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TRACY HALL SCIENCE CENTER

LEED | New Building Design and Construction

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Tracy Hall Science Center is pursuing LEED Gold certification under LEED for New Building Design and Construction.

LEED, or Leadership in Energy & Environmental Design, is transforming the way we think about how our buildings and communities are designed, constructed, maintained and operated across the globe. Comprehensive and flexible, LEED is a green building tool that addresses the entire building life-cycle recognizing best-in-class building strategies.

At its core, LEED is a program that provides third-party verification of green buildings. Building projects satisfy prerequisites and earn points to achieve different levels of certification.

LEED is comprised of the six following credit categories:

- Sustainable Sites
- Energy & Atmosphere
- Indoor Environment Quality
- Water Efficiency
- Materials & Resources
- Innovation In Design

For more information log on to: http://www.usgbc.org/leed

Sustainable Sites

p1 Construction Activity Pollution Prevention
c1 Site Selection
c2 Development Density and Community Connectivity
c4.2 Alternative Transportation-Bicycle Storage and Changing Rooms
c4.3 Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles
c4.4 Alternative Transportation-Parking Capacity
c7.2 Heat Island Effect-Roof

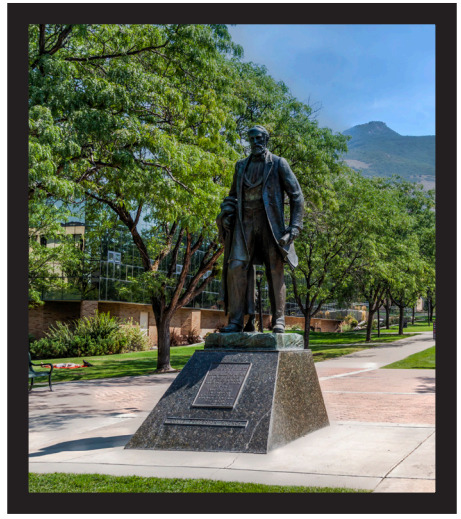
Water Efficiency

p1 Water Use Reduction-20% Reduction
c1 Water Efficient Landscaping
c3 Water Use Reduction

Energy & Atmosphere

p1 Fundamental Commissioning of the Building Energy Systems
p2 Minimum Energy Performance
p3 Fundamental Refrigerant Management
c1 Optimize Energy Performance
c3 Enhanced Commissioning
c4 Enhanced Refrigerant Management
c6 Green Power

LEED points and credits



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Materials & Resources

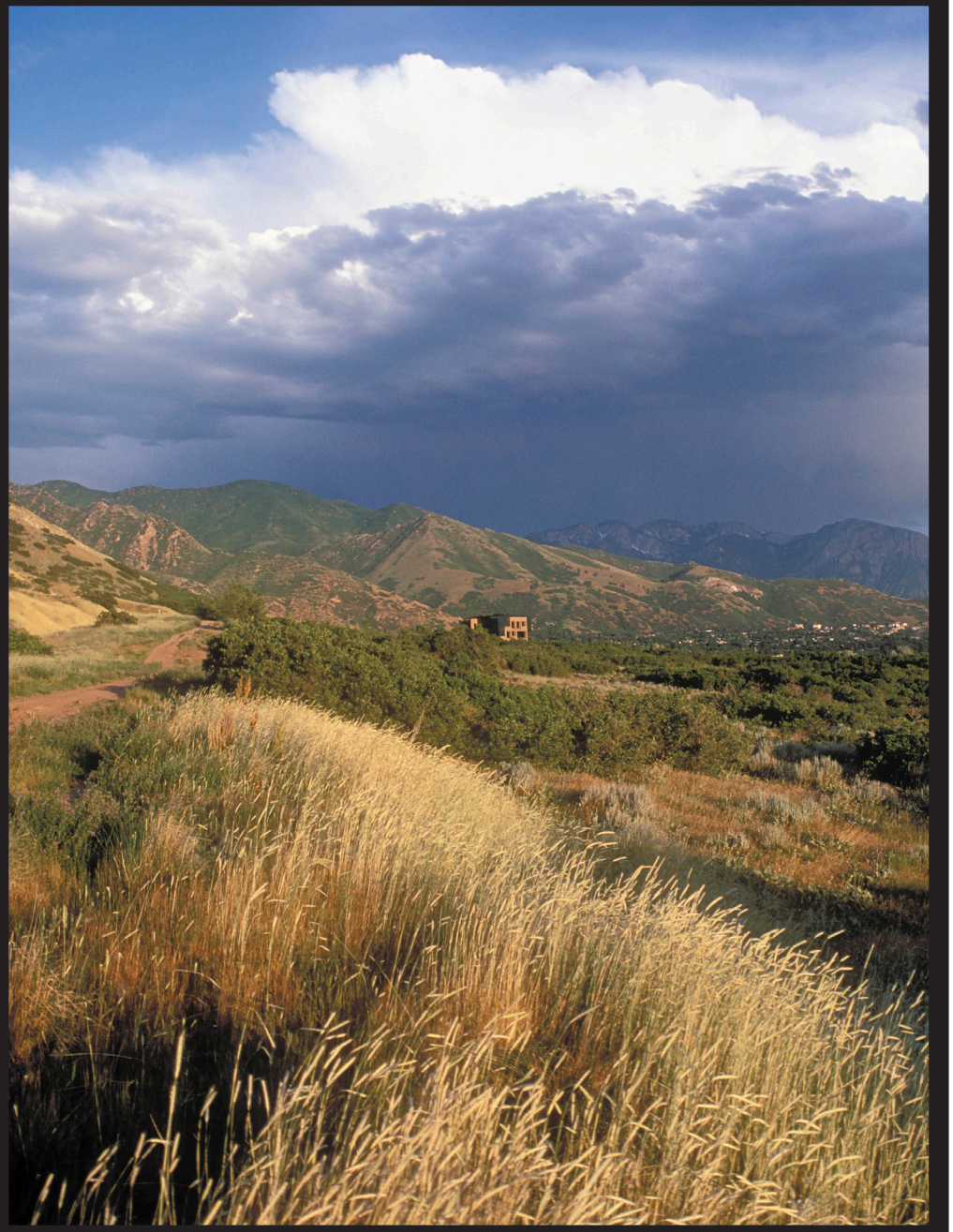
p1 Storage and Collection of Recyclables
c2 Construction Waste Management
c4 Recycled Content
c5 Regional Materials
c7 Certified Wood

Indoor Environment Quality

p1 Minimum Indoor Air Quality Performance
p2 Environmental Tobacco Smoke (ETS) Control
c1 Outdoor Air Delivery Monitoring
c3 Construction IAQ Management Plan-During Construction and Before Occupancy
c4 Low-Emitting Materials
c6 Controllability of Systems-Thermal Comfort and Lighting
c7 Thermal Comfort-Design and Verification

Innovation & Design

c1.1 Building Education Program
c1.2 Low Mercury Lighting
c1.3 College Green Team Integration
c1.4 Envelope Commissioning
c2 LEED Accredited Professional



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SUSTAINABLE SITES

Objective

To reduce negative environmental impacts related to location of site, construction activities, automobile use, light pollution, storm water management and urban development. Other objectives include points to conserve existing natural areas, restore damaged areas to provide habitat, promote biodiversity, and provide a high ratio of open space to development footprint to promote biodiversity. Points are also given to project which reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on micro-climate and human and wildlife habitat.

Tracy Hall Features

- The location at the core of campus contributes to increasing the campus density and improving connectivity.
- The building is located on a previously developed site within walking distance of many daily services and housing.
- The development is established on previously cultivated land, within an area equipped with amenities, necessary utilities and infrastructure.
- There is access to a campus shuttle and UTA bus stops within walking distance of the new building, and no new parking was added with the construction of the project to minimize single vehicle ridership to campus.
- Secured bicycle storage, showers and changing rooms have been provided to encourage bicycle commuting.

WATER EFFICIENCY

Objective

The water efficiency section of LEED certification addresses water holistically, looking at indoor use, outdoor use, specialized uses, and metering. The section is based on an “efficiency first” approach to water conservation.

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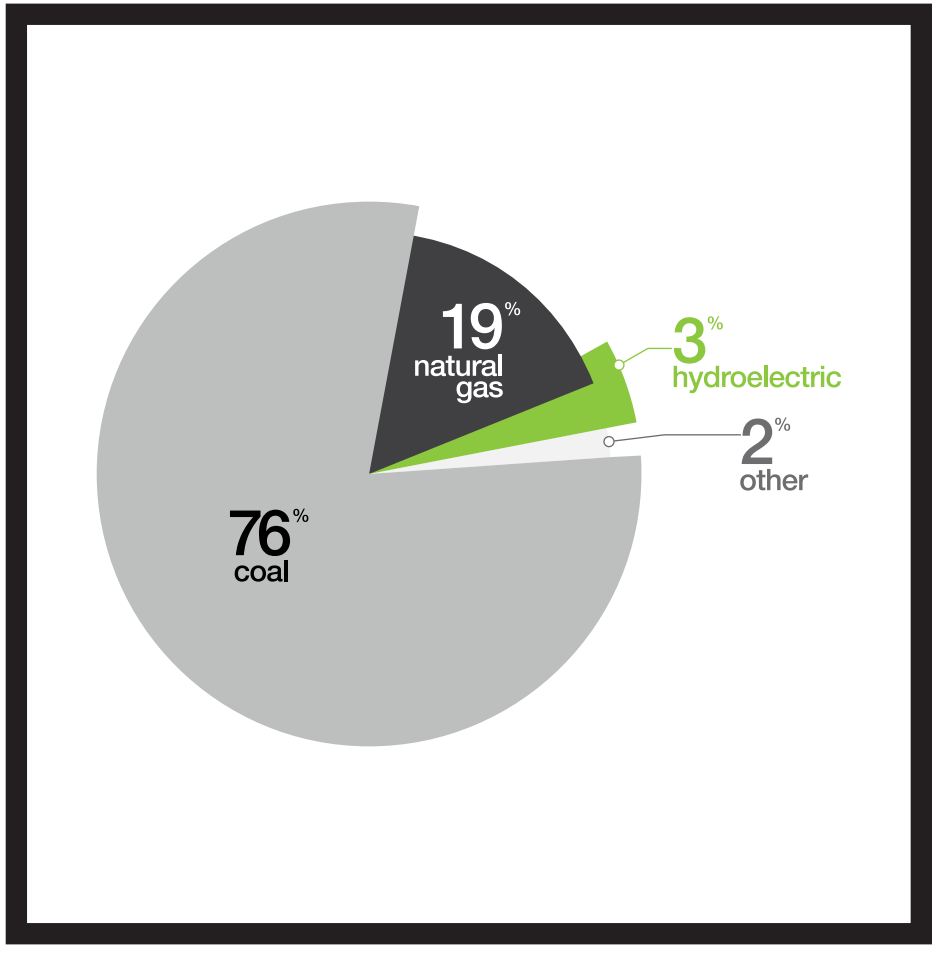
Utahans consume about 240 gallons of water per person per day. We use the most water per capita in the US, but receive the second lowest annual rainfall.

conservewater.utah.gov/why.html

Tracy Hall Features

- Tracy Hall Science Center has reduced water utilization inside the building envelope by 37% over a code baseline building through the use of low flow toilets and urinals and efficient faucets.
- The project has also reduced water used for landscape with water-efficient irrigation systems that use secondary water from the campus pond rather than potable water.



ENERGY AND ATMOSPHERE

Objective

Energy efficiency in a green building starts with a focus on design that reduces overall energy needs, such as building orientation and glazing selection, and the choice of climate-appropriate building materials. Strategies such as passive heating and cooling, natural ventilation, and high-efficiency HVAC systems partnered with smart controls further reduce a building's energy use.

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Tracy Hall Features

- Tracy Hall Science Center uses a very efficient VRF mechanical system, in tandem with a ground-source coupled heat recovery chiller and evaporative cooling system to save energy and improve thermal comfort. The system was designed to contribute to the campus goal of carbon neutrality by 2050.
- Building commissioning occurred to ensure all systems operate effectively and efficiently.
- The building envelope was tested to ensure air filtration is minimal.

MATERIALS AND RESOURCES

Objective

The materials and resources (MR) credit category focuses on minimizing the embodied energy and other impacts associated with the extraction, processing, transport, maintenance, and disposal of building materials. The requirements are designed to support a life-cycle approach that improves performance and promotes resource efficiency.

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Tracy Hall Material Choices

Materials used in the construction of Tracy Hall were selected according to their sustainability and recycled content. Okland Construction was able to recycle more than 82% of the building construction waste - diverting 61.22 tons of waste from the landfill. In addition, the building was constructed from materials that contain recycled content.

These materials include:

- Structural steel and metal framing materials
- Carpet and ceiling tiles

Locally manufactured products were also used. These include:

- Brick masonry, concrete, stone, and gypsum board
- The relic alcoves also feature local trestle wood, cooper, and stone.

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INDOOR ENVIRONMENT QUALITY

Indoor environmental quality (IEQ) encompasses the conditions inside a building—air quality, lighting, thermal conditions, ergonomics—and their effects on occupants or residents. Strategies for addressing IEQ include those that protect human health, improve quality of life, and reduce stress and potential injuries. Better indoor environmental quality can enhance the lives of building occupants, increase the resale value of the building, and reduce liability for building owners.

To make their buildings places where people feel good and perform well, project teams must balance selection of strategies that promote efficiency and conservation with those that address the needs of the occupants and promote well-being. Ideally, the chosen strategies do both.

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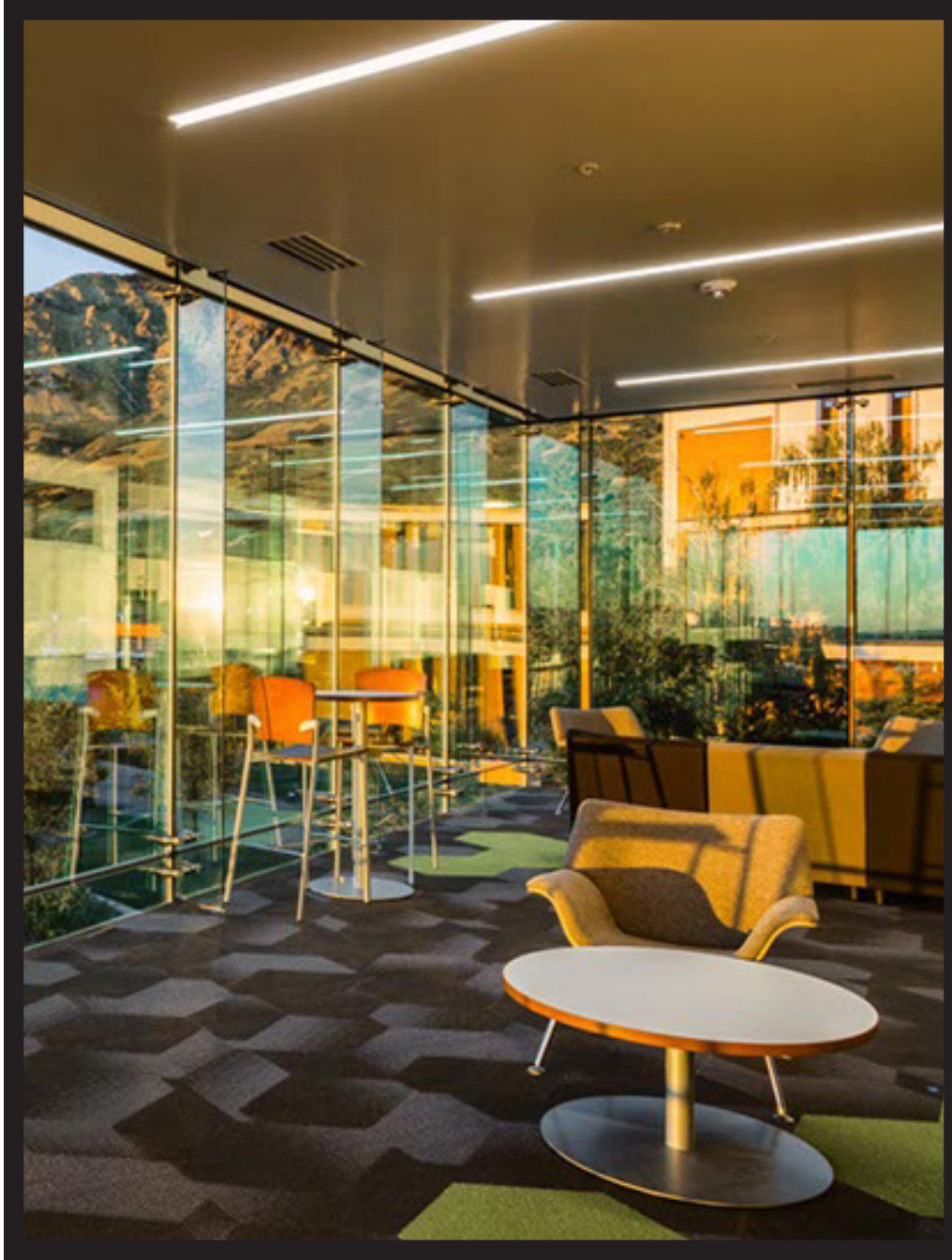
Tracy Hall Features

The selected finishes for Tracy Hall Science Center are low-emitting to help improve indoor air quality for people who use the building. Views to the environment outside were preserved and maximizing daylighting was a key consideration during the design phase of the project. Transparency from the corridor into the learning areas and to the exterior allows views to all building occupants and put science on display throughout the building.

The building was also design with a high level of indoor air quality using effective filtration systems and a 100% outdoor air with a heat recovery system in lieu of recirculating the building air.



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WHAT CAN YOU DO?

How occupants interact with their buildings needs to be a key consideration for all green building planning, design, operations and decision-making. Research on the performance of green buildings in recent years has placed greater emphasis on the need and opportunity to better understand the roles of occupants and the factors that shape their behavior, including institutional expectations, organizational culture, peer pressure and more. Although there are many facets to the research, there are many simple behaviors one can do to contribute to the effort to create a more sustainable environment.

- Reduce, Reuse and Recycle. Use the water bottle filling stations instead of buying a new bottle of water and recycle your materials instead of throwing them away.
- Use Public Transit. Tracy Hall Science Center is conveniently located near a campus shuttle and UTA bus stops. Let's use transit to help improve our Utah air!
- Save Energy. Unplug your charger when you are not using it and turn off the lights when there is enough daylight in the space for comfort.