



Case Study of The Green Building

Keys to Success



Project Description



Economic Value



Challenges & Advice



Benefits



Stewardship Meaning



The Green Building, located in Metro Louisville, is the city's first commercial building to achieve platinum LEED (Leadership in Energy and Environmental Design) certification and Kentucky's first Platinum Adaptive Reuse Project. The award-winning renovation of the 115-year-old former dry goods store included resuscitating the structural masonry shell and infusing it with a modern core, including a 40-foot-high lobby, expansive natural lighting, ecofriendly materials, renewable energy systems, extensive solar power, geothermal wells and recycled denim insulation.

The design of The Green Building, a KY EXCEL member, made natural daylighting a major priority, with large windows and skylights throughout the space. Panes of glass replace what would have been some interior walls, allowing light to bleed through from one room to another or even one floor to another. That design, in tandem with a series of photovoltaic sensors throughout the

space monitoring levels of natural light, which in turn control the lights, means workers use very little artificial light in their offices during the work day. In the spring, summer, and fall, they rarely have to rely on artificial light. Even in the winter, there are some days where lights are not needed.

“Old buildings are filled with reusable resources (like wood and brick), versus new construction, using steel and plastic.”

Used throughout the building are mineshaft cinder blocks or solid masonry blocks made of slag and fly-ash, byproducts of coal production. The building features the original, stamped tin ceiling, low-emission paint and coatings and steel framing with 70 percent recycled content.

recycled content.

The roof, made with specially chosen materials that reduce the amount of heat entering the building, helps regulate building temperatures without electricity. The ventilation system can exhaust hot air or collect and redistribute it, depending on the seasons and outdoor temperature. A solar power system with 81 solar panels collects

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enough energy to put power back into the grid. The green roof aids in stormwater retention and runoff reuse, reduces urban heat island effects, improves air quality and insulates the building naturally.

A closed loop geothermal system of twelve wells, dug 300 feet into the earth’s surface, captures the coolness of the earth, which is converted into energy.

The building also has rain barrels to collect rain, decreasing stormwater runoff by at least 25 percent, and the overall discharge into the city’s stormwater pipes is significantly reduced by rain from the roof flowing into three collection tanks for irrigation and outdoor purposes.

\$ Vacant for 20 years prior to renovation, the owners estimate that the building’s



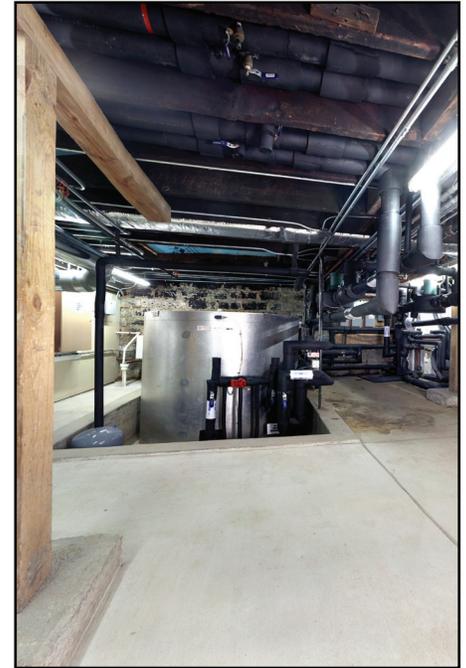
Wood in the building was corn-blasted and reused for flooring and beams.

operating costs are about 25 percent of a traditional structure this size. Additional expenses incurred to make the building more sustainable are expected to be recouped in 10 years, or sooner with depreciation.

? Uncovering and dealing with old problems in the structure was a challenge for the new owners.

Another challenge was that in 2006, green products were harder to find, and contractors had to be educated in using those products.

+ Typical of old buildings, a benefit to the project was the presence of resources for reuse, such as wood and brick as opposed to steel and plastic in new construction (adaptive reuse). As much material as possible was used, with the rest being used at other sites. The majority of the exposed wood is original to the structure. During the rehabilitation process, this wood was removed, corn-blasted (more environmentally friendly than sandblasting) and retrofitted to become flooring or support beams. The exposed brick and mortar walls were also corn-blasted.



In the basement, the ice tank cools the building.

“Our KY EXCEL membership has allowed us to speak, network and present our project and mission to groups of current and potential EXCEL members across the state,” says Stephanie Brothers, director of marketing and events. “We are proud to be part of this group.”

🌿 The Green Building houses an art gallery, event rooms, offices and a café, stimulating interest in the distressed East Market Street District. It is a prime example of the potential to be sustainable that exists in older structures.

HELPFUL HINT: Reusing original materials when renovating a structure not only is environmentally wise, but it saves money and landfill space and retains the building’s character.