

## **Bim Underground.**

Bim Underground is a 3D modelling tool for civil engineers, drafters and technicians that allows users to create 3d Solids of existing and proposed underground utilities for planning and clash detection, without prior 3d modelling expertise.

Users can work in AutoCAD or Civil 3D. All objects created are native AutoCAD *3d Solids, Surfaces or Loft Objects*. The AutoCAD layers for each 3d object are automatically generated and assigned based on the National Cad Standards

<https://www.nationalcadstandard.org/ncs6/>

Users can choose between working with imperial or metric units.

The screenshot displays the BIM Underground software interface with the following sections:

- Layer Control - Discipline & S.U.E. level:** A dropdown menu set to "Cable TV", a checkbox for "Use S.U.E. Quality Level Layer Color" (unchecked), and a dropdown menu for "Quality Level D".
- Units:** Radio buttons for "Imperial" (selected) and "Metric".
- Conduits:** Input fields for "Conduit Width" (12 in), "Conduit Height" (12 in), "Start Point Invert Elevation" (0 ft), and "End Point Invert Elevation" (0 ft), with a "Create Run" button.
- Pipes:** Input fields for "Pipe Diameter" (12 in), "Start Point Invert Elevation" (0 ft), and "End Point Invert Elevation" (0 ft), with a "Create Run" button.
- Conduit Transition:** Text instructions: "Click 'Create Loft' and pick the polyline at the start and end faces of each conduit run. On screen, select the new segment and choose 'Normalize to all sections' for vertical curves and 'Draft Angle' for horizontal curves." Below the text are two 3D diagrams showing conduit transitions and a "Create Loft" button.
- Clash Detection:** Text instructions: "For each conflict a 3D solid on layer 'Clash Found' will be created. An AutoCAD 3D solid will be created whose dimensions encompass the limits of the clash. If clearance tolerances are required just increase the size of the pipe and/or conduits, and recreate." Below the text is a "Check" button.

With Bim Underground you can create vaults, maintenance holes, pipes, conduits and conduit transitions and share structures with other users. Civil 3D users can project created objects onto Civil 3D profiles.

The “Help & S.U.E. Information” tab has a selection of video links that cover the most common applications of Bim Underground.

The screenshot shows the BIM Underground software interface. The 'Help & S.U.E. Information' tab is selected, displaying the following content:

- Quick Start Guides**
  - Quick Start Pipes & Conduits
  - Quick Start Maintenance Holes
  - Quick Start Vaults
- S.U.E. Links & Info**
  - [Subsurface Utility Engineering - Wikipedia](#)
  - [Federal Highway Administration S.U.E. website](#)
  - [U.S.D.O.T. active projects status](#)
  - [BIM Underground Website](#)
- S.U.E. Layer Quality Level Descriptions**
  - S.U.E. Level A
  - S.U.E. Level B
  - S.U.E. Level C
  - S.U.E. Level D

The 'Examples' section on the left shows a video link for 'Maintenance hole & catch basin' with a 'Click for video' button. A red box highlights the 'Help & S.U.E. Information' tab and its content. A red arrow points from a text box to the 'S.U.E. Links & Info' section. Another red box highlights a video link in the 'Examples' section.

Additional links on this tab are directed to websites concerned with Subsurface Utility Engineering, quick start guides and descriptions of each S.U.E. quality level.