Student Opinions of Green Building Practices within Recreational Sports Facilities

Eric Brownlee, Gannon University
Lana Huberty, University of Minnesota
Megan Shreffler, University of Minnesota
Tony Brown, University of Minnesota
Jinhee Yoo, University of Minnesota

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Today's environmental concerns include pollution, water shortages, overpopulation, deforestation and global warming (Wolff, 2007). This brings the idea of sustainability to the forefront of any sport's facility design and management team. "Going Green" means decreasing the burning of fossil fuels, improving fuel efficiency, and conserving the energy used in our daily facility operations. Ries (2006) lists three possible benefits of green construction as conservation of natural resources, increased energy efficiency and water conservation, and an improved indoor environment. Green design can also lead to substantial cost-savings over the lifespan of a building and improve productivity for the buildings occupants. Recognizing these paybacks, building conventional sports facilities is now an outdated idea and being innovative and green is the norm rather than an exception (Tockook, 2011).

In 2000, the U.S. Green Building Council (USGBC) launched the Leadership Energy and Environmental Design (LEED) system. LEED provides facility owners and operators a concise framework for identifying and implementing practical and measureable green building design, construction, operations and maintenance solutions. Today, this standard has grown worldwide, certifying projects in 41 countries and every U.S. state (Nowlin, 2008).

While LEED certified facilities can cost more than traditional buildings, these higher initial costs can be lessened by the savings acquired over time due to the lower-than-industry-standard operational costs typical of a sustainable facility. Studies have found that an initial upfront investment of going green will yield ten times the initial investment over the life cycle of the building. Facilities being built to comply with the LEED criteria have been reported to cost five to 10% more than other buildings. Green facilities typically cost more to build, but in the long run their maintenance and energy costs more than make up for the higher starting price (McCarron, 2001). These compliant facilities are both environmentally friendly and over the long term have cheaper facility operational costs (Fried, 2005).

Since the development of LEED, University Recreation programs have been joining the list of LEED certified facilities. For instance, the University of Cincinnati Recreation Center opened in February of 2006 in Cincinnati, Ohio. This recreation center features a leisure pool, lap pool, whirlpool, three fitness centers, eight racquetball courts, six-court gymnasium, suspended track, 40-foot climbing wall, and more than 200 fitness machines. In addition to the low-flow faucets and toilets, the building has a rainwater collection system to reduce use of other water sources. The site was designed so the landscaping around the building and the facility's reflective roof steer heat away from the interior. The building itself is a testament to environmental consciousness, nearly 30 percent of which is composed of recycled materials (Nowlin, 2008).

Additionally, the University of Minnesota began renovation of their campus recreational sports center in May, 2011. This $59 million project includes a three million dollar renovation of the existing, 142,000 square foot facility and a $56 million, 145,000 square foot expansion. The expansion will feature state of the art amenities such as an expanded fitness center, climbing walls, outdoor adventure center, indoor cycling studio, elevated track, new outdoor intramural sports fields, new multi-sport courts (soccer, floor hockey, volleyball, and basketball), and more. Although this project is not seeking a LEED certification, it does meet or exceed all 38 guidelines detailed by the State of Minnesota Sustainability Building B3 Guidelines. For example, this construction project is building less by remodeling existing facilities, and has been designed for flexibility leading to reductions in cost, energy, and the environmental impact. (Brown, 2011)

Green building and seeking LEED certifications in college athletic and recreation facilities is becoming more
common, and is often used to attract potential students (Nowlin, 2008). Consequently, one of the primary funding sources for these green renovations or buildings is student fees (University of Minnesota, 2007). For instance, the $59 million dollar “green” renovation of the University of Minnesota recreational sports center will be financed with a mandatory student fee of $75 dollars per semester for an estimated 25 years (Raddatz, 2011). Despite the importance of students in this process, both from a financial and recruitment point of view, very little research exists regarding student opinions of these green building practices and more importantly the use of student fees to complete these projects (Brown, 2011; Nowlin, 2008).

Attitude toward green purchase (AGP) has been previously utilized as a measure of consumer opinion related to buying green products (Chan, 2001; Taylor & Todd, 1995). Researchers have often found that a positive AGP may significantly increase green purchase intentions and green product usage (Alwitt & Pitts, 1996; Chan, 2001; Chen & Chai, 2010). The current study applies these findings to the college campus recreational sport setting. More specifically, the purpose of this study was to examine student opinions of green building practices in a major college recreational sports center renovation.

This study looks at two topics: Student attitudes toward green recreational sports facilities and how these attitudes affect usage of these facilities. The following hypotheses will be tested:

H1: Attitudes toward green purchase will significantly influence student usage of a "green" college recreational sports facility.

H2: Attitudes toward green purchase will significantly influence student opinions of student fee usage for a "green" recreational sport facility renovation.

A random sample of 2,000 undergraduate and graduate/professional students at a large, Midwestern university were surveyed via email regarding their opinions and attitudes toward green building practices in a major college recreational sports facility renovation. Approximately, 494 usable surveys were returned, indicating a 25% response rate. Students were asked to answer a variety of demographic questions and modified versions of AGP, green product usage, and green product purchase intentions (Chan, 2001). The "green" measures in this study were measured with seven point Likert type scale items (1 = strongly disagree and 7 = strongly agree). The data is currently being analyzed and will be interpreted following the completion of a technical report for the university involved in this study. Complete results and implications will be reported at the NASSM 2012 conference.