Green Buildings at Mount Holyoke College
Purpose, Process, and Progress

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ABSTRACT

In the past few years, sustainable building design has emerged as an area in which technology may help ameliorate environmental problems. There are millions of buildings in the U.S., and they collectively consume a huge amount of energy and resources while excreting polluted waste. As technologies improve, “green” building is being standardized and joining the mainstream—architectural firms tout their Leadership in Energy Efficiency and Design (LEED) certification to clients, while building owners proudly display the LEED placard on their newly constructed walls.

Mount Holyoke College was one of the first institutions to seize green building concepts and get on the LEED bandwagon, constructing two of the first nine buildings to achieve LEED certification. Since then, it has continued to push its green building initiative, creating its own standards and moving forward with a new dormitory to be built with “green” principles in mind.

I set out to learn about how MHC had gone about achieving these “green” building projects. Where did the initiative come from, and which parties supported it? How green is the College? How are decisions made in building projects? To answer these questions, I examined material posted on the College’s website, identified important actors, and spoke personally with them about what they, the decision-makers, thought of MHC’s progress. I hope the answers will help guide MHC in the future, and even guide other schools in their green building endeavors.
INTRODUCTION: Purpose

Background: Green Buildings

Buildings are said to account for the following:

- 40% of the world's total energy use,
- 30% of raw materials consumption,
- 25% of timber harvest,
- 35% of the world’s CO2 emissions,
- 16% of fresh water withdrawal,
- 40% of municipal solid waste destined for local landfills,
- 50% of ozone-depleting CFCs still in use (1)

Obviously, making buildings more environmentally friendly has the potential to effect a significant improvement in overall environmental health. As our technology improves, we have a growing ability to create buildings that are significantly more efficient in their resource use and waste production, without emptying our pockets.

Background: LEED

Perhaps the most significant force in the green building movement is the U.S. Green Building Council (USGBC), a coalition of building professionals formed “to promote buildings that are environmentally responsible, profitable and healthy places to live and work” (2). To that end, it established the Leadership in Energy and Environmental Design (LEED) standards. The USGBC trains building professionals in environmentally-friendly practices and certifies individual buildings according to the LEED point system.

LEED has gained recognition as the standard for green buildings, but it is not the only one. In some cases, such as smaller renovation projects, LEED certification is not a feasible choice, especially because the requisite documentation can be expensive. Some
institutions, including Mount Holyoke College, have created specifically tailored internal
standards. LEED is also criticized because a LEED certification, especially at the
minimal level, does not imply a building is environmentally responsible (i.e. 100%
sustainable); rather, it is less harmful than it would have been otherwise.

**Benefits to MHC**

Green buildings are one area of environmental concern that is relatively
uncontroversial. Rene Davis, head of Residential Life at MHC, told me “there are no
disadvantages to having a green building” (3). Her enthusiasm is due, in my opinion, to
the green building principle of integrating the concerns of all interested parties from the
beginning of the design process. The result is a building that is both more user friendly
and easier on the conscience.

Beyond the pleasant working environment, MHC sees several benefits from green
buildings. The College likes to position itself as a leader, and green building are a
positive way to stand out. One of my interviewees surmised that the President of the
College supports this initiative in particular because “she can see results” (4). They may
also appeal to prospective students—Emily Wheeler (’08) said she was attracted to the
school by its two LEED-certified buildings (5). Green buildings also offer an opportunity
for education in “purposeful engagement in the world,” part of MHC’s mission statement
(6), for all members of the community. Davis said she does things differently at home
“because of the education [she] receive[s] in the [new residential hall planning]
meetings;” simply walking by the prominently displayed LEED plaques may serve as a
reminder of the importance of sustainability.
There are, however, potential objections, especially to the more radically sustainable buildings. I was particularly concerned about college campuses like Mount Holyoke, where buildings have a traditional look and an old-fashioned resource use scheme. Most of the residence halls, administrative buildings, academic buildings, and the major performance venue here were built around the turn of the twentieth century. While they are elegant buildings and generally highly valued on campus, it is hard to imagine that their design allows for total sustainability. New construction generally hopes to blend in style with the old, creating a cohesive campus atmosphere but proscribing the use of certain green techniques.

Another, more common objection is cost. While that problem is abating as technology improves, significant prioritization decisions must be made. Those decisions rest on the attitude of the decision-maker.

Problem

Despite its traditional air, Mount Holyoke is looking to the future, at least in terms of building requirements. It has taken a relatively strong pro-green-building stance, evidenced in its current strategic plan, its practices, and the attitudes of the people with whom I spoke. I was curious to explore the impetus for that position, how the College carried it out, and how successful it had been. I hoped to identify recommendations both for MHC’s ongoing endeavors, including the new residence hall (groundbreaking is scheduled for fall of this year (7), and for other college campuses looking to adopt sustainable building principles. Questions I hoped to answer included:
• What institutional forces led to MHC’s green building stance?

• Who makes decisions about green buildings, and how are various campus interests integrated in the green building process?

• Why does MHC have its own green building standards?

• How do aesthetic concerns play into decisions about green buildings?

• Is Mount Holyoke doing a good job? How can it do better?

METHODS

There were two parts to my methods in carrying out this project. The first was internet research. Much of this was on the Mount Holyoke website—the school is eager to broadcast its green progress. Materials included the two strategic plans (for 2003 and for 2010) and minutes from the Green Building Design and Construction Working Group, as well as information published by the various environmental constituents on campus (Center for the Environment, Office of Environmental Stewardship, Environmental Studies senior seminar).

The second part consisted of interviews with important players on the green building scene. I interviewed the following people:

• Nancy Apple, Director of Safety and Environmental Affairs, Chair of Green Building Design and Construction Working Group (GBDCWG), and member of the committee coordinating the new residence hall

• Paul Breen, Facilities Management Project Engineer, member of GBDCWG and new residence hall committee
- Rene Davis, Director of Residential Life, member of new residence hall committee (via email)
- Emily Wheeler ’08, Co-Chair of student environmental group Environmental Action Coalition (EAC), member of GBDCWG.

FINDINGS: Process

MHC’s Green Building History

In May 1997, Mount Holyoke faculty and trustees approved the Plan for Mount Holyoke 2003, a collaboratively developed strategic plan for the College (8). The Plan stipulates,

Recognizing that informed decision-making about regional and global environmental issues is crucial to responsible citizenship and leadership, let us encourage personal and professional activities to improve environmental literacy and awareness, generate scientific knowledge, guide public policy, and encourage individual students and faculty to advocate and effect social change that will improve the environmental health of our community and our world (9).

This commitment is important. As I progressed with my project, it became clear that the vision of the college helps determine priorities, including green buildings.

The stage was set for MHC’s first green building projects. Blanchard Student Center, a turn-of-the-century brick building originally constructed as a gymnasium, was gutted and a 9,000 square foot combination performance and dining space was added, as was a 6,000 square foot campus store (10). The success of such a renovation bodes well for green building on college campuses, many of which are full of elderly buildings in need of updating. Kendade Hall, the hub of Mount Holyoke’s science center, was the first such building to be LEED certified. A conditional $10 million gift, the largest the College has ever received, propelled Kendade’s green certification (10).
Current work

MHC’s current efforts on the green building front are inspired by the Plan for Mount Holyoke 2010, the school’s ongoing strategic plan (11). It specifically cites green buildings as the first way in which the college is “mov[ing] toward sustainability” (p.20), and introduces the Environmental Management System of which the later Green Building Design and Construction Working Group (GBDCWG) is a part. Perhaps the most significant part of the Plan is the statement, “Environmental stewardship is an integral part of campus master planning” (p.20). This statement affirms the college’s intent that concern for environmental best practices should permeate its actions at all levels.

Taking up the spirit of the Plan, Nancy Apple, Director of Safety and Environmental Affairs, pushed for more comprehensive approach; her initiative resulted in the GBDCWG, as well as working groups in other areas such as waste reduction and recycling and energy efficiency, which began meeting in 2004 (4). The working group, so called to emphasize its active nature (as opposed to “committee”)(4), was comprised of Ms. Apple and representatives from facilities management, the botanic garden, the Center for the Environment (formerly Center for Environmental Literacy; an initiative of the Plan for 2003), the department of Earth and Environment, and EAC, the student environmental group (12). Members were chosen by invitation with the intent to cover a range of interests and expertise, and the group worked well together (4). The student attendee with whom I spoke said that while she felt she was lacking in expertise, her opinions were sought out and valued (5).

The GBDCWG’s first task was to decide whether MHC would use LEED standards for all new construction, or whether it would develop its own standards. It was
determined that internal standards were in order. The following pros and cons of relying on LEED standards are summarized in this table, from the GBDCWG meeting notes (12):

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<th>Pros</th>
<th>Cons</th>
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<td>Nationally recognized certification system</td>
<td>Requires extensive documentation which can be difficult to obtain from contractors/vendors.</td>
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<td>Use of established system would minimize work to develop MHC system</td>
<td>Review process bureaucratic. Use of point system can lead to obtaining most cost effective points as opposed to more environmentally beneficial points.</td>
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<tr>
<td>May be important to some donors</td>
<td>Some point requirements may not be most environmentally beneficial option.</td>
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It was determined that the school would develop its own standards, but not rule out LEED certification for any project. MHC standards were proposed by members of the committee, based on other, comparable standards. It was agreed that the MHC document would function as a guide, rather than an evaluative standard; review would be internal and would take place at periodic project milestones (12). The guidelines were used tested against two recent dormitory renovation projects, and will be tested from the design phase onward in a similar renovation project this summer (12).

The GBDCWG has for the time being been folded into the new residence hall design committee for the sake of reduced meeting time. The new hall is being designed according to LEED standards, and will probably register for certification (4, 12).

**Decision-making**

Several decisions about specific green technology came up in my interviews. The most common deciding factor was relative cost-benefit analysis. Because design aspects all compete for the same pool of funds (4), and these aspects vary in both cost and
environmental benefit, a balance between cost and environmental benefit must be struck. For example, roof-mounted solar panels are expensive, but since they pay for themselves in energy savings over a period of years, and are environmentally sustainable, they are, according to Project Engineer Paul Breen, a “no-brainer” (13). The new dorm will likely use solar power for water heating (13). Other technologies do not have quite as much value for the dollar. An example of this would be grey water. It was determined that in a region where water resources are not severely threatened (and not likely to spike in price), a grey water system would be too expensive to be justified by the corresponding environmental benefit (13). The money could better spent elsewhere. Breen cited “senior management philosophy” as the force supporting environmentally beneficial measures even at somewhat added expense.

The other primary decision-making factor was appearance. The new building intends to “respect its neighbors” (13). Its neighbors are three brick buildings: a hundred-year-old residence hall, a music building designed to respect the hundred-year old residence hall, and a slightly more modern-looking theatre. It was decided early on that the new hall would be brick-faced with sloping roofs (13); innovative-looking buildings “do not always have an immediate appeal to students, who tend to be conservative in their tastes” (14). When I asked Breen about aesthetic concerns, he said he believes “to be green, [a building] doesn’t have to look innovative.” The Blanchard renovations serve as an example of a traditional-looking green building. On the new building, examples of aesthetic and environmental synergy include probable use of imitation slate roof shingles made from recycled material (13). Breen pointed out that many innovative-looking green buildings owe their appearance to broad glass faces necessary for passive solar climate
control. On a smaller scale, composting toilets came up repeatedly as an aesthetic concern that was probably worrisome enough to prevent its serious consideration.

Success

Everyone I spoke to about green projects seemed pleased with MHC’s progress with green buildings, with the possible exception of students who want to see more progress sooner. Davis (Residential Life) said, “MHC is definitely ahead of the curve when it comes to environmental responsibility.” In response to criticism that basic LEED certification is not enough (beyond base level certification there are silver, gold, and platinum levels), Breen pointed out that it is “quite an achievement to get the certification.” He says he sees 100% sustainable buildings as a possibility, but as “a long way off.”

DISCUSSION: Progress

The more I learn about MHC’s green building efforts, the more impressed I am. Mount Holyoke has done many things well, and is getting tangible results in the form of successful building projects. Nonetheless, the College cannot be complacent. There are areas for improvement.

Critique

The College’s best move toward green building was including environmental stewardship in its central philosophy. Creating a cohesive vision is an important aspect of any organization’s success if decisions are to be coordinated and the organization is to
move in a particular direction (such as increased sustainability). The vision of sustainability, in particular, is important because in any given situation, cost will likely outweigh environmental concern unless environmental concern gets extra support from institutional philosophy. Credit for this move extends to everyone who made the strategic Plans for Mount Holyoke 2003 and 2010 a success, rather than empty rhetoric.

MHC has also used a reasonably integrative approach to green building. This approach allows the College to take advantage of the array of expertise on campus. It also ensures that the buildings will be satisfactory to many different users, both because their concerns have been addressed in the final product and because they feel they have been listened to. The latter is especially important when a decision is made that does not favor the party in question; when someone respects the decision-making process, she is less likely to feel cheated or give up on advocating for her position. I do feel that increased collaboration is possible and necessary.

Recommendations

1. **Continue to support the Plan for Mount Holyoke 2010** and the environmental initiatives it spawned. Integrating environmental stewardship into senior management philosophy is a guiding force for the college, and it can only help the College’s reputation.

2. **Push the definition of green building**. If Mount Holyoke can get from zero environmental standards to basic LEED certification, I have confidence in its ability to construct even more sustainable buildings. They may be a way off, but without setting the goal, we will never get there. Oberlin College’s Adam Joseph
Lewis Center for Environmental Studies (15) is an example of a building that attempted 100% sustainability; though it is not functioning perfectly, it is a remarkable pioneering project to which we can look as a model.

3. Further integrate campus interests. Potential collaboration opportunities include:
   a. Art and architecture. Good buildings are works of art, and including students in the design process would be a great way to teach and expand the base of people who are attached to the building project. Inspiration for this idea comes from environmental artist Michael Singer (16).
   b. Biological system integration. Oberlin’s building utilizes a “living machine” to clean and recycle its own water for toilets and landscape use (15). As far as I can tell, no such system has been seriously considered at MHC.
   c. Research opportunities for students. Mount Holyoke aims to make its campus a “natural laboratory” (9) but I find no mention of a similar idea being applied to building systems. By comparison, in Smith College’s planned new science complex, “the building itself will function as a teaching tool” (17). MHC should create opportunities for term projects and/or internships examining particular design issues and presenting them to the design committee.
LITERATURE CITED


13) Paul Breen, personal interview, 27 April 2006.

15) Adam Joseph Lewis Center for Environmental Studies, Oberlin College. 
   http://www.oberlin.edu/ajlc/ajlcHome.html [May 1, 2006].
