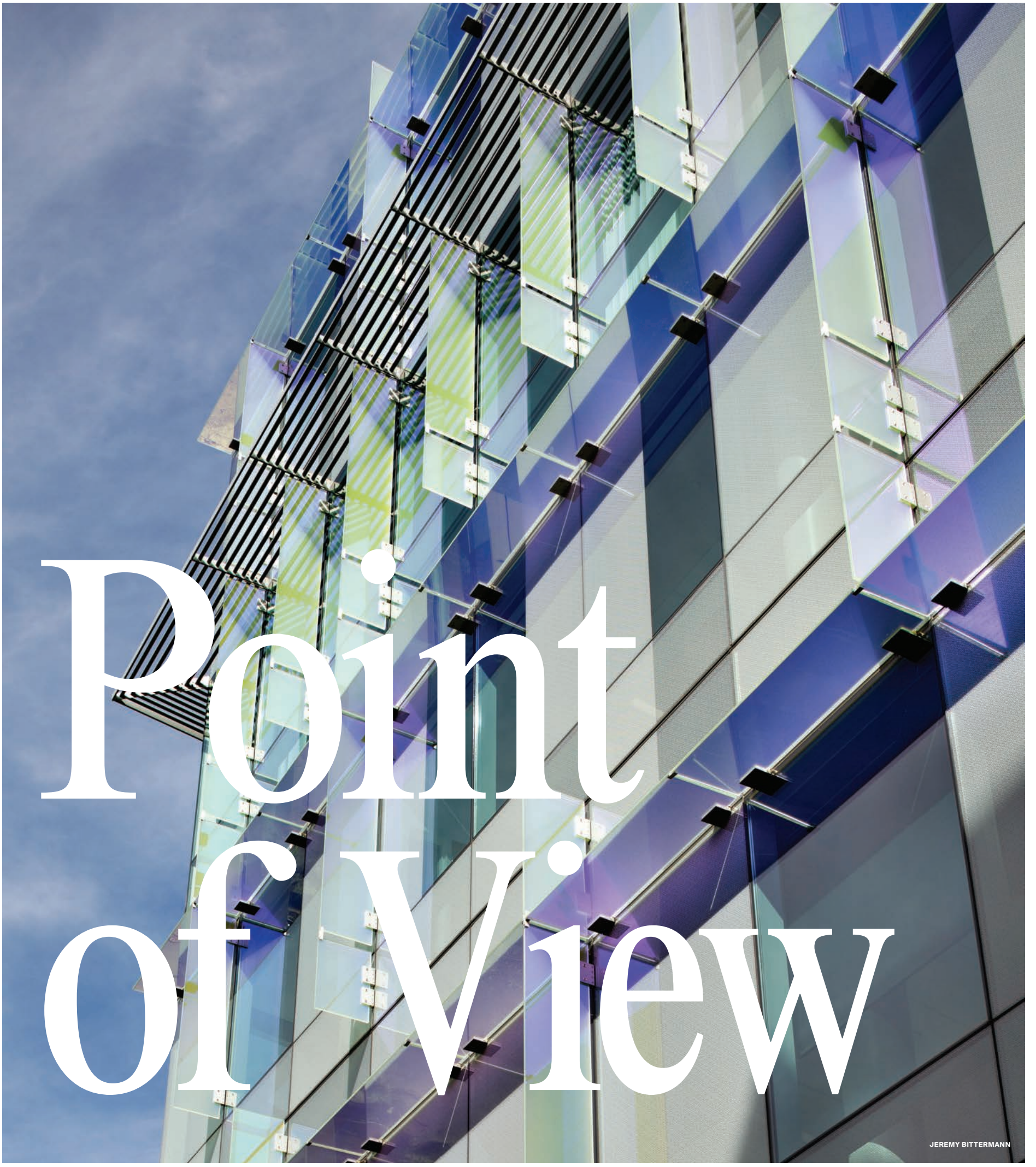
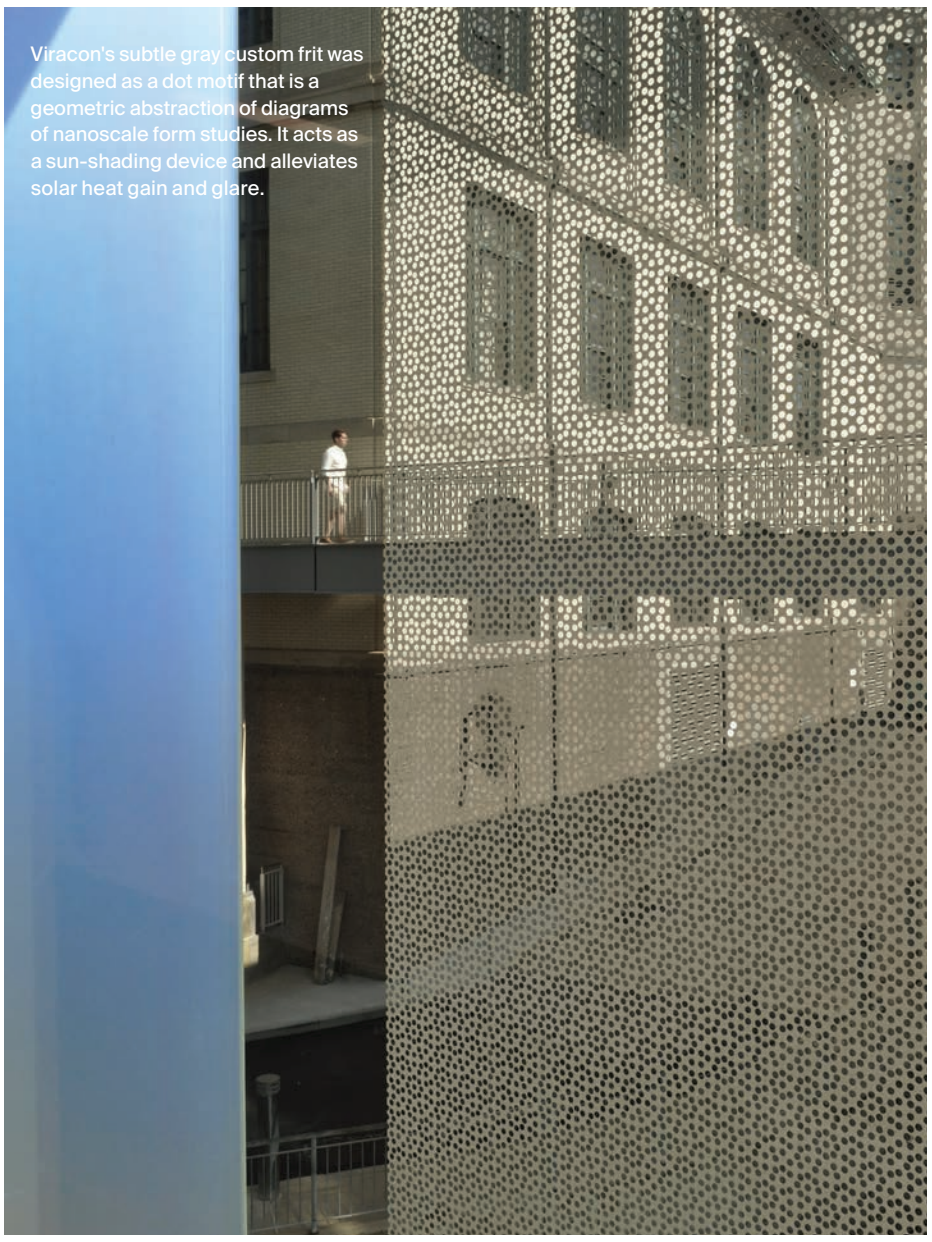
Point of View



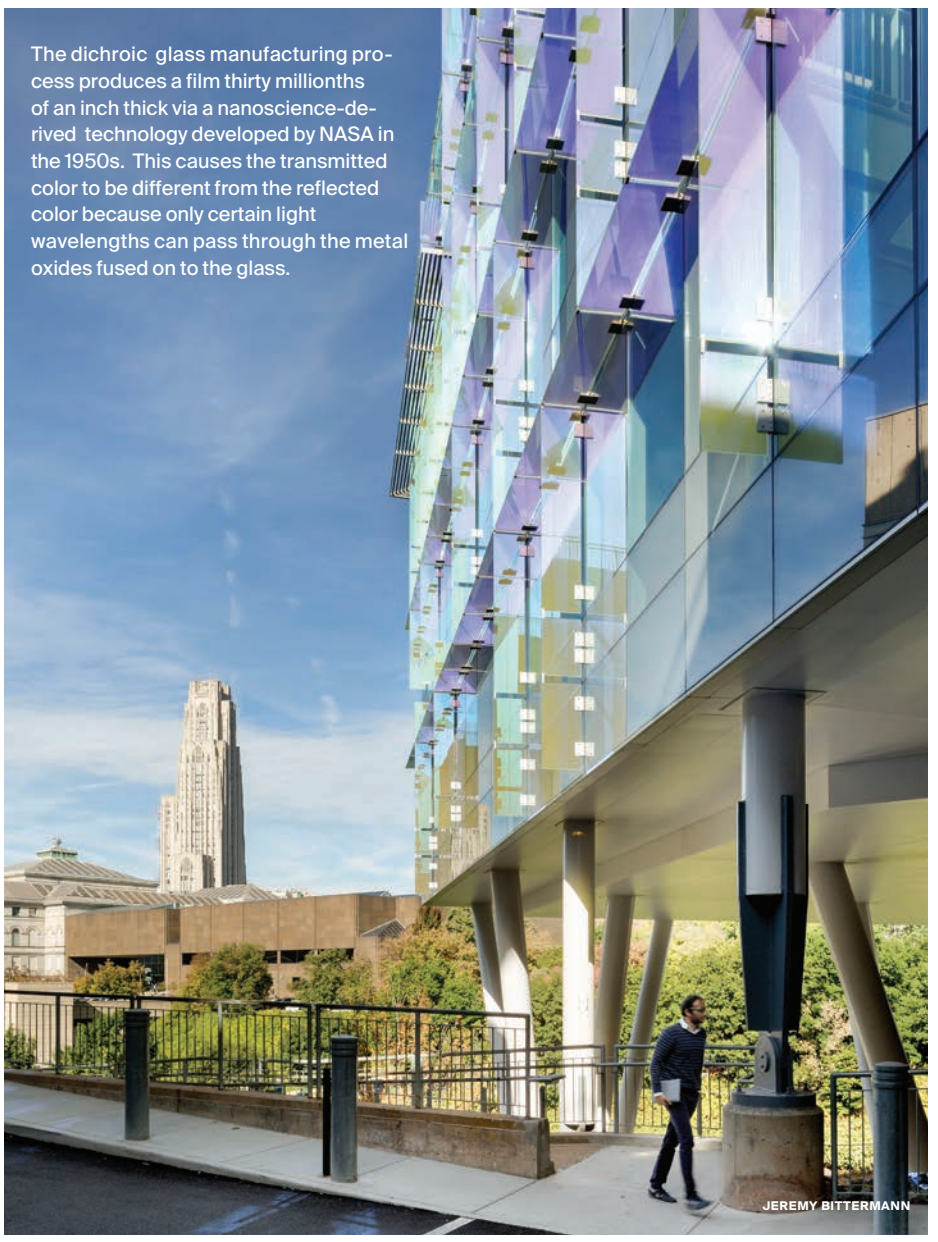
JEREMY BITTERMANN

In this special section we share the latest glass products—from windows to decorative and performance applications—that debuted at the AIA A'18 Expo, NAHB International Builders' Show, Greenbuild International, and GlassBuild America. Furthermore, we explore how architects are employing these new glass typologies in a series of case studies, including a passive tower with a folded glass facade for Shenzhen Energy Company's new headquarters (see page 40) and a dichroic glass facade for the Nano-Bio-Energy Technologies building at Carnegie Mellon University (see page 42). **By Gabrielle Golenda**

Scott Hall at Carnegie Mellon



Viracon's subtle gray custom frit was designed as a dot motif that is a geometric abstraction of diagrams of nanoscale form studies. It acts as a sun-shading device and alleviates solar heat gain and glare.



The dichroic glass manufacturing process produces a film thirty millionths of an inch thick via a nanoscience-derived technology developed by NASA in the 1950s. This causes the transmitted color to be different from the reflected color because only certain light wavelengths can pass through the metal oxides fused on to the glass.

JEREMY BITTERMANN

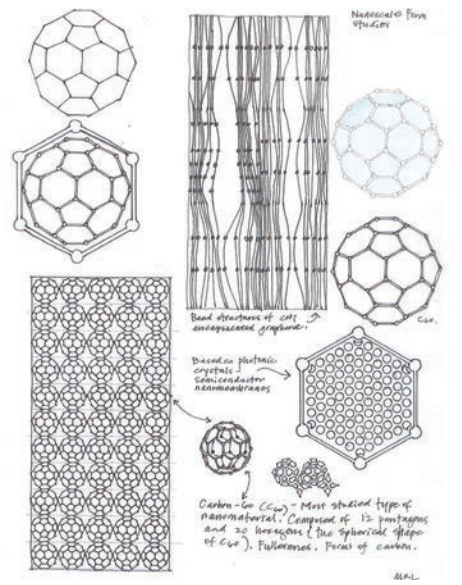
Design Architect	OFFICE 52 Architecture
Location	Pittsburgh
Architect of Record	Stantec
Structural/MEP	Arup
LEED Consultant	evolveEA
Curtain Wall Glass Manufacturer	Viracon
Curtain Wall	United Architectural Metals
Dichroic glass fins	Schott AG
Fabricator	Triview Glass
Installer	D-M Products, Inc.
Insulated glass units fabricator and manufacturer	Viracon

Portland-based studio OFFICE 52 Architecture designed the new 109,000-square-foot interdisciplinary Nano-Bio-Energy Technologies Building at Carnegie Mellon University with an apropos glass facade inspired by form, texture, and color. Materializing as a study of dichroic light, the skin that lines the North Wing of the Sherman and Joyce Bowie Scott Hall features a facade with a vibrant curtain wall that is part of two interlocking geometric forms composing the building. This combination of clear and frosted glass layers includes some with a micro-thin layer of metal oxide created by a process that echoes the nanotechnology work taking place in the facility. "It all has to do with photons, which is essentially light. We wanted to give the build-ing a timeless quality in terms of the custom nanotechnology-inspired frit motif juxtaposed by the dichroic glass," said Michelle LaFoe, principal of OFFICE 52.

In effect, Scott Hall's curtain wall creates spaces that glow with saturated light that passes through the glass layers and diffuses into a plethora of colors—from warm amber to cool grape to saturated cyan—depending on the wavelength of the light beam.

Lending the building an aura of luminance, a rainbow of color changes transpires throughout the day according to the angle the sun moves through the glass. These qualities are created by Schott AG fins—vertical in Narima Orange and horizontal in Narima Blue|Gold. Both are laminated between Vitro Starphire low-iron glass using DuPont's SentryGlas laminate, a clever combination paired with custom frit that allows birds (who naturally have a tetrachromatic visual system with a heightened color perception) to see the color in the dichroic glass. Together, the dichroic fin colors and the ceramic glass frit's printed pattern with a custom subtle gray is what the birds see, ultimately functioning as a safety feature.

The structure is one of the first research-grade clean facilities in the country certified LEED Gold, a feat that both partners attribute to the collaborating engineers and fabricators: "Innovation was most easily achieved when we worked together to fabricate custom fins. Collaborating with the engineers (Arup) and the dichroic glass manufacturer (Schott AG) is an example of collaboration to get the best use of the best products," said Isaac Campbell, principal at OFFICE 52.



The custom glass frit motif is inspired by studies of nano-scale forms, including a mathematical and microscopic nanoscience structure based on photonic quasicrystals. The pattern alludes to the activities taking place within the labs. At the same time, it functionally creates sun-shading.

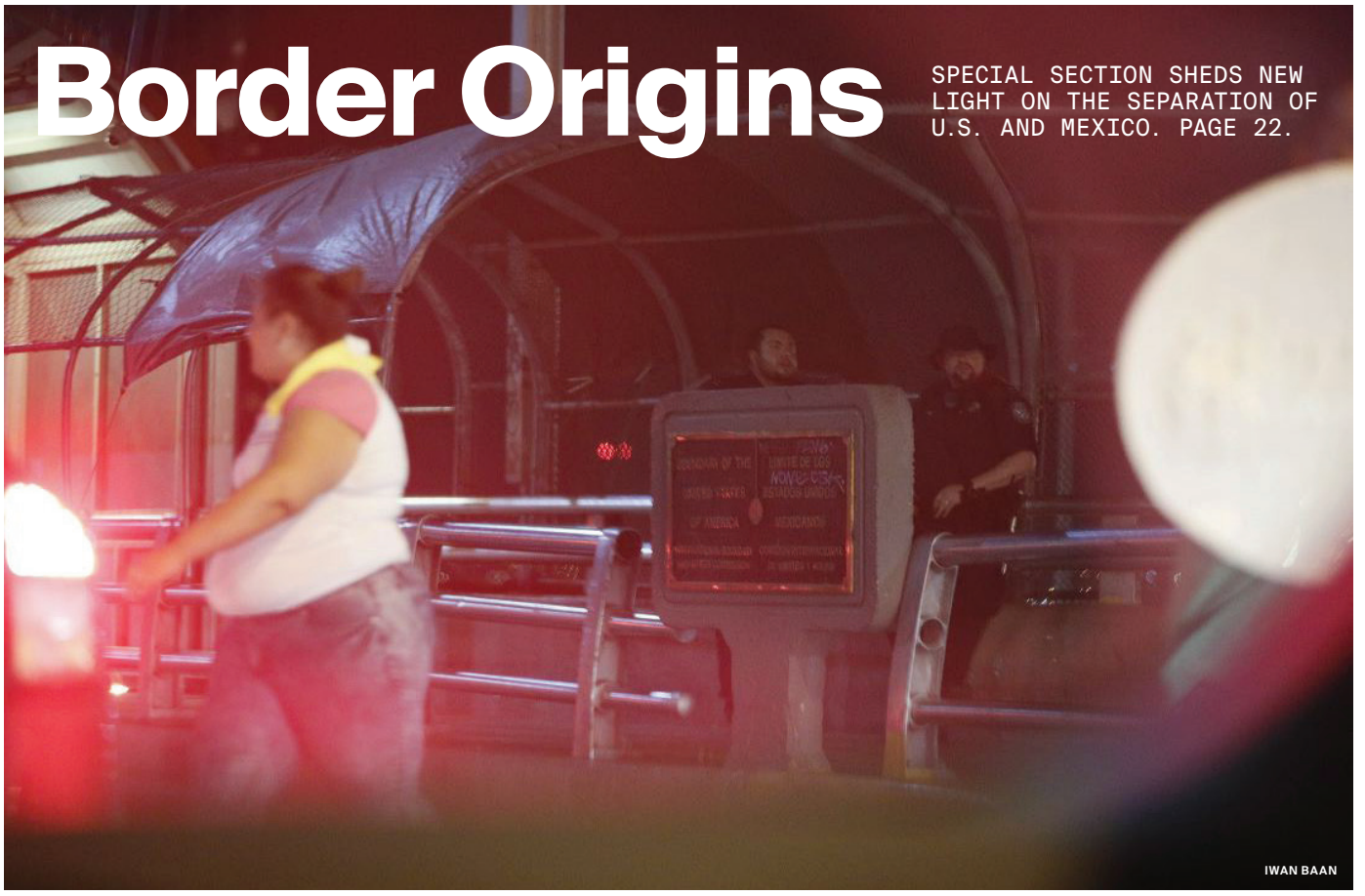
THE ARCHITECT'S NEWSPAPER

★The Texas Issue★

THE ARCHITECT'S NEWSPAPER JULY & AUGUST 2018 $3.95

Border Origins

SPECIAL SECTION SHEDS NEW LIGHT ON THE SEPARATION OF U.S. AND MEXICO. PAGE 22.



IWAN BAAN

This image was taken from a car on the Mexico side of the Paso Del Norte International Bridge border crossing where U.S. immigration officials are reportedly turning away migrants before they get to the checkpoint at the U.S. border.

CONTENTS

The Beaver Is Watching

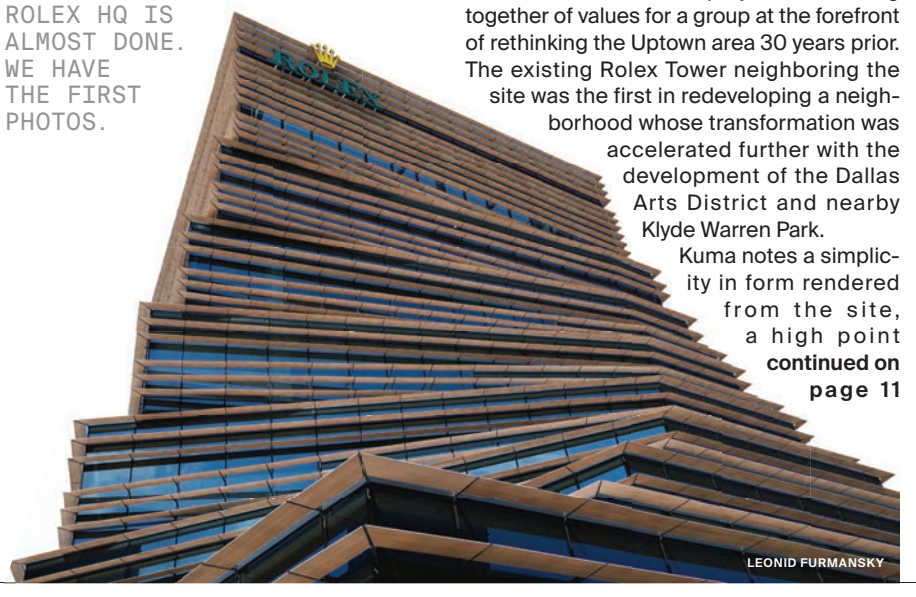
GAS STATIONS ON STEROIDS IS THE ONLY WAY TO DESCRIBE THE TOTALLY TEXAS CHAIN BUC-EE'S.

Here are some things for sale at Buc-ee's: dozens of varieties of beef jerky, jalapeño pepper jelly, fudge, yoga pants, gun cases, faux rusticated wood accoutrements, faux rhinestone belts, cowboy art, meaty kolaches, deer corn, American Hunter game feeders, artisan soap, camo tote bags, sports memorabilia, gummy worms, brisket, BBQ smokers, and just about anything else one could possibly want emblazoned with the portrait of the store's mascot, a cartoon beaver.

For the uninitiated, Buc-ee's is a Texas gas station chain and so much more. Started in Lake Jackson, outside of Houston, by Arch "Beaver" Aplin III in 1982, the chain now has 33 locations throughout the eastern half of the **continued on page 10**

Ha Kuma Matata

KENGO KUMA'S ROLEX HQ IS ALMOST DONE. WE HAVE THE FIRST PHOTOS.



LEONID FURMANSKY

A new home for Rolex within Dallas's Harwood District will mark the first project completed by Kengo Kuma in the southern United States. For Gabriel Barbier Mueller, founder of the Harwood District and one of the largest private collectors of Japanese armor and artifacts, the project is a coming together of values for a group at the forefront of rethinking the Uptown area 30 years prior. The existing Rolex Tower neighboring the site was the first in redeveloping a neighborhood whose transformation was accelerated further with the development of the Dallas Arts District and nearby Klyde Warren Park.

Kuma notes a simplicity in form rendered from the site, a high point **continued on page 11**

Another Kind of Bullet

$15 BILLION BULLET TRAIN BETWEEN DALLAS AND HOUSTON TO ROLL OUT NEXT YEAR.

It's no hyperloop, but construction of a 200-mile-per-hour bullet train from Houston to Dallas could begin as early as next year. Add in the recently announced Amtrak partnership that will cover last-mile trips and tie into the rail company's established interstate network, and Texas is looking at a major mass transit expansion.

Developers Texas Central Partners (TCP) will be privately financing the $15 billion, 240-mile-long high-speed rail line, and have been on a public outreach spree as they attempt to drum up support and garner feedback for their proposal. TCP argues that the Texas Bullet Train will bring in $3 billion in state and local tax revenue through 2040, in addition to the $36 billion in direct spending and tens **continued on page 13**

Reconsidering Houston and San Antonio

See page 30

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