



CHESAPEAKE BAY FOUNDATION BROCK ENVIRONMENTAL CENTER



CERTIFIED LEED PLATINUM

Leadership in Energy and Environmental Design (LEED) is the most widely recognized green building certification across the globe. As a program of the U.S. Green Building Council (USGBC), LEED focuses on building a more sustainable future by providing framework for cost-efficient and energy-saving buildings, homes, neighborhoods, and communities. Earning LEED certification requires adherence to a strict rating system, with LEED Platinum being the top achievement.

Points are awarded in specific categories of sustainability and environmental quality control. Categories range from rainwater collection and handling to inside air quality control of mechanical and electrical systems and adequate natural day lighting.



LIVING BUILDING CHALLENGE

The Living Building Challenge (LBC), a program of the International Living Future Institute, has redefined the meaning of sustainability within the green building movement. This non-governmental organization is committed to catalyzing a global transformation toward true sustainability resulting in a future that is socially just, culturally rich, and ecologically restorative across development at all scales—from new construction and renovation, to infrastructure, landscapes, and neighborhoods.

*The first project in Virginia to be **LEED Platinum** and fully **Living Building Challenge** certified*

To qualify as a Living Building, the project must adhere to specific regulations within seven primary sustainable design categories, known as petals in regard to the International Living Future Institute's dandelion logo, which include the following:

- **Site**
- **Water**
- **Energy**
- **Health**
- **Materials**
- **Equity**
- **Beauty**

Certification is based on actual performance, so projects must meet all criteria for twelve consecutive months of operation before the certification can be completed.

THE CENTER

Located in Virginia Beach, Virginia at Pleasure House Point on the Lynnhaven River, this 10,000-square foot environmental education facility will focus on promoting preservation, sustainability, and education.

At the end of the LBC reporting period, the building had produced **83% more** energy than it consumed. In order to be certified, the building needed only to break even (hence “net zero”). The energy is produced by 168 solar panels and 2 10kw wind turbines. In the end, the solar panels produced 45.6kWh (kilowatt hours) and the turbines produced 20kWh. The excess energy is back-fed into the grid so that it can provide power for surrounding homes and businesses.

With all aspects of the project meeting the strictest of environmental standards, the Chesapeake Bay Foundation believes the Brock Environmental Center will engage, inform, and inspire the Hampton Roads Community to solve the Bay’s challenges in innovative, sustainable, and collaborative ways.

THE CENTER CURRENTLY PROVIDES:

- A “net zero” impact on the surrounding environment
- State-of-the-art energy and resource-saving features
- An international model for green design and construction
- Headquarters to the Chesapeake Bay Foundation’s award-winning outdoor environmental education programs in Hampton Roads, which provide engaging, hands-on environmental education opportunities for thousands of teachers, students, citizens, and community leaders annually
- Active demonstrations of important restoration projects
- Office space for the Chesapeake Bay Foundation, Lynnhaven River NOW, and several other local conservation groups
- Meeting spaces for the community

BROCK CENTER AWARDS

US Green Building Council

2015 Leadership in Energy and Environmental Design
LEED Platinum Certification

Engineering News-Record (ENR) National

2015 “Best of the Best” Green Project - National

Commonwealth of Virginia

2015 Virginia Governor’s Environmental Excellence Award
Gold Medal Winner

Association of Builders and Contractors (ABC)

2015 Award of Excellence, Best Institutional Building
2015 Overall Excellence in Construction Award

Engineering News-Record (ENR) Mid-Atlantic

2015 Best Project, Green Project
2015 Best Overall Safety Project

Hampton Roads Association for Commercial Real Estate (HRACRE)

2015 Award of Excellence, Best Sustainable Project
2015 Award of Excellence, Best Master Planned Project
2015 Juror’s Choice Award

American Planning Association

2015 Sustainable Building Project Award

HanleyWood and Hanley Foundation

2015 Hanley Award Winner Community Service
in Sustainability

Bayfront Advisory Commission

2015 Bayfront Exceptional Design Award

American Society of Heating, Refrigerating and Air-Conditioning Engineers

2015 Regional Technology Award

Architectural Engineering Institute (AEI)

2016 Award of Excellence, Mechanical Systems Design

Architectural Engineering Institute (AEI)

2016 Award of Merit, Architectural Engineering Integration
2016 Award of Merit, Electrical Systems Design

“There are plenty of examples out there about harvesting rainwater, but to harvest it for drinking water is the hard part. The Brock Environmental Center is one of the first to do so.” - Tyler Park



RECLAIMED WOOD

Wood flooring is one of the largest quantities of materials incorporated into the Brock Environmental Center—covering 90% of the floor area. It was designed to satisfy the salvaged materials requirement of the Living Building Challenge’s Materials Petal. There are two primary sources of reclaimed wood flooring being used at the Brock Environmental Center. The first was sourced from oak fence posts harvested from central to northern Virginia. The other came from reclaimed maple wood gymnasium floor from a middle school in Virginia Beach that was completely demolished and rebuilt.



WATER SYSTEMS

The LBC Water Petal requires that one hundred percent of a project’s water must be supplied by captured precipitation or other natural closed loop water systems. Therefore, it is imperative that a project has the ability to reuse and filter water in order to continue the cycle. The Brock Environmental Center uses a mixture of low-tech, state-of-the-art technologies and practices to manage its use of water. Composting toilets transform human waste into usable compost, water generated by sinks and showers (greywater), will be pumped into an elevated infiltration garden, and other rainwater collected on and around the building will be redirected back into the surrounding vegetation.



SINKER CYPRESS

Sinker cypress wood consists of cypress logs that have been submerged in rivers or swamps since the late 1800s. The most important characteristics of sinker cypress are its durability and longevity. The wood typically lasts over 150 years without severe deterioration due to a natural preservative oil, cypresseine, which resists rot and insects. This made it a perfect choice for the exterior siding of the Brock Environmental Center. The sinker cypress will have a 3-coat system of ultraviolet-resistant stain applied, which will also darken the natural color of the wood. This will help it match the design of the rest of the building.



“This is the only building in the world that is fully Living Building Challenge certified, is LEED Platinum, and produces it’s own drinking water - which makes it pretty special.” - Chris Brandt

“There was a lot of time and care that we took at the beginning to understand the technologies and materials we’d need to meet the water demands of the Living Building Challenge.”

Tyler Park
 Quality Control Manager



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HOURIGAN AND SUSTAINABILITY

With a deep portfolio of successful projects, Hourigan Construction is a knowledgeable partner in the field of sustainable building design and construction. Through first cost and lifecycle cost analyses our collaborative team of subject matter experts helps owners construct the most sustainable building possible within budget parameters. We provide insight and clarity on options and tradeoffs in critical areas like materials, appearance and building systems so that owners can make informed decisions.



HOURIGAN SUSTAINABILITY STATS

17

ACCREDITED
 Professionals

2

FOUR-GLOBES
 Certified Projects

LEED
 Projects

1 PLATINUM

2 GOLD

10 SILVER

6 CERTIFIED

ONE LIVING BUILDING
 CHALLENGE PROJECT

1.5 MILLION TOTAL SQUARE FEET