

Constructing a Movement, One Building at a Time:
The History of Green Buildings at Emory University
Micah Hahn, March 2008

Sustainability on Campus

An analysis of sustainability movements across U.S. university campuses identified the common thread of the 3 Cs of social movements: catalyst, consensus, and commitment (Barlett and Chase 2004). Although each of the Cs came at a different point in the sustainability movement and originated from a different source at each university, the general trend was the same across all campuses. For example, at Illinois Wesleyan University, the sustainability movement began with a student petitioning for recycling bins on campus and was bolstered by the addition of an Environmental Sciences faculty hire and a conference on curriculum development. Unforeseen support from within the university prompted the first round of consensus among students, faculty, and administration, and the Green Task Force was born. Roadblocks along the way were removed in part by external support in the form of a grant from the Rockefeller Foundation and speeches from outside leaders in sustainability. The Green Task Force went through a roller coaster of commitment from students and staff in the form of time and the administration in the form of funds, but ultimately, the administration established a permanent Committee for a Sustainable Campus, signaling at least their theoretical commitment to sustainability at Illinois Wesleyan.

The green building movement at Emory University was no exception. Catalyzed by a conference on green practices on university campuses, a small group of enthusiastic staff and faculty quickly set their sights on introducing green buildings to Emory. Aided by their collective years of experience at Emory, they knew which members of the administration to approach in order to gain support for their ideas. After gathering the necessary data on the costs and benefits of green buildings, the unofficial green building committee easily gained consensus from the Chief Financial Officer, the President, and the Board of Trustees. They soon realized that in order to make the green building initiative sustainable, they needed to integrate a commitment to green building principles into Emory's policies. The committee drafted a policy statement that was eventually incorporated into Emory's mission statement, ensuring that the commitment of the university to green buildings will continue for generations.

Although this tale of green buildings at Emory sounds idyllic and the commitment of the university to green buildings secure for perpetuity, the following history through the eyes of the movers and shakers that made up the unofficial green building committee reveals that the initiation of the green building movement at Emory resulted from sheer enthusiasm, blind ignorance, committed individuals, and a little bit of luck. Far from over, the struggle to inspire and motivate student action as well as the lack of publicity about the exceptional achievements of the movement thus far both challenge the future of green buildings at Emory.

Methods

This paper is part of a multi-sectoral project to gather oral interviews to record the history of the sustainability movement at Emory University, part of the anthropology course “Issues in Sustainability” (ANT 585), taught by Peggy Barlett in 2008. Other sectors examined were energy, transportation, and forest preservation. Information was collected through background research on Emory’s [Facilities Management website](#), [Construction Updates website](#), [Office of Sustainability website](#), and in-class discussion with the instructor and other researchers on the project. Individual interviews on green buildings were conducted with the following people:

- Jennifer Fabrick, University Architect
- Laura Case,
- Robert (Bob) Hascall, Vice President of Facilities Management
- John Wegner, Chief Environmental Officer of Emory University and faculty in Environmental Studies Department.

Interviews lasted approximately 1-1.5 hours, and all interviews were held in the offices of the respective interviewees. Consent for the interviews was gained via email with each interviewee individually. Once the researcher arrived at the interview location, the purpose of the study was clearly explained, namely to gather the history of green buildings at Emory from those who were instrumental in the initiation of the movement. It was explained that eventually, these histories might be available on the Emory website in order to share our successes with sustainability with the general public. It was also made clear that although the researcher would be taking down names and attributing quotations to the person being interviewed in the field notes and in the final report for Anthropology 585, any version of the history to be shared outside of the class would be sent back to the interviewees for screening and editing to ensure that anonymity is preserved. Interviewees were given an opportunity to review the report, and in 2017, the reports were edited for clarity and consistency, to be part of an archive of Emory’s sustainability history.

Reconciling Differences and Building Relationships

“I think the genesis, or the ability to have discussions about green buildings, goes back to the debate over the shuttle route, or Starvine Way.” John Wegner, Chief Environmental Officer of Emory University and faculty in the undergraduate Environmental Studies (later changed to Environmental Sciences) Department recalls a contentious discussion in 1999 regarding the construction of the shuttle route that today links the Clairmont Campus with main Druid Hills campus. “It was highly adversarial, like you wanted to put on your suit of armor and take up your sword when you went to meetings. [The] debate was between Facilities Management and the [Committee on the Environment](#). Fairly early on, we decided that we were never going to reconcile our differences, and so we agreed to put our differences aside and...redesign the road to minimize the environmental impact. [This] started to create a level of trust between to the two sides” (Wegner 2008).

A few months after consensus was reached on Starvine Way, Wegner, one Emory undergraduate (Jacob Halcomb), and two Facilities Management staff (Al Herzog and Chip Bullock) attended a campus ecology conference at Davidson College. “We found ourselves locked in a car for five

hours each way, and we started to talk things through. ...This is to say that most of this has to do with personal relationships and serendipity” (Wegner 2008)

Irrational Enthusiasm Seems Like a Good Place to Start

In March 2000, Wegner, Bob Hascall (Vice President of Facilities Management), John Fields (then Director of Project Management and Construction for Facilities Management), Jen Fabrick (University Architect), and Peggy Barlett (faculty in the Anthropology Department) attended a [Second Nature Regional Conference](#) in Atlanta. “It was a really exciting conference,” recalls Hascall. “[It was the] first time Jen, John Fields, and I had ever heard of LEED [[Leadership in Energy and Environmental Design](#)]. [We heard about] what other campuses around the country were doing on sustainability.”

The LEED Green Building Rating System was developed in early 2000 as a “nationally recognized benchmark for the design, construction, and operation of high-performance green buildings” (US Green Building Council 2008). There are four levels of LEED Certification: certified, silver, gold, and platinum. Certification level is earned through a points system based on a variety of criteria, ranging from the percentage of construction waste recycled to the amount of natural light utilized in the building. The news that other universities had attempted to reach this new standard for their university buildings convinced the Emory conference attendees that it could be done at Emory.

“We were in the midst of redesigning the Whitehead Building (the new biomedical research building on Emory campus),” said Fabrick. “We had a group discussion. We made a commitment then to make that building as green as possible. As we talked more, the whole thing evolved into ‘Why can’t we make Emory have a green building policy?’ That was really the seed” (Fabrick 2008). Hascall said that he came away from the Second Nature Conference convinced that Emory was ready for green buildings. “I said, ‘We need to do this LEED thing here’...but I didn’t know what it meant.”

“Greening” Whitehead

Eager to implement the compact made by the conference attendees, John Fields went to Laura Case and Bill Chatfield, the project managers on the Whitehead building, upon his return to Emory in October 2000. “[Fields] sent a group of us to the first LEED training in Atlanta,” said Case. “[It was] a full day of training. We asked the teacher if they thought that we could certify a LEED building that was already designed, and he said, ‘No.’ So we took that as a challenge. We sat down with a LEED scorecard, and we decided we could do it” (Case 2008).

The quickly-growing informal committee to “green” Whitehead agreed that they needed to secure support from John Temple, the university’s Chief Financial Officer, President William Chase, and the Board of Trustees. They approached John Temple first. “He said to us, ‘From a payback point of view, prove that this is worth it upfront,’” recalled Fabrick. The university

architects and engineers undertook a lifecycle cost analysis to estimate the added cost of adding the features necessary to obtain LEED certification on the Whitehead building. They calculated that when energy and water costs were considered over the lifetime of the building, the cost of building Whitehead to LEED standards would be more than recovered in less than seven years. Armed with this lifecycle cost analysis, Hascall presented the research to Temple. “I said, ‘There are going to be some costs, but here are the long-term benefits.’ John Temple was a finance guy, so when you laid it out on the table that it cost [“x” dollars] but it came back in four years, he was convinced.... You’re actually making money over the lifetime of the building” (Hascall 2008).

The unofficial Whitehead building committee then drafted a policy to accompany the lifecycle analysis.¹ If accepted by the administration, this document would ensure that all new buildings at Emory would be built to LEED certification to the extent that it was economically feasible to do so and would ensure that the Whitehead initiative would come to fruition.

The next step was presenting the mission statement and the Whitehead proposal to President Chase. “[He was] fortunately an environmental guy,” said Hascall. Impressed by the lifecycle analysis and easily convinced of the environmental benefits, President Chase agreed to support Hascall to present the mission statement and the proposal to “green” Whitehead to the Board of Trustees. Fabrick insists that the support of President Chase’s wife, JoAn Chase, was significant to ensure the progress of the green building movement as well. “She rode her bike to campus from Lullwater [the Emory estate where the house of the president is located]. She helped start [the Friends of Emory Forest](#). Her [support] and President Chase’s support was very strong” (Fabrick 2008).

Persuaded by the financial data and the endorsement of President Chase, the Board of Trustees supported the Whitehead initiative. Realizing that they had gathered the necessary approval from the administration and trustees at Emory, the unofficial green building committee moved ahead with altering the plans for the Whitehead building despite the fact that the project was already months in progress.

Climbing the Steep Learning Curve

“Nobody knew what they were doing,” said Wegner. “The only thing that saved us on Whitehead was the architecture firm, [HOK](#).... They had already written a manual on sustainability, and they had already incorporated many green principles into the building, which is why we could get certification.” Case, the project manager on Whitehead, also gave HOK credit for supporting Emory in the quest to build Whitehead to LEED standards. “We were lucky with Whitehead because of the site we chose—the lay of the building, south-facing, big windows—very efficient mechanical system, large overhang.... We have Emory design standards [even before LEED] that define long-lasting, high-performing, high-quality buildings [as our goal]. We tell our architects, ‘Design a building that will last for fifty years’” (Case 2008). Hascall reiterated this point, “The leap from where we were in our standards to LEED was not that great.”

The contractor on the Whitehead project, [Whiting-Turner](#), on the other hand, was hesitant at first to take on the new specifications. “We initially got pushback,” said Hascall. “[Whiting-Turner] said, ‘This is going to cost more money...we’re stopping progress.’ We said to them, ‘We’re willing to pay that money and accept that extra time.’ Once assured that Emory wanted to collaborate with them and work as a team to embark on this new chapter in Emory building design, Whiting-Turner agreed to enter into negotiations and work to get Whitehead certified (Hascall 2008).

Once the building team began to make the modifications necessary to attain LEED-certification standards, the team realized that they had jumped headfirst into a massive undertaking without as much knowledge about the process as they would have liked. When asked why they decided to experiment with LEED standards on a building already in progress rather than waiting for a fresh slate with the next building project, Hascall laughed. “Because we didn’t know any better. None of us knew enough about LEED to say, ‘Let’s start on the next building.’ We were so enthusiastic about it...the blind leading the blind...”

Shifting the Paradigm

Despite frustrations throughout the construction process, the Whitehead Biomedical Research Facility was completed in October 2001, one month ahead of schedule, and included many innovative design features (Environmental Protection Administration 2005). The building stands eight stories high, is 325,000 gross square feet, and cost a total of \$65 million (\$200 per square foot). Whitehead utilizes innovative technology such as four 20-foot-diameter enthalpy wheels that recover energy from the building’s exhaust air. The wheels pre-heat outside cool air in the winter and pre-cool warm air in the summer in order to cut down on the costs for temperature regulation inside the building. Ninety percent of the building’s 300 laboratory and office spaces were placed on the edges of the building to allow natural lighting to illuminate the space. The perimeter lighting system is governed by a photocell that automatically switches off the outside row of light fixtures when there is adequate natural lighting.

A storm-water harvesting system on top of the building funnels water to a retention vault below Whitehead to be used to irrigate the landscape around the building, and a condensate-recapture system collects condensation from the building’s cooling pipes and channels it into the nearby Emory cooling towers as make-up water. Many post-consumer and post-industrial waste products were used in the construction of Whitehead, and the cost and energy use for transporting construction materials was reduced by utilizing many locally manufactured supplies. Additionally, Emory followed a construction recycling plan that allowed them to recycle 300 tons of metal and save an addition \$20,000 in landfill costs.

The Whitehead research building was one of the first 28 buildings in the United States and the first building in the Southeast to receive LEED certification (Environmental Protection Agency 2004, Seideman 2002). The building was awarded a Silver rating by the U.S. Green Building Council in 2002. As a result of the success of the Whitehead project and the commitment of the university to the mission statement on green buildings, many Atlanta-area architecture firms and building contractors began to look into LEED-accreditation. This spread of interest in green

building offered Emory new partners, as the university plans to build 4.7 million gross square feet in new buildings in the next decade (Facilities Management 2005). “We were at the forefront of making the profession change,” said Fabrick. “When we were interviewing contractors, we’d ask them questions about green buildings and a lot of them didn’t know [the answer], so we didn’t hire them.”

Expanding the Green Building Mission

The [Mathematics and Science Center](#) was the next construction project at Emory to undertake LEED design principles. In a tribute to the green building mission statement, Wegner was asked to sit on the building committee as the environmental advocate and consultant. “[He organized a] design charrette,” said Case, “kind of like brainstorming...you get the designers and the contractors, everybody involved in the building, brainstorming about what makes it [a] higher quality [building].”

Despite the publicity that Emory received as result of the Whitehead project and the endorsement of President Chase and the Board of Trustees, Emory faculty were still hesitant to undertake green design on new teaching facilities. “For Whitehead, you were dealing with a research building, and everyone understood that it was a heavy energy user, but do the same numbers pan out for housing and education buildings?” (Fabrick 2008). Fabrick recalled this as one of the questions posed to her from the faculty when Facilities Management announced that they would be applying LEED standards to the new teaching building. “It was sort of a sociological philosophy that ‘It’s going to cost so much more to do these green buildings’” (Fabrick 2008).

Undeterred and backed by the Emory mission statement on green buildings, the green building committee pushed forward with the plans for the Math and Science Center. Despite their initial reservations, the faculty found that once they moved into the new space, they had no complaints of headaches or asthma from students or staff, issues they expected to arise as a normal consequence of exposure to recent construction. LEED certification standards required the contractor to use low VOC (volatile organic compounds) paints, carpets, and adhesives, and once the faculty had a better understanding of the personal health benefits of adhering to LEED standards, they were happy to accept the extra up-front costs of incorporating LEED principles.

Celebration and Education: The Missing Pieces of the Green Building Puzzle

So far the story of green building at Emory has involved a number of actors from around the university, but notably, there has been scant mention of students. “It’s been the most frustrating part to this,” said Wegner, who was then splitting his time between teaching in the Environmental Studies/Sciences Department and serving as an environmental consultant for Facilities Management. “Only recently, students have become engaged.... Students are involved in too many things—that diffuses their ability. Up until recently, I would’ve said that Emory students don’t care about the environment...but we’re still having a hell of a time getting out the news that we’re doing some pretty neat stuff” (Wegner 2008).

All of the members of the original unofficial green building committee recall quite a celebration at Emory after the completion and certification of the Whitehead Biomedical Research Building. Similarly, HOK and Whiting-Turner were thrilled to have a picture of the building on their websites. “Everybody involved in the process got to take credit,” said Case. “No telling what that’s worth for the universities and contractors involved. That’s one benefit we never really track, but how do you?”

The other four completed LEED certified buildings on campus received no such grand acclamation. “I think that’s one of things we’re not doing a good job of,” said Hascall. “We don’t celebrate the moment. Other than the plaque in the building, you wouldn’t know [the building] is certified.”

Fabrick and Wegner expressed similar sentiments, highlighting the fact that they did not have the time or expertise to ensure that the media got wind of their new construction projects. “Nobody knew about [our green buildings],” said Fabrick. “Nobody on campus from a PR point of view was letting the world know what we were doing. From our point of view, we thought, “That’s not our job. We’re just here to make it happen.” “Early on in my job I had a choice between working on PR, which I’m not very good at, or protecting the environment—so when you’re faced with that choice...” Wegner said with a shrug.

Continuing to Raise the Bar

Facilities Management at Emory has continued to uphold the green building mission statement of the university and has applied LEED principles to the three building in the design phase and the nine buildings either currently under construction or in the process of being certified. Their early success with the LEED program has provided the impetus for expanding their goals for energy conservation and sustainability on campus. “Alternative energy” seems to be the topic of conversation around the water cooler in the Facilities Management buildings these days. “We still want to do some pilot projects,” said Fabrick.

“Photovoltaics,” said Case. “We’d love to see those, but everything’s not cost effective [at this point]. Still a relatively new technology, solar panels cannot boast the quick cost recovery figures that other LEED specifications have proven on Emory’s campus. This minor obstacle does not stop Fabrick and Case from letting their imaginations run wild with visions of roofs topped with gardens and futuristic nautilus seashell-shaped wind turbines. “I think we’re all passionate it about [green building and design],” said Fabrick.

Looking Forward

The genesis of the green building movement at Emory University began with a small group of committed and enthusiastic, if uninformed, individuals. Each member of the initial unofficial green building committee brought a different perspective and professional background to the table; for example, Hascall had just come from California, where electric cars on campus were the norm, Fabrick studied green design in college during the environmental movement in the

seventies, and Fields was your “classic engineer,” Fabrick said. “Good Southern boy...really athletic, enjoyed nature.... [At the beginning, he] said ‘I don’t know ‘bout this stuff, but I’ll try it’” (Fabrick 2008).

A combination of dedication, strategic planning, and luck produced Emory’s first LEED certification. Despite a few occasional tussles, the green building mission seems to be rolling along at a clip, and recognition for the behind-the-scenes efforts of these individuals seems more likely as the newly established [Office of Sustainability Initiatives](#) begins to take root.

Is this momentum sustainable? The original green building committee members think so. “[Green buildings are] part of the culture [at Emory] now, especially because we have so many LEED-accredited people in our building [Facilities Management],” said Hascall. “Absent me, I don’t think it’s going to stop.... [The] university has taken on sustainability as a key strategic theme.”

Wegner agrees that the green building movement will continue moving forward, but he is not convinced that Emory has experienced deep, ideological change just yet. “In my mind, it’s not so much that [green building] is embedded in the culture, but that it’s in the policies of the university...I’ve been in social movements since my teens. My experience has been that it’s better to regulate it and take it out of human control.”

There is likely some truth to both perspectives. The green building mission statement document certainly dictates the standards to which Emory University construction projects must adhere. Likewise, the green building initiative does have strong advocates throughout the university who would no doubt defend the sustainability principles set forth in the document, should it be challenged in the future. The current state of green building standards seems secure for the coming decade, but what about three decades from today?

David Orr, well-known pioneer in environmental literacy and ecological design and a current Chair of the Environmental Studies Department at Oberlin College, has laid out the tasks to be carried out by the current generation of students:

They will have to stabilize and quickly reduce greenhouse gas emissions from 8.5 billion tons to around 3 billion tons, stop the loss of biodiversity, reduce population growth, rebuild cities, eliminate waste, learn how to grow their food and fiber sustainably, and radically improve fairness within and between generations. They will have to reshape economies and public institutions to fit ecological realities...It is nothing less than the recalibration of human intentions with the way the world works as a physical system (Orr 2004).

Not an insignificant list.

Students need to prepare now, while they have the resources of an academic institution at their disposal, and while they are situated in a real-time learning lab. It will not be long before the current students are running universities and re-prioritizing the strategic objectives of the educational institutions. Engaging them from the beginning in the struggle to integrate

ecological design into Emory's strategic plan and exposing them to the passion and dedication of the leaders of the green building movement can provide a template for future social and cultural movements of which they will hopefully be a part.

Institutionalization of Change: How Does Emory Compare?

Returning to the comparison of the green building movement at Emory to sustainability movements on other university campuses, we look at the events, documents, and committees that other sustainability leaders took as a signal that their work had made a permanent impact on their university community. In the case of Stanford, Audrey Chang wrote about the expansion of the Students for a Sustainable Stanford to an umbrella organization to oversee all the green building interest groups on campus and the integration of the *Guidelines* she and her committee wrote into Stanford's building policies (Chang 2004). For Nan Jenks-Jay at Middlebury, probably the role model for institutionalization of sustainability into a university campus, the establishment of the Environmental Council made up of key administrators, the incorporation of environmental standards into the university's strategic plan, and the encouragement of creativity from faculty and students through sustainability grants have all ensured a long-term commitment to sustainability (Jenks-Jay 2004). She also mentions the involvement with the outside community through local food and building supply purchases as a key to sustaining Middlebury's success. On the other hand, David Orr reflects on his quest to build the "Living Machine" on Oberlin's campus, an energy-generating, wastewater-processing building, by pointing out that the building, "has to this point remained on the periphery of institutional consciousness.... [It] does not yet reflect a deeper institutional commitment to sustainability, energy efficiency, the transition to solar power, ecological restoration, and biological diversity" (Orr 2004).

At some universities, administrative support, written policies, and student movements have been referenced as signs of institutionalization of sustainability principles in the university community. In other circles, a 13,700 foot, photovoltaic-bearing building is not sufficient to ensure deep cultural and philosophical change. As seen from these diverse examples, no two paths to sustainability or signs of commitment to sustainable principles are the same for different communities. Those who have been involved in the process from the beginning are best placed to gauge the long-term outlook. In the case of Emory, the analyses of Bob Hascall and John Wegner printed above bode well for sustainability at Emory.

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¹ Excerpt from the minutes of the administrative meeting where the Emory Green Building Policy was voted upon: “The committee voted to recommend to the Executive Committee that the University implement the Leadership in Energy and Environmental Design (LEED) process as guiding principles in the design and construction of Emory University Facilities, with the decision for cost-benefit analysis and implementation to be the responsibility of the senior associate vice president for Facilities Management Division.”