# How Do Geothermal Systems Work?

At Playa Vista Elementary School, designed by Osborn Architects, more than half of the heating and cooling demand is met by a geothermal system called a Ground Source Heat Pump.

The system is a network of underground water-filled pipes that uses the constant temperature of the earth just a few feet below the surface as a regulator of temperature inside the building.

The system at Playa Vista uses two pipes buried at different levels, looped using the "Slinky"™ method which allows more pipe in a shorter trench.

On hot days the Slinky pipes shed heat into the ground; on cold days they extract heat from the ground.

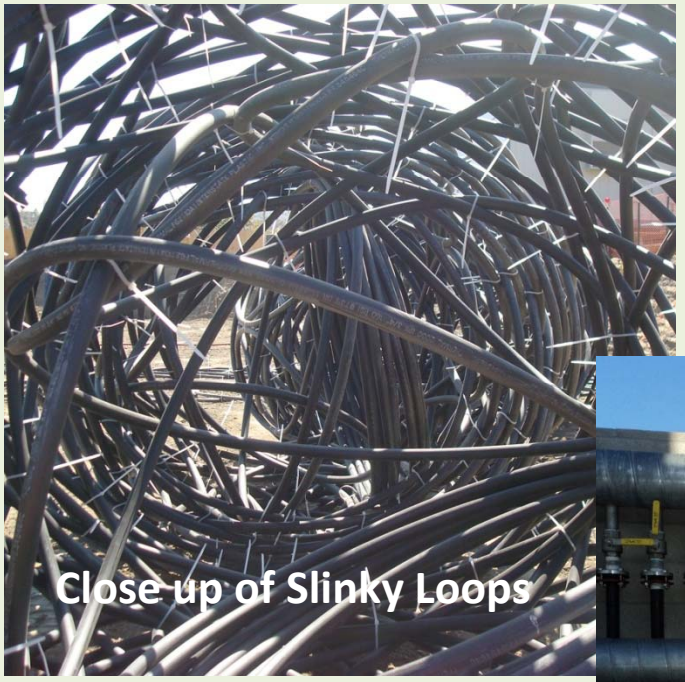
Because the peak mean temperature at Playa Vista ES is 84 degrees it is likely that air conditioning will not be required for most of the year. The geothermal system reduces the amount of space needed for rooftop equipment, allowing for a larger solar array.

Lower Layer

Row of Slinky Loops

Upper Layer

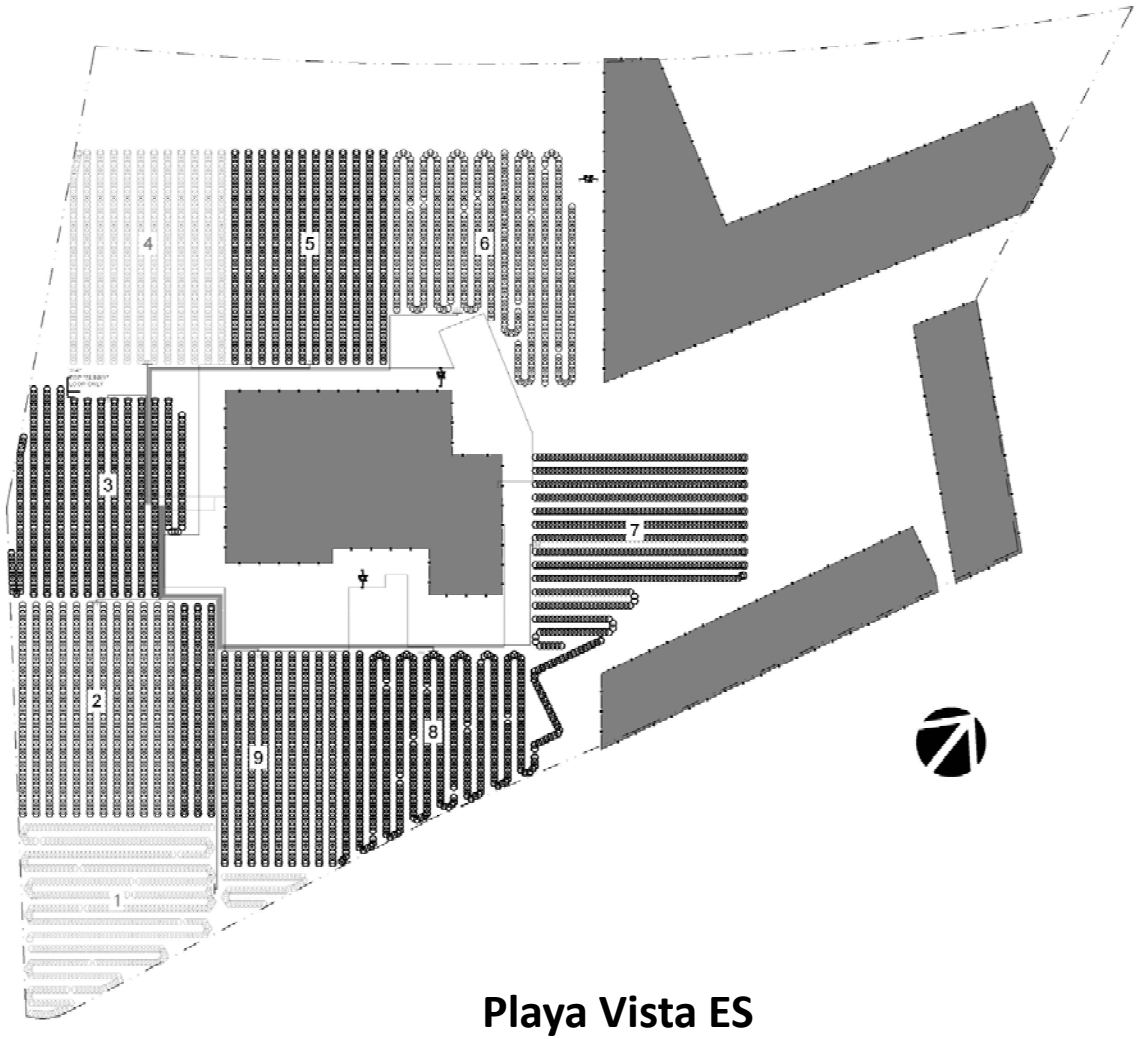
Slinky Loops being laid out



Close up of Slinky Loops

System Manifold

Close up of Slinky Loops




**Playa Vista ES**
**Site Plan with Slinky Loop Layout**
**Osborn Architects**

# Playa Vista Elementary School

Solar Overhang at Admin Building


Solar Array on Library Roof

School Design: Osborn Architects
Photos by Edmund Barr Photography

# Playa Vista Elementary School

School Design:  Osborn Architects
Photo by Edmund Barr Photography