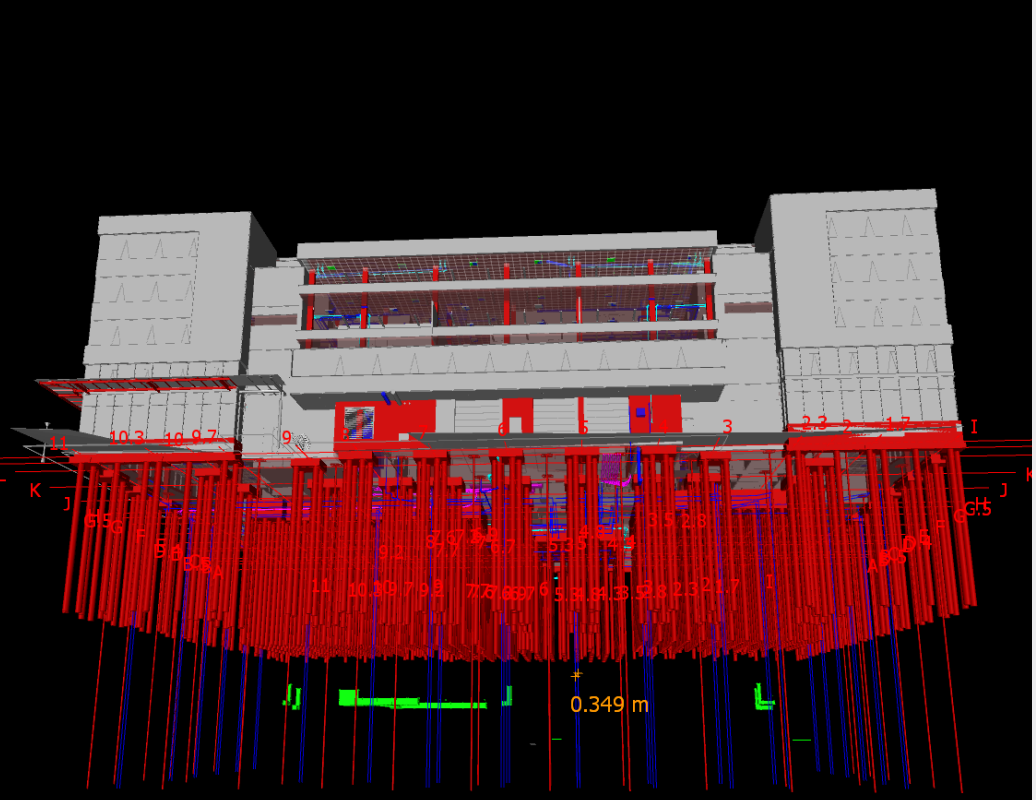

Virtual model of the 1063 Capitol Way building foundation.
Red indicates the Geopier shafts.

1063 Capitol Way, Block Replacement Project

Geopier Foundations

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

A Geopier is a 24-inch-wide shaft drilled to around 30- to 40-feet deep under each footing of the building. Once the shaft has reached its depth, loose stone and aggregate is placed at the bottom of the hole. A vibratory hammer and special mandrel compresses the aggregate until it forms a solid mass of predetermined thickness. This step is then repeated until it reaches ground level, thus improving the ground in order to support the building load and lessen settlement.

The site's footprint requires 1,011 Geopiers. Installation of the Geopiers will displace approximately 3,900 bank cubic yards of existing soil. The overall installation process began on Dec. 3, 2015 and is expected to be complete by mid-February 2016.

Washington State Department of Enterprise Services

ZGF ZIMMER GUNSUL FRASCA ARCHITECTS LLP

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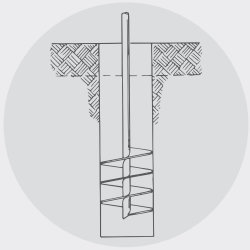
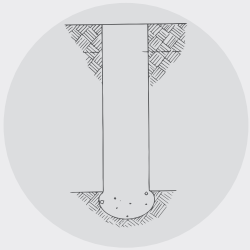
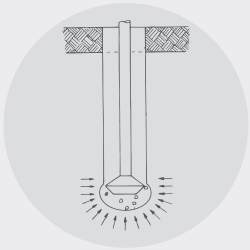
Creating a Rock Solid Foundation



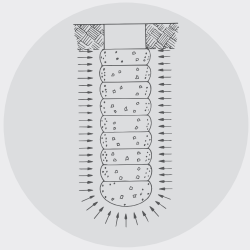
Step 1: Drilling creates a cavity 30 to 40 feet underground. This is the Geopier shaft.



Step 2: Stone and aggregate is placed at the bottom of the shaft.



Step 3: A vibratory hammer and special mandrel compresses the stone until a solid mass of predetermined thickness is formed.



Step 4: Step 3 is repeated until the compacted rock reaches ground level. The lateral pressure of the surrounding soil, combined with the compressed levels of rock, create ground dense enough to support the building load.