

## Corner Brewery - Energy Projects

This array consists of 140 panels - all providing - both [solar thermal and PV](#). The electricity is run through a bank of [Renovo inverters](#), which supplies power directly to the brewery and tasting room. The water that circulates through these panels, provides cooling to make the PV portion more efficient!

You will notice that the panels across the front of the building are not at the same 'optimal angle' as the roof panels. This was done by design – the lower angle is actually optimized for the summer sun - which has the side benefit of shading the front of the building, keeping the building, and our fermentation tanks cooler.

The solar heated water is stored in (4) 330 gallon tanks, and like the Arbor Brewing Pub, city water is fed through a heat exchanger, picking up heat from the solar tank, feeding a pair of [Noritz tank-less water heaters](#). One of these heaters supplies 140F water to the restaurant and kitchen. The second water heater supplies 180F water to the brewery for brewing beer.

Because this building was built in 1922, it had lots of single pane, steel framed windows, it was important to upgrade the windows to a high efficiency thermal pane. We were able to maintain the historical look of the building, and dramatically decreased energy consumption!

The fermentation and bright beer tanks in the brewery are cooled with a glycol chiller. The original chiller for this system was quite old and oversized for our brewing operation. A new two stage glycol chiller was purchased as a replacement. The new unit will fire a smaller single stage to maintain tank cooling - but has the capacity to fire a second stage when the capacity is needed.

A 2000 sq ft of cool storage was built behind the beer garden. Affectionately known as the Sand Worm, from the outside, but truly a Beer Cave on the inside! This is a steel building is super insulated with 6" of spray foam insulation. Pumps are used to circulate water through plastic pipes in the floor to plastic pipes down (6) 85' deep wells dug deep into the aquifer. This water circulation helps to keep the building cooler in the summer and prevents freezing in the winter. An exhaust fan was installed to remove the hot air from the ceiling and (4) 120' 4" earth tubes were dug under the beer garden to draw in cooler make up air.