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ADVOCACY AND SOCIAL IMPACT+ OCULUS: 80TH BIRTHDAY

BUILDING A RENEWABLE FUTURE

The materials we use today will have an enormous impact on our living conditions now and in the years ahead.

BY CASSANDRA GERARDO

The Intergovernmental Panel on Climate Change, a scientific panel organized by the United Nations, released a harrowing report last October on the accelerated impact of global warming by 2040. The report underlines the fact that, while sustainability is a cornerstone of architectural best practices, it must be a critical component of design in our plans for a renewable future. The use of materials that endure and conserve energy is essential. These take many forms, but include those that can easily be swapped out and upcycled, that perform double duty as a design focal point and a sound dampener, and that replace an outdated energy-wasting method with a more sustainable approach. Here are some of the most effective sustainable materials available today:

CORK: RESILIENT, RESISTANT

Daniel Michalik, founder of Brooklyn-based Daniel Michalik Furniture Design, has been experimenting with cork since 2004, when he was writing his master's thesis in furniture design. Porous yet firm with a pleasingly soft tactility, cork has sensorial attributes that are uniquely appealing. It is waterproof, long-lasting, resistant to molds and microbes, and able to withstand changing climates, making it useful both indoors and out for flooring, wallcoverings, and furnishings.

Michalik uses cork from Portugal, which produces 49% of the world's supply. Praising cork as a zero-waste product, he sends any leftover waste back to his supplier, Amorim, which remolds it into blocks for reuse. "Cork represents a different way of using natural materials, based on how it's generated," he says. The material has a nine-year renewal cycle, he explains, and its regular harvest helps promote a healthier forest. Michalik recently consulted with architecture students at Parsons School of Design in New York City for the school's annual Design Workshop. This year, students are using insulating two-inch-thick cork siding from Amorim on the exterior of a learning hub building they have designed for non-profit use on Governors Island. Andrew Harvey, a student in the workshop, notes that cork met the project criteria of using healthy materials, but had other benefits as well. "In the design phase," he says, "we learned that cork will help the thermal performance of our building." The project is scheduled for completion at the end of 2018.

FELT: AN ANCIENT MULTITASKER

The earliest uses of felt date back to ancient Mesopotamia, making it one of the oldest textiles still in use today. Alexandra Cuber, head of the hospitality department at Fogarty Finger, says that while felt has always been an option for interiors, she has seen it used heavily within the last two years. "Felt works really well with Fogarty Finger's aesthetics and color palettes," Cuber says, explaining that felt can either blend into the background or become a statement piece within a space. Because of industrial innovations that have expanded the variety in felt thickness, color, and shapes, the textile can be used in blackout shades, sound dampeners, cushions, patterned tiles, wall and ceiling coverings, and upholstery. Derived from wool, felt is sustainable, biodegradable, easy to produce, and resistant to fraying because it is non-woven. It is also naturally fire-retardant and can be made water- and soil-resistant by adding a thin, waxy coat of lanolin.

Cuber recently used felt in the shared offices of two private New York-based financial clients, whose existing space was composed of hard surfaces. Felt wall panels provide an acoustical softening to the office and help create a warmer feel to the space. Fogarty Finger partners with the company FilzFelt, which not only supplies felt rolls, but offers customized intricate CNC cut-felt, dimensional patterned sound-softening panels, and an array of patterned felt tiles. The company says it upcycles felt remnants into new products or sells them at a reduced rate for others to use.

BuzziSpace, based in Antwerp, Belgium, uses upcycled PET bottles to create BuzziFelt, a felt alternative that is indistinguishable from its wool counterpart. It is available in a variety of colors, and any leftover trimmings are used in the company's unique striped fabrics called BuzziSwitch. The felt is used in wallcoverings, furniture, and light fixtures.

Photo credits: Daniel Michalik Furniture Design (opposite page); FilzFelt (above)

CONCRETE VENEER: FLEXIBLE DURABILITY

Concrete veneer, a cost-effective, chameleon-like substance, can emulate surfaces such as metal, wood, and stucco. STUDIOS Architecture used Vitrūv concrete veneer to outfit the walls of Nike's New York headquarters' lobby, creating a perfect match with the lobby's concrete flooring. Vitrūv, a combination of concrete and acrylic polymers, comes in a wide range of finishes that can be matched to almost any existing paint or surface. Because of its chemical makeup, it is particularly flexible and crack-resistant, adapting well to structural settling. It is also extremely durable, resisting exposure for up to 15,000 rub cycles, making it a smart and sustainable choice for high-traffic areas.

With concrete veneer, explains STUDIOS Associate Principal Frank Gesualdi, "You can completely control where joints go, design the material's scale, and decide how much of the original surface you reveal through the veneer." Although the veneer on its lobby walls was applied to have a cool, smooth finish, Nike intends to distress it by hiring street artists to etch, draw, and paint on the walls. As new art appears, the walls will continue to tell an evolving urban story.

TERRASTRAND®: WHO NEEDS PETROLEUM?

Most plasticized PVC yarns are softened with petroleum-based products containing phthalates, which have been linked to health concerns such as asthma, breast cancer, and fertility problems. So Chilewich developed TerraStrand®, which utilizes 25% renewable plant-based polymers, is phthalate-free, and still retains the softness and flexibility central to the company's woven products. Created in 2013 and now fully integrated into all but one Chilewich product, TerraStrand is stain-resistant, long-lasting, and waterproof—and its contract products are also treated with Microban®, making them antimicrobial. The company claims it has saved 6,400 gallons of petroleum annually since implementing TerraStrand.

Chilewich uses TerraStrand to make textiles used in wallcoverings, wall-to-wall flooring, rugs, tiles, wall treatments, and upholstery—not to mention the popular placemats carried by MoMA. Leftover production scraps become part of founder Sandy Chilewich's art or are handwoven into bespoke salvage rugs.

LED SCREENS: POWER DOWN

By tracking the market shares for top LED component suppliers for many years, London-based global information firm IHS Markit released a report in December 2017, citing that the global use of LEDs to illuminate buildings and outdoor spaces reduced the total CO2 emissions of lighting by an estimated 570 million tons in 2017. This reduction is roughly equivalent to shutting down 162 coal-fired power plants.

The use of LEDs extends far beyond illumination, however. LED screens allow for an evergreen space where branding, customization, and relevant information can live before the appropriate audience. According to Gideon D'Arcangelo, ESI's vice president of creative strategy, "Clients approach ESI Design for our expertise in transforming places into experiences. Sometimes we achieve that through the use of communications technology that typically reduces the need for traditional materials such as print media and static signage, which can be unwieldy to update." With LEDs lasting from 7 to 15 years and e-cycling at the end of their lifespan, they save energy from the persistent output of traditional print marketing methods.

Completed in November 2017, the LED lights of ESI Design's 900 North Michigan Shops transform the shopping center's once-static ceiling into a 190-foot-long, enlivened LED canopy of high-definition kaleidoscopic art, atmospheric skies, and animated store branding. To allure shoppers and keep content fresh, the media programming is easily customizable for special events. "The new tech-infused environment becomes a flexible and powerful communications channel for clients to share their brand story in a dynamic and immersive way," says D'Arcangelo. ■

Photo credits: courtesy of Nike (opposite, top); Chilewich (opposite, bottom); Caleb Tkach (right) courtesy Save a Sample (bottom right)

SAVE A SAMPLE 2019

An inexpensive, eco-friendly way to support design schools

Instead of tossing material samples during the next office spring cleaning, consider donating them to Save a Sample. Going into its 20th year, the event collects material samples from design studios and vendors and delivers them to design schools across the country. During the 2018 event, donations from over 105 design firms diverted 5.4 tons of architectural and design waste from landfills, and provided 23 schools with invaluable design supplies. This year, Save a Sample aims to double its efforts by reaching out to 18 cities. Sign-up for design firms begins January 28, 2019. For more information, visit http://www.saveasample.org.