



LEED® AND CLIMATE CHANGE

Buildings account for 39% of the CO₂ emissions per year. The good news is – buildings can be 39% of the solution. The U.S. Green Building Council's LEED green building certification system directly addresses CO₂ emissions from buildings and their use.

LEED Buildings Mitigate Climate Change

LEED, the nationally accepted benchmark for the design, construction, and operation of high performance green buildings, provides building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance.

LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. A series of points/credits are available within the five LEED areas and building projects can earn those credits through incorporating green design and construction techniques.

65% of the credits in the LEED certification system directly reduce the CO₂ footprint of the building. The areas in which climate change is mitigated through LEED include:

Energy

Buildings consume approximately 40% of the energy and 70% of the electricity in the U.S. annually.

- LEED awards credits for reducing energy use in buildings through such means as installing energy efficient heating and cooling systems; using renewable power (daylight, solar heating and wind energy); requiring building commissioning; and purchasing green power.
- The average LEED certified building uses 32% less electricity, 26% less natural gas, and 36% less total energy. LEED certified buildings in the U.S. are in aggregate saving 150,000 metric tons of CO₂ reduction equivalent to 30,000 passenger cars not driven for one year.
- A single LEED certified building is designed to save an average of 352 metric tons of CO₂ emissions annually, which is equivalent to 70 passenger cars not driven for one year.

Water

Through changing precipitation patterns, climate change will put additional strain on global water supplies. Water is becoming an increasingly limited resource and LEED certified buildings use less water. The embodied energy of water is also a major contributing factor to climate change.

- LEED buildings incorporate efficient use of water and irrigation strategies to deliver water energy consumption savings. Strategies such as rainwater harvesting, waterless urinals, installing aerators on faucets, using non-drinkable water for irrigation and installing timers on faucets are awarded LEED credits.
- A LEED Certified building saves, on average, 30% of water use as compared to a conventional building, which translates to more than 1 million gallons of water savings per year.

- Encouraging reductions in the amount of water that needs to be conveyed to and treated by municipal wastewater treatment facilities reduces pumping and process energy required by systems.
- LEED also encourages on-site treatment of storm water to minimize the burden and use of energy by municipal treatment systems.

Materials

Construction and demolition waste constitute 40% of the total solid waste stream in the U.S.

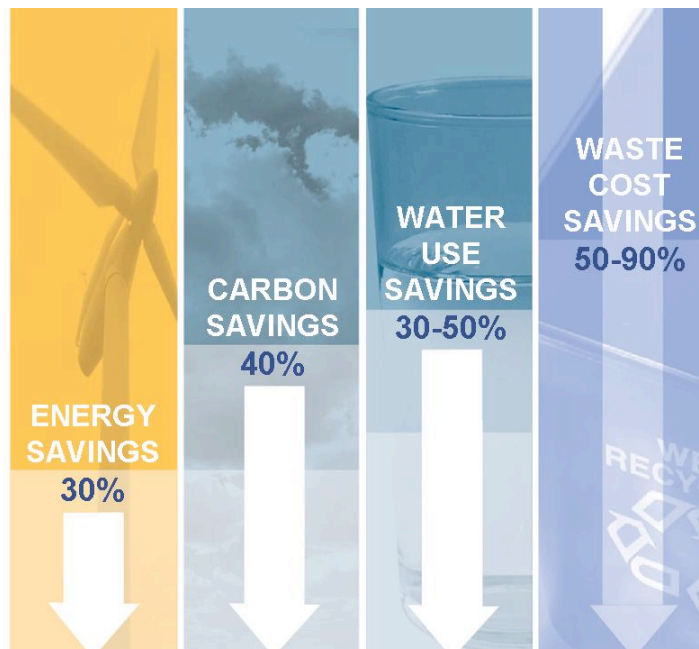
- LEED buildings use less material and generate less waste through measures such as reusing existing buildings, developing a construction waste management plan, salvaging materials, using materials with recycled content, using local materials and implementing an on-site recycling plan.
- Using fewer materials in a building lower the overall embodied energy of the building, which directly impacts the building's carbon footprint.

Transit & Density Oriented Development

A building's location affects ecosystems based on the occupant's options for travel to and from the site. Vehicle use in America has nearly tripled from 1 to 2.85 trillion since 1970 and passenger vehicles are responsible for approximately 20% of U.S. carbon dioxide emissions.

- LEED buildings constructed near public transportation earn credits. In addition, car pooling and hybrid car use is awarded within LEED.
- The infrastructure required to support vehicle travel increase the consumption of land and non-renewable resources, alter storm water flow and absorb heat energy, exacerbating heat island affect.
- High-density is proven to encourage efficiency in transport and building energy use through promoting the use of public and alternative transportation.

Average Savings of Green Buildings



Source: Capital E