BIOPHILIC DESIGN AND THE HEALTHCARE WORKPLACE

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Nature is having a major moment right now.

Green walls are popping up in offices, trails of ivy can be found in nearly every coffee shop, and tropical plants are sprouting from pots in people’s homes. Even within dense cities, once forgotten parcels of land are being turned into blossoming urban jungles.

This trend is more than just a resurgence in the interest of plants. It’s an example of how people are looking for new ways to reconnect with the natural world.

In design, “sustainability” has long defined our commitment to the environment, and today, every good architecture firm is committed to designing environments that diminish impact on the natural world. But while sustainability is all about reducing the impact humans have on nature, biophilia — a term coined by biologist and researcher Edward O. Wilson — is all about looking at new ways nature can have a positive impact on humans. It prompts the question:

Can the built environments we create replicate the psychological and emotional benefits people experience when interacting with nature?

In healthcare, research has long shown that connections to nature can support the healing process. The most well-known champion on this topic is Roger Ulrich, whose study more than 30 years ago showed that patients recovering from gallbladder surgery healed faster when they had a view of nature. But little has been documented about the important role nature and biophilic design strategies can have on staff — the individuals who ultimately spend the most time in healthcare environments.

One of the biggest challenges healthcare staff face is stress. There are myriad factors contributing to this challenge, but at its core, it is caused by the very reason healthcare exists — to care for people. Every day, staff are dealing with emotional, high-stress and often traumatic situations involving patients. These often aren’t situations they can walk away from, so they must deal with this stress in the moment and in the workplace. This is where biophilic design can make a difference.
Research in the field of ecotherapy has shown a strong connection between time spent in nature and reduced stress, anxiety and depression. In a 2015 Stanford University study, researchers compared the brain activity of healthy people after they walked for 90 minutes in either a natural setting or an urban one. They found those who walked in nature had lower activity in the subgenual prefrontal cortex, a brain region associated with depression and rumination (when people have repetitive negative thoughts). The urban walkers showed no improvements.

Although long walks in the woods are not typically an option for healthcare employees on the clock, there are several biophilic design strategies that can be employed in healthcare workplaces to offer respite and replicate the benefits found by interacting with nature.
Harness Natural Forms

Did you know there are no exact right angles in nature? The natural world is largely defined by irregularity and organic shapes that have freedom in their form. One way to integrate nature into workplaces is simply to mimic these organic forms.

UC San Diego Health’s Jacobs Medical Center does exactly that. The overall curvilinear form of the hospital creates a subtle continuous flowing curve of the exterior — a dynamic form that is carried throughout the building in similarly organic ways. The staff spaces continue this theme, with corridors exuding a natural flow and design details that are fluid in shape.
Bring Nature Up to the Staff Level

Although research shows that the presence of plants inside buildings increases occupant well-being significantly, integrating plant life into healthcare workplaces is not encouraged. This is largely because of the increased risk of hospital-acquired infections from microbial pathogens associated with live plants. But it is possible to still bring plant life up to the staff level while still keeping it outside.

West Park Health Centre’s new hospital development is taking this idea to new levels by bringing its picturesque natural surroundings up to staff. This is done through expansive terraces that climb up the side of the building, providing a getaway and place of relaxation on every floor. Although open to both patients and staff, the terraces have programmed times for staff only — allowing employees to decompress and clear their minds surrounded by nature.

The Children’s Hospital of Philadelphia’s Buerger Center for Advanced Pediatric Care also integrates nature into its architecture with a 14,000-square-foot roof garden providing opportunities for patient and staff recreation. And at UC San Diego Health’s Jacobs Medical Center, numerous gardens and terraces carved into the building make stepping outside to recharge convenient.
Mimic Natures Patterns

Just as nature is defined by its organic shapes, it is also defined by its beautiful patterns — many of which inspire everything from fashion and textiles to artwork and architectural design. Imagine the patterns on a butterfly’s wing, the rings found on a piece of cut timber or the hexagonal shapes found in honeycomb. All of these patterns regularly influence the design of healthcare environments and workplaces.

At the Centre hospitalier de l’Université de Montréal, a 21-story mega hospital in downtown Montreal, this concept was applied in a very literal and powerful way. In addition to designing six rooftop gardens that infused nature into the urban hospital, each garden was designed in the shape of a medicinal herb. Many of the building’s windows look out over these gardens, some of which are open to staff and patients.

When Kaiser Permanente sought a new radiation oncology center completely inspired by nature, the design team harnessed fritted glass depicting imagery of a forest. The team digitized a photograph of trees as a composition of circles and wrote a program to manipulate the image to avoid repetition and vary the intensity of the fritting. This 16,000-square-foot building also harnesses transparent glass in key areas to blur the lines between nature and the building; in the radiation treatment rooms, for example, a wall of windows overlooks an expansive green wall.

Super graphics featuring natural scenes and patterns also act as successful, low-cost strategies for mimicking nature’s patterns and scenery — especially in urban environments where nature may not be easily accessible (see examples on next page).
1 Nantucket Cottage Hospital; 2 Metro Health, Critical Care Pavilion; 3 Lancaster General Hospital Frederick Building
Harness Natural Light

Providing rooms with a view certainly isn’t a novel idea, but when it comes to healthcare real estate, it’s not uncommon for these views to be limited to patient areas. Traditionally, staff spaces have been hidden in the core of buildings, limiting the amount of natural light that can reach where they’re at. Thankfully, this thinking has shifted dramatically, and designers are employing creative strategies to make natural light a key part of staff spaces.

In Kaiser Permanente’s new Santa Clarita Specialty Medical Office, the staff enclave extrudes from the building, providing a band of windows around the shared office and core staff zones. The staff spaces, and the entire building, harness wood details, nature-inspired graphics and an earth-tone color scheme to connect occupants to the natural world outside.

Similarly, the University of Minnesota Health’s Clinics and Surgery Center was designed with collaborative spaces and work zones throughout the building, many with full-height windows looking out onto the campus. Windows were even introduced in surgical suites to help increase alertness, decrease fatigue, and help orient staff to the time of day.

Kaiser Permanente, Santa Clarita Specialty Medical Office

University of Minnesota Health, Clinics and Surgery Center
Conclusion

Healthcare organizations across the globe are putting heightened focus on the wellness of their staff to enhance productivity and concentration, reduce absenteeism, increase talent retention and more. Biophilic design, and the intimate connections it can create between people and nature, has the potential to play a significant role in helping organizations support the psychological wellness of their employees — individuals who ultimately spend more time in healthcare buildings than anyone else.

References


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