Duke Sustainability
Medical Science Research Building II

Building Information
Architect: Hillier

Construction: Bovis

Purpose: Research & Administrative

Footprint: 168,701 sq ft

The Medical Science Research Building (MSRB) II was designed to use 26% less energy than the typical energy-intensive research laboratory and preserves the surrounding landscape.

View the MSRB II LEED™ Scorecard

Sustainable Site Features:
The building's location preserves a buffer of trees and minimizes the building's footprint. The roof and landscape elements were selected so as to reduce the heat island effect from exposure to the hot North Carolina sun.

Water Efficiency
Incorporating the natural forest rather than exotic landscaping in the buildings design enabled the designers to achieve landscape watering reductions of more than 50% compared with traditional landscapes decorated with non-native plants that would require regular irrigation.

Energy Efficiency
Light-shelves and other elements shade the buildings windows, where heat would otherwise enter the building. Light-colored exterior materials and roofing, as well as treated windows were used to reduce heat absorption, while the angles of ceilings allow natural ambient light deeper into the building. Inside, a heat-recovery wheel helps to balance the temperature of air moving into the building by exposing it to the controlled air leaving the building, reducing the need for heating and air conditioning.

Indoor Air Quality
Low-VOC carpets, paints, tile, wood and sealants were used throughout the building to improve air quality and the health of occupants.

Resource Management
MSRB II was one of only a few LEED™ projects at Duke to divert more than 75% of construction waste from the landfill. The project made use of recycled steel, concrete and gypsum in addition to

obtaining more than 20% of all materials locally.

Integration of Sustainability in Design & Construction Process
As a research and laboratory space, commissioning of fume hoods to ensure efficiency was a critical step. The building also uses Green Seal approved housekeeping chemicals and microfiber mops to maintain the exceptional indoor air quality.

Duke Medical Sciences Research Bldg 2
Project # 10001522
Certification Level: Silver
6/12/08

LEED for New Construction v2.0/2.1

34 Points Achieved — Possible Points: **69**

Certified 26 to 32 points **Silver** 33 to 38 points **Gold** 39 to 51 points **Platinum** 52 or more points

9 Sustainable Sites — Possible Points: 14

Y			
Y	Prereq 1	**Erosion & Sedimentation Control**	
1	Credit 1	**Site Selection**	1
	Credit 2	**Development Density**	1
	Credit 3	**Brownfield Redevelopment**	1
1	Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
1	Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
1	Credit 4.3	**Alternative Transportation**, Alternative Fuel Vehicles	1
1	Credit 4.4	**Alternative Transportation**, Parking Capacity & Carpooling	1
1	Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
1	Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
	Credit 6.1	**Stormwater Management**, Rate & Quantity	1
	Credit 6.2	**Stormwater Management**, Treatment	1
1	Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
1	Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
	Credit 8	**Light Pollution Reduction**	1

2 Water Efficiency — Possible Points: 5

Y			
1	Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
	Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
	Credit 2	**Innovative Wastewater Technologies**	1
1	Credit 3.1	**Water Use Reduction**, 20% Reduction	1
	Credit 3.2	**Water Use Reduction**, 30% Reduction	1

2 Energy & Atmosphere — Possible Points: 17

Y			
Y	Prereq 1	**Fundamental Building Systems Commissioning**	
Y	Prereq 2	**Minimum Energy Performance**	
Y	Prereq 3	**CFC Reduction in HVAC&R Equipment**	
	Credit 1.1	**Optimize Energy Performance**, 15% New / 5% Existing	1
	Credit 1.2	**Optimize Energy Performance**, 20% New / 10% Existing	1
	Credit 1.3	**Optimize Energy Performance**, 25% New / 15% Existing	1
	Credit 1.4	**Optimize Energy Performance**, 30% New / 20% Existing	1
	Credit 1.5	**Optimize Energy Performance**, 35% New / 25% Existing	1
	Credit 1.6	**Optimize Energy Performance**, 40% New / 30% Existing	1
	Credit 1.7	**Optimize Energy Performance**, 45% New / 35% Existing	1
	Credit 1.8	**Optimize Energy Performance**, 50% New / 40% Existing	1
	Credit 1.9	**Optimize Energy Performance**, 55% New / 45% Existing	1
	Credit 1.10	**Optimize Energy Performance**, 60% New / 50% Existing	1
	Credit 2.1	**Renewable Energy**, 5%	1
	Credit 2.2	**Renewable Energy**, 10%	1
	Credit 2.3	**Renewable Energy**, 15%	1
1	Credit 3	**Additional Commissioning**	1
1	Credit 4	**Ozone Depletion**	1
	Credit 5	**Measurement & Verification**	1
	Credit 6	**Green Power**	1

5 Materials & Resources — Possible Points: 13

Y			
Y	Prereq 1	**Storage & Collection of Recyclables**	
	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
	Credit 1.2	**Building Reuse**, Maintain 100% of Shell	1
	Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
1	Credit 2.1	**Construction Waste Management**, Divert 50%	1
1	Credit 2.2	**Construction Waste Management**, Divert 75%	1
	Credit 3.1	**Resource Reuse**, Specify 5%	1
	Credit 3.2	**Resource Reuse**, Specify 10%	1
1	Credit 4.1	**Recycled Content**, Specify 5%	1
1	Credit 4.2	**Recycled Content**, Specify 10%	1
1	Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
	Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
	Credit 6	**Rapidly Renewable Materials**	1
	Credit 7	**Certified Wood**	1

12 Indoor Environmental Quality — Possible Points: 15

Y			
Y	Prereq 1	**Minimum IAQ Performance**	
Y	Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	
1	Credit 1	**Carbon Dioxide Monitoring**	1
1	Credit 2	**Ventilation Effectiveness**	1
1	Credit 3.1	**Construction IAQ Management Plan**, During Construction	1
1	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
1	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
1	Credit 4.2	**Low-Emitting Materials**, Paints	1
1	Credit 4.3	**Low-Emitting Materials**, Carpet	1
	Credit 4.4	**Low-Emitting Materials**, Composite Wood & Agrifiber Products	1
1	Credit 5	**Indoor Chemical & Pollutant Source Control**	1
1	Credit 6.1	**Controllability of Systems**, Perimeter	1
	Credit 6.2	**Controllability of Systems**, Non-Perimeter	1
1	Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	1
1	Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	1
1	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	1
	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	1

4 Innovation & Design Process — Possible Points: 5

Y			
1	Credit 1.1	**Innovation in Design**: Fume Hood Commissioning	1
1	Credit 1.2	**Innovation in Design**: Green Housekeeping	1
1	Credit 1.3	**Innovation in Design**: Exemplary Performance MRc4	1
	Credit 1.4	**Innovation in Design**: Credit Title	1
1	Credit 2	**LEED® Accredited Professional**	1