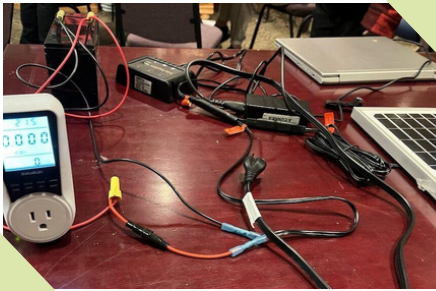


Grace Holistic Center for Education

2023 Path to Zero Energy Award Winner



The Project:

Students at Grace Holistic Center for Education built solar charging stations for their classrooms, which required them to learn how to read, monitor, and understand energy usage through Multimeters and Kilowatts Meters. The solar charging stations were used to power Chromebooks, which helped reduce costs, save energy, and improve air quality in the classrooms.

Project Focus: Path to Net Zero, Energy

Location: Yorkville, IL

Staff Involved: 3

Students: 24



The meters are showing us that the panels do make a difference, while over the long-term our electric usage and bills will tell us how much of a difference they are making. We believe every little bit makes a difference.



The Process:

The project began with outreach to the community, other students, family members, the project's mentors at FGM Architects, Inc, resources available through Illinois Green Alliance, The Climate Initiative, ComEd and the World Wide Web. Students researched different ways of measuring energy usage, and they explored how much energy is consumed and used in the school. Grace Holistic Center for Education used the Illinois Green Alliance mini grant to purchase Multimeters and Kilowatt Meters, and experts in the community taught students and faculty how to use them. These monitors were used to build their Solar Charging Stations for students' Chromebooks. The meters show the energy being consumed by each charging Chromebook. The school plans to use electric bills to track long-term cost savings.

The Outcomes:

The students and faculty learned that Chromebooks utilize anywhere from 6.33W to 11.53W of power consumption while idling and approximately 45 W a day. If the Chromebooks are plugged in with approximately 38 students using Chromebooks in the school, 4 hours a day, with a basic cost of \$0.12, they figured a baseline of .18 kwh used per Chromebook at \$7.88 year, or 65.7 kwh at \$299.44 per year. They used this baseline as a very conservative starting point for understanding their energy and cost savings. The Solar Powered project also helps improve the air quality in classrooms by reducing reliance on fossil-fuel burning energy.



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