Sustainable building is expanding way beyond LEED-certified residences and commercial venues, how particular products are manufactured, recycling, and electric vehicle charging stations. It has become a critical strategic imperative and unified approach to planning and working that transforms lives, businesses, and cities.

When we talk about sustainable planning, building, and development; we’re ultimately referring to the health, vitality, and longevity of:

• Individuals
• Communities
• Economies

Reflecting the perspectives of Greenbuild experts, this report delve into each of those three forms of health – and how true sustainable building influences them.

Compelling global and local leaders and building professionals to take sustainability seriously requires education. Sustainable planning and building has a major impact on their lives and those of the people they know and serve. It impacts the financial viability of their towns, cities, states, and countries.
Individual Health

We all know that personal behaviors and factors directly impact longevity and disease prevention. But factors like air and water quality are now being explored as key factors on human health. For example, a recent study revealed that air pollution shortens life expectancy by a full year.

“People do not often consider how the places where they spend their time affect their health. When asked how often they consider the impact of the buildings they spend time in on the environment and their health, 39% said they never considered it or do not know. The lack of awareness is significant, yet 50% consider it very important that green buildings improve health.”

U.S. Green Building Council Report

Air quality doesn’t just relate to the air we breathe on the way to work or school each day. The places we live, shop, eat, learn, and visit for entertainment are all part of our micro-environments.

“Buildings affect our health in so many ways. We spend about 90% of our time indoors - buildings are our “habitat”. So poor air quality, uncomfortable temperatures, bad lighting and poor acoustics will negatively impact health, well-being and performance. Multiple studies bear this out. Green buildings lead to happier healthier and more productive humans”

-Chris Schaffner, CEO, The Green Engineer, Inc.

Poor air quality is a problem in as many as 30 percent of new and remodeled buildings today. The term “Sick Building Syndrome” has multiple causes and impacts – from rashes to nausea, and difficulty concentrating.

Human-centric lighting has also become a topic of scientific study and design innovation. According to leading Facility Management site, FacilitiesNet:

“The research to date shows that it is extremely important to tailor lighting systems that meet the circadian needs of the people who occupy any given space. Assessing the needs of any given population is therefore a key first step in providing a regular 24-hour pattern of light and dark to improve their health and well-being.”

The WELL Building Standard for lighting is based on seven categories, with various features or specifications in each category including 13 specifications for light output levels, lighting controls, reflectances, visual comfort, and daylighting. The goal is to improve alertness, mood, and productivity while minimizing disruption to the body’s circadian rhythms.

We are just beginning to see the impact that sustainability, mindful designs, and product choices have on our health and longevity.
“Tighter buildings, materials with fewer chemicals, fresh air system, and excellent filtration all add up to improved air quality for individuals living in the home. Add natural lighting through sun tunnels and skylights, and health is further improved. We have several examples of individuals who no longer need breathing treatments after moving into sustainable houses, or a client whose grandmother no longer needed hospice care after moving into a sustainable place, etc.”

Todd Usher, President, Addison Homes

Additionally, as the health community becomes better educated about environmental factors in illness and death, physicians and other health care practitioners will ask questions about symptoms. This will, in turn, put pressure on developers and builders to look at the human health implications of the decisions they make.

“More people in the medical professions are recognizing the connections between buildings and health, and are encouraging their patients to ask if their buildings have caused certain types of health problems such as itchy eyes or headaches.”

Sara Neff, SVP Sustainability, Kilroy Realty Corp.

We are also starting to see more plants incorporated into new construction and remodeling projects. Biophilia, or the incorporation of living things into indoor environments, improves air quality and brings in natural elements indoors, resulting in an increase in happiness and creativity.

Noise reduction has also reduced stress in the workplace. In one “acoustically-balanced environment, 55 percent of workers said their new environment supported rest and relaxation, compared to just 2 percent in the previous space.

Healthier food options are now available in many office and school locations, and studies show that better food choices can increase productivity by as much as 52 percent. As new spaces are designed, built, and renovated, every choice that’s made is a building block in human health.

Generations to come will benefit from the environmental decisions we make today. How our children learn and grow are also directly affected by sustainable building choices and practices.

“A building that does not provide a healthy environment is not sustainable. Personally, I am a strong believer in natural light, and many buildings I have worked on have strong high quality natural light benefits. I have seen the benefits first-hand. I have seen schools where students work quietly and breath air that is noticeably better.”

Mark Lucuik, Director of Sustainability, Morrison Hershfield

Animal health, as well as human health, is impacted by how we plan and construct buildings. Christine Sheppard, Ph.D., Director of Glass Collisions Program for the American Bird Conservancy points out that roughly a third of the breeding bird population in North America has been wiped out – often as a result of glass building collisions. Pet owners can also take steps towards sustainability, from food and toy choices to managing waste. The carbon “pawprint” is just as important as the carbon footprint.
Community Health

As consumers consider green space and sustainable practices in their housing, work, and lifestyle choices, more regions are embracing the sustainable communities movement. The private sector is also championing the cause, including:

- **Mohawk**, by engaging its employees in sustainable community initiatives.
- **Amazon**, in committing $100M to a fund and will be working with the Nature Conservancy on carbon reduction projects.
- Organizations like the **Institute for Sustainable Communities** who work with factories and cities to make major change.
- **Colleges and universities** who are creating their own sustainable ecosystems and applicants who choose schools based on their practices.

In our technology-driven environment, committing to spaces and places where people can meet, engage, and thrive together will become more important to urban planning. Getting people off the roads and on to bikes or walking paths reduces emissions and gives communities cleaner air to breathe.

“Healthy communities are more connected communities that encourage walking and cycling. I have seen this happen in Hollywood recently, with new bike lanes and more amenities and that more people are on foot, and I believe it makes the area safer and more welcoming.”

*Sara Neff, SVP Sustainability, Kilroy Realty Corp.*

“When a building or campus invests in sidewalks, cycling infrastructure such as lockers and bike parking, or incentivizes public transit use and carpools, the entire community benefits when cars are taken off the roads and particulate matter is reduced in our air. Asthma, stroke, and other diseases are mitigated and people breathe easier throughout the community. There are several studies on this connection. When the Olympics were here in Atlanta, more people biked, walked and took transit and respiratory disease occurrences declined for that time frame.”

*Liz York, FAIA, Senior Advisor Buildings and Facilities, Center for Disease Control and Prevention*

Moving beyond cities and neighborhoods, The World Economic Forum believes that we must take a hard look at the growth in urban populations and ensure that every geography must:

- Plan for a sustainable and resilient future
- Balance economic and social development, as well as environmental protection
- Design solutions adapted to their local contexts, and enhance their character
Fitwel is a collaborative effort that encourages researchers, urban planners, and architects to work together to build sustainable communities. Among its criteria are outdoor spaces focused on health and wellness, providing gardens, on-site farmers markets, and an integrated pest management plan.

The annual Healthiest Communities ranking assesses how U.S. cities are performing in terms of a wide range of factors. Millennials, who comprise the largest segment of the population, are starting to buy homes. They will be choosing housing options, communities, and even employers based on their commitments to sustainability. Their influence will put increased pressure on legislators, community decision-makers, and builders to make wise and sustainable choices.

When asked which communities have “done it right” in terms of sustainable development leading to economic vitality, one expert provides these examples:

“Fitwel Community pilot users include Lendlease’s Horizon Uptown, a 503-acre, mixed-use, master planned community in Aurora, Colorado that emphasizes pedestrian and bicycle connectivity, access to quality open spaces, and programming to strengthen community trust, social bonds, and civic participation. Another example is the Heights District in Vancouver, Washington, driven by the City of Vancouver, GGLO, and VIA. The project is transforming an underutilized mid-century mall site into a vibrant neighborhood center, weaving together the existing neighborhood fabric with active parks and open space, complete streets, transit, mixed-income housing, and more. In Charlotte, North Carolina, ATCO Properties is breathing new life into a former Army base located just outside the central business district, transforming the city’s largest assemblage of historic factories and warehouses into Camp North End, a district for innovation, creativity, and community.”

Joanna Frank, President & CEO, Center for Active Design

Economic Health

Building to the highest sustainability standards or adopting a zero waste business model is becoming more achievable and affordable each day, but the economics still have a way to go. Business owners, project managers, architects, and designers continue to struggle with ROI and competing on cost.

“Evolving an organization to one that is truly committed, you need to learn to speak multiple languages. If you’re selling to a CFO, for example, you need to connect sustainability to long-term cost savings or the stock price. Ultimately, we need to make sustainability more relevant and personal to consumers, business decision-makers, and employees. People will learn better, perform better, and help their company thrive if their environments are healthier.”

George Bandy, Jr., Chief Sustainability Officer, Mohawk Flooring North America
At an individual project level, builders and developers must prove the payback of investing in sustainable building.

“One of the biggest obstacles to overcome is the landlord/tenant split-incentive, which occurs when the entity paying for energy improvements is different from the one who benefits from the savings. When tenants account for 50% or more of a building’s energy consumption, it’s critical to address that energy load. Numerous programs and solutions have been developed to address this issue, but unfortunately none have (yet!) been impactful at scale. Green leases, sustainable tenant improvement fit-outs, transparency of energy usage, installation of sub-meters – these all play an important role in overcoming the split-incentive, but we’re not there yet.”

– Marta Schantz, SVP, Urban Land Institute (ULI)  
Greenprint Center for Building Performance

But looking beyond an individual building to a community with multiple sustainable buildings, we see a different picture emerging. As noted earlier, millennial home-buyers and tenants are specifically seeking out cities and areas that provide a healthier quality of life.

“The economic benefits of healthy and sustainable buildings are numerous. At the most basic level decreased energy use brings lower costs for building managers as well as individuals. If we dig a little deeper, we can see how strategies such as location and greenery impact property values. In fact, a recent review of empirical evidence found that increased greenery in the form of parks is associated with as much as a 20% increase in property values in the surrounding area. Also, studies and surveys from the Urban Land Institute show that developers that prioritize healthy and sustainable buildings experience faster lease-up rates, coupled with lower rates of tenant turnover.”

Reena Agarwal, Chief Operating Officer, Center for Active Design

And of course, healthier buildings create healthier people AND more engaged and healthier communities.

“In many ways, health is emerging as the missing link in the sustainability movement—rounding out the triple bottom line of people, planet, and profit. An emphasis on human health drives home the essential point that sustainability is personal. We also know workplaces, residences, and communities that are healthy and sustainable are associated with greater occupant retention and attraction—reinforcing any project’s bottom line.”

Joanna Frank, President & CEO, Center for Active Design

Paying close attention to the materials used in building and construction is a critical component of planning. The Health Product Declaration® Collaborative is a non-profit whose mission is to bring together suppliers, manufacturers, architects, designers, engineers, contractors, building owners, and managers to develop and recommend healthy and affordable sustainability solutions. With close to 300 members, they are committed to helping designers and builders make better health-friendly choices.
“When people aren’t sick, they can be more productive. Increased productivity improves the bottom line for industries. People who aren’t sick can be more productive members of society and can help create economic growth.”

Liz York, FAIA, Senior Advisor Buildings and Facilities, Center for Disease Control and Prevention

Organizations worldwide have begun to track and measure the impact of sustainable and healthy choices on local and global economies. According to GBRI, the top 10 areas to watch as we head into next year (and beyond) are:

1. Net Zero Energy Buildings
2. Energy Efficiency
3. Renewables
4. Biomimicry
5. Water Conservation
6. Waste to Fuel
7. Smart Buildings
8. Climate-Change Resistant Buildings
9. Alternative Building Materials
10. Low-Emitting Windows and Cool Roofs

As you incorporate some, or all of these into your own building projects, assess their impact on cost/benefit of energy savings, the health and well-being of the people who occupy those spaces, and the quality of life in the communities around them.

Perhaps one of the most powerful statistics is the estimate that the focus on sustainability (including green building) will create 24 million new jobs globally by 2030.

Healthier children and adults...healthier communities...and healthier economic outlooks...it’s a win-win-win for the building community and our planet.

Editorial Credit: Nancy A. Shenker, founder of nunu ventures, a content strategy and storytelling company

Want more on the future of Greenbuilding?

Attend Greenbuild International Conference & Expo taking place November 19-22, 2019 in Atlanta, GA. Greenbuild is the largest annual event for green building professionals worldwide to learn and source cutting edge solutions to improve resilience, sustainability, and quality of life in our buildings, cities, and communities.