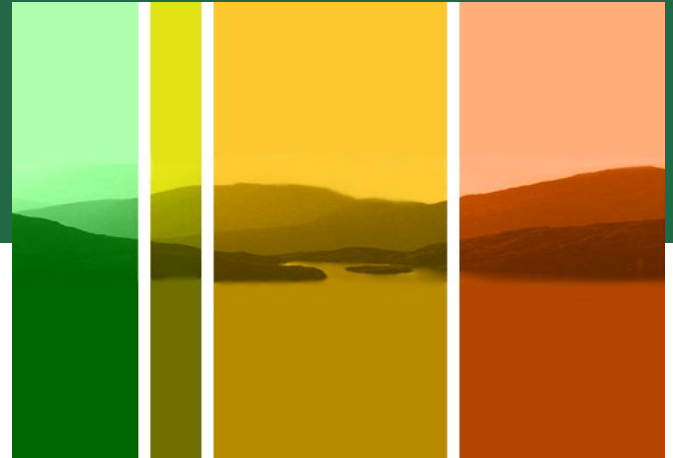


clean and simple
design software



New Thinking

Most civil design software on the market today runs on top of a CAD system and is heavily oriented towards drafting.

RoadEng® is different. It focuses on engineering. RoadEng was designed from the ground up to work with objects such as surfaces, cross sections, alignments, drainage structures, and templates. There is no need to convert back and forth between the engineering model and CAD drawing. Free from the overhead, complexity and awkwardness of the CAD environment, RoadEng delivers intelligent and highly interactive engineering capabilities in an intuitive easy to use format.

Keep It Simple

RoadEng is easy to use and intuitive! Its use is not limited to computer specialists or CAD operators. When it comes to menus, dialogs, modes, buttons and options our philosophy is "the fewer the better". The benefits of this are clear. Over 90% of our users don't require formal training less time spent learning and more time spend 'doing'.



Power without Complexity

Using a small powerful command set, RoadEng delivers power without complexity. It has been used on very large civil projects and will comfortably process very large LIDAR data sets.

Existing Technology

RoadEng integrates well in the modern engineering office. It is a clean, simple standalone package which allows information to be moved seamlessly between other applications such as Microsoft Office®, AutoCAD® and ArcView®.

It can be deployed completely by itself or as a companion to other civil/survey software such as Civil 3D®, Land Desktop®, EaglePoint or InRoads®. RoadEng supports industry standard file formats such as DWG and LandXML.

The Bottom Line

RoadEng can be applied to a variety of road, rail and corridor applications. Its interactive power has proven itself. RoadEng is now in use at 1000's of companies worldwide, including universities, consultants and government.

Grades, alignments and design parameters can be quickly evaluated with RoadEng, resulting in reduced engineering time, better safer designs, less earthwork and reduced construction costs.

Data Collection

Using a small powerful set of operations, topographic information can be quickly assembled from a variety of sources including total station surveys, LIDAR, 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 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 in either BMP, JPG or TIF format can be imported and used for reference or to enhance the visual impact of a design.

Terrain Modeling

A 3D surface (triangular mesh) is easily created. Contours, profiles, volumes between surfaces and 3D displays are available.

Terrain Tools will automatically create a TIN from coordinate points. It can process large sets of points (more than 5,000,000 points). Breaklines, boundaries, void areas can be used to improve modeling accuracy.

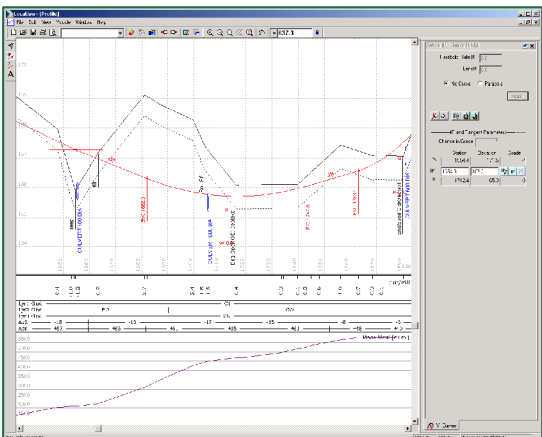
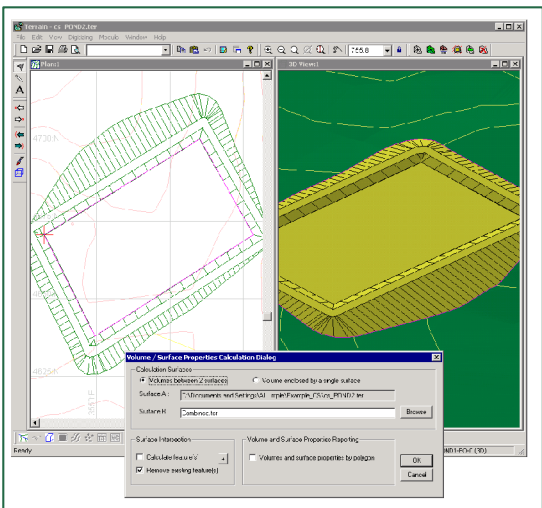
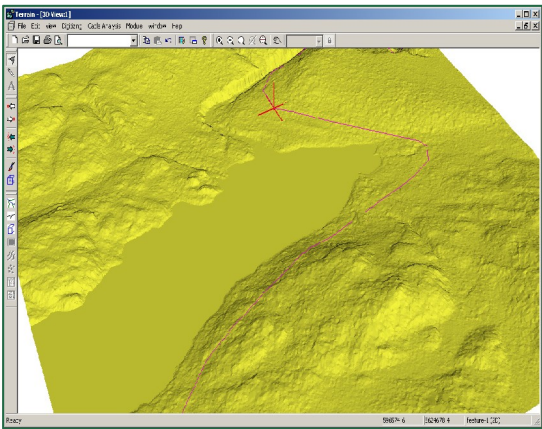
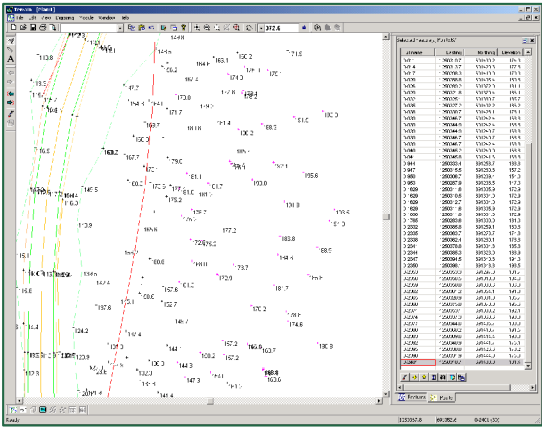
Various 2D and 3D displays are available including smoothed and labeled contours, slope vectors, color shading for slope, aspect, and elevation.

The 3D Window includes several useful options such as color shading and overlay of imagery. Cursor tracking between the Plan, 3D and Profile windows provides easy navigation and identification of problems in the TIN model.

Cut/fill volumes can also be quickly generated between two digital TIN surfaces. The intersection polyline between two surfaces can also be calculated. Surface area and average slope can be automatically calculated and displayed for any polygonal area.

Grading and template functions are included, allowing you to easily design pads, ponds, roads, embankments etc. Surfaces can be merged together to create new surfaces.

Cross sections and profiles can be extracted from single or multiple TIN surfaces. Features can be edited in profile or cross section. Additional features can be intersected or projected onto a profile, providing a truly powerful 3D modeling capability.



Road and Corridor Design

Road design is accomplished using 4 window types, Plan, Profile, Cross Section and Data. Each of these windows provides customizable feedback during design. Changes made to your design in one window are instantaneously reflected in all other windows. For example, an adjustment made to the alignment in the cross section window will immediately alter the data window volumes, and the slope stake projections (catch points) displayed in the profile and plan windows.

Creating and changing the horizontal alignment is quick and easy. IP coordinates and curve parameters such as design speed, super-elevation and transition lengths can be typed into the Horizontal Curve panel; IPs can also be created and edited interactively using the mouse. As soon as an alignment change is made all windows (plan, profile, data, section) update. This feedback allows you to continually monitor slope stake positions, right of way, grades, volumes and mass haul as you design.

The template editor allows you to assemble typical sections. Highly flexible and easy to use, urban and rural templates can be quickly defined to 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. Facilities to export drawings to CAD via DWG and DXF are also provided.

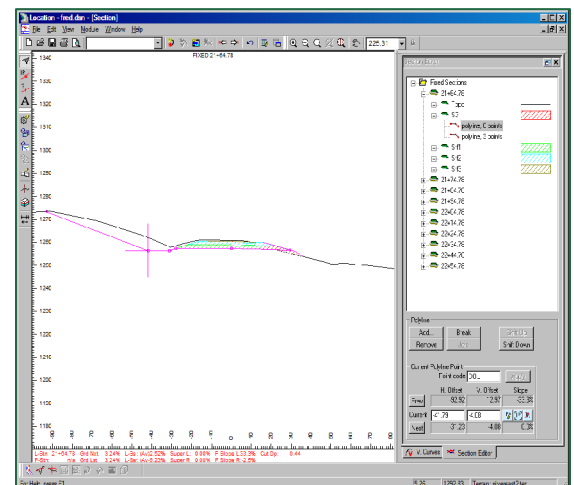
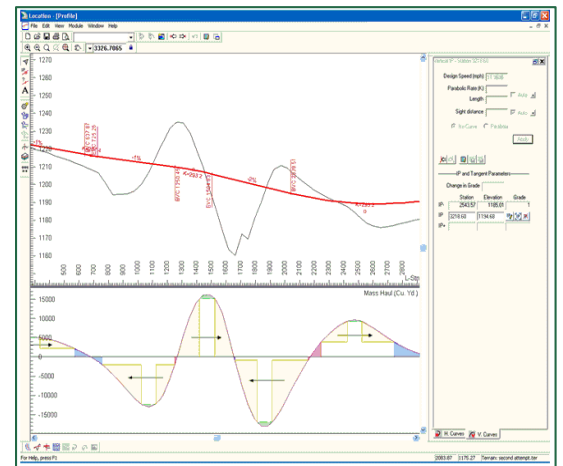
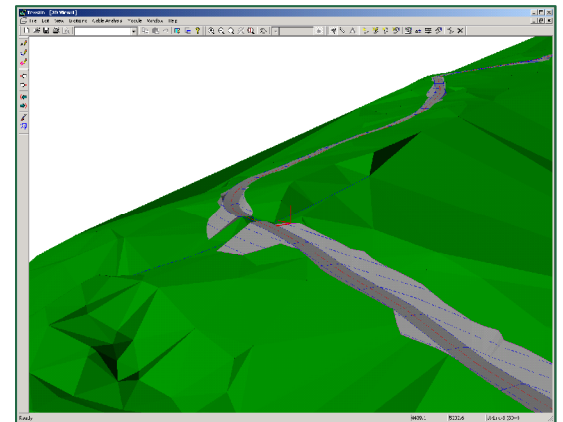
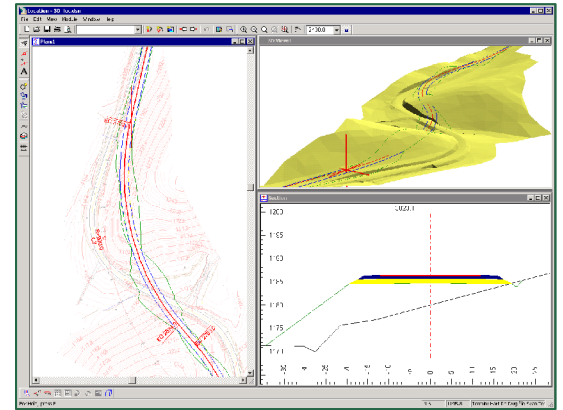
Construction Management

RoadEng® includes features to help you manage construction projects, track material quantities and resolve discrepancies between proposed design drawings and actual field measurements.

A variety of functions are available 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. It provides an easy-to-use tool for editing and 'tying off' layers and creating pay surfaces from portions of other layers such as stripping, sub-cut, subgrade or original ground.

Volume and area reports can be printed directly from RoadEng® or exported to Microsoft Excel®. A mass haul graph is available to plan and track material movements.



Functions by Product

Civil Engineer Lite
Civil Engineer

Terrain Import of TIF, JPG, BMP, SHP, Mr.SID®, ECW, ASCII, MS Excel, DXF, DWG, USGS DEM, SDTS, Land XML	✓	✓
Terrain Export to ASCII, DWG, DXF, JPG, BMP, TIF, SHAPE, LandXML, KMZ	✓	✓
Terrain Coordinate Conversions - Lat/Lon, UTM, State Plane, Albers Equal Area, and many other projections.	✓	✓
Terrain CAD - includes drafting functions.	✓	✓
Terrain Digitizing – tracing areas and lengths from scaled maps.	✓	✓
Terrain Profiles – display of profiles at any orientation.	✓	✓
Terrain Profile Drafting & Design – provides editing in the profile window.	✓	✓
Terrain Surface Generation & Contouring – includes TIN generation and display.	✓	✓
Terrain Volume Calculation & Reporting – volumes and surface area calculations.	✓	✓
Terrain 3D Window – perspective display of 3D features and TIN surfaces.	✓	✓
Terrain Image Adjustment – adjustment of images to known control points (rubbersheeting).	✓	✓
Survey p-line note entry (station/offset x-sections).		✓
Location Alignment Design - includes plan, profile and section design using mouse or keyboard input.	✓	✓
Location Basic Templates – creating new templates from stock object library.	✓	✓
Location Horizontal and Vertical Curves - includes super-elevation and transitions.	✓	✓
Location Terrain Design – allows a design to be created from a Terrain TIN model.	✓	✓
Location Land XML Design – allows creation of a design from a LandXML TIN model.	✓	✓
Location P-line Design – allows a design to be created from a p-line (station/offset x-sections).		✓
Location Multi-Plot - creation of plan/profile sheets.		✓
Location Profile Sub Windows – mass-haul, ground type, side slope and other profile sub-windows.		✓
Location Culvert Editor – interactive editing of culvert position, length and skew.		✓
Location Auto Balance – automatic balancing of earthwork quantities.		✓
Location Sub Surfaces – subsurface display and volume calculations.		✓
Location Advanced Curve design – sight distance, design speed and spirals.		✓
Location Extended Templates – creation of new template objects and associated template point codes.		✓
Location Cross Section Editor – editing of individual cross sections.	✓	✓

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