R.V. Truitt Laboratory

LEED Silver

Dr. Reginald V. Truitt, one of Maryland's forefathers of conservation

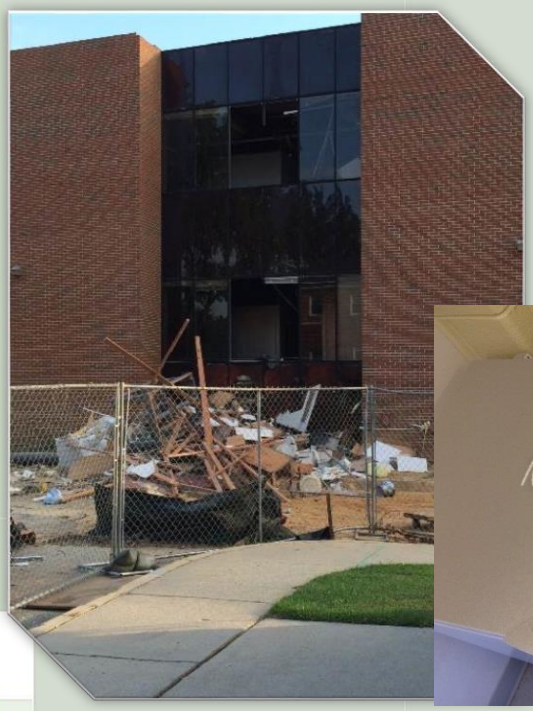
Why A LEED Building at CBL? Or anywhere?

The better question would be "Why not?" The University of Maryland Center for Environmental Science Chesapeake Biological Laboratory (CBL) is a environmental research facility founded in 1925. This southern Maryland location was chosen because of its access to Bay waters and its mid-Bay location. Today at CBL our faculty are conducting cutting-edge research, educating students, and advising state, national and international leaders on important environmental questions. UMCES is an Environmental Institution dedicated to conducting research to protect, sustain and restore the environment. Our buildings should be an example of our commitment.

One might argue that local tax-funded buildings should follow the same guidelines as state and federally funded buildings – "all buildings whether new or renovated, must be high-performance (LEED Silver equivalent.)" Public buildings are frequented by members of our community and can serve as an example of sustainable and responsible use of resources.

Lets Tear it Down or build it up but carefully

Rather than throw all the construction and demolition-generated debris into a dumpster bound for the landfill, 75% of the Truitt building waste was recycled or salvaged including concrete, wood, steel, masonry, asphalt, cardboard, and drywall.



Get Creative….

It's Awesome out Here. Just take a look around.

- Native and adaptive plants are a must! Once established these plants require no irrigation – just natural rainfall. In addition, keeping the invasive species away enables the local ecology to thrive.
- CBL has three micro-bioretention management areas on the campus. These areas are designed to treat rainwater runoff and remove impurities prior to the water finding its way to the Bay. The deep swales of plantings and soils, trap nutrients such as phosphorous and nitrogen known to cause a decline in the health of the Bay.
- Special concern should always be given to the existing site. Protecting the tree canopy and native grasses ensures the wildlife habitat won't be disturbed.
- Creating outdoor work spaces for staff allows for employees to get up, get out, get the creative brain cells engaged.

Let's step inside the Truitt Lab….

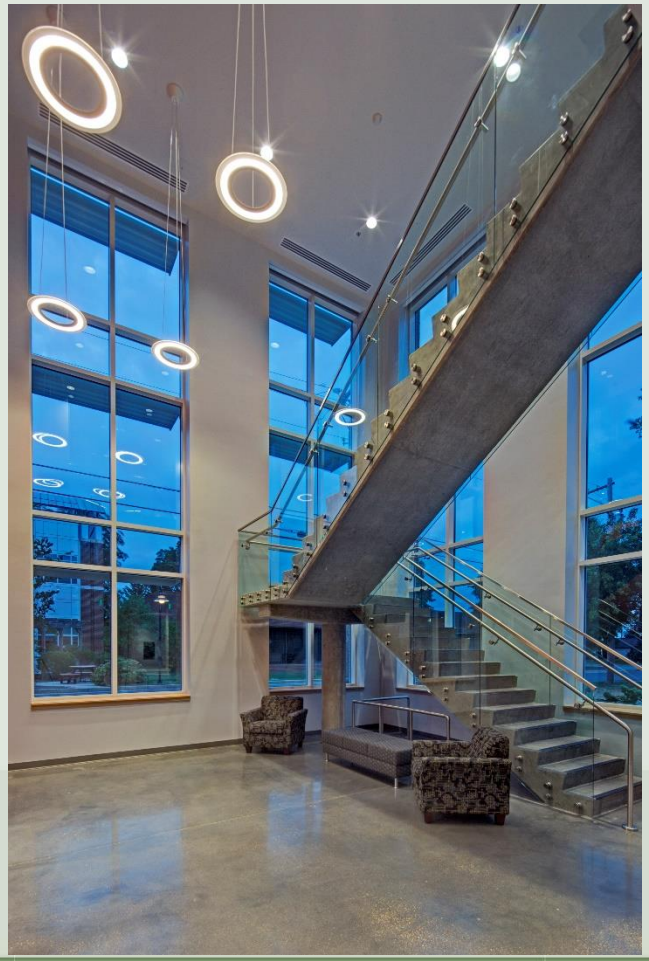
The entry and office area incorporate several sustainable design elements including:

- Window glazing
- Clerestory windows
- Light filtering window shades
- Windows in all occupied spaces
- Ergonomic and Greengard furnishings

- The exterior windows on the West and South side have integral sunshade louvers mounted into the window. These louvers filter the sunlight coming into the building and reduce glare.
- LED lighting is found throughout the Truitt building as well as several other buildings on campus. Occupancy and centrally controlled lighting is a feature found at CBL.

Why all the concrete at Truitt?

Concrete is a composite material that is substantially environmentally sensitive. It is composed of aggregate, cementitious material, and silica fume. The types of products used in the concrete at the Truitt building improve the strength and performance of the concrete. The steel reinforcing bars embedded within the concrete at Truitt have a high recycled content. A poured concrete structure was used to construct portions of the building. Concrete was used on the exterior to help reduce the heat island effect and reflect sunlight. Polished concrete floors are found throughout the interior of the building to reduce the need of additional, unnecessary flooring. Concrete is very easy to maintain, unlike vinyl, ceramic tile and carpet. The use of concrete inside not only saved the cost of purchasing unnecessary products that would cover the concrete, but avoids maintenance costs both in labor and products.



Building Mechanicals – Impressive!

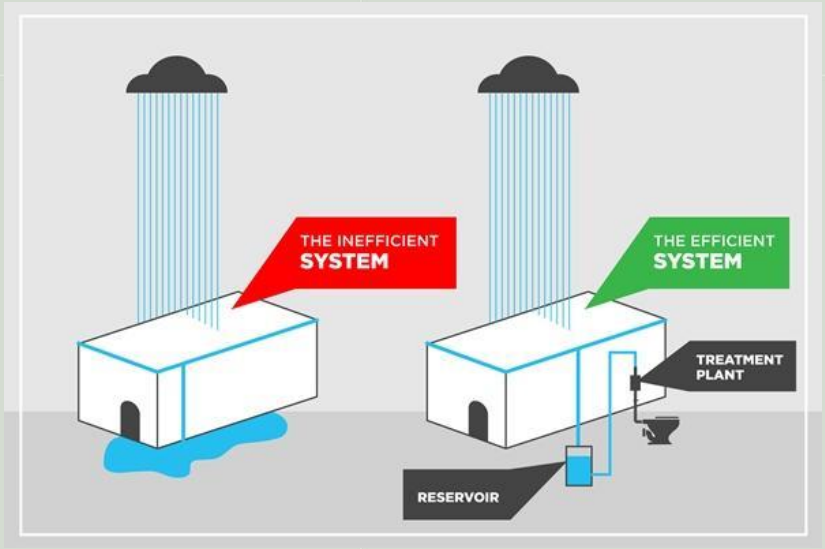
(Said no one ever)

Energy Performance!

Redundancy, Reliability, Recovery – all important terms when talking about LEED

The biggest savings and efficiencies are found in the HVAC systems. Unfortunately, it's not the thing people are anxious to see or even think about (unless it's not working!) The mechanical systems at the Truitt building were designed and constructed keeping energy savings, redundancy and reliability in mind. The entire building is centrally controlled and managed 24/7/365 by the Facilities Team and can be accessed and adjusted off-site, even via our mobile phones! Occupancy and load sensors are extremely important – there is no need to heat or cool a space at an occupied temperature if it isn't in use. Communicate! Communicate! Communicate! A lobby kiosk can tell the story of the sustainable features of the mechanical equipment.

Let Mother Nature do the work - Rain



Rainwater can fulfill a multitude of uses when harvested. Why let all that free water literally go down the drain? The practice of harvesting is becoming more prevalent as water costs rise. Harvested rainwater, with very basic filtration can be used for all non-potable uses, including toilet flushing. Rain water can supply all water needs with more elaborate filtration systems.

And…..Sun

The energy from the sun is another useful and innovative way to reduce the environmental footprint a building creates. Solar is a great alternative to replace our reliance on fossil fuel, it produces no harmful emissions, it's clean and because solar power is renewable, it can supply energy infinitely. There are many ways to incorporate the use of solar into new and existing buildings…and beyond. Parking lots are a must so why not use crushed stone or permeable pavers to pave the lot and cover some, or all of it with solar canopies? The energy created could off-set the cost of operating car-charging stations. Don't forget to tell your story and track the savings and reduction of greenhouse gasses.

Great Features People Notice

(and score points)

- Provide ergonomic work areas with Greenguard furnishings that allow staff to stand and sit at their work area.
- Ensure that conference rooms are equipped with high-end technology. No need to travel to meetings, just log-on and join in.
- Reduce waste! At CBL recycle containers are available throughout the buildings. Before CBL employees recycle, we encourage them to find ways to reuse. Paper food products are not provided at CBL – we support BYOMP&F (bring your own mug, plate & fork.)
- Green cleaning should be your only method. The exclusive use of Green-Seal and non-corrosive certified products should be mandatory. Purchase cleaning equipment that is Green Label certified and quiet – less than 70dBA.
- Ensure your landscaping and pest management practices focus on the environment. No fertilizers. No pesticides. No weed killers. Additionally, Mulch and compost on site if possible.
- Use low VOC paints and products so everyone can breathe easy.
- Provide common-use, collaboration areas – There is no need for every area to have a mini-fridge, microwave and printer/copier. Get together to collaborate, and reduce the energy used to operate appliances.

Questions?

LEED Checklist

Caring for the Land Around Us (Sustainable Sites)

- Prevent soil erosion and pollution during construction
- Encourage people to drive clean cars and carpool
- Preserve land for people and animals
- Reduce heating of the air around us

Save our Water (Water Efficiency)

- Eliminate water use for outdoor plants by using native plants
- Reduce water by using water saving fixtures
- Be smart! Use rainwater

Use Energy Wisely and Protect Our Atmosphere (Energy & Atmosphere)

- Use less energy than other comparable buildings
- Make sure everything works right (commissioning)
- Don't lose the chemicals that keep us cool (refrigerant management)
- Check it out! Measurement and verification that everything is working as designed

Use of Materials (Materials & Resources)

- Recycle construction waste
- Use products made from recycled materials
- Reduce pollution from transportation by using local materials

Make The Indoors Healthy (Indoor Environment Quality)

- Lots of fresh air (outdoor air delivery monitoring)
- Keep the place clean during construction (indoor air quality management)
- Use products without harmful chemicals (Volatile Organic Compounds)
- Control the amount of light
- Control the amount of heat or cooling
- Let the sun shine in (day-lighting)

Extra Credit (Innovation & Design Process)

- Make the building a learning tool
- Preserving the land around us
- Use WAY less water

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name:
Date:

Y	?	N			
			Credit	Integrative Process	1

Y	?	N		Location and Transportation	16
			Credit	LEED for Neighborhood Development Location	16
			Credit	Sensitive Land Protection	1
			Credit	High Priority Site	2
			Credit	Surrounding Density and Diverse Uses	5
			Credit	Access to Quality Transit	5
			Credit	Bicycle Facilities	1
			Credit	Reduced Parking Footprint	1
			Credit	Green Vehicles	1

Y	?	N		Sustainable Sites	10
Y			Prereq	Construction Activity Pollution Prevention	Required
			Credit	Site Assessment	1
			Credit	Site Development - Protect or Restore Habitat	2
			Credit	Open Space	1
			Credit	Rainwater Management	3
			Credit	Heat Island Reduction	2
			Credit	Light Pollution Reduction	1

Y	?	N		Water Efficiency	11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
			Credit	Outdoor Water Use Reduction	2
			Credit	Indoor Water Use Reduction	6
			Credit	Cooling Tower Water Use	2
			Credit	Water Metering	1

Y	?	N		Energy and Atmosphere	33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
			Credit	Enhanced Commissioning	6
			Credit	Optimize Energy Performance	18
			Credit	Advanced Energy Metering	1
			Credit	Demand Response	2
			Credit	Renewable Energy Production	3
			Credit	Enhanced Refrigerant Management	1
			Credit	Green Power and Carbon Offsets	2

Y	?	N		Materials and Resources	13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
			Credit	Building Life-Cycle Impact Reduction	5
			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
			Credit	Construction and Demolition Waste Management	2

Y	?	N		Indoor Environmental Quality	16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
			Credit	Enhanced Indoor Air Quality Strategies	2
			Credit	Low-Emitting Materials	3
			Credit	Construction Indoor Air Quality Management Plan	1
			Credit	Indoor Air Quality Assessment	2
			Credit	Thermal Comfort	1
			Credit	Interior Lighting	2
			Credit	Daylight	3
			Credit	Quality Views	1
			Credit	Acoustic Performance	1

Y	?	N		Innovation	6
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1

Y	?	N		Regional Priority	4
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1

Y	?	N		TOTALS	Possible Points:	110
0	0	0				

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110