

UNC Butler Hancock Addition

case study



LEED Facts:

Pursuing LEED for New Construction

GOLD **42***

Sustainable Sites 9/14

Water Efficiency 2/5

Energy & Atmosphere 9/17

Materials & Resources 7/13

Indoor Environmental Quality 10/15

Innovation & Design Process 5/5

* Out of possible 69 points



Ambient Energy role:

- LEED for New Construction consulting
- Sustainable design Charrette facilitation
- Drawings, specifications, & LEED template reviews
- Energy modeling analysis
- Life cycle cost analysis
- Green materials analysis
- Construction administration

Open space provides wildlife habitat and reduces the heat island effect.



Owner: University of Northern Colorado
Project Status: Completed July 2010
Construction Cost: \$10.7 million
Square Footage: 21,000 square feet
Location: UNC Campus
Greeley, CO 80639

Team:
Sink Combs Dethlefs Architects
Smith Seckman Reid
EMC Engineers
Northstar Design
BHA Design
Hensel Phelps Construction Company
Innovative Electrical Systems
Ambient Energy

The University of Northern Colorado Butler-Hancock Addition project is designed to update and add on to an existing 1974 athletics hall. The existing building is occupied by the Department of Athletics and Sports and Exercise Sciences which have overgrown the facilities available in the current structure. It houses a spectator gymnasium, pool, locker facilities, sports medicine room, athletic weight room, classrooms and offices. The Butler Hancock addition incorporates features of sustainability and energy efficiency and is designed to meet the Gold certification requirements of LEED-NC version 2.2.

With a combination of sustainable design strategies applied to the building, the addition is expected to:

- Reduce the local heat island effect by utilizing reflective site hardscape materials
- Reduce potable water usage by 44% for interior fixtures
- Offset 70% of building electricity use with Renewable Energy Credit purchases

During construction, the Butler Hancock addition:

- Used materials with a total recycled content value of 25% of the total material costs
- Diverted nearly 1,076 tons, or 90%, of construction waste from the landfill
- Purchased Forest Stewardship Council certified wood for 81% of the wood in the building
- Provided low-emitting carpeting, paint, coatings, adhesives, sealants, and composite wood products
- Provided a increased ventilation to improve indoor air quality

High efficiency plumbing fixtures reduce indoor water use.



Recycled content carpet and FSC certified wood products installed.





SSp1: Construction activity pollution prevention by implementing EPA guidelines.



SSc1: Built on previously developed land does not disturb green field.



SSc2: Located in dense urban area with more than 10 basic services within 1/2 mile.



SSc4.1: Has two public transportation service within 1/4 mile of the site.



SSc4.2: Provides bike racks and showers in the building for the building users.



SSc4.3: Provides preferred parking spots for fuel-efficient and low-emitting vehicles.



SSc4.4: Provides preferred parking for carpool and carpool.



SSc5.2: Provides a high ratio of open space to development footprint.



SSc7.1: Reduces heat island effect to minimize impact on microclimate.



SSc8: Reduces light pollution by minimizing light trespass from the building and the site.



WEc3: Uses low flow and flush fixtures to reduce potable water usage.



EAp1: Fundamental commissioning of building systems helps save in energy usage.



EAp2: Building is designed to meet ASHRAE/IESNA Standard 90.1-2004.



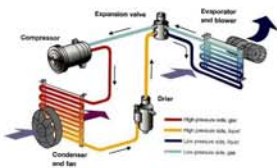
EAp3: Reduces ozone depletion through zero use of CFC based refrigerants.



EAc1: Saves energy usage and costs by implementing energy efficient strategies in design.



EAc3: Performed enhanced commissioning to save overall resources.



EAc4: Minimizes contribution to global warming and reduces ozone depletion.



EAc6: 35% of building energy is derived from renewable sources for a period of 2 yrs.



MRp1: Reduces waste generated by building occupants by recycling.



MRc2: Diverted more than 90% of construction waste from landfills.



MRc4: Recycled content materials contribute to over 20% of the total materials cost.



MRc5: Uses regional materials for more than 20% of the total materials cost.



MRc7: Uses certified wood products for more than 80% of the total wood cost.



EQp1: Meets minimum requirements of Sections 4-7 of ASHRAE 62.1-2004.



EQp2: Provides a smoke free environment to the building occupants.



EQc2: Provides 30% additional outside air above ASHRAE Standard 62.1-2004.



EQc3.1: Implemented an IAQ plan during the building's construction.



EQc3.2: Performed building flushout prior to occupancy.



EQc4.1: Used low-VOC adhesives and sealants.



EQc4.2: Used low-VOC paints and coatings in the building.



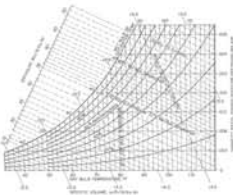
EQc4.3: Used Carpet and Rug Institute Green Label Plus certified carpet.



EQc4.4: Used composite wood & agrifiber containing no added ureaformaldehyde.



EQc6.1: Provides lighting controls to more than 90% of building occupants.



EQc7.1: Building has been designed to meet ASHRAE Standard 55-2004.



EQc7.2: Implement a thermal comfort survey and plan to rectify HVAC system.



IDc1.1: Reduces potable water usage by 43% through the use of low-flow fixtures.



IDc1.2: Provided open space area greater than twice the are of the building footprint.



IDc1.3: Provided sustainable education through case study and signage.



IDc1.4: Purchased green power for 70% of annual electricity usage for 2 years.



IDc2: Had multiple LEED-APs on the building design and construction

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