



3-D virtual model of the 1063 Capitol Way building foundation. Red indicates the Geopier shafts and blue indicates the GeoWell system.

1063 CAPITOL WAY, BLOCK REPLACEMENT PROJECT

GEOPIER FOUNDATION SYSTEM & GEOTHERMAL HEATING PROCESS

Construction is underway at the new 1063 Capitol Way office headquarters building. The Sellen team has been excavating the site and is ready to begin installation of the building's structural foundation and geothermal heating system. These processes will involve two primary equipment systems, as described here.

GEOPIER SYSTEM

The existing soils on the 1063 Capitol Way project site are soft and compressible, and, as a result, they will not provide adequate support for the building. To resolve this challenge, the team will use a Geopier structural system to augment the building's foundation.

A Geopier is a 24-inch shaft that will be drilled around 30 to 40 feet deep under each footing of the building. The site's footprint requires 1,000 Geopiers, and their installation will displace around 3,900 cubic bank yards of existing soil. The overall installation process will take around seven to nine weeks and will begin on Nov. 9.

GEOTHERMAL HEATING

Throughout the year, almost 50% of the sun's energy is absorbed into the earth where it maintains a consistent temperature just a few feet below the ground's surface. Geothermal technology will allow our team to take advantage of this constant renewable energy source.

To obtain the geothermal energy, the team will use a GeoWell system combined with a vertical loop system. Beneath the building, the team will drill 30, 6-inch diameter GeoWells to a depth of 300 feet. Within each well, the team will install a vertical loop — a 1-inch diameter tube. The vertical loop facilitates the heat exchange by transferring heat from the earth to the building or in reverse, from the building into the earth, depending on the season. It's estimated that use of the geothermal heating system will save around \$21,000 in energy costs per year. Construction will take about six weeks and the team will begin this process on Nov. 16.