

Breathing Room

A new take on the staff lounge helps frontline workers avoid burnout by tapping the brain's natural cues to chill. The good news for the rest of us: You can try this at home.

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PG 54
Spring 2021
popsci.com





During New York City's first COVID-19 surge, an oasis beckoned stressed and exhausted Mount Sinai Hospital physicians, nurses, and other frontliners. During breaks or between shifts, they could sink into high-backed chairs beneath a canopy of silk trees, breathe in calming scents of lavender and chamomile, and, in the dimmed light, lose themselves. Floor-to-ceiling nature videos whisked them away to mountain lakes, lush forests, or oceanfront beaches. The enclave—a converted triage tent with an arched roof just steps from the pandemic's front line—offered a healing all its own to a burned-out crew.

“The trauma of seeing death after death during the peak was very difficult for all,” recalls Dahlia Rizk, an internal medicine physician who works with severely ill patients and leads a 30-person hospital team at Mount Sinai, which, with more than a dozen sites, is one of New York City's largest health care systems. At the deadliest point of its COVID epidemic, the city logged more than 5,000 cases and nearly 600 deaths daily. “It was a very intense time—nobody knew if they would live or die, caregivers were dying too.”

Long before this reprieve tent, health care institutions embraced nature's restorative properties—that's why some create healing gardens for recovering patients. They've also provided break spaces and even yoga studios to relieve staff. But installing indoor features that mimic an outdoor idyll at Mount Sinai began just as the pandemic was delivering its hit to the Big Apple in 2020. The idea for the recharge rooms, as they were dubbed, came from neuroscientist David Putrino and Mirelle Phillips, who is founder and CEO of Studio Elsewhere, a design firm that specializes in immersive settings that foster resilience. Their creations don't envelop hospital staff in real trappings (soil-based plants aren't allowed because of potentially pathogenic microbes), but they feature powerful analogues that engender the same feelings. “There's a lot of research that spending time in naturally beautiful environments can be cognitively very restorative in a short amount of time,” says Putrino, whose work at Mount Sinai focuses on studying performance and how people can recover skills lost to illness, trauma, or stress.

A survey conducted by the advocacy group Mental Health America from June to September 2020 found that 93 percent of the country's health care workers were stressed, 86 percent grappled with anxiety, and three-quarters were exhausted, burned out, and overwhelmed. Before COVID hit, Putrino had been investigating nature's recuperative effects.



When his lab had to close as lockdown began, he collaborated with Phillips to convert it to recharge rooms—eventually creating more than 20, including the triage tent, for teams throughout the Mount Sinai network. When he surveyed the immersed, they reported a 60 percent drop in stress levels after 15 minutes, according to a study he published in November 2020 in *Frontiers in Psychology*.

That was certainly true for Rizk. Right before the surge, she had sent her husband and two small children to her mother's house in Florida. A recharge room video of rolling ocean waves lapping a stretch of golden sand became her favorite, virtually reuniting her with her family. “It was a way for me to escape

metropolitan landscapes, but moving nature inside homes or workspaces can be equally beneficial, especially if we have to stay indoors for lengthy lockdown-esque stretches. We are feeling more frazzled, anxious, exhausted, bleary, and dreary, at least in part because, in our flat-screen, remote-working-and-learning reality, we are missing the outside world with all its smells, sounds, sights, and sunlight. According to the Kaiser Family Foundation, a nonprofit focusing on national health issues, about 4 in 10 American adults were experiencing anxiety or depression nearly a year into the pandemic, compared to a Centers for Disease Control and Prevention finding of only 1 in 10 in 2019. Adapting some of the features of recharge rooms promises a restorative lift—during and long after these pandemic times.

RIGHT: Designer Phillips and doctor Putrino outside a tent they fashioned as an oasis for hospital workers.



PREVIOUS PAGE AND AT RIGHT: MAKSIM AXELROD / COURTESY STUDIO ELSEWHERE (2)

and pretend I was with them in my happy place, on the beach at our family home,” she says. “I would put the scene on and just cry—it was a release.” She cried over her children she couldn't hug, over the patients she couldn't save. “There was no time to process how much and how quickly this was happening, and the room was a way to unload,” she says. At the end, she'd wipe off tears and go back to the COVID wards to keep saving those she could.

Over the past decade, urban orchards, rooftop farms, and rain gardens have sprouted in

Recharge rooms tap the concept of biophilia, or love of the natural world. Introduced in 1984 by biologist Edward O. Wilson in his book *Biophilia*, the notion postulates that humans have an innate connection with the living world that surrounds us and tend to associate with other beings over inanimate objects. A few years later, University of Michigan psychologists Rachel and Stephen Kaplan proposed a theory called attention restoration, which suggests that enjoying the great outdoors—climbing mountains, trekking in forests, and diving in oceans—can help humans replenish mental capacity depleted by stressful and draining urban life.

Eventually, architects and designers started pondering the benefits of biophilic elements in their projects. In 1996, the furniture company Herman Miller moved its workforce into a new building with large windows overlooking beautiful landscapes. Subsequent research orchestrated by psychologist Judith Heerwagen made an interesting discovery: a boost in productivity during manufacturing day shifts. Those who study offices took note. In 2001, Heerwagen co-authored a paper in *Environmental Design & Construction*, charting a new direction for urban architects. Three years later, William Browning, co-founder of sustainable design company Terrapin Bright Green, and social ecologist Stephen Kellert advised the first-ever biophilic conference, bringing together researchers and designers. The flurry of papers generated by the event scrutinized the psychological effects of incorporating biodiverse elements into our steel, glass, and concrete structures.

All that literature clearly outlined that humans perform better when surrounded by sunlight, greenery, and components of the outdoors. The concept caught the attention of Silicon Valley giants like Google and Facebook, which saw these settings as a way to attract and retain the best talent. “Tech companies were the first to pick up on this,” Browning says. As he worked with them to greenify their offices, Browning outlined 15 principles—“patterns,” as he calls them—covering elements like airflow, rustling of plants, reflection of light off fabric and other materials, and flowing water, which he later described in his handbook, *Nature Inside*.

The right mix of these features can have positive effects on the brain. Watching gurgling streams, ocean tides, or butterflies landing on flowers puts us in a state that environmental psychologists call soft fascination, in which our minds unwind. It’s the opposite of hard fascination—a state of concentration and focus that engages the prefrontal cortex, the section of gray matter tasked with making rational decisions. A 2015 study by a collaborative team from Stanford University, the Royal Swedish Academy of Sciences, and the Laureate Institute for Brain Research in Oklahoma found that nature walks quiet this area and reduce repetitive negative thinking about oneself. Experiencing the outdoors also engages our parasympathetic nervous system, which controls bodily functions when we’re at rest and decreases respiration and heart rate. Taken together, those changes bring down our blood pressure and promote a general feeling of well-being, helping us rejuvenate.

Researchers have only recently turned to quantifying the physiological and cognitive benefits of bringing biophilic environments inside. In one of the first efforts of its kind, a team headed by Jie Yin, who studies the intersection of environments and well-being at the Harvard T.H. Chan School of Public Health, added exterior elements to a lackluster indoor space in 2017. They trucked in plants, arranging them in a vibrant green cluster by the window, laid out a bamboo floor, and positioned a table and a chair to let a resting person look out the window at a stretch of Boston’s Emerald Necklace, a

chain of parks encircling the city.

The team outfitted participants with wearable sensors tracking their heartbeat, their blood pressure, and their skin’s electrical conductivity—a way to gauge the body’s arousal levels by measuring sweat gland activity. With this setup, Yin and his colleagues measured the subjects’ stress reduction in the biophilic space versus a typical drab classroom. Their study, published in the March 2018 issue of *Building and Environment*, reported that just five minutes of sitting in a verdant corner and staring out the window

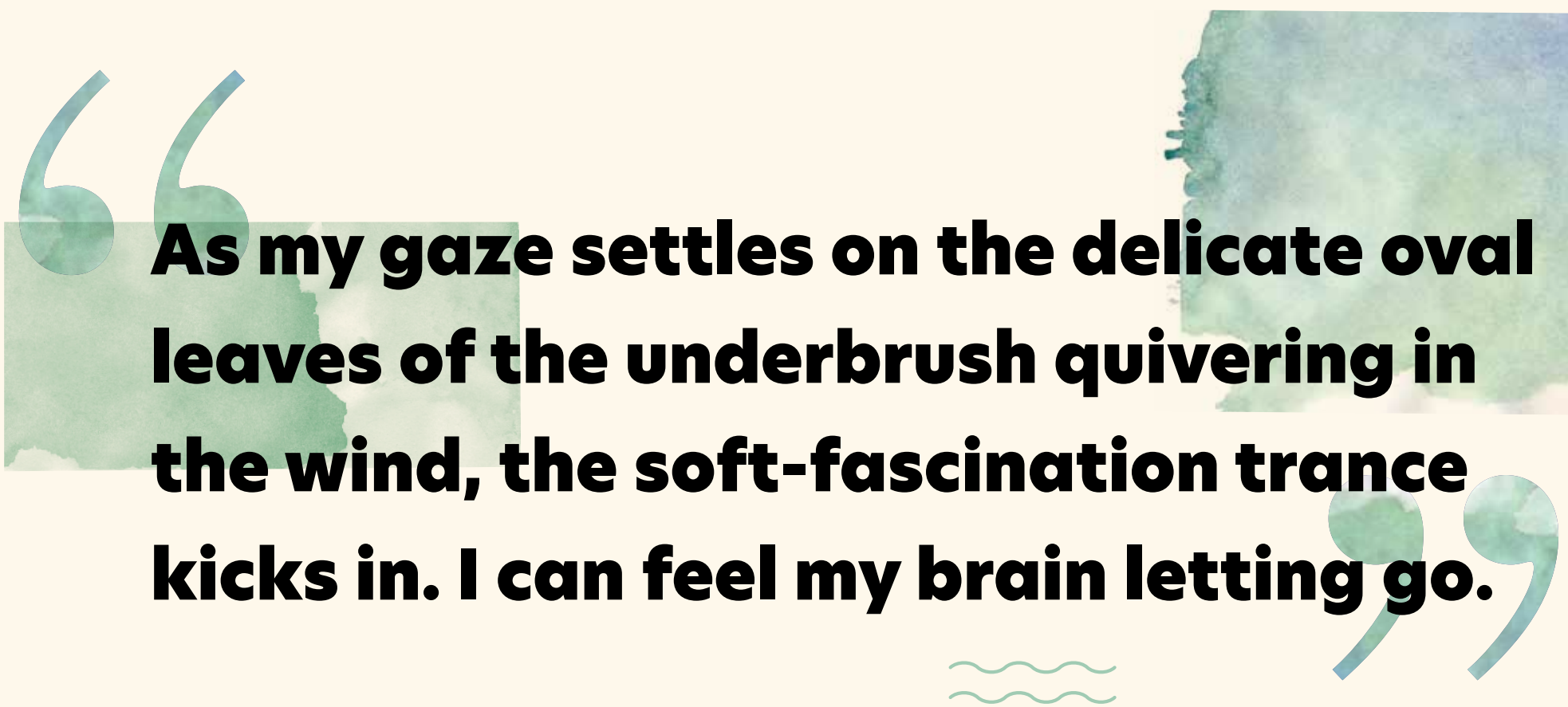
conjunction with the study of real-world settings. They recreated the contrasting spaces in virtual reality and compared participants’ experiences. It turned out that resting in the biophilic VR space was nearly as beneficial as doing it in its physical equivalent. “If you compare the real and virtual environments, the real one is a little bit better, but the virtual environment is not significantly different,” Yin says.

The idea that impactful natural scenes don’t require real trees, real breeze, or real sun underlies Phillips and Putrino’s work in resilience and recovery.

Japanese evergreens. “It’s reminiscent of a forest floor.”

Several tall silk-leaf trees and smaller, fernlike plants dot the space. As I lean back into a chair, resting my feet on a rug woven from natural yarn that feels like textured dried grass, Phillips issues a command to her voice-activated setup: “Hey, Google, take me to the redwood forest.” And so it does. A projector turns on, and the white wall in front of me transforms into a path disappearing into a beckoning emerald thicket. It’s so inviting and mysterious that I can’t help but stare.

As my gaze settles on the delicate oval leaves of the underbrush quivering in the wind, the soft-fascination trance



As my gaze settles on the delicate oval leaves of the underbrush quivering in the wind, the soft-fascination trance kicks in. I can feel my brain letting go.

brought down blood pressure and skin conductance and boosted mood better than the unadorned setting. But the most impressive finding was an uptick in short-term memory: Asked to recall strings of numbers and recall them in reverse order, subjects boasted a 14 percent improvement in the task after resting in a biophilic setup compared to when they performed the same test in the other space.

Yin’s team also made an intriguing discovery in

Walking into a recharge room feels immediately transformative. The dim glow of faux candles instantly relieves my eyes after the painfully bright fluorescence of hospital lights. A gentle breeze caresses my skin. While generated by an air purifier, it circulates naturally around the space. A woodsy, mossy, grassy scent—invigorating, even through a mask—envelops me. “We’re using Hinoki cypress diffusers,” explains Phillips, referring to aromatic

kicks in—and a last wave of relief washes over me. I can feel my brain letting go. I start breathing deeper. I sink into the chair as if it were a hammock suspended between trees. As birdsong pipes up a few seconds later, I’ve already gone elsewhere, as Phillips’ company name promised I would.

Phillips came to create Studio Elsewhere following her own medical battle. A few years ago, she suffered a neurological trauma so puzzling that doctors had trouble pinning down the diagnosis. As she went in and out of the hospi-

tal, Phillips lost her normal mobility. In a wheelchair, she began to frequent the New York Botanical Garden, where wide, paved paths made moving around easy. In winter, its orchid show left her in awe. “I realized that sitting in the wheelchair was a better experience—just having this thing wash over me,” she says. The seated perspective was more immersive than simply strolling around. She also found the encounters had a restorative effect, one she thought could help others too. With a background in designing realistic video game backdrops, she wondered if she could recreate

sleep. When lockdown began, it was a no-brainer to apply the concept to the hospital’s own staff, then in the throes of the pandemic’s first US wave.

“You can only be cognitively present so much before you get completely drained,” Putrino explains. “We need some time when we can reset, when we can process things that happened and work through our experiences.” That’s as true for the working-from-home parent overseeing zoomer schoolchildren as it is for a trauma team tending patients.



LEFT: Inside a recharge tent, faux nature works to ease stress. RIGHT: Designer Phillips sets up a new oasis for frontline workers at Mount Sinai Beth Israel Hospital in New York City.



the enveloping effects of nature. She found Browning’s book and began researching the biophilic approach.

It was good fortune that she happened to know Putrino from time she’d spent in the video game industry. His role at Mount Sinai involves experimenting with various rehabilitation methods, including video games. Phillips suggested that natural experiences might help his patients heal, and the two struck a collaboration in 2019. Initially, they planned to focus on stroke victims, patients with neurological diseases, and professional athletes who had to quickly unwind after high-adrenaline night games so they could get enough

On a biting-cold winter day in Ann Arbor, Phillips watches a virtual rising sun flicker over Lake Tahoe as she assembles yet another recharge room, this one inside the University of Michigan hospital. While the set of videos is standard, no two of her interiors look the same. There isn’t an arched roof, as in Mount Sinai’s tent, but the chairs are flanked by tall plants to create a safe feeling of “having one’s back covered,” she explains. And though the seating must be vinyl to withstand harsh disinfectants, the laminate side tables look and feel like birch.

MAKSIM AXEIROD /
COURTESY STUDIO ELSEWHERE (2)

Building the room at UM is symbolic, Phillips says, because that’s where the Kaplans outlined their pioneering environmental psychology ideas more than three decades ago. Back in New York, Putrino has his lab back, but some 20 hospitals are in the process of having Phillips set up recharge rooms for their personnel. It’s a telling sign, she thinks. The pandemic opened our eyes to the extent to which we depend on nature for our health and well-being.

Of course, revamping a basement or spare bedroom or building green walls isn’t feasible for many, but there are small things anyone can do. To push through blursdays, Phillips recommends creating signals that time is passing—lamps that cast different shadows throughout the day and scent diffusers that puff awakening aromas of lemongrass, citrus, rosemary, or mint in the morning and calming chamomile or lavender toward nightfall. If you have a window that offers a glimpse of nature, such as a tree, it’s a good workspace, she says, because it allows switching from the flat computer screen to the three-dimensional world our eyes evolved to see. If you don’t have a view, a houseplant in the peripheral

vision of your laptop can have a similar effect.

For his part, biophilic designer Browning suggests bringing in a variety of flora to create a biodiverse assemblage: a fern for an understory plant, a fig-tree plant for its height, ivy for its draping leaves. Some evidence suggests our brains perceive such plentiful habitats as healthy ones, so it’s mentally comforting. Flowering plants that can bear fruit are even better because they let us watch a fulfilling natural process. Motion is good too. “An aquarium can be incredibly helpful,” Browning says, and not only because of the water. Watching the mottled creatures dart and chase each other without having to make important decisions is similar to watching butterflies flutter—it ushers one toward the soft-fascination trance. “The movement of fish is not only unpredictable, it’s always interesting, and always changing,” he adds—and that’s how Mother Nature normally behaves.

Phillips hopes recharge rooms can open doors for communities with limited access to nature. For now in hospitals, and eventually in places like nursing homes, veterans’ facilities, and schools. Perhaps the trend will give us all a newfound appreciation for our planet. “It helps you remember and understand that nature is out there for us,” Phillips says, “to experience and to be stewards of.”