A PLAYFUL PAINT EFFECT TAKES A TORONTO BUILDING FROM DRAB TO DRAMATIC
WORDS: Kendra Jackson
PHOTO: Scott Norsworthy

Whereas regular exterior paint would eventually bubble and peel due to trapped moisture and heat, a custom-tinted mineral stain creates a permeable film that enables airflow. Red awnings and slatted wood signage add contrast to the blue-grey brick.

To many passersby, the rundown three-storey building on a corner of a recently-on-the-rise-again Toronto neighbourhood at best didn’t warrant a second glance. At worst, it was considered an eyesore. Neglected for more than a decade, the century-old structure had languished into a state of disrepair, its exterior an unattractive patchwork of dingy and mismatched brick, delaminated pebble-embedded stucco and small, arbitrarily positioned windows. But local architect Heather Dubbeldam often sees potential in the derelict — not just with the physical attributes, but in the positive influence a building can have on its surroundings. “I strongly believe well-designed architecture can catalyze change and impact a neighbourhood,” she says.

After purchasing the building as the new home for her own practice, she and her team set about transforming it from the outside in, adhering to the firm’s sustainability mandate to always recycle and re-use before demolishing and replacing. To make a more inviting impression, first to be addressed was the fenestration: Bricks were removed to expand the openings — some were joined together, others were widened and all were replaced by a mix of operable casement- and awning-style Schüco models from local retailer Bigfoot Doors. (In this instance, new was necessary to shore up insulation and meet modern-day standards.) “The goal was to create a natural ventilation effect,” says Dubbeldam of the placement and orientation of the windows. Coupled with the newly opened-up roof (a shared terrace for occupants), they create stack-effect ventilation: When the street-level door is propped open, fresh air blows from the ground floor through to all levels, limiting the need for AC in the summer. Increasing the overall window area by 60 per cent, the larger openings also provide ample sunlight to the interiors.

When it came to the dilapidated brick facade, a light yet considered touch was employed. “We wanted to celebrate the heritage of brick and also do something playful,” Dubbeldam says. Inspired by a recent (pre-pandemic) team trip through Scandinavia, she chose a moody blue-grey. “Brick needs to breathe from the inside out, so we couldn’t use regular paint,” says Dubbeldam. Instead, a permeable mineral-based stain from PermaTint was chosen and custom-coloured through a “painstaking” process to find the perfect hue. A trompe l’œil of drop shadows falling in different directions adds a unique characteristic, an effect that further contributes to Dubbeldam’s intentions: to establish a “landmark that people recognize and reference when talking about the neighbourhood” and to prove that urban renewal is achievable when considered gestures contribute to the mix.
AuREUS is a thin material made of agricultural waste that absorbs UV rays and converts them into usable electric current.

Above: Engineer Carvey Ehren Maigue was inspired by the neon facade of the Montreal Convention Centre when developing AuREUS.

A neon-hued solar panel built from upcycled crops harnesses power from the sun—even when there’s no sun in sight.

If all goes according to Manila engineering student Carvey Ehren Maigue’s ambitions, a future retrofit of the Montreal Convention Centre could turn the building’s fluorescent facade into a more-than-18-kilowatt solar farm. “The city itself could become a renewable energy plant,” says Maigue. “That’s what we’re aiming for.”

Maigue is the inventor of AuREUS, which converts the sun’s ultraviolet rays into green energy with a little help from garden-variety greens. Recently recognized with a 2020 James Dyson Award for Sustainability, his panel design works in two stages. First, organic luminescent particles extracted from fruit and vegetable waste start to glow as they absorb incoming UV, producing visible light. Then, using the same type of photovoltaic plates found in conventional solar panels, that light energy is transformed again, this time into usable electric current.

Since the UV rays that AuREUS captures are present even when it’s cloudy and can bounce off surfaces to reach shadowed areas, the technology harnesses energy in places where conventional solar panels cannot—like building windows. The plastic-like material’s organic origins also cut down on food waste by upcycling spoiled or damaged crops.

To hear Maigue tell it, grinding, distilling and filtering the necessary particles from ingredients like rotten ginger is as easy as baking lockdown focaccia. “During the pandemic, I couldn’t use the laboratory equipment at my university, so I used my mom’s kitchen,” he says. “It’s worked so far.”

Like all the best inventors, Maigue also experienced his big Eureka moments during everyday life: The UV-sensitive transition lenses on his glasses revealed the solar energy present on overcast days, while a drink that he saw glowing under the black light at a local bar led him to research the fluorescent properties of certain foods. A documentary about the particle physics behind the Northern Lights finished the puzzle—and gave the system its Aurora Borealis-inspired name.

Maigue’s early prototypes have moulded his technology into thin films that can be easily sandwiched between double-paned glass. Montreal’s exhibition hall is an especially good candidate for the invention since its colourful facade corresponds to the material’s neon hues, which are necessary to successfully absorb UV. “One of the defects of my product is that it’s not a clear window,” Maigue admits. “But the building in Montreal is a big inspiration.” Evidently, if designers are willing to envision a more colourful future, a cleaner future could be close behind.
SKYLINE WITH PURETI
Toronto architect Brenda Izen combined two sturdy materials — Indiana limestone on top and Neolith’s Skyline, a sintered stone ventilated facade, below — to bring a sense of airiness to a recent project, House 95. Upping the performance of the exterior surface, Neolith’s porcelain panels were finished with Pureti, an environmentally friendly photocatalytic treatment with self-cleaning capabilities. When it comes in contact with sunlight, inorganic contaminating agents (like NO\textsubscript{x} and SO\textsubscript{x}) are destroyed, helping to reduce pollution by purifying the air. The finish also extends the lifespan of the material while maintaining its pristine appearance.

neolith.com, pureti.com, izenarch.ca

TERRAÇADE
Glen-Gery has introduced its first ceramic cladding, Terraçade. Prefinished, colourfast, high-impact resistant and able to withstand extreme weather — from intense UV exposure to freezing temperatures — the material promises to retain its integrity for years to come. Formats include two tiles (30 by 58.8 and 30 by 118.8 centimetres) and a baguette (5 by 5 by 100 centimetres), plus suspension rails, internal and external corner finishes and other accessories. Smooth, glazed, sand-blasted or watermark surfaces are available, each in a range of colourways.

glengery.com

MITREX BIPV
Unlike traditional solar energy generation panels, Mitrex’s BIPV (building-integrated photovoltaics) materials can be seamlessly incorporated into any building exterior. A solar cell is applied to an aluminum honeycomb base, which is in turn layered with tempered glass with a ceramic facing that can be endlessly customized. Finishing options range from monochrome colours and precast concrete to natural wood or stone and even tailor-made designs; the adaptable cladding system can be incorporated into retrofits as well as new builds.

mitrex.com

MITREX BIPV

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WORDS Elena Sénéchal-Becker

Strong Points

Skylight with Pureti

Skylight with Pureti

TERRAÇADE

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Memphis State of Mind

A STRANGE AND SCULPTURAL SKIN ENSHROUDS A SHOWROOM DEDICATED TO THE AVANT-GARDE MOVEMENT

Words _Kendra Jackson   Photos _Shao Feng

Bold geometric shapes, garish colour combinations, vividly stylized patterns and motifs — the instantly recognizable hallmarks of Memphis design are a far cry from understated. And so it would follow that an exhibition space and showroom dedicated mainly to furniture and objects from the groundbreaking 1980s movement should be equally curious, exaggerated and bizarre. When commissioned for a Memphis Milano outpost in Hangzhou, China, local designer Li Wenqiang took the collective’s advocacy for “unrestricted creative expression” to heart and devised a renovation that was both a departure from its surroundings and an indicator of the “unexpected sensory experiences” the pieces inside bring to people.

Set on a busy corner in the city, Ye Spacial commands attention with a spiky exterior that was conceptualized as a cliff face (In Chinese, the word for “cliff” is pronounced “ya”). Wenqiang, who headed his 12-member studio PIG Design in 2015, wanted to give the “white box exhibition hall a totally different perspective.” After comparing the integrity and usability of possible materials, he opted for corrugated sheet metal — more than 200 triangular panels of it — to clad the pre-existing 455-square-metre building that would house the two-storey showroom. “Metal seems to be more abstract, and technology can make each piece have its own direction,” he says.

To realize the vision, Wenqiang and his team welded a large-scale steel framework to the existing building before installing the custom-fabricated wedge-shaped panels, which are a deviation from standard rectangular boards. These modules were fine-tuned with the supplier off site, then finished on site with T-shaped strips to conceal their exposed edges — a troubleshooting to keep costs down. To create a crystalline and organic showstopper, Wenqiang applied the panels in alternating orientations, which resulted in the ridged triangles mimicking the slapdash arrangement of the geometric forms favoured by the Memphis Group while also riffing on the random nature of rock formations. In a final salute to the movement’s penchant for conflating rudimentary shapes, a bronze-ringed circular glass door punctuates the silvery facade and provides a warm entry point for visitors, protected under the cliff’s edge. Ye Space! is peculiar, multi-faceted and over the top — in short, an appropriate homage to the nonconformist postmodern movement that turned convention on its head.

ABOVE: More than 200 custom-cut sheets of steel were used for the unique facade of the Ye Space! showroom.
The windswept shores of the Adriatic Sea may seem like an unlikely place to find a minimal, Nordic-inspired cottage, but Italian architect Valeria Aretusi has built just that. Set into olive tree–speckled hills overlooking the Italian village of Roseto degli Abruzzi, Residenza G is a stark contrast to the ornate 19th-century villas and sixties-era apartment buildings populating the town below.

"[It is] unique in its style, especially for its contemporary character and Nordic design," says the architect. The wood-frame dwelling is an uncommon mode of construction in Italy but one of Aretusi’s areas of expertise. The pitched-roof, 118-square-metre house is divided into two slightly staggered mirror-image modules: one for the multi-generational Ferretti family, the other as a working showroom for the clan’s nearly 60-year-old confectionery business.

With the intent of improving thermal and acoustic insulation and to protect the structure from coastal humidity, Aretusi looked to Italian decking and cladding manufacturer Déco for an energy-saving ventilated facade, specifically its Ultrashield system in an antique finish. She chose the material both for its tone, which reminisces the grey of salt-weathered rock, and its sustainable qualities, of which there are many.

"The whole house is built with ecological materials and technologies," says Aretusi, who also installed a rainwater collection and purification system to irrigate the garden — a Moroccan-inspired alcove painted Yves Klein blue — and surrounding lawn. "I looked for a facade covering that would complete the eco-sustainable project and marry with the design," she adds.

Composed of recycled hardwood shavings mixed with a biodegradable PVC substitute and wrapped in a polymer shield, the slats (which are stain-, fade-, and crack-resistant) were simple to install; similar to decking, the boards are affixed with bolts to a substructure of joists.

The wood-look composite was necessary "to make the project warmer and to integrate it with the surrounding landscape without forgetting the sense of continuity between inside and outside," says Aretusi. Simple and sustainable, it was a move in keeping with the home’s Nordic roots.

valeriaaretusi.it


www.engineeredassemblies.com

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**STENI VISION**

This polymer-stone composite system from Norwegian facade manufacturer Steni offers realistic expressions through a signature printing technology. In 14 standard patterns that mimic natural wood, stone, and concrete (plus matte, semi-matte and high-gloss finishes), the cladding can also be specified with custom illustrations and graphics, like the shimmering fish scale design for Norway’s Arctic Salmon Center by architect Peter W. Söderman of Norconsult, shown here. Offered precut for ease of installation, the water-impermeable panels are frost- and impact-resistant and low-maintenance.

steni.com, norconsult.com

**ATELIER**

Casalgrande Padana’s new collection of porcelain stoneware tiles, dubbed Atelier, features large-format, ultra-thin monolith panels. Measuring only 6.5 millimetres thick, the brightly coloured tiles were made to complement the company’s other natural-looking materials (wood, marble, stone; plus metal and concrete) with a barely there yet eye-catching effect. Available in a range of eight pastel monochrome tones, Atelier is UV- and stain-resistant, ensuring the longevity of its inviting hues. It’s available in various formats, from 40 by 120 to 120 by 278 centimetres, with a natural matte finish.

casalgrandepadana.com

**SYSTEM**

The System collection of exterior and interior tiles from Ceramica Vogue has been updated with an extensive palette of fresh colours by Italian architecture and design firm Marcante Testa. Offered in four surface finishes — satin, glossy and two non-slip — the frost-proof glazed porcelain tiles come in a range of sizes (from 5 by 5 to 20 by 40 centimetres) with a combined total of 74 colouros and an array of special finishing pieces.

ceramicavogue.com

**1 SET IN STONE**

The newly retrofitted Hong Kong Museum of Art features a dynamic exterior that mimics the undulating waves of nearby Victoria Harbour, achieved via the installation of Equitone’s Tectiva range of through-coloured cement panels. An ode to traditional Chinese masonry patterns, the customised aluminium-framed modules are each made from five separate pieces; cut at differing angles, they create shadow joints that enhance the 3D effect. Sound-insulating and resistant to water damage, extreme temperatures, fungi and bacteria, the material has a sanded surface and is available in nine standard colours.

equitone.com

**2 OUTER WEAR**

Wrapped in 8,500 custom panels of Lorin Industries’ ClearMatt series of anodized aluminum, the U.S. Olympic & Paralympic Museum in Colorado (designed by Diller, Scofidio + Renfro) evokes a sense of movement fitting for a building dedicated to sport and athleticism. Made by MG McGrath, the lightweight yet extremely durable diamond-like segments were coil anodized so as not to oxidize or scratch, ensuring their longevity; the material also reflects and refracts light to further the three-dimensionality. Offered in a range of finishes, it’s 100 per cent recyclable and low maintenance.

lorin.com

**3 FABRIC INFLUENCED**

For a textile company in Foshan, China, Lucien International—Masanori Designs devised an exterior that recreates the symmetry of yarn on a loom using slender white-toned aluminum bars. Stretching from the second level to the first, the rigid material appears to billow softly around the building, lifting gently to offer a glimpse inside.

masanoridesigns.com