

614 San Carlos Ave, Albany – Green Home Features

You are welcome to see the stove and heat pumps by going to the backyard and up to the deck. Please only go inside with a volunteer. Thanks!

2.5 kW solar panel system installed in January 2017.

We are looking into adding more panels in the future.



We replaced a gas stove with an electric induction stove in October 2022.



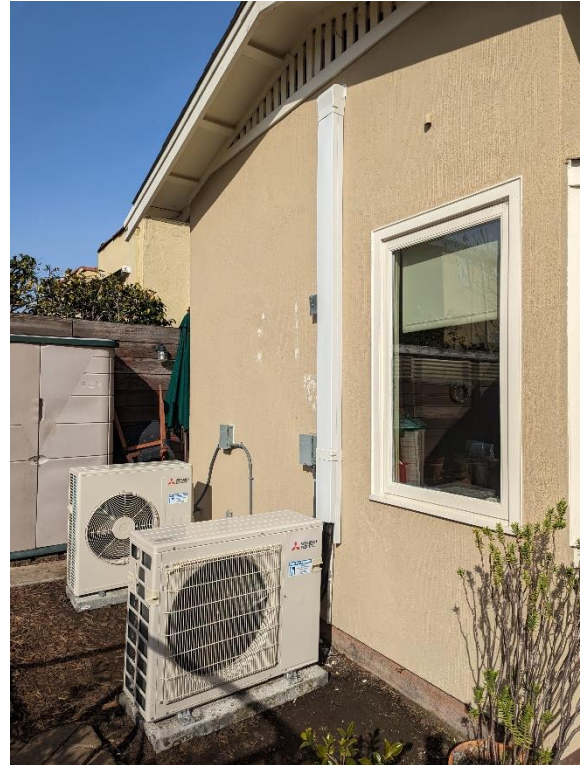
We installed two Mitsubishi heat pump systems in May 2022.

- One system is a small ducted system in the downstairs addition.
- The other is a ducted system with two ductless mini-splits upstairs in the main (original) house.

Two compressors are in the back yard. Line sets to supply the mini-splits and air handlers are partly on the outside walls, partly in the attic and partly in the crawlspace.



Compressors as originally installed



Compressors moved to reduce noise



The only remaining gas appliance is a tankless gas water heater installed in December 2015.

All other gas pipes were disconnected, reducing the possibility of leaks.

614 San Carlos Ave, Albany

Comments on Heat Pumps

Goals: air conditioning for health reasons when air quality is bad and it is hot, reduce carbon emissions. We decided to replace our two gas furnaces with heat pumps

Choices:

We have two HVAC systems, one for the original 1925 house, which is split level and one for the 1996 addition. The addition could not be served by the main furnace because there was no way to connect the ducts.

The system for the addition was straightforward.

The split-level portion of the original house was difficult. The HVAC contractors said that with no air return, a central system would not cool the upstairs bedrooms. This is the portion of the house that most needs air conditioning on hot days. The “office” in particular has east and south facing walls and gets very warm. Mini-splits solve the return problem and allow us to cool only the room(s) that need it.

Challenges:

First, we needed to upgrade our electric service to a 220 amp system. PG&E has increased their safety requirements, which meant that we could not just replace our old panel. (The old panel and solar equipment are too near the gas meter to meet current requirements.) At one point we thought we would have to remove the gas service before we could upgrade the electric service. In the end we were able to install a new panel on the opposite side of the house. (Note that this does not solve the safety issue, it just makes it our problem, not PG&E's.)

Finding a location for the two compressors was another challenge. We chose the HVAC system and contractor based on a plan to put the compressors under our back deck. The compressors fit just fine, but the job supervisor let us know that there needed to be 30” of clearance above the compressors for maintenance. Albany's set-back requirements did not allow us to locate the compressors on the side of the house. (The HVAC people said that this would not have been a problem in El Cerrito.) The only possibility was the back yard. All of the companies we talked to wanted to put the compressors west of our deck, basically centrally in our back yard. This was not acceptable. We decided to put the compressors on the back (west) of the addition, one on the ground and one hanging on the wall.

The systems were installed in May 2022. We didn't need the air conditioning very much, but it worked great when we used it.

In the winter we discovered that the two compressors were pretty loud in the bedroom they were next to. From outside the compressors seemed quiet, but they were noisier at the back and the noise transmitted to the bedroom, along with a small amount of vibration from the compressor on the wall. The HVAC company came back and moved the two compressors. Now they are both on the ground, rotated 90°. This was a huge improvement in noise level. It takes more space and looks a bit unusual.

The electric upgrade and the need for two HVAC systems added a lot to the cost of this project. We did get a number of large rebates. Hopefully, in the coming years, the rebates and tax credits are better and the cost of the equipment goes down!

Outcome:

Installing mini-splits upstairs has worked well. We can cool the front upstairs office that gets so hot in the summer without over-cooling the downstairs. And at night we can heat or cool the upstairs bedroom without using energy to heat or cool the entire house.

The heat from the heat pumps works differently than the heat from our gas furnace.

- The heat from the gas furnace tended to rise upstairs. In fact, we kept the vents closed all of the time because it was always warm upstairs. Now the temperature of the heated air is cooler and the heat does not rise. Sometimes we do need to turn on the mini-splits upstairs, but not often.
- The air from the gas furnace was very warm and warmed the house more quickly. We now set the thermostat to warm the main house half an hour earlier.

All in all the temperature in the house seems more even and more efficient. It is hard to compare cost because it was such a cold winter this year.

614 San Carlos Ave, Albany

Comments on Induction Stove

GE Profile PHS93XYPFS

The air quality in our kitchen has greatly improved!

Pots and Pans:

Few of our “vintage” Farberware pots and pans worked on an induction stove. We bought a mix of Tramontina skillets, Tramontina Tri-Ply Clad pots, and Farberware New Generation pots and pans. (We saved a lot of money by buying the new Farberware in opened packaging.)

Tramontina Tri-Ply Clad pots are stainless with an aluminum core. The magnetic stainless steel continues up the side of the pot, which means that both the bottom and sides of the pot heat up on an induction burner.

Challenges:

This stove is very sensitive to the size of the base of the pots and pans. Water on the cooktop makes this problem worse. If possible, measure the size of the burners before buying new pots and pans. Also check on spacing of skillets with curved sides.

The large burner is large enough that few of the pots and pans I purchased work on it. If turned up high the burners make a high-pitched noise.

The stove doesn't work in a power outage.

And all of the challenges don't matter because the air quality is so improved. It is much healthier for our grandchildren, who live with us. And it is a huge improvement for my asthma. I enjoy cooking again.

614 San Carlos Ave, Albany

Fruits and Vegetables in the backyard - 2023

You are welcome go to the backyard to see them all.

Fruit

- Blueberries
- Raspberries
- Peach, Nectarplum, and Aprium Trees
- Apple tree with three types of apples
- Meyer Lemon tree
- Bearss Lime tree
- Strawberries
- Grapes

Vegetables

- Tomatoes
- Green Beans
- Lettuce
- Green Onions
- Zucchini
- Snow Peas
- Garlic
- Chard
- Potatoes

Herbs

- Thyme
- Mint
- Savory
- Basil
- Oregano
- Marjoram
- Cilantro
- Lemon Verbena