

PROJECT PROFILE

LEED® Facts

Glenn Research Center
Building 60 Business Service Center
Cleveland, OH

LEED® for New Construction - Version 2.2
Certification Awarded December 12, 2011

Silver 37*

Sustainable Sites 8/14

Water Efficiency 4/5

Energy & Atmosphere 7/17

Materials & Resources 6/13

Indoor Environmental Quality 10/15

Innovation & Design 2/5

*Out of a possible 69 points

Glenn Research Center
Building 60 Business Service Center
Cleveland, Ohio

LEED for New Construction

30% Recycled Content

45% Less Energy

52% Reduced Potable Water Use

94% Line of Sight Views for Occupants

95% Construction Waste Diverted

100% Reused Building Structure



NASA GLENN RESEARCH CENTER
BUILDING 60
Cleveland, Ohio

HAS SUCCESSFULLY ACHIEVED THE FOLLOWING LEVEL OF CERTIFICATION ESTABLISHED BY THE U.S. GREEN BUILDING COUNCIL
IN THE LEED GREEN BUILDING RATING SYSTEM™ AND VERIFIED BY THE GREEN BUILDING CERTIFICATION INSTITUTE.

LEED FOR NEW CONSTRUCTION

SILVER

R.

December 2011

Peter Tompsett

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U.S. GREEN BUILDING COUNCIL

PETER TOMPSETT, PRESIDENT
GREEN BUILDING CERTIFICATION INSTITUTE

PROJECT PROFILE

Building 60 Business Service Center NASA's First LEED Silver Rehabilitation



PROJECT DESCRIPTION

The Building 60 renovation successfully repurposed the former Center Library into a Business Service Center which is credited as being NASA's first LEED Silver rehabilitation. The facility features a demand control ventilation system, an energy recovery wheel for the pre-treatment of outside air, high performance window glazing, enhanced R-value insulation in roof/walls, premium efficient motors and variable speed motor drives for HVAC equipment and hot water, and high efficiency lighting with occupancy sensor controls and daylight sensor controls.

SUSTAINABLE SITES (8/14)

The facility promotes the use of alternative transportation by providing bicycle storage and shower facilities for the occupants, preferred parking spaces for low-emitting and fuel efficient vehicles, and direct access to two bus lines within 0.25 miles of the site. Stormwater management ensures that over 90% of average annual rainfall is captured or treated which results in over 80% of the total suspended solids being removed. The majority of the roof area (92%) is covered with materials that are highly reflective to reduce heat island effect.

WATER EFFICIENCY (4/5)

Potable water usage in the facility has been reduced by 52% compared to the calculated baseline through the installation of low-flow urinals, water closets, and faucets. Outdoors, the landscape design utilizes native plants which do not require an irrigation system, therefore reducing potable irrigation water usage by 100%.

ENERGY & ATMOSPHERE (7/17)

The facility reduced energy consumption by 45% from the ASHRAE 90.1-2004 requirements through an increased thermal envelope, high-efficiency glazing, reduced interior lighting power density, occupancy sensors, daylight harvesting, and a VAV air-handling unit tied to a district chilled water and steam system. The facility also underwent an enhanced commissioning process. Additionally, no CFC-based refrigerants were used in the HVAC system and the total refrigerant impact score is 81 per ton – noticeably less than the 100 per ton limit.

MATERIALS & RESOURCES (6/13)

The project diverted 95% of on-site generated construction waste from landfills and 30% of construction materials contained recycled content. As a renovation, the project was able to maintain 100% of the existing wall, floor, and roof elements. Additionally, the facility has dedicated areas for the collection and storage of recyclable materials.

INDOOR ENVIRONMENTAL QUALITY (10/15)

The facility incorporates carbon dioxide monitoring in internal workspaces and direct airflow carbon dioxide measurements in the non-occupied areas to monitor ventilation. The facility provides 30% more fresh air than required by ASHRAE 62.1-2004. Occupants are ensured thermal comfort in accordance with ASHRAE Standard 55-2004 and lighting controls allow all occupants to make adjustments to suit individual preferences. Additionally, 94% of all regularly occupied areas have direct line of sight views. Low-emitting paints, carpets, and adhesives were used throughout the building.

INNOVATION IN DESIGN (2/5)

The project received exemplary ratings and recognition for its use of recycled content and participation of a LEED Accredited Professional in the project development team.

"This Project resulted in improved energy efficiency and reduced repair & maintenance required for aging and worn architectural, mechanical, and electrical systems in Building 60. Additional occupancy provided from this Project helped to meet overall Center goals of locating employees onto Lewis Field."

**DAVE EBNER, BUILDING 60 PROJECT
MANAGER, BUSINESS SERVICE
CENTER**



As part of the Building 60 renovation, the exterior windows were replaced with energy efficient and highly reflective windows.

Owner: NASA Glenn Research Center
Architect: Ralph Tyler Services (RTS)
Structural Engineer: RTS
MEP Engineer: RTS
Commissioning Authority: C.L.I Group, LLC
Contractor: New Era Construction
Project Size: 33,000 SF
Project Cost: \$6,300,000
Completion: November 2010
Photography: NASA

ABOUT LEED

The LEED Green Building Rating System is the national benchmark for the design, construction, and operations of high-performance green buildings. Visit the U.S. Green Building Council's Web site at www.usgbc.org and the Northeast Ohio Chapter of USGBC at www.usgbc.org/chapters/northeast-ohio-chapter to learn more about how you can make LEED work for you.