# RoadEng®

## THE UNCOMPLICATED DESIGN SOFTWARE THAT STILL DOES COMPLICATED STUFF

## EASY CIVIL DESIGN SOFTWARE

Designed for busy engineers, RoadEng® is built to make civil design projects faster and easier. RoadEng is a complete civil design package for surveying, terrain modeling, corridor design and site planning.

RoadEng is ideal for roads (public and industrial), rural highways, rail and pipeline projects, streams, and many site design applications. Culvert replacement, bridge site design, reservoirs, ponds, and pads are just a few applications.

Users can build and manipulate 3D models quickly and switch instantly between multiple views. It's amazingly simple to use. And fast.

## KEEPING IT SIMPLE

RoadEng is easy to use and intuitive. With a focus on engineering over drafting, RoadEng is not just for CAD experts. We believe in always maintaining a clean user interface, adding sophistication without the addition of extra menus, dialogs, modes, buttons and options. 90% of RoadEng users do not require formal training, which means engineers can spend less time learning and more time engineering.

## POWER WITHOUT COMPLEXITY

RoadEng is powerful and fast, handling large LiDAR data sets with ease, managing construction costs for large civil projects, and providing real-time interactivity for its users. The simplicity of RoadEng allows you to see the data you need to see, when you need to see it, in real-time as you make changes to your design. You'll never have to dig for data again.

## COMPATIBLE WITH OTHER SOFTWARE

Clean, simple and standalone, RoadEng allows information to be moved easily between other applications such as Microsoft Office®, ArcView®, and AutoCAD®. RoadEng supports industry standard file formats, including DWG, DGN, and LandXML.

## THE BOTTOM LINE

RoadEng is used by thousands of companies worldwide, including universities, consultants and government organizations. Its interactive power has made countless engineering projects easier and faster.

**FAST**   **POWERFUL**   **COMPATIBLE**

Softree
Engineering an *Easier* Way

# RoadEng®

## Quick learning curve.

Be up and running in hours with little or no training with RoadEng®'s easy user interface. 90% of users do not require formal training.

## Design start to finish.

Enter survey data, create horizontal & vertical alignments, calculate earthwork quantities, create output sheets. New roads. Realignments. Widening projects. No hassles.

## Real-time interactivity.

See the data. Change the design. No waiting around. Our software works with you to build accurate models, design better alignments, and save earthwork costs.

## Output finished designs.

Create PDF output sheets. Share DWG, DGN, and LandXML files with other programs. Our civil design package works alone or can integrate into other CAD or GIS-based engineering systems.

# A POWERFUL, EASY-TO-USE, COMPLETE CIVIL DESIGN TOOL SET

## 3D MAPPING & TERRAIN MODELING

RoadEng takes in data from many sources, including total station surveys, large LiDAR sets, existing CAD drawings, or imagery.

Features can be easily selected, edited, formatted and manipulated by name, coordinate range, property or layer. Coordinate geometry operations are provided so the user is able to move, scale, rotate, intersect, break, join and offset features.

Drafting functions are provided for control of color, linetype, symbols, hatching, and annotation of distances, bearings, stations etc. Digital images can also be imported and used for reference, or to enhance a design.

Automatically create a TIN from large point sets, including LiDAR data with over 5,000,000 points. Customize your display options in 2D or 3D. See smoothed and labeled contours, slope vectors, and color shading for slope, aspect, and elevation. Cursor tracking between the various windows provides easy navigation and identification of problems in the TIN model.

Calculate volumes, do grading, and use templates to easily design pads, ponds, embankments, sites and more. Find the volume between two surfaces, or merge surfaces to create new ones. Extract cross sections and profiles from single or multiple TIN surfaces. Intersect or project additional features onto an existing profile. Experience truly powerful 3D modeling capability at the heart of RoadEng.

# ROAD AND CORRIDOR DESIGN

Only four windows are used for road design: Plan, Profile, Cross Section, and Data. Each window is customizable and instantaneously reflects changes made in all other windows.

Creating and changing the horizontal and vertical alignments is quick and easy. IP coordinates can be created and edited interactively using the mouse, or in the Curve panels. These panels also allow users to input curve parameters such as design speed, super-elevation, transition lengths, K-values, and sight-stopping distances.

Simultaneous update among windows when an alignment is changed allows you to continually monitor slope stake positions, right-of-way, grades, volumes, and mass haul in real-time as you design.

RoadEng's flexible template editor allows you to assemble typical sections using a library of customizable components. Account for ditches, pavement, sub-base materials, varying lane widths, cut slopes, variable height fill slopes, curbs, sidewalks etc.
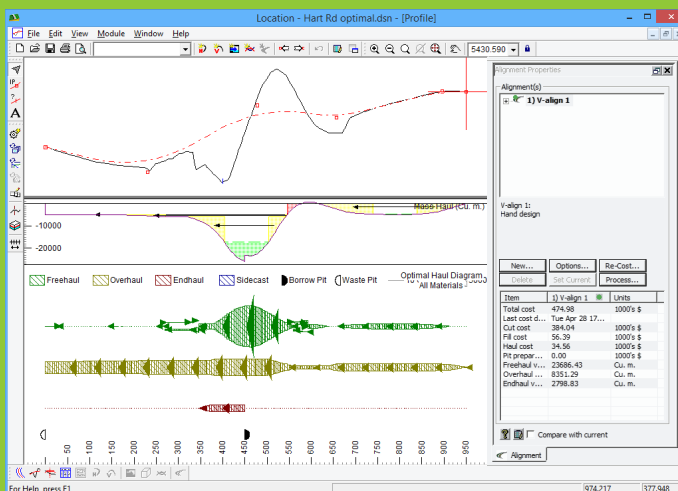
Profiles, plans and cross sections can be output to any Microsoft Windows supported printer or plotter in single page or multiple page formats. Drawings can be exported to CAD via DWG, DGN and LandXML.
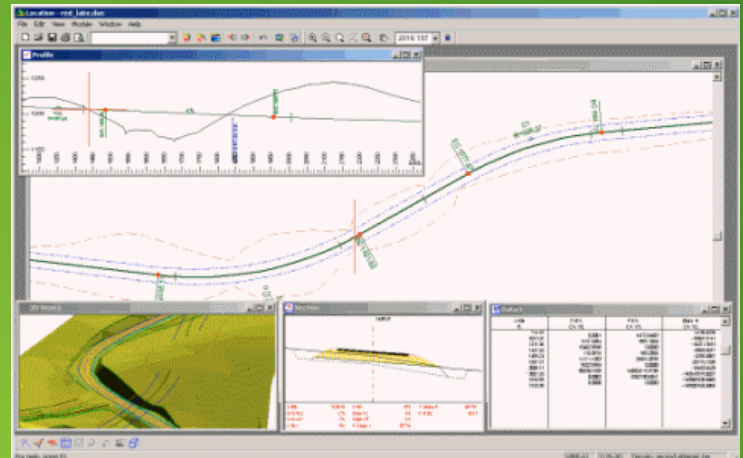


*Profile, Plan, Cross Section, Data & 3D Windows*
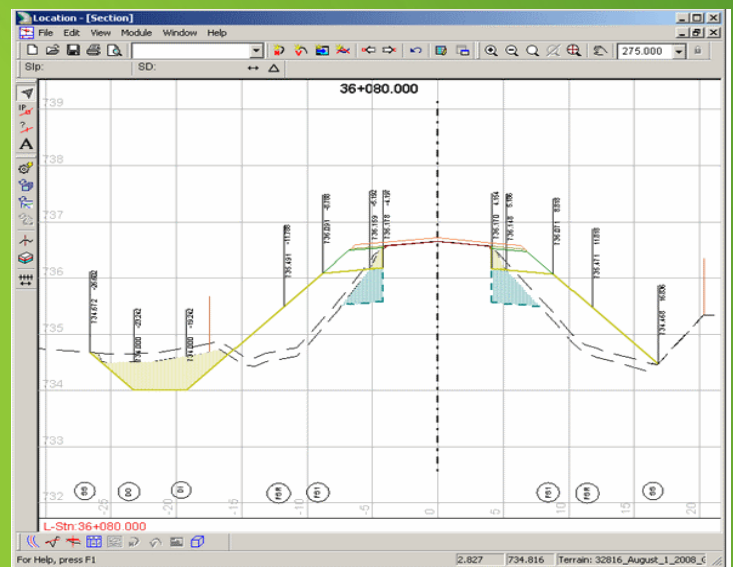


*Cross Section Window*



*Profile with Opti-Haul Sub Window*

# CONSTRUCTION MANAGEMENT

Innovative and sophisticated costing features help you to manage construction projects. The mass haul graph and an Opti-Haul graph give detailed feedback on optimal material movement and pit quantities.

Discrepancies between proposed design drawings and actual field measurements are easily calculated, with functions for digitizing takeoffs, stake-out, recalculation of design quantities, and modeling as-built construction throughout the life of the project.

The Cross Section Editor allows you to easily calculate as-built quantities, comparing surfaces and layers such as stripping, sub-cut, sub-grade or original ground. Volume and area reports can be printed directly from RoadEng or exported to Excel®.

# FUNCTION COMPARISON

| | Terrain Tools 3D | RoadEng Civil Engineer |
|---|:---:|:---:|
| **TERRAIN** | | |
| Basic mapping and CAD functions. | ✓ | ✓ |
| Import of TIF, JPG, BMP, SHP, Mr.SID, ECW, LAS, GPX, GML,ASCII, MS Excel, DXF, DWG, USGS DEM, SDTS, Land XML, DGN. | ✓ | ✓ |
| Import from GPS (GPS waypoint download). | ✓ | ✓ |
| Export to ASCII, DWG,DGN, DXF, SHAPE, TIF, JPG, BMP and LandXML. | ✓ | ✓ |
| Multi-Plot — creation of output sheets, title blocks, legends, north arrows etc. | ✓ | ✓ |
| Digitizing — tracing areas and lengths from scaled maps. | ✓ | ✓ |
| Extended CAD functions — curves, buffering, and clipping. | ✓ | ✓ |
| Profiles — display of profiles. | ✓ | ✓ |
| Profile Drafting & Design — provides editing in the profile window. | ✓ | ✓ |
| Surface Generation & Contouring — includes TIN generation and display. | ✓ | ✓ |
| Volume Calculation & Reporting — volumes and surface area calculations. | ✓ | ✓ |
| 3D Window — perspective display of 3D features and TIN surfaces. | ✓ | ✓ |
| Image Adjustment — adjustment to known control pts (rubbersheeting images). | ✓ | ✓ |
| **LOCATION** | | |
| Alignment Design — in plan, profile and section. | | ✓ |
| Horizontal and vertical curves — includes super-elevation and transitions. | | ✓ |
| Earthwork calculations, slope stake reporting. | | ✓ |
| Basic templates — creating new templates from stock object library. | | ✓ |
| P-Line Design—allows a design to be created from a p-line (station/offset x-sections). | | ✓ |
| Multi-Plot— creation of plan/profile sheets. | | ✓ |
| Profile Sub-Windows — Mass-haul, ground type, side slope & more. | | ✓ |
| Culvert Editor — interactive editing of culvert position, length and skew. | | ✓ |
| Auto Balance — automatic balancing of earthwork quantities. | | ✓ |
| Sub Surfaces — subsurface display and volume calculations. | | ✓ |
| Advanced Curve Design — sight distance, design speed and spirals. | | ✓ |
| Extended Templates — creation of new template objects and point codes. | | ✓ |
| Cross Section Editor — editing of individual cross sections. | | ✓ |