Solar Heating & Cooling - Case Study

Wheaton College | Norton, MA

Introduction

In August 2017, Wheaton College installed a solar hot water system on the roof of its Haas Athletic Center. In doing so it earned a rebate of $89,600 from the Massachusetts Clean Energy Center, through the Commercial-Scale Solar Hot Water Program. The contractor for this project was Renewable Energy Systems, who installed the array of 39 SunEarth flat plate collectors, which heat the athletic center's indoor Olympic sized pool, and which also heat water for locker room showers and restrooms. This configuration allows either the pool or the domestic hot water to be heated to different temperatures depending on weather conditions, which greatly increases the system's overall energy efficiency.

Performance

The system uses two Onicon BTU meters to track the total heat output. One BTU meter is on the pool-heating side, and the other is on the domestic hot water side. The performance data is transmitted in real-time to the Thermal Grid web based platform, via the Resol DL2 datalogger. During the systems first 4 months of operation (Sept.-Dec.), it generated about 700 therms of free heat.

Haas Athletic Center's Olympic-size swimming pool

39 SunEarth Thermoray TRB-32 flat plate collectors

System Information

Location:	Norton, MA, USA
Application:	Pool & Domestic Hot Water
Rated Power Output:	83.2 kW (thermal)
Yearly Energy Output:	72,700 kWh / 2,480 therms
Yearly CO2 Reduction:	13,240 kg / 29,200 lbs
Solar Collectors:	39x SunEarth TRB-32
System Format:	Drainback closed loop
Storage Capacity:	360 gallons
System Metering:	2x Onicon BTU-meters

Contact Information

SunEarth | www.SunEarthInc.com
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