

Case Study

Army Residence Community



Overview: This state-of-the-art, award-winning solar thermal system was installed in May of 2009 at the Army Residence Community (ARC) in San Antonio, Texas. Designed to serve as the building's primary source of domestic hot water, the system consists of 176 Apricus AP-30 Evacuated Tube Collectors which preheats water for the 13-story building's 198 apartments.

The system uses three 4,000 gallon storage tanks, 600 feet of three inch copper piping, integrated full Programmable Logic Controller (PLC), remote monitoring and data acquisition. A custom designed fully adjustable racking system was used to allow seasonal tracking of the sun, providing maximum efficiency throughout the year.

This project was designed to turn variable costs into fixed costs that would exceed the expected rate of return to the market. It has met that objective and is saving the facility between \$2,500 and \$3,000 per month, producing about 80% of the domestic hot water for the building. At maximum output, the facility generates almost 1.5 MBtu's per hour.



Project Highlights:

Array Size:	176 Apricus AP-30 Collectors
Annual Production:	2 billion Btu's
Maximum Output:	1.5 MBtu's per hour
Cost Savings:	\$2,500 - \$3,000 per month



Site Description:

Location:	San Antonio, TX
Building Use:	198 Unit Apartment Building
System Type:	Direct Feed, Domestic Hot Water
Displaced:	Natural Gas
Design & Installation:	Cinco Solar

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"We'll be able to better control our costs compared with the natural gas that we were using. Solar puts us in the driver's seat."

~ Bruce Chittenden, Army Residence Community CFO



Apricus APSE-30:

Physical Specifications:

Dimensions:	2.0m x 2.2m / 78.9" x 86.4"
Aperture Area:	2.98m ² / 32.05ft ²
Gross Area:	4.15m ² / 44.76ft ²
Gross Dry Weight:	95kg / 209lb
Fluid Capacity:	710ml / 24 fl oz
Max Pressure:	800kPa / 116psi

Materials of Construction:

Evacuated Tubes:	Borosilicate 3.3. Glass
Absorber Coating:	Aluminum Nitrate
Heat Pipes:	High Purity Copper
Mounting Frame:	439 Stainless Steel
Manifold Casing:	5005-H16 Anodized Aluminum

Warranty:

Manifold & Frame:	15 years
Tubes & Heat Pipes:	10 years



Contact Information:

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