

Sustainable construction: what it is and how we benefit

By: [Glenn Ebersole, Contributing Writer](#)

August 31, 2020 2:38 pm

What Is Sustainable Construction?

We are hearing the term “sustainability” more often during the pandemic. Sustainability is a misunderstood term because of many different interpretations and a tendency for people to only casually address and refer to it using words like “eco,” “green,” or “smart.”

People working in the public and private sectors are taking this issue seriously and believe and advocate that sustainability embraces the environment and that its long-term endurance is a matter of vital importance for all humanity.

The U.S. Environmental Protection Agency defines sustainable construction as “the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building’s life-cycle from siting to design, construction, operation, maintenance.”

Sustainable construction means much more than ensuring that resources are being used in an efficient way in construction projects. It also means considering the environmental impacts created by the way materials are sourced and the processes used to complete building projects.

The construction industry requires an enormous amount of material and energy resources to produce and maintain the built environment and has the potential to make a significant contribution to meet sustainability challenges. The total amount of emissions and waste generated throughout the entire life cycle of physical structures is another area where the construction sector can make a big difference. Today, more than ever, it is imperative that whatever is built must perform sustainably environmentally, economically, and socially.

How do we build a sustainable future?

Sustainable construction requires committing to meet the current needs for housing, working environments and infrastructure without compromising future generations’ ability to meet their own needs for shelter, work spaces and life-sustaining services. Furthermore, these needs must be met now and in the future in a socially supportive manner by reducing the overall carbon footprint and being innovative in responding to the ever-increasing demand for the built environment.

Positive environmental impacts of sustainable construction will result from the design and management of built structures, the performance of materials across all sizes of structures and throughout their life cycles, and the use of renewable energy resources integrated with the innovative technologies in building, operation, and maintenance to reduce global greenhouse gas emissions.

Economic rewards will result from the transition from a linear to a circular economy of renewable energy generation that involves material and waste recycling, water harvesting and preservation, transferable technologies, the adaptive reuse of structures and innovative financing models built on an economy that achieves more with less.

Sustainable construction will produce positive social impacts due to adherence to the highest ethical standards in business and industry practices throughout all project phases and the promotion of manageable living and healthy working environments for work forces and building occupants.

What are the benefits of sustainable construction?

Some of the major benefits of sustainable construction include.

Protecting the environment: Recycled materials used during the construction process significantly contribute to the reduction of waste and the protection of the environment. Sustainable construction incorporates the benefits of installation of well-insulated windows, ceilings and walls to ensure less wasted energy. The use of solar heaters, insulated air-conditioning pipes and photovoltaic panels also make buildings more energy efficient and less harmful to the environment.

Improving health & quality of life: We spend 90% of our life indoors, so “well” buildings are beneficial to the health of building occupants. According to the EPA, outdoor air is two to five times less polluted than indoor air. Air quality also is improved by using sustainable materials and paints, cleaning products and carpets that are not dangerous for human health.

Increasing productivity: Studies have indicated that the better the environment of the building space, the easier it is to concentrate and work effectively to complete tasks.

Efficient use of materials: Sustainable buildings manage water more effectively in an environmentally friendly manner, including equipping the buildings with systems that recycle water, such as collecting rainwater. Sustainable buildings collect and preserve natural energy, such as solar or wind energy, store it and reuse it.

Minimizing waste: The U.S. construction industry generates between 230 million to 530 million tons of construction and demolition waste annually. Green buildings minimize waste with lower environmental impact and use of renewable sources and materials. Products such as demolition debris, sand and other materials can be used with excellent environmental and aesthetic results.

Reduce costs: Construction is a \$10 trillion industry and has financial challenges that cannot be dismissed. Wasteful rework rates of up to 30 percent require smart and functional alternatives to increase efficiency and quality. Overall, a “sustainable” building costs less than a normal building because fewer resources (e.g. water and energy) are required to complete the project. Sustainable buildings also have great ROI and significantly increased value.

Innovation: The sustainable building concept has helped the market evolve and unlock new possibilities. Sustainable construction continues to develop daily and opportunities are unfolding for the construction industry. Creative research and development efforts are resulting in new materials and more innovative techniques being discovered, developed and implemented.

I'll leave you with this quote from Pope John Paul II: “The earth will not continue to offer its harvests, except with faithful stewardship. We cannot say we love the land and then take steps to destroy it for use by future generations.”

Glenn Ebersole is a professional engineer and is the Business Development Manager for CVM and CVMNEXT Construction in King of Prussia. He can be reached at gebersole@cvmnext.com or 610-964-2800📞, ext. 155.