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# Benefits of green building

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reduction goals. Buildings account for almost 40 percent of global energy-related CO2 (https://web.archive.org/web/20210121005945/https://www.iea.org/topics/energyefficiency/buildings/) and will play a major role in a sustainable transformation.

Green buildings, like those that are LEED certified, are a global solution for cities, communities and neighborhoods. The tangible benefits may not be easily recognizable to tenants or visitors, but through sustainable design, construction and operations green buildings are reducing carbon emissions, energy and waste; conserving water; prioritizing safer materials; and lowering our exposure to toxins.

These outcomes are contributing to the global growth of the industry. According to the 2018 World Green Building Trends SmartMarket Report

(/web/20210121005945/https://www.usgbc.org/articles/green-building-accelerates-around-worldpoised-strong-growth-2021), many in the building and construction industry expect the majority of projects in the next three years to be green buildings. Looking ahead, creating spaces that support our health and well-being, as well as the economy and environment will be vital to accelerating sustainable development and delivering a better standard of living.

## Profitable, cost-effective and good for the economy

 The top two triggers for green building in the U.S. are client demands and healthier buildings, but the economic benefits can't be overlooked. Operating cost savings, shorter payback periods and increased asset value in new green buildings and green retrofits have been consistently reported

(https://web.archive.org/web/20210121005945/https://www.construction.com/toolkit/reports/worldgreen-building-trends-2018).

- Upfront investment in green building also makes properties more valuable, with a growing number of building owners seeing a 10 percent or greater increase in asset value (https://web.archive.org/web/20210121005945/https://www.construction.com/toolkit/reports/world-green-building-trends-2018). The percentage of owners reporting that level of growth has nearly doubled since 2012. Accept
- Green buildings reduce day to day costs year over year in Cookies buildings have reported (https://web.archive.org/web/20210121005945/https://www.pnnl.gov/main/publications/external/te 19369.pdf) almost 20 percent lower maintenance costs than typical commercial buildings, and

green building retrofits typically decrease operation costs by almost 10 percent in just one year.

- Green buildings are for every market and every community. A report on the Los Angeles market (https://web.archive.org/web/20210121005945/https://la-bbc.com/green-buildingsthriving-in-la-real-estate-market-according-to-costar-report/) indicated that while traditional (non-LEED certified) buildings receive an average of \$2.16/ft2, tenants were willing to pay \$2.91/ft2 for LEED certified space.
- The University of Texas at Austin looked at resale value on homes
   (/web/20210121005945/https://www.usgbc.org/articles/green-homes-texas-add-25000-resale value-study-finds-0) in the Austin-Round Rock Metropolitan Statistical Area and found that
   homes built to LEED standards between 2008-2016 showed an eight percent boost in value,
   while homes built to a wider range of green standards saw a 6 percent increase in value.
- To-date, green building has created millions of jobs and contributed hundreds of billions of dollars to the U.S. economy

(/web/20210121005945/https://www.usgbc.org/sites/default/files/2015 Green Building Economic Impact Study - Key Findings.pdf). From 2011-2014, national green construction generated \$167.4 billion in GDP. In Texas alone, more than 720,000 jobs were attributable to green construction during that time. In 2014, LEED-related employment directly contributed \$1.09 billion of individual income tax to states.

# Prioritizing people's health and well-being

- USGBC public opinion research (/web/20210121005945/https://www.usgbc.org/articles/newusgbc-research-explores-green-building-industry%E2%80%99s-role-highlighting-importancebuilding) found that almost a third of respondents have had direct, personal experience with bad health associated with poor environments or living situations. We spend about 90 percent of our time indoors and green buildings create spaces that promote health and comfort. Read about inspiring work from around the world in our Project Directory (/web/20210121005945/https://www.usgbc.org/projects).
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- Green buildings positively affect public health (https://web.archive.org/web/20210121005945/https://www.ncbi.nlm.nih.gov/pmc/articles/PMC292
   Improving indoor air quality can reduce absenteeism and work hours affected by asthma, respiratory allergies, depression and stress and self-reported improvements in productivity.
   USGBC's own research reinforces that employees in LEED green buildings (/web/20210121005945/https://www.usgbc.org/articles/employees-are-happier-healthier-and-more-productive-leed-green-buildings) feel happier, healthier and more productive.
- A 2018 National Institute of Building Sciences (NBIS) study (https://web.archive.org/web/20210121005945/https://www.nibs.org/news/381874/National-Institute-of-Building-Sciences-Issues-New-Report-on-the-Value-of-Mitigation.htm) found that each \$1 spent on mitigation activities – such as strengthening buildings and improving drainage conditions – saves \$6 in response and recovery costs.
- Green buildings promote resilience-enhancing designs, technologies, materials and methods. To support these efforts, green buildings promote the use of durable materials, thoughtful site selection, rainwater collection, demand response, grid islanding, energy efficiency, onsite renewable generation and more. Explore more resilience strategies at USGBC's Center for Resilience (/web/20210121005945/https://www.usgbc.org/about/programs/center-forresilience).
- There is value in incorporating resilience into individual projects, but also on a larger scale. Pursuing resilience on a community or portfolio level can encourage greater collaboration among residents and property owners. LEED for Cities and LEED for Communities (/web/20210121005945/https://www.usgbc.org/leed/rating-systems/leed-for-cities) provides the tools needed to improve quality of life for people through resilience planning. Read some of the profiles of resilience

(/web/20210121005945/https://www.usgbc.org/sites/default/files/profiles-of-resilience.pdf).

# An environmental solution

Green buildings help reduce carbon, water, energy and waste. The Department of Energy
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 morreektrasta80mmillion tons of waste from landfills.

- The IPCC report calls for a reduction in energy demand and strong electrification of the building sector, as well as a shift to high-performance lighting, appliances and water heating equipment. Green buildings help building owners and managers, architects, developers and product manufacturers navigate this transition and verify performance.
- According to the EPA, heating and cooling accounts for about 43 percent of all energy use in the country (https://web.archive.org/web/20210121005945/https://www.epa.gov/indoor-airquality-iaq/health-energy-efficiency-and-climate-change), which contributes to air pollution and generates the largest amounts of greenhouse gases. By improving energy efficiency, green buildings also help reduce indoor air pollutants related to serious health issues.
- LEED projects (/web/20210121005945/https://www.usgbc.org/projects) are getting results across the board, scoring an average ENERGY STAR (https://web.archive.org/web/20210121005945/https://www.energystar.gov/) score of 89 points out of a possible 100. In a study of 7,100 certified construction projects, more than 90 percent were improving energy performance by at least 10 percent.
- · Buildings account for

(https://web.archive.org/web/20210121005945/https://archive.epa.gov/greenbuilding/web/html/wh 12 percent of total water consumed in the U.S. while the average person uses 80-100 gallons of water per day. Water-efficiency efforts in green buildings help reduce water use and promote rainwater capture, as well as the use of non-potable sources.

 Standard building practices use and waste millions of tons of materials each year; green building uses fewer resources and minimizes waste. LEED projects are responsible for diverting more than 80 million tons of waste from landfills (https://web.archive.org/web/20210121005945/http://www3.cec.org/islandoragb/en/islandora/object/greenbuilding%3A66/datastream/OBJ-EN/view), and by 2030 that number is expected to grow to 540 million tons.

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