Fruit Drying

Sunsweet Dryers, California

Freshly dried prunes

A section of the roof mounted SolarWall® system

Background

Sunsweet Growers is a cooperative of prune growers, which operates 481 drying tunnels. Sunsweet Dryers is the largest prune drying company in the United States.

Prunes are dried at a relatively high temperature with a maximum temperature of 185℉ leaving the burner. Each of the 481 tunnels has two chambers. The drying season is 4 to 5 weeks per year, 24 hours a day, usually from mid July to mid August. Each fan handles approximately 50,000 cfm of air with approximately 20% fresh air and 80% re-circulated air. The burners are rated at 3.2 million BTU's per hour and are modulating. The roofs of the dryers are not insulated.

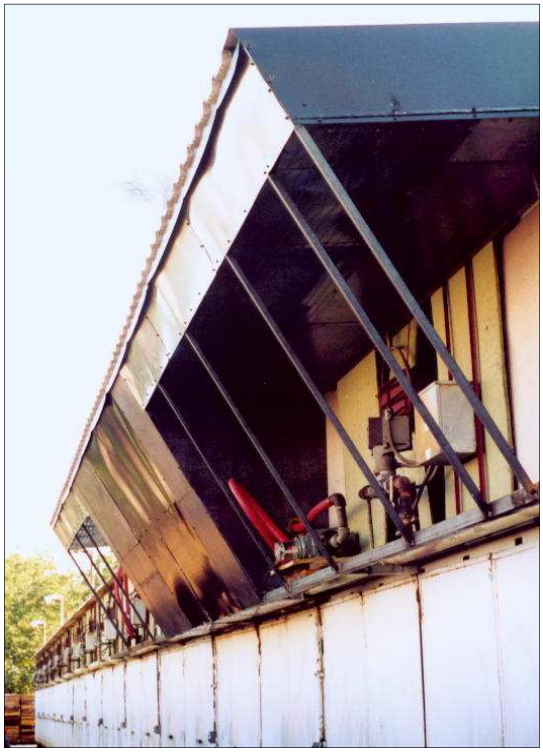
Solution

A 110 m^2 (1,200 ft^2) SolarWall® system was mounted on the roof of three adjacent dryers and connected to one fan intake. The solar system pre-heats the ambient air 20 to 30℉ before it enters the drying chamber. The energy produced by the SolarWall® comes from two sources: The first is the solar energy collected, and the second is the heat recovery from the roof. The air flow rate through the SolarWall® solar collector was designed for 10 cfm per square foot of collector.

Monitoring of the gas consumption for the 2004 drying season showed a total fuel savings of 29 therms of gas per day from SolarWall when operated 24 hours a day.

This represents a savings of 8.7% of the gas usage.

The California Air Resources Board's Innovative Clean Air Technologies (ICAT) program provided financial support to demonstrate solar drying in California.



Dryer air inlet

U.S.A.
Conserval Systems Inc.
4242 Ridge Lea Rd, Suite 28, Buffalo NY 14226
P: 716-835-4903 F: 716-835-4904
E: info@solarwall.com
www.solarwall.com

Canada
Conserval Engineering Inc.
200 Wildcat Road, Toronto, ON M3J 2N5
P: 416-661-7057 F: 416-661-7146
E: info@solarwall.com
www.solarwall.com

Europe
SolarWall Europe Sarl.
66 Avenue des Champs Elysees
75008 Paris, France
E: info@solarwall.eu
www.solarwall.eu