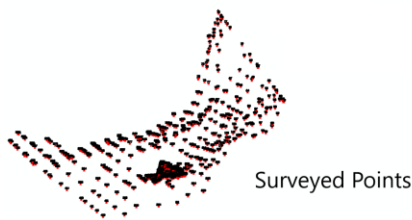


This [Knowledge Base Article](#) is going to run through how to create a surface on a vertical face that contains overhang. This generally occurs on rock faces in mines or quarries.

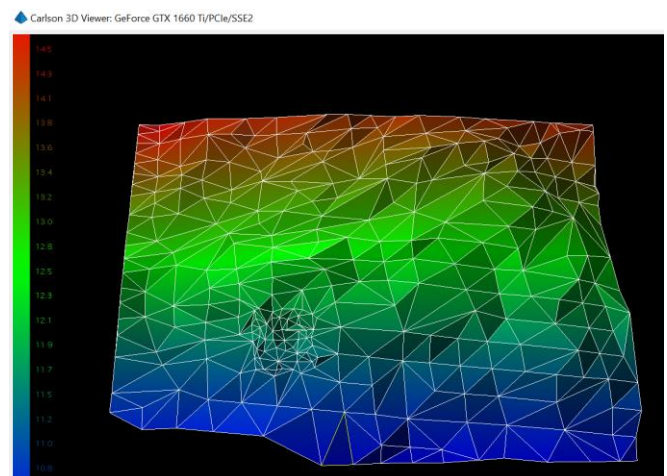
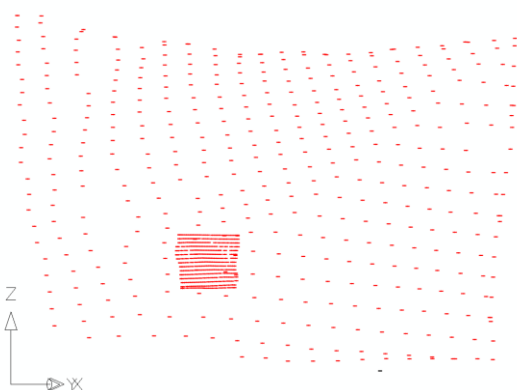
In this example, a section of a rock cliff was scanned using the **Robotic Grid / Face Scan** option in [SurvCE](#) and SurvPC which turns a robotic total station in to a simple grid scanner by taking reflectorless shots along a grid. More information on this command is contained in [KBA 1104](#).



Total Station Location

Diagram above shows the plan view of the survey conducted, showing the location of the total station and the surveyed points on the cliff face. If you try and create a surface from this using the normal options, the surface will not turn out correctly as a surface is generated in a top-down approach.

As such, in Carlson 2020 and later, a new option was added into the Triangulate and Contour routine; **Pick Reference Plane**. When enabled, this option allows you to contour an overhang or cliff by changing the reference plane to a side view. The reference plane can be specified by using the *View>Viewpoint 3D>View* command (see the AutoCAD/IntelliCAD Help menu for additional details) or by specifying three data points on the cliff (two along the bottom and one at the top).



Once completed, note in the commandline:
TIN contains overhangs and is marked as 3D TIN.

Always view the resulting surface in the **3D Viewer (View > 3D View > Surface File Viewer)**.