



Clark College – Columbia Tech Center

LEED Gold

CLARK COLLEGE

Project Specifics

| | |
|--------------------------|--------------------------------------|
| Gross square footage: | 69,984 SF |
| Construction cost: | \$20,470,000 |
| Project occupied: | 2009 |
| Energy savings: | \$ 20,000 / 29% |
| Water savings: | \$5,932 / 2,398,783 gallons per yr |
| Waste recycled: | 323 Tons / 95% |
| Added LEED cost*: | \$ 125,400, 3.4% of Consultant Costs |
| Incentives: | none |
| LEED Payback**: | 0 Years |
| CO ₂ savings: | Unknown |
| Awarded: | LEED Gold 2010 |

Energy-Efficient Design

The Columbia Tech Center was designed with energy conservation in mind, and is targeted to perform nearly 29 percent more efficiently than standard buildings. The design includes an innovative multi-story trombe wall that pre-heats the building's intake air with passive solar energy. Annual energy savings are estimated at nearly \$20,000 per year.

Renewable Energy

Roof-top photovoltaic arrays (one fixed and one tracking for a total of 2.25kW) and two micro-wind turbines (2kW) will provide real-life examples of renewable energy systems for students. Students will be able to monitor the energy used by the building and produced on site, while also gaining an understanding of these alternative power sources.



Energy savings are estimated at roughly \$19,500 per year. Strategies that increase first cost were carefully balanced against program value and the return on investments (energy, maintenance, and replacement savings).

Higher quality and more efficient HVAC systems contribute to a life of energy savings, as do high efficiency lighting integrated with photocells, all incorporated with occupancy sensor controls.

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Sustainable Sites

Some of the strategies used to promote healthy ecosystems include and are not limited to:

- Capture, treatment and release of all stormwater on-site.
- Use of rain gardens and bioswales for storm water treatment.
- Reduced impervious surfacing.
- Bicycle parking and Mass Transit service.
- Light pollution avoidance



Rain Garden Source

Water Efficiency

The project was designed with a projected total annual water savings of 948,184 gallons. As of 2016, it is saving double that (almost 2 million gallons per year). This is due to:

- **Landscape Irrigation Efficiency:** Over 70 percent irrigation water use reduction by landscaping with native and drought tolerant plant species, reducing lawn area, a high-efficiency irrigation system, rain sensors, etc.
- **Building Water Use Efficiency:** 49.9 percent building potable water use reduction by installing low-flow fixtures, dual flush toilets, and pint flush urinals.
- 100 percent on-site infiltration of storm water not only avoided costly connection fees, but afforded a discount of over \$6,000 a year from the City storm sewer impact fees.

Indoor Environmental Quality

- **Daylighting:** Over 75 percent of occupied spaces have been designed with natural lighting, which has been shown to improve student performance, productivity and overall comfort of occupants.
- **Views:** Over 90 percent of occupied spaces will have access to exterior views.
- **Glazing and Sunshade Devices:** Block unwanted sun in summer while capitalizing on passive daylighting and heating with deep penetration of daylight in winter.
- **Indoor Air Quality:** Non-toxic building materials were used, including low-VOC emitting paints, sealants, adhesives, carpets and finishes. The contractor implemented strict Indoor Air Quality management techniques during construction, and flushed out the building with fresh outside air after construction as an added precaution.
- **Mechanical System and Infiltration:** Designed for high standards of occupant health and comfort. A complete building flush out was performed after construction to exhaust any remaining irritants. The College uses Green and healthy cleaning practices and cleaning agents to maintain indoor air quality and protect health.

Materials and Resources

Recycling: In addition to providing recycling for building occupants, more than 95 percent of construction waste generated on the project was diligently recycled (323 tons) and diverted from landfills through an aggressive construction recycling and salvaging program.

Examples of Responsible Materials used on the project include:

- 32.3 percent recycled products from building materials
- 31.4 percent regionally harvested and manufactured building materials
- Certified wood from sustainable forests (FSC certified)
- Urea-formaldehyde free composite wood products and insulation.
- Polished concrete floors reduce materials and maintenance needs, in addition to other low maintenance and durable materials.