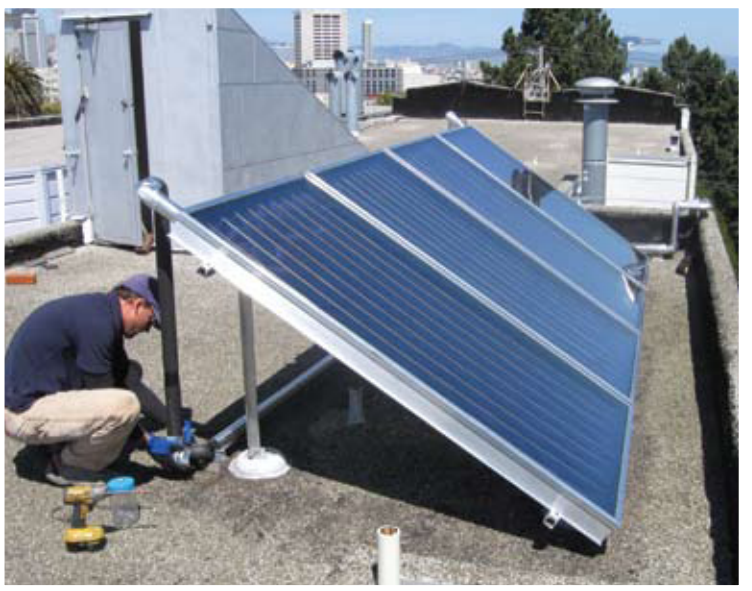
Meet Greg: Our Solar Energy Installation Expert

Many homeowners are investing in solar energy installations in their homes as a way to save on skyrocketing energy costs. The California Solar Initiative offers financial incentives for

solar installations, and many homeowners are actually able to generate their own power and sell back their unused electricity into the electric grid, saving even more money. Contrary to what you might think, solar installations still do work in foggy San Francisco. For existing home installations, the incentive programs are run through the California Public Utilities Commission (**www.cpuc.ca.gov**).

Now in his 30th year working with solar energy, Greg is a native San Franciscan whose family has been doing business in the City for many generations. In fact, his general office was built by his great-grandfather in 1916.

Before launching his solar installation company, Greg worked in his family's electrical contracting business. In 1980 he went to work for what was then the largest solar water heating company in San Francisco, starting out as an installer. He ultimately became the field supervisor and served on the board of directors. That company installed solar thermal systems on S.F. public housing and the University of San Francisco, as well as hundreds of private apartment buildings and homes.



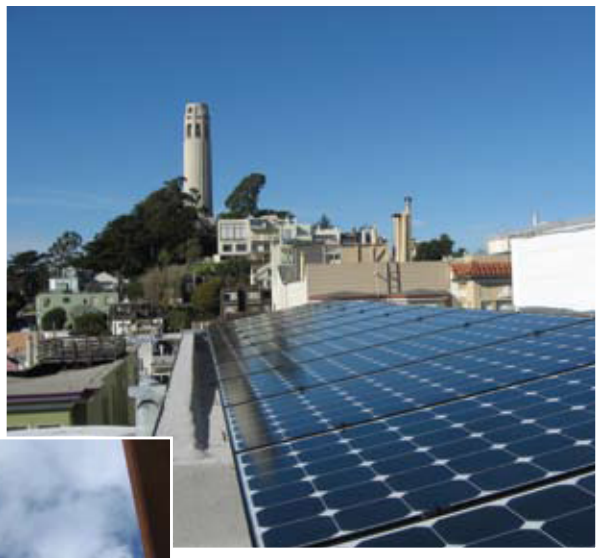
The solar industry dried up in the 1980s because of a change in public policy. But Greg figured that ultimately solar energy would return, because quite simply, it made too much sense. In 1989 he formed his company, and in 1996 they installed the first permitted solar-electric system in the City, then the first net-metering system in the City, and one of the first in the state, the following year. His company followed that up with the first commercial solar system in the City.

Greg's company today employs 20 workers, and he believes, "You are only as good as the people you work with." Some folks have been with the firm for 10 to 20 years! Greg and his team handle all the rebates, permits, inspections and approval processes necessary to build a solar system for your home, apartment or business.

Greg's firm has its own fabrication equipment, and they custom make racks and assemblies as needed for the large variety of projects encountered. In-house trades include electricians, plumbers, sheet metal and mechanical journeymen—even a windsmith! Greg himself holds a general contracting license and a solar energy license with the state of California. Unlike some newer solar installation companies, Greg rarely subcontracts work, unless it is absolutely necessary for some expertise.

They have installed large solar systems for the City and small systems for homes and school gardens. When he was installing solar thermal on public housing in the1980s, like Valencia gardens and Holly Court, Greg made it a matter of course to hire from the Urban League and Conservation Corps, long before there were incentives to do so.

All systems are built for San Francisco's marine environment, using high-grade stainless steel and aluminum. Of the over 500 solar systems his



company has installed, most are still maintained and serviced by Greg and his team.

Here are some of the various types of solar installations that Greg and his team offer.

Solar Electric—Photovoltaics (PV)

Solar energy is a popular form of renewable energy in San Francisco. Despite the frequent layer of summertime fog and dampness, solar panels perform efficiently. Thanks to recent California "net-metering" laws, solar energy is now cost effective in an urban environment.

For the past several years, many San Francisco solar system installations have been net-metered, or connected to the local utility grid. This allows businesses and homeowners to generate their own electricity and sell unused energy back to the grid. Utility intertied systems collect and add power to the utility grid during the day to offset power use at night. During daylight hours, the owners' electrical meters run backward as their solar panels produce more energy than they need. At night, the meters run forward as the owners use more electricity than they can generate. The utility charges only for the net difference of power consumed and power produced. With net-metered solar energy and some energy-efficiency improvements, owners may eliminate their utility costs.

In a solar electric or photovoltaic (PV) system, energy is collected by the PV modules and sent through an inverter. An inverter transforms direct current (DC) power generated by the PV modules into alternating current (AC) power. This power is used onsite or is sent back through the electric meter, spinning it backward during periods of high production and low consumption.

Solar Thermal

A solar thermal system is designed to work as a solar preheat for a conventional gas system. The solar collector absorbs heat from sunlight and

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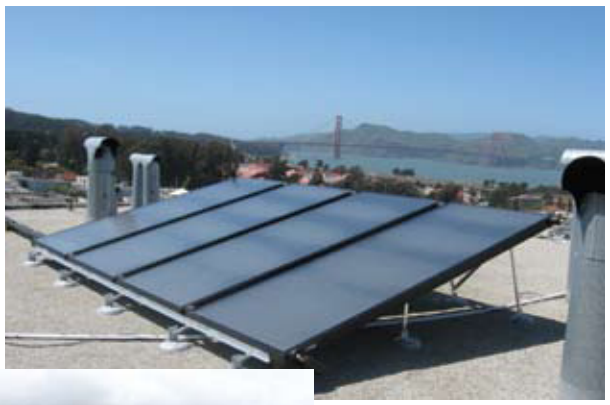
sends the heated water into a separate storage tank. Sensors determine if the water needs additional heating before entering the hot water system in the building. Solar preheating reduces the amount of natural gas needed to heat water by increasing the temperature of water entering the conventional storage tank and heating system. For example, solar preheated water may enter the storage tank at 90°F and thus need to be heated by 30 degrees before leaving the hot water tank. A conventional system receives water at 60°F and requires the amount of energy necessary to raise the temperature to 120°F. In this example, the solar preheat reduces the amount of energy needed by one half.

Other solar thermal services offered by Greg include:

- Design and installation of new systems
- Removal and reinstallations of systems prior to and after the installation of a new roof
- Panel repair
- Preventative maintenance inspections

Cogeneration

Cogeneration refers to a system that produces two useful sources of energy: electricity and heat. Greg's company sells, installs and services Tecogen® cogenerators that burn natural gas to power a generator, which produces electricity. The generator is cooled by water, producing hot water as a by-product. Unlike conventional electric generators, cogenerators harness the "waste" heat instead of throwing it away. Greg's installations have included health clubs, municipal pools, and apartment buildings with large domestic water heating, pool water heating or space heating requirements.



In the right application, natural gas cogenerators can pay for themselves in two to five years. One of Greg's clients reduced their utility bills from $100,000 to $50,000 by installing a natural gas cogeneration system. These natural gas cogenerators produce 60 kilowatts of electricity continually, provided there is a heat load to accept heat from the generator. Cogenerators are a 90% efficient means of producing both electricity and hot water at the same time.

If you think a solar energy system might be for you, contact Greg through our Design + Build Referral Service at **415/753-2653 ext. 3** or **homerepair@colehardware.com**. Be sure to ask about all the rebates for solar water heating and electric that now exist, as well as the federal tax credits and grants available for businesses, not to mention the City of San Francisco incentives!