Landscape Ecology on College Campuses to Promote Environmental Sustainability

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Landscape Ecology is defined as heterogeneous areas repeated in form throughout. Structure, Function and Change define landscapes and areas consist of the matrix, patches and corridors arranged in a land mosaic. To direct change, we need to “Think Globally, Plan Regionally and Act Locally” (Forman p. 480).

Sustainability is defined as one in which there is stability...achieved through meeting the needs of the present without compromising the ability of future generations to meet their own needs” (Forman, p. 483).

Environmental Science is the study of interactions among physical, chemical, and biological components of the environment. To connect Landscape Ecology and Environmental Science one needs to contact the desire for a sustainable environment with the reality of sustainable systems.

Cultural Cohesion refers to linking of people by common intellectual, aesthetic and moral traditions...culture can be considered as a bonding force in its own right, separate from religion, economics, politics...” (Forman, p. 492).

Sustainability through LEED®

For future considerations, building standards that promote sustainability within Environmental Science need to consider Green Building and incorporate standards for Leadership in Energy and Environmental Design (LEED ®).

Similar to LEED® Sustainability, Tracking, Assessment, and Rating System (STARS) was developed for college campuses. STARS gives credits based on education and research including sustainability-focused classes and new student orientation programs. It also gives credits based on operations involving “green” new construction or the use of “green” products.

Lumberjack Village Energy Competition

At a very fine scale the local ecosystem, including resident halls, new buildings, might also be managed for sustainability.

“Do it in the Dark” Energy Competition was developed for Lumberjack Village Resident Hall. The goal of this competition was to create a cultural cohesion among residents and reduce the energy usage on campus. Paradox of Management tells us “One can much more likely cause or create an effect at a fine scale, whereas success is more likely to be achieved at a broad scale.” (Forman p. 488).

“Do it in the Dark” has been successful at many other campuses with energy reductions as high as 25%. Campuses with energy competitions include: Tufts University, Wesleyan University, Northeastern University, Rice University and Columbia University.

Environmentally Sustainable Campuses

Adam Joseph Lewis Center for the Environment, Oberlin College

- Campus Resource Monitoring System for dormitory electricity and water use
- Living Machine cleans and recycles wastewater for use in building and landscape
- Active and passive heating and cooling systems including geothermal wells
- Retains stormwater for reuse in landscape
- Landscape produces food and grows native trees, shrubs and flowers

Center for the Environment at Catawba College

- Building uses recycled materials including bamboo flooring
- Double- and Triple-paned glass
- Low or no VOC paints
- Insulation made from recycled newspaper
- Ceiling tiles manufactured for noise reduction and light reflection
- Ground-source heat pump
- Occupancy sensors that automatically turn off
- Photovoltaic cells
- Campus green by planting native trees on campus

“The farther we get away from an individual caring for his or her own garden, the less effective planning and management decisions are” (Forman p. 488)