

To the Heights: Sustainability at the University of Puget Sound

by

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At the 2008 commencement ceremony, University of Puget Sound president Ronald Thomas translated the enigmatic Greek letters on the university's seal to cap-and-gown sporting seniors: "ἦρος τα ἀκρᾶ," he said to blank stares. "To the heights." Soon-to-be graduates sighed a collective epiphany: this is the mysterious caption to their four years at Puget Sound. The letters are usually interpreted to reference both the proximity of Mount Rainier to campus and the university's academic philosophy, which encourages students to reach for new opportunities of discovery. In the past four years, however, officially beginning with President Thomas's signing of the Talloires Declaration in 2005, the concept of sustainability has permanently augmented the university insignia.

The Talloires Declaration, composed at an international conference in France in 1990, is a ten-point action plan for ensuring that universities achieve environmental literacy. When University of Puget Sound president Thomas signed the declaration in February 2005, he reached to the heights. A 3000-student liberal arts university in Tacoma, Washington, joined the ever-growing chain of institutions of higher learning around the world committed to educating themselves and others about sustainability. The signing of the Talloires Declaration was symbolic: it reinforced the idea of seeking new opportunities of discovery symbolized by our official seal. Furthermore, it spearheaded a new definition of the once-foreign Greek letters, grounding the university in a new tradition of sustainability and combining the 14,410 feet of Mount Rainier and the correspondingly high-reaching university academics to the idea of campus sustainability.

After the 2005 signing, the Sustainability Advisory Committee (SAC) was formed, allowing the declaration's symbolism to be translated into campus action. The SAC is a collaborative effort between administration, faculty, and students, committed to transforming the Puget Sound campus both intellectually and physically. In addition to hosting campus-wide zero-waste events, in which the total non-recyclable waste generated by thousands of students and faculty is less than one small garbage bag, the SAC started a campaign for commingled recycling, and results have been astonishing. Besides the obvious physical effects—reduced waste, increased presence of blue recycle bins on campus, and posters encouraging green behavior—the idea of sustainability has changed attitudes and behavior. For a university whose mascot is the "Logger", an increased presence of "This Logger Loves Trees" bumperstickers and a blooming interest in sustainable business and economics are proof that sustainability is leaking through the university (though not through the SAC-distributed sustainability mugs used in the campus café).

In the spring of 2007, SAC initiated a new phase in its development: the distribution of financial grants for sustainability-oriented projects from the campus community. These grants have included vermiculture composting for the cafeteria, a campaign to increase local public transit ridership, making the campus arts magazine *Crosscurrents* sustainable, the funding for a campus bike shop, and a stormwater management project. The University of Puget Sound's growing vision in sustainability, combined with SAC's commitment to realizing this vision, has allowed Puget Sound students to take powerful ideas and transform them into tangible

products. As three college seniors in an environmental law course, we took advantage of this opportunity, turning a research project about stormwater management into a physical campus installation.

Our student-led project, *Harvesting the Future: Rain Collection at the University of Puget Sound*, originated in Professor Lisa Johnson's fall 2007 Environmental Law course, a course which exemplifies the commitments of the Talloires Declaration. Sustainability is more than changing building materials and beginning recycling programs; it introduces a way to critically assess our role in the world. In Professor Johnson's course, students were assigned to write a sustainability-related grant proposal to the EPA. After researching the history and implementation of rain gardens in other universities, we decided that this was a realistic option for our own UPS campus. We turned to the SAC for realization of this project. Through the sustainability grant we received fall 2007, the *Harvesting the Future* project was completely funded and UPS opened a new chapter in campus sustainability.

Through collaboration with the University's Facilities Services and the SAC, we designed and installed a small-scale sustainable stormwater management model for the Puget Sound campus. This included the construction of a rain garden and water collection system that serves not only to sustainably manage the campus stormwater runoff, but also to retain excess water for garden maintenance. Completed in spring 2008, the project showcases two campus rain gardens, each approximately 400 square feet in size, and rain collection barrels adjacent campus buildings to capture excess stormwater runoff.

The gardens exhibit new opportunities in low impact development (LID). LID is a stormwater management technique which focuses on reducing the quantity and improving the quality of stormwater runoff by promoting conservation of the natural habitat. An LID project may incorporate several tools to soak up rainwater, reduce stormwater runoff, and filter pollutants. Some examples of these tools include permeable paving, compost-amended soils, vegetated roofs, rainwater collection systems, and bioretention sites.

Bioretention sites are swaled drainage sites designed to remove silt and pollution from surface runoff water. Rain gardens, like those installed at Puget Sound, use large drum barrels to capture runoff from roofs or other impervious surfaces, lead this water to the swale of the garden, and become a wetland-like landscape element. As a form of sustainable LID, rain gardens are beneficial for a variety of reasons: not only do they reduce stormwater flow and decrease the amount of pollution from, for example, parking lots or overflowing sewers, but their design and implementation can also be tailored to meet the specific needs of the homeowner or corporation, or in this case, the university campus. Moreover, this seemingly small-scale practice, when properly implemented, can result in a trickle-down effect with great benefits to Tacoma's overall stormwater management practices. Our rain barrel contact in Tacoma has already reported a huge surge in barrel purchases, and several community gardens in Tacoma are using this technology as well.

Our choice of plants native to Western Washington provides a much lower maintenance garden once the plant root structure is firmly developed in the soil. Since these plants are adapted to survive the wet winters and dry summers of the Puget Sound region, additional watering is rarely required. They additionally resist native pests better than non-native plants. Combined, planting native plants such as

snowberry, sword fern, and evergreen huckleberry improves the local water quality, as they require neither fertilizer nor pesticides.

Based on assessments campus soil experts, we installed the gardens on two separate sites on "Theme Row" at the University of Puget Sound, a street devoted to on-campus student housing. These sites are both located on native soil: they absorb and filter stormwater much more effectively than the clay found on much of the rest of campus. This is important, as both sites are responsible for draining runoff from significant areas of impervious surfaces (one garden is responsible for draining a portion of the 16,000 square foot Facilities gravel parking lot). The filtered water exits the campus cleaner than before, thereby benefiting the overall regional water health of the Tacoma community. The water harvested by the rain barrels is used to hand-water the gardens during particularly dry months, thereby representing a cost-saving campus water usage scheme.

Through the community outreach portion of our project we have promoted the sustainability and cost-effectiveness of landscaping with such LID sites. This includes information available directly at the rain garden sites as well as an interactive website linked through the university's own homepage. Several other college campuses across the nation have implemented similar stormwater management programs, such as the University of Minnesota Duluth (UMD), Carleton College (Northfield, MN), and Edgewood College (Madison, WI). The rain gardens at these campuses both filter stormwater and act as an educational asset to the schools. The UMD rain garden, for example, is comprised of plantings, a drain tile system, and a water level control system. The drain system here can hold as much as 60,000 gallons of water; this is part of UMD's commitment to protect nearby Lake Superior.

The construction of campus rain gardens at the University of Puget Sound is a sustainable method to harness and treat excess stormwater runoff, and is an excellent example of students from a wide variety of disciplines—business, economics, international relations, music, biology, and the interdisciplinary Honors program—coming together to realize this project. We have additionally collaborated with other student groups with similar goals: the Students for a Sustainable Campus, which organizes the annual University of Puget Sound EcoFest with the SAC, extended their help during garden construction, and the newly founded Biology Club has expressed interest in future garden maintenance. Our project was featured at the SAC-sponsored Sustainability Open House, where we were able to connect with other members of the campus community interested in sustainable events, and articles about the rain gardens have been published in *The Trail*, the campus newspaper, as well as the science magazine *Elements*.

As demonstrated by the *Harvesting the Future* project, the University of Puget Sound provides an environment ideal for putting sustainable ideas into practice. President Thomas reinforced the Talloires Declaration when he signed the Presidents Climate Commitment in 2007. This commitment recognized Puget Sound's awareness of the growing threat of global warming, and underscored its pledge as a university to exercise leadership in efforts to curtail this threat. Colleges and universities are where ideas about environmental protection can come to life, and students at the University of Puget Sound can do just this: the close-knit web that ties students to faculty to administration allows projects like *Harvesting the Future* to be realized.

Since *Harvesting the Future*, the University of Puget Sound has undergone even more transformations in sustainability. Harned Hall, the new 51,000-square-foot

science center, received the U.S. Green Building Council's LEED Silver standards and is scheduled for grand opening during fall semester 2008. Additionally, the Sustainable Living Program House will open in August 2008; this student residence received LEED Gold certification. In addition to solar panels, Energy Star-rated appliances, materials from local materials, and low flow plumbing, the house will use rain gardens to collect and filter water for irrigation. *Harvesting the Future* has already, within months of installment, spilled into other university projects.

Harvesting the Future did not begin when the first rain collection barrel was purchased; it began when the University of Puget Sound and its students committed themselves to a more sustainable campus and becoming a role model for the surrounding community and other universities. Nor did the project end when the last evergreen huckleberry was planted. *Harvesting the Future* is a permanent installment on the university campus, linking the students and faculty to the environment, and providing a dynamic example of how sustainability is more than a definition: it is reaching to the heights.

REFERENCES

Hinman, Curtis. "Low Impact Development: Rain Garden Handbook for Western Washington Homeowners." <http://www.pierce.wsu.edu/Water_Quality/LID/>

"Harvesting the Future."
<<http://asups.ups.edu/students/cganderson/rg/home.html>>

"Presidents Climate Commitment."
<<http://www.presidentsclimatecommitment.org/>>

"Sustainability at Puget Sound." <<http://www.ups.edu/sustainability.xml>>

"ULSF: University Leaders for a Sustainable Future."
<http://www.ulsf.org/programs_talloires.html>

"UMD Storm Water: Rain Garden." Rain Gardens at the University of Minnesota, Duluth. <http://www.d.umn.edu/outreach/stormwater/rain_garden/>