Executive Summary Excerpt

SmartMarket Report

McGraw Hill CONSTRUCTION
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# New and Retrofit Green Schools:

## The Cost Benefits and Influence of a Green School on its Occupants

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*New and Retrofit Green Schools SmartMarket Report*

# Executive Summary

**The green school market is thriving because both the K–12 and higher education sector report seeing strong financial benefits combined with positive impacts on student health and well-being.**

The research results demonstrate that schools are making significant green investments and that most expect strong benefits in return. However, a significant percentage are also unsure about the benefits they are accruing, presenting an opportunity for increasing the market with better, more consistent tools for measuring.

## Green is Widely Adopted in the K–12 and Higher Education Sectors

**In 2012, McGraw-Hill Construction estimates that green projects will account for 45% of all construction project starts in the education sector.** The research demonstrates that over 80% of the K–12 and higher education respondents have done at least some green projects. In addition, many of them are doing most of their projects green, with over one-third of K–12 and one-half of higher education respondents reporting that more than 90% of their work is green.

**Third-party green certification is also being widely used, with 66% of K–12 and 84% of higher education respondents reporting achieving green certification on green projects in the last three years.** Additional evidence of their commitment to green projects is the extent to which both sectors exceed the guidelines set for them on the level of LEED certification to achieve:

- **52% of K–12 respondents exceed guidelines, with more than half achieving LEED Gold.**
- **75% of higher education respondents exceed guidelines, with nearly one-quarter achieving LEED Platinum.**

## Schools Have Made Major Green Investments in Retrofits and Operational Improvements

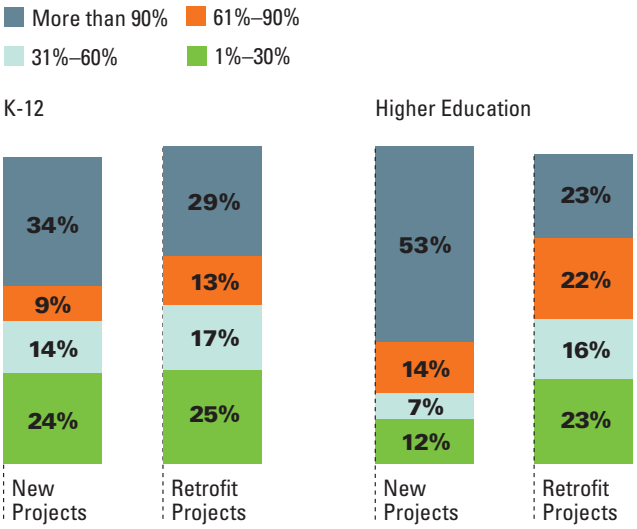
**Green retrofits and operational improvements are also widely used in the education sector, with 83% in K–12 and 85% in higher education that they did at least some green retrofits or improvements in the last three years.** In addition, the overall share of green retrofits among the total building improvements made by the respondents is expected to increase, including a shift up in percentage of those who report that more than 90% of their retrofits are green increasing in three years to 31% of K–12 schools and 29% of higher education.

**All of the financial, health and productivity benefits reported in this research include, not just the new green buildings and major renovations, but also this ongoing improvement effort to existing buildings.**

One key finding of the research is that the benefits achieved in green buildings are consistently higher among those who use green operations and maintenance. The results strongly demonstrate that greening a building is an ongoing process that is just beginning when a school builds a new green building.

**Percentage of Green School Projects Conducted in the Last Three Years**

Source: McGraw-Hill Construction, 2013




## Health and Well-Being is a Key Driver for Green Schools, Especially in K–12

**Eighty-eight percent of K–12 respondents consider enhanced health and well-being an important trigger for the work they have done in green, roughly equivalent to energy use reductions and operating cost savings.** This finding is unique to this sector, and it is consistent with the findings of the McGraw-Hill Construction 2007 *Education Green Building SmartMarket Report*, which demonstrates the important role health and well-being plays in green school construction.

Green building products and practices that improve indoor environmental quality (IEQ) are essential to

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achieving this goal, and 87% of K–12 respondents rank IEQ practices as highly important, the largest percentage for any green practice. Ninety percent of higher education respondents also regard this as highly important, second only to energy and atmosphere practices at 92%.

## Green Schools Deliver Strong Financial and Social Benefits, But Measuring Those Benefits Still Presents Challenges

### FINANCIAL BENEFITS

**Consistently, a large percentage of school respondents report achieving savings from their green investments**, including energy use reductions, annual operating cost savings and ten-year cost savings (see chart at right).

However, **the majority of those who do not report savings state that they do not know what impact their green buildings are having on these costs.** Top challenges for gathering metrics include staff capacity for doing so and knowing the right measures to pursue. These results demonstrate that there is a major gap in capturing this data that must be addressed to see continued growth in the green schools market.

### HEALTH AND PRODUCTIVITY BENEFITS

Because improved health and well-being ranks so highly as a driver for schools, their belief that green buildings have a positive impact on these factors is critical to encourage more green school construction. In fact, **91% of K–12 and 87% of higher education respondents find that green buildings improve health and well-being of students**.

Seventy-four percent in K–12 and 63% in higher education also report that green buildings help improve student productivity and test scores. About half of those who make these building improvements also link factors such as improved acoustics and daylighting with increased attentiveness and student engagement.

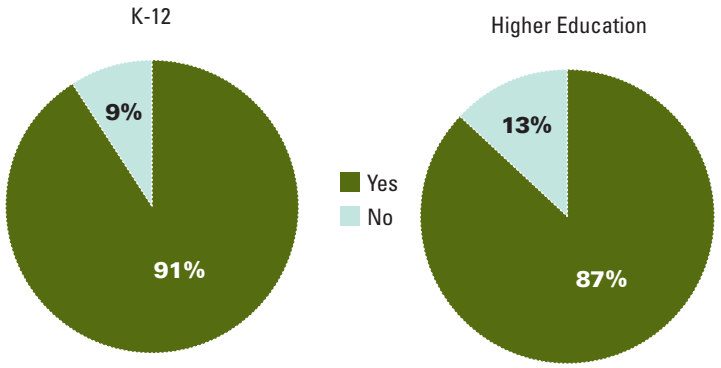
However, only a low percentage of schools are capturing measures of these benefits associated with their green school projects, and even fewer can apply them to their return on investment calculations for green building efforts. More research and investment in gathering green building metrics is needed to improve the ability of schools to achieve these benefits on future projects.

### OTHER BENEFITS

Respondents are also seeing other benefits that have positive implications for their institutions:

### Green Schools Improve Health and Well-Being

Source: McGraw-Hill Construction, 2013




### Operating Benefits of Green School Buildings

Source: McGraw-Hill Construction, 2012

| | Energy Use | | Annual Operating Cost Decreases | | 10-Year Operating Cost Decreases | |
|---|---|---|---|---|---|---|
| | Expect a Decrease | Don't Know | Expect a Decrease | Don't Know | Expect a Decrease | Don't Know |
| K-12 | 58% | 28% | 55% | 28% | 39% | 50% |
| Higher Education | 55% | 30% | 47% | 34% | 38% | 52% |

- **Improved Reputation/Attractiveness to Students**
  - K–12: 69%
  - Higher Education: 65%
- **Enrollment**
  - K–23: 23%
  - Higher Education: 33%

## Green Prefabricated Buildings Offer Untapped Potential to Improve Building Performance

Green prefabricated building solutions have been used by over one-third of K–12 respondents and one-quarter in higher education. While most of these report using trailers, a nearly equal percentage report using one story modular buildings, which demonstrates the evolution of the use of prefabrication in the education sector.

These results also demonstrate the opportunity offered in this market. To encourage wider adoption, the education sector needs to be convinced that prefabricated buildings are high quality, and they need to see data on building performance and cost compared with traditional building methods.

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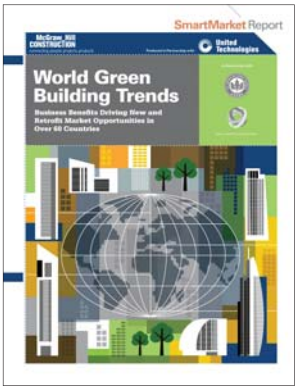


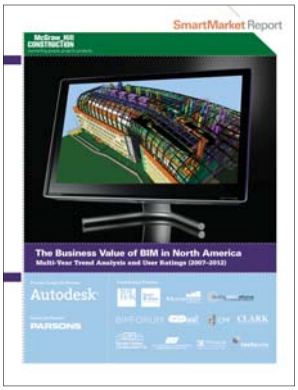


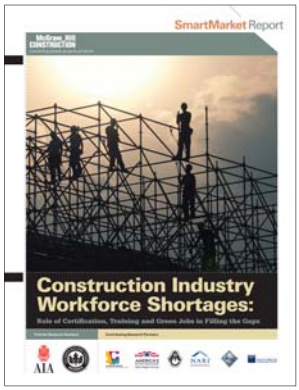


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