

## Geology, GeoTech and Construction Tasks using OpenSite Designer

Tasks routinely performed by Geology, GeoTech or Construction involved creating sloped quarry excavation surfaces, merging surfaces, calculating the triangle volumes of excavations, manipulating surface features, and creating vertical alignments that were draped along a surface. These tasks can be performed using OpenSite Designer or OpenRoads Designer, but the names of commands have changed over time.

In the OpenX products, most surface commands are found on the Terrain tab. Some of the surface utilities for modifying surfaces are found on the Model Detailing tab. When working with geometry, look for the word “profile” to refer to the 3D elevations along a horizontal alignment.

The word “profile” has several different meanings.

- A **profile drawing** shows vertical geometry and surface lines, as well as a grid, labels, and title block.
- The **profile of a surface** is a line of elevations shown in a section.
- The **alignment profile** is another name for the vertical geometry.

Check out the ***OpenRoads Designer Help*** for instructions on operating each tool; links are provided in the matrix below.

Task	OpenRoads/OpenSite Tab>Group>Button	OpenRoads/OpenSite Designer Command
Generate Sloped Surface / Generate Longitudinal Feature	<b>Model Detailing</b> > <a href="#">3D Tools</a> >3D Elements	<a href="#">Create 3D By Slope To Target</a>
Drape a Feature	<b>Model Detailing</b> > <a href="#">3D Tools</a> >3D Elements	<a href="#">Create 3D By Drape To Surface</a>
Create a surface from 3D elements	<b>Terrain</b> > <b>Create</b> > <a href="#">From Elements</a>	<a href="#">Create Terrain Model By Elements</a>
Create Isopach Surface (Difference Surface)	<b>Terrain</b> > <b>Create</b> > <a href="#">Additional Methods</a>	<a href="#">Create Delta</a>
Create a draped vertical alignment	<b>Geometry</b> > <a href="#">Vertical</a> >Profile Creation	<a href="#">Profile From Surface</a>
Set Active Vertical Geometry	<b>Geometry</b> > <a href="#">Vertical</a> > <a href="#">Set Active Profile</a>	<a href="#">Set Active Profile</a>
Set Elevation	<b>Geometry</b> > <a href="#">Vertical</a> > <a href="#">Element Profiles</a>	<a href="#">Profile By Constant Elevation</a>
Fillet Feature	<b>Geometry</b> > <a href="#">Horizontal</a> > <a href="#">Arcs</a> > <a href="#">Arc Between Elements</a>	<a href="#">Simple Arc</a>