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Biophilic design is incorporated into Perkins + Will's Memorial Sloan Kettering Monmouth project in Middletown, N.J. Hospital patients have been found to have substantial healing benefits when exposed to environments that incorporate principles of biophilia.

Social sustainability continues to evolve health and wellness design

BY LIZ SWITZER

As healthcare systems across the country plan for tomorrow – undertaking construction projects to replace aging facilities or expanding and upgrading existing structures – new concepts surrounding sustainability in the green built space are being considered.

What was, in the past, a focused methodology on seemingly simplistic environmental impacts has become a more holistic approach – sustainable healthcare is becoming inextricably linked to patient and staff well-being and quality of care, and social sustainability is beginning to reign.

As health and wellness concepts have, over the last few years, become more integral to the design process – in addition to product choice and transparency – an evolution within sustainable building continues to take shape. Designers and vendors alike agreed, this evolution will continue to push the boundaries of healthcare design in an effort to promote better patient outcomes, environmental healing and even profit margins.

NATURAL HEALING

When it comes to social sustainability, one of the most signifi-

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OPPOSITE PAGE: Stantec's Mary Bird Perkins Our Lady of the Lake Cancer Center in Baton Rouge, La., represents a new vision for cancer treatment. Limited in size and located between a tower, busy street and parking garage, it lacked a sense of place and stature so Stantec looked beyond the chassis of the building to enhance surroundings with through-light and nature themes featuring Louisiana-based indigenous materials.

ABOVE: HDR's Sunshine Coast University Hospital in Queensland, Australia, is one of the country's largest construction projects to date. The building captures the qualities of its locale's vernacular character and climate, translating it into an environment that is ideal for healing.

cant factors in healthcare design from the past decade has been the emergence of evidence that suggests access to nature can enhance both the healing and patient experience. As this concept has gained more widespread acceptance, healthcare organizations and design firms have begun turning to biophilic design – strategies that mimic natural environments.

New program space is being added to healthcare projects that offer patients and staff places of respite, not just within healing gardens on the ground level but at every floor, to decrease travel distances.

Biophilic design principles are also changing the material finishes, such as flooring, in common areas and even patient rooms. In addition, leading healthcare organizations in the last decade have embraced integrated healthy lifestyle and living centers; non-traditional health-related components; and culturally appropriate and place-specific design concepts, according to healthcare architect, Alex Tsaparis, and senior principal, Brenda Bush-Moline, both of Stantec Inc., an international design and consulting services company.

POPULATION HEALTH

The potential for an even broader holistic approach to healthcare design lies in the concept of population health – a systematic approach that aims to prevent and cure disease by keeping people healthy. The concept is made up of a series of components, including education, employment, lifestyle, security/safety, housing, access to food, transportation and environment, all designed in a way that is sustainable.

In this way, accessible, timely and curated resources that respond to specific community health needs over time can transform lifestyles for qualitative improvements in health, Tsaparis said.

Interestingly, as the design industry looks ahead to improving the patient experience of care, the focus on improving population health will likely tie more closely to reducing the per capita cost of healthcare.

This approach to sustainability has become more mainstream over the past 10 years as healthcare reimbursements have evolved and organizations recognize the impact they can have. And that is good news, according to Bush-Moline. "We see the impact of the built environment and what we offer citizens shapes the ability to achieve these goals, thereby creating a more sustainable and healthier living scenario," she said.

Designers also noted, however, opportunities for smart investments must be measured in non-traditional ways and val-

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ued beyond the profit/margins of individual organizations. "This, by its nature, has been and continues to be a disruptive concept, as it challenges the norms related to financial investments and returns, the responsibilities of stakeholders and the roles of individuals in health," Bush-Moline said.

The construct overall, designers noted, requires a depth of partnerships by healthcare providers, retailers, merchants, community services leaders, government, city and township officials, regulatory agencies and others with goodwill, citizen-level support, measured risk and an investment in iterative processes to invent, improve and refine.

However, looking into the future, if the major focus for healthcare design is on human health and wellbeing, healthcare will need to evolve to include improvements in the area of social equity, serving the needs of the underserved and uninsured while integrating more deeply into everyday lives, according to architect Colin Rohlfing, director of sustainable development, HDR, a global engineering, architecture, environmental and construction services firm.

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Designed by HDR, Northside Hospital Cherokee in Canton, Ga., automatically adapts to the amount of light with glass that darkens in direct sunlight and increases transparency as daylight reduces.

NET ZERO READY

In terms of healthcare design facility solutions, Rohlfing said projects that are pushing toward Net Zero Ready – a structure that produces as much energy as it consumes – have had the most significant impact with displacement ventilation, radiant panels and even natural ventilation directly affecting infection control procedures and patient bed placement. "These more efficient and healthy solutions can also result in reduced healing times and better thermal comfort, directly impacting facility operations and revenue models," he said.

He added that there is also a renewed focus on "do no harm", and the realization that building materials may contain toxic chemicals has overhauled material specifications significantly in the past 10 years. "Elimination of Red List chemicals and a requirement for transparency in building material ingredients have changed the materials that multiple healthcare organizations will allow in their spaces," he said.

Mary Dickinson, co-director of Perkins+Will's Material Performance Lab, echoed those sentiments. "In the last ten years, the building design industry has united in pursuit of a building materials market where product content information is transparent and accessible, and where materials with toxicants have alternatives," she said.

These known toxicants are found in abundance in healthcare and are used to combat hospital-acquired infections and meet high-performance demands, Dickinson pointed out. They include stain repellents, antimicrobials and phthalates, to name a few. In many cases, she said, these substances that serve as a "safety net" are not necessary.

However, times are changing, and the concept of specifying truly toxic-free materials within the healthcare design industry is being championed by numerous environmental and health organizations. For example, in response to this growing issue, Health Care Without Harm – an international coalition of healthcare organizations – pledged to reform the environmental practices of the healthcare industry through specific initiatives, including reduction in incineration through improved waste management practices and alternative technologies; the phase-out of mercury and PVC plastics in medical products; and the education of the industry.

In the coming decade – due in part to groups such as Healthcare Without Harm – healthcare institutions are poised to join the building design industry in its pursuit of alternate materials, designers noted.

"The good news for manufacturers is that meeting this market demand opens opportunities to be publicly celebrated," Dickinson said.