The University of Vermont

GREEN BUILDING at UVM
Letter from the President
September 2013

The University of Vermont has been a leader in environmental education, research, and practice for more than four decades. We established the nation’s first interdisciplinary program devoted to study of the environment in 1972, and we have increased our commitment to environmental science, research, and environmental studies significantly over the last forty years. Appropriately, the buildings that house students, faculty, and staff at UVM are themselves exemplars of environmental and sustainable thinking and design.

The University of Vermont campus is home to more than one million square feet of space, in 12 buildings, that meet the U.S. Green Building Council’s stringent Leadership in Energy and Environmental Design (LEED) guidelines. Examples of our campus commitment to high performance green buildings are highlighted on these pages. Please take a few minutes to learn more about the care, creativity, and innovation UVM devotes to minimizing the ecological impact of its footprint.

Sincerely,

Tom Sullivan, President

Over the last decade, the University of Vermont has invested in constructing new, welcoming, high-performance facilities, and in renovating existing facilities using innovative technologies and high standards.

In 2005 the University adopted a green building policy stating that all new construction and major renovation projects must be formally commissioned (quality and performance check), and must adhere to the guidelines of the U.S. Green Building Council Leadership in Energy and Environment (LEED) rating systems. These guidelines address use of energy, water, materials, and land use, as well as indoor air quality and more. In 2006 the University appointed a green building coordinator, and 2007 the policy was upgraded to require achieving a minimum level of LEED Silver equivalent.

Since the University’s green building policy took effect, eleven major construction and renovation projects have attained LEED certification: four received Silver, six Gold, and one Platinum.

Legend

- U.S. Green Building Council®
- LEED Certification
- Energy use reduction
- Water use reduction
- Construction and demolition waste diverted from landfill
- Locally-sourced building materials
- Windows, new and enlarged
Seventeen solar trackers provide 30% of Aiken’s total energy needs, by cost.

Aiken’s roof is an active research laboratory for learning about green roof technologies.

The EcoMachine™ relies on plants and micro-organisms to treat all the waste water in the building.

THE GEORGE D. AIKEN CENTER
The George D. Aiken Center is the home of the Rubenstein School of Environment and Natural Resources. The Rubenstein community created a vision for their building that included a “deep energy retrofit” and transformation of the existing structure into a living building: one that minimizes, cleans, and re-uses wastewater, monitors energy use, and provides ample natural lighting and ventilation. Over the past decade this “learning laboratory” has engaged nearly 500 students with research and analysis in an internship-based course that covers all aspects of what it means to be a “green” building. These opportunities continue in the newly renovated Aiken Center, with a focus on learning from the data coming from the EcoMachine™, green roof, and solar photovoltaic trackers associated with the building.

PLATINUM level of certification – 2013
- 74% water use reduction
- 65% energy use reduction
- 86% construction and demolition waste diverted from landfill
- 200 new or enlarged windows
THE DUDLEY H. DAVIS CENTER

The Dudley H. Davis Center serves as the campus student union and is a hub of activity for students, faculty, staff, alumni, visitors and the local community. It includes offices for student life, clubs and organizations; dining facilities; conference and meeting rooms; the University bookstore and other retail shops. The Davis Center also has a built-in refrigerated food compost collection area, and an intensive green roof. The Davis Center is student focused; complements the university’s academic mission; celebrates and supports social justice; and is a community-centered environmental college union.

Located at the top of Main Street, Davis Center is a new front door to the campus and to Burlington itself.

The Building Dashboard shows occupants how much energy and water the building is using, and encourages them to reduce their own use.

The Grand Maple Ballroom provides a flexible space for a wide variety of functions, including an annual yoga conference.

UVM’s commitment to local food is evident in the Davis Center.
JAMES M. JEFFORDS HALL

James M. Jeffords Hall houses the programs in the Departments of Plant Biology and Plant & Soil Science of the College of Agriculture and Life Sciences (CALS). The building contains research and teaching laboratories and support space, faculty and student offices, and related meeting spaces. It provides physical connections to transport plants and material to the adjacent greenhouses, and employs innovative energy recovery and efficiency technologies to reduce the energy consumption of this sophisticated research facility. Using sensors to detect occupancy and daylight, for example, has been effective in minimizing energy use in the seven teaching laboratories and three general purpose classrooms on the first floor.

THE COURTYARD AT GIVEN

The Courtyard at Given is a four-story office building-within-a-building, occupied by the UVM College of Medicine. The design challenge to bring natural light from the glass roof that covers what was once an exterior courtyard is achieved by dividing the building into two pods connected by walkways and a large open stair. Light reflects down through the volume of space between the two buildings into the interior offices.

GOLD Level of Certification – 2010
- 30% water use reduction
- 87% of construction and demolition waste was diverted from the landfill
- 40% of materials from within 500 miles

GOLD Level of Certification – 2011
- 28% energy use reduction
- 50% water use reduction
- 90% of construction and demolition waste diverted from the landfill
The exterior of the Davis Center celebrates materials from the State of Vermont, including both Vermont brick and slate.
The twenty-five ranch-style houses previously on the project site were deconstructed by crews from Re-Source Job Skills Training program, salvaging more than 219 tons of recyclable materials, including these roof trusses.

UNIVERSITY HEIGHTS RESIDENTIAL LEARNING COMPLEX

The first residential complex to be constructed on campus in over three decades, the north and south complexes of University Heights house the Honors College, and the GreenHouse Program respectively. Each complex accommodates 400 students in eighteen different room types, as well as visiting faculty apartments, a game room with kitchen amenities, a multi-purpose room, academic offices and classroom facilities.

A green roof was built into each of the complexes, daylighting was maximized, and two composting toilets were installed in the south complex.

Carefully designed landscaping created a new residential quad and incorporated alternative stormwater management, such as green roofs and vegetated swales that end in an outdoor amphitheater and a small wetland area.

Sally McCay
Lorie Clairmont
Lorie Clairmontz

GOLD Level of Certification — 2007

- 68% energy use reduction
- 32% water use reduction
- 75% of construction and demolition waste diverted from the landfill
- 20% of materials from within 500 miles
**THE JOSEPH E. CARRIGAN WING BUILDING**

The Carrigan Wing provides a sustainable and efficient space for the Department of Nutrition and Food Science. The Wing was designed and constructed while planning for the Davis Center was underway, and when it became clear that the original Carrigan Building would need to be de-constructed. The new research space includes washable and sealed surfaces, live steam, and specialized equipment stations, walk-in refrigerators, fume hoods, and innovative ventilation to respond to the south-facing glazed facade.

**LATTIE COOR HOUSE**

The Lattie Coor House is the home of the Dean’s office for the College of Arts and Sciences. The goals of the renovation project were to provide an ecologically sensitive design for an addition, and to maximize building system efficiency. New mechanical, heating, and ventilation systems were programmed to optimize seasonal temperature fluctuations, and insulated, double-pane, low-E, argon-filled glazing was installed in all of the original double-hung historic windows. The building was the first LEED-planned historic renovation on campus.
More than 650 new, energy efficient double-pane, low-E, argon filled, fiberglass framed windows were installed. These allow for more than 95% of regularly occupied spaces to have direct exterior views. The complex also boasts a beautiful central atrium space that floods the commons area with daylight.

The Vermont Kosher Kitchen celebrates diversity and local food.

REDSTONE DINING HALL RENOVATION

The renovation of the Redstone Dining Hall, within the Mason/Simpson/Hamilton Residential Complex, included a complete re-design of the facility, and a new internal entryway and commons area for the complex. The upgrades to the dining space provided new windows, “food station neighborhoods” in the servery areas, additional restrooms, and mechanical, electrical and plumbing upgrades. All food service equipment was replaced, seventy-seven percent of which is Energy Star™ qualified. A separate Kosher food service and preparation area was also incorporated into the kitchen. Locally harvested wood from the University’s Jericho Research Forest was hand selected and incorporated into the counters and dining area.

SILVER Cl Level of Certification – 2013

- 33% energy use reduction
- 21% water use reduction
- 80% of construction and demolition waste diverted from the landfill

SILVER Level of Certification – 2007

- 40% energy use reduction
- 80% of construction and demolition waste diverted from the landfill
- 51% of materials from within 500 miles
COLCHESTER RESEARCH FACILITY

The Colchester Research Facility was renovated for the College of Medicine to provide additional research and laboratory space. The work included extensive revision to the heating, ventilation and air conditioning, electrical systems, reconfiguration of laboratories and offices, and improvements to floor and ceiling finishes. This was the first USGBC LEED Commercial Interiors project for the University, allowing for the flexible fit-up of interior space only.

SILVER CI Level of Certification – 2008

- 41% water use reduction
- 35% energy use reduction
- 32% of materials from within 500 miles

TERRILL BUILDING

The Bertha M. Terrill Building is home to the Department of Animal Science, and the Nutrition unit from the Department of Nutrition and Food Science. The building, constructed in 1950, was the first location of the home economics department, now known as Family and Consumer Sciences.

Renovations included replacing an ineffective heating and ventilation system, providing central air conditioning, new exterior windows, and the expanding of the quantity of Animal Science laboratory facilities. The historic building was incorporated into the atrium of the Davis Center, creatively melding past and future of the University.

GOLD Level of Certification – 2009

- 36% water use reduction
- 48% energy use reduction
- 63% construction and demolition waste diverted from the landfill
<table>
<thead>
<tr>
<th>Certification Level</th>
<th>Building Name</th>
<th>Certification Date</th>
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<tbody>
<tr>
<td>LEED Platinum (1)</td>
<td>George D. Aiken Center</td>
<td>2012</td>
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<tr>
<td>LEED Gold (6)</td>
<td>University Heights Student Residential Learning Complex</td>
<td>2006</td>
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<td>Dudley H. Davis Center</td>
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<td>Lattie Coor House</td>
<td>2008</td>
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<td></td>
<td>Bertha M. Terrill Building</td>
<td>2009</td>
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<td>The Courtyard at Given</td>
<td>2010</td>
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<td>James M. Jeffords Hall</td>
<td>2011</td>
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<td>LEED Silver (4)</td>
<td>Joseph E. Carrigan Wing</td>
<td>2005</td>
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<td></td>
<td>Wing/Davis/Wilks Residential Complex</td>
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<td>Colchester Research Facility</td>
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<td>Simpson (Redstone) Dining Hall Renovation</td>
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<td>Pending (1)</td>
<td>Harris/Millis Residential Complex</td>
<td>2014</td>
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The curriculum-related landscape of Jeffords Hall provides on-site opportunities to apply research methods learned within the classroom.