

OVERVIEW



The renovation of the existing greenhouse and construction of more than 15,700 square feet of additional laboratory and greenhouse space, provided much needed teaching and research facilities for the Plant, Soil & Insect Sciences Department. The Greenhouse is an efficient glass and steel research machine. Sophisticated automated systems control lighting, temperature, humidity, irrigation and fertilization, adapting the interior environment in response to the sun, the wind, and the weather. The facility maximizes research capability and provides an open, flexible environment for introductory botany instruction. Project interiors have a simple, minimal character in keeping with the overall agrarian style. The project was completed in August, 2011 and is has achieved LEED Silver Certification.

SUSTAINABLE SITES



Site selection is an important step in the building process because it impacts transportation choices, has the potential to preserve green space, and affects overall campus functionality. The site chosen for the Research & Education Greenhouses positively impacts the campus' built environment in many ways, including:

- Remediation of asbestos and other hazardous materials improves site ecology.
- Reusing the site of the old greenhouses preserves surrounding greenfields.
- Close proximity to campus shuttle bus reduces private vehicle traffic to the site.
- On-site bicycle storage reduces fossil fuel travel to the site.

WATER EFFICIENCY, MATERIALS & RESOURCES



Efficient resource use is a high priority for UMass Amherst. Consideration was made in the design and construction of this facility to ensure the responsible use, reuse and recycling of materials and resources, including:

- A unique stormwater retention system that surrounds the project with three feet of gravel on all sides avoids the need to install expensive and disruptive underground cisterns.
- High-efficiency plumbing fixtures reduce potable water usage.
- Building materials with high recycled content minimized the use of natural resources.

ENERGY, ATMOSPHERE & INDOOR ENVIRONMENTAL QUALITY



UMass Amherst strives to reduce indoor environmental stressors and energy use in campus facilities through sustainable building design. The team employed many strategies, including:

- Using high efficiency ballasts to provide adequate lighting at reduced wattage
- Installed modular chiller and a hybrid cooling tower to maximize efficiency and opportunities for “free cooling”
- Providing multi-level switches that control interior lighting.
- Providing daylight level sensors in spaces along the building perimeter with window glazing.



COLLEGE OF NATURAL SCIENCES RESEARCH & EDUCATION GREENHOUSE

CNS RESEARCH & EDUCATION GREENHOUSES

<https://www.umass.edu/sustainability/green-campus/cns-research-education-greenhouse>

DESIGN & CONSTRUCTION DIVISION www.umass.edu/fp

CAMPUS PLANNING DIVISION www.umass.edu/cp

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SUSTAINABILITY FEATURES

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ENVIRONMENTAL PERFORMANCE ADVISORY COMMITTEE
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