

## CASE STUDY

# Solar Installation | Home owner forges new territory installing first solar system in exclusive golf course community



### Profile

Dr. Christopher Fleming, M.D. and his family reside in a 7,000 square-foot home located within the exclusive Bear Creek Golf Club in Murrieta, Calif. Situated in southwestern Riverside County, Murrieta's Mediterranean climate ensures that residents enjoy an average of more than 250 sunny days each year, and less than a few dozen days of measurable precipitation. The months of April through November are typically warm to hot and dry with high temperatures averaging 73 over 95 degrees Fahrenheit.

### Situation

When Dr. Fleming purchased his home in the Bear Creek Golf Club about 15 years ago, he knew that he would be subjected to higher than average energy costs, especially with four air conditioning units required to adequately cool the large home during the hot summer months. However, with energy costs having risen over the years, Dr. Fleming recently found himself at a tipping point when his summer electric bills topped \$1,000. He decided it was time to find a more cost-effective, energy-efficient way to cool his home.

Initially, Dr. Fleming looked into more energy efficient air conditioning systems, but was advised that even with a more advanced system, the cost of installation, coupled with the fact that he would still have a monthly energy bill, would not save him a significant amount of money, or vastly reduce his energy consumption. With that in mind, Dr. Fleming began to look at solar energy as a viable option for saving money and reducing his dependence on the electrical grid.

Advances in solar technology combined with the added resale value for his home and the 30% federal tax credit made solar power most appealing as an alternative source of energy. Additionally, as a resident of California, Dr. Fleming was able to take advantage of a state rebate program in the form of performance-based payment that reflects the generating capacity of the system installed.

Based on a recommendation from a colleague, Dr. Fleming chose to contract with Ambassador Energy for guidance in purchasing and installing a solar energy system for his home. He was immediately pleased with the professionalism and expertise displayed by Ambassador Energy when it came to choosing the right solar system for his home.

The founders of Ambassador Energy are passionate about helping the planet, and want to help raise people's consciousness about solar so that people use energy in a conscious, thoughtful way. While most solar energy solution providers simply sell solar panels through an uneducated sales force, Ambassador Energy's agents, or Earth Ambassadors, never simply count roof space; they are armed with the ability to deliver real solutions that match the end users' real needs.

Before Ambassador Energy even installed the first solar panel, they worked with Dr. Fleming to better understand his needs and objectives for installing a solar system. Ambassador Energy took aerial photos of the home in addition to evaluating the local climate, monitoring his current energy usage, and measuring the house and roof. Because Dr. Fleming lives in a private, gated community, Ambassador Energy worked directly with the homeowners association to ensure that the installation met community aesthetic requirements. Incidentally, Dr. Fleming was the first resident in the community to install a solar system.

To ensure the integrity of Dr. Fleming's older, more fragile roof tiles, and provide a single point of contact in the event of damage or leakage, Ambassador Energy hired the roofing contractor who had installed the roof on the home when it was built in the early 1990s, to install the solar panel system.

For the solar installation, Ambassador selected its 11.7-kilowatt (K) solar array system. The design of the system incorporated many unique variables, and was chosen to offset more than 70% of the Fleming's electric bill, which represented Southern California Edison's costly Tiers 3-5 (22-34 cents/watt). The system was engineered with three arrays feeding three inverters. Two arrays were mounted traditionally on the south-facing slope of the roof. The third utilized the home's roof portion, which is uniquely flat. To achieve an aesthetic appeal, Ambassador Energy installed flashing which matched the color of the stucco. This height added by the 6-inch flashing hid the mounting system and panels from view. These extraordinary steps are not only a part of the culture of Ambassador Energy, but also ensure that the homeowners will continue to live harmoniously with their neighbors.

More unusual than the flat roof array was the system installation. Within Riverside County borders are several Ambassador Energy authorized agencies, two of which merged their skill sets for the Fleming installation. While one agency was responsible for the sale of the system, another, the licensed roofing company who is now an authorized Ambassador Energy agency, and original installer for the Fleming's roof, performed the installation. The benefit of having licensed roofers perform the penetrations was especially obvious in this case, as the roof tiles had become fragile with age and, in the extreme heat, nearly 100 cracked. As such, the tiles had to be replaced.

"The installation at the Fleming home is an example of real Ambassador team work", said Kelly Smith, President, Ambassador Energy. "One Ambassador Energy office sold the job and relied on another Ambassador Energy office to fulfill the installation, which was a great call for this job, as the roof tiles were cracking and popping during the process. To have licensed roofers up there was absolutely the right thing for this client."

### Objectives

- Drastically reduce or completely eliminate energy costs
- Return on investment
- Maintain the aesthetic integrity of the home and the Bear Creek Golf Club community
- Reduce Dr. Fleming and his family's energy consumption

### Results

Dr. Fleming's solar system was activated in early August 2009. He has begun to regularly check his inverter readouts, meters and energy bills to determine how much energy and money he is saving. The digital readouts on his inverters display kilowatt hour usage and the number of pounds of carbon dioxide (CO<sub>2</sub>) the system has been prevented from going into environment.

With the installation of the solar panel system complete, Dr. Fleming expects to nearly eliminate his energy bills entirely, with the credit he will receive from the electric company. In this "Net Metering" program, he will be selling excess energy produced by his solar system back to the electrical grid.

### Reaction

"I am very pleased with the look and feel of the solar panel system installed by Ambassador Energy. Steve and his team did an excellent job with choosing the right system for my home. I am particularly impressed with the forethought that went into hiring the original roofers to install the system. This alone gives me peace of mind in knowing that the system was installed correctly, and with the added attention to detail and skillfulness that will ensure the longevity of the system. I expect that it will not take long to achieve ROI with the dramatic reduction I will soon see in my monthly electric bills."