

# SUSTAINABILITY REPORT

Bryant University – May 2009

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The following report is designed to characterize the successful steps that have been made at Bryant University in its efforts to move toward becoming a greener campus, one which will meet the guidelines of a sustainable business entity. This summary includes faculty, student, and staff initiatives that have already been implemented in the past year, as well as plans and commitments for additional efforts that are underway.

## INTRODUCTION

The concept of sustainability is usually employed to describe the “ability to meet the needs of the current generation while insuring that we do not compromise the ability of future generations to meet their needs. Corollary ideas emphasize that no generation has the right to destroy the quality of life for the next generation. When we speak of economic sustainability we tend to focus on profitability, return on investment, market share, and business stability; whereas, for ecological stability a greater emphasis would be placed on resource allocation and conservation, waste minimization, and environmental protection. It is reassuring to know that these goals are not mutually exclusive.

Even when we adopt these widely accepted principles as appropriate societal goals we are then challenged to describe exactly how we are going to transform ourselves into more sustainable societies. Specifically, we struggle to design better business practices that will integrate economic and ecologic sustainability objectives. Fortunately, already corporate initiatives abound to demonstrate that firms are taking their social responsibility seriously, designing better materials management programs (e.g., Design for Disassembly, Just in Time Inventory, Pollution Prevention Pays, etc.), reducing water consumption and implementing energy efficiency measures, expanding recycling and reuse programs, and turning to renewable energy options. By rethinking how we do business we can energize our business models in ways that allow us to improve working environments, improve efficiency of operations, and reduce our carbon footprints. Managing all types of capital (natural, human, infrastructural, and financial) allows us to gain even greater efficiencies and enhance business sustainability. In order to reap the benefits of better workplaces and more efficient operations, initial investments must be made, but where do we start?

To begin with, we must first bridge the imagined disconnect between economic activity and resource management. For example, viewing energy supply as a type of resource necessary for the existence of civilization in the long run allows us to visualize energy resources for their “sustainability” value now and in the future, as well as for their short term commodity value. Viewing living ecosystems such as forests and wetlands as a source of environmental services in protecting drinking water aquifers and reducing flooding and erosion is an alternative to looking at them as a timber resource, or filling the land for building. Protecting and using water resources well can enable us to support communities well into the future. Already, insufficient water resources in California and the Southwest are limiting the growth and productivity of the region.

Moving closer to home, institutions can make progress toward sustainability by simple first steps: develop a pollution prevention (P-2) plan, seek ISO 14001 certification, complete an energy audit of all operations, assemble a materials management strategy (emphasizing reuse and recycling), reduce

toxic materials use, start switching to renewable energy alternatives (geothermal heating, solar panels for heating or producing electricity, wind turbines, fuel cells, bio-fuels, or hybrid vehicles), or retrofit to meet green building objectives. Improving energy efficiency could be a great first step for reducing the institution's carbon footprint.

The stakes are high, for if we collectively fail to curtail our wasteful energy consumption, protect our dwindling water supplies, preserve valuable environmental services provided by living ecosystems, curb the spread of toxins worldwide, and reduce our carbon footprints, we will have so altered the ecosphere that irreversible changes may result. It falls on the shoulders of academic institutions to lead the way for business, government, and the larger society to follow. Bryant, like other institutions of higher education, is expected to meet the highest standards of efficiency and good resource management, not only in its educational programs, but in its operations as well.

Fortunately, most of these initiatives represent good investments, and often provide a rapid return on investment in the form of energy and water savings, reduced waste management costs, a more comfortable and healthier work and living environment, and an improvement in the institution's green image. Additionally, individuals who commit to sustainable solutions often develop better connections to their community and substantially alter their behaviors accordingly.

## SUSTAINABILITY INITIATIVES AT BRYANT UNIVERSITY

### Campus Facilities

#### Energy Efficiency and Water Conservation Initiatives (Brian Britton)

- (1) 2 Residence halls and Presidents Residence heated and cooled with Geothermal Ground Source Energy Systems
- (2) Campus wide Building Automation System. Night Setback, Load Shedding,
- (3) Efficient lighting T8s, CFL's Radio Frequency induction lighting for walkways, Atrium areas, Rotunda, Stairwells, all with Electronic Ballasts
- (4) Extensive use of Variable Speed Drives and premium high efficiency motors
- (5) Ice storage, demand shedding 900 KW (5200 ton hours cooling) – demand as KW)
- (6) 26 gas-fired condensing boilers (Town Houses) in addition to Chafee Center, Old President's House (Guest Center), Residence Hall 17; Tankless On Demand Water Heaters for Town Houses (N.O.P., A1-4)
- (7) Extensive use of occupancy sensors for lighting control
- (8) 25% of campus glazing replaced with Low E Glass.
- (9) High Efficiency Transformers (100% copper windings, low resistance)
- (10) Green Computer Center Design (Art Gloster) – See Appendix for documentation
- (11) Low flow shower heads, fixtures equipped with automatic flush controls
- (12) Natural gas Direct Fired Heating & Cooling with Distributed System for Bello Center, Chace Wellness Center, Facilities, Residence Hall 17 (first in Rhode Island)
- (13) High Reflective Roofing systems to reflect summer heat and lower air conditioning requirements

#### Recycling Improvements (Ken Person)

Participated in RecycleMania, a national competition among colleges and universities  
Improved recycling output by \_\_\_% from April 2008 to April 2009 (see Recycling Summit Report – Appendix I)

#### Environmental Training – Staff and Faculty (Susan Colantonio)

- (1) Environmental Compliance
- (2) Recycling
- (3) Handling Hazardous Chemicals

#### Toxics Reduction Efforts (Susan Colantonio)

- (1) Asbestos removal program throughout campus buildings
- (2) Removal of all PCBs on campus.
- (3) Green Cleaning Chemicals

### Department of Science & Technology:

#### Proposed Major in Environmental Science (Fall 2008)

- (1) Added environmental courses to curriculum (e.g., Environmental Toxicology, Technology for Environmental Management; GIS – Environmental Planning and Decision Making, Systems Modeling, Environmental Geochemistry)
- (2) Expanded research and laboratory capacity
- (3) Installed acid neutralization tank for assuring effluent compliance

#### Proposed Master's Degree in Environmental Administration (expected Fall 2009)

Curriculum changes so that courses include a sustainability component

(Include an emphasis on looking at the total energy and pollution cost of different scenarios for designing, building, manufacturing, installing, and maintaining societal infrastructure. By factoring in the total costs of the natural capital involved in each production and use cycle, business and economic mechanisms will more accurately reflect the real costs and benefits of sustainable ways of doing things, including preservation of environmental services and reduction in carbon footprints.)

Course projects that address sustainability issues (including websites)

- (1) The Ecological Footprint of Bryant University (Dana Juth, Spring 2005)
- (2) The Ecological Footprint of Bryant University (update – Spring 2007)
- (3) Green Campus Projects (see website)
- (4) Ecology (endangered species)
- (5) Energy Management Strategies (renewable energy applications)

Earth Week Speakers (co-sponsored with U.S./China Institute) – (Hong Yang)

2008 –

2009 – Mark Pagani, Yale University Professor - Climate Change Predictions...

Center for Sustainable Business Practices:

Established 7 years ago to provide a forum and focus for redesigning business practices to meet sustainability guidelines <http://bryant1.bryant.edu/~langlois/sustainability/>

Achievements:

- Submitted “Leaving a Green Footprint” to the Northeast Export online newsletter
- Organized effort for Bryant’s membership in the U.S. Green Building Council (USGBC)
- Convened “Sustainability Efforts at Bryant University” – a meeting to discuss collaboration on a wind energy project in Smithfield, spearheaded by Peter Arpin of Arpin International Group (10/01/08)
- Convened the Recycling Summit at Bryant - focus on improvement of Bryant’s recycling programs (working with student organizations, faculty, staff)
- Prepared case studies of businesses that have successfully created sustainable practices, to be distributed to business and liberal arts faculty
- Coordinated community seminars on business/environment issues such as renewable energy alternatives
- Created a Marketing Plan for “Cost-Effective Opportunities for Northeast Materials Exchanges for the Northeast Recycling Council (NERC) (refer to website link)
- Worked with campus organizations such as Bryant Environmental Society (BES) – New website being designed – Caitlyn Witkowski
- Created the “Bryant University Green Initiative” (see website)
- Developed and coordinated the “Negawatts” Project (a plan for integrating neighborhood weatherization techniques into urban renewal projects – Olneyville section of Providence)

Current Projects:

- Expanding the activities of the Bryant University Green Initiative
- Proposal for a Solar Greenhouse project (solar and wind energy demonstration project)
- Monitoring vernal pools on campus (in conjunction with state and local agencies and conservation organizations)

Collaborating on the *Metasequoia* Protection Program (in conjunction with the U.S./China Institute)  
Preparation of a brochure for green building practices on campuses

#### Bryant's Service Learning Efforts

Developed as part of Bryant's efforts to provide good leadership training, by offering opportunities to get involved in the community, and help create a culture of community involvement and corporate responsibility, including issues related to environmental justice, product life cycles, and a broad-based approach toward community involvement  
<http://www.bryant.edu/wps/wcm/connect/Bryant/Academics/Academic%20Endeavors/Service%20Learning>

#### Management Department

All Bryant students take an introductory management course that includes one assignment allowing them to work with a nonprofit agency throughout the course, thus learning to apply their management skills to help the organization run more efficiently and effectively, while also learning about issues in the community

#### English and Cultural Studies Department

Adjunct Professor Ana Flores has drafted a new course, Sustainable Design, and is willing to help in "creating projects with students that translate the issues we are facing with poetry, imagination and poignancy."

#### Student Organizations

Student Senate – Green Week (Spring 2008) and Earth Week (Spring 2009), Creation of environmental quality as one of the Senate's 2009 TriGoals (Jordan Letendre); report forthcoming (projects focused on resource conservation and energy efficiency on campus)

SIFE – Marketing of recycling programs on campus (Rob Taylor)

Bryant University Emerging Green Leaders – Student organization focused on a green campus (President - Marisa Bono) – Participation in Bryant's "Go Green or Go Home" day; tracking of Recyclemania progress; participated in the Coca-Cola recycling bin grant process

Archway – Series of articles in campus newspaper focused on recycling issues (2008-2009)

#### Bryant's Entrepreneurship Programs

Redesign of the Spring semester E-Pitch program to focus on green business initiatives  
Speaker program encompassing green entrepreneurs

#### Community Outreach Programs

Bryant University maintains a variety of programs designed to address community business needs and provide expertise and training on local, national and global affairs  
<http://www.bryant.edu/wps/wcm/connect/Bryant/Community%20Outreach/>

#### John H. Chafee Center for International Business

Sponsorship of programs on energy management, green building practices, and environmental training (Ray Fogarty)

Oversight of World Trade Day, including major sustainability speakers, i.e., Fred Krupp, Environmental Defense Fund (2008) and Ray Anderson, Interface Carpets (2009)  
Coordination of student teams researching alternative energy business development  
Networking and collaboration for sustainable solutions involving RI businesses and their international trading partners

U.S./China Institute and Confucius Institute

Speaker series –

*Metasequoia* grove on campus; *Metasequoia* conference

Honors Program

Film project focused on individual involvement in creating a greener world (Jessica Clark – Spring 2009)

Research project focused on faculty recycling efforts (Justine Boucher - Spring 2009)

Strategic Actions to be Taken (proposed July 2008 by Gaytha Langlois)

(1) Join the U.S. Green Building Council (USGBC) and continue to move toward energy efficiency and green design

Main Website for the USGBC

<http://www.usgbc.org/>

Membership as an Organization (lists benefits of membership)

<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1773>

**COMPLETED NOVEMBER 2008**

(2) Join the Association for the Advancement of Sustainability in Higher Education (AASHE)

Main Website for AASHE

<http://www.aashe.org/index.php>

Membership Information

<http://www.aashe.org/membership/members.php>

(3) Sign the American College and University President's Climate Commitment Letter

Overview of the Initiative

<http://www.presidentsclimatecommitment.org/>

Why Sign?

<http://www.presidentsclimatecommitment.org/html/why.php>

Signatories

<http://www.presidentsclimatecommitment.org/html/signatories.php>

(4) Incorporate green business principles into our academic programs (so many opportunities that I dare not list particular ones). The Center for Sustainable Business Practices will be actively involved in this endeavor.

**STARTED IN BOTH THE COLLEGE OF ARTS AND SCIENCES AND THE COLLEGE OF BUSINESS**

(5) Continue to expand our Recycling and Materials Management programs, and to commit to energy efficiency on campus

**GOOD PROGRESS**

(6) Initiate some renewable energy projects on campus (projects that involve students, faculty and staff are most desirable)

**GOOD PROGRESS – SEE FACILITIES SECTION OF THIS REPORT FOR A LISTING OF PROJECTS**

**ADDITIONAL PROJECTS ARE EITHER UNDERWAY OR BEING PLANNED  
GREEN ROOFS ARE PLANNED FOR SOME FUTURE RESIDENCE HALLS**

## **APPENDICES**

- I. Recycling Summit Report – Spring 2009**
- II. Metrics for Sustainability at Bryant Universities**
- III. Future Strategic Initiatives to Be Considered For Bryant University**
- IV. Sustainability Efforts at Bryant – Discussions of Wind Energy Collaborative  
(Meeting Agenda)**
- V. Description of Green IT Facility at Bryant University**
- VI. List of Sustainability Websites at Bryant University**
- VII. List of Websites for Sustainability Programs at Other Universities**
- VIII. Samples of Websites for Sustainability Programs at Other Universities**
- IX. Selected Articles of Interest for Sustainability Planning**