

2010–2011 Activities and Projects of the SJU Office of Sustainability

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1 Energy

1.1 Arena Lighting

Description Inspired by the success of the efficient induction lighting installed over the pool, we began to seek a more efficient lighting system to replace the metal-halide luminaires in the Old Gym, Sexton Arena, and the Field House.

Outcomes We found more efficient alternatives to the current lighting in these spaces, but induction technology cannot yet provide the light levels to match the existing light levels in the Field House and the over-lit Sexton Arena. Induction lighting exists to replace the lighting in the Field House, but the 20-year payback was too long. LED alternatives also had an unacceptably long payback period. High-bay fluorescent fixtures are available that would provide the needed light levels and save enough energy to enable a relatively short payback period, but the cost of group re-lamping of these systems is cost-prohibitive at this time because of the sheer number of lamps that such a system would use.

Even though we were not able to find any acceptable alternatives, we collected all the necessary data on our existing lighting systems in these areas so that future alternatives may be quickly evaluated.

1.2 Bernard/Patrick/Boniface Hall Lighting

Description Lighting in the lounge areas of these buildings used inefficient halogen floodlamps. The corridor lighting used inefficient T-12 lamps¹ and ballasts within a fixture with poor light distribution.

¹“T-12” is a standard designation for linear fluorescent lamps that are $12/8 = 1.5$ inches in diameter. For any lamp designated T-x, the outside diameter of the lamp is $x/8$ inches.

Outcomes Using the revolving loan fund, Physical Plant replaced the lounge luminaires with more efficient luminaires using PL lamps, saving approximately \$5,770 annually. Replacement of luminaires in the corridors will proceed this summer after the design committee grants approval. Since this project involves replacing a moderately efficient T-12 fluorescent system with a more efficient T-8 fluorescent system, the payback is longer—8 years—but the project will save approximately \$2,350 every year with a 12% annual simple return on investment.

1.3 Tunnel Insulation Inventory

Description Many of SJU's utility tunnels contain pipes that lack adequate insulation. Especially egregious is the tunnel that runs between Benet and Simons Halls to Mary Hall, where the ground above the tunnel is often free of ice and snow during the winter months. We have taken an inventory of the pipe sizes, insulation depths—or where insulation is missing—and temperatures in this tunnel and the tunnel running to Tommy hall, totaling 940 feet of tunnel and approximately one mile of pipe.

Outcomes This work is still in progress, but we expect that the Mary Hall tunnel will be retrofitted in the near future. Based on work done at Smith College, annual savings in energy could be worth on the order of tens of thousands of dollars.

1.4 T-12 Inventory

Description After June of 2012, the production and import of T-12 fluorescent lamps will be illegal in the United States. The Order of Saint Benedict, Inc. has a large number of T-12 luminaires that must be retrofitted now so that we can take advantage of rebates for retrofitting to T-8 lamps and ballasts before those rebates expire next year.

Outcomes Over three weeks, we counted approximately 7,000 luminaires that could contain approximately 16,000 T-12 lamps on our campus. Of these, about half are estimated to still contain T-12 ballasts and lamps, but this will not be known until the project is complete. The new lamp and ballast combinations will use 41% less energy and last 175% longer than the old systems, saving money on their operation and maintenance.

1.5 Project Green Fleet

Description Three Link buses were upgraded with pollution controls and two were upgraded with idle-reduction technologies at no cost. The project is funded by a grant through the Minnesota Environmental Initiative.

Outcomes This project reduces the particulate emissions of the buses, which improves air quality and human health both inside and outside the buses. Idle-reduction technologies reduce the buses' warm-up time on cold mornings and reduce their diesel consumption.

1.6 Energy Challenge

Description To see who can reduce their energy use by the greatest percentage, students competed against students, and—for the first time this year—staff competed against staff during a month-long competition.

Outcomes The average SJU residence hall reduced consumption by 3.4%, together saving \$330 and 8,745 pounds of carbon. Seven of eleven SJU staff buildings reduced their usage. Through this campaign the campus community gained a greater awareness of its energy consumption.

1.7 Sustainable Revolving Loan Fund Projects

Description The pool lights in the Warner Palaestra and the lounge lights in the sophomore dorms have been retrofitted with energy-saving lights that last longer than the old lights, resulting in saved maintenance time. The Office accepts proposals, facilitates review, coordinates metering, and oversees accounting and payback for the fund.

Outcomes In total these two projects will save over \$11,800 and 80,000 pounds of carbon dioxide annually. They also save maintenance and Physical Plant time by reducing lamp replacements.

2 Recycling

2.1 Recyclemania Competition

Description For the first time, SJU participated in Recyclemania, a competition among over 600 colleges and universities to see who can recycle the most and waste the least. Over the ten week period, we collected our first accurate weight data for the amount of solid waste leaving SJU.

Education A group of ten volunteers stormed the dorms twice during the competition and brought recycling education into the residence halls in the form of student-to-student interaction.

Outcomes SJU finished third among MIAC schools and in the top half of all colleges and universities competing. We increased our recycling rate from 29% in 2009 to 43% in 2011.



Figure 1: One of the new combined recycling and waste bins in the Quad.

2.2 Waste Monitoring

Description Since July 2010, SJU Custodial Services and the Office of Sustainability have monitored waste and recycling sites around campus. From our collected data, we were able to make recommendations about dumpster use and appropriate sizing.

Outcomes Since July 2010, waste and recycling reconfiguration and reduction have reduced waste and recycling expenses on an average of \$5,018 per month. A total of \$40,144 has been saved since July 2010. More reconfigurations are currently underway, and we look for these savings to increase.

2.3 Consistent and Convenient Public Recycling

Description We launched a new labeling system and reconfiguration for campus recycling bins this fall. After research and a review of signage from other campuses and cities, the SJU Office of Sustainability and Custodial Services came up with a new commingled labeling system for all indoor recycling bins on campus. The new stickers and labeling system are simple, brightly colored, and image-based to improve understanding of the commingled system. We also expanded public recycling to the SBH, Quad and Guild Hall. The funding for the materials came from the Saint John's Senate and the Target grant. The labor came from the Office.

Outcomes Students and staff have responded energetically to this project, saying that it makes recycling more visible, understandable, and convenient. Custodial staff has noticed an increase in the amount of recycling and also a



Figure 2: The poster used for the “We Recycle” campaign.

reduction in the amount of contaminants. Custodial Services has taken on the responsibility for the emptying of these bins.

2.4 Outdoor Recycling

Description In cooperation with the grounds department, we converted excess waste bins into recycling bins and then strategically placed them throughout upper campus. These bins are set apart from waste bins by their green color, signage, and recycling emblem. The funding for the materials for this project came from the Saint John’s Senate and labor came from the Office.

Outcomes We worked to install these bins in response to strong student and employee desire for more visible and convenient opportunities to recycle on campus. The sustainability survey has shown that students and employees have recognized and appreciated this effort. The grounds department has taken over the collection of these bins.

2.5 “We Recycle” Campaign

Description This fall we made recycling opportunities available at SJU athletic events through the “We Recycle” campaign. Working with athletics, we placed oversized plastic bottle receptacles throughout Clemens Stadium in the fall and inside Sexton Arena during the winter. This made it easier for fans to recycle their plastic bottles and cans. The Office of Sustainability was responsible for creating the marketing, placing the containers, and picking up the recycling.

Outcomes Not only did this campaign divert a significant amount of waste from the landfill, but it also reduced our costs of waste disposal because WA-

COSA picks up the bottles and cans for free. It also gave valuable visibility to our sustainability efforts to our many fans and guests. SJU Athletics, along with Bernick's Pepsi, are looking to make significant upgrades in this effort and will also provide the resources to keep the program going.

2.6 Move-Out 2011

Description Along with Custodial Services and Residential Life, the Office initiated programs to provide options for responsible waste removal, recycling and donations. E-waste bins, "Goodwill-not landfill" boxes, and metal dumpsters were procured by Custodial Services to make this effort possible. The Office is responsible for implementation, pick up, and marketing for this campaign. It is also responsible for the distribution and collection of over 150 "Goodwill-not landfill" boxes.

Outcomes All donations will benefit Catholic Charities Emergency Relief Services and will reduce the amount of waste sent to the landfill—which could save money in future years.

3 Education

3.1 New SJU Sustainability Website

Description We launched an SJU-specific sustainability website earlier this spring to connect the Saint John's community with the information and tools necessary to help make our institution sustainable for generations to come. The website displays Saint John's commitment to sustainability in an attractive and clear manner.

Outcomes The site is an easily navigable portal, making information needed by the Saint John's community easily accessible. An increased effort to link to pages detailing other departments' efforts has brought a spotlight to the sustainability projects outside of the Office.

3.2 Commencement Speaker

Description To cap Saint John's Year of Sustainability, this year's commencement speaker, John Grim, will give voice to the emerging academic field of World Religion and Ecology, which he has been influential to help create. Although John has been on the list of possible graduation speakers, a contact with his wife made by Lew Grobe and Nick Moe at the AASHE Conference in Denver helped to facilitate John's participation this year. This will be an influential relationship to build as Saint John's continues to define its role towards providing the education and moral motivation to help the Saint John's community be more sustainable for generations to come.



Figure 3: Approximately 90 people attended the first sustainability forum, which discussed recycling, trash, and the goal of creating zero waste.

3.3 McKeown LEED Certification Project

Description Working with Physical Plant and the Environmental Studies department, the Office completed and documented requirements under the LEED certification process for the McKeown Center in order to achieve extra points through innovation. Points included the development of guided and self-guided tours and text for signage highlighting sustainable features throughout the building.

Outcomes The tours build a greater awareness of LEED certification. As of this writing, the project is slated to win the LEED Gold designation, which would not have been possible had we not completed the work to obtain the two innovation credits.

3.4 Forums

Description In September, we wrote a proposal to hold a monthly series of forums to help inform our campus communities of our sustainability efforts and how they can get involved. Each forum began with a short presentation by students, faculty, and staff, followed by a question-and-answer period.

Outcomes We held five forums: Recycling, Trash and Zero Waste; Clean Energy Production and its Conservation; Simple Living; Local Food; and Water Sources, Use, and Disposal. Each of the forums attracted between 40 and 100

people. Students comprised the vast majority of those in attendance, but some staff, faculty, and monastics attended as well. This helped us to spread the word on what we were doing and helped clear up some misconceptions about our campus operations. The forums helped some members of the Sustainability Alliance (see Section 5.1) to form positive relationships with our campus operations staff.

3.5 Green Guide

Description Inspired by the need to have a central, student-oriented source of information on campus sustainability information, Lief “Charlie” Davisson, one of our interns, worked with us and Communication and Marketing Services to assemble a “Green Guide” that will be distributed in either print or electronic form to both incoming and returning students in the fall.

Outcomes This project is anticipated to help kick-start student involvement in sustainability efforts right away at the beginning of the school year. By having all the specific information needed by students in one place, we expect that students will quickly learn that sustainability is important to Saint John’s. Admissions could also use this guide to inform prospective students about our sustainability programs.

3.6 Residential Building Operations Guide

Description Many different types of heating and cooling systems exist in our residential buildings. Most building occupants do not understand the operation of those systems, which can lead to energy waste.

Outcomes Working with Gary Jorgensen and Preventative Maintenance staff, we assembled a description of the heating and cooling systems for each residential building on the SJU campus. We put this information into a format on the Physical Plant website that was accessible to students and provided procedures that residents can use to correct malfunctioning systems. For those areas with thermostatic climate control, we also provided an avenue for students to request changes to the pre-set temperatures if those changes save energy. This is expected to reduce the incidence of the use of open windows to correct for unwanted heat.

3.7 Solar Tours

Description An hour-long tour explains the history, technology, and provides a comparison of solar energy in the United States and around the world. The tour also explains the importance of energy usage and why we use solar technology at Saint John’s.

Tour Groups:

- Sustainable Business class
- Environmental Art and Architecture class (also included a McKeown tour)
- Open Tours for Staff and Students
- St. Cloud Community College
- St. Thomas School of Engineering
- St. John's Abbey Oblates
- SJU Alumni Group
- Chilean exchange students

Outcomes Participants walk away with a better understanding of solar energy and energy consumption. The tours also raise minor funds for the Arboretum through registration fees.

3.8 Eco-House

Description A group of six men have turned Edelbrock into an Eco-House. Students have worked to educate their fellow students, offer suggestions to Residential Life, and have reduced their environmental impact through lifestyle changes.

Education Through the audit, Jean Lavigne's Learning Community of 21 students was able to view an audit of their house. Through programs they have shown others how to reduce waste, energy and water consumption, and compost their food scraps.

Outcomes The house retrofitted lighting to reduce energy consumption by 75%, replaced shower heads to reduce water consumption by 150%, installed a programmable thermostat, line-dried their clothes, wrapped windows in plastic, started a compost bin, and orchestrated an energy audit, which gave Physical Plant several recommendations on ways to make the house more energy-efficient.

3.9 Presentations

Description As it was the Year of Sustainability, we received many invitations to give presentations to the community, including:

- Support Staff Guild luncheon: "A Solar Farm in Minnesota"
- Administrative Assembly luncheon: "The Year of Sustainability"
- Peace Studies conference: "Environmental Sustainability in Higher Education"

- St. John the Baptist Parish Center
- Orientations
 - New Employee Orientation
 - RA Orientation
 - Orientation Leaders

Outcomes We fostered a greater awareness of the Office of Sustainability, educated people about what sustainability truly means, and encouraged people to get involved.

4 Changing the Face of Campus

4.1 Sustainability Survey

Description Early this fall, we conducted a survey to assess the attitudes, literacy and habits regarding sustainability issues on campus for the entire CSB/SJU community. Over 1,300 students and employees—27% of the total population—responded to the survey.

Outcomes The Office gained valuable information regarding sustainability issues, including:

- A large majority of respondents expect to learn more about sustainability while at CSB/SJU.
- The majority of respondents find it important that CSB/SJU become a leader in sustainability and the environment.

Another survey has recently gone out to gauge the success of the Year of Sustainability.

4.2 Grant Procurement and Fulfillment

Description By assisting John Taylor with grant applications such as the McLeod Grant and the Target Grant, we have found funds to underwrite the Year of Sustainability. Timely reports from the Office of Sustainability ensure that we can continue to apply for grants such as the McLeod Grant.

Outcomes We secured \$54,000 to underwrite the Year of Sustainability and maintained a productive relationship with the donors.

4.3 Year of Sustainability

Description We provided the necessary support to make the Year of Sustainability a reality and a success. Through this all-inclusive community-based initiative, we've worked to reduce greenhouse gas emissions, create a sense of awareness concerning issues on our campuses, change the culture, and educate the students, faculty, and staff through education and outreach opportunities appealing to all sections of the community.

Outcomes Please see the document, "The Year of Sustainability: A Review."

4.4 Working with Various Departments on Campus

Description We have collaborated with other campus departments, including with the bookstore on green gowns; Athletics, Grounds, and Custodial on recycling; Dining Services on food and bottled water; Physical Plant on recycling and energy issues; the Arboretum on Earth Week and solar classes; and IT on pay-per-print.

Outcomes We built better relationships between campus operations and enabled them to execute their own sustainability programs through these new initiatives.

4.5 Greenhouse Gas Inventories

Description SJU updated its GHG inventories for 2009 and 2010 by systematically tracking our carbon emissions. By separating the emissions from non-university divisions, we achieved a better reflection of our emissions this year.

Outcomes By completing this, we maintain our status under the ACUPCC and enable ourselves to track the progress we made from year to year.

4.6 STARS

Description *"The Sustainability Tracking, Assessment and Rating System (STARS) is a transparent, self-reporting framework for colleges and universities to measure their sustainability performance. STARS was developed by AASHE with broad participation from the higher education community."*

SJU is a charter member and will submit its reporting documents in the spring of 2011.

Outcomes We anticipate a silver rating, which AASHE will use as a gauge for comparison between schools. This also gives us ideas of what we should be working towards as an office.

5 Student Development

5.1 Sustainability Alliance

Description The Sustainability Alliance (SA) is a group of students that formed prior to the start of the 2010–2011 school year to act as a coalition of student leaders interested in sustainability issues from a cross-section of groups on our campuses. Nick Moe met with the SA regularly to advise the group and to garner student help on the SJU Office of Sustainability’s initiatives.

Outcomes The SA helped to spread awareness for our Sustainability Forums by making promotional materials, and also made videos that explained our recycling systems and demonstrated ways to save energy on our campuses. The SA created the organizing team for the Power Shift conference (see below), supported the petition to ban the sale of bottled water on our campuses, held a leadership retreat that led to a considerable uptick in student involvement, organized outreach concerts, lended volunteers for Recyclemania efforts, supported the effort to start a student-run winter greenhouse at CSB, and provided an outlet for the discussion and collaboration on a number of other sundry ideas.

5.2 Power Shift Conference

Description In April, 19 Johnnies, 24 Bennies, and Nick Moe traveled to Washington, DC to attend the 2011 Power Shift biennial conference, which 10,000 young people from across the country attended. The conference had a focus of three areas: moving beyond dirty energy, taking political action, and creating Campus Climate Challenge 2.0. Nick and thirteen students trained to become facilitators in the weeks prior to the conference. The conference also held what the organizers billed as the largest grassroots organizing training in history. Facilitators helped small groups train on how to lead grassroots movements. The skills that the training taught are applicable to any group leadership situation, and the way in which it was taught enables the students to pass the training on to other students.

Outcomes Although the conference hosted presentations and workshops on a wide range of sustainability topics, the whole conference had an overarching, big-picture emphasis: that fighting climate change should be our number-one goal. This, combined with the organizing training, has empowered these students to help us solve the problem of how our campuses will reach carbon neutrality by 2035. The students have already discussed the possibility of holding a mini-Power Shift on campus to bring the skills they learned in DC back to our community.

Nick was able to strengthen trust and relationships with the students by experiencing this formative experience with them, which will translate into positive synergy with them and their cohorts in the future.



Figure 4: CSB/SJU students at Power Shift 2011 in Washington, DC.

5.3 Eco-Reps

Description Four students worked through community-based social marketing in order to reduce consumption and informally educate their peers. Their activities included installing shower timers, promoting the energy challenge and Recyclemania, showing documentaries, putting up displays, and conducting individual room audits.

Outcomes The Eco-Reps focus on the social and environmental consequences and costs of daily campus life through peer-to-peer activities and one-on-one conversations, which are the most effective ways to create change.

6 Professional Development

6.1 AASHE Conference

Description This gathering of students and professionals working on sustainability at colleges and universities across the United States gave us the opportunity to learn about sustainability efforts on other campuses and allowed us to network with sustainability professionals from other schools in Minnesota and across the country.

Outcomes At this conference, we connected with the wife of this year's SJU graduation speaker, John Grim. We learned about successes and failures at other schools with regard to recycling, energy conservation and production, gardening, and composting. The Power Police of the University of Minnesota-Twin Cities, a student-led program to encourage and monitor energy conservation

in staff and faculty offices, gave one of the most profitable presentations we attended. This is a program that we are now working to emulate here at SJU.

6.2 Big Green Conference

Description In November, Nick Moe, Theo Eggermont, Ernie Diedrich, Lindsay Wimmer, and Derek Larson attended this conference at the Mall of America. Larkin Hoffman Attorneys and the Mall of America sponsored the conference. The conference provided an interesting look into the world of sustainability as viewed by business and government.

Outcomes Because of the focus of the conference, we did not glean too many things that were applicable to our campuses. However, we all found a talk given by Xcel Energy, Westwood, and various governmental organizations to be quite illuminating on the positive outlook for renewable energy on the grid market.

6.3 CERTs Conference

Description The Minnesota Clean Energy Resource Teams (CERTs) sponsored this biennial conference in St. Cloud in February. More than 600 people from all over Minnesota gathered to share their experiences working in energy efficiency and renewable energy projects in their communities.

Outcomes We attended sessions entitled "Energy-Saving Steps for Your Business or Organization," "Creating a Clean Energy School," "Emerging Trends in Biomass Energy," "Energy Project Financing and Local Governments," "Building Successful School and Community Partnerships," "Low-Cost & No-Cost Energy Saving Strategies," "Innovative Project Case Studies at Schools," and more. We also re-connected with the University of Minnesota Power Police students and received materials from them that helped us to start our own program like theirs.