



Topocad Design

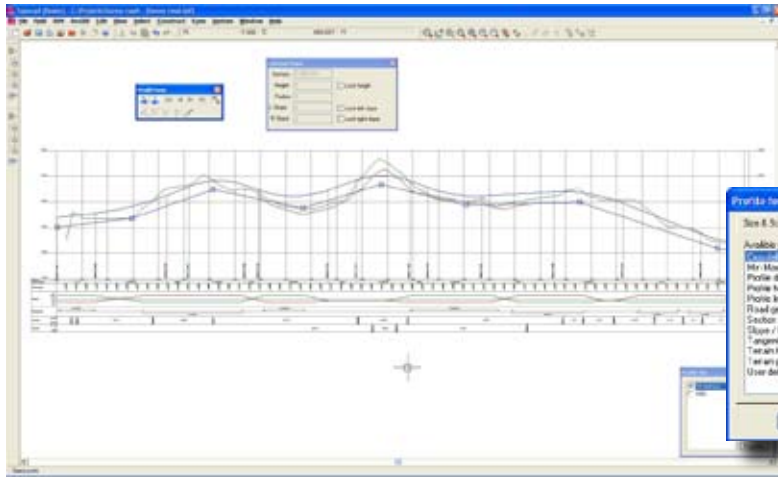
Topocad design module includes Profiles, Profile forms with profile interpretation, Volume calculation using surface models and Volume calculation from cross sections.

Get a second opinion when it comes to volumes, sections and profiles!

Topocad Design uses a design method

Road lines are created in a CAD environment with straight lines, circular and spiral curves. The surface terrain models

are also created in a CAD environment from the survey plot. From the road lines and the terrain models it is possible to create one or several terrain profiles in the Profile form and there design a road profile. A number of profiles can be selected in the same Profile form and be edited at the same time.



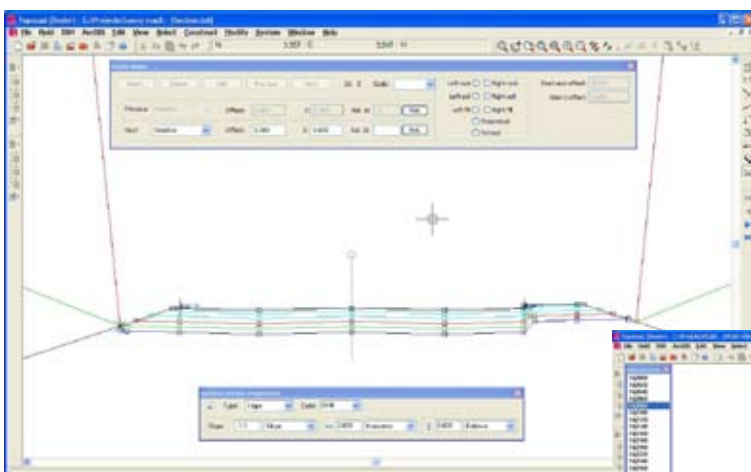
Topocad Profile form with profile interpretation. The form can use many profiles at the same time and symbols can be selected directly in the drawing.

The profile form is built up from a number of different types of components that are sorted within the list. All types of components can be used for several different profiles in the same form.

Cross sectioning

The cross section template is very flexible and can adopt to any type of cross section. Independently road, railroad or pipe section can be created. The Cross sections are built with vectors, side lines and profiles. The template handles

all conceivable layers and uses a main line and optionally a large number of side lines. When the calculated sections are finished – the fun begins. There is the possibility to edit one or several sections, interpolate changes between sections and it is possible to update the terrain models, lines, profiles and section templates, without having to start from scratch.

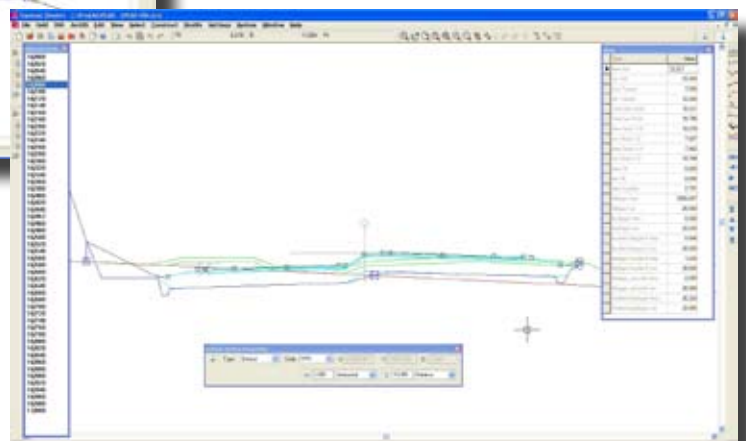


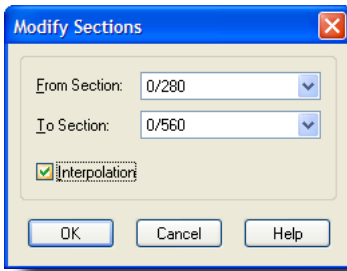
The section template can be built in many ways, with one or several side lines, various profiles and cross falls and an optional number of layers in the section template.

Once the cross sections are calculated, all the data is connected, and can easily be edited. A very large number of tools for editing are available.



The section templates may use one or several side lines built up by road lines, road profiles and/or camber diagrams.





It is possible to edit several vectors in the cross sections at the same time and also interpolate vector values over an optional number of cross sections.



Sections can be recalculated whilst keeping the remaining editing.



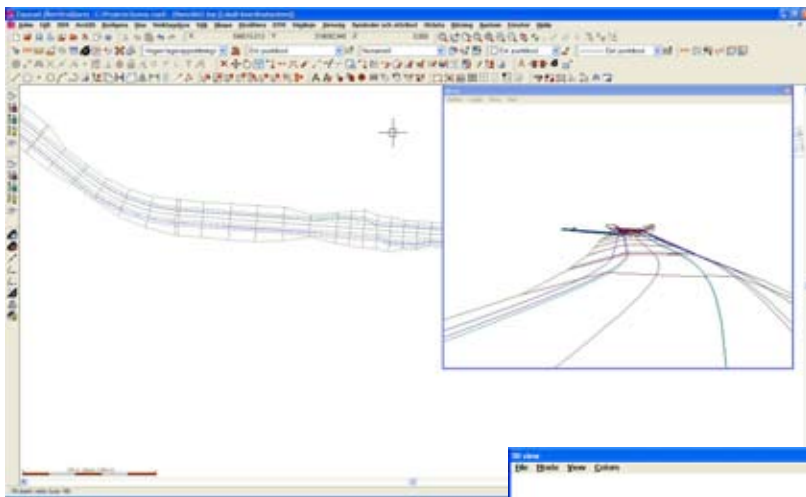
It is possible to replace the section template with another.

To plan road lines, road profiles and calculate volumes with sections can be simple, but very detailed if required

A primary calculation can be produced quickly and in presentable form. It is also possible to dig down into the details, i.e. when the width is not constant, or when it is necessary to create a mass balance by increasing the elevation of a profile a more compli-

cated cross section design can be produced. When the side tracks vary in height and side, topsoil is removed, there are different thicknesses for layers in the superstructure, the terrain model is updated, or when a pavement or a bus stop is added, the design becomes very much more complex. This is the strength of Topocad Design; the ability to edit something at the planning stage, whilst keeping the earlier option settings as a comparison.

It is in this situation we believe you need a system that gives you the possibility for a second opinion.

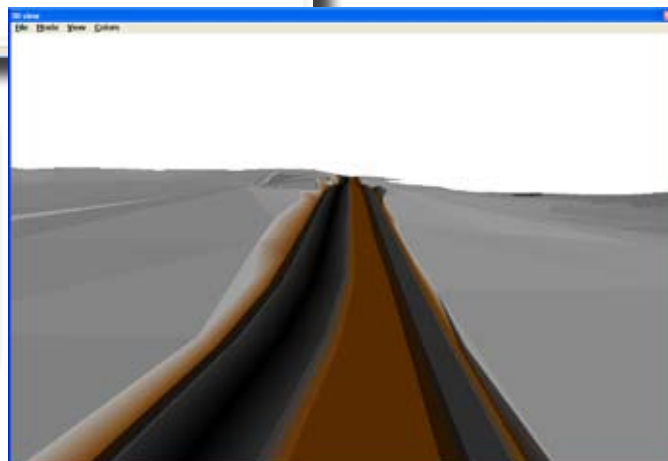


The calculated sections can easily be viewed in 2D and in 3D view.

A 3D view of the road with original ground surface can be generated. The colours can be set in three different methods generated by codes.



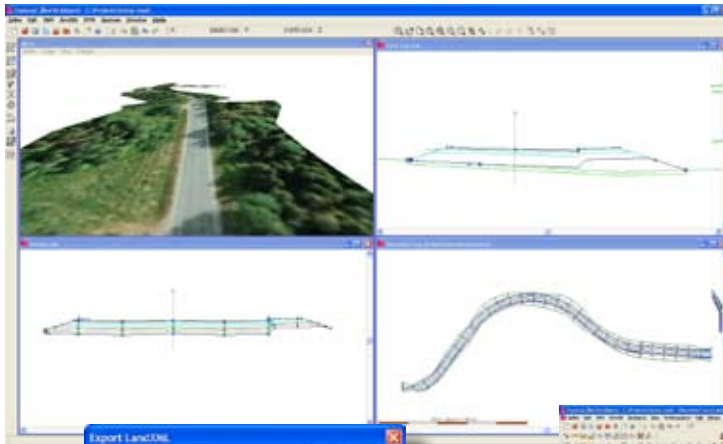
Co-ordinates from the calculated sections can be selected and are sorted by codes or layers.



Stake out and Exports

directly to survey instruments or machine control units for Stake out.

The terrain model and design plan can be exported to DWG and LandXML, or as co-ordinates

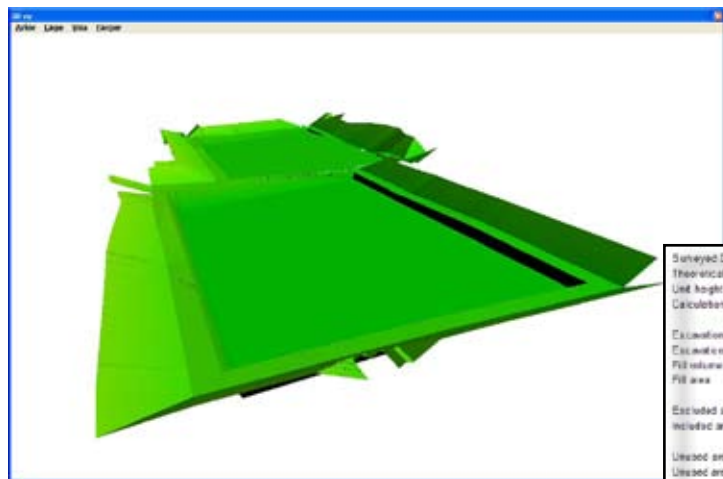
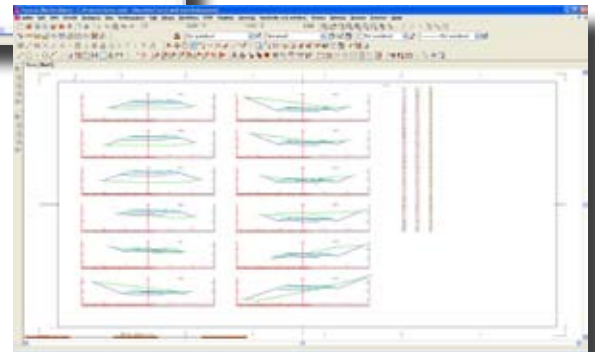


There are 4 optional views of a section template; 2D plans, 3D view, terrain model and calculated sections.

The sections easily can be printed via the Topocad drawing sheet manager.



The best way to export sections is in LandXML format which includes the geometries and terrain models.



Volume calculation between terrain models is included in the Topocad Design package and can be used for many types of calculation, including shafts, graves and controls.

Surveyed DTM	2_Ground model.dtm
Theoretical DTM	Cross sections.dtm
Unit height	0.000
Calculation interval	0.500
Excavation volume	35002.144 m ³
Excavation area	36445.880 m ²
Fill volume	3738.583 m ³
Fill area	14483.710 m ²
Excluded area	0.000 m ²
Included area	0.000 m ²
Unused area in surveyed DTM	4224324.766 m ²
Unused area in theoretical DTM	4.390 m ²

Reports of calculated volumes between model surfaces are generated.

Contact info

Topocad is developed by Chaos systems. Read more about Topocad at www.chaos.se/eng/topocad.htm

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