

## Bioretention Area/Rain Garden Studio Arts, UMass Amherst



To capture stormwater flow from a nearby parking lot, UMass constructed a 150-foot long, 20-foot wide, and 18-inch deep rain garden. Designed as a flow-through system, the facility uses a series of four 12-inch by 12-inch weirs that help to maximize capacity. Weirs range in length from 10 to 14 feet. Stormwater enters through one of two entry points, infiltrates with excess waters moving downgradient through the series of basins to outlet ultimately into a catch basin that had previously received all flow prior to

construction of the rain garden. The system also includes 450 native wetland plants.

**Purpose:** To capture a large volume of stormwater from the adjacent parking lot, allowing wetland plants to absorb water and filter contaminants.

**Designers:** UMass faculty Jack Ahern, Max Cohen, and Mike Davidsohn

**Stormwater Capacity:** 3,000 to 4,000 gallons

**Permitting:** None

**Construction Costs:** Extensive use of recycled materials, including concrete slabs, stone, boulders, plants and other materials, making construction costs very inexpensive (estimated to cost between \$50,000 and \$100,000 if had gone out to bid)

**Funding Source(s):** UMASS Amherst; donated parts and labor by UMASS Construction Services

### Lessons Learned:

- Importance of accurate site data including soils and slopes.
- Need to provide management of flow during project development and with project completion.
- Having the right plants and soil for infiltration is critical. Native plants should be considered.
- Having a plan to maintain the raingarden is essential, including pruning, weeding, etc.
- It is critical to have at least one person on the ground overseeing every aspect of construction from setting grade stakes and excavation to planting and mulching.

**Decision Makers:** Designers, UMASS Construction Services

**Completed:** 2010