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Field Trip 01: Botanical Research Institute of Texas

ARC 5423: Ecological Issues

Fall 2012 Semester

October 5, 2012

The Botanical Research Institute of Texas (BRIT) was established in 1987. BRIT's mission is to "conserve our natural heritage by deepening our knowledge of the plant world and achieving public understanding of the value plants bring to life…. BRIT documents the diversity of plant life and conducts extensive research around the world. In the last 10 years, BRIT scientists have located and described scores of species previously unknown to science…. By serving as a think tank and catalyst, BRIT inspires learning and forms of interdisciplinary collaborations for critical research within scientific, educational, social, cultural, and business communities."

– BRIT: www.brit.org/about

Mission Statement

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“Our work impacts our community and the world in many functional areas including environment, by giving people a local sense of stewardship; medicinal plant efficacy, by contributing with colleagues to an appreciation of the nutritional and medicinal use of plants; society, by training a new generation of thinkers and problem solvers; and in agriculture, by working with our collaborating institutions to create a better understanding of sustainable agricultural practices and preserving plant diversity.” – BRIT: www.brit.org/about

Mission Statement

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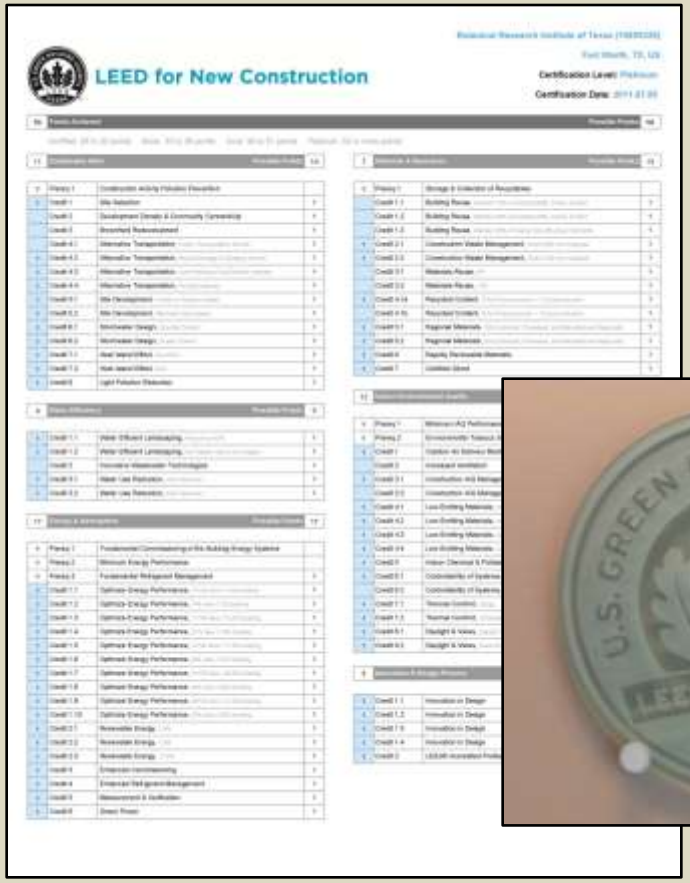
The Botanical Research Institute Of Texas is one of the few LEED Platinum certified buildings in the state of Texas.



LEED Platinum

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“Through careful site design, responsible landscape management, and conscientious human behavior, BRIT seeks to reduce its footprint on the natural world as well as protect and restore ecosystem services…. [T]he BRIT landscape—with its native plants, vegetated walls, bioswales, living roof, and retention pond—was designed to eliminate use of potable water, reduce overall maintenance costs, curb energy consumption, extend the life of building materials, mitigate urban heat island effects, and manage onsite stormwater.”

– BRIT: www.brit.org/about/campus

Sustainability

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“BRIT’s employees and users are encouraged to model sustainable personal practices, such as recycling, composting, and water and energy conservation.”

– BRIT: www.brit.org/about/campus

LED light fixtures are used in the parking areas and designed to reduce light pollution. Preferred parking spaces are reserved for low-emission vehicles. To the right is a bike rack that encourages reduction in fossil fuel emissions by automobiles.

Sustainability

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BRIT moved into its new facility in the Spring of 2011 on the campus of the Fort Worth Botanical Gardens. The 70,000 square foot building takes advantage of the latest techniques in energy efficient design while treading lightly on the surrounding site and environment. Integrated passive techniques contribute to an estimated energy savings of approximately $37,000 per year.

Facility

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“The new BRIT building was designed by H3 Hardy Collaboration Architecture and Corgan Associates to accomplish several key goals:

- Reduce energy and water consumption
- Enhance indoor environmental quality
- Use recyclable and renewable materials

This was achieved through daylighting, photovoltaic panels (solar energy), low-flow and low-energy fixtures, low-VOC (volatile organic compounds) materials, wool and linen furnishings, certified wood products, and recycled-content steel and rubber, to name a few.” – BRIT: www.brit.org/about/campus

Facility

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Mats at major and minor entrances help keep shoe-tracked pollutants out of the HVAC system.

Entrance Mats

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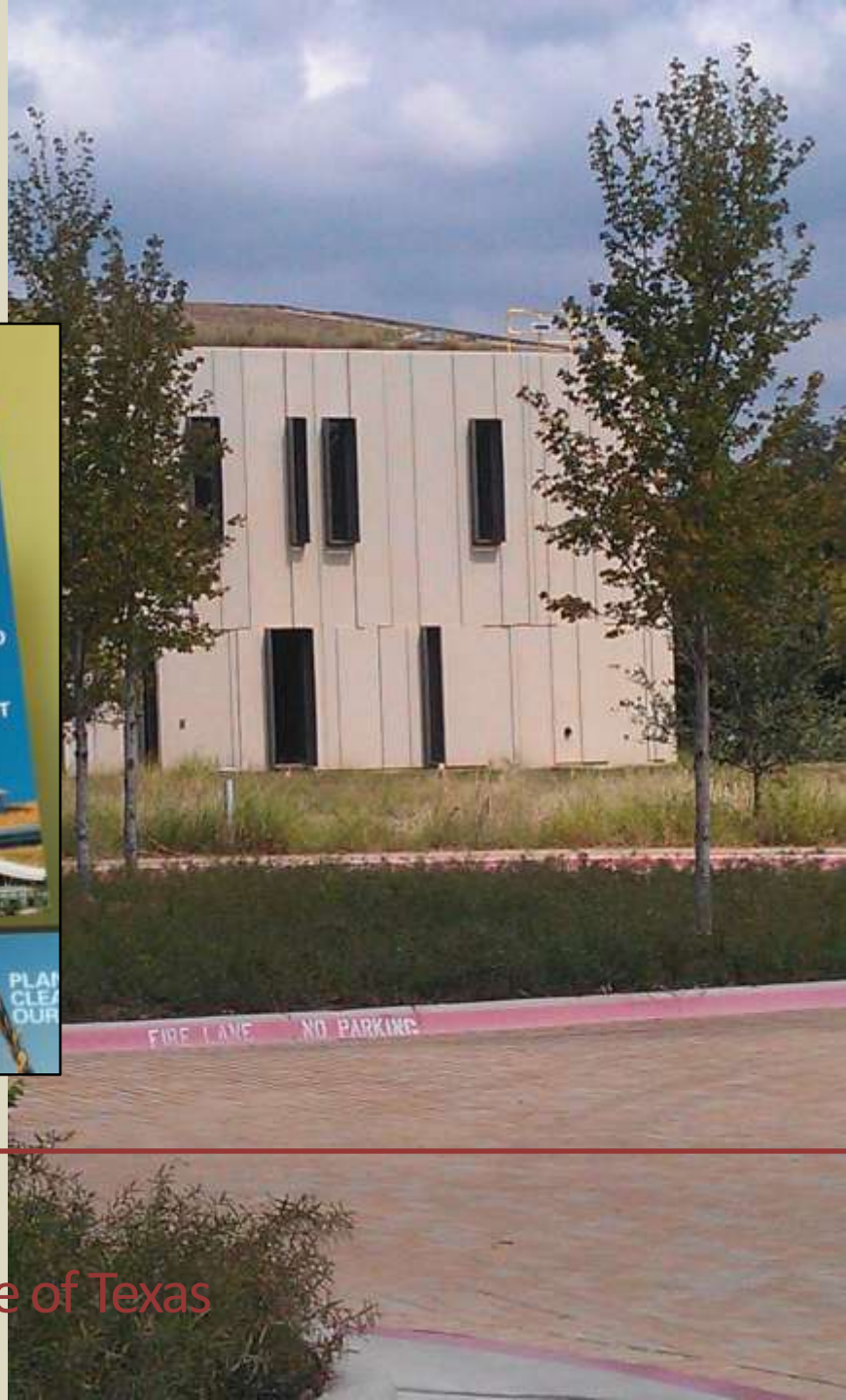
Among the BRIT's many sustainable features is a "living roof." This green roof helps to reduce rainwater runoff to the surrounding site.



Living Roof

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Living Roof

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The site contains rain gardens and native vegetation bioswales which help prevent pollution, erosion and runoff. A retention pond also stores water and serves as an additional source of nonpotable water.

Bioswales & Retention

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BRIT has a cistern on site to collect and store nonpotable stormwater runoff for use as irrigation. The above-ground tank serves as an educational tool for the community.

Cistern

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166 geothermal wells under the landscaped and parking areas help maintain constant temperatures and reduce heating and cooling loads by over 50%. BRIT worked with Green Mountain Energy Company to establish a solar photovoltaic array which sits on the roof over the Herbarium. The array converts sunlight into electricity, which is then transformed into a form of energy that is compatible with common electrical devices and the form of electricity that is supplied by the grid. The benefits of rooftop solar arrays include reduction of the following items: Operational Costs, Climate-Change Emissions, and Dependence on Fossil Fuels Approximately 14% of the building's electricity is generated by the array. One of panels is shown in the image to the right.

Energy

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This double-height wall in the main entrance lobby is a great example of implementing salvaged materials into the project. BRIT chose to harvest sinker cypress, a wood that is recycled from logs that sank over 100 years ago when the cypress trees were logged and transported by river. By utilizing this recovered resource BRIT reduced the need for harvesting new trees.

Caddo Lake Cypress Trees

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A terrace on the second level is made of Ipe wood. The public has access to this space during open hours.

Ipe Deck

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BRIT has integrated rapidly renewable materials, which are defined by LEED as materials that are harvested within six-year cycles. Finishes throughout the building include bamboo ceiling panels, linen and paper wall coverings, and wool carpet.

Renewable Materials

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The flooring in many of the building's rooms is made of recycled rubber items such as tires and even tennis shoes!

Recycled Rubber Flooring

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“The BRIT building and campus serve as an educational tool for the community, highlighting the myriad ways both organizations and individual citizens can improve their own sustainability. We also intend the campus to serve as a research site for local scientists. Our stormwater management system and our living roof, in particular, are innovative designs; long-term studies of their performance will inform and greatly benefit the green building and design industry. Plus, the reintroduction of two native ecosystems (Fort Worth Prairie Barrens and mid-grass prairie) into an urban setting will provide researchers a chance to study colonization patterns of both native and invasive plants and animals.”

– BRIT: www.brit.org/about/campus

Community Education

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BRIT has many educational activities to enrich the public's knowledge of sustainability and botany. BRIT works with local schools to have teachers bring students to the center for interactive education. The organization also has free daily tours to educate the public.

Community Education

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BRIT has an on-site Herbarium and libraries for the community to use as resources.

“A herbarium is a museum of preserved plants that are used for botanical research. Each herbarium specimen is made up of a dried plant, mounted on archival paper, and affixed with a label providing descriptive data. Herbaria across the globe provide a permanent record of the diversity of the Earth's flora.”

– BRIT: http://www.brit.org/herbarium

Community Education

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“The BRIT Libraries serve to support the taxonomic research done by botanists at BRIT and visiting researchers and to support the educational programs sponsored and hosted by BRIT. The scientific reference collection includes materials valuable for research and systematic botany, particularly those with descriptions of new species. The remainder of the collection has been carefully selected to represent a comprehensive library of scientific and taxonomic books and publications, primarily for naming and classifying plants. It is one of the largest and finest collections of botanical literature in the southwestern United States….Students and teachers use…BRIT's library to enrich their studies and to reach a fuller understanding of the value of plants.”
– BRIT: http://www.brit.org/library

Community Education

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Miscellaneous Photos

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I really enjoyed my visit to the Botanical Research Institute of Texas in Fort Worth. I plan to go back soon for further exploration!

The End

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