Green Building Facts

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MARKET IMPACT

By 2015, an estimated 40-48% of new nonresidential construction by value will be green, equating to a $120-145 billion opportunity[1]

U.S. respondents to a 2012 international survey projected that 58% of their building activities in 2015 would be green[2]

More than 2.7 billion square feet of building space are LEED-certified (*as of October 1, 2013*)

41% of all nonresidential building starts in 2012 are green, as compared to 2% of all nonresidential building starts in 2005. [3]

The construction market accounts for 5.5% of the $14.7 trillion U.S. GDP. This includes all commercial, residential, industrial and infrastructure construction[4]

With energy efficiency financing having the potential to soar from $20 to $150 billion annually, over one million jobs could be created[5]

Areas with the greatest proportion of green office buildings relative to the total stock of buildings in the market[6]:

- District of Columbia
- Oregon
- Vermont
- Washington
- Colorado
- Massachusetts
- Maine
- New Hampshire
- Illinois
- California

LEED is referenced in project specifications for 71% of projects valued at $50 million and over[7]

The number of LEED certified federal building projects in the U.S. increased by more than 50 percent from 2011 to 2012.

Achieving LEED certification is a top sustainable goal for both private and public organizations, with LEED Gold certification being set as the goal for a majority of the organizations[8] **INTERNATIONAL**

LEED is becoming increasingly international[9]

- **40% of all projects pursuing LEED are located outside of the U.S.**

Project expectations in four countries in 2015[10]:

- **Brazil - 83% of firms planning new green commercial projects**
- **Singapore - 69% of firms planning green renovation projects**
- **United Arab Emirates - 73% of firms planning green institutional projects**
- **United Kingdom - 65% of firms planning green renovation projects**

ENERGY

By sector[11]:

- **Buildings: 41%**
- **Industrial: 30%**
- **Transportation: 29%**

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 emissions[12]**
- **73% of electricity consumption[13]**
- **Green buildings consume less energy. Compared to the average commercial building, the LEED Gold buildings in the General Services Administration's portfolio generally[14]:**
  - **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 2030[15]. WATER

Buildings use 13.6% of all potable water, or 15 trillion gallons per year[16].

The industry expects that water-efficiency efforts will[17]:

- **Decrease energy use by 10-11%**
- **Save 11-12% of operating costs**
- **Reduce water use by 15%**

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[18]

MATERIALS

Buildings use 40% of raw materials globally (3 billion tons annually)[19]

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 sources.[20]They also estimate that 250 million tons of municipal solid waste was generated in the U.S. in a single year[21].

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 2030[22].**

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 projects[23].

The market share of retrofit projects that are green is expected to rise to 20-30% in 2014[24].

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 alone[25].

39% of building owners are planning to pursue green certifications for existing buildings by 2013[26].

Firms that completed green building retrofit projects report[27]:

- **Decrease in operating costs: over one year, 9%; over five years,13%**
- **Expected increase in asset valuation according to building owners: 4%**
- **Number of years until payback is expected: 7**

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 project[28].

One billion square feet of buildings are demolished and replaced with new construction each year[29]. BUILDING PERFORMANCE

A review of data from 195 LEED projects found:

- **The buildings are in the top 11th percentile in the U.S. in terms of energy usage**
- **Have an average ENERGY STAR score of 89 points (out of 100)**
- **Have a 57% lower Source Energy Use Intensity than the national average (as reported through EPA Portfolio Manager)**

The majority of the buildings were office or retail, avg. 254,000 sf, certified under the LEED for Existing Buildings: Operations & Maintenance

An analysis of LEED projects in the San Francisco Bay area found:

- **More than half achieved LEED Gold (52% of the projects)**
- **Projects certified under LEED for New Construction exceed ASHRAE standard 90.1 (1999, 2004, or 2007) by 25%.**
- **Projects certified under the LEED for Existing Buildings: Operations & Maintenance have ENERGY STAR score of 88 points (out of 100).**

An analysis of 7,100 projects certified under LEED for New Construction found[30]:

- **92.2% are improving energy performance by 10.5%**
- **<89% are improving energy performance by 14%**

Industry Sectors with the Highest Penetration of Green Building[31]
1. Education

2. Health care
3. Office

What's Driving Green Building?

These factors are driving dramatic green building market growth[32].

1. The economy
2. The largest nonresidential projects by size are more frequently green
3. Mandates and policies

Top 10 Cities in the U.S.A. for LEED: Certified & Registered (as of Oct. 1, 2013)

1. New York, NY
2. Washington, DC
3. Chicago, IL
4. Houston, TX
5. San Francisco, CA
6. Los Angeles, CA
7. Seattle, WA
8. Atlanta, GA
9. San Diego, CA
0. Boston, MA

Top 10 States in the U.S.A. for LEED: Certified & Registered (as of Oct. 1, 2013)

1. California
2. Texas
3. New York
4. Florida
5. Pennsylvania
6. Illinois
7. Virginia
8. Maryland
9. Georgia
0. Washington

Top 10 Countries outside of the U.S. for LEED: Certified & Registered (as of July 1, 2013)

1. Canada
2. India
3. China
4. United Arab Emirates
5. Brazil
6. Mexico
7. Germany
8. Turkey
9. Chile
0. Italy

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