Sheldrake Point Winery Goes Geothermal

Celebrating Sustainable Initiatives for a Greener Finger Lakes

"As the cost and availability of renewable energy changes, it is important that we strive to reduce our dependence on fossil fuels. Geothermal energy is very well suited to the wine industry, when the differential between ground temperature and the cool confines of a winery environment create really meaningful efficiencies. We believe in doing what we can to harvest such efficiencies and reduce our dependence on convention energy.
–Chuck Tauck, Owner, Sheldrake Point Winery

Geothermal Heating and Cooling

The earth's temperature remains at a consistent 50 degrees or so, no matter how hot or cold it gets outside. Because of this, the geothermal system has the opportunity to be more efficient in extracting and disbursing warm and cool air from the 50 degree liquid circulating in ground loops.

Conversely, a conventional "air-source" heat pump battles to scavenge heat from the freezing winter air, or to dissipate heat into the sweltering summer, ultimately working 3-4 times as hard to produce the same effect as the geothermal system.

Geothermal Cellar and Facility

By moving our wine production indoors to a geothermally heated and cooled facility, we are making wine in an environment that is closer to a true cellar by taking advantage of the desirable temperature of the earth.

Our shift to geothermal heating and cooling, in addition to our existing solar panel installation, represents our commitment to increasing efficiency, decreasing waste, and finding sustainable solutions to meet our growing needs.

Geothermal Wine Production

Temperature control is vital in wine production. There is an abundance of heating and cooling needed at various stages of the process, from the day the grapes are picked to the storage of the finished product.

PVC pipes transport glycol liquid to the jackets on the tanks where it is used to heat and cool the contents. The glycol liquid is warmed and cooled by the geothermal system, harnessing these efficiencies for the production of wine.

Geothermal Ground Loop

Water and methanol are constantly pumped through 6 wells drilled 450 feet into the ground with a mile of vertical loops, harnessing the steady temperature of the earth.

This mixture leaves the building charged with thermal energy, but after traveling thought the wells it is returned at 50 degrees.

Geothermal Distribution Center

The flexibility of the system is that it can heat and cool at the same time…

Piping comes from the ground loop through the barrel room and up to the compressors, where they either extract or discharge heat. The copper pipping distributes the heat throughout the building.

The two compressors can work in tandem or separately; for example, when the building needs to be warmed and the tanks need to be cooled, one compressor transfers heat to the glycol loop to warm the building, while the second cools the loop that is sent to the jackets on the tanks.

Breaking ground in the spring of 2017, Sheldrake Point Winery began construction on the new 100% geothermal production facility directly across the parking area from the former crush pad and winery. Moving all winemaking activities indoors and increasing production capacity by 30%, the winemaking team marked 2018 as their first vintage in the new winery.