



# SOLAR POOL HEATING SYSTEMS

## City of Santa Clara

(408) 615-2000

### OVERVIEW

The City of Santa Clara's Solar Utility has been offering solar leases since 1975. Currently over 300 customers subscribe to the City's solar pool heating program. The City provides the engineering design, purchase, installation and maintenance service of the solar system. The City will connect to your existing pool equipment, install the collectors, solar controller, and associated piping.

The owner (or utility customer) pays an initial installation fee, plus lease payments. The monthly charge payments are made for six months from April through September. This has been arranged so the payments closely match the swimming season, while reducing the cost of heating the pool.

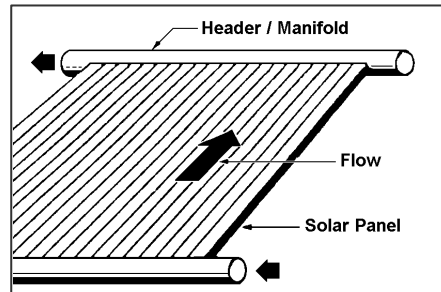
### WHY SOLAR?

Most swimming pools require some type of heating, whether to bring the pool up to temperatures in the spring, to maintain a desired temperature during the swimming season or to extend the season. You can use conventional gas heaters, but another option is to install a heating system that captures the free heat of the sun.

### SOLAR POOL HEATING

The solar collectors are flat sheets, called absorber plates, with tubes running from bottom to top. Headers at the top and bottom convey the filtered pool water to be heated. Each time the water passes through the solar collectors it is heated 2-5 degrees.

The City will connect the solar controller so that filtered pool water is pumped to the solar collectors. The solar controller uses heat sensors to measure the temperature at the collector surface and pool. If the difference between the two is sufficient, the controller sends a signal to a motorized valve that closes and directs the pool water through the solar collectors.



### SOLAR SURVEY

The City will perform a solar survey to determine if a solar pool heating system is right for your pool. Contact the City of Santa Clara Water Utility at 408-615-2000 to schedule a solar survey.

### WHAT IS THE COST?

The owner (or utility customer) will pay an initial installation; typically the installation cost is \$2,900 plus \$115 per panel. There is a charge of \$143 per panel to remove and reinstall panels for re-roofing. There is a monthly service charge based on the size and number of panels. Pool systems are billed a monthly service charge for six billing cycles per year (generally from April to September), although the system is available for use all year. Special requirements such as a system requiring multiple roofs, additional pumps & valves, special controllers, over 15 panels, or unusual installations will have installation fees based on detailed cost estimate.

### QUESTION & ANSWER

*Q: How many collectors do I need?*

Ideally, solar collectors should face due south, or southwesterly. Generally, the number of collectors is 60% of the pool surface area for a south-facing roof, or 75% for a west or flat roof.

*Q: We're building a new pool, what do I need to tell my pool contractor?*

The City installer requires a two or three foot straight run of 2-inch pipe between your filter and conventional heater. The solar controller will also need a 110V power source.

Many subscribers prefer having their contractor install the buried piping so they may finalize the concrete work and landscaping. Your contractor would install and pressure test the supply and return pipes (two 2-inch PVC pipe), and sensor conduit (one 3/4-inch PVC with long radius "sweep" elbows).

*Q: How long will it take to install the solar pool heater?*

The typical residential solar pool installation takes 2 to 3 days. However during the peak summer months a backlog of several weeks or more is typical for new installations.

*Q: Will a pool cover be beneficial?*

Yes, a pool cover stops evaporation, reduces your pool heating needs, extends the swim season, and can augment a solar pool heating system that cannot be optimally sized.

*Q: What about insurance?*

Subscribers will be responsible for obtaining adequate insurance coverage for their property.

