



GREEN BUILDING FACTS

Market Impact

- By 2015, an estimated 40-48% of new nonresidential construction by value will be green, equating to a \$120-145 billion opportunity¹.
- 2 billion square feet of building space are LEED-certified (as of June 2012).
- The green building market included 2% of non-residential construction starts in 2005; 12% in 2008; and grew to 28%-35% in 2010².
- The construction market accounts for 5.5% of the \$14.7 trillion U.S. GDP³. This includes all commercial, residential, industrial and infrastructure construction.
- With energy efficiency financing having the potential to soar from \$20 to \$150 billion annually, over one million jobs could be created⁴.
- Areas with the greatest proportion of green office buildings relative to the total stock of buildings in the market: Washington, DC; Oregon; Vermont; Washington; Colorado; Massachusetts; Maine; New Hampshire; Illinois; California⁵.
- LEED is referenced in project specifications for 71% of projects valued at \$50 million and over⁶.
- LEED is becoming increasingly international⁷ and 40% of all projects pursuing LEED are located outside of the U.S.

Energy

- Energy use by sector:
 - Buildings: 41%
 - Industrial: 30%
 - Transportation: 29%⁸
- Buildings are one of the heaviest consumers of natural resources and account for a significant portion of the greenhouse gas emissions that affect climate change. In the U.S., buildings account for 38% of all CO2 emissions⁹.
- Buildings represent 73% of U.S electricity consumption¹⁰.
- Green buildings consume less energy:
 - Compared to the average commercial building, the LEED Gold buildings in the General Services Administration's portfolio generally¹¹:
 - Consume 25% less energy and 11% less water
 - Have 19% lower maintenance costs; 27% higher occupant satisfaction; 34% lower greenhouse gas emissions
 - LEED buildings avoided 0.35% of total U.S. CO2 emissions in 2011. The percentage of CO2 avoidance attributed to LEED buildings is estimated to be 4.92% in 2030¹².

Water



GREEN BUILDING FACTS

- Buildings use 13.6% of all potable water, or 15 trillion gallons per year¹³.
- The industry expects that water-efficiency efforts will decrease energy use by 10-11%; operating cost savings of 11-12%; and water reductions of 15% on average¹⁴.
- Retrofitting 1 out of 100 American homes with water-efficient fixtures could avoid approximately 80,000 tons of greenhouse gas emissions (the equivalent of removing 15,000 cars from the road for one year)¹⁵.
- A month's supply of electricity for 43,000 households could be saved if 1% of American homes replace an older toilet with a WaterSense® toilet¹⁶.

Materials

- Buildings use 40% of raw materials globally (3 billion tons annually)¹⁷.
- The EPA estimates that 170 Million tons of building-related construction and demolition (C&D) debris was generated in the U.S. in 2003, with 61% coming from nonresidential and 39% from residential sources¹⁸.
- The EPA estimates that 250 million tons of municipal solid waste was generated in the U.S. in a single year¹⁹.
- Green buildings consume less energy and fewer resources:
 - LEED projects are responsible for diverting over 80 million tons of waste from landfills, which is expected to grow to 540 million tons of waste diversion by 2030²⁰.

Existing Building Market

- Square footage of LEED-certified existing buildings surpassed LEED-certified new construction by 15 million square feet on a cumulative basis.
- Approximately 61% of all construction projects are retrofit projects²¹.
- The market share of retrofit projects that are green is expected to rise to 20-30% in 2014²².
- By 2015, the green share of the largest nonresidential retrofit and renovation activity will more than triple, growing to 25-33% of the activity by value—a \$14-18 billion opportunity in major construction projects alone²³.
- 39% of building owners are planning to pursue green certifications for existing buildings by 2013²⁴.
- 88% of Building Information Modeling (BIM) users surveyed who are not currently using Green BIM expect that within two years their firms will use BIM on a green retrofit project²⁵.
- One billion square feet of buildings are demolished and replaced with new construction each year²⁶.



GREEN BUILDING FACTS

Industry Sectors with the Highest Penetration of Green Building²⁷

- Education
- Health care
- Office

What's Driving Green Building?

These factors are driving dramatic green building market growth²⁸

- The economy
- The largest nonresidential projects by size are more frequently green
- Mandates and policies

Top 10 LEED Locales

Top 10 Cities (Registered + Certified) (as of June 30, 2012)

New York, NY
Washington, DC
Chicago, IL
Houston, TX
San Francisco, CA
Los Angeles, CA
Seattle, WA
Atlanta, GA
San Diego, CA
Portland, OR

Top 10 States (Registered + Certified) (as of June 30, 2012)

California
Texas
New York
Florida
Pennsylvania
Illinois
Virginia
Maryland
Georgia
Washington

Top 10 Countries (Registered + Certified) (as of June 30, 2012)

China
United Arab Emirates
Brazil
India
Canada
Mexico
Germany
Republic of Korea
Qatar
Chile



GREEN BUILDING FACTS

¹ McGraw Hill Construction (2010). *Green Outlook 2011: Green Trends Driving Growth*.

² McGraw Hill Construction (2010). *Green Outlook 2011: Green Trends Driving Growth*.

³ Department of Commerce (2011). *Annual Value of Construction Put in Place - 2002-2010*. Accessed October 21, 2011 via <http://www.census.gov/const/C30/pr201108.pdf>. Bureau of Economic Analysis (2011). *BEA News Release: Gross Domestic Product*. Accessed Oct. 24, 2011 via http://www.bea.gov/newsreleases/national/gdp/2011/pdf/gdp2q11_3rd.pdf.

⁴ Pollin, R., Heintz, J., Garrett-Peltier, H. - Department of Economics and Political Economy Research Institute (PERI) and Hendricks, B., Ettlinger, M. - Center for American Progress (2009). *The Economic Benefits of Investing in Clean Energy*.

⁵ Miller, N. (2010). *Does Green Still Pay Off?* <http://www.costar.com/iosre/pdfs/DoesGreenStillPayOff.pdf>

⁶ McGraw Hill Construction (2010). *Green Outlook 2011: Green Trends Driving Growth*.

⁷ Watson, Rob. *Green Building and Market Impact Report - 2011*. Accessed Nov. 15, 2011 via http://www.greenbiz.com/sites/all/themes/greenbiz/doc/GBMIR_2011.pdf

⁸ National Trust for Historic Preservation (2011). *The Greenest Building: Quantifying the Environmental Value of Building Reuse*, Accessed Jan. 26, 2012 via <http://www.preservationnation.org/issues/sustainability/green-lab/useful-facts-about-greenest-buildings.html>

⁹ Energy Information Administration (2008). *Assumptions to the Annual Energy Outlook*.

¹⁰ Department of Energy (2011). *Buildings Energy Data Book. Buildings Share of Electricity Consumption/Sales*. Accessed October 26, 2011 via http://buildingsdatabook.eren.doe.gov/docs/xls_pdf/6.1.1.pdf

¹¹ U.S. Department of Energy (2011). *Re-Assessing Green Building Performance: A Post Occupancy Evaluation of 22 Buildings*.

¹² Watson, Rob. *Green Building and Market Impact Report - 2011*. Accessed Nov. 15, 2011 via http://www.greenbiz.com/sites/all/themes/greenbiz/doc/GBMIR_2011.pdf

¹³ U.S. Geological Survey (2000). 2000 data.

¹⁴ McGraw Hill Construction (2010). *Green Outlook 2011: Green Trends Driving Growth*.

¹⁵ U.S. Environmental Protection Agency. Green Building, Green Homes, Conserving Water. *Water Use and Energy*. Accessed December 14, 2011 via <http://www.epa.gov/greenhomes/ConserveWater.htm#wateruse>

¹⁶ U.S. Environmental Protection Agency. Green Building, Green Homes, Conserving Water. *Water Use and Energy*. Accessed December 14, 2011 via <http://www.epa.gov/greenhomes/ConserveWater.htm#wateruse>

¹⁷ Lenssen and Roodman (1995). *Worldwatch Paper 124: A Building Revolution: How Ecology and Health Concerns are Transforming Construction*. Worldwatch Institute.

¹⁸ U.S. Environmental Protection Agency (2009). *Estimating 2003 Building-Related Construction and Demolition Materials Amounts*.

¹⁹ U.S. Environmental Protection Agency (2008). *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2008*. Accessed Nov. 7, 2011 via <http://www.epa.gov/osw/nonhaz/municipal/pubs/msw2008rpt.pdf>



GREEN BUILDING FACTS

²⁰ Watson, Rob. *Green Building and Market Impact Report – 2011*. Accessed Nov. 15, 2011 via http://www.greenbiz.com/sites/all/themes/greenbiz/doc/GBMIR_2011.pdf

²¹ McGraw Hill Construction (2010). Smart Market Reports. *Green BIM – How Building Information Modeling is Contributing to Green Design and Construction*.

²² McGraw Hill Construction (2009). *Green Building Retrofit & Renovation SmartMarket Report*.

²³ McGraw Hill Construction (2010). *Green Outlook 2011: Green Trends Driving Growth*.

²⁴ CoStar Group. Current Trends in Green Real Estate, Summer 2011 Update. *Energy Efficiency & Existing Buildings*. Accessed Nov. 22, 2011 via www.costar.com/webimages/webinars/CoStar-Webinar-CurrentTrendsInGreen20110621.pdf

²⁵ McGraw Hill Construction (2010). Smart Market Reports. *Green BIM – How Building Information Modeling is Contributing to Green Design and Construction*.

²⁶ National Trust for Historic Preservation (2011). *The Greenest Building: Quantifying the Environmental Value of Building Reuse*, Accessed Jan. 26, 2012 via <http://www.preservationnation.org/issues/sustainability/green-lab/useful-facts-about-greenest-buildings.html>.

²⁷ McGraw Hill Construction (2010). *Green Outlook 2011: Green Trends Driving Growth*.

²⁸ McGraw Hill Construction (2010). *Green Outlook 2011: Green Trends Driving Growth*.