Description
Technocad urban design software is a suite of PC based programs for the design and automated draughting of civil engineering urban services. Incorporated in this suite are software packages that cover all aspects of civil engineering services design such as Roads, Sewer reticulation, Stormwater reticulation and Water supply.
All the software has been written with knowledge gained in the civil design office where the need for fully automated draughting, rather than manually manipulated computer aided draughting, was identified as the only way of increasing design and draughting productivity.

RoadMate is the road software package of the Technocad urban design software.
The purpose of the software is to provide an intuitive, easy to learn and easy to use graphical approach to roads design and draughting, whereby basic engineering parameters pertaining to the roads design are input by the designer whilst working inside an AutoCAD drawing. RoadMate gives you final working layout, longitudinal section drawings and cross section drawings with the minimum amount of manual input.

Work Smarter
Road alignments are co-ordinated and layout and longitudinal section drawings are created automatically from parameters chosen by the designer. All horizontal setting out calculations are done for you. Quantities are also calculated, both for areas in Cut situations and in Fill. In addition topsoil stripping is also calculated, together with mass haul. Because you are working in AutoCAD, you can easily add extra notes, background images or attach reference files etc. prior to plotting the final working drawings. Let RoadMate do all the previously boring and mundane work!

Horizontal Layout Drawings
The designer simply has to draw lines or polylines representing the stakeline of the road(s) in plan in AutoCAD.
Curves are input by 'filleting' tangents with the required radii. Using the ‘Stakeline curve and PI’ editor, you can dynamically change curve radius, tangent length, arc length and PI positions. Maximum radius and tangent lengths are displayed whilst editing.

When you have created your road stakelines, simply show RoadMate the road by selecting the centreline, answer design data questions via an easy to use dialog box, and the following is calculated and drawn automatically inside your AutoCAD drawing:
- Road edges including horizontal curves
- Kerbs or shoulders
- Horizontal PI's numbered and co-ordinated to Cartesian or RSA

Features include:
- Extraction of long-section profiles automatically from SurfMate’s DTM – extremely fast and very accurate,
- Picking up all changes in grade of a surface
- Display of ground profile and road centreline prior to choosing of vertical PI (VPI) positions by draughting or typing
- Designer can choose whether to set vertical curve lengths or alternatively let RoadMate calculate vertical curve lengths according to user selected design speed and corresponding K-factors for sags and crests
- Designer can dynamically move a selected VPI (vertical point of intersection) and watch the effect on the vertical curves at the current VPI, at the VPI to the left of the selected VPI (vertical point of intersection) and watch the effect on the vertical curves at the current VPI, at the VPI to the left of the current VPI. Great for sorting out problems with overlapping vertical curves on complex designs! View changes in grade and vertical curve length update in real-time.
Cross sections

Cross-sections are taken perpendicular to the road centreline. Ground levels for cross sections can be extracted automatically from the Digital Terrain Model or typed in from survey data. Designers can determine the distance left and right from the centreline at which existing ground elevations are to be calculated. Centreline road levels are determined automatically from long-section vertical design.

Features include:
- Accurate existing ground elevation determination by seeking out changes in grade
- Scaling, spacing and positioning of cross-sections in the drawing is user selectable
- Able to accept varying number of cross section offsets for each section. This allows for the manual addition of any additional changes in grade if required. In addition those designers choosing to type in surveyed cross section data can have different numbers of offsets for each section
- Vertical curve high and low point chainages and levels determined and annotated on longitudinal section – sort out drainage problems fast!
- Ground and road levels interpolated if required at constant chainage intervals
- Ground and road levels determined at special chainages such as road intersections or pipe/curved crossings
- Annotation of horizontal curve BCC and ECC on longitudinal section
- Annotation of road cross-section profile description and transitions in profile on long-section based on cross-section information
- Longitudinal sections can be drawn between selected chainages
- Output in high quality final drawing format in AutoCAD. This allows for further editing and enhancement if required prior to plotting

3D Visualisation

Calculation and the drawing of the road toe line as well as other template lines at "strings" is performed. These strings, as well as the associated 3D faces (in full 3-dimensions) can be drawn onto the road layout drawing. The designer can then use the strings to modify the original Digital terrain model (DTM), forming a new DTM of the original surface and the designed road merged together. The 3D faces allow for shading of a 3D view in AutoCAD. The 3D model can then be input to rendering software, such as Autodesk 3D Studio Max and photo-realistic images produced of the design.

Toolbox

Included with RoadMate is the Technocad ‘TechTools’ toolbox featuring lots of useful functions to make your draughting a pleasure! The toolbox is accessible via the pull-down menu or directly from a specially designed toolbar.

On-line Help

RoadMate has full-featured Windows on-line help with indexing and search features. Extensive use of graphics and examples makes this ‘help’ facility really useful.

Volumes

Features include:
- Volume calculated from cross sections
- Sub-grade cut/fill areas and quantities calculated and accumulated
- Mass haul calculated with cut/fill bulking ratio
- Embankment toe positions and elevations reported
- Road left/right edge positions and elevations are reported

Typical Longitudinal section produced automatically

 exported horizontal alignment data to ASCII file for electronic setting out.
Technical Support
When a license of RoadMate is purchased, you have a full year of software maintenance and technical support for free! After one year, you can continue to receive the same benefits for a further year for a small fee.

Purchase Options
You can purchase a perpetual license with annual maintenance, or you can subscribe to the software for 1 month, 3 months, 6 months or 12 months. The choice is yours!

Hardware Requirements
As per Autodesk recommendation for AutoCAD. Windows 64-bit and extra RAM recommended

Software Requirements
AutoCAD / AutoCAD Map Release 2017-2020 family. SurfMate for extracting elevations.

3D Visualisation

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Road Earthworks Report

Ordering Details
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