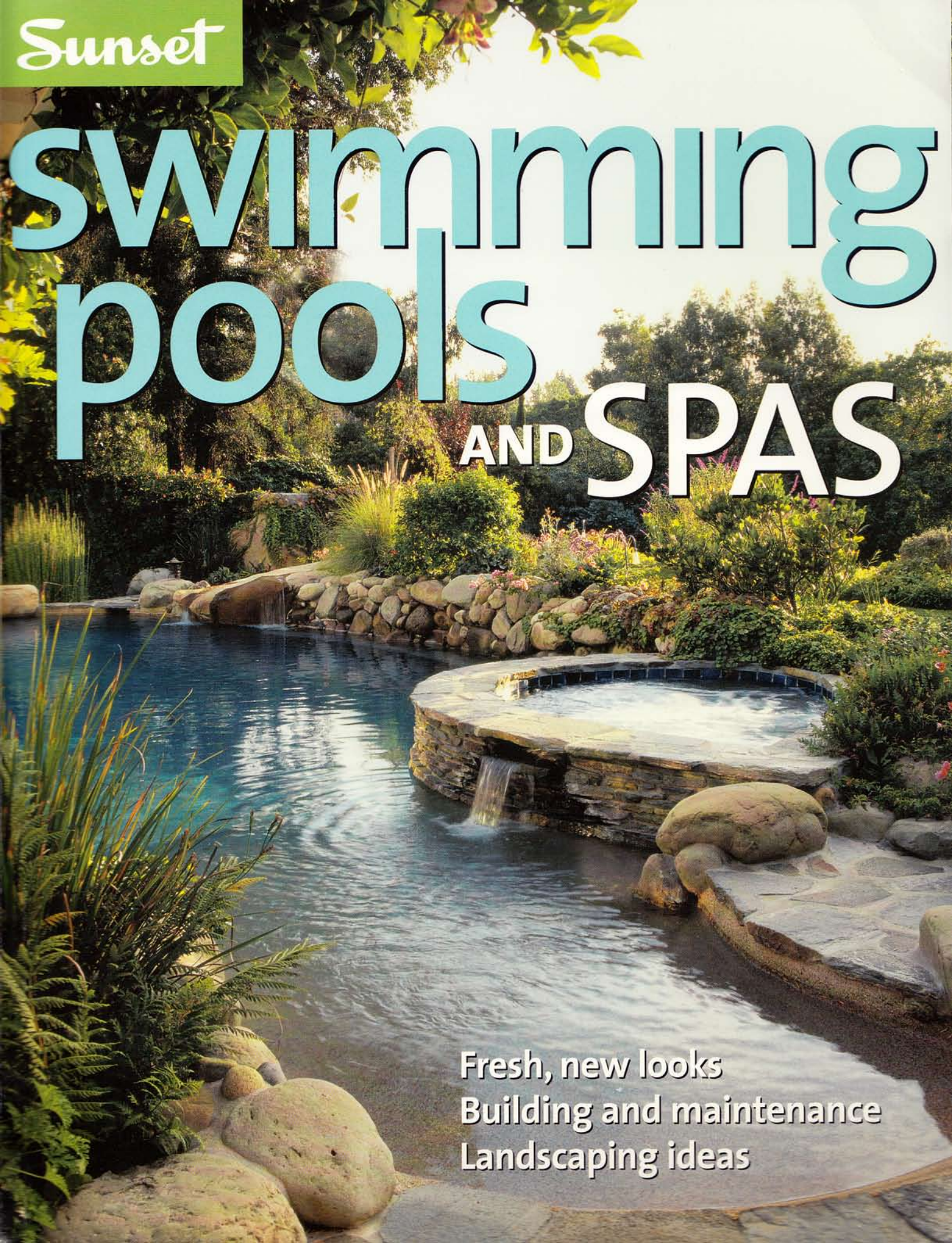


Sunset

# Swimming pools AND SPAS



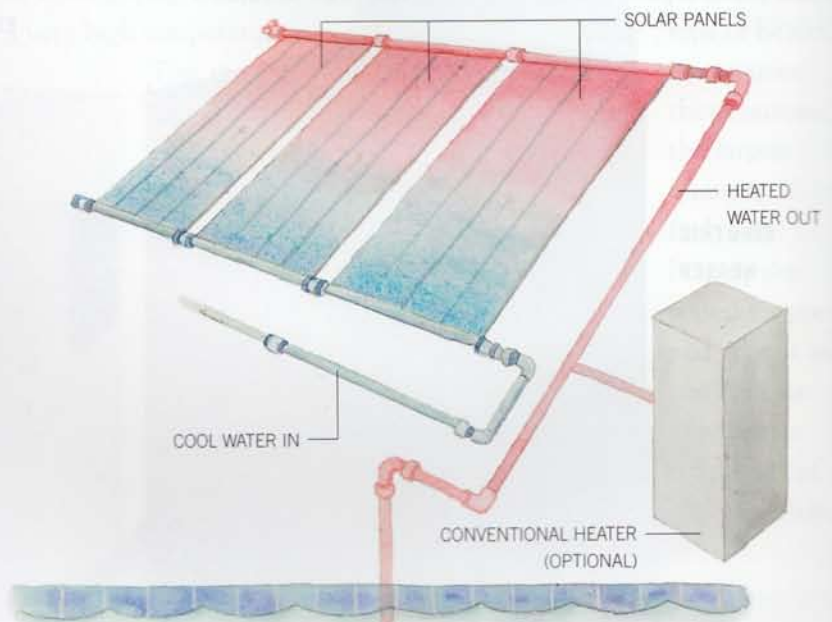
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*Even in a woody location, wisely sited solar panels can result in substantial savings in the cost of heating a pool.*



### smart tip

When installing solar collectors or combination systems, always choose a contractor who has a lengthy track record working with solar heat. While many contractors may think they can manage the simple technology, solar components require careful installation that only someone with experience should tackle. Choosing the right contractor will help avoid expensive mistakes.



## GOING SOLAR

Because of the big expense of heating pool water, solar energy is an increasingly appealing option. The single best way to ensure being able to trap solar energy is to site the pool well. If the pool has full southern or southwesterly exposure, with no shade from trees, then the water will heat up on its own, sometimes eliminating the need for supplemental heating entirely, but in any case reducing heating costs.

## USING SOLAR COLLECTORS

If more heat is needed than what the pool water alone can absorb, you can add solar collectors elsewhere. These devices are constructed simply and consist of a black metal plate with water-filled tubes running through it; the tubes are covered with clear acrylic to prevent loss of heat from wind. Pool water is warmed when the metal plate absorbs heat from the sun and transfers it to the water in the tubes, which flows back into the pool.

As a general rule, the surface area of solar collectors must add up to at least 75 percent of the surface area of the pool; for example, if the swimming pool has a surface area of 400 square feet, a total of 300 square feet of collectors is needed. Solar collectors can be positioned anywhere on the property, but the most common location is on the roof of the house, facing directly south or slightly to the southwest.

## A COMBINATION SYSTEM

Not all locations are ideally suited to using solar collectors, both because of the number of collectors needed and because the exposure has to be right. In addition, solar collectors do not work well in colder climates in the wintertime, for obvious reasons. Still, it is possible to produce at least some heat from solar collectors in many areas. A combination system will enable you to partially warm water through collectors, then warm it further with a conventional heater, reducing your overall heating bill.

## WHAT SIZE HEATER?

The heating capacity of gas heaters is measured in British Thermal Units, or BTUs. A single BTU is defined as the amount of heat needed to raise the temperature of 1 pound of water 1 degree Fahrenheit. The range of pool heaters goes from 20,000 BTUs

to 200,000 BTUs and beyond. The size heater you will need will depend on your geographic location as well as how the pool will be used. If the goal is to add a few degrees of extra heat during the peak summer swim season, a small heater will suffice—possibly one that produces fewer than 50,000 BTUs. But if you want to extend the swim season year-round, you'll need a more powerful heater.

While calculations based on pool volume and the relative day- and nighttime temperature averages can produce a BTU requirement, there are too many other variables, including wind conditions and water-cooling evaporation, to give you an exact number for your situation. It makes better sense to rely on the advice of an experienced contractor as well as to talk to friends and neighbors in order to arrive at a realistic heater capacity.

## calculating pool volume

To select an appropriate heater, it's essential to know the volume of water in your pool. If your contractor cannot give you this information, you can estimate the number of gallons yourself. For a rectangular pool, multiply the length by the width by the average depth to determine the number of cubic feet. For a free-form pool, you may have to estimate the length and width, or break the pool into smaller segments and calculate each separately.

Once you have the volume in cubic feet, multiply that number by 7.48 (the number of gallons in 1 cubic foot of water) to yield the number of gallons in your pool. For example, a rectangular pool that is 20 by 40 feet and averages 6 feet deep will contain 4,800 cubic feet of water. This translates to more than 35,000 gallons of water.