



EDUCATION & OUTREACH
case study for LEED

NOAA
Center for Weather and Climate Prediction
Riverdale Park, Maryland, USA



Project Overview :

- NOAA's Center for Weather and Climate Prediction is the centerpiece of the largest planned research park in the Washington, DC, region.
- Building Type - **Commercial Offices, Laboratory, Library, Campus**
- Size - **504,039 SQ. FT.**
- Certification Level - **Gold** under LEEDv2.2 - New Construction
- The design reduces the Center's impact on the environment and physically embodies man's relationship to nature.



Site

- The new NOAA National Center for Climate and Weather Prediction is located on property adjacent to areas of existing woods and Prince George's County parkland. The site features a seasonal stream along the northern edge. A **100-foot-deep woodland preserve** along this edge contains mature, mixed hardwood trees preserved in their natural forested state to minimize the impact of the secured perimeter and provide pleasant outdoor spaces. The cafeteria, which has access to the outdoor dining terrace and views of the wind sculpture, is open to the public. Building occupants along the north façade have wonderful views into this wooded area. The site is located in close proximity to the College Park metro station and two miles from the University of Maryland campus to help create synergy between students and NOAA researchers. The conference center at the ground level of the building was designed with easy access from the main building entrance.

Parking spaces per occupant:

- 627 Employee Spaces, 35 Car Pool Space, 35 Low Emitting
- Vehicle Spaces (697 Total Parking)
- 800 FTE maximum planned capacity (0.87 parking spaces per occupant)

WalkScore rating: 35



south elevation detail



north elevation detail



Water

- **Water efficient** plumbing fixtures within the project scope achieved a **40% reduction in water** use below baseline fixture use developed by the EPA, based on the EPAAct and 2006 plumbing codes.
- An **underground cistern collects rainwater** used for irrigation. The native and low-water plant species reduce irrigation requirements.
- % precipitation managed on site: **100% managed on site**
- Predicted annual regulated potable water use, gallons/sf/yr: **4.8 gal/sf/yr**



▲ rainwater diagram



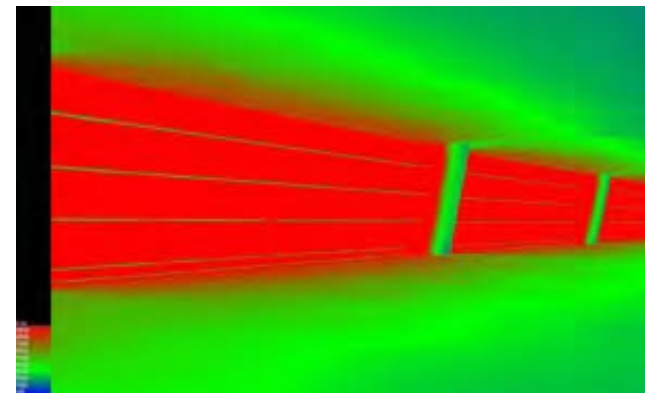
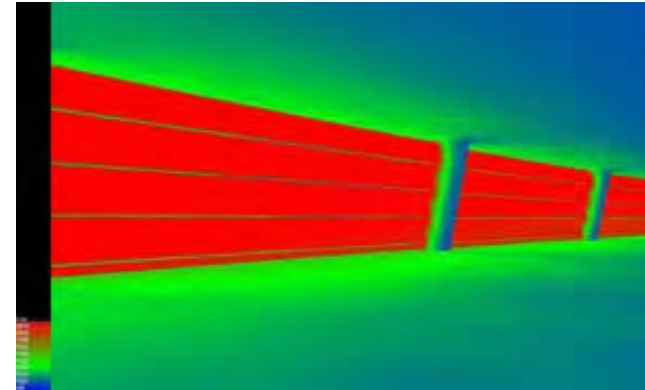
▲ green roof

Energy & Atmosphere

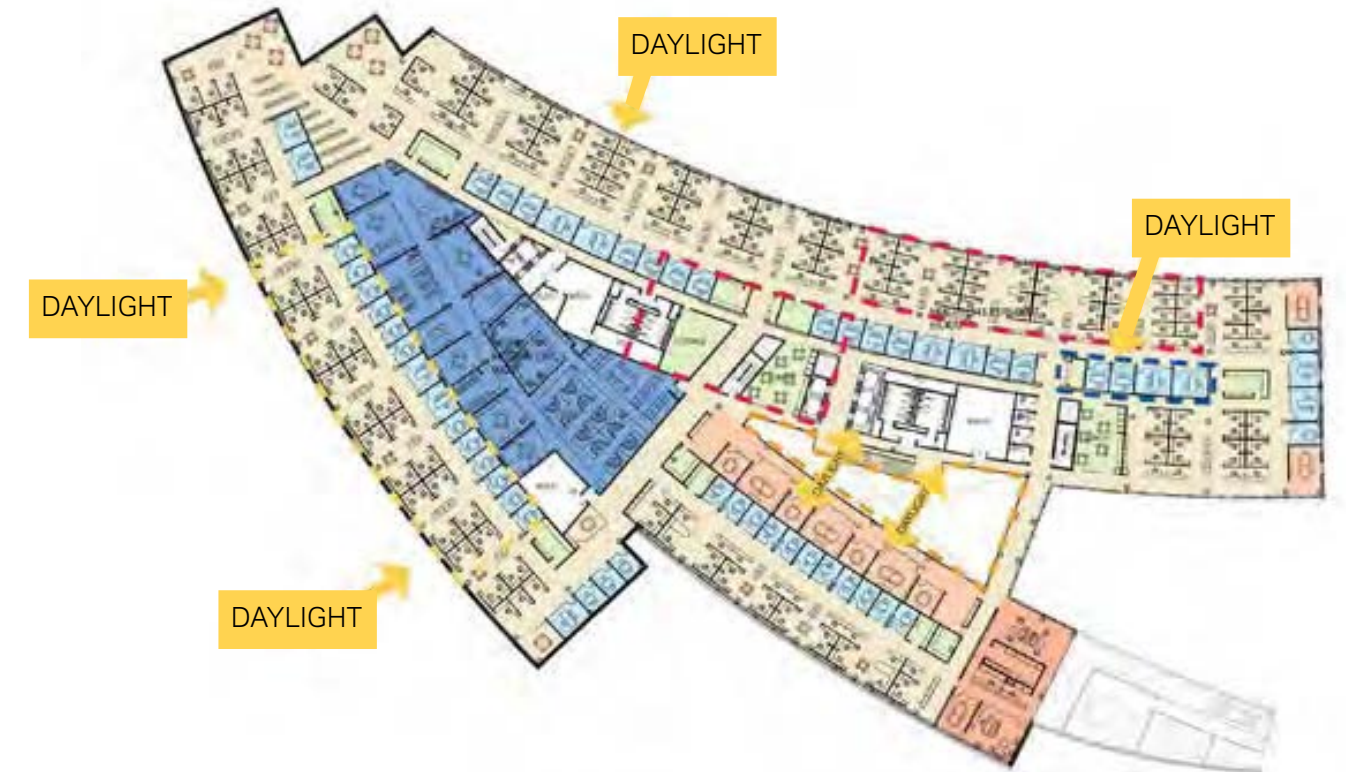
- A **commissioning agent** was enlisted for the design and construction processes to ensure that the client's building performance needs were met and that the building systems will perform in the manner that they were designed.
- **Refrigerant Management** By selecting a site within a LEED Certified building, the owner ensured that the HVAC&R systems serving the project would use no CFC-based refrigerants, which are a significant cause of ozone depletion.
- Predicted EUI in kBtu/sf/yr excluding on-site renewable energy contribution: **79.6 kBtu/sf/yr**
- Predicted EUI in kBtu/sf/yr including on-site renewable energy contribution (carbon offsets will not be counted): **79.6 kBtu/sf/yr**
- Predicted % regional energy reduction per Energy Star Target Finder: **81/100**



▲ south façade detail



▲ daylight analysis march 21st 9am/3pm





Materials and Resources

- **Construction Waste Management:** A construction waste management plan was created for the project to ensure that eligible waste materials from construction were diverted from the landfill for recycling. This plan resulted in **78% of the total construction waste**, being diverted from landfill
- **Materials Reuse:** Reused workstations made up 50% of the project furniture. This reduced virgin material use, but also extended the life of existing materials by keeping them out of the landfill. Material Content **13% of the project materials were sourced from post-industrial and post-consumer recycled content**, minimizing the use of virgin material.
- **Regional Materials:** The specification of regionally manufactured materials and furnishings supported the local industry and reduced carbon emissions generated in the transport of furniture to the job site. **34% of the project materials were regionally manufactured**, including drywall, insulation, glass, chairs, tables, and reused workstations from a local source.



Indoor Environmental Quality

- **Environmental Tobacco Smoke Control:** Smoking is prohibited inside the project building or within 25 feet of any entrance, air intake, or operable window. Increased Ventilation the HVAC system was designed to increase outdoor air ventilation rates to 30% above the minimum standard of ASHRAE 62.1-2007.
- **Construction Indoor Air Quality Plan:** A plan was implemented to protect finish materials and systems from contamination during the construction process and to ensure that the indoor air was safe for building users before occupancy.
Low-Emitting Materials : Low-VOC products were selected for all interior adhesives and sealants, paints and coatings, composite wood, gypsum board, acoustic ceiling systems, and insulation used in the project.
- **Controllability of Systems:** Adjustable lighting controls were designed for conference rooms and task lights were integrated into all individual work stations to provide employees with lighting flexibility to suit specific work tasks. Controllability of lighting systems was identified by the USGBC as being a high-priority environmental issue for this project's geographic location.
- **Thermal Comfort:** In order to maximize employee's thermal comfort in this office space, the HVAC system was designed to meet the requirements of ASHRAE Standard 55-204, Thermal Comfort Conditions for Human Occupancy. Thermal comfort design was also identified by the USGBC as being a high-priority environmental issue for this project's geographic location.

**100% low-VOC adhesives, paints,
composite wood, ceilings, and walls**

97% of space with access to views

