Rockland County Co-Composting

Black SolarWall® panels installed on Wall 1 of the Rockland County Co-Composting Facility, located in the town of Ramapo, New York.

The County installed “SolarWall®” signs on two of the walls to draw attention to their solar system, which is used for process drying.

Background

The Rockland County Solid Waste Management Authority administers and treats the solid waste from wastewater that is generated within the county. The co-composting facility is one of the buildings that they administer, and in 2005, Dvirka & Bartilucci (D&B) Consulting Engineers were tasked with overseeing a series of process, structural, and energy efficiency improvements.

Solution

As part of the energy efficiency improvements, D&B Engineers investigated commercially available solar heating systems to offset the large quantities of energy required in the waste drying application. They recommended the SolarWall® technology, which is ideally suited to commercial process drying applications.

SolarWall® systems were installed on the southeast and southwest walls to provide heat to two 3-million BTU/hr oil-fired heating systems. The overall project was divided into three systems, and is summarized below.

**SolarWall® System One**: 1,265 ft² (118 m²) of panels were installed on the southeast wall. 11,000 cfm air is preheated and connected to the oil heater on the northeast corner of the facility;

**SolarWall® System Two**: The solar collector area is 3,815 ft² (355 m²) on the southeast facing wall. 17,500 cfm of air is preheated and delivered to the second oil heater on the southwest corner;

**SolarWall® System Three**: Covers 2,900 ft² (270 m²) on the southwest wall. Designed for preheating 17,500 cfm of air, which is also connected to the second oil heater.

Results

Each year, Rockland County is projected to realize the following savings from the SolarWall installations:

*Energy Savings: 1,475 MMBTU / year*
*Heating Oil Displacement: 14,100 gallons / year*
*CO₂ Displacement: 165 tons / year*

At the time the project was approved in 2006, the cost of heating oil was $1.18 a gallon and the project had a payback period of under 10 years. As of 2008, the price of heating oil in NY state had tripled and was fluctuating in the range of $4 to $4.70 a gallon, resulting in a 3 year payback. Given the magnitude of the energy reductions, this highlights why the SolarWall technology offers such a compelling ROI in terms of hedging against volatile energy prices.