In partnership with the University of Michigan, Adams Academy has a renewed emphasis on Science, Technology, Engineering and Math (STEM). Students enjoy the advantages of working with highly qualified teachers along with U-M Engineering graduate students. The curriculum meets the Michigan benchmarks but with an infusion of STEM disciplines. Adams sets the foundation for the YPS Department of Educational Quality's goal to create a K-12 emphasis on preparing students for careers in the sciences.
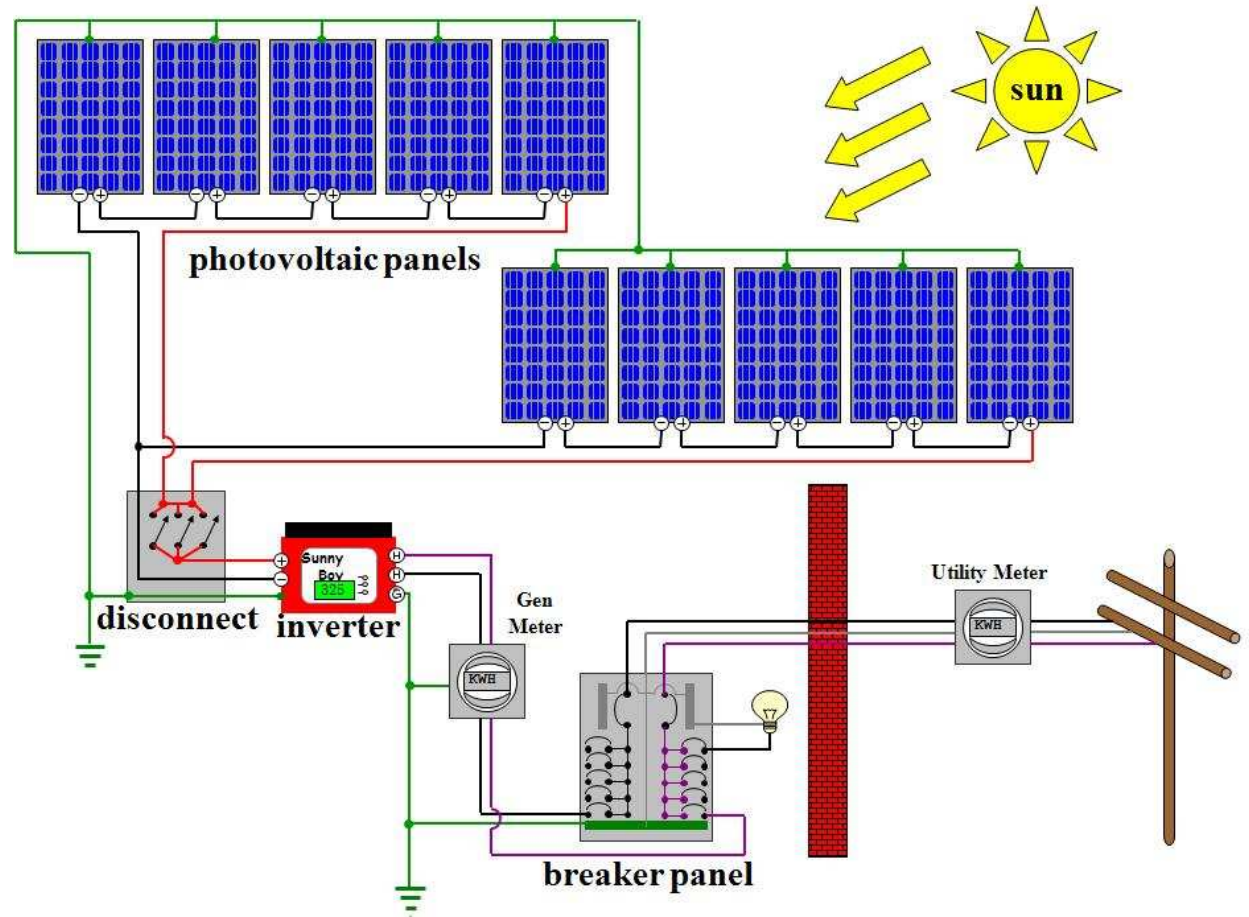
As part of this emphasis on Science, Technology, Engineering, and Math, Adams Academy applied for a solar grant from the Michigan Renewable School Program in 2010. The school was awarded a grant to install a small solar photovoltaic system on the Southeast side of their building. The system was installed and operational in the spring of 2011. SolarYpsi installed their real time monitor in the fall on 2011 and we can now track the total electrical power consumption and generation at the school.

How Solar Power is Captured

As illustrated in the diagram below, sunlight penetrates the photovoltaic panels, which converts a portion of that light into electrical current. The panels are mounted at a fixed 38 degree angle to maximize annual solar collection at our location. This electrical current is direct current (DC) which is carried through wires to a disconnect switch that can turn the system off for maintenance. The DC power is then routed to the Sunny Boy inverter, which converts DC electricity into standard, 110 volt, 60 cycle alternating current (AC) that we find in an ordinary wall outlet. The power is now ready to be used and is routed to the school's breaker panel for distribution to individual circuits.
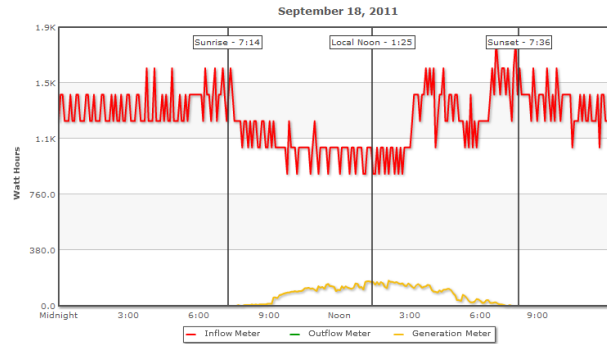
The system is very small relative to the amount of power being consumed at the school so the utility company choose not to meter the generated power , but any solar power generated directly offsets power that would have been purchased. SolarYpsi installed a monitoring system to measure the total power consumption and the solar power being generated. You can see this real time data at SolarYpsi.org/installations/adamsschool.

The picture above shows one of the SunModule 240 watt solar photovoltaic panels before it was installed. Five of these panels are mounted on a metal frame and then fastened to the school's south facing wall. The ten panels are wired as two strings of five. This direct current (DC) power then enters the school and is routed to the inverter and connected to the schools electrical system.

Graphs showing the power coming into the store (red) and generated from the sun (yellow) can be seen at **SolarYpsi.org**, then clicking on the Adams School link. The website also has photos of the installation and details about the project.

September 18, 2011

About the Michigan Renewable Schools Program – Renewable Energy (RE)
The RE Program provides technical and financial assistance to public, private and charter K-12 schools in the State of Michigan to design, coordinate and implement practical installations of educational solar photovoltaic (PV) and wind turbine systems. This program provides turn-key renewable energy systems to schools. Supplemental matching funds are required from participants. The Michigan Renewable Schools Program is funded by the Michigan Public Service Commission. For more information visit:
www.EnergyWorksMichigan.org

Adams S.T.E.M. Academy

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Solar Power

In 2010 Adams School won a grant from the Michigan Renewable Schools Program to install a small solar photovoltaic array on the school. While only a demonstration scale system (~1% of building energy use), it is a great educational tool for the students, staff and community. Come visit and learn how it works.

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