

# WILSON COLLEGE



## *Energy Solutions* AT WILSON

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A self-guided walking tour of Wilson's sustainability initiatives





Since 1994, the Richard Alsina Fulton Center for Sustainability Studies has lived its mission to educate students of all ages about humane stewardship of our communities and world. One way we do that is to demonstrate alternative energy generation and living practices to address issues of dwindling energy sources and the geopolitical instability that results. Current projects include low-tech home energy solutions, a variety of solar electric applications and energy conservation measures.

Why it is better to use clean energy/sustainable energy sources?

- Reduces air pollution and greenhouse gas emissions
- Lowers consumer energy bills
- Enhances state and local economic development, including job creation
- Improves energy system reliability and security

#### **WALKING TOUR:**

Distance: about 1.5 miles in total

Duration: about 45 minutes (at a casual pace)



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### **GRID-TIED CHARGING STATION: ART BARN, 2011**

This solar-powered Schneider Electric vehicle charging station demonstrates sustainable energy production and raises awareness of solar energy production and electric vehicles.

- First solar electric charging station in Franklin County
- Charging station
  - Reduces carbon emissions
  - Free for public use

Follow the link to see how much you are potentially spending on gas each year: [www.eia.gov/todayinenergy](http://www.eia.gov/todayinenergy)



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### **LEED-CERTIFIED: HARRY R. BROOKS COMPLEX FOR SCIENCE, MATHEMATICS AND TECHNOLOGY, 2009**

This building is a model for best practices in green construction and serves as a resource for environmental education. Leadership in Energy and Environmental Design (or LEED) certification is administered by the U.S. Green Building Council ([www.usgbc.org/leed](http://www.usgbc.org/leed)) and ensures the best environmental and energy-efficient design, construction and operations of resource-efficient, high-performing, healthy, cost-effective buildings.

- Features include solar thermal hot water on roof, low-flush toilets for water conservation, recycled building materials, natural lighting and low-water/native landscaping. The LEED program mandates high environmental standards when it comes to energy efficiency and the use of chemicals, and requires natural and local building materials and native vegetation.



### 3 GRID-TIED SOLAR ARRAY: FULTON FARM, 2006

The Fulton Farm solar array provides electricity to the grid, earning electric credits. It demonstrates solar energy production on a residential scale. This project is funded by a grant from the West Penn Power Sustainable Energy Fund.

### 4 TOOKE FARMHOUSE, 2013

#### *Energy Audit*

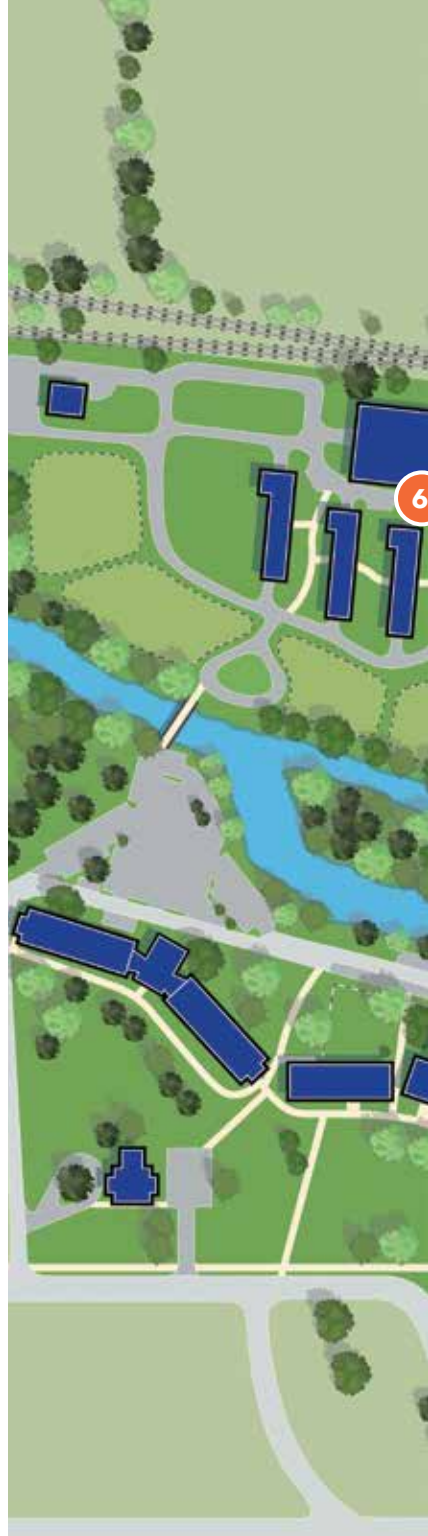
Energy audits, like the one conducted at the Tooke Farmhouse, are an important instrument in energy conservation practices. An energy audit involves an inspection and analysis to determine the efficiency of a building or system, with the goal of finding ways to improve or reduce energy use. Recommendations include air sealing, weatherstripping and insulation.

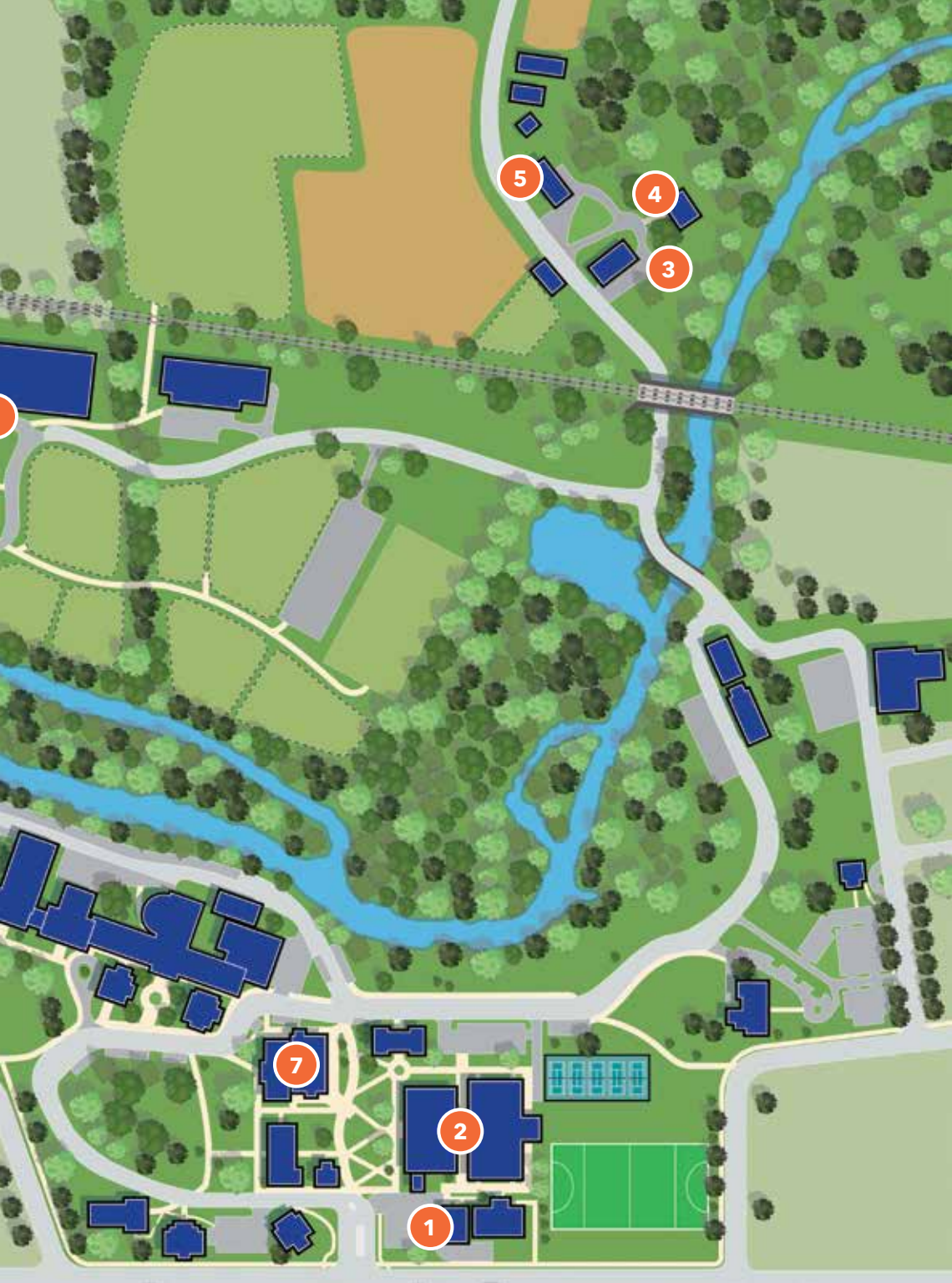
- The Tooke Farmhouse energy audit recommended insulation and air sealing, which was completed in 2013.
- Energy audits are a good first step in planning for conservation measures. Through planned implementation, improvements are prioritized based upon return on investment, need and budget.

#### *Insulation and Air-Sealing*

In response to the results of an energy audit or assessment, the attic and basement of the Tooke Farmhouse were insulated and air sealed to improve energy efficiency. Air-sealing reduces air leakage and, along with insulation, conserves heating and cooling energy.

- Propane use decreased by over 20% after insulation and air-sealing, resulting in a five-year payback for the project.





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## 5 FULTON FARM

### *Solar irrigation pump system, 2014*

This solar system powers an irrigation pump and system that delivers water to the Fulton Farm.

- Six kW grid-tied photovoltaic panels (PV) array on the pole barn have been sized to power a two-stage pump system, replacing a diesel-powered irrigation pump.
- The system is grid-tied to take advantage of solar energy production throughout the year.
- A natural sand filtration system is also part of the design, reducing labor and maintenance costs.

### *Solar-powered garden tractor, 2015*

A General Electric solar tractor is used by farmworkers to mow grass, cut brush and till fields.

- Specs: 36 Volts (six, six-volt golf cart batteries in Series), 8 mph, designed to mow approx. 1.5 acres, powered by five dedicated solar panels on the pole barn.
- Purchased with a multipurpose grant from the Margaret A. Cargill Foundation.



## 6 AUTOMATIC, SOLAR, FROST-FREE HORSE WATER TROUGH: EQUESTRIAN CENTER, 2016

Solar watering troughs installed in the paddocks demonstrate sustainable alternatives in equine management.



## 7 ENERGY-EFFICIENT LED LIGHTING: JOHN STEWART MEMORIAL LIBRARY, 2015

LED is short for light-emitting diode, which is an electronic semiconductor device that emits light when an electric current passes through it.

- The LED lights reduce energy use in the library by 23%, for a savings of 1,265 kilowatt-hours per year over a fluorescent lighting system.
- Funded in part by the West Penn Power Sustainable Energy Fund.



For more information about sustainable energy projects, contact:

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**WILSON  
COLLEGE**

Chambersburg, Pennsylvania

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