

Flooring

- The entryway to the new ground-level addition features **genuine linoleum**, a product made from all-natural and largely renewable materials, such as linseed oil, cork dust, wood flour, and ground limestone.
- In offices where carpeting was used, **individual tiles** were installed instead of one wall-to-wall piece, so that replacements can be made easily and with minimal waste.
- The carpet tiles are made of earth-friendly fibers and contain the **highest percentage of recycled materials available**. The adhesive is non-VOC.

Other

- Countertops on the main floor are sandstone slabs that were **sidewalks in the City of Greensburg** in the early 1900s.
- The main floor cupboards are made from **materials salvaged** from the old Loyalhanna School near Latrobe and a commercial building in Blairsville.
- The wooden plank above the barn's main entry was part of a **carriage house** that once stood on the Saint Vincent monastery grounds in Latrobe.



- The barn's exterior monument sign is a one-of-a-kind sculpture that combines **historical elements from agriculture and forestry**, including a unique set of left and right mold board plows, two large farm wagon wheels, and a saw blade from a lumberyard in Champion.



Resource Efficiency

Heating and Cooling

- The barn draws on the earth's natural HVAC qualities with a **geothermal system** that uses 19 wells, each 150 feet deep, to heat and cool the main floor, lofts, and most of the ground floor.

In winter, this system pulls heat from the ground and brings it inside. In summer, it takes heat out of the building and deposits it in the ground.

Geothermal systems cost more to install, but much less to operate than conventional HVAC systems. In winter, our geothermal system can produce an extra \$3 of heat for every \$1 spent to run it. In summer, it can save as much as 60% on the cooling bill. Plus, in the air-conditioning mode, it uses the heat it takes out of the building to heat the barn's water – for free!

- The new ground floor office area uses a **high-efficiency heat pump system** with variable speed motors and computer control. Four ductless heating and cooling devices in the office areas have the advantage of being independently controlled.
- **Zoned, radiant floor heat** in most of the barn's main floor is efficient because it avoids heating unused space...yet it also is extremely comfortable because it works on the principle that people are most comfortable when their feet are warmer than their head.
- The exterior windows feature **low-E glass**, and those in the recently converted ground floor offices are **triple-pane**. All exterior windows can be opened to allow nature to do the space conditioning many days.
- A **metal canopy** shades south-facing windows from the summer sun to reduce heat gain.

Lighting

- Inside and out, we are systematically **converting our lighting to LED bulbs**, which produce light approximately 90% more efficiently than incandescent light bulbs.

Water

- **Water-saving toilets** reduce the amount of potable water drawn from the municipal system, and save twice: once in the cost of water and once in the cost of sewage.
- Overall, the building itself has been designed to create **no burden on the storm sewers**.

A 3,000-gallon **underground cistern** catches rain water runoff from the roof that is reused for a variety of purposes. Other roof water is channeled into a water garden.

Front and rear parking areas feature **permeable pavers** that allow stormwater to soak into the ground, rather than simply running off.



A sample of the permeable pavers used in the front parking lot.



Several different kinds of permeable pavers were used in the barn's back parking lot for demonstration purposes.

*More than 100 foundations, businesses, individuals, and government agencies that also believe in the value of conservation supported this \$1.5 million project.

** In 2010, the average cost of electricity per square foot for U.S. office buildings was approximately \$1.73. Source: MGE, Madison Gas and Electric, Madison, WI.

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This 1880s era barn
has some amazing
NEW THINGS to show you



Westmoreland
Conservation
District

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This building is a real barn that was built in the 1880s. For about 120 years, it housed grain and animals as part of a working farm in Penn Township, Westmoreland County.

But by the late 1990s, the farm was no longer operating and the barn was set to be razed to make way for a housing development.

A community effort* saved the barn from demolition. Amish craftsmen carefully dismantled it, and then rejoined each of its 300-plus hand-hewn beams and timbers at its present location on the Donohoe Road in Greensburg. (Interestingly, we learned that there had been a barn on this site – in almost the exact same location – in the 1930s when this land was a private farm. Later, it was purchased for use as the Westmoreland County farm.)

The Westmoreland Conservation District added a number of practical conservation measures to the original barn's shell to prepare it for its new life as the organization's headquarters. Many of those conservation measures are detailed in this brochure.

As you look through this brochure, think about how these practical conservation measures might work in your home or business. Not only can they make a building a more pleasing place to be, they often can save you money and benefit our community with cleaner water and air, less waste, and a better quality of life.

Many of the goods and services for the barn – from lumber to lights, carpet tiles to insulation – were obtained locally, which also helps our community's economy and reduces transportation costs.

In 2001, the barn's transformation was complete and the District moved in.

Adaptive Reuse

Reclaiming a barn about to be lost to development is one of most fundamental conservation concepts: **reusing what we already have.**

More than 80% of the barn's original structural timbers were in good shape, and are being reused. We estimate that these original timbers of poplar, white oak, and red oak have at least another 100 years of life in them (see more examples of reuse under Recycled ... Materials).

Another benefit of reclaiming a barn is that it **honors Westmoreland Country's agricultural heritage.** Farming is still the number one industry in Westmoreland County in terms of gross dollar product. And the Conservation District itself got its start in 1949 when local farmers gathered in a neighbor's barn to discuss soil, crops, and conservation.

Teamwork Approach

Building with conservation in mind started with a **teamwork approach to planning.**

Instead of working separately, the barn's architect, engineers, and contractors all spent time at the table together before the first shovel of earth was turned, laying out common goals and creating integrated systems to achieve them.

Thoughtful Siting

The physical geography of this location and the style of barn were a perfect match.

This structure is a **"bank barn,"** which is designed to **fit into the profile of a hill.** The barn fit the contours of this location almost perfectly, minimizing the amount of earthmoving needed.

We **oriented the barn very carefully on this location** because doing so helped to reduce long-term dependence on mechanical systems for heating and cooling. The right orientation allows us to take maximum advantage of the southern sun's natural warmth in the winter and the prevailing breezes in the summer. And the bank of earth against the ground level of the barn also helps to moderate the temperature inside.

Recycled, Repurposed and Sustainable Materials



Top: Amish craftsmen unload original 1880s barn timbers for reconstruction at Donohoe Center.

Right: The main hall of the completed District headquarters with original timbers and diverse wood wall paneling.



Wood

- 80% of the barn's **original structural timbers have been reused**, and the limited number of new timbers needed came from Westmoreland County forests.
- Inside walls are finished with a variety of wood types**, representing the natural diversity found in area forests.

Some walls are chestnut, original to the barn and newly planed to reveal their beauty. Others are finished with more recently harvested low-grade cherry, poplar, ash, and maple. Some even are finished with local timber from "cull" trees, including wormy red oak salvaged after a gypsy moth infestation, which is used in the main floor receptionist's office.

- Exterior siding on the barn is hemlock.**

Iron Oxide

- The concrete floor in the main meeting room, as well as the window shades here, have been

tinted a rusty orange by using some 400 pounds of iron oxide removed in the process of cleaning up local streams.

When used as a pigment, iron oxide is harmless. But when it gets into streams and rivers (as it does when water leaches from abandoned coal mines), iron oxide is a pollutant.

Stone

- The barn's **stone foundation is recycled** from a barn on nearby Georges Station Road that was once owned by Ann Rudd Saxman (for whom the adjacent Nature Park is named).

Interior Windows

- The windows used in some of the interior walls on the main and loft levels were **salvaged** from old buildings.

More than just design elements, **they allow additional daylight** into the offices and so reduce the need for electric lights on many days.



Insulation

- The barn's shell is made of **structural insulated panels.** Produced locally, the panels are a "sandwich" of waste wood with a non-CFC-producing foam in between.

