

SENSE AND SUSTAINABILITY: AN ASSESSMENT OF SKIDMORE'S SUSTAINABLE DEVELOPMENT

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INTRODUCTION

Modern Environmentalism as a philosophy has become increasingly involute since its origin. As a movement it has had its accomplishments, but at a slow pace. Scientific evidence continues to pile upon itself, delivering the message that haste must be made: humans must reduce the effect that their current lifestyles have on the cohesive functioning of the planet, and soon. The problems we face today are countless. It is becoming clear with each record temperature, each natural disaster, and each extinct species, that we are not acting quickly enough or on a large enough scale. The efforts of the environmental movement are simply not saving the planet, nor adequately portraying the urgency and severity of the issue to outlying citizens. A recent Washington Post/ABC poll found that the percentage of Americans who think global warming is happening at all has dropped eight points in just the past year, and only 57% of poll respondents think there is evidence of warming.

Positive change is locked in a political, economic, social and environmental crisis (Speth 2010). Examining the cause for this stagnation is necessary, and examining possible solutions is critical. Movement from citizen's power political and economic change, and it is necessary to establish appropriate methods of inspiring support in this environmental endeavor. The basis for this support will be found in students of higher education. The importance of a university or college campus' sustainability is often underestimated, but a growing body of studies is starting to point out the obvious: universities churn out millions of students who eventually develop into professionals that further contribute to the development of their own societies (Alshuwaikhat 2008).

Institutions of higher education have begun to take ownership of this idea, and for the past two decades a steadily increasing number of universities and colleges have been taking "green" initiatives and making sustainable choices. Skidmore College is no exception to this emerging trend, but what have they done and how well have they succeeded? To understand Skidmore's current place in the field, we must first comprehend the growth of the movement as a whole. This movement began in the early 1990s with a number of declarations made at an

international level by the United Nations International Environmental Education Program (Wright 2004).

There were four declarations made between 1990 and 2000 that specifically related to sustainability and institutions of higher education. The first was The Talloires Declaration, 1990. This Declaration was the first official statement given by university administrators affirming a commitment to environmental sustainability in academe. Since 1990, signatories from around the world have increased from 20 to over 275 (Wright 2004). The next declaration was the Halifax Declaration, 1991, which emphasizes universities' moral obligation towards environmental sustainability (Wright 2004). It also offers an Action Plan for signatory

Success 1): Reducing the carbon footprint and negative ecological impacts of the institution. University sustain

expansion of man's domain, it is now time for studies to create holistic learning that will prepare the future for environmental comprehension, respect, and repair (Orr 1996). Holistic approaches to the climate change conundrum are fast emerging as the most comprehensive method, due to the complex relationships inherent in ecosystems. Most environmental issues lack a singular origin, instead being composed of multiple dilemmas from multiple sources. Similarly, most environmental issues lack a singular solution, requiring instead a multitude of frameworks, contexts, and backgrounds (Rhodes 2006). Therefore, a holistic approach to learning offers the most fulfilling backdrop for success in any department, especially Environmental Studies (ES).

Examples of these changes can be seen in many institutions of higher education. For instance, Rensselaer Polytechnic Institute (RPI) boasts a progressive campus that has proven the feasibility of a sustainable institution. Through changes in policy, physical operations, and

body, or faculty in decision-making. This change in delib

and the need for further change. We aimed to create a working archive of what Skidmore's initiatives have been, to what extent they have succeeded, and what must be addressed in the ongoing process of development.

METHODS

Our analysis of campus sustainability was based around the presence and successes of 4 types of changes campuses can make in an effort towards sustainability:

- 1) Environmental literacy

to meet the challenge of converging global environmental problems. These initiatives should enable students to understand humans, the earth, and the relationship between the two from a variety of perspectives (Katherine 2008).

: Outreach efforts to both the campus and the surrounding community that reflect the

their experiences in the program over the more recent years, since they joined Skidmore. We

Available ES courses have also increased over the past 20 years (Figure 3). During the first academic year of Environmental Studies, 1994, Skidmore offered 38 classes that counted towards the ES minor. By 2010, 82 different courses were applicable to the Environmental Studies major and minor, with 20 of them being ES designated (meaning they were offered specifically from the ES department). Currently, 62 courses are available within 15 different departments.

Discussion

ES-100 is a broad introduction to the world of environmental studies, and it increases environmental awareness over a spectrum of subjects. The steady increase of enrollment shows

Dilemmas, from the old Liberal Studies Program, used to fit this niche, and attempts at

Figure 5 shows the number of ES-relevant events since 2000. The 2011 bar is short because we do not have data past April 2011. There is a clear increase in the number of events between 2000 and 2010.

Discussion

It is clear that over time, the Environmental Action Club has expanded immensely. Not only has membership increased, but so has administrative support, as well as the creativity of the EAC members. Jonathan Greene '07 was able to speak with us about the EAC's status and success from 2003-2007 in the time he attended Skidmore and was a member, and for a time president of the group. He expressed frustration at the failure of almost all of the club's initiatives and the lack of administrative support during his first years at Skidmore. He addressed the issue of student turnover in the success of student-led initiatives. At the time when he attended Skidmore, the club underwent a structural transformation that has allowed it to become a more cohesive and smooth running operation.

Greene discussed the club's decision to divide into subcommittees, the results of which are represented in Figure 4. Not only did these subcommittees improve student involvement, but they made members feel like they were a significant component of a significant movement. Prior to this change the club felt more like a number of individual efforts, rather than one lar0.21 (t) a 95.4a

had reachable short-term goals. If all went as planned any given project would be institutionalized into Skidmore's policy before the end of 3 or 4 years, and in any given year around 30 projects could be started and completed. An example of this type of success was the double-sided printing in the library. The initiative is considered successful because the students successfully educated and lobbied those who had influence on policy. They pushed this issue, which resulted in the successful institutionalization of the solution to this problem: campus-wide double sided printing. The new EAC aimed to increase productivity, and decrease the requirement for continuity in projects, and provide for constant student interest, so the issue of student turnover was null.

Because EAC became a productive, active club, there was a notable increase in the budget (Figure 4). According to Greene (2011), when the budget was increased they did not know what to do with the excess money, as the expenses for their operations were not increasing. They opted to supplement other clubs "green" purchasing for events, and in doing so, hoped to provide an incentive for deeper thought outside money management. The changes made in EAC during that time worked to increase the breadth of the environmental conscience

for the most part want to be involved in these types of events, however they do not want to make it their job description, and the brunt of the responsibility falls on the shoulders of the

this mentality at play, stating that students made strong and steadfast arguments for double beds in the North Woods. This is a clear display of the high standard of luxury we have established here at Skidmore, and does not speak well for the awareness of the need, and cooperation for resource reduction in general. She also discussed that it is difficult to encourage lifestyle changes in students without offending. Often, reactions to these efforts are defensive, as students don't want to be told how to live their lives. There is a fine balance between preaching and encouraging sustainable behaviors, and Skidmore has not yet achieved this balance successfully.

Riley Neugebauer discussed a recent event Recyclemania as an example of weak student engagement. She noted a lack of appropriate enthusiasm, and this coupled with the difficulty to manage all of the waste/recycling material in an organized matter did not allow the event to reach its full potential. As for interest among active students, there are peaks and valleys, and waves of popularity for certain projects which generally reflect the trends in the broader environmental movement. This makes it difficult to sustain one project over a long period of time (Marsella 2011). For instance, the garden project is currently flourishing, as is the local food movement throughout the country, but there is potential for failure if people lose interest. This loss of interest is demonstrated in the current lack of enthusiasm for North Woods stewardship, a project that has been very popular in previous years. Overall, it is difficult to

Physical Operations

Methods

We interviewed a number of staff members to gain the perspective of those who have had a direct hand in Skidmore's physical operations, via decision-making, management, implementation, and finance. These interviews included Riley Neugebauer, Sustainability Coordinator; Dan Rodecker, Assistant Director of Operations; Mike Hall, Director of Financial Planning and Budgeting; and Mike West, Chief Financial Officer.

In order to assess the physical effects of Skidmore campus, we gathered data pertaining to total annual waste, recycling, water consumption, energy use, and pesticide use. Dan Rodecker and Riley Neugebauer supplied us with this information via Facilities. Our goal in doing so was to analyze Skidmore's environmental impact over time. There was also a significant amount of information found in the Campus Environmental Committee Annual Reports, as well as pages on the Skidmore website for Facilities Services, Sustainability, and the North Woods.

Results

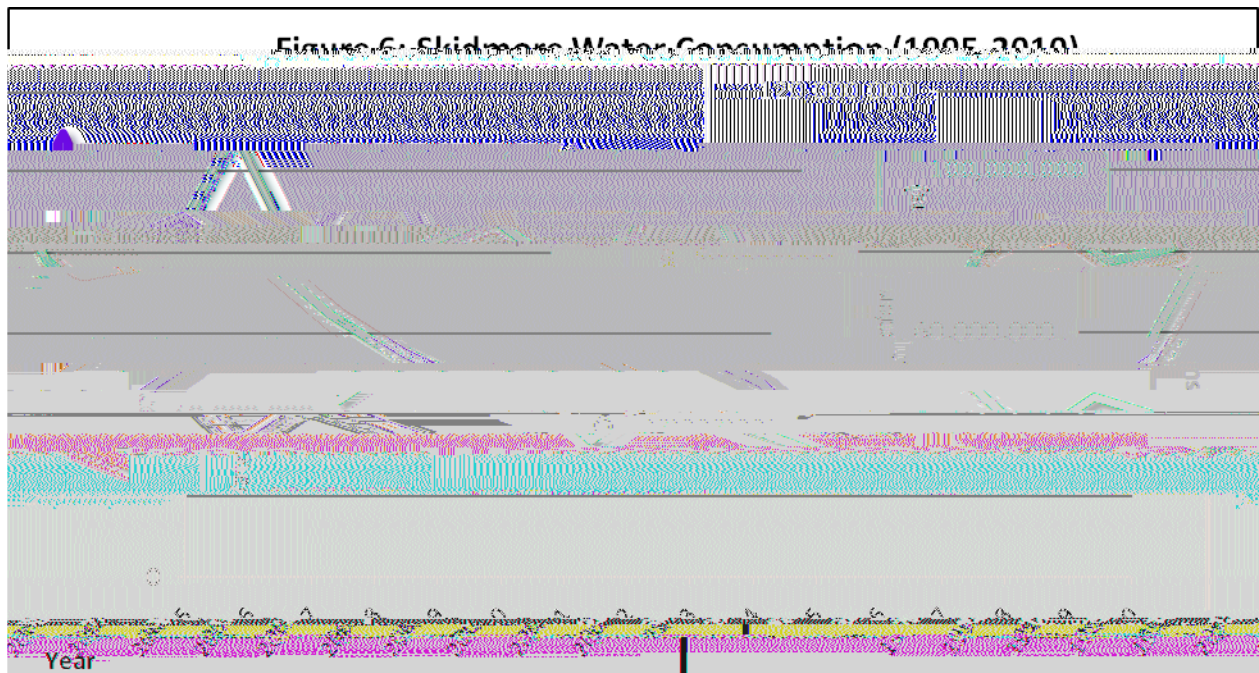


Figure 6 shows campus water consumption in gallons from 1999-2010. There is a steep increase

Figure 8: Geothermal Buildings on Skidmore College Campus

Figure 8 highlights the buildings that utilize geothermal heating and cooling on campus as of April 2011. Skidmore's installation of geothermal heating/cooling systems began with the construction of the North Woods Apartments in 2006. Next came the Murray-Aikins Dining Hall, constructed in 2007, followed by the Zankel Music Center, 2010 (Hall).

Discussion

Improvements have been slow and steady, developing as issues arise. As Dan Rodecker explained, Skidmore always take environmental issues into consideration, and sometimes even chooses the environmentally friendly route even when there isn't 100% fiscal compensation (Rodecker 2011). Very first on our time line of physical operations initiatives, however, was both environmentally friendly and fiscally beneficial. In 1997 facilities changed 90% of the lighting fixtures in buildings from 4-bulb T12 fixtures to 2-bulb T-8 fixtures (Hall 2011). While the jargon may be technical and specific, the general gist is that Facilities was able to supply the same amount of light with less energy. Mike Hall estimated that these installations cut the lighting-based energy usage in half. After this, the first few initiatives within Physical Operations were focused around landscape. Decreased mowing around native species and construction of low-erosion/low-

within recycling, mentioning that the process has expanded to include computer parts and furniture. Currently, Hall

away from the rest of Skidmore's campus, atop rocky terrain. Because of distance and geological impediments, connecting the North Woods Apartments to the school's central heating and cooling loop was not a viable option. Some alternatives included the construction of a small power plant that would supply the North Woods Apartments with heat/cooling, or the utilization of a renewable energy. Heating, cooling, and water heating need a more reliable source than energies such as wind or solar can provide. With this set of complications and options in mind, Skidmore made the first decision to install geothermal heating/cooling systems. This system was location specific, effective, didn't require significant infrastructure, and reduced consumption of natural gas.

After the construction of North Woods, between 2006 and 2007, Skidmore's natural gas consumption was cut by 14.5% (Figure 9). There was a large decrease in natural gas consumption, seen on Figure X in 2000, but we did not receive this data until after all of our

Skidmore still had to support a large amount of construction and new buildings in this time, as well as an ever-growing student body. For these reasons, demand increased simultaneously with geothermal availability. Finally, the data available does not go beyond 2009 and at this point Skidmore was still operating with a centrally location boiler system. This boiler system, as discussed above, contributed significantly to heating efficiencies throughout the campus.

Dan Rodecker mentioned that emerging incentives from the National Grid and the New York State Energy Research and Development Authority (NYSERDA) has increased efforts towards sustainability, but the details are unclear.

Although many successes pepper the history of physical operations, there have been setbacks and pitfalls as well. A major disappointment in Skidmore's building plans was the design of the Tang Museum. Aside from being extremely far away from the central heating system, the Tang lacked any progressive environmental design (Sue Van Hook 2011). The Tang's south-facing slanted roof offers an ideal surface for a solar panel, and the physics of the roof created excess runoff, requiring the construction of a water holding pond. Even the more progressive buildings, such as Zankel, are believed to lack sufficient environmental standards. Kim Marsella expands on this problem, stating that Skidmore should use the existing spaces more efficiently. While the new buildings are the "sexy sustainable" alternatives, she explains, they use more resources to construct and are generally less efficient at reducing the carbon footprint than retrofitting.

Lack of metering is also a setback in physical operations. Dormitories have recently been fitted with metering devices, which are admittedly expensive at the price of \$5,000-10,000 per unit (Hall). Without proper metering, it's extremely difficult to obtain a solid metric and understand where Skidmore is using the most energy, or where changes have been effective.

There are constant efforts to make further advancements, though many of these are only in their beginning stages. Investments in large-scale off-site renewable energy are circulating through conversation (Neugebauer 2011). Facilities is in the midst of a pilot project to test the efficacy of LED lights in parking lots and the perimeter road, which would reduce individual wattage from 250W to 50W. Concerns within this project are primarily issues of safety, and Skidmore, as a college campus, must prioritize the safety of students above environmental efficiency (Rodecker, Hall, Neugebauer 2011). Mike Hall also mentioned that there is growing consideration for a cogeneration plant. He explains that the updated boiler system and

big dent in electricity usage; ideally this process would balance the two and result in an overall reduction in both over Skidmore's history.

Other pilot projects have been deemed unsuccessful. For example, biomass and wind energy have been investigated but don't fit Skidmore's physical features well enough to be effective. Administration is waiting on technological improvements, improved incentives and reduced pricing before investing in solar energy (Hall 2011). However, there is talk of initiating a solar energy pilot project at Skidmore's boat house. Because of the low electricity, water, and gas demands of the boat house, it is an ideal location to test the efficacy of solar energy, though the final decision on this project is still pending (West 2011). Green roofing has also been considered in the past, but was ultimately pushed aside (Hall 2011). Currently, Administration is very weary of green roofing. Green roofs require fairly flat rooftops, and Saratoga Springs' snow-

environmental policies and procedures in such areas as land management, construction, waste management, purchasing, recycling, energy use and air quality. The CEC has undergone some significant changes in terms of the strength of its role in policy deliberations. In 2001 the CEC was declared a subcommittee of the Institutional Policy and Planning Committee (IPPC) In 2005 at the CEC's request, the CEC chair was invited to attend IPPC meeting as a guest. In 2006 the CEC chair became an official member of the IPPC. Because of the current structure of the CEC, influential people within the environmental realm have direct contact with influential people in administration. The CEC is the theoretical connector between the environmental concerns of students, faculty, facilities, administration and financing. Riley Neugebauer, a current member of CEC and current Sustainability Coordinator, describes their current activity as somewhat useful, but also recognizes that it could be better used to established necessary policy regarding sustainability.

There currently exist a number of active sustainability-

accessible information only states the climate actions plan will “set a percent carbon reduction

In terms of policy, we have not made a great deal of progress towards any of the goals outlined in the national Commitment. We do have policy but there are holes, efforts are not always placed towards the most important initiatives, the policy is not always effective and missed opportunities often occur (Marsella 2011). For instance, Jonathan Greene '07 pushed for a "D-Hall Revolution" in which the dining hall would purchase more foods from local sources. There was overall success in the proposal with a good student interest and an anticipated positive local economic impact, however the next year the dining hall administration that had agreed to this plan had all left, and the project disbanded. The initiative was not institutionalized soon enough to become a functioning part of college policy. In addition, when the new dining hall was under construction, the Student Government Association passed funding for a composting system

construction of the cafe. This begs the question: Why hire a Sustainability Coordinator and then not seek their opinion for major campus changes? While there is a clear improvement in the consideration of sustainability in campus planning and construction, they are happening due mainly to

that currently hold high positions in administration have more personal interest in the issues, thus more informal policies currently exist on campus. 3) There is a general cultural shift towards sustainable development outside of the college's walls, and this has trickled into the