl flooring, zip-up ceiling systems, and polyethylene- and acoustic-foam underlayments. FOUNDED: 1997 EMPLOYEES: 150 PRICE RANGE: \$\$ MPGLOBALPRODUCTS.COM



MANUFACTURER: Hastings HVAC LOCATION: Hastings, Nebraska PRODUCTS: Commercial and industrial HVAC equipment. FOUNDED: 2001 EMPLOYEES: 40

PRICE RANGE: \$-\$\$ HASTINGSHVAC.COM



MANUFACTURER: Mapes Canopies LOCATION: Lincoln, Nebraska PRODUCTS: Hanger-rod, sun-control, and extruded-aluminum architectural canopies. FOUNDED: 1952 EMPLOYEES: 40 PRICE RANGE: \$-\$\$\$ MAPESCANOPIES.COM





5 MANUFACTURER:

 Prosoco
 LOCATION: Lawrence, Kansas
 PRODUCTS: Solutions for making building envelopes air- and watertight and for cleaning, protecting, maintaining, and restoring concrete and masonry.
 FOUNDED: 1939
 EMPLOYEES: 95
 PRICE RANGE: \$\$
 PROSOCO.COM



6 MANUFACTURER: VersaFlex LOCATION: Kansas City, Kansas PRODUCTS: Polyurea protective coatings, joint fillers, sealants, and repair products. FOUNDED: 1994 EMBI 02555: 50

FOUNDED: 1994 EMPLOYEES: 50 PRICE RANGE: \$\$ VERSAFLEX.COM



7 MANUFACTURER: Structurflex LOCATION: Kansas City, Missouri PRODUCTS: Tensile fabrics, structures, and systems. FOUNDED: 2006 EMPLOYEES: 6 PRICE RANGE: \$-\$\$\$ STRUCTURFLEX.COM



SNAPSHOTS

IOWA

In the Hawkeye state, payroll costs are nearly

18.2 PERCENT

below the national average.



Of the patents issued in lowa over the last five years, **78 percent** concerned advanced manufacturing needs.

SOURCES: STATE LIBRARY OF IOWA; IOWA DEPARTMENT OF ECONOMIC DEVELOPMENT

KANSAS

In 2015, the Sunflower state was the

30тн

most expensive state in which to do business.

The Kansas economy **shrank in 2015**, contracting in three of four quarters.



SOURCES: KANSAS DEPARTMENT OF COMMERCE; THE WICHITA EAGLE

MISSOURI

Between 2015 and 2016, the Show-Me state climbed 12 positions, from

44 то 32

on the ACEEE's annual State Energy Efficiency Scorecard.



The Tax Foundation has consistently ranked Missouri in the **top 10 states** for low corporate income taxes.

SOURCES: AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY; THE MISSOURI PARTNERSHIP

NEBRASKA

In August 2016, the Cornhusker state's unemployment rate was **3.3 percent** versus the national average of 5 percent.



In August 2016, Nebraska averaged

96,900

manufacturing jobs, which was 600 fewer than it had the month before.

> SOURCE: NEBRASKA DEPARTMENT OF ECONOMIC DEVELOPMENT

GREENSOURCE

Earth First!

On November 5, sustainable design resource BuildingGreen announced the 2017 winners of its Top 10 Green Building Products award. We offer an in-depth look at all the honorees.





2. ACETYLATED WOOD Accoya Dallas accoya.com

A nontoxic alternative to chemically preserved wood, these FSCcertified radiata pine products are treated with acetic anhydride. The colorless acid changes the chemistry of the wood's cell walls, making the material impervious to moisture and rot; it also keeps the wood from shrinking, swelling, or absorbing water. These properties make it an ideal choice for exterior applications, including windows, doors, decking, cladding, and engineered products. (SNAP #261)





3. HYPERPURE WATER PIPING Legend San Antonio legendvalve.com

This flexible potable water pipe provides an inexpensive, simple-toinstall, and environmentally friendly alternative to copper, chlorinated PVC, and cross-linked polyethylene options. The bimodal polyethylene product is easily recycled and does not leave the water with a chemical taste. (SNAP #262)



1. AQUEOUS HYBRID ION "SALTWATER" BATTERY Aquion Energy Pittsburgh aquionenergy.com

Aquion's battery for grid-tied photovoltaic systems stores power by utilizing sodiumsulfate electrolytes rather than corrosive sulfuric acid or flammable lithium salts. These nonhazardous alternatives, including the attendant lithium manganese-oxide anode, are inexpensive, abundant, and safe to use. The battery contains no PVC and meets Cradle to Cradle standards. (SNAP #260)



4. SECUROCK EXOAIR 430 USG and Tremco Chicago/Beachwood, Ohio usg.com/tremcosealants.com

Unlike most weather-resistive barriers, Securock ExoAir 430 is easy to install: Simply hanging it completes 80 percent of the process. The fiberglass-faced sheathing comes with a factory-applied Tremco fluid barrier, which reduces time and trades needed on the site. It also ensures a more uniform application of the membrane and increased protection against air and moisture penetration. (SNAP #263)

5. PHOENIX COMPOSTING TOILET Advanced Composting Systems Whitefish, Montana composting toilet.com

Because the toilet composts waste on-site, it eliminates the need for a septic tank or municipal sewer system. The unit uses a biochamber whose 4-watt fan creates negative pressure for ventilation. Daily upkeep is minimal—you mostly add wood shavings and mix the compost—and after 18 months, the resulting product can be used as a non-food crop fertilizer. (SNAP #264) Epro's Fu y Integrated Fie d In tal ed Composite Waterproofing System Provides the Most Protection, Fastest Installation, Lowest Cost and Best Warranty in the Industry Today!





Four New Field Installed Systems Available ... Ecoline-S

- System III CWB Concrete / CMU Wall Waterproofing
- System III RDB Roof / Deck Waterproofing
- System III MBB Waterproofing / Gas Barrier
- System III LWB Blindside Waterproofing / Gas Barrier

Excellent Strength and Chemical Resistance - the result of the unique field installed composite system design utilizing HDPE.

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Exceptional Adhesion - The sprayed or fluid applied membrane bonds tenaciously to almost any substrate in almost any condition including green concrete or a damp substrate.

Self Sealing - The bentonite layers seal at any penetration of the system.

Redundant Protection - Multiple waterproofing protection courses and drainage plane.



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GREENSOURCE





7. DESIGNTEX TEXTILES Designtex New York designtex.com

The global textile industry has one of the worst environmental records of any manufacturing sector; its complex supply chain also makes finding more equitable options difficult. Designtex counters this with its catalog of over 8,000 materials, which allows specifiers to search by fabric, pattern, color, and environmental certification while filtering for a number of sustainability and performance metrics. (SNAP #266)



6. POWER HUB DRIVER Nextek Detroit nextekpower.com

Most office equipment, including LED lighting and computers, runs on DC-grid power. However, for those devices that don't, there's Nextek's Power Hub Driver (PhD), which converts AC into 380-volt DC, and then to a safe-to-handle 24-volt current. By doing so en masse instead of one machine at a time, PhD saves material costs, reduces e-waste, and increases a device's reliability. (SNAP #265)



8. COMMERCIAL ELECTRIC LAWNMOWERS Mean Green Products Hamilton, Ohio meangreenproducts.com

Mean Green lawnmowers require no fuel, produce zero emissions, and need minimal maintenance. They utilize lithium energy module (LEM) battery technology and last two to seven hours per charge. Mean Green offers 48-inch stand-on models and 52- and 60-inch ZTR riding options; all help meet LEED goals for building operations and maintenance. (SNAP #267)



9. D-RAIN JOINT RAINWATER FILTER DRAIN Biomicrobics Shawnee, Kansas biomicrobics.com

Used in place of pavers, the D-Rain offers a cost-effective solution to stormwater runoff. It resembles a standard concreteslab expansion joint but offers a roughly 1-inch gap that allows water to drain just below the surface at a rate of up to 5 gallons a minute per linear foot. D-Rain comes in 8-foot lengths that can be installed in concrete and asphalt sidewalks and driveways. (SNAP #268)

10. HVAC LOAD REDUCTION (HLR) VENTILATION EnVerid Boston enverid.com

EnVerid's HLR ventilation system cleans indoor air by running it through a recyclable sorbent cartridge that removes contaminants such as VOCs and formaldehyde. The system also brings in enough outdoor air to maintain positive pressure, with sensors providing real-time feedback to maximize air quality and energy savings based on a building's needs. The modular product can be installed on a wide variety of HVAC systems, with each unit managing approximately 20,000 square feet. (SNAP #269)

Evolution



Thermal and Moisture Protection Roof and Wall Panels

Division 7 Thermal and Moisture Protection Specification Section 07411 - Manufactured Roof Panels

The Overly *Evolution* metal wall and roof system is without raised batten or standing seams and exposed fasteners. The system consists of a hidden drain channel, compression bar, cover cap and cladding sheets. The smooth, contemporary design appears monolithic when viewed from just a short distance. It's an 'Evolution' to all the standard metal wall and roof systems available throughout the history of the industry.

Applications

The Overly Evolution system can be installed on sloped roofs and vertical walls. Panels can be curved and/or tapered for barrel vaults and domes or spherical shapes. The system features hidden fasteners and an internal drainage component which removes any moisture that migrates into the system and skillfully designed joints which allow for expansion and contraction. The system is the exterior exposed component of a wall/roof composite assembly. Several composite assemblies are available ranging from thin to thick as determined by aesthetic preferences or as necessary to meet performance requirements such as thermal, structural and fire ratings.

Materials

- Aluminum Alloy 3003-H14, Standard Thickness 18 gauge (.040")–16 gauge (.050") available in painted K500 finishes, brushed and mill finishes
- Stainless Steel type 304 and type 316, 24 gauge (.024") – 20 gauge (.036") available in 2B, 2D, #4 and several custom directional and non-directional finishes
- Titanium Grade 1, gauges .018"-.024" available in standard mill or matte finishes
- Zinc, gauge .028"-.032" available in natural or pre-weathered finishes
- Recycled content varies upon material selected.
 100% recyclability of all metal components

System Design Data

- Width of Compression Cover: 2.75"
- Mininum/Maximum Spacing between Compression Covers: 12"-48"
- Maximum Length of Panels: 40'
- Compression Extrusion Thickness: .056"
- Channel Extrusion Thickness: .056"
- Test data in accordance with ASTM E 283, ASTM E 330, ASTM E 331 and UL 580 (Class 90 available upon request)

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CONTINUING EDUCATION: KINETIC BUILDINGS

FROM ARCHITECTURAL RECORD



TRAVELING SHOW The Shed, a multidisciplinary arts venue under construction in Manhattan, consists of a fixed building enclosed by a glass cable wall and an ETFE-clad diagrid shell that can be moved to cover a plaza. The structure, rising on the city's far west sidewhere the High Line meets the Hudson Yards developmentwill sit at the base of a new residential tower.

Movable Feasts

Dynamic structures with large-scale operable elements adapt and transform, responding to changing needs. BY JOANN GONCHAR, AIA

BUILDINGS ARE GENERALLY designed to be permanent, immutable structures. But this is not always the case. In the early 1960s, the British architect Cedric Price proposed that a "Fun Palace" be built on the banks of the Thames in London. It was to be everchanging, with moving and reconfigurable walls and floors. Price's vision was never realized, but a modern-day transformable structure inspired by his ideas and known as the Shed is taking shape in New York, on Manhattan's far west side, where the High Line meets Hudson Yards. The 200,000square-foot interdisciplinary arts space, designed by Diller Scofidio + Renfro (DSR) with Rockwell Group, was devised to operate in a variety of modes. Slated to open in spring 2019, the \$425 million venue consists of two primary components: a six-level fixed building that houses two galleries, a 500seat theater, and a rehearsal room (among other elements) and an outer shed or shell that slides to shelter an adjoining 21,000square-foot plaza and create a multipurpose 120-foot-tall, column-free hall.

The venue's stationary structure has a conventional steel frame with 100-foot-long clear spans and is enclosed within a glass cable wall. The movable shell, meanwhile, comprises an exposed steel diagrid frame clad in translucent pillows made of the strong but lightweight ethylene tetrafluoroethylene (ETFE). Integrated within this cagelike structure are equipment and services such as power, lighting, theatrical rigging, and ducts, creating what Liz Diller, DSR founding partner, calls an "open infrastructure."

The shell, whose primary steel weighs 2,400 tons, will travel via a system based on gantry-crane technology, common in shipping ports. A rack-and-pinion drive moves the shell forward and back on six-foot-tall bogies, or wheels, that run in tracks at plaza level. It will take about five minutes to completely extend the shell, according to Diller, raising the possibility that its movement could be incorporated into a performance rather than merely in preparation for one. In fact, the building is inherently "performative," says David Rockwell, Rockwell Group founder.



But before the shell is deployed, the Shed's managers must conduct a multistep safety protocol to make sure that the path of travel is clear of obstructions—checking areas such as the plaza, the bogie tracks, and the space directly below the theatrical rigging. The location of the drive system on the roof of the fixed building—keeps it secure, since the public has no access.





THE SHED-DEPLOYED: AXONOMETRIC DIAGRAM



THE SHED-DEPLOYED: SECTION

50 FT. 15 M.



THE SHED-BOGIE: SECTION

like in the future is an open question," says Diller.

Of course, large-scale kinetic elements in the form of retractable roofs have long been a feature of stadia and ballparks for professional athletic teams. The operable coverings permit play in inclement weather and allow facilities to be used for multiple sports, as well as for other types of events including concerts and trade shows. They can also help facilitate the growth of natural turf.

The friction and inertia forces from the drive are transmitted through the fixed building's steel frame, explains Scott Lomax, principal at Thornton Tomasetti, the project's structural engineer. Its elements have been sized to accommodate these forces, he says.

To deal with the environmental-control issues associated with temporarily enclosing outdoor space, the project team designed the plaza as a radiant floor that can be heated for winter events. In warm weather, the space under the deployed shell will be conditioned with cool air delivered through low-level ducts. Blackout shades can also be extended to make the hall suitable for multiple types of programming. The goal is a responsive, versatile building that can accommodate different media, showcase work at a variety of scales, and adapt to changing technologies. "What art will look

CONTINUING EDUCATION: KINETIC BUILDINGS

FROM ARCHITECTURAL RECORD



One venue with a particularly unusual operable roof is the new facility designed by 360 Architecture (now part of HOK) for the National Football League's Atlanta Falcons. The \$1.5 billion Mercedes-Benz Stadium, now under construction and on track for completion next summer, will have an operable roof comprised of eight ETFE-pillow-clad triangular "petals." These retract, much like the leaves in a camera shutter, to reveal a 380-foot-long and 305-foot-wide oval opening overhead.

The designers and owners envision that the roof will be open most of the time during NFL games, since the Atlanta weather in football season is mild. Bill Johnson, the HOK design principal leading the project, hopes the pool of sunlight that will move around the artificial-turf field during daytime play will bring to mind the Pantheon in Rome. "It was the inspiration," he says.

It might seem presumptuous to compare a professional-sports venue with one of the most revered works of antiquity, but the stadium is an engineering feat in its own right. The roof includes an outer fixed portion clad in metal and a membrane that is folded and faceted to create something that resembles an eight-point pinwheel in plan. Its structure is a two-way system of steel trusses that span 730 feet between reinforced-concrete megacolumns positioned just outside the stadium's seating bowl. This fixed-roof assembly includes backspan members intended to support the upward forces created by the retractable petals, each of which weighs as much as 450 tons. The petals cantilever up to 200 feet—a dimension similar to



GRAND OPENING

The oval opening over the field at the Mercedes-Benz Stadium in Atlanta (top) will have eight ETFE-clad petals that appear to rotate as they open (above) and close (right) the roof. In reality, each petal moves on a straight line.





STRUCTURAL GYMNASTICS

The Mercedes-Benz Stadium's fixed roof framing (three diagrams from top left) consists of a system of trusses that span more than 730 feet between megacolumns (above) and support the retractable petals (bottom), which cantilever as much as 200 feet over the oval aperture when closed.

the length of a city block, notes Erleen Hatfield, a partner at BuroHappold, the project's structural engineer.

The roof scheme bears the mark of the kinetic design consultant Chuck Hoberman, who was involved in the project's early phases: Although the petals appear to rotate as the roof opens and closes, they move together at a diagonal but straight line. Each travels on a pair of rails set 40 feet apart and supported by the fixed-roof structure. But because of the opening's oval shape, the petals have varying dimensions and weights. This not only made structural analysis more difficult, but it also meant that the petals travel at different speeds, creating an added challenge for synchronization and coordination.

And if the roof system was not complicated enough, it will also support a 58-foot-tall and 1,100-foot-long video scoreboard that wraps the perimeter of the roof opening. This configuration, an alternative to the typical Jumbotron, allows the Falcons' fans to see the clouds and the sky, but, at 940 tons, it is almost 5 percent of the weight of the entire roof, says Hatfield.

The nodes where steel elements came together are particularly complex. So to facilitate their coordination, BuroHappold shared its 3-D model with the steel fabricator, ultimately checking the shop drawings in a digital environment. Hatfield says the process was a significant time-saver. She believes that it is the largest project ever to implement 3-D review for its steel package.

The roof isn't the only moving or adaptable element at Mercedes-Benz. To reduce the stadium's capacity

for events such as soccer matches, corner sections of the stadium bowl retract, while upper portions can be closed off with a motorized curtain. The aim is to minimize conversion time, says Scott Jenkins, the facility's general manager.

Compared with Mercedes-Benz, the new roof over the Arthur Ashe Stadium at the Billie Jean King National Tennis Center in Queens, New York, appears almost straightforward. The slightly domed 236,600square-foot canopy contains two 500-ton rectangular panels that separate to frame a 250-foot-square slice of the sky. Designed by the Detroit-based architecture firm Rossetti, the new roof is the United States Tennis Association's response to rain delays that in recent years had regularly plagued the U.S. Open Tennis Championships held in late summer at the Flushing Meadows complex.

But devising and constructing the \$150 million shelter for the almost 24,000-seat venue was not so simple. The primary complicating factor: The original 1997 stadium, which was also designed by Rossetti, had not been conceived to support a roof. So the new element would need to be wholly independent of the original's precast-concrete seating bowl and steel structure. What's more, the team was hampered by the marshiness of the site, a former ash dump. Ahmad Rahimian, the U.S. director of building structures for WSP and the project's structural engineer, sums up the challenges as "poor soil, long spans, and a tight budget."

Rossetti principal Jon Disbrow refers to the solution as "an umbrella," but one that straddles the existing stadium. It is supported on eight steel columns—each with two branchlike braces—placed just outside the corners of the existing building's octagonal footprint. The columns, which sit on top of piles as deep as 200 feet, hold up four nearly 500-footlong trusses, two spanning in each direction. These in



FROM ARCHITECTURAL RECORD





HAT TRICK

The new operable PTFE roof over the Arthur Ashe Stadium (above and left) in Queens, New York, is completely independent of the 1997 structure beneath it. The roof can be opened or closed in about six minutes.

turn support a network of steel joists and bracing, over which a membrane of polytetrafluoroethylene (PTFE)—a lightweight material resistant to heat and UV degradation—is stretched.

The new roof was built without disrupting the U.S. Open schedule. It was constructed, starting in late 2013, in three discrete phases, each conducted in the 11½-month period between tournaments: first the foundation work, then the primary steel structure, and finally, this summer, the retractable-roof components and PTFE skin.

Now that the new roof is in place, it looks as though it was always intended to be there, adding a bit of interest to the stadium's stubby profile. But one aspect of the newly covered stadium that not everyone is pleased with is its acoustics. Some players at this summer's Open reportedly complained that the roof amplifies the noise made by the spectators, making it hard to concentrate. As part of Rossetti's design, perforated metal panels backed with mineral wool were installed at the roof's perimeter to dampen reverberation, according to Disbrow. He says that additional measures could be implemented, but so far the USTA hasn't asked the firm to do so.

Although acoustics may still need to be addressed, the new canopy does work admirably in a variety of modes and conditions, as any adaptable building should. Even in the open position, the majority of the venue's seats are in shade, shielded by the fixed roof's PTFE skin, which blocks 90 percent of visible light. So even though the new lid was conceived primarily as an umbrella, it also serves as a parasol, allowing fans to enjoy tennis at Arthur Ashe, rain or shine.

The completions of Mercedes-Benzand the Shed are still in the future. It is not yet clear if the highly mechanized buildings will function as flawlessly as their designers predict. Or more to the point, if they will readily adapt to needs yet to be identified. But Jenkins at Mercedes-Benzis confident. He says the roof has been mocked up and thoroughly tested, and its controls are straightforward. But he does concede that "until we actually operate it, we won't know what we don't know." His project and others could be just the beginning of a future for flexible architecture that may turn out to be even more fun than Cedric Price dreamed it would.

other services **Continuing Education**

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at architectural record.com, and complete the online test. Upon passing the test, you will receive a certificate of completion, and your credit will be automatically reported to the AIA. Additional information regarding credit-reporting and continuing-education requirements can be found online at continuingeducation.bnpmedia.com.

Learning Objectives

- 1 Discuss the design, construction, and operational challenges presented by buildings with large-scale kinetic elements.
- 2 Describe three such current projects and explain the mechanisms that allow their kinetic elements to move.

1

2

7

- Explain the structural solutions presented by 3 these projects.
- Explain the indoor environmental-control 4 solutions presented by these projects.

AIA/CES Course #K1610A.

A CSSETTI

FORCEU CREDIT, READ "MOVABLE FEASTS" AND



ARTHURASHE STADIUM-ORIGINAL SOUTH FLEVATION



ARTHUR ASHE STADIUM-NEW SOUTH ELEVATION



ARTHURASHE STADIUM-FRAMING DIAGRAM

MANUFACTURERS' SPOTLIGHT SECTION

Look to these pages for products brought to you directly from manufacturers. You'll find price, application, performance data, and contact information—the facts needed to make the right decisions. Use the reader service card in the issue or go online at architecturalrecord. com to request further details.



Mixing disparate materials such as brass, aged wood, and wired glass, Doimo Cucine's SoHo kitchen has a refined look that further blurs the divide between living and cooking spaces. (SNAP #233)

TABLE OF CONTENTS

Doors, Windows

Doors, windows, storefronts, entrances, skylights, framing systems, glazed curtain walls, and translucent wall and roof assemblies.

Equipment

A broad range of electrical and tech goods, among them audiovisual, multimedia, and control systems. Also covers elevators and appliances.

Interior Finishes, Furnishings

Products for finishing and furnishing building interiors, including flooring, wallcoverings, ceilings, furniture, shelving systems, and window treatments.

Landscaping, Sitework

Exterior improvement products such as site furniture, bollards, pavers, landscape edging, and exterior green walls. Also includes gazebos and other site structures.

Materials

Page 50

Page 50

Page 52

Basic products used in construction, among them lumber, concrete, and masonry units. Includes paint, coatings, and structural materials and fittings.

Mechanical Systems, HVAC, Plumbing Page 52

Products for conditioning, moving, holding, and controlling air, water, and other fluids. Examples include fans, ventilators, and boilers.

Roofing, Siding, Thermal & Moisture Protection

Pages 52, 53

Goods for constructing the building envelope, such as exterior wall and roof panels, sheathing, thermal insulation, and waterproofing.

Specialty Products

Page 52

Page 52

Pages 53, 54

Products for special applications or that apply to more than one category, such as gates, ladders, columns, signage, awnings, canopies, and railing systems.

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1 HSW Learning Unit

SNAP 138

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SS | GREEN Crown Shade Company

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SNAP 238

SNAP 240

EQUIPMENT

DOORS, WINDOWS

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SNAP 234

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- ✗ Heavy and difficult to install
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LANDSCAPING, SITEWORK

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ROOFING, SIDING, THERMAL & MOISTURE PROTECTION

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LANDSCAPING, SITEWOR



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Performance Data

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- Mill Woods Library, Seniors and Multicultural Centre · Edmonton, Alberta, Canada
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ROOFING, SIDING, THERMAL & MOISTURE PROTECTION

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FLOODPROOFING

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- · Variety of modular components for every design

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SNAP 259

PRODUCTS



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54 | SNAP | NOVEMBER/DECEMBER 2016 | ARCHITECTURALRECORD.COM

SNAP # 271

Advertisers in this issue

E

A

Aamsco Lighting Inc Inside Back Cover	Epro Se
Acoustical Surfaces	F
Advance Lifts Inc25,50	Froet In
Armstrong Ceiling Solutions2, 3	1
Arriscraft Corp52	Icon She
Atas International15	J
Atlantis Rail Systems53	Just Ma
Azon USA49	К
C	KBIS 20
Covestro, LLC50	M
Crown Shade Co50	Major In
D	Mobilfle
Da-Lite50	Musson
Design Components Inc53	Otis Elev
Dri-Design4,53	Overly N
Ε	P
Easi-Set Industries	Peterser

F	Epro Services Inc39,52
	Froet Industries53
	Icon Shelter Systems Inc 52
	Just Manufacturing 52
EV.	KBIS 201724
	Major Industries
	Mobilflex Folding & Rolling Closures Inc
C	Musson Rubber Co54
	Otis Elevator Company29
>	Overly Manufacturing Co41
	Petersen Aluminum Corp9,53

	Putnam Rolling Ladder Co. Inc53
c	
2	
	SAFTI FIRSTInside Front Cover, 50
	SAFTI FIRST O'Keeffe's Inc51
	Schweiss Doors50
	Simonswerk7
	Smart Vent Inc 12,53
	Stonhard21,52
	Sturdisteel53
T	
0	TamlynBack Cover
1	Thomas Steele 52
W	
1	Walz & Krenzer Inc 17
1	Wausau Tile Inc 13
1	Wooster Products Inc54
١	Noven Wire Products Association54

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NEW AND UPCOMING EXHIBITIONS

Design Episodes: Form, Style, Language

December 17, 2016–June 25, 2017 In anticipation of the Art Institute of Chicago's fall 2017 new permanent display of architecture and design works, this exhibition highlights the Institute's collection via three provocative vignettes: the modern chair, the emergence of postmodern design, and contemporary identity systems in graphic design. *Boundary Lines*, a custom-designed installation by graphic designer Amir Berbić that brings together the three parts, occupies the gallery windows overlooking Griffin

Court. For more information, visit artic.edu.

Pop Art Design

NEWPORT BEACH, CALIFORNIA

January 7-April 2, 2017

This exhibition at the Orange County Museum of Art juxtaposes a large number of important works by artists including Andy Warhol, Claes Oldenburg, Roy Lichtenstein, Ed Ruscha, and Richard Hamilton with works by such designers as Charles Eames, George Nelson, Achille Castiglioni, and Ettore Sottsass; there's also extensive ephemera. For more information, visit ocma.net.

ONGOING EXHIBITIONS

Michael Sorkin Studio and Terreform: Metrophysics

LOS ANGELES

Through December 4, 2016

This exhibit foregrounds projects with meanings rooted in the urban, including buildings and sites designed with practical and polemical intent. On view at SCI-Arc, the work is from a team that operates as both a traditional architectural studio responding to clients and a research practice that formulates its own agenda of investigation and intervention. For more information, visit sciarc.edu.

Oskar Hansen: Open Form

Through December 17, 2016

This exhibition traces the evolution of Hansen's theory of open form from its origins in the architect's own projects to its application in film and other artistic practices. Hansen was a member of Team 10, the architectural group that formed the first critical voice against the Athens Charter's modernist orthodoxy and Corbusier followers. Hansen proposed parting ways with the model of the all-knowing expert, instead advocating for viewer participation. Oskar Hansen: Open Form, at the Yale School of Architecture, is divided into seven sections exploring Hansen's theories. For more information, visit architecture.yale.edu.

Reading Room: A Catalog of New York City's Branch Libraries

Through January 7, 2017

On display at the Center for Architecture is Elizabeth Felicella's work documenting all 210 branches of New York City's extensive publiclibrary systems. From full-scope exterior shots to intimate studies of window plants and pencil sharpeners, the subtle and technically accomplished photographs—depicting the libraries from a variety of vantage points—invite the viewer to appreciate the intricacy, complexity, and vast scope of these vital and evolving public resources. For more information, visit *cfa.aiany.org*.

Authenticity and Innovation

Through January 14, 2017

A particularly relevant topic for a metropolis characterized by perennial change, *Authenticity and Innovation* explores preservation in contemporary New York City. Although the city's Landmarks Preservation Commission oversees about 1,500 individual landmarks and 139 historic districts, this exhibition at the Center for Architecture will feature 28 projects not officially designated as significant, but their reuse represents a phenomenon that can be called preservation beyond the preservation law. For more information, visit *cfa.aiany.org*.

Model Behavior

Through January 14, 2017

This exhibition at the San Francisco Museum of Modern Art explores the design process behind Snøhetta's expansion of the storied art institute. Architectural models, sketches, an interactive app, and a narrated walk-through of the building reveal how Snøhetta responded to the built environment and cultural context of the expansion-to-be, chronicling how the firm arrived at the space that opened its doors on May 14. For more information, visit sfmoma.org.

Tracing Displacement and Shelter NEW YORK CITY

Through January 22, 2017

This MoMA exhibit explores how architects and designers have considered the meaning of shelter in light of the global refugee crisis. Works on display examine such trends as the strengthening of national borders in response to the influx of migrants and the growing need for affordable, adaptable, and mobile housing for transient populations (currently estimated at more than 60 million worldwide). For more information, visit moma.org.

Building Optimism: Public Space in South America

Through February 13, 2017

Held at the Carnegie Museum of Art and spanning projects in Argentina, Brazil, Chile, Colombia, Peru, and Venezuela, *Building Optimism: Public Space in South America* investigates how emerging architects and designers can instigate change through design of public space. Via photography, video, drawings, and models, the exhibition immerses visitors in the inventive ways that public spaces can become social spaces as they respond to the circumstances and pressures of their communities. For more information, visit *cmoa.org*.

City of Ideas: Architects' Voices and Visions

CHICAGO

Through February 25, 2017 An ongoing conceptual installation project, *City* of *Ideas* is traveling to the Chicago Design Museum from Sydney University's Tin Sheds Gallery. Its key objective is to present original visions of leading international architects as recorded and transcribed by curator Vladimir Belogolovsky. Each installation will include groups of voices, interpreted through continuously changing forms by local artists, architects, and designers. For more information, visit chidm.com.

MetaModern

PALM SPRINGS, CALIFORNIA

Through February 27, 2017 Modern design—that once-radical break with the past—is now itself a thing of history, with contemporary artists viewing modern designs as icons that can be incorporated into their own work. The result is metamodernism, in which the original source is changed and abstracted, and the outcome is self-referential. The artists in this exhibition, held at the Palm Springs Art Museum, challenge head-on the tenets of modernism, whether they're working in the United States, Europe, or Latin America, in a range of media. For more information, visit psmuseum.org.

Voulkos: The Breakthrough Years NEW YORK CITY

Through March 15, 2017

Spanning the years from 1953 to 1968, *The Breakthrough* Years is the first exhibition to focus on the early career of Peter Voulkos, whose radical methods and ideas opened up the possibilities for clay in ways still reverberating today. Held at the Museum of Arts and Design (MAD), this exhibition is a part of MAD Transformations, a series of six shows addressing artists who have changed our perceptions of traditional craft mediums. For more information, visit *madmuseum.org*.

One and One Is Four: The Bauhaus Photocollages of Josef Albers

Through April 2, 2017

Josef Albers stands as a central figure in 20thcentury art, both as a practitioner and a teacher at the Bauhaus, Black Mountain College, and Yale University. In 2015, the Museum of Modern Art acquired 10 of his photocollages, joining the pair donated by the Josef and Anni Albers Foundation almost three decades ago. This makes the MoMA collection the most significant after the foundation's. The installation celebrates both the landmark acquisition and the publication of One and One Is Four: The Bauhaus Photocollages of Josef Albers, which focuses exclusively on this deeply personal and inventive aspect of the master's work and makes many of these photocollages publically available for the first time. For more information, visit moma.org.

LECTURES, CONFERENCES, AND SYMPOSIA

Zoning at New Heights: Supertalls and the Accidental Skyline

NEW YORK CITY December 8, 2016

New Yorkers have long had a love-hate relationship with height. And as the age of the supertall tower sets a new precedent for what's possible, controversy is growing. In response, the Municipal Art Society launched its Accidental Skyline report in 2013 to track the construction of supertalls along the southern border of Central Park. Since then, countless more such structures have sprouted up around the city. In this conversation at the Museum of the City of New York, leading experts will consider whether the zoning regulations created to tame towers in the early 20th century have kept pace with the evolving skyline. For more information, visit mcny.org.

COMPETITIONS

Kip Island Auditorium International Competition

Registration deadline: January 18, 2017 The Riga Exhibition Centre, located in the heart of the Latvian capital, is soliciting design proposals for an iconic addition to its complex that houses conference rooms, meeting rooms, and two large exhibition halls. The new addition will include an auditorium, more conference rooms, and another exhibition hall. For more information, visit kipislandauditorium.beebreeders.com.

eVolo 2017 Skyscraper Competition Registration deadline: January 24, 2017

Registration deadline: January 24, 2017 Established in 2006, this annual contest recognizes outstanding ideas that redefine skyscraper design through the implementation of novel technologies, materials, programs, aesthetics, and spatial organization, along with manifesting flexibility, adaptability, and change wrought by globalization and the digital revolution. Designs should reflect investigation of public and private space and the role of the individual in relation to the collective in a dynamic vertical community. There are no restrictions on site, program, or size. For more information, visit *evolo.us*.

Nikon Photo Contest

Submission deadline: January 27, 2017 This contest supports filmmakers and photographers who wish to use images to share stories and influence how people think. The competition's 36th edition will feature two new categories: the Nikon 100th Anniversary Award, which celebrates the company's 2017 centennial, and the Next Generation Award, for anyone under the age of 30. Acclaimed graphic designer and art director Neville Brody is serving as lead judge. For more information, visit nikon-photocontest.com.

The SOURCE Awards

Submission deadline: January 30, 2017 Now in its 40th year, the SOURCE Awards competition is open to all lighting designers, architects, engineers, professional designers, and consultants who use Eaton's lighting fixtures and lighting control systems in interior or exterior design projects. Students currently enrolled in any of these disciplines are also eligible to enter projects based on conceptual lighting designs that utilize Eaton's lighting and controls products. For more information, visit thelightingresource.eaton.com.

Metals in Construction Magazine 2017 Design Challenge: Reimagine Structure Submission deadline: February 1, 2017

This competition invites architects and engineers to submit designs for a high-rise that integrates its enclosure and its primary structure for the purpose of minimizing embodied energy. It challenges participants to substitute a hybrid frame-and-skin system for the typical aluminumand-glass curtain wall. Entries will be judged on embodied energy reduced and overall performance, with a prize of \$15,000. For more information, visit metalsinconstruction.org.



The Fair's the Thing

The London Design Festival takes over the British capital, offering a bounty of fresh ideas and visual treats.

FOR NINE DAYS in September, when the London Design Festival's distinctive red signage appeared at scores of event locations, the remarkable breadth and depth of the U.K.'s design industry was suddenly made visible. The 14th edition, held September 17 to 25, was a sprawling affair: Hundreds of designers and manufacturers hosted events across the city as five separate trade fairs ran concurrently.

PHOTOGRAPHY:

Commissioned projects gave a sense of order to the dizzying array of pop-ups and partnerships, lectures and launches. At the Victoria & Albert Museum, the festival's official hub, several temporary largescale exhibits were installed among the permanent displays. The Green Room, by London-based product designers Glithero, featured a massive cylindrical curtain of 160 brightly hued cords that dropped down a six-story stair well; individual strands gently rose and fell over the course of a minute, offering

onlookers a new way to visualize the passing of time. In the Tapestry Room on an upper floor, Benjamin Hubert's wavelike Foil-an animated ribbon of 50,000 stainless-steel mirrors—scattered light across the walls like a giant disco ball.

At nearby Chelsea College of Arts, another ambitious project occupied the courtyard. Alison Brooks Architects' The Smile, a pavilion in the form of a curved box beam, demonstrated the constructional capabilities of cross-laminated American tulipwood. While the center of the 112-foot-long arc lightly rested on the ground, both ends rose 11 feet into the air, culminating in large openings that offered those inside framed views of the college and the sky. (Unlike most of the installations, which ended when the festival did, The Smile remained on view through October 12.)

Downriver to the east, Somerset House-a Neoclassical cultural center and home to the Courtauld

Institute of Arts—hosted the inaugural London Design Biennale. For it, curatorial teams from design museums in 37 nations produced pavilions that responded to the theme of Utopia, selected by show director Christopher Turner to mark the 500th anniversary of Thomas More's classic work. Occupying a prominent spot in the center of the entrance courtyard was Barber Osgerby's Forecast. The supersize weathervane, anemometer, and wind turbine alluded to Britain's maritime history, tumultuous politics, and-of course-fabled obsession with the weather.

In Shoreditch, architect Asif Khan erected three enigmatic translucent polycarbonate structures, which he then stocked with furniture and thickets of plants. The project, called Forests, which was commissioned by MINI Living, explored the potential of "third places" in the city: spaces to gather in the public realm, away from home and work. Khan, who designed

ARC DE TRIOMPHE

Created by Alison Brooks Architects, the Smile installation provided a material lesson as it showed possible applications of cross-laminated American tulipwood.

TRADE SHOW NEWS







a summer house for the 2016 Serpentine Pavilion program, explained that he hoped his interventions would foster interaction between strangers as well as raise questions about the relationship between public and private space.

Bompas & Parr also used vegetation as

<image>

a material in *L'Eden*, a bioresponsive garden installed in a Soho gallery. In the fairy-talelike indoor landscape, concealed mechanics and motion detectors animated living plants, causing them to "react" as visitors moved through the space. Thus, under a starlit LED curtain, tendrils drew themselves back to

> ARTY FACTS Foil, by Benjamin Hubert, cast flecks of light around the Victoria & Albert Museum's Tapestry Room (top), while Glithero's The Green Room, a column of 160 bright cords, cascaded down the museum's six-story stairwell (far left and detail). At the first London Design Biennale, Barber Osgerby's Forecast showed which way the wind was blowing (center right).

TOGRAPH

PHOT



clear a path, and a dancing tree bent and swayed along with spectators' motions.

Similar levels of ingenuity were evident in designers' studios and showrooms. For example, to introduce his new lighting range, **Lee Broom** transformed his East London store with an Op Art–inspired installation. *Opticality* featured geometric-pattern pendant fixtures endlessly replicated by mirrored walls, creating the illusion of infinite space.

Eley Kishimoto took its energy to the streets—literally. With help from design

consultancy **Dolman-Bowles**, the fashion duo applied its signature Flash pattern to crosswalks at busy Brixton intersections, improving safety while adding visual flair to the urban environment.

In all, the London Design Festival's messy diversity is its strength: Grand spectacles coexist with subtle interventions, and culture cozies up to commerce. As the event expands into new territory and broadens its international scope, the mix grows even richer. —*Chris Foges*







URBAN JUNGLE

In its garden L'Eden (top), Bompas & Parr included sensors and mechanics that responded to visitors' movements. Architect Asif Khan created three temporary structures brimming with plants, giving Londoners extra green space in which to relax and interact (above and center). To heighten safety awareness at busy intersections, design duo Eley Kishimoto applied its Flash pattern to crosswalks (left).

PARTNERS IN DESIGN





KIM YAO Yao is principal and cofounder ofArchitecture Research Office, a New York Citybased firm specializing in a wide range of commercial, residential, and institutional architecture and interiordesign work. aro.net

KELLY SMITH The creative director of FilzFelt, Smithatrained architectcofounded the company with Traci Roloff in 2008 to bring high-quality German wool felt to the design community. Knoll purchased FilzFelt in 2011. filzfelt.com

ARCHITECTURE RESEARCH OFFICE'S 2013 redesign of Knoll's Midtown showroom not only garnered awards but also won the Manhattan-based firm a new client. ARO's inspired use of FilzFelt, which included wrapping an entire staircase in the high-quality material, made a product collaboration with the Knoll sister company a perfect fit. "They are architects, and architects are our target audience," says Kelly Smith, creative director of FilzFelt.

With their shared interest in environmental responsibility, the two parties settled on a brief: find an elegant way to repurpose remnants from FilzFelt's projects and production runs. The result, ARO Blocks, is a line of sound-absorbing tiles, panels, screens, and baffles.

The modular solutions feature scraps of the company's Wool Design fabric mounted on 10-millimeter-thick PET acoustic substrate. The 100 percent VOC-free tiles come in four patterns—rectangles, asymmetric angles, and two sizes of triangles— and offer a 0.65 NRC. Dozens of colors are available.

"The pieces are flexible and low-tech," says ARO principal Kim Yao. They're also a lesson in artful sustainability. (SNAP #270)





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