

Using Revit to create toposurfaces and calculate cut and fill

1. Opening Revit Software

Open Revit

Under 'Projects' list pick 'New'

Pick default template file (Usually Construction)

Create New 'Project'

2. Importing Contours

Pick 'Insert' tab (at top of screen)

Pick 'Import CAD'

Navigate to Autocad file location. (This file should contain all the contours needed to create both existing and proposed terrain surfaces. Existing and proposed contours need to be on separate layers)

Pick 'Open'

3. Viewing Contours

In order to view the contours that have been imported the view will need to change to a 3D view, therefore:

Pick 'View' tab

Pick '3D View'

4. Creating Existing Toposurface

Pick 'Massing and Site' tab

Pick 'Toposurface'

The 'Modify/Edit Surface' tab will then automatically be highlighted

Pick 'Create from Import' then 'Select Import Instance'

Select the contours on screen

Select the layers appropriate to create an existing toposurface and pick 'OK'

A toposurface should now be highlighted in the main view. Pick the green tick in the 'Surface' tab to complete.

5. Toposurface properties

The toposurface created needs to be recognised as the existing surface (or 'phase') for comparison. Therefore:

Select toposurface

In the 'Properties' menu on the left of the screen scroll down to the 'Phasing' heading and pick 'Existing' next to 'Phase Created'. Pick 'Apply'.

6. Creating Proposed Toposurface

Follow the steps for stage 4, though this time when selecting the layers choose the ones appropriate for creating the proposed toposurface.

7. Cut / Fill calculation

Select toposurface

In the 'Properties' menu on the left of the screen scroll down to the 'Other' heading . The 'Cut' and 'Fill' calculations should be displayed.

Using Revit to render an image of terrain model

Pick 'View' tab (at top of screen)

Pick 'Render'

Under Quality select 'Best' Setting

Pick 'Render'

Revit will render the image

Once done pick 'Export' and then give the file an appropriate name and save as jpg format