HEALTH AND WELLNESS IN THE BUILT ENVIRONMENT

HOW A WHOLE SYSTEMS APPROACH OF ECOLOGICAL, ECONOMIC, AND SOCIAL FACTORS BUILDS THE CASE FOR SUSTAINABLE HEALING ENVIRONMENTS



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Promoting a healthy and sustainable built environment is a current topic of much concern in the news. The COVID-19 pandemic has brought to attention the need to have resilient, flexible, well-maintained, and super-efficient hospitals. As resources are stretched to provide healthcare during a period of unprecedented crisis, hospital environments that promote human health and wellness while responding efficiently and economically, have provided the best back drop for healthcare. A sustainable approach that considers the ecological, economic, and social factors of healthcare provides the ideal framework for the most resilient hospitals. A whole systems approach to the optimal healing environment.

Sustainability Movement in Healthcare - an Ecological Response

Preparing healthcare organizations to meet future challenges is exactly what helped to spark the Green Hospitals movement. In 1997, the U.S. Environmental Protection Agency (EPA) announced regulations governing the emissions from medical waste incinerators. The EPA introduced measures for stringent, cleaner air regulations to stop the discharge of highly toxic dioxin and mercury emissions. Dioxins had been identified as highly potent carcinogens and mercury identified as a neurotoxin. Medical waste incineration had been putting into the atmosphere toxic health harming agents. The very organizations that were trying to help and promote human health, had been contributing to serious health problems.

Health Care Without Harm (HCWH) began in 1996, as the EPA was ramping up its efforts to clean up emissions from medical waste incinerations. Hospitals for a Healthy Environment (H2E) was launched in 1998 when the EPA and the American Hospital Association signed a Memorandum of Understanding to address healthcare's contribution to medical waste emissions and mercury pollution. The H2E movement was backed by HCWH and led to the development of the *Green Guide for Health Care* (GGHC) in 2002, one of the first specific guides for sustainable healthcare. It recognized the two important aspects of the sustainability efforts for hospitals: Design and Construction of Facilities and Ongoing Operations.

In 2008, H2E was renamed Practice Greenhealth and took on a new role as a member organization for healthcare systems and their Ongoing Operations. The Design and Construction of Facilities portion of the GGHC was sunsetted in 2011 as *LEED for Healthcare* came into the marketplace. Practice Greenhealth has evolved into the leading membership organization in the United States for hospitals that are committed to sustainable hospital ongoing operations.

Tools for Sustainable Design and Construction - an Economic Means to Create Change

As industry partners in design and construction, understanding the motivation behind the healthcare sustainability movement is an important precursor to understanding the tools. Think of it as a business case as to why sustainability is so important to hospitals. "First do no harm" is a doctrine of medical practice itself. If a hospital can become leaner in operations and maintenance, they can use that saved money for patient care. If a hospital can become healthier in operations and maintenance, they are protecting the health of the patients they treat, and more fully meeting their oath to protect human health. If a healthcare organization greens their operations and procurement to protect

the environment, they are protecting the planet that supports life itself. This whole systems approach of protecting the environment, promoting an economical business model AND being socially responsible to promote human health is a triad of interdependence that allows a healthcare organization to follow its mission: to promote, protect and provide healthcare. An unprofitable business will fail. A healthcare organization that promotes sustainability is promoting human health, environmental health, and financial health. It is a sound business model for a healthcare organization.

There are prescribed rating systems, product certifications, codes, and online tools to aid in the business of sustainable healthcare. New hospital construction, existing facilities or substantial renovations can rely on building rating systems or green product selection. Energy management and building commissioning are also areas where great impact on the dollars and sense of healthcare can be gained. Here is a listing of some of the most common tools:

Building Rating Systems

- **LEED for Healthcare,** a green building ratings program administered by USGBC
- **Green Globes Certification,** an online rating system, applicable to any building type
- **WELL,** a ratings program that concentrates on occupant health and well-being
- **Fitwel,** a program focusing on well-being of occupants and surrounding community

Product Declaration & Disclosures – Multi-Attribute Third-Party Certifications, Calculators & Resources

- **Environmental Product Declaration (EPD),** independently verified product Life Cycle Assessment
- **Health Product Declaration (HPD),** full disclosure of potential chemicals of concern in a product
- **Declare Label,** a "nutrition label" for products that lists chemical analysis & raw material sourcing
- **Living Product Challenge,** administered by ILFI with petals for seven performance categories
- **JUST Label,** a voluntary disclosure program that includes an organization's social justice & equity
- **Mindful Materials,** a free platform of aggregated info on human health & environmental impacts
- **Material Bank,** a logistics platform for sourcing design samples, easy search & return options

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- **AIA Materials Initiative,** tools and education to measure & understand the impact of products
- **Carbon Smart Materials Palette,** a tool for embodied carbon reductions
- **Red List,** worst-in-class materials, chemicals and elements that pose risk to human health
- **Product Lense,** UL transparency tool with material ingredient data reporting for product lifecycle
- **Green Seal,** ISO certification for paints, adhesives, lamps, chillers, windows, occupancy sensors
- **Cradle to Cradle Certified,** for building materials, textiles, fabrics, paper, homecare products
- **GreenGuard,** UL certification for products that have low chemical emissions
- **Green Squared,** ISO certification for tile and tile installation
- **SCS Global Services,** certification for recycled content and biodegradable liquids
- **Embodied Carbon in Construction Calculator EC3,** materials for retrofit or new construction
- **Life Cycle Assessments** through online Ecochain, openLCA, Mobius, SimaPro, GaBi, OneClickLCA

Energy and Resource – Single-Attribute Third-Party Product Certifications

- **Energy Star,** an EPA program to benchmark and track energy use and efficiency
- **WaterSense,** a governmental label based on third-party testing
- **Forest Stewardship Council,** certification of forests and forestry products

Whole Building Commissioning, Certification, Green Building Codes, and Initiatives

- **American Society of Healthcare Engineers,** ASHE Health Facility Commission Guidelines
- **AIA Blueprint for Better,** design tools to help stop climate change
- **AIA Framework for Design Excellence,** defining principles of good design in the 21st Century
- **IGCC,** International Green Construction Code
- **ASHRAE Standard 189.1,** the Design of High-Performance Green Buildings
- **IECC,** International Energy Conservation Code
- **Zero Code,** the renewable energy appendix to the International Energy Conservation Code
- **Zero Carbon Certification,** ILFI-sponsored third-party certified zero carbon emission buildings



Advancement of the Human Health & Wellness Movement – The Physical and Social Impacts on Health

Health Care: *Health* by definition is the absence of disease. The definition of *Care* is expanding beyond just the delivery of care to one that can enhance well-being. For years, healthcare organizations have been conscious of their impact on the environment and wanting to provide healthy buildings for patients, staff, and families. The sustainability champion in many hospitals has been charged with greening the operations. Promoting energy efficiency, recycling efforts, healthier products, and healthy materials for use in the hospital, even creating foundations that staff can contribute part of their paycheck to go toward these healthier initiatives. The triple bottom line of protecting the planet, profit and the health of people has been an interconnected business model that has largely driven the healthier hospitals movement. Recent weather events and the pandemic health crisis have proven that a resilient hospital that can continue to provide healthcare efficiently, economically, and safely during a disaster is critical. A sustainable hospital is one that is well-positioned in a crisis to effectively continue safe and effective healthcare delivery.

The whole systems definition of a healthy modern sustainable hospital is evolving beyond what is good for the planet, profit, and people by "do no harm," to one with a

broader definition that includes enhanced and improved health and well-being. Health Care Without Harm has been advocating a future vision for healthcare that is restorative, or healing. By advocating for environmental and social issues in the communities they serve, healthcare organizations move beyond the walls of the hospital to look at the total picture of human health. Creating well-being programs and access to healthcare outside of their mainstream hospital programs is a way to be a part of the prevention of harm and the promotion of health and well-being.

One comprehensive approach to well-being is detailed in the *International Well Building Institute's WELL Building Standard* (wellcertified.com). It has 10 concepts that address health and wellness for people in the built environment. A portion of the concepts address a healthy built environment with components addressing quality air, water, light, thermal comfort, sound, and healthy materials, while going beyond to address aspects of nourishment, movement, mind, and community. Looking at a holistic health picture, that goes beyond the building to promote human wellness.

This is a movement that looks to conceive sustainable environments that are also flexible, adaptable, and engaging to occupants. It aligns well with building research done through the years by the Center for Health Design, and the Evidence-Based Design program of basing decisions about the built environment on credible research to achieve the best possible outcomes. The Planetree Organization, which is based on person-centered care, has also long considered a pleasant, nature inspired environment to be an important factor in the total care picture of positive patient outcome. Biophilia, coined by Edward O. Wilson in 1984, promotes a human connection with nature. Research studies using biophilic imagery have shown improved patient outcomes including decreased stress, decreased use of pain medications, and increased well-being. Active Building Design is another tool that can promote physical activity in a building, and thereby promote health through its design. The social programs and physical environment interventions of these different programs can all be considered as important elements of a whole systems sustainable healthcare program.

Health.gov and the Office of Disease Prevention and Health Promotion has established "Healthy People 2030" to set objectives to improve the overall health of Americans. Promoting health through improved physical environments, increased access to healthcare and wellness platforms are some of the important aspects in their notes on improving American's health. A sustainable hospital, which promotes health and wellness through a restorative environment, community outreach and initiatives, employee, and patient wellness programs, is the transformative future for healthcare design. This is a holistic model that supports human health and wellness by the very actions that it takes.

As industry partners, integral to creating the built environment, we can make a difference by choosing to educate ourselves and apply the components that go into a healthy built environment. Be an advocate for health and wellness by promoting energy conservation, healthy materials, and get healthy yourselves! Being an ambassador for health and wellness can start with you. Our industry has many tools that you can utilize to create and make a difference in the built environment. I would be happy to continue the conversation about how you can become an advocate for health and wellness. Going beyond the basics in your next project, to incorporate ideas and products that represent health, is part of being a force for change. We all need to be a part of the optimal sustainable healing environment.

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