



GALILEO'S PAVILION

12345 College Boulevard Overland Park, Kansas USA

Architect Studio 804

Lawrence, Kansas USA
www.studio804.com

Team

Executive Director Dan Rockhill
Team Aaron Aday, Megan Carrithers, Chris Claassen, Raymond Dwyer, Jon Hanes, Nate Jarvis, Seamus McGuire, Phil Meyer, Rhett Morgan, Thomas Nguyen, Dan Nordmeyer, Kevin Porter, Liz Pritting, Melissa Schoch, Andy Seemiller, Adam Smith, Stephanie Stone

Collaborators

Architect of Record Rockhill + Associates
Contractor Studio 804, Inc.
Engineer Hoss and Brown
Structure Norton and Schmidt

Date

Design Phase August 2011 - December 2011
Build Phase January 2012 - July 2012

Client Johnson County Community College Center for Sustainability

Project Data 3300 square feet



Studio 804, Inc. is a not-for-profit 501(c)(3) corporation whose participants are graduate students of the University of Kansas's School of Architecture, Design and Planning. The organization is a comprehensive education opportunity for graduate students entering their final year of study.

With sustainability, affordability and constructability dominating our collective interests, Studio 804 educates students using a hands-on approach, not only doing the design but also the building, often using new techniques we develop through our research. Studio 804 produces one building per year, and it is through the support of organizations and individuals committed to environmental stewardship that we are able to continue our service to the community at large.

Studio 804 has completed four LEED Platinum buildings in Kansas; a sustainable prototype for tornado ravaged Greensburg, KS, (the first LEED Platinum in the state), two in Kansas City and the Center for Design Research on the KU campus in Lawrence. They have also completed two Passive House Institute Certifications. Studio 804 projects adhere to standards of the highest quality, both in design and fabrication, and address important issues of environmental sustainability, energy efficiency and accessibility.

The Department of Architecture's J.L. Constant Distinguished Professor Dan Rockhill leads the studio.

The goals of the Johnson County Community College Center for Sustainability, combined with the need for additional classrooms at the ever-expanding college, gave Studio 804 the opportunity to create Galileo's Pavilion. It is an inspired learning space that also serves as an information center for the campus and the community at large.

Galileo's Pavilion incorporates and enhances an existing sculpture, Galileo's Garden, an artwork commissioned in 1984 by renowned Kansas City artist Dale Eldred. This work emphasizes the sun's seasonal and daily cycles, acting as a solar calendar. The new building was designed to work with these same forces of nature and embraces the new garden in its courtyard.

The facade of the pavilion is clad in slate chalkboard panels recycled from regional schools throughout the Midwest and large glass panels which are reclaimed from a local unfinished building project. A glass louver system, highly insulated glass curtain walls, operable windows and skylights as well as the thermal mass of the concrete floors manage the sun's heat and prevailing winds for passive heating and cooling as well as year round daylighting. The north wall of the classrooms and lounge support living plants that help improve the indoor air quality and acoustics of the spaces.

The building is super insulated, designed with 6" of rigid insulation board beneath the slab and 12" of rigid insulation installed on the inside of the foundation walls. The structural frame is made of engineered lumber and is over three times as thick as conventional framing allowing for more insulation to be used. Blown cellulose, 75-85% recycled paper fiber produced from newspaper waste, results in R-values that are four times the conventional methods. These passive design features coupled with an advanced mechanical system not only provide an extremely efficient means of heating and cooling, but it also saves the owner operating costs as well as extending the life of the building.

Rainwater collected from the roof is diverted to an underground cistern and pumped to the interior rainset. The rainset filters the water and meters the amount used from the cistern. Helping to reduce potable

water demands and stormwater runoff, the water is used to irrigate the living walls as well as supply the water closets. Stormwater runoff not collected in the cistern is retained in a rain garden south of the building. In addition to harvesting rainwater, the building features green roof trays, photovoltaics and a wind turbine to further reduce or even eliminate the need to use public utilities to heat, cool or manage the use of water on the site.

Another important feature is net metering, enabling the owner to be credited for excess energy production during peak hours of sun and wind. An energy management system displays the building's real-time energy use on a monitor in the lounge, allowing users to immediately see the impact of these systems on the building's energy usage.



