

craftworks

at Cool Spring

AT LAST! NEW STUDIO OPENS AT COOL SPRING

After nearly two years in planning and construction, CraftWorks' new studio on Bullsken Run is finished and open for classes and events. Built in the style of a bank barn, the new studio is both a beauty to behold and a marvelous conception of environmental and energy-efficient design.

In the upstairs space, or loft, the most impressive features include massive timbers, the vaulted ceiling of reclaimed wood, and windows that bathe the entire upstairs in light. The upstairs, with its wooden floor, will be used for "clean" classes like writing, drawing, music, yoga, and dance. It will also be the venue for lectures, poetry readings, and chamber-scaled musical events. The building will be available for use by other education organizations, particularly those involved in the creative arts, heritage tourism and preservation, and the environment.

Downstairs, the garden level is the "dirty" studio for classes in painting, clays and sculpture, stained glass, and other studio arts. The downstairs opens to planned garden area that will be designed and installed by CraftWorks partners like the Eastern Panhandle Master Gardeners, Dolly Madison Garden Club, and the Job Corps.

The building was designed and built by PanelWrights, a Jefferson County company that is a leader in the use of structural insulated panels, or SIPs.

SIPs insulated panels are high-quality foam core panels. They are solid, one-piece structural components that can be used in walls, floors and roofs. Each panel is made of an Expanded Polystyrene (EPS) core bonded between two outer layers of rugged Oriented Strand Board (OSB). SIPs buildings are among the most energy-efficient structures in the world.

PanelWrights' president Al Cobb seized the opportunity to create a studio that both celebrated the architectural heritage of the region and utilized state-of-the art building techniques and technologies. "I worked towards a level of performance that is seen only in projects that hold the designation of Passive House Certified," said Cobb.

The homes that reach certification go through a process of verification of three performance metrics. First, they must use a limited amount of power per square foot per year for heating and cooling. Second, they must use a limited amount of total power per square foot per year. Third, they must achieve a level of airtightness less than .6 air changes per hour under a pressurized condition of 50 pascals. The CraftWorks studio has tested at .56 at 50 pascals.

"This level of tightness is about twenty times tighter than the average house built in the United States today," explained Cobb. The building is so tight a ventilation system brings in fresh air periodically throughout the day.

Other features include an air exchange to move cool air from the



downstairs to upstairs in summer, and to move warm air from upstairs to downstairs in winter. There is even a system to monitor the energy efficiency remotely via an internet connection.

"All those green features aside, though, the studio is visually a thing of beauty," said operations director Aundrea Humphreys. "It's an inspiring place. And it fits in perfectly with the surrounding landscape."

The studio is built on a 12-acre tract donated to CraftWorks by founder Linda Case. It is part of an 81-acre preserve that includes more than a mile of walking paths that will soon be open to the public.

"Having our own studio building with its unique bank barn design is a dream come true," said Case. "It's a handcrafted work of art in itself. The studio will enable CraftWorks to carry out our mission of delivering exceptional learning experiences in a jewel of a natural setting."

Commenting on the studio's green qualities, Case added, "Having the Studio be the most energy efficient building in West Virginia is a wonderful icing on the cake and helps to lighten our footprint on the environment."

An open house is scheduled for September 17 from 1pm to 4pm. Everyone is welcome to stop in and see the studio and learn more about programs and classes.

CraftWorks welcomes people to experience the magic of Cool Spring through exceptional learning programs that inspire lifelong creativity and foster deep connections with the environment and community.

Come Do!

Putting Together West Virginia's Most Energy Efficient Structure

When we were approached by the folks at Craftworks we knew that Cool Spring Studio was going to be someplace special. Panelwrights wanted to do our part. As one of the SIP industries largest distributors of structural insulated panels, we know a thing or two about building green. And we were excited to be doing it right in our own backyard.



Structural Insulated Panels (SIPs)

Using SIPs in Craftworks was the first step in creating a building envelope that would allow us to achieve the air-tightness required for maximum energy efficiency.

Exterior Applied "Outsulation"

6 1/2 " of closed cell foam was applied over the poured foundation walls. This technique moves the dew point outside the building envelope keeping the interior space dry and comfortable. In addition, the thermal mass of the concrete foundation works to buffer any temperature changes, keeping a more uniform temperature inside the space.



Radiant Floor Heating

The looped PEX tubing was placed in the insulated floor slab in anticipation of future installation of a solar thermal system.



Heinzmann Windows

These European tilt/turn windows were salvaged and repurposed for the Craftworks project. Meeting the Passive House standard, the double pane, double-sealed windows help with both air-tightness and controlling solar gain.

Energy Recovery Ventilator



The UltimateAir ERV is used to control indoor air quality by exhausting stale air and supplying fresh air as required. This HVAC feature is tied to building occupancy, turning on and off automatically using motion sensors.

Mini Split System

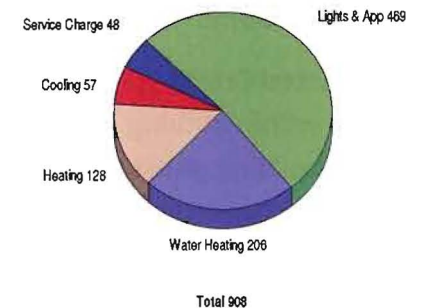
This Mitsubishi mini split ductless system provides both heating and cooling. One compressor unit is mounted outside the building and supports the individual control of the two interior wall mounted units. This configuration enables each level of the building to be controlled independently.

Energy Analysis

The confirmation of energy efficiency relies on both an analysis of the building as a system as well as a blower door test. The blower door test supports the statistical analysis by confirming the air-tightness of the envelope. Craftworks' envelope is 20 times tighter than the average house. The energy analysis performed resulted in an Energy Star 5 Star Plus rating, as well as a HERS score of 49. Annual heating and cooling for Craftworks is anticipated to be \$185.



Cool Spring Studio Annual Energy Costs (\$/year)



Energy Analysis performed by Home Efficiency Solutions LLC
304-676-8892 www.homeefficiencysolutionsllc.com

Energy Monitoring

Co-developed here in West Virginia, the ECOP (Energy Consumption Observation Panel) is an energy monitoring and measuring as well as data-logging device. ECOP communicates with the entire electrical power system and can provide internal reports, alerts, and comprehensive energy analysis. The web tied system allows off-site monitoring 24/7.