

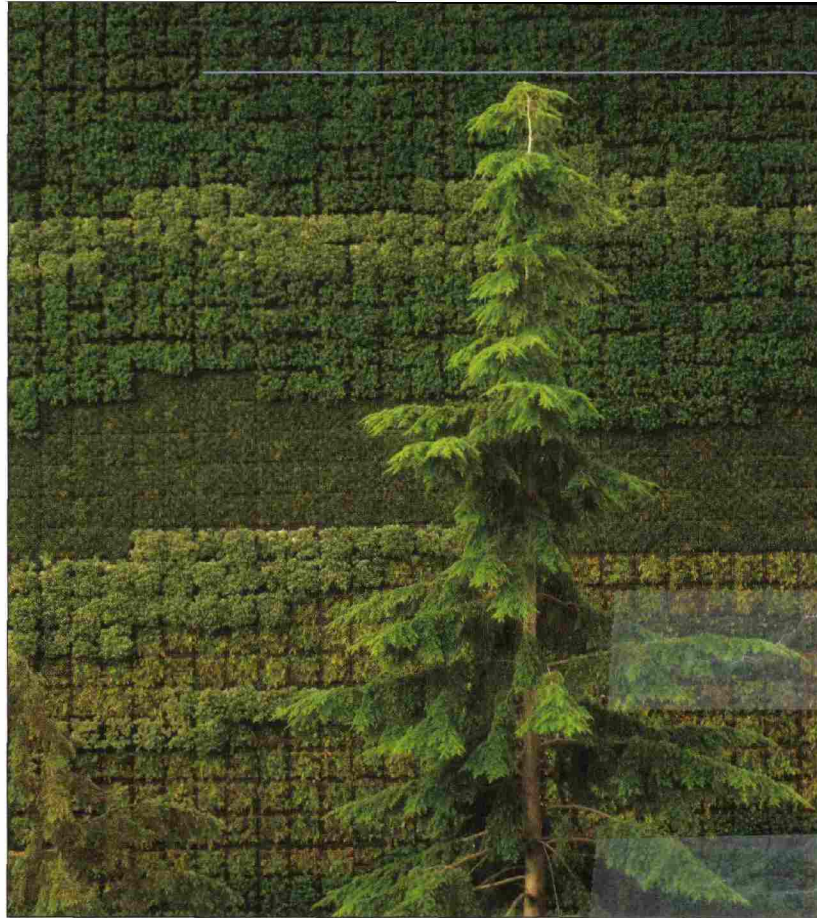
Creating a Favorable Interior

By Todd Ferguson

There is a growing body of research that demonstrates that access to a natural environment indoors may improve health and well-being, aid in the prevention of disease, and help patients recover from illness faster. Patients in healthcare environments clearly benefit from environmental enhancements known as part of evidence-based design (EBD). EBD features a holistic review of a building's physical space including the total sensory environment of sight, sound, touch and smell. EBD is credited with having a healing impact on patients' well-being, mood and safety and providing a restorative benefit for busy medical staffers. As a horticulture professional, I have seen firsthand the healing benefits of employing EBD principles with plants, ambient scenting and art in healthcare environments.

"A pleasing and positive healthcare environment that is presented as a spiritually satisfying sanctuary with natural light, gardens, fountains, art and music is enormously beneficial for a patient's well-being," says Dr. Gilda Carle, psychotherapist, author and professor. "Being able to access and enjoy surroundings that reduce stress and engage the senses is highly therapeutic for patients."

Healthcare design is increasingly guided by research linking the physical environment of a hospital to patients and staff outcomes and is moving toward EBD. In a report to The Center for Health Design in a project funded by the Robert Wood Johnson Foundation, researchers from Georgia Tech and Texas A&M analyzed thousands of scientific articles and identified more than 700 studies – many in well-respected, peer-reviewed journals – that establish how hospital design can positively impact clinical outcomes. A variety of factors were analyzed, including type of lighting, ventilation, noise levels and use of ergonomic furniture. The researchers found a



strong body of evidence that indicated that improved hospital designs that adhered to EBD principles resulted in reduced staff stress and fatigue, improved patient safety, reduced patient stress and outcomes, and overall improved healthcare quality.

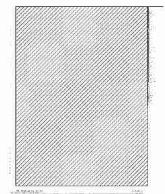
Power of Plants – Creating Curative Interior and Exterior Landscapes

The experience of being near lush greenery, whether indoors or within a patient's line of vision outside his or her window, provides many beneficial effects. Being around plants reduces stress and engenders a feeling of well-being in most people: a benefit that is even more acute if correct lighting is in place. Plants have a large surface area and exchange water and gases with their surroundings, giving them a unique ability to tackle many environmental problems.

It isn't necessary to fill every available space with a plant to achieve this; just a few good-quality specimens located in patients' rooms and where employees work or take their rest breaks can be sufficient. "The reasons this has a beneficial effect are a subtle

but complex mixture of the physiological (improved humidity, reduced noise, etc.) and psychological," says Kenneth Freeman, international technical director at **Ambius**, who has led many research initiatives on the benefits of plants in the workplace. "The fact that the hospital has been prepared to spend money on something that has no obvious function other than to make the environment more attractive may also be a contributing factor, by sending a signal to staff that management cares about its employees and its patients.

"Perhaps the most obvious reason for installing plants and one that is backed up by research," adds Freeman. "A study carried out in a London hospital in 1995 provided clear evidence that people do react more favorably to a building when it contains plants than when it does not. Hospital visitors were asked to respond to a descriptive choice test using 20 pairs of bipolar adjectives (quiet vs. noisy, cheerful vs. gloomy, etc.). The results showed that when plants were present in the reception area of the hospital, users perceived it to be 17 percent more ornate, interesting and cheerful; 16 percent



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more welcoming; 15 percent more relaxing; 11 percent less stressful; 11 percent tidier; and 8 percent quieter.” There were no negative findings and all the results were independently verified as being statistically significant (Ref: “Human Responses to Interior Planting,” J.V. Stiles, PhD, Oxford Brookes University).

“There is now general agreement within the scientific community that plants improve the indoor environment and are useful weapons in the fight against the modern phenomenon known as sick building syndrome (SBS),” says Freeman. “No specific cause of SBS has been identified, but poor air quality, excessive background noise, and inadequate temperature and light control are thought to be important factors. Because plants have a large surface area and exchange water and gases with their surroundings, they have a unique ability to tackle many environmental problems.” In particular, plants can reduce levels of carbon dioxide, which can accumulate in buildings from the breathing of its occupants and the by-products of heating systems and electrical equipment. Plants also increase the relative humidity, which should be between 40 and 60 percent RH for maximum human comfort. Plants

reduce levels of certain pollutant gases, such as formaldehyde, benzene and nitrogen dioxide, as well as airborne dust levels. Plants also reduce air temperatures and background noise levels.

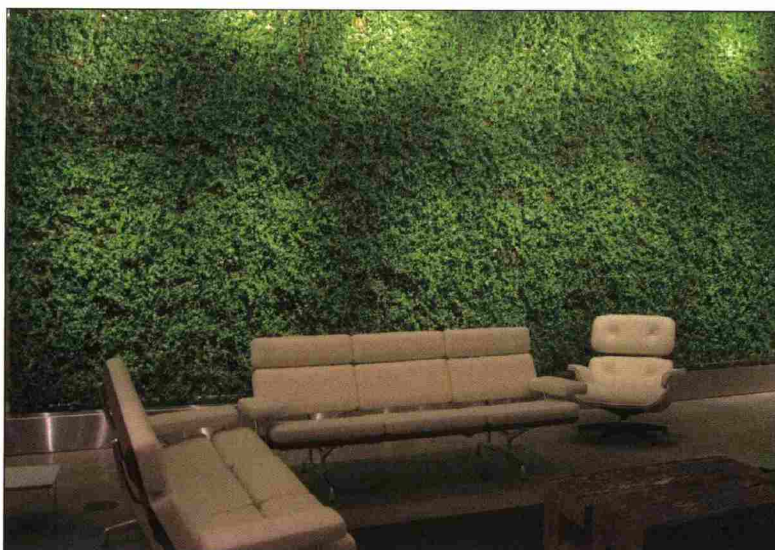
Hospitals in large urban markets are often very large and easy to get lost in. In many hospitals, there is a need to channel pedestrian traffic toward significant landmarks such as exits, check-in desks, escalators and common passageways. Plants offer an attractive and practical solution, providing a living barrier that gently guides people to where you want them to go.

Choosing the right plants and containers for this purpose is very important. Spiky plants or those with sharp-edged leaves

would clearly be inappropriate in an area designed for heavy pedestrian traffic flow. Containers need to be robust, take up minimum floor space and in some situations be linkable to form an impenetrable wall.

Green Walls Promote Health and Wellness

A green wall, also referred to as a living wall or vertical garden, is a wall that is free-standing or part of a building that is partially or completely covered with a vegetation facade. Unlike green roofs, which are rarely seen and enjoyed by the public, living walls can create instant vibrancy and impact. Exterior green walls also help lower a hospital’s building temperatures in summer and prevent heat loss in winter. Interior green



Living walls can create instant vibrancy and impact.

walls can help to clean the air and make the hospital environment more welcoming for patients. “By dressing hard and unforgiving facades of concrete and iron in green soft plants, we rejuvenate our minds and physical fatigue is greatly reduced,” says Chad Sichel, president of GSky Plant Systems, Inc., a leading provider of green wall systems based in Vancouver, Canada. “There are several studies showing that hospital patients who have been in rooms with a clear sight of fully blooming trees have required fewer pain relief drugs and recovered more quickly than patients who were in direct sight of concrete walls. A green wall can fill the spaces and walls and surround patients with vitality that encourages a patient’s quick recovery.”

Dollars and Scents

Ambient scenting is a powerful yet subtle way for a healthcare facility to create a warm and uplifting environment for patients and staff. Of all the five senses, smell is often cited as the one that triggers emotions most powerfully. And when it comes to employees, scientific studies have shown that pleasant smells can increase alertness and productivity and reduce stress. Air treatment practices that improve indoor air quality by adding pleasant scents or removing problem odors have a positive outcome on occupant health.

Art’s Holistic Impact in Healthcare Facilities

In a hospital environment that is full of turmoil and change, it’s more important than ever to take time to feed your soul. Art can do just that by offering some relief from the stress of daily life, evoking emotions and speaking to the soul. At its best, it inspires and challenges and transforms us. A custom-designed art program that completes the image as envisioned by the client, architect and design team can nourish the soul of all who work, visit or reside in the healthcare facility.

“Healthcare cannot be separated from the setting in which it’s delivered,” says Jain Mulkin, author of the *Hospital Interior Architecture* textbook. More and more healthcare organizations are realizing the value of EBD programs in facilitating patient healing, reducing patient and staff stress, improving patient and family satisfaction, increasing staff effectiveness, reducing staff turnover, and consequently reducing costs. The idea that our physical environment affects our emotional and physical well-being is really common sense. **FC**

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