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ENVS 664
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October 26, 2006

The Alliance Center in Denver: a LEED Overview

Situated near the corner of 15th and Wynkoop Streets in Denver, Colorado is the Alliance Center. This old converted warehouse is an incubator of activity for Colorado non-profits. Funded by the Alliance for Sustainable Colorado, the building represents a living laboratory for sustainability. The Alliance Center is one of the few buildings LEED certified for two categories: existing buildings and commercial interiors. It exists in the Lower Downtown section of Denver close to the regional transit hub. One of the largest independently owned bookstores in the country is next door and across the street is an almost finished EPA regional office. This paper looks at the many aspects of sustainability enshrined in the U.S. Green Building Council's LEED certification process. Additionally, the paper considers other aspects of sustainability that LEED may not cover well.

The Site

The Alliance Center is located in a very dense and walkable part of Denver. One of its immediately sustainable features is that it is accessible by foot, bike, car and public transit. This multi-modal transportation access diminishes dependence on the automobile, but offers choice for the occupants of the building. In fact, the new FasTracks initiative in Denver will increase the light rail options in the next 10 years, adding about 119 miles of rail and 18 miles of Bus Rapid Transit.¹ All of these lines will intersect at Denver's Union Station, which is two blocks from the Alliance Center. Although not covered directly in the LEED-EB standards, the Alliance



Figure 1 The Alliance Center sits near 15th and Wynkoop Streets in Denver, Colorado

¹ FasTracks Plans. Overview. Available at <http://www.rtd-denver.com/fastracks/index.html>



Center is also close to restaurants and a number of retail options on the 16th Street Mall. This access is important to place making and indirectly social sustainability. According to Jocelyn Hittle, a tenant of the building, “being able to go next door to get a cup of coffee or look at books after work is a benefit” to the building.² This same building in a primarily office district or government district in Denver may

not provide the same vitality that a location like Wynkoop does. However, the LEED-EB standards do not distinguish dense sites based on the mix of uses.

Denver sits in an arid region with an average of 300 days of sun. To deal with the low amount of rain, the Alliance Center xeriscapes its garden to conserve water and control runoff when it does rain. Xeriscaping is a concept invented by Denver Water, a public utility, in the early 1980’s and utilizes the planting of native, low water plant species to conserve water used for the irrigation of lawns.³ LEED does not really adapt to different regions very well. Although stormwater management is important everywhere, there are some places where water conservation should weigh more heavily.

Water

In addition to xeriscaping, the Alliance Center has reduced water usage through the application of simple technologies. In the restrooms, the Center uses waterless urinals, low flush and dual flush toilets. Showers use low flow showerheads and aerators are installed on faucets, reducing water flows and energy consumption. In bathrooms, the sinks have self-generating power automatic faucets that use the flow of the water to charge the sensor batteries.⁴ All of these water-conserving measures have resulted in an 84% reduction in water usage.⁵ According Aaron Nelson, the project director for LEED certification, this reduction “amounts to a monthly



Figure 3
Waterless urinal
like the one in
the Alliance
Center

² Jocelyn Hittle. Personal Interview. Monday, October 23.

³ Kent Sovocool, Janet Rosales and Southern Nevada Water Authority. (n.d.) A Five-Year Investigation into the Potential Water and Monetary Savings of Residential Xeriscape in the Mojave Desert. Working Paper

⁴ Alliance for Sustainable Colorado. Alliance Center Tour. Available at <http://www.allianceforcolorado.org/tour.html>

⁵ Alliance for Sustainable Colorado. (June 2006). Alliance Center Description. Available from Janna Six.

savings of \$350. The payback period at retail cost for this retrofit is only 4 years.”⁶ These water saving decisions have an impact on energy usage and ultimately the operating costs of the building. Thinking about sustainability in terms of the whole system can help make better decisions about retrofits. The LEED system does not seem to reward whole systems design; however, existing buildings present barriers to the whole systems approach because of the existing infrastructure.

Energy and Atmosphere

The Alliance Center also features a number of energy efficient technologies, besides the water-conserving retrofits. The most technical of these features is the Direct Digital Control (DDC) for monitoring and maintaining climate throughout the building. Although this system is highly advanced, it does not always result in the perfect climate. Because most of the building is tenant occupied, climate can vary from office to office. This has something to do with the rearrangement of rooms as tenants move in. In a recent visit to the Orton Family Foundation office, I noticed that it was very chilly in the morning and almost hot by the afternoon.⁷ Although the system monitors climate, it cannot respond to the rapid changes in direct light that the tenant must regulate manually. These expensive systems are often hard to calibrate, especially for a number of tenants that may have different climate comfort levels.

Lighting is a great source of energy use for office buildings, but the Alliance Center utilizes several technologies to control lighting. The simplest change was from 40 watt T-12 bulbs to 32 watt T-8 bulbs. This reduced the energy usage by about 20% and will pay itself back in about 3 years. Furthermore, the switch has reduced the toxic levels of mercury inside the building and the electro-magnetic radiation.⁸ In addition to the change in bulbs, some of the floors have self-dimming ballasts that adjust based on the amount of daylight in the room, providing a consistent level of working light. Within the tenant spaces, the windows have MechoShade™ manual shades, which allow light through but block UV radiation. In the lobby spaces, the windows are tinted with a bronze mylar film that blocks about 99% of UV radiation and 60% of heat. Finally, in some rooms, the Alliance installed occupancy sensors to turn on

⁶ Rebuild Colorado. (September 2006). *Success Story, Alliance Center: LEED-EB Gold*. Available at http://www.colorado.gov/rebuildco/success/nonprofit/alliance_center.htm

⁷ Personal visit. Monday, October 23, 2006.

⁸ Supra. note 6.

and off lights. All of these improvements together result in an overall energy reduction of 56%.⁹ The payback period for the lighting is fast, but the DDC system and other expensive retrofits may have a longer payback period and are not as economically sustainable—especially if these systems need maintenance or improvements. LEED does not look holistically at the economic sustainability of some retrofits, but maybe the applicant is better suited to make those economic decisions with the certification process as a guide.

Materials and Resources

The Alliance Center has a commitment to locally sourced and “cradle to cradle” products when available. Some tenants opt to use wheatboard instead of drywall. Wheatboard manufacturers use the waste created in the harvesting and processing of wheat to produce the product. It is more expensive than drywall, but is recyclable and does not off any toxic chemicals. When a tenant opts for drywall, it comes from the local Gypsum, Colorado plant. Recycled jeans and cotton fiber make up the insulation between the drywall or wheatboard. This product is not toxic like the fiberglass insulation used in most construction and is a Class-A fire retardant.¹⁰ Additionally, the UltraTouch™ material used as insulation is also reusable and recyclable. This keeps costs low for the Alliance Center, which changes tenant spaces from time to time. With each new tenant, the Alliance Center advocates the use of recycled or locally sourced materials. In the case of one tenant, the Orton Family Foundation, they chose salvaged windows as a means of providing daylight to back offices and to create a unique space. Other tenants have used Lexan Dividers made from recycled plastic. The Center also advocates recycling to all of its tenants. Denver has single stream recycling, which allows tenants to place all recyclables in the same container and increases participation drastically. Recycling in the building has diverted 40% of the Center’s waste from the landfill.¹¹

Indoor Environmental Quality

LEED also assigns points for general indoor environmental quality. These things promote a healthy, enjoyable place to work. Daylighting at the Alliance Center is extensive with nearly every tenant space having access to natural daylight. Simple mats at all entrances capture dirt from the outside. The DDC contributes to these LEED points as well in terms of monitoring

⁹ Supra note 5.

¹⁰ Bonded Logic. *Ultratouch Features and Benefits*. Available at <http://www.bondedlogic.com/ultratouchfeatures.htm>

¹¹ Supra note 5

and maintaining indoor air quality. All cleaning products used throughout the building are green certified products. Additionally, the Center requires painters to use low-VOC paints and carpet tiles contain low VOC-material. When visiting this building, there is a real sense of comfort throughout. Despite the variations in temperature in some office suites, the building as a whole feels and smells clean. The fresh paint smell was not lingering as I sat down to do some work in the new Orton Family Foundation office.

Social Sustainability

An earlier section addressed the importance of a dense, mixed-use area for vitality and social sustainability. There are a additional steps that the Alliance Center takes internally that support social sustainability. These are that are not really part of the LEED certification but important nonetheless. First, all meeting spaces within the building are shared. This allows the Alliance Center to maximize tenant space and support the flattening of hierarchies. As a nonprofit clearinghouse, it also allows smaller nonprofits to cut costs. Tenants also share kitchen areas, which allow people from different organizations to mix and mingle in an informal setting. Throughout the Center are digital displays that help to share events and information for each tenant organization. Finally, mailboxes are located in one place to support accidental and sometimes fortuitous encounters with other tenants. These features create a space that is constantly in motion and bubbling with activity. The goal here is to cross-pollinate ideas from one organization to another and to build partnerships among the many organizations working toward common goals of sustainability.

Conclusion

LEED is a great, even if imperfect, tool. It provides a set of guidelines to help shift the market in green buildings and it is doing so. However, LEED alone does not make great design. This takes the dedication and passion of the designers, builders, contractors and funders. In some ways, LEED helped to reward the people that have been doing this for decades and galvanize others to start thinking green. The economics for existing buildings are not always present. Existing buildings often require expensive retrofits that may never recover the cost. In the case of the Alliance Center, they are lucky to have a wealthy philanthropist underwriting the costs. They also benefit from leasing the space to other tenants and share costs across a greater number of people. Even if the Alliance does not recover the costs in five to ten years, one could argue that the Alliance Center is doing a greater service for Colorado by advancing the cause of

sustainability. Benefits from the work of the tenants could multiply the savings for cities and counties throughout Colorado—savings that may never have come without the investment in the Alliance Center.