The Albert Apartments Solar Thermal Installation
Case Study

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Solar Thermal System Installation
Provides Sustainable Hot Water, Portland, OR

Project Highlights:

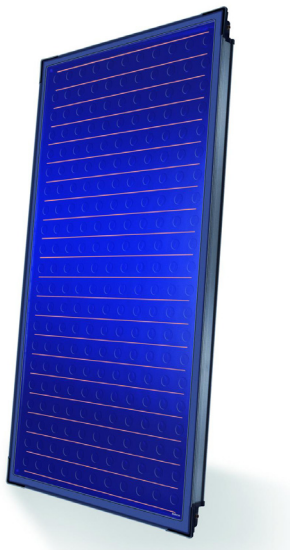
- Total domestic energy usage estimated at 627 MBtu per year
- Solar contributes 299MBtu per year or 47.3 percent
- Equivalent savings in dollars are $4,600.00 per year
- CO2 emissions avoided = 59,982 lbs

Background

Ruben J. Menashe Inc. wanted to create a unique, comfortable development that showcases environmental accountability when building The Albert, a mixed-use building with 72 apartments over retail space in Portland, Oregon. As part of its effort to obtain LEED Gold certification from the U.S. Green Building Council, a process that ranks construction projects by their sustainability, Menashe installed a variety of green-building features including ENERGY STAR appliances and Buderus solar thermal hot water panels to harness the sun's heat for approximately half the domestic hot water used by tenants.

"We felt the panels would be of great overall benefit to our residents, that it would allow us a smaller footprint in our mechanical area for hot water heating. And, obviously, it is a smart thing to do for the planet," said property co-owner and general contractor Jack Menashe.

Because the neighborhood has tight height restrictions, the Bosch design team and MFIA engineers used Buderus SKS4.0 landscape panels to maintain a low profile. They used 1,224 square feet of panels to save more than 4,700 therms of natural gas, eliminating an estimated 60,000 pounds of CO_2 emissions from reaching the atmosphere. Buderus' propylene glycol active indirect systems are reliable and robust, designed to endure the freezing conditions of winter and high stagnation temperatures of summer for many years.



Buderus SKS solar thermal collectors provide approximately 50% of the building's domestic hot water, saving residents significant annual energy costs.

Installation Summary

The design and selection of the Buderus solar thermal systems comes from 25 years of experience with solar installations in varied conditions and locations. Installation by Piper Mechanical in Vancouver, WA, consisted of 48 rooftop-mounted solar hot water panels for pre-heated and recirculating hot water, supplemented by a 1500-gallon high-efficiency holding tank. Peter Levanen, Project Manager for Piper Mechanical, said that "We learned that installing a solar thermal system is nothing to be afraid of. The rack system was installed within one day once we got the base down." Peter noted that Tom Szklarz of PacWest Sales, Inc. (Buderus' sales representative) was helpful in providing equipment and accessories to enable a smooth installation process.

Summary and Conclusion

Mr. Menashe said that potential clients are attracted to the green amenities used in the project. "Many of our prospect leads came from internet searches under "sustainable apartments," he said. "We have a real-time video monitor in our building lobby showing the production of our solar thermal and PV systems, and this provides ongoing reinforcement of this benefit." He reported that during its initial year of operation, the panels generated approximately 50% of the building's annual residential energy needs for hot water, resulting in energy bills of just a few dollars per apartment.

The property owner is breaking ground this summer for a second 76-unit apartment building which will incorporate the same solar thermal system from Buderus.

Buderus

Project Name:

- The Albert Apartments, North Williams, Portland, OR

Building Owner:

- Rujax I, LLC Portland, OR

General Contractor:

- Ruben J. Menashe, Inc.

Consulting Engineers:

- MFIA, Inc., Portland, OR

Installation Application:

- Solar thermal water heating, replacing natural gas

Installing Contractor:

- Piper Mechanical, Vancouver, WA

Manufacturer's Representative:

- PacWest Sales, Inc., Portland

Project Completion:

- August 2012

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