LEEDing the Way:
Lessons Learned from the Commitment Process of Universities in North Carolina Building to LEED Standards

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Executive Summary

Universities are considering ways to reduce their environmental impact, such as building to LEED standards for major new construction. This study examines the motivations, drivers, challenges and key factors to making the commitment to build to LEED standards for universities and colleges in North Carolina. This research suggests university administrators should consider learning from other universities with similar characteristics, researching the cost of building to LEED standards at higher education institutions, finding support from an upper-level administrator as well as cultivating support throughout the campus community and using the university’s culture as a tool.
INTRODUCTION

Public and private institutions in North Carolina are reducing their environmental impact by building to LEED (Leadership in Energy and Environmental Design) standards for major new construction. LEED, developed by the United States Green Building Council (USGBC), is an internationally recognized green building certification that provides third party verification for buildings that incorporate specific design elements and features.¹ LEED seeks to bring environmental, economical and health/community benefits to building owners, users and community.²

This capstone explores the lessons learned from studying the decision making process that led specific universities to commit to building to LEED standards for major new construction. This capstone focuses on the decision process involved for universities that chose to build to LEED standards. Building to LEED standards means following the LEED guidelines, but not necessarily going through the formal certification process. University administrators in North Carolina can use this research to gain insight into the commitment process at other universities and colleges.

RESEARCH DESIGN

This capstone focuses on 5 four-year universities and colleges in North Carolina committed to building to LEED standards for major new construction projects. This selection is a convenience sample based on distance from Chapel Hill, NC. The institutions selected were the University of North Carolina at Chapel Hill, Duke University, North Carolina State University, Meredith College and Elon University.³

Sustainability coordinators, university architects and facilities services managers were contacted at each institution for interviews. The researcher identified these positions based on their likely knowledge about the commitment. Snowball sampling, which asks participants to refer the interviewer to other potential participants, was used. This sampling continues until interviewees start referring the researcher to the same people. The researcher conducted 14 interviews across the five institutions.

The semi-structured in-person and phone interviews focused on motivations for the commitment, drivers, challenges and key factors to making the commitment. The motivations focused on why the institution made the commitment. Drivers were the people that initiated the commitment process and/or championed it. The challenges were any obstacles during the process and key factors to making the commitment were perceptions of what in particular about the university or college allowed it to make the commitment. In addition to interviews, the researcher collected sustainability website literature, design and construction guidelines, green building policies, facilities’ and university architects’ mission statements and news releases for each university and college. The researcher analyzed the interviews and documents for common themes.

LIMITATIONS

This research examines the process behind the commitment to follow the standards and not the implications of the commitment or the decision to go through the actual certification process. Only four-year universities and colleges with a formal policy committing to building to LEED standards were included. The small convenience sample limits generalizability and the research design focuses on collecting stories from a few universities and colleges instead of trying to represent the total population that have committed.
Additionally, this capstone relied on snowball sampling to identify other interviewees, which could bias the sample towards certain individuals. The researcher could also not guarantee confidentiality to respondents because the population committed to building LEED standards is small.

A variety of perspectives could offer a more comprehensive understanding of the commitment process at each institution. Additionally, snowball sampling allows the researcher to interview administrators involved that may not be identified based on position title alone.

RESULTS AND ANALYSIS

Motivation
This section examines the reasons why universities and colleges made the commitment. LEED’s public relations value, environmental responsibility and campus demand were common motivators. Respondents cited the public relations value and environmental responsibility with the same frequency. The chart on the next page provides the response patterns across the universities.

This research defines public relations value as using LEED’s brand to promote a certain image with the public. An Elon University interviewee said LEED is a “tool used to attract students, faculty and staff. It is becoming more important to people to be on a campus where sustainability is important.” Elon considered another building standard besides LEED and NCSU initially used another building standard. Both ultimately committed to LEED standards because of its brand. People recognize LEED and know what it means, according to an NCSU administrator. In addition, respondents from UNC-Chapel Hill, NCSU and Duke said the universities wanted to be seen as leaders in sustainability. One administrator remarked that universities compete with each other to be labeled as “the greenest.”

The researcher defines environmental responsibility as taking accountability for the institution’s environmental impact. Six interviewees from NCSU, UNC-Chapel Hill and Elon University said this commitment was the “right thing to do for the environment.”

Respondents cited responding to the campus community’s demand with the third most common frequency. A student group from Duke, called the Duke Greening Initiative, advocated for green building by bringing an internationally renowned green architect to speak at the university. Meredith College’s campus suggested a sustainability theme for the 2008-09 school year. During the year, the college developed a sustainability plan for the campus called the Greenprint. An administrator interviewed students, faculty, staff and alumnae to determine what the sustainability priorities were for the campus. Building to LEED standards for new construction was a recurring theme of the interviews and was included in the Greenprint.

Drivers
This section focuses on who pushed for the commitment. The campus community at Duke, UNC-Chapel Hill, NCSU and Meredith initiated the commitment process while Elon University had high-level administrative initiation.

At Duke, the Duke Greening Initiative worked with the University Architect’s staff to make the commitment happen. The Initiative, which started as a project for a public policy class, grew into a group of undergraduate and graduate students as well as advisors from the Nicholas School of the Environment. UNC-Chapel Hill project managers and architects lobbied for individual construction projects to be built to the standard. Eventually UNC-Chapel Hill hired its first sustainability directors who actively supported integrating LEED standards into construction guidelines.
NCSU also had staff, faculty and some students advocating for LEED standards and sustainability in general. Two of the three interviewees from NCSU said the grassroots movement for sustainability has been on campus for a while. This advocacy has become mainstream and involved more people in the past few years, according to a respondent. Meredith College’s community suggested a campus theme about sustainability. One interviewee acted as the facilitator for bringing the ideas together to create the Greenprint. At a small liberal arts college without teams of architects, project managers and engineers, it made sense for the interviewee to take on this role.

In contrast, Elon University’s President created the Environmental Advisory Council consisting of faculty, staff and student representation. The President charged the Council to create a Sustainability Master Plan with initiatives to help the university reduce its environmental impact. One recommendation was to build to LEED standards. Elon held forums about the plan to receive student input.

Duke, NCSU, UNC-Chapel Hill and Elon University had a champion in university leadership advocating for the commitment. The Duke Greening Initiative’s first goal was to gain administrative support for their work. The Initiative obtained the support of a senior officer and the president. A few high-level administrators at UNC-Chapel Hill supported the commitment and one interviewee had a goal to get communication regarding the commitment to top administrators. NCSU had strong support from a former Provost, who worked to create support among other high-level administrators, according to a respondent. At Elon, the President initiated the commitment process and supported making sustainability an institutional priority soon after Council created the Master Sustainability Plan.

| Table 1: Summary of Motivators, Drivers, Challenges and Key Factors to Making Commitment |
|--------------------------------|---------|---------|---------|---------|---------|
| **Motivations**                         | Duke       | Elon     | Meredith | NCSU   | UNC-CH |
| PR Value                                  | ✓         | ✓         | ✓         | ✓         | ✓       |
| Environ. Resp.                            |           | ✓         |           | ✓         | ✓       |
| Campus Demand                            | ✓         | ✓         |           |           |         |
| **Drivers**                              |           |           |           |           |         |
| Campus Community Initiation              |           |           | ✓         | ✓         | ✓       |
| High-Level Admin. Initiation             |           |           |           | ✓         |         |
| High-Level Leadership Champions          | ✓         | ✓         | ✓         | ✓         | ✓       |
| **Challenges**                           |           |           |           |           |         |
| Cost                                      | ✓         | ✓         |           |           | ✓       |
| Parameters Considered                    |           |           | ✓         | ✓         |         |
| **Key Factors to Making Commitment**    |           |           |           |           |         |
| Campus Culture                           | ✓         | ✓         | ✓         | ✓         | ✓       |
| Private Institution Status               | ✓         | ✓         |           |           |         |
| Ease of Transfer                         | ✓         |           |           |           | ✓       |
| University Leadership Support            | ✓         | ✓         |           |           | ✓       |
This capstone suggests that campus demand as well as a “champion” in university leadership is important. This finding is consistent with previous research on sustainability movements in higher education. One researcher writes, “A good structure for environmental management takes a simultaneous top-down and bottom-up approach... Not only must the senior people be interested in the cause, they must be seen to be so… Second, people throughout the organization must be a part of such an initiative.” Support from the campus community and upper level leadership varied at each institution. This variance may be because each institution has a different typical decision making process. A UNC-Chapel Hill administrator said the university’s decision process to commit to LEED was consistent with other decisions and based on consensus. At other institutions, the upper and lower level support needed will vary

**Challenges**
Challenges were any obstacle during the commitment process. Interviewees identified up-front costs as a challenge to committing. Specifically, respondents discussed the initial concerns about costs, perceived costs and the parameters of the commitment. Three interviewees said the up-front cost was an initial concern or question instead of a challenge. An additional five interviewees said the perceived up-front costs of the commitment were a challenge. A UNC-Chapel Hill administrator said some people will question the commitment’s value because of the perceived costs. Another respondent at Elon said people automatically think a 5 to 10 percent up-front cost increase when LEED is mentioned. Several interviewees remained unconvinced whether it does cost more to build to LEED standards. Other interviewees believed the increased cost was only marginal.

Universities and colleges place parameters on the commitment likely because of cost. Interviewees at Meredith College and Elon University said limits are an important consideration. At Meredith, the Greenprint draft originally said the college would build to LEED-Gold standards. The senior management team only approved building to LEED standards. An Elon administrator said the university asked itself, “What is appropriate and what is not appropriate for Elon?” Elon committed to building to LEED-Silver standards for buildings greater than 8,000 square feet because administrators wanted to make sure academic buildings, which are sometimes around that size, were captured in the commitment.

UNC-CH and Duke interviewees discussed that there are fewer challenges today than back when these universities made the commitment. One interviewee said in the early 2000s, everyone was trying to figure out what LEED was and the USGBC was learning at the same time.

**Key Factors to Making the Commitment**
Key factors to making the commitment were perceptions of what factors about the institution allowed it to make the commitment. Universities and colleges identified campus culture, private institution status, ease of transfer and university leadership support as key factors to making the commitment.

**Campus Culture:** Thirteen of 14 interviewees identified campus culture as critical to making the commitment. At Meredith College, a core focus is on the people and face-to-face relationships within the campus community. One administrator said the senior management team approved the commitment because the campus community wanted it. Elon administrators saw a link between the university’s value of experiential learning (learning derived from experience) and facilities built to LEED standards. Students exposed to LEED buildings can learn green building’s benefits from first-hand experience. Advocates at NCSU related the university’s strong foundation in energy efficiency and new technology to building to LEED standards, according to a respondent. UNC-Chapel Hill views itself as a leader and an innovator. An interviewee said community is open and willing to try new things. A Duke University administrator described the campus as open to sustainability and institutionalizing it on campus.
Private Institution Status: Three of the five institutions studied are private. Since public funds do not support private institutions, they do not need legislative approval for construction. A Duke University administrator said Duke could allocate resources more freely than a public university because it did not need approval from state government. Elon made the commitment quickly and easily because of its private status, according to an administrator.

Ease of Transfer: Duke University, UNC-Chapel Hill and NCSU already had sustainable principles in their construction guidelines. A Duke administrator said the university was able to evaluate the advantages of building to LEED standards since they were already in the guidelines. When UNC-Chapel Hill compared its guidelines to the LEED checklist, one respondent said it was surprising how much the university was already doing. An NCSU interviewee said the design guidelines in place before the commitment were already achieving what a LEED building would. An administrator at Elon University agreed, stating a university should evaluate its guidelines to examine how close they are to building to LEED standards.

University Leadership Support: While some institutions had more active support from their leadership than others did, interviewees from three universities said the support was critical to making the commitment. The Chancellor of NCSU’s personal interest in energy efficiency led him to support the commitment, according to an administrator. At Duke University, an interviewee said the administration wanted the university to be seen as a leader in sustainability and was responsive to what the students desired. High-level administration support at UNC-Chapel Hill gave the commitment credibility with other administrators, according to a respondent.

RECOMMENDATIONS

University and college administrators considering committing to building to LEED standards for major new construction should consider the following recommendations:

- Examine characteristics of your university or college and learn from institutions with similar characteristics. Interviewees said talking to administrators at other institutions is a way to learn useful strategies for making the commitment;

- Research the cost of LEED at universities and colleges. Up-front costs were a common challenge and knowing the expected up-front cost of buildings to LEED standards and the return on investment can bring more people on board with the commitment;

- Find support from an upper-level administrator. Four institutions had upper-level administrative support for the commitment;

- Along with upper level support, cultivate support from the campus community;

- Use university’s culture as a tool. Universities cited campus culture as critical to making the commitment possible;

- Some interviewees commented that more challenges came from fulfilling the commitment than the actual commitment process. While this finding is outside the scope of this study, it is an important consideration for universities and colleges.
2 Ibid.
3 North Carolina Central University was initially contacted but did not agree to participate. Elon University replaced NCCU.
4 Elon University Anonymous Interview, 12/07/2009
7 Ibid.
8 Ibid.
9 “President’s Address, August 20, 2007,” http://www.elon.edu/e-web/administration/president/openingaddress_8_20_07.xhtml.
10 David Chernushenko, Greening Campuses: Environmental Citizenship for Colleges and Universities (Winnipeg, Manitoba, Canada: International Institute for Sustainable Development).
12 LEED has four levels a university can choose to building to: Certified, Silver, Gold and Platinum. The certified level requires the least amount of points while platinum requires the most amount of points to be built to the respective standards.
APPENDIX A: University Profiles

Duke University Profile

University Demographics
Type of School: Private University, Coed
Degrees Offered: Bachelor’s, Master’s, Doctoral, First Professional
Setting: Suburban, Small city (50,000-249,999), Residential Campus
Total Undergraduates: 6,496
Graduate Enrollment: 5,884

LEED Building Policy
Duke University is committed to a Greening Initiative. The focus is on incorporating an environmentally responsible design and construction practice into all University building projects. Specifically, the Greening Initiative supports the Leadership in Energy and Environment Design (LEED) approach to project design and construction. Consideration of LEED certification shall begin with project inception. (Design Guidelines, 2006 Edition, Section 1, Consultants’ Guidelines)

Advice from Interviewees
One interviewee said LEED is not a perfect standard for universities. The USGBC does not have standards for a campus-wide system and universities will not be able to receive credit for all things the university does, even if they are good for the environment. However, that “just means the scorecard has fewer points, but the points should not be all you are aiming for.” Another interviewee said it was helpful the process was “collaborative” with the students asking, “How can we help you do this?” and “how can we make this work for Duke?”
The University of North Carolina at Chapel Hill Profile

University Demographics

Type of School: Public University, Coed

Degrees Offered: Bachelor’s, Master’s, Doctoral, First Professional

Setting: Suburban Setting, Large Town (10,000-49,999), Residential Campus

Total Undergraduates: 17,895

Graduate Enrollment: 8,275

LEED Building Policy

The University of North Carolina at Chapel Hill is a member of the US Green Building Council. We recognize the USGBC’s LEED rating system as the most widely accepted standard for evaluating sustainability of the built environment. While we do not yet require projects to seek LEED certification, every project is expected to incorporate measures that would enable it to be certified at the silver level. Achieving this standard requires close cooperation among the design team, eventual occupants, owner representatives, contractors, and staff who will operate and maintain the building. Incorporation of these standards and design approaches begins at pre-design and includes early meetings with a range of owner representatives on campus. Refer to “Section B: Project Development Sequence, Programming Phase” in Chapter II for a list of departments to include. (Design and Construction Guidelines, Chapter 1 – General Principles, Summer 2007 Edition)

Advice from Interviewees

One interviewee said to “get communication as high up the chain as it can go.” A university may not need approval from high-level administrators for the commitment, but the communication can “enhance credibility and clout.” Another interviewee said to analyze the institutional goals for campus buildings and see how and if you need LEED to accomplish those goals.
North Carolina State University Profile

University Demographics
*Type of School:* Public University, Coed  
*Degrees Offered:* Associate, Bachelor’s, Master’s, Doctoral, First Professional  
*Setting:* Urban Setting, Large City (250,000-499,999), Residential Campus  
*Total Undergraduates:* 24,741  
*Graduate Enrollment:* 7,819

LEED Building Policy
NC State understands this impact and has committed all new construction to be LEED-Silver, which will help tie sustainable design into our University Construction Guidelines for new construction and renovation projects. (Buildings Initiatives)

Advice from Interviewees
One interviewee encouraged other universities to build to LEED standards because it is important to “educate students about limited resources and how it is important to conserve for the future.” Another interviewee said it is key to have a good understanding of what LEED is before you make the commitment and have a “time period for people to figure out what LEED is all about.”
Meredith College Profile

University Demographics
Type of School: Private, Liberal Arts College, Women Only
Degrees Offered: Bachelor’s, Master’s
Setting: Urban Setting, Large City (250,000-499,999), Residential Campus
Total Undergraduates: 2,001
Graduate Enrollment: 249

LEED Building Policy
Outcomes for Goal 2: Meredith College will model environmental responsibility in daily operations (future focus):
Outcome 2.6: Meredith College will build and renovate to the highest environmental standards.
Indicator: Meredith College will build all new buildings, renovations and retrofits to a minimum of LEED standards, or a comparable environmental standard. (The Meredith College Greenprint, Spring 2009)

Advice from Interviewees
One interviewee said it is important to restructure how one looks at the costs of a building before a commitment is made. People “are trained to see utility bills and capital costs as independent, but to get people on board with LEED, they need to be seen together because the upfront costs may be more, but you can save money over time.”
Elon University Profile

University Demographics
Type of School: Private, Liberal Arts College, Coed
Degrees Offered: Bachelor’s, Master’s, Doctoral, First Professional
Setting: Suburban Setting, Large Town (10,000-49,999), Residential Campus
Total Undergraduates: 4,992
Graduate Enrollment: 209

LEED Building Policy
New construction projects and major renovations consisting of 8,000 or more square feet of conditions, occupied space will achieve LEED certification. LEED silver is strongly preferred level and in no case will such projects achieve less than LEED Certified certification. The design and construction team should strive to a higher level of certification whenever project resources and conditions permit. (Green Building Policy)

Advice from Interviewees
One interviewee said many schools are “probably very close to LEED-like buildings by using current architectural principles and it may not be that big of a leap for some schools.” Additionally, “when you say LEED to someone, they are going to think of a 5 to 10 percent cost increase for construction.” If a university knows how their construction standards match up to LEED, it may not be that big of a commitment. Another interviewee said the policy should make sense for the institution and involve “a lot of different stakeholders since there are many involved with LEED at a university.”
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