

Summary of Green Building Market and Impact Report 2010

http://www.greenbiz.com/sites/all/themes/greenbiz/doc/GBMIR_2010.pdf

This report, compiled for GreenBiz Group, looks at a wide range of issues pertaining to LEED and associated environmental and marketing trends. LEED for Homes and LEED market trends comprise minor focus areas in this report, with environmental trends making up the primary focus. Some of the main findings within these respective sectors are as follows:

LEED for Homes

- Estimates for 2010 predict certification of over 9,500 homes and registration of an additional 30,000 homes.
- As with commercial development, the number of registrations are down by approximately 30% compared to the past 12 months.
- A majority of certified homes are about 15% smaller than average single-family homes and 59% are “Production” homes built by large homebuilding companies.
- While no projections were made for energy efficiency, the report notes that the average LEED home is about 40% more energy efficient than a conventional home built to 2006 IECC (International Energy Conservation Code) standards.

LEED Market Trends

- LEED growth in 2010 fell markedly short of 2009 projections, due in part to a slower than expected rate of growth among LEED New Construction and Core & Shell projects¹.
- Project registration numbers declined by nearly 70% compared to 2009 totals.
- Certifications exceeded 2009 rates by over 50%, and if current projections are accurate, the amount of newly certified floor area in 2011 alone will almost equal the total certified floor area of the previous 10 years.
- LEED Existing Building Operations & Maintenance saw a 55% decrease in certified floor area registration along with an 80% increase in certified floor area certification.
- While international LEED certifications in 2010 doubled the floor area certified to date, the number of internationally registered projects declined by 60%. For international projects, over 65% of certified projects and approximately 80% of registered projects were BD+C.

Environmental Trends

These environmental trends make up the main area of focus within this report and examine environmental impacts in five different areas: Land & Site, Water, Energy, Materials, and Indoor Environmental Quality.

Site & Land Use Impacts

- Research in this section is based on vehicle miles traveled (VMT), which appears to be impacted more by location-efficient development than previously estimated in 2008.
- Projections of VMT reductions for 2010 are slightly double 2009 projections, and are estimated to be over 1.4 billion VMT avoided. Estimates place VMT reductions at 8.7 billion 2020 and 19.9 billion by 2030.
 - Estimated fuel savings and CO₂ preventions from VMT reductions equal over 58 million gallons saved and 14 million fewer tons of CO₂ produced. By 2030, estimates project a savings of over 800 million gallons and prevention of over 190 million tons of CO₂.
- Estimated site impacts from LEED-certified buildings project almost 1.3 million tons of soil erosion prevented as of 2010, with this increasing to 8.5 million tons by 2030.
- Due to an increase in urban development and LEED for Existing Buildings, 81,000 acres of sensitive lands are projected to remain undeveloped by 2020.
- Stormwater impacts in 2010 were higher than the 2009 projections. The LEED stormwater prevention and treatment requirements avoided or treated over 1 billion gallons of toxic water in 2010.
- Approximately 26,000 acres of land and rooftops have initiated measures to reduce the urban heat island effect.

Water Efficiency Impacts

- Plumbing, landscaping, and use of cooling towers saved 33 billion gallons of water in 2010. Estimated annual water savings in 2020 and 2030 are 236 and 565 billion gallons, respectively.
- Wastewater reduction estimates project 9.6 billion gallons avoided at time of report publication, with an expected 52 billion gallons avoided by 2020.



Energy Impacts

- Estimates for energy savings decreased from 2009, with projected annual savings of 0.08 Quad Btu in 2010, 0.83 Quad Btu by 2020, and approximately 2.08 Quad Btu by 2030. These savings equal 0.41%, 3.94% and 9.17%, respectively, of total commercial energy use.
- Energy efficiency and renewable energy are estimated to yield CO₂ reductions of 7.3 million tons in 2010, 62 million tons in 2020, and 168 million tons in 2030.
- The National Research Council's Institute for Research in Construction (IRC) of Canada found that the average energy savings of LEED buildings ranged from 18% to 39%.

Materials Impacts

- Increases in rehabilitated floor area offset the declines in New Construction, yielding over 107 million sq ft at time of report publication, with estimates of 400 million sq ft by 2020 and 800 million sq ft by 2030.
- Estimates of equivalent embodied energy savings show 73 million barrels of oil at the time of report publication, increasing to 200 million barrels by 2030.
- Waste diversion for new construction, core and shell, and commercial interior projects is estimated at 60%, with total recycle and reuse estimates of 216 million tons in 2020 and 433 million in 2030.
- Local and recycled-content building materials accounted for nearly \$15 billion in spending in 2010, with a projected increase to \$120 billion by 2030.
- Growth was seen in the use of certified wood between 2009 and 2010. The use of certified wood increased from 38% to 41% for New Construction, from 18% to 47% for Core and Shell, and from 19% to 27% for Commercial Interiors.
- Findings of other studies noted in this Market Report indicated 10 to 20% reductions in cleaning costs through "effective green cleaning practices" and an 8% reduction in energy costs when a daytime cleaning program was utilized.

Indoor Environmental Quality Impacts

- Market value findings associated with LEED buildings include savings of \$6.4 billion through added productivity afforded by the "green building workforce", increasing to \$22 billion by 2020 and to \$75 billion by 2030.

¹ New Construction combined with Core & Shell and LEED Schools makes up LEED Building Design and Construction (BD+C)