Introduction
Since its founding in 1869, Chatham University has embraced the environment as part of its mission. Situated on a wooden hillside overlooking Pittsburgh’s neighborhoods, the then-Pennsylvania Female College was often called an “oasis” far from the soot and pollution of the City’s industrial past. Sixty years after its founding, Chatham granted a degree in biology to Rachel Carson, who would later alert the public to the dangers of pesticide overuse. Decades later, as climate change becomes a global threat, Chatham’s focus on the environment and its dedication to honoring the legacy of Rachel Carson have informed its passionate involvement in many environmental initiatives, through the Rachel Carson Institute and other commitments. Since 2002 – the 40th anniversary of the publication of Silent Spring – Chatham has eliminated the use of chemical herbicides and pesticides and increased its purchasing of power from alternative sources to 100 percent.

Chatham University signed the American College and University Presidents Climate Commitment in April 2007. Chatham addresses climate challenges by reducing global warming emissions and by integrating sustainability into our curriculum, to better serve our students and meet our social mandate to help create a thriving, ethical and civil society.

About Chatham University
Chatham University is located in Pittsburgh, PA, one of the most livable and green cities in the United States. Pittsburgh offers more acres of park per capita than any other major U.S. city. Surrounded by rural farmlands and mountains that provide plenty of outdoor opportunities, Pittsburgh is also centrally located. Most of our programs are housed on Chatham’s beautiful campus on Woodland Road, a national arboretum with over 120 different species of trees over 39 acres of park-like woods.

Mission
Chatham University prepares its students, bachelors through doctoral level, on campus and around the world, to excel in their professions and to be engaged, environmentally responsible, globally conscious, life-long learners, and citizen leaders for democracy. Chatham College for Women offers superb career preparation informed by the liberal arts. Chatham College for Graduate Studies and Chatham College for Continuing and Professional Studies provide men and women with undergraduate, graduate, professional, and continuing education of the highest quality with primary emphasis on preparation for work and the professions.

Key Characteristics
More than 2,200 students are enrolled in Chatham’s three distinctive Colleges: Chatham College for Women was founded in 1869 as Pennsylvania Female College and is one of the oldest women's colleges in the United States. The College for Graduate Studies offers 21
masters and doctoral degree programs to both women and men. The College for Continuing and Professional Studies offers eight degree programs through the doctoral level as well as non-degree and certificate programs. CCPS also presents community programming including the Summer Music and Arts Day Camp.

Sustainability is also a part of our campus environments. The Shadyside Campus on Woodland Road is our historic home, a 39-acre arboretum in an urban setting, only minutes from Oakland and downtown Pittsburgh. Less than a mile down the road on Fifth Avenue is Chatham Eastside, a LEED Silver academic facility which houses our graduate programs in Interior Architecture, Landscape Architecture, Occupational Therapy, Physical Therapy and Physician Assistant Studies.

Located 20 miles north of the Shadyside Campus is our Eden Hall Campus, which will be the first sustainable university campus in the world built from the ground up. As home to the School of Sustainability and the Environment, Eden Hall Campus will be central to Pittsburgh’s – and our nation’s – continuing conversation about renewable energy and resource sustainability, by providing a living laboratory and unique experiential opportunities coupled with an innovative curriculum with a systems perspective. The School's vision honors the legacy of Rachel Carson, Chatham’s most distinguished alumna, who founded the modern environmental movement.

**Operational / Governance Structure**
The President oversees the organization. Seven Vice-Presidents report to the President, serving on President’s Council. The President reports to the 28-member Board of Trustees, which has seven standing committees: Advancement, Audit, Business Affairs, Education, Enrollment Management and Marketing / Communications, Executive, and Trusteeship.

**Ownership / Funding Basis**
Chatham University is a privately owned 501c3 institution. Chatham is tuition-driven, relying primarily on income from students and supported by an endowment overseen by the Finance and Administration Vice-President.

**About the Report**
This is a draft of Chatham’s first Charter Report, covering 2011/2012 and including forward planning to 2013. Data has been gathered from several sources, including our Climate Action Plan and annual greenhouse gas audits, planning documents, etc. Chatham is in the process of conducting its first STARS assessment, due in October of 2012, and expects to use that tool for future ISCN reporting.

**Contact Information**
For questions about this report, please contact Mary Whitney, University Sustainability Coordinator at Chatham University.

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412-365-1686
mwhitney@chatham.edu
Principle 1 – Sustainability Performance of Buildings on Campus

Principle 1: To demonstrate respect for nature and society, sustainability considerations should be an integral part of planning, construction, renovation, and operation of buildings on campus.

A sustainable campus infrastructure is governed by respect for natural resources and social responsibility, and embraces the principle of a low carbon economy. Concrete goals embodied in individual buildings can include minimizing environmental impacts (such as energy and water consumption or waste), furthering equal access (such as nondiscrimination of the disabled), and optimizing the integration of the built and natural environments. To ensure buildings on campus can meet these goals in the long term, and in a flexible manner, useful processes include participatory planning (integrating end-users such as faculty, staff, and students) and life-cycle costing (taking into account future cost-savings from sustainable construction).

Management Approach to Principle 1 Topics

Chatham’s construction, renovation and operations are overseen by teams from the President’s Office, Facilities, Finance, and the Office of Sustainability. Planning for the Eden Hall Campus is managed by the Eco-Center Project Team, with members from the President’s Office, the School for Sustainability and the Environment, with input from Facilities and the Office of Sustainability, Faculty, and Trustees.

Goals are set in accordance with our commitments to climate neutrality by 2025 through the ACUPCC, our commitment to the City of Pittsburgh to show a 20% reduction in GHG emissions by 2015, and our commitment to the various building challenges for the Eden Hall Campus.

Main Initiatives

RESOURCE USE
- Electricity
- Natural gas
- Renewables

WASTE, RECYCLING, EMISSIONS
- Stormwater management

RESEARCH/IT/FACILITIES/SUSTAINABILITY
- Green IT Initiatives

USERS
- Accessibility

GREEN BUILDING DESIGN
- Green Building Policy
- Green Challenges
Overview of Chatham’s Principle 1

<table>
<thead>
<tr>
<th>Topics</th>
<th>Goals and Initiatives</th>
<th>Key Initiatives (in reporting year, and/or planned for the following and beyond)</th>
<th>Performance 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resource use</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td>10% reduction in electric use</td>
<td>Motor controls upgrade</td>
<td>11672605 kWh total used</td>
</tr>
<tr>
<td>Natural gas</td>
<td>15-tonne reduction in carbon equivalents</td>
<td>Future solar thermal hot water installations planned for gymnasium and additional residence halls, and Eden Hall Campus.</td>
<td><em>posthac</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Complete commissioning of solar thermal systems installed on 2 largest residence halls in 2010</td>
<td>Currently 2 systems installed on campus.</td>
</tr>
<tr>
<td>Renewables</td>
<td>Support renewable power infrastructure in a region where the only commercial power mix is 80% coal-20% nuclear.</td>
<td>Purchase high-quality Green-e certified RECs equivalent to 100% of our electricity use</td>
<td>12,000,000 kwh purchased</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Investigate switch to local SRECs as part of green power purchasing collaborative</td>
<td><em>posthac</em></td>
</tr>
<tr>
<td><strong>Waste, recycling, local emissions, and non-compliance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater management</td>
<td>Reduce flooding, standing water, and moisture problems</td>
<td>Continue installing rain gardens - 5 rain gardens at Eden Hall plus 1 more for Woodland</td>
<td>First rain garden (Dilworth) installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rainwater capture—95-gallon barrels for residence halls, underground rainwater storage for Eden Hall farm irrigation</td>
<td>First rain barrel (Beatty House) installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Porous pavement- Walks and parking lots at Eden Hall, as built</td>
<td><em>posthac</em></td>
</tr>
</tbody>
</table>
## Overview of Chatham’s Principle 1  
*(cont’d)*

<table>
<thead>
<tr>
<th>Priority topics (with units of measurement)</th>
<th>Objectives and targets (for reporting year, for the following year, and/or beyond)</th>
<th>Key Initiatives (in reporting year, and/or planned for the following and beyond)</th>
<th>Performance 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research/IT facilities and sustainability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Server virtualization</strong></td>
<td>Eliminate aged servers, reducing physical size, high power draw, cooling needs</td>
<td>Continue server virtualization over 3 phases (Net 60+ total servers over course of program)</td>
<td>Phase 2 complete</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phase 2 – Replace 20+ devices with 2 physical servers and 1 storage device</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phase 3 - Replace final hardware servers</td>
<td></td>
</tr>
<tr>
<td><strong>Switching replacement</strong></td>
<td>Reduce power draw of edge and core switching equipment</td>
<td>Green switch infrastructure replacement-</td>
<td>posthac</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Replace all switches with 12w “green” switches (from 57-45)</td>
<td></td>
</tr>
<tr>
<td><strong>Wireless upgrade</strong></td>
<td>Replace aged high-power consumption access points with energy-efficient, more powerful equipment and improved coverage with less devices</td>
<td>Replace all wireless points:</td>
<td>posthac</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All residence halls and office buildings</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Complete Mellon and Chung buildings, and Eden Hall as construction progresses (from 24-18 at Eastside)</td>
<td></td>
</tr>
<tr>
<td><strong>Users</strong></td>
<td>ADA accessibility upgrades to campus infrastructure</td>
<td>Mellon Center, Anderson Dining Hall, Anderson Snack Bar</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Athletic and Fitness Center, Art and Design Center, Carriage House, Lindsay House</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>2011 was Year 3 of a $1.5 million, 5 year improvement program for ADA accessibility. Completed projects include campus-wide door hardware replacement and signage, four major exterior ramp projects, sidewalk replacement/contouring, six automatic door openers, elevator in campus Chapel, dorm and restroom refitting</td>
<td></td>
</tr>
</tbody>
</table>
### Building design aspects

<table>
<thead>
<tr>
<th>Green building policy</th>
<th>Green building standard targets</th>
<th>New (and renovated when possible) buildings to be built to meet LEED Silver standards, as buildings are planned</th>
<th>Eastside LEED-CSI Silver</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green challenges</strong></td>
<td>Beyond LEED for Eden Hall Campus</td>
<td>Eden Hall to be built to meet various stringent green standards, i.e.: Living Building, LEED Platinum, NetZero <em>(see Attachment A)</em></td>
<td></td>
</tr>
</tbody>
</table>
Principle 2 – Campus wide Master Planning and Target Setting

*Principle 2: To ensure long-term sustainable campus development, campus-wide master planning and target-setting should include environmental and social goals.*

Sustainable campus development needs to rely on forward-looking planning processes that consider the campus as a whole, and not just individual buildings. These processes can include comprehensive master planning with goals for impact management (for example, limiting use of land and other natural resources and protecting ecosystems), responsible operation (for example encouraging environmentally compatible transport modes and efficiently managing urban flows), and social integration (ensuring user diversity, creating indoor and outdoor spaces for social exchange and shared learning, and supporting ease of access to commerce and services). Such integrated planning can profit from including users and neighbors, and can be strengthened by organization-wide target setting (for example greenhouse gas emission goals). Existing low-carbon lifestyles and practices within individual campuses that foster sustainability, such as easy access for pedestrians, grey water recycling and low levels of resource use and waste generation, need to be identified, expanded and disseminated widely.

Management Approach to Principle 2 Topics

Sustainability is one of the three mission initiatives at Chatham. A mission initiative is both broad and deep, creating an institutional identity and focus across a range of activities and timeframes, academic and otherwise. Sustainability is a priority of the Board of Trustees, and included as part of the university’s planning and progress reporting to the Board. Responsibility for implementing the sustainability mission initiative rests with the President’s Office and President’s Council and their offices.

Emissions reduction targets were set primarily by our agreement with the goals of the American College and University Presidents Climate Commitment. Our institutional goals are based on the results of annual greenhouse gas emissions audits. Projects are identified to reduce emissions as part of our Climate Action Plan. Responsibility for managing targets and the overall goals of reduction is with the Office of Sustainability, with project identification and management from Facilities, with funding from a mixture of operations and special projects funds.
Main Initiatives

INSTITUTION-WIDE CARBON TARGETS
   GHG Reduction Plan

MASTER PLANNING
   Mission Initiative

TRANSPORTATION
   Chatham Bike Works
   Fleet Conversion

FOOD
   Community Gardens

LAND USE AND BIODIVERSITY
   Preserve Genetic Diversity
   Biodiversity Assessment
### Overview of Chatham’s Principle 2

<table>
<thead>
<tr>
<th>Topics</th>
<th>Goals and Initiatives</th>
<th>Key Initiatives (in reporting year, and/or planned for the following year and/or beyond)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Priority topics</strong> (with units of measurement)</td>
<td><strong>Objectives and targets</strong> (for reporting year, for the following year, and/or beyond)</td>
<td><strong>Revise long-term sustainability plans in conjunction with ACUPCC goals</strong></td>
<td><strong>Revise Climate Action Plan</strong></td>
</tr>
<tr>
<td>Institution-wide carbon targets and related achievements</td>
<td>10% reduction in Scopes 1, 2, 3 from 2007 baseline *</td>
<td>Motor controls: Motor controls upgrades/replacements complete (see Climate Action Plan for details*)</td>
<td>2010 emissions (last available*) Scope 1 = 4,383 tonnes Scope 2 = 9,076 tonnes Scope 3 = 3,368 tonnes</td>
</tr>
</tbody>
</table>

*Please see our ACUPCC reports for more details: [http://rs.acupcc.org/search/?abs=&q=Chatham%20University](http://rs.acupcc.org/search/?abs=&q=Chatham%20University)*

### Master Planning

<table>
<thead>
<tr>
<th>Mission Initiative</th>
<th>Revise long-term sustainability plans in conjunction with ACUPCC goals</th>
<th>Revise Climate Action Plan</th>
<th>posthac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eden Hall living and learning community in place</td>
<td>Capital campaign and construction</td>
<td></td>
<td></td>
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</tbody>
</table>

### Transportation

<table>
<thead>
<tr>
<th>Chatham Bike Works</th>
<th>Increase bike support on all campuses</th>
<th>Indoor locked parking area in Woodland for 40 bikes Covered bike parking at Eastside</th>
<th>posthac</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Expand bike shop classroom space One class and one ride per month Classes at Eastside monthly</td>
<td>posthac</td>
</tr>
</tbody>
</table>

| Fleet conversion | Reduce or eliminate truck emissions | Fuel analysis: biodiesel, natural gas or other alternative fuel options (currently use 13,532 gallons B5 annually, but availability is variable. | posthac |
Overview of Chatham’s Principle 2  (cont’d)

<table>
<thead>
<tr>
<th>Priority topics (with units of measurement)</th>
<th>Objectives and targets (for reporting year, for the following year, and/or beyond)</th>
<th>Key Initiatives (in reporting year, and /or planned for the following and beyond)</th>
<th>Performance -2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td></td>
<td></td>
<td>posthac</td>
</tr>
<tr>
<td>Community gardens</td>
<td>Multi-use community garden, heritage orchard and farming</td>
<td>2-acre community garden</td>
<td></td>
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<td></td>
<td></td>
<td>5-acres fenced for deer</td>
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<td></td>
<td></td>
<td>High-hoop greenhouse</td>
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<td></td>
<td></td>
<td>Plots for community members (Chatham and a Farm to School program with the Pine Richland area)</td>
<td></td>
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<tr>
<td>Land-use and biodiversity</td>
<td></td>
<td></td>
<td>posthac</td>
</tr>
<tr>
<td>Assess and increase biodiversity</td>
<td>Preserve genetic diversity</td>
<td>Heritage orchard: Conserve genetic material from existing orchard after survey. Begin planting new orchard of heritage trees</td>
<td></td>
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<td></td>
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<td>Expand apiary: Relocate bees to more sheltered area (away from bears)</td>
<td>posthac</td>
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<tr>
<td></td>
<td></td>
<td>Increase honey production for CSA shares (2 hives in 2012)</td>
<td></td>
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<tr>
<td></td>
<td>Assess biodiversity</td>
<td>Bird-banding partnership with Audubon and National Aviary Station in place with first cohort of trained volunteers</td>
<td>posthac</td>
</tr>
</tbody>
</table>
Principle 3 – Integration of Facilities, Research, and Education

Principle 3: To align the organization’s core mission with sustainable development, facilities, research, and education should be linked to create a “living laboratory” for sustainability.

On a sustainable campus, the built environment, operational systems, research, scholarship, and education are linked as a “living laboratory” for sustainability. Users (such as students, faculty, and staff) have access to research, teaching, and learning opportunities on connections between environmental, social, and economic issues. Campus sustainability programs have concrete goals and can bring together campus residents with external partners, such as industry, government, or organized civil society. Beyond exploring a sustainable future in general, such programs can address issues pertinent to research and higher education (such as environmental impacts of research facilities, participatory teaching, or research that transcends disciplines). Institutional commitments (such as a sustainability policy) and dedicated resources (such as a person or team in the administration focused on this task) contribute to success.

Management Approach to Principle 3 Topics

Working closely together, the Office of Sustainability and Chatham’s School of Sustainability and the Environment (SSE) strive to implement the University’s mission of increasing student’s environmental understanding. Launched in 2009, SSE was created to further expand the potential of new Eden Hall Campus, the first Zero Net energy campus to be built from the ground up. The new school provides innovative, interdisciplinary education and research opportunities for graduate and professional students to better prepare them to identify and solve challenges related to the environment and sustainability. The Zero Net energy campus, currently under development, will serve as an experiential laboratory for students to learn about sustainable energy systems, integrated design, sustainable landscape architecture, and farming techniques.

The Office of Sustainability at Chatham upholds Chatham’s deep institutional commitment to sustainability as expressed in day-to-day operations and facilities management. The Office of Sustainability works with the Chatham Climate Committee and the entire campus community to monitor the University’s institutional carbon footprint, identify and develop projects to reduce or eliminate those emissions, and to encourage climate leadership and behavior change across campus.
Main Initiatives

TOPICAL INTEGRATION
  Academic Programs
  Sustainability Courses

SOCIAL INTEGRATION
  Internships
  Community Engagement
  Student Organizations

RESEARCH AND EDUCATION PROJECTS ON LAB/IT/FACILITIES
  Faculty Research
  Campus Research

COMMITMENTS AND RESOURCES FOR SUSTAINABILITY
  Dedicated Staff
  Eden Hall Campus
  Climate Committee
### Overview of Chatham’s Principle 3:

<table>
<thead>
<tr>
<th>Topics</th>
<th>Goals and Initiatives</th>
<th>Key Initiatives (in reporting year, and/or planned for the following year, and/or beyond)</th>
<th>Results Performance 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Priority topics</strong> (with units of measurement)</td>
<td><strong>Objectives and targets</strong> (for reporting year, for the following year, and/or beyond)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Academic Programs</strong></td>
<td>Develop degree programs and concentrations to provide students with a foundational knowledge of sustainability</td>
<td>Launch a Certificate in Sustainable Management in the spring of 2012. Offer A Master of Sustainability degree in the fall of 2012. Admit students to Certificate program in Spring 2012 Admit first cohort of students in the Master of Sustainability degree programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Add sustainability content in Food Studies</td>
<td>Add focus area and courses to Master of Arts in Food Studies Add courses on Food and Climate Change, sustainable agriculture and production Add track in sustainable agriculture MAFS</td>
<td></td>
</tr>
<tr>
<td><strong>Sustainability Courses</strong></td>
<td>Increase number of sustainability courses offered</td>
<td>Chatham University currently offers a number of sustainability courses at both the undergraduate and graduate level (see STARS when completed.). Additional classes will be added in 2012. Increase # of courses across all programs that have sustainability content</td>
<td>20 courses with sustainability as the main focus of the class were offered between Fall 2011-Summer 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop searchable list of sustainable content courses once STARS is complete Add more courses in core and majors</td>
<td></td>
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</tbody>
</table>
## Overview of Chatham’s Principle 3 Goals (cont’d)

<table>
<thead>
<tr>
<th>Priority topics (with units of measurement)</th>
<th>Objectives and targets (for reporting year, for the following year, and/or beyond)</th>
<th>Key Initiatives (in reporting year, and/or planned for the following and beyond)</th>
<th>Performance 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Integration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Internships</strong></td>
<td>Provide opportunities for students to connect with industry, government, and civil society through internship opportunities</td>
<td>Integrate internship requirements into sustainable degree programs</td>
<td>24 internships within Food Studies for calendar year 2011.</td>
</tr>
<tr>
<td><strong>Community Engagement</strong></td>
<td>Host conferences, workshops, and lectures</td>
<td>Through the Rachel Carson Institute, the community outreach arm of SSE, Chatham University will host its first conference on sustainability and food security in the fall of 2012. SSE will also sponsor lectures/workshops at Eden Hall Campus to engage the community on various topics related to sustainability.</td>
<td></td>
</tr>
<tr>
<td><strong>Student organizations</strong></td>
<td>Support creative sustainability projects and student engagement with new and existing sustainability-oriented organizations</td>
<td>Develop student green fees for sustainability projects</td>
<td>posthac</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop board and proposal systems</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>By 2013, first projects approved and underway</td>
<td></td>
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</table>
### Overview of Chatham’s Principle 3 Goals (cont’d)

<table>
<thead>
<tr>
<th>Priority topics (with units of measurement)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Research &amp; Education projects on Laboratory/IT facilities and sustainability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Faculty Research</strong></td>
<td>Increase the number of faculty perusing sustainable research agendas</td>
<td>4 faculty members within SSE are currently engaged in research focused on environmental governance, community ecology, and sustainable agriculture</td>
<td></td>
</tr>
<tr>
<td><strong>Campus Research</strong></td>
<td>Develop research opportunities at Eden Hall Campus</td>
<td>Incorporate research at Eden Hall into curriculum</td>
<td></td>
</tr>
<tr>
<td>Commitments and resources for campus sustainability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dedicated staff</strong></td>
<td>Continue to fund a full-time Sustainability Coordinator</td>
<td>Hire a graduate assistant to support the Sustainability Office, continue to fund bike program, add graduate communications assistant</td>
<td>1 GSA, 12 hours per week</td>
</tr>
<tr>
<td><strong>Eden Hall Campus</strong></td>
<td>Support the development of a new Zero Net energy campus</td>
<td>Break ground in 2012, Fundraising for the first phase is underway</td>
<td>FY2011 raised $3,072,500 dedicated to EHC</td>
</tr>
<tr>
<td><strong>Climate Committee</strong></td>
<td>Engage and draw upon the expertise of the Chatham community</td>
<td>Increase number of departmental appointments and increase student members</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change name to reflect wider sustainability goals</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Each department has at least 1 formal representative</td>
<td></td>
</tr>
</tbody>
</table>
Welcome to Eden Hall Campus....

In 2008, Chatham University received an inspirational gift and opportunity from the Eden Hall Foundation: 388-acres of undeveloped farmland and woodland 20 miles north of Chatham’s historic campus and located in the midst of some of the region’s fastest-growing communities.

From this incredible opportunity grew the vision for Eden Hall Campus: a living laboratory to address the social, economic and environmental concerns that the world faces, at the site of the first university campus built from the ground up to integrate cutting-edge methods for sustainable development, learning, and living.

What exactly does sustainability mean? Sustainability goes beyond just ‘thinking green’. True sustainability gives co-equal consideration to economic issues and social impacts as well as the environment. By applying this three pronged approach to every decision we make, we are creating the community of the future—a model that is unique in the world with the potential to pull us all into the 22nd century.

The goal for Eden Hall Campus is to become a world-class model for sustainable development—one that actively improves the health of both humans and the environment. Through collaborations with researchers, universities, companies and organizations locally and globally we will initiate innovative research on water, food, land, energy and health. We will integrate sustainable agriculture with cutting edge energy, land and water management, while promoting human wellness.

The images in this presentation outline the 20-year vision for Eden Hall Campus which can accommodate up to 1,200 residential students in addition to providing extensive community outreach. Also included are specifics for some of the innovative designs and various models for living that we have incorporated into the first phase of the campus development.

We hope you enjoy the tour.

Esther L. Barazzone, PhD
President
Chatham University
Since the early 19th century, Eden Hall Farm has served as a place for focused connection with nature. Originally a farm and retreat for the working women of Pittsburgh, Eden Hall Farm was the vision of Sebastian Mueller (1860-1938) who immigrated to Pittsburgh from his native Germany in 1884 to work for his cousin Henry J. Heinz in his fledgling food processing operation. Mr. Mueller headed the H.J. Heinz Company's manufacturing operations, served on its board of directors and ran the organization when Mr. Heinz was absent.

Sebastian Mueller won the respect and gratitude of not only the company's founder but also its legion of working women. Mr. Mueller was generous in providing the female employees of the H.J. Heinz Company with medical care and financial assistance—long before the existence of corporate health care plans or government programs. Mr. Mueller willed his entire estate, including Eden Hall Farm, to serve as a retreat for generations of Pittsburgh's working women where they could be restored and renewed through interaction with nature.

Mr. Mueller built Eden Hall Farm by acquiring small local farms. He purposely left large parts of the property undeveloped. The land has remained largely untouched and is now one of the largest undeveloped tracts of land in Allegheny County, Pennsylvania.

Across the river from Eden Hall Farm, Chatham University has nurtured a mission since 1869 that parallels that of Mr. Mueller's, focusing on environmental research and women's leadership. The University is home to the Rachel Carson Institute, which was formed in 1989 to promote the awareness and understanding of significant and current environmental issues.

In May of 2008, Eden Hall Foundation donated the 388-acre farm to Chatham University to further the university's educational objectives and, in doing so, created an extraordinary opportunity for immersive research and advancement in sustainability studies. This gift marks a new trajectory in our society's course to a sustainable future. The new Eden Hall Campus is our vehicle to take us there.
Eden Hall Campus

Next Generation Green Buildings

Eden Hall Campus will be a demonstration site, modeling a variety of different building standards and ways to live. The buildings will incorporate high performance, integrated design and will provide a laboratory for researching and testing best practices. Each building will be monitored to determine energy consumption and to see what works and what does not in the course of day-to-day activity.

- The EcoCenter (1) will be designed to LEED Platinum Certification and will be the baseline for all other new construction and renovations including the Café – formerly the Dairy Barn (2), Field Lab (3) and Dining Hall (4). The Residence Lodges (7) will be the first such structures built to Passive House standards in the United States.

- The EcoVillage (5) will model entirely “off the grid” living with twelve cabins and a common kitchen/living space. Features such as composting toilets will be used to reduce water consumption. Rain water will be collected from roofs and solar panels will generate the required energy (and just in case more is needed … a bicycle will be connected to a generator in the common building for pedal power!)

- The Classroom Building (6) will be built to Living Building Challenge standards. This will be one of the few buildings with a green roof (we need the other hard surfaces to collect precious rain water). The building can be certified as "Living" if it meets all of the program requirements after 12 months of continued operations and full occupancy.
Eden Hall Campus
A Zero Net Energy Campus

In order to create a climate positive community, the engineers and architects involved with the design of Eden Hall Campus are incorporating an array of technologies to meet initial and anticipated energy needs. These technologies reinforce the goal of Eden Hall Campus as a demonstration site that will model and monitor the effectiveness of proven and new approaches to creating, conserving and using energy.

The land on which Eden Hall Campus sits is very dry, so we must conserve and collect all of the rainwater possible. For this reason, almost all of the roofs will have photovoltaic panels (5) which serve the dual purpose of generating electricity and helping to collect rainwater for non-potable uses. We will also use the sun to heat water for the Residence Lodges and Dining Hall (6).

An innovative energy loop (3) showcases the cutting-edge energy system – a tubular conduit system buried 18-inches underground will be able to transfer heat energy from buildings that are producing excess heat to those buildings that need the extra heat. This is a way to share resources among buildings during peak and off-peak use.

Low velocity wind turbines (11) and a micro-hydroelectric system (4) will be incorporated to diversify how we generate energy.
1. Geothermal
   Horizontal Bore Wells

2. Geothermal
   Vertical Bore Wells

3. Energy Loop

4. Micro-Hydroelectric
   Energy Generation

5. PV (Photovoltaic)
   Energy Generation

6. Combination PV/Solar Hot Water
7. Vegetated Roof
8. Compost
   Heat Recovery
9. Passive Ventilation
10. Thermal Mass Slab
    Heat Storage
11. Low-Velocity Wind Turbine
    Energy Generation
12. Energy Monitoring Displays
13. Green Maintenance Strategies
    Throughout
14. Carbon Sequestration Throughout
     Soil-Building
     Increased Biomass
     Nutrient Cycling

CHATHAM UNIVERSITY
A Zero Net Energy Campus: Incorporating multiple technologies for demonstration and to meet resource needs
08.10.2011
Eden Hall Campus
Integrated Water and Nutrient Cycle

As stewards of the land, Chatham has an important responsibility to both restore and protect the site’s natural systems. Eden Hall Campus sits at the top of two watersheds that eventually flow into the Mississippi River and to the Gulf of Mexico. To help protect the important waterways downstream, and so as not to overburden the local sewer system, Chatham will treat all wastewater onsite through a system of constructed wetlands and has plans to manage storm water. Eden Hall Campus will demonstrate how a development that will eventually house 1,200 students can treat wastewater so that it is cost effective, efficient and safe.

- Waste from composting toilets (9), low flush toilets and general water use will be processed on site through a series of filtration systems and constructed wetlands (4).

- The resulting effluent (which has no smell and is safe enough to drink) will then be used to water a newly replanted orchard (2) and a series of gardens (13) that will help to support the food needs for the campus.

- Raingardens (11) and permeable paving (10) will help to control storm water and keep the excess water out of the existing sewer systems.
Eden Hall Campus

Wellness

Sustainability means more than reducing energy use, conserving water and restoring the land – focusing on individual wellness is also important. People, community interactions and social programs will transform Eden Hall Campus from a collection of high performance green buildings and landscapes into a premier living and learning campus.

Some of the highlights include:

- An **Open Amphitheatre** (5) which can accommodate up to 500 people and a **Fire Pit** (6) that can accommodate 250 people will be used for large gatherings and performances.

- An ADA accessible **Tree House** (8) will extend from one of the Residence Lodges and provide stunning views over the ravine looking towards Stanford Hill.

- A **meditation platform** (13) will allow relaxation of the mind, while a **ropes course** (10) and **zip line** (9) will energize the body.
Site Context: Living at the Beginning of Rivers

Located at the top of two watersheds, water conservation and management is an important aspect of how Chatham develops and uses Eden Hall Campus. Our actions will have very literal downstream impacts going all the way to the Gulf of Mexico.
The **Green Zone** *(Preservation)* provides valuable environmental resources such as existing forest, wetlands, stream corridors and wildlife habitat that need to be preserved and restored.

The **Orange Zone** *(Arable Land)* has the best agricultural soils which will be managed as a valuable resource.

The **Grey Zone** *(Connections)* shows the connections between preservation areas and prime agricultural areas. Campus development will maximize these connections.
Eden Hall Campus - Full Development Plan
Eden Hall Campus: Five Districts

The Mueller Center Campus and Stanford Hill make up the academic core of the campus. The Elsalfa District will include outreach and community education. Housing and parking are located in Elizabeth and Thoreau Cottages. The Thoreau Cottages give students and visitors access to nature and solitude.
Eden Hall Campus Core Development

Phase 1
($80-100 million investment)

2011-2013

1. EcoCenter (new building plus renovated Barn)
2. Café (renovated Dairy Barn)
3. Field Lab (includes Aquaponics/Aquaculture and Water Treatment Facility)
4. Open Amphitheatre
5. Renovations to Lodge
6. Drop off area
7. Mosaic Garden
8. EcoLawn
9. Fire Pit

2013-2015

10. Residence Lodges
11. Dining Hall
12. Classroom Building (Living Building Challenge)
13. EcoVillage
EcoCenter and Renovated Barn
View of the EcoCenter and Renovated Barn

The green space is the EcoLawn, a drought tolerant and pest resistant seedmix that stands up to high foot traffic and requires less maintenance such as watering and mowing.
View of the EcoCenter and Renovated Barn
Patio has permeable paving and the window looks into one of the EcoCenter classrooms.
(As seen from the Mosaic Garden near the drop off area.)
Interior of the EcoCenter
The wall on the left will be used as gallery space.
This will be the welcome center for Eden Hall Campus and can accommodate events for up to 250 people. The glass doors on the right open to gain access to the central patio area.
EcoCenter – Interior of the Renovated Barn
The Barn can seat up to 250 people including the mezzanine. Seats are not fixed, allowing for a large flexible space. The stage at the end can have an indoor or outdoor orientation.
View of the EcoCenter and Renovated Barn from Café Patio

A patio wraps around the Café (former Dairy Barn) to provide additional outdoor seating and meeting places for students, faculty and visitors when they are on campus.
Café

(renovated Dairy Barn)
Café (renovated Dairy Barn)
A small café will offer light fare and beverages to students and visitors.
Café (renovated Dairy Barn)
Inside view of the Café with references to its former use as a Dairy Barn.
Floor plans with the extended deck (above) and inside cow motif (below).

Café (renovated Dairy Barn)
Open Amphitheatre
View from the Open Amphitheatre Stage
Terraced seating can accommodate up to 250 people with additional seating for 250 available just beyond on the surrounding lawn, at the Café Patio and the steps leading to the Barn stage at the EcoCenter.
Dining Hall and Kitchen
The Dining Hall and Kitchen will serve as the campus hub for food preparation and service, but will also be used as a teaching and demonstration space. The Kitchen will model energy efficient cooking equipment incorporating root cellars and will have direct connections to the Field Lab and Hoop House.
Classroom
Aquaponics / Aquaculture
Water Treatment Facility
Field Lab:
Field Lab

The building includes a muddy boots classroom with easy access to bring in samples from the field. Moveable tables will provide flexibility for use. This building will also house the water treatment facility with interpretive signage to describe how Eden Hall Campus treats the waste water it produces. This facility will be open to the public as a demonstration and education site.
Field Lab

A view of the Field Lab from the Mosaic Garden.
Some deer fencing will be incorporated around the plantings as seen on the left.
An Aquaculture/Aquaponics Lab will be established in part of the Field Lab. This structure will also be connected to a 30 x 100 feet Hoop House (greenhouse) used for year-round food cultivation.
Living Building Classroom
Classroom Building – Living Building Challenge

The Classroom Building will have a variety of classroom and office spaces. It will be designed to meet the Living Building Challenge standards which will include a green roof.
View of the Residence Lodge from the Center of Campus. With housing for up to 100 people, the building will also have meeting space and catering facilities so that it can be used for conferencing. While built into the slope, the building is ADA accessible.
View of the Residence Lodge with a Tree House

This side view of the Residence Lodge shows the ADA accessible Tree House that extends from the main building with views that look over the ravine to Stanford Hill (where future expansion to the academic center will take place).
View from the Residence Lodge toward the Tree House
A deck off of the conference room with views over the ravine looking towards Stanford Hill.
Conference Room in the Residence Lodge looking toward the Tree House
Flexible space allows for a variety of conference, meeting and classroom uses.
View of the Inside Corridor of the Residence Lodge
Large wooden beams from the Barn are repurposed as seating.
EcoVillage

With twelve double occupancy cottages and a commons building with a community kitchen, dining and lounge areas – the EcoVillage will be a model of entirely off-the-grid living.