

PHILADELPHIA SOLAR WATER HEATING CASE STUDY: LONGWOOD MANOR

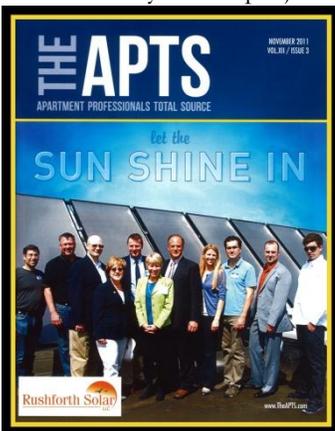
A past president of the Apartment Association of Greater Philadelphia, Alan Lindy knew his three large apartment buildings were a great fit for a solar hot water installation. Each building is oriented on an east/west axis, allowing the panels to face due south and collect the most solar energy. With 40 units in each building, there is a high demand for hot water throughout the day. The panels are highly visible from Roosevelt Boulevard in NE Philadelphia, allowing Lindy to advertise his building's green credentials. The system was installed by Rushforth Solar, a local Philadelphia area solar water heating installer.

The Solar Hot Water project was broken into 2 phases, with the first two buildings installed in May and the third in December 2011. While the gross cost for Solar Hot Water with High Efficiency Heaters was initially \$222,400, the 30% federal tax grants of \$62,520 and two PA Sunshine Grants totaling \$72,940 helped bring Lindy's pre-tax cost to \$86,940. Natural gas savings from the combined project should be about 8,400 CCF per year or about 43.5 tons of CO₂ per year. The payback after subsidies but before accelerated depreciation on this system is projected to be between six and seven years. Paybacks that were often five to eight years with the PA Sunshine grants of \$35,000 up to \$50,000 will be longer, now that the PA grant program has run out of funds.

Longwood Manor was featured in the November 2011 issue of *The APTS* (Apartment Professionals Total Source) *Magazine*, which highlighted how solar water heating systems are particularly well suited for apartments with central water heating facilities and large hot water demands. Hotels, nursing homes, assisted living facilities, car washes, and health and fitness facilities are also great locations for solar water heating systems.

Project Snapshot

- Three apartment buildings with 40 units in each building.
- 16 solar collectors installed on each building.
- 1,800 gallon storage tank in each building.
- Each system saves an estimated 2,800 CCF (hundred cubic feet) of natural gas a year. Combined, the three systems will offset 8,400 CCF per year!



Images courtesy of Rushforth Solar, LLC