

# Carole Weinstein International Center



*LEED NC v2.2 Gold 2015*



**100%** Multi-occupant spaces have adjustable thermostats and lighting



**92%** Construction waste diverted from landfills through reuse and recycling



**44%** Reduced water usage in the building



**99%** Recycled steel used in construction

**39 / 69 points**

- Sustainable Sites 8 / 14
- Water Efficiency 4 / 5
- Energy & Atmosphere 7 / 17
- Materials & Resources 5 / 13
- Indoor Environmental Quality 10 / 15
- Innovation 5 / 5





*LEED (Leadership in Energy and Environmental Design) is an internationally recognized green building certification system developed by the U.S. Green Building Council (USGBC). LEED provides third-party verification that a building was designed and built using strategies that save energy, conserve water, reduce emissions, improve air quality, and steward the land. Credits achieved in six areas are awarded points that determine the level of certification.*

*The International Center is LEED Gold certified.*

Completed in 2010, the Carole Weinstein International Center showcases the University's commitment to international education and environmentally friendly construction. At approximately 55,000 square feet, the center is a widely utilized space for all of the University of Richmond's five schools. This \$13 million project houses both co-curricular and curricular activities.

Named in honor of Carole M. Weinstein for her generous support of international education at the University, the building holds twelve departments and programs centering on this idea. The building houses the Office for International Education, the Spatial Analysis Lab, the Global Studio Technology Lab, Passport Cafe, seven high-tech classrooms, faculty offices, two art galleries, and an outdoor classroom.

## ***Project Team***

***University of Richmond***  
Owner

***Glavé and Holmes Architecture***  
Architect

***Taylor & Parrish Construction Inc.***  
Contractor

***PACE Collaborative, P.C.***  
HVAC Engineer

***Draper Aden & Associates***  
Civil Engineer

***Higgins and Gersteinmaier***  
Landscape Architect

***Sustainable Design Consulting***  
LEED Consultant

***PACE Collaborative, P.C.***  
Electrical Engineer



# Sustainable Sites

The building landscape, hardscape, and exterior of the Carole Weinstein International Center were designed to limit environmental impacts.

The building is constructed on previously developed land, thus reducing the destruction of natural ecosystems. Landscaping at the site utilizes native and adaptive species to reduce reliance on irrigation and decrease water demand.

This project earned credit for community connectivity because of its proximity to many basic services; locating a project within walking distance of services, such as a library or restaurant, limits the building occupants' need to rely on vehicles for travel. The building is also located within walking distance of bus stops and includes priority parking places for fuel efficient vehicles.

This building utilizes a best management practice (BMP) to treat storm water runoff; 90% of the average rainfall to this area is managed by using Westhampton Lake to slow down runoff and allow sediment to settle out of the water.

The heat island effect, where buildings absorb and retain heat from the sun, is an issue for many developed areas; it is caused when dark surfaces such as roofs absorb heat energy from the sun and subsequently raise the temperature of the building. In an effort to prevent this, the roof of the building is white and reflects more heat than a dark roof.

Finally, outdoor lighting is low-power and only located at main entrances and exits to minimize light pollution.



## Community Connectivity

1. Carole Weinstein International Center
2. Greek Theatre
3. Cannon Memorial Chapel
4. US Postal Service
5. Harnett Museum of Art
6. Tyler's Grill
7. Boatwright Library
8. Disc Golf Course
9. ETC Convenience Store
10. The Cellar
11. Tyler Haynes Commons



# Water Efficiency

Landscaping water usage was reduced through the use of native and adaptive plants, which require no watering during normal periods of rain.

Through the use of water conservation practices, this building was also designed to use 44.3% less water than it would have if conventional fixtures and practices were used. Water-free urinals, dual-flushing toilets, and other low-flow fixtures significantly decreased water use.

That amounts to at least 84,331 gallons saved every year, which is the same amount of water required to produce:

 28,110 sheets of paper

or

 1,686 eggs

or

 6,487 oranges

*Please print this only if necessary. If printing is required, please print double sided and recycle when finished.  
Office for Sustainability / sustainability.richmond.edu*



## Energy & Atmosphere

Extensive commissioning measures were used during this project to ensure that the building was built to design specifications and is operating as efficiently as it was designed to operate.

**!** Remember to turn your classroom and office lights off when you leave. If it's a bright day outside, consider leaving the lights off and taking advantage of natural light.

Commissioning included pre-build analysis of the project as well as follow-up after completion.

According to energy models for the

building, the Carole Weinstein International Center uses 8.6% less energy than a traditionally designed building without energy efficient technologies.

The International Center's annual energy savings equal the amount of energy needed to power 7 homes for a year.

The majority of this energy conservation is achieved through the building's cooling system



which uses abundantly available energy to freeze tanks (pictured above) of water at night; the ice is then used to cool the building during the day. All refrigerants utilized in the building are free of chlorofluorocarbons (CFCs), and help prevent climate change through little to no emission of ozone-depleting compounds. Of the energy that is consumed on site, 35% comes from green power sources.



## Materials & Resources

Recycling centers are located throughout the Carole Weinstein International Center to ensure easy access to environmentally preferable methods of waste disposal.

### **Construction Waste Diverted From Landfills Through Reuse or Recycling**



Ten percent of the construction materials in the building are made from recycled materials. Additionally, 10% of the building materials are regional, meaning the materials were extracted, harvested, or recovered and manufactured within 500 miles of the site. The concrete used in the building is 47% recycled by weight, and 100% of it is regional.

Bricks used in the building were produced at the Mid-Atlantic Factory, 208 miles from the University and the materials used were harvested within 500 miles. At least 50% of the wood products used in the building are certified by the Forest of Stewardship Council's principles and criteria, standards based on environmental appropriateness and economically viable forest management.



## Indoor Environmental Quality

The building was designed to optimize indoor environment quality, which positively impacts occupants' health and comfort while minimizing the environmental impact of the project. Smoking is prohibited within 25 feet of all campus buildings to preserve indoor air quality. Plans were put in place during construction to prevent the contamination of the air, through the use of low-contaminant materials, strategic scheduling of processes involving problematic substances, regular cleaning, and other methods. Emissions and levels of volatile organic chemicals (VOC) are minimized in all sealants, adhesives, paints, carpets, coatings, and floorings.

Outdoor ventilation is monitored and sensors are used to monitor indoor carbon dioxide levels. All regularly occupied spaces in the

**!** *Save energy by adjusting your office's thermostat up a couple degrees in the summer and down a couple degrees in the winter. Don't forget to change it five degrees either way when leaving for the day.*

building have both temperature and light control devices, promoting comfort and avoiding unnecessary usage of energy. Thermostats are connected to a central control system which

sets a seasonally appropriate building set point (represented by "0" on the thermostat),



building occupants are able to raise or lower the temperature by a few degrees in their space.

To further improve the building experience for occupants 90% of regularly occupied spaces have views of the outside.



## Innovation & Design

The cleaning products used to maintain the building are green products. These cleaning agents minimize levels of toxic chemicals, which can be harmful when they are exposed to humans, animals, and the environment. An integrated pest management program has been put in place in the Carole Weinstein International Center, which uses regular inspection, non-toxic methods of prevention, and least-toxic options

in pest controlling substances to avoid and manage problems with insects, rodents, and other pests.

Finally, the project earned credit because of active involvement by a LEED accredited professional (LEED AP). Building construction was overseen by Andrew McBride, LEED AP.

# Full Score Card

## SUSTAINABLE SITES AWARDED: 8 / 14

|        |   |       |
|--------|---|-------|
| SSc1   | Site selection  | 1 / 1 |
| SSc2   | Development density and community connectivity                        | 1 / 1 |
| SSc3   | Brownfield redevelopment  | 0 / 1 |
| SSc4.1 | Alternative transportation - public transportation access             | 1 / 1 |
| SSc4.2 | Alternative transportation - bicycle storage and changing rooms       | 0 / 1 |
| SSc4.3 | Alternative transportation - low emitting and fuel efficient vehicles | 1 / 1 |
| SSc4.4 | Alternative transportation - parking capacity                         | 1 / 1 |
| SSc5.1 | Site development - protect or restore habitat                         | 0 / 1 |
| SSc5.2 | Site development - maximize open space                                | 1 / 1 |
| SSc6.1 | Stormwater design - quantity control                                  | 0 / 1 |
| SSc6.2 | Stormwater design - quality control                                   | 1 / 1 |
| SSc7.1 | Heat island effect - non-roof   | 0 / 1 |
| SSc7.2 | Heat island effect - roof   | 1 / 1 |
| SSc8   | Light pollution reduction   | 0 / 1 |

## WATER EFFICIENCY AWARDED: 4 / 5

|        |   |       |
|--------|---|-------|
| WEc1.1 | Water efficient landscaping - reduce by 50%                         | 1 / 1 |
| WEc1.2 | Water efficient landscaping - no potable water use or no irrigation | 1 / 1 |
| WEc2   | Innovative wastewater technologies                                  | 0 / 1 |
| WEc3.1 | Water use reduction - 20% reduction                                 | 1 / 1 |
| WEc3.2 | Water use reduction - 30% reduction                                 | 1 / 1 |

## ENERGY & ATMOSPHERE AWARDED: 7 / 17

|      |                              |        |
|------|------------------------------|--------|
| EAc1 | Optimize energy performance  | 4 / 10 |
| EAc2 | On-site renewable energy     | 0 / 3  |
| EAc3 | Enhanced commissioning       | 1 / 1  |
| EAc4 | Enhanced refrigerant Mgmt    | 1 / 1  |
| EAc5 | Measurement and verification | 0 / 1  |
| EAc6 | Green power                  | 1 / 1  |

## MATERIAL & RESOURCES AWARDED: 5 / 13

|        |   |       |
|--------|---|-------|
| MRc1.1 | Building reuse - maintain 75% of existing walls, floors & roof    | 0 / 1 |
| MRc1.2 | Building reuse - maintain 95% of existing walls, floors & roof    | 0 / 1 |
| MRc1.3 | Building reuse - maintain 50% of interior non-structural elements | 0 / 1 |
| MRc2.1 | Construction waste Mgmt - divert 50% from disposal                | 1 / 1 |
| MRc2.2 | Construction waste Mgmt - divert 75% from disposal                | 1 / 1 |
| MRc3.1 | Materials reuse - 5%  | 0 / 1 |

## MATERIAL & RESOURCES CONTINUED

|        |   |       |
|--------|---|-------|
| MRc3.2 | Materials reuse - 10%   | 0 / 1 |
| MRc4.1 | Recycled content - 10% (post-consumer + 1/2 pre-consumer)                 | 1 / 1 |
| MRc4.2 | Recycled content - 20% (post-consumer + 1/2 pre-consumer)                 | 0 / 1 |
| MRc5.1 | Regional materials - 10% extracted, processed and manufactured regionally | 1 / 1 |
| MRc5.2 | Regional materials - 20% extracted, processed and manufactured regionally | 1 / 1 |
| MRc6   | Rapidly renewable materials   | 0 / 1 |
| MRc7   | Certified wood  | 0 / 1 |

## INDOOR ENVIRONMENTAL QUALITY AWARDED: 10 / 15

|        |  |       |
|--------|--|-------|
| EQc1   | Outdoor air delivery monitoring                                | 1 / 1 |
| EQc2   | Increased ventilation  | 0 / 1 |
| EQc3.1 | Construction IAQ Mgmt plan - during construction               | 0 / 1 |
| EQc3.2 | Construction IAQ Mgmt plan - before occupancy                  | 1 / 1 |
| EQc4.1 | Low-emitting materials - adhesives and sealants                | 1 / 1 |
| EQc4.2 | Low-emitting materials - paints and coatings                   | 1 / 1 |
| EQc4.3 | Low-emitting materials - carpet systems                        | 1 / 1 |
| EQc4.4 | Low-emitting materials - composite wood and agrifiber products | 0 / 1 |
| EQc5   | Indoor chemical and pollutant source control                   | 0 / 1 |
| EQc6.1 | Controllability of systems - lighting                          | 1 / 1 |
| EQc6.2 | Controllability of systems - thermal comfort                   | 1 / 1 |
| EQc7.1 | Thermal comfort - design                                       | 1 / 1 |
| EQc7.2 | Thermal comfort - verification                                 | 1 / 1 |
| EQc8.1 | Daylight and views - daylight 75% of spaces                    | 0 / 1 |
| EQc8.2 | Daylight and views - views for 90% of spaces                   | 1 / 1 |

## INNOVATION AWARDED: 5 / 5

|      |                              |       |
|------|------------------------------|-------|
| IDc1 | Innovation in design         | 4 / 4 |
| IDc2 | LEED Accredited Professional | 1 / 1 |

**TOTAL** 39 / 69

# Additional Resources

**Carole Weinstein International Center**  
[international.richmond.edu/campus/center/](http://international.richmond.edu/campus/center/)

**Office for Sustainability**  
[sustainability.richmond.edu/](http://sustainability.richmond.edu/)  
[www.facebook.com/BeAGreenSpider](https://www.facebook.com/BeAGreenSpider)  
[twitter.com/BeAGreenSpider](https://twitter.com/BeAGreenSpider)

**LEED Building Case Studies**  
[sustainability.richmond.edu/buildings](http://sustainability.richmond.edu/buildings)

**University Facilities**  
[facilities.richmond.edu](http://facilities.richmond.edu)