



THE AMERICAN UNIVERSITY

Cassell Hall

LEED-NC v2009

4400 Massachusetts Ave NW, Washington D.C. 20016

## BUILDING HISTORY

Cassell Hall, opened in Fall 2013, is the first AU residence hall built on campus since Centennial Hall opened in 1987. The building was designed in an L-shape with an eight-story wing and a seven-story wing, adding 358 suite-style beds to campus.

AU announced in January 2013 the building would be named Cassell Hall in honor of the Cassell family. The naming recognizes made by Jack Cassell (SOC/BA '77) and the Cassell family. The donation supported the residence hall's construction and AU's Department of Athletics and Recreation.

Cassell houses sophomore, junior, and senior students in 4 person or 6 person suite-style housing. Each suite has a furnished common living area as well as individual bathrooms for the suite. Cassell Hall also features an 8,000-square-foot fitness facility, named the Stafford H. Cassell Jr. Fitness Center. The building is located adjacent to the President's Residence and across from McDowell Hall.

## PROJECT HIGHLIGHTS

### LEED (™) Facts

Cassell Hall  
The American University  
2016



Location.....	4400 Massachusetts Ave NW, Washington D.C. 20016
Rating System.....	LEED-NC v2009
Certification Achieved .....	Silver
Total Points Achieved.....	54

Sustainable Sites.....	22/26
Water Efficiency.....	4/10
Energy and Atmosphere .....	11/35
Materials and Resources.....	4/14
Indoor Environmental Quality.....	7/15
Innovation in Design.....	6/6

**100%** *Amount of green electricity used in the building*

**98%** *Percent of construction waste was diverted from landfills*

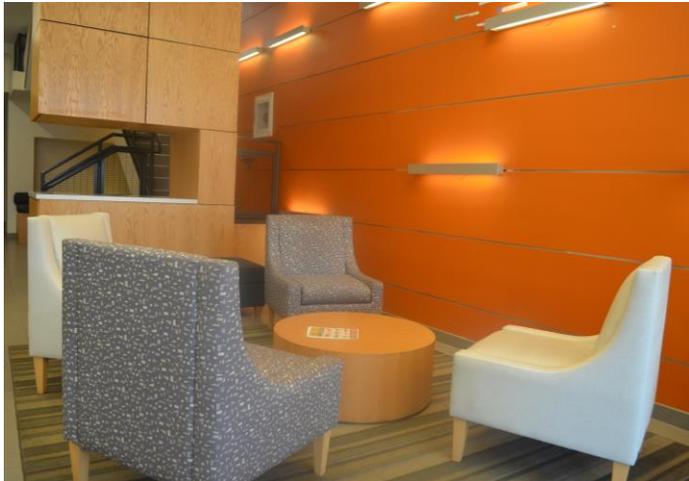
**46%** *Reduction in water usage compared to a standard building*

**29%** *Reduction in greenhouse gas emissions compared to a standard building*

Please only print this project if necessary. If printing is required, please print double sided and recycle when finished.

# PROJECT TEAM

Owner: The American University	Mechanical Engineer: Van Der Weil Engineers
Architect: Little Architectural Consulting	Civil Engineer: Wiles Mensch Corporation
Contractor: Grunley Construction Company, Inc.	Structural Engineer: Tadjer Cohen, Edelson Association, and Restl Designers
LEED Professional: The American University	Commissioning Agent: Brinjac Engineering



# ADDITIONAL RESOURCES

Office of Sustainability:

[www.american.edu/sustainability/](http://www.american.edu/sustainability/)

University Facilities:

[www.american.edu/facilities/](http://www.american.edu/facilities/)

U.S. Green Building Council:

[www.usgbc.org](http://www.usgbc.org)

GBCI:

[www.gbci.org](http://www.gbci.org)

View details for all of AU's LEED buildings:

[www.gbgl.org/collections/18029](http://www.gbgl.org/collections/18029)



# SUSTAINABLE SITES

A building's location and development are fundamental components of sustainable building practices because they can cause significant environmental impacts. Selecting a site that is well connected to public transportation can decrease the effects of air pollution and greenhouse gas emissions, as well as reduce vehicle reliance. Cassell Hall is located on the north side of the American University campus, in a dense suburban area with easy walkable access to amenities, including restaurants, banks, places of worship, and retail. The building is well connected to the rest of Washington, DC by metro bus and the university shuttle, which runs to the Tenleytown-AU metro. In addition to public transportation options, covered and secure bicycle storage inside Cassell encourages easy alternative commuting.

Additionally, design features that minimize run off and the heat island effect lessen the environmental impact of the building. Cassell includes nearly 5,000 square feet of ground level green roof above the fitness center, which reduces storm water runoff and mitigates the heat island effect. Excess storm water run-off is filtered through a storm filter, removing pollutants, such as fine solids and total nutrients, and is then captured by a 15,000 gallon cistern and used for irrigation.

Native and adaptive plants are used in the project landscaping to help reduce irrigation needs because they require less water. More than half of the landscaping around Cassell Hall is home to native plant species which help protect and restore habitat as well as reduce runoff.



# WATER EFFICIENCY

Reducing potable water use in buildings can help improve environmental well-being by decreasing the amount of water withdrawn from reservoirs and aquifers. Water efficiency, both indoors and outdoors, reduces potable water waste and the amount of water sent back to energy intensive wastewater treatment facilities as well as protecting the natural water cycle.

Water efficient plumbing fixtures are used throughout the residence hall and fitness center. The lavatory faucets, toilets, and urinals all conserve potable water by having flush and flow rates lower than standard fixtures. Through the use of efficient fixtures, Cassell also uses 46 percent less water indoors than a standard building.



# ENERGY AND ATMOSPHERE

Green buildings provide occupants with a comfortable indoor environment that uses energy efficiently. Sustainable building design, efficient equipment, and energy conserving practices minimize the energy used for heating, cooling, ventilating, and illuminating building spaces. American University is committed to reducing energy usage on campus as part of its effort to reduce greenhouse gas emissions.

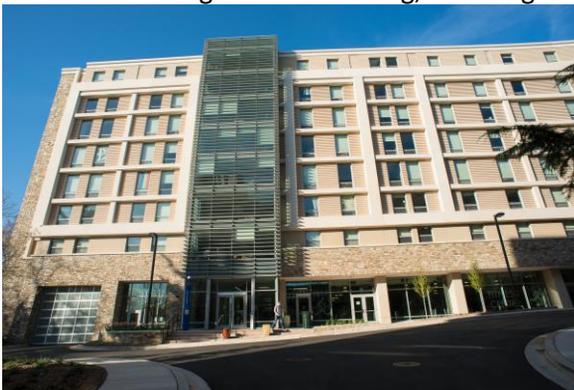
Cassell Hall hosts a rooftop solar thermal system for heating water in the building. Electricity consumption is reduced through the use of efficient lighting fixtures which results in 18 percent less energy use than a conventional building. Additionally, because American University purchases renewable energy for all campus electricity use, 100 percent of the building's electricity consumption is complimented with renewable energy credits. Cassell was also commissioned to verify that the building was designed, constructed, and operated as intended.



# MATERIALS AND RESOURCES

Using sustainably sourced, recycled, and reused building materials reduces the environmental impact of construction while improving the building environment. Sustainable materials are responsibly extracted and processed, or locally sourced, thereby minimizing air pollution due to production and transportation.

During the construction of Cassell, 98 percent of construction waste was diverted from going to a landfill through recycling and material reuse. Over 10 percent of the material used in the building is recycled, including construction material, such as rebar, and hardware. Local materials account for 25 percent of the total construction including material in the ceiling and wall structure. All building waste was sent to a recycling center 25 miles away in Virginia. Additionally, Cassell Hall uses low emitting adhesives, sealants, paints, and carpets to improve air quality and reduce occupant exposure to chemicals. Zero waste containers can be found throughout the building, including a compost bin and recycling bins for paper, bottles, and cans.



# INDOOR ENVIRONMENTAL QUALITY

Indoor environmental quality has a significant impact on a person's wellbeing because Americans spend about 90 percent of their time indoors. A healthy indoor environment positively impacts the way people learn, work, and live in a building. Air quality, thermal comfort, acoustics, and lighting all play a role in the productivity, comfort, safety, and security of building occupants.

Cassell has numerous features that help improve air quality to ensure a healthy indoor environment. All paint and coating products inside the building are completely VOC (volatile organic compound) free. In addition, carpet tiles used throughout the building are low VOC. These compounds can affect occupants' long-term health and lead to respiratory and immune complications. Ventilation and air filtration are used to eliminate exposure to these potentially hazardous particulates and pollutants. Having an abundance of windows provides occupants a connection to the outdoors. Over 90% of the building is accessible to views of the outdoors, reducing occupants' stress and increasing productivity.



# INNOVATION IN DESIGN

The innovation in design section of LEED recognizes design and construction features that go beyond sustainable design standards. The Cassell project team included several innovative sustainability features during the building's design and construction.

American University purchases 100% Renewable Energy credits to compliment campus electricity consumption, therefore all the electricity used in Cassell is sourced from green power. Outreach efforts through sustainability focused building signage and campus sustainability tours provide campus visitors with the opportunity to learn more about the university's green buildings. Cassell's maintenance also follows LEED's green housekeeping standards, which uses the lowest concentration necessary for all chemical cleaners.



# LEED SCORE CARD

## LEED FOR NEW CONSTRUCTION & MAJOR RENOVATIONS (V2009)

ATTEMPTED: 52, DENIED: 1, PENDING: 0, AWARDED: 54 OF 109 POINTS

	<b>SUSTAINABLE SITES</b>	20 OF 26		<b>MATERIALS AND RESOURCES</b>	CONTINUED
	SSp1 Construction Activity Pollution Prevention	Y		MRc5 Regional Materials	2 / 2
	SSc1 Site Selection	1 / 1		MRc6 Rapidly Renewable Materials	0 / 1
	SSc2 Development Density and Community Connectivity	5 / 5		MRc7 Certified Wood	0 / 1
	SSc3 Brownfield Redevelopment	0 / 1		<b>INDOOR ENVIRONMENTAL QUALITY</b>	7 OF 15
	SSc4.1 Alternative Transportation-Public Transportation Access	6 / 6		IEQp1 Minimum IAQ Performance	Y
	SSc4.2 Alternative Transportation-Bicycle Storage and Changing Room	1 / 1		IEQp2 Environmental Tobacco Smoke (ETS) Control	Y
	SSc4.3 Alternative Transportation-Low-Emitting and Fuel-Efficient V	0 / 3		IEQc1 Outdoor Air Delivery Monitoring	0 / 1
	SSc4.4 Alternative Transportation-Parking Capacity	2 / 2		IEQc2 Increased Ventilation	0 / 1
	SSc5.1 Site Development-Protect or Restore Habitat	1 / 1		IEQc3.1 Construction IAQ Mgmt Plan-During Construction	1 / 1
	SSc5.2 Site Development-Maximize Open Space	1 / 1		IEQc3.2 Construction IAQ Mgmt Plan-Before Occupancy	0 / 1
	SSc6.1 Stormwater Design-Quantity Control	1 / 1		IEQc4.1 Low-Emitting Materials-Adhesives and Sealants	0 / 1
	SSc6.2 Stormwater Design-Quality Control	1 / 1		IEQc4.2 Low-Emitting Materials-Paints and Coatings	1 / 1
	SSc7.1 Heat Island Effect, Non-Roof	0 / 1		IEQc4.3 Low-Emitting Materials-Flooring Systems	1 / 1
	SSc7.2 Heat Island Effect, Roof	1 / 1		IEQc4.4 Low-Emitting Materials-Composite Wood and Agrifiber Products	0 / 1
	SSc8 Light Pollution Reduction	0 / 1		IEQc5 Indoor Chemical and Pollutant Source Control	1 / 1
	<b>WATER EFFICIENCY</b>	4 OF 10		IEQc6.1 Controllability of Systems-Lighting	0 / 1
	WEp1 Water Use Reduction, 20% Reduction	Y		IEQc6.2 Controllability of Systems-Thermal Comfort	1 / 1
	WEc1 Water Efficient Landscaping	0 / 4		IEQc7.1 Thermal Comfort-Design	1 / 1
	WEc2 Innovative Wastewater Technologies	0 / 2		IEQc7.2 Thermal Comfort-Verification	0 / 1
	WEc3 Water Use Reduction	4 / 4		IEQc8.1 Daylight and Views-Daylight	0 / 1
				IEQc8.2 Daylight and Views-Views	1 / 1
	<b>ENERGY AND ATMOSPHERE</b>	10 OF 35		<b>INNOVATION IN DESIGN</b>	6 OF 6
	EAp1 Fundamental Commissioning of the Building Energy Systems	Y		IDc1.1 Innovation in Design - Green Power	1 / 1
	EAp2 Minimum Energy Performance	Y		IDc1.1 Innovation in Design	0 / 1
	EAp3 Fundamental Refrigerant Mgmt	Y		IDc1.2 Innovation in Design - Green Cleaning	1 / 1
	EAc1 Optimize Energy Performance	3 / 19		IDc1.2 Innovation in Design	0 / 1
	EAc2 On-Site Renewable Energy	1 / 7		IDc1.3 Innovation in Design - Green Building Education	1 / 1
	EAc3 Enhanced Commissioning	2 / 2		IDc1.3 Innovation in Design	0 / 1
	EAc4 Enhanced Refrigerant Mgmt	2 / 2		IDc1.4 Innovation in Design - WEC3	1 / 1
	EAc5 Measurement and Verification	0 / 3		IDc1.4 Innovation in Design	0 / 1
	EAc6 Green Power	2 / 2		IDc1.5 Innovation in Design - Exemplary Performance SSc4.1	1 / 1
				IDc1.5 Innovation in Design	0 / 1
				IDc2 LEED® Accredited Professional	1 / 1
	<b>MATERIALS AND RESOURCES</b>	4 OF 14		<b>REGIONAL PRIORITY CREDITS</b>	3 OF 3
	MRp1 Storage and Collection of Recyclables	Y		SSc5.1 Site Development-Protect or Restore Habitat	1 / 1
	MRc1.1 Building Reuse-Maintain Existing Walls, Floors and Roof	0 / 3		SSc6.1 Stormwater Design-Quantity Control	1 / 1
	MRc1.2 Building Reuse - Maintain 50% of Interior Non-Structural Ele	0 / 1		EAc2 On-Site Renewable Energy	1 / 1
	MRc2 Construction Waste Mgmt	1 / 2			
	MRc3 Materials Reuse	0 / 2			
	MRc4 Recycled Content	1 / 2			
<b>TOTAL</b>					54 OF 109