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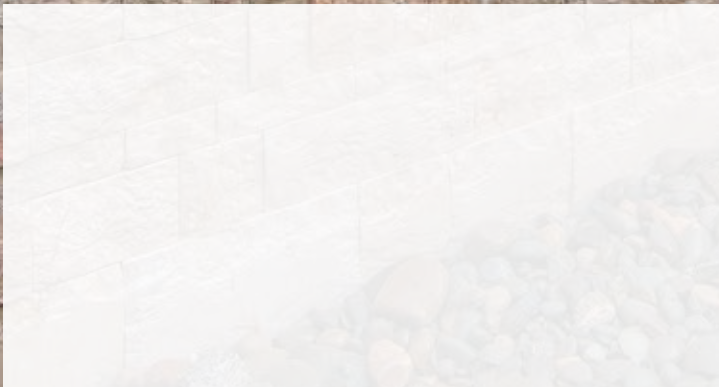
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Add Solar Pool Heat

by Frank McLaughlin

SOLAR HOT WATER

systems were introduced about 40 years ago in the U.S., but it has only been in recent years that they have gained wide acceptance outside of the warmer regions of the country, like California and Florida. If you are not offering a solar hot water system to your customers today here in the Northeast, you are missing an opportunity to help your customers heat their pools more inexpensively and to add to your bottom line.

The benefits of selling a solar hot water heater are numerous: it effectively heats pools, even in the Northeast; it is a natural add-on to your pool and spa business; it is a green product that does not pollute the environment; it is a giant money saver; it keeps dollars in the U.S. that normally would flow overseas to oil producers; it is easy to install and maintain; and, if you wish, it allows you network with professional solar heater installers while continuing to focus on building or servicing your pools.

Here are some of the basics to help you understand this product and market better:

SAVING MONEY

A key reason that solar continues to gain wide acceptance is that it can save the consumer money.

ers to Your Line-up

Let's look at a typical 16' by 32' pool that has a surface area of 512 square feet. If you were to install a new natural gas heater for your customer, it would cost \$3,000 for the unit and about \$1,500 to operate for the first season; a propane system would cost about \$3,000 to install, but the fuel would cost more, about \$2,000; an oil heating system would cost around \$4,000 to install and the cost of fuel would range from \$1,500 to \$2,000 (at press time, it seems oil prices are heading back up as the world works off its big oil glut); and an electric heat pump would cost around \$4,000 to install and the electricity to operate it would be about \$1,500 or more for the first season. What would a solar system for that same pool cost to install? About \$5,500 to \$6,000. How much for fuel for the first year? Nothing! Therefore, comparing all of these systems, first-season costs are roughly the same.

But after the first season, the cost picture changes. The systems fueled by natural gas, propane or oil will continue to cost the customer about \$1,500 to \$2,000 a season. The heat pump would cost less to operate. But the solar hot water system would cost \$0 to operate over the life of the product. Further, all of these other heating systems need to be replaced after a few years. I have solar hot water heating systems that I installed 20-25 years ago that are still perfectly operational. So, those customers who installed a traditional heating system 25 years ago have not only had to replace the units several times since then, but they have spent thousands of dollars a year to operate them. The solar hot water system customer of 25 years ago has saved thousands of dollars on fuel costs and contributed no pollution to the air.

HOW THE SYSTEM WORKS

While we have seen dramatic advances in solar electric technology over the past 30 years, the basic solar hot water system of today was really perfected in the 1970s

and 1980s. The system includes a solar collector, the device through which pool water is circulated to be heated by the sun; a filter that removes debris from the water before it is pumped through the collectors; a pump to circulate the water through the filter and collector and back into the pool; and a flow control valve, an automatic or manual device that diverts pool water through the solar collector.

Solar collectors can be made of various materials. If the system is for an outdoor pool here in the Northeast and is only used in weather above freezing, an unglazed collection system will work fine. The unglazed system does not include a glass covering and the collectors can be made of plastic with a UV light inhibitor to protect the system and extend its life. If the solar hot water heater is for an indoor pool that will be used during the cold seasons of the year, then the collector system will need to be glazed.

THE SITE'S SOLAR RESOURCES

Naturally, not every customer's site will be right for a solar hot water system; it will depend on how much of the sun's energy reaches the site. The solar hot water system, however, will use both direct and diffuse solar radiation. A customer who has an unshaded area generally facing south is probably a good candidate for a solar hot water heater.

SIZING THE SOLAR SYSTEM

There are a number of factors that will dictate the size of the solar heating system, including:

- size of the pool
- length of the swimming season
- average regional temperatures
- desired temperature of the pool
- site's solar resources
- collector orientation and tilt
- collector efficiency
- use of a pool cover

There are worksheets available to help you figure out the size of a solar

water heating system. Basically, the solar collector should range in size from 50 percent to 100 percent of the size of the surface area of the pool. A 16' x 32' pool would require solar collectors ranging in size from 256 square feet to 512 square feet. The more square footage added to the collection system, the longer the swimming season. In cases where a customer wishes to create a therapeutic pool with considerably warmer water, the solar installation will need to be larger than the standard installation.

Some of your customers might not like the aesthetics of solar collectors on their roofs. They are in luck. Solar water collectors can be placed virtually anywhere on the property that gets adequate sun. I had one customer with a relatively flat pitched roof who had large trees blocking the sunlight from the southern portion of the roof. We placed panels on the north side of the roof, but because the roof was not a steep pitch, the north side got plenty of sunlight and the solar panels functioned perfectly. True south orientation is not necessary for a solar system to be effective; you can place panels 45 degrees east or 45 degrees west and still achieve great performance.

Unlike a traditional pool heater, the solar hot water heater requires little maintenance over the lifetime of the product as long as pool chemicals are kept in proper balance. For a glazed collector system, rain will keep the panels clean. |



Frank McLaughlin, who has been in the solar heating business for 34 years, is president of a retail operation called All Quality Solar Systems, headquartered in New Jersey. He also has a wholesale business in five states surrounding New Jersey. McLaughlin spoke at The Pool & Spa Show in Atlantic City this past January on solar heating systems.