



BENTLEY® MXROAD®

STRING-BASED MODELING FOR ROAD AND HIGHWAY DESIGN

Bentley MXROAD V8 XM Edition is an advanced, string-based modeling tool that enables the rapid and accurate design of all road types. With MXROAD V8 XM Edition you can quickly create design alternatives to achieve the “ideal” road system and then automate the design detailing process, saving time and money.

3D Design Modeling

At its core MXROAD V8 XM Edition uses 3D string modeling technology – a proven, powerful and concise method of creating any 3D surface. Localised in all key markets, MXROAD has an interoperable database that allows engineers to create and annotate 3D project models in the most popular CAD platforms and in a Stand-Alone version which has fully functional, high quality CAD tools built in.

Digital Terrain Model (DTM) creation and analysis, full alignment, road and junction design capability, 2D and 3D drainage design, volume and quantity extraction, 2D and 3D PDF creation, integration with Google Earth and automated production of contract drawings, complete a tool set that allow MXROAD users to feel confident tackling the design of any type of road, large or small.

Design Creativity

The dynamic placement and change functionality in MXROAD speeds the creation of 2D and 3D alignments. “Rubber band” flexibility allows the user to place and edit alignments, encourages design creativity and fast assessment of design alternatives. With cut/fill calculations “on the fly” the end result is informed decisions, promoting better quality design.

Junction Design

Junction design, along with other functionality in MXROAD, is string-model based. String modeling gives users the ability to design and dynamically re-grade junctions as necessary. Problem areas, such as flat spots, can be identified and resolved during the design phase rather than incur the high costs and delays of rework on site.

Superelevation Design

The automated approach in MXROAD to superelevation design is extremely fast and effective. Superelevation standards are stored in a rules file for the quick application of the correct local, company or project standards. The Superelevation Wizard allows for efficiency whilst retaining the ability to apply engineering judgment.

Pavement Layer and Sub-Grade Design

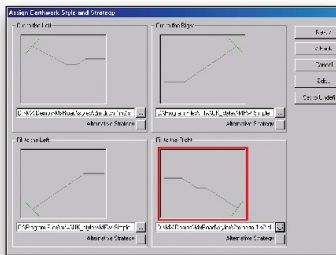
The Pavement Layer Generator models the entire road pavement construction complete with variable pavement configurations across and along the road. Volumes are produced as a by-product of the design process, delivering the information required for fast and accurate reactions in bid situations.

Final Drawings

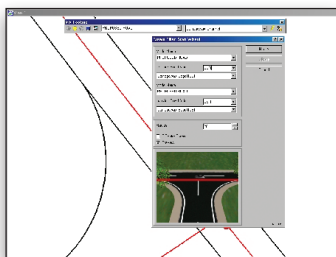
All three MXROAD Environments offer the ability to automate the production of final drawings. The Stand-Alone environment provides the ability to complete contract drawings without the need to move to or use a separate CAD drafting system. If for any reason the design is amended, design changes ripple through to the drawings automatically. Users can “do it all and never leave MX”

MX® Command Language and Input Files

The MX Command Language uses simple, repeatable commands that can be recorded and replayed using Wizards. This powerful, unique feature to the MXROAD family saves time when exploring different design scenarios and iterations. New designs can be quickly and easily created through the use of Input Files.



An Earthworks wizard is used to define strategies for cut/fill.



The 3D design of kerb returns allows you to re-grade via a simple user interface.

SYSTEM REQUIREMENTS

Software*:

MicroStation V8 XM or higher,
AutoCAD 2004 or higher

Processor

Pentium 900Hz minimum, Pentium P4
1.5Ghz or equivalent and higher

Operating System

Windows 2000 SP3, Windows XP Pro
SP2, Windows XP Home

Memory

512MB minimum, 1GB or higher
recommended

Disk space: 1GB

Input Device: Mouse

*For the MXROAD Stand-Alone version,
no CAD software is required. All other
requirements apply.

Find out about Bentley at:
www.bentley.com

Contact Bentley

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Outside the US +1 610-458-5000

Global Office Listings

www.bentley.com/contact

BENTLEY MXROAD AT-A-GLANCE

Data Interoperability

- Seamless integration between CAD platforms – in both DGN and DWG environments
- Ability to import data from almost any source including Land XML
- Referencing of CAD files “on the fly” including multiple formats or Raster images
- Available as a Stand-Alone environment with high quality, fully functional CAD tools built-in
- Save as DGN and DWG
- Publish to 2D and 3D Adobe PDF format

Alignment Design

- Dynamic, advanced tools for interactive alignment creation
- Variety of transition types to most international standards
- Comprehensive geometric reporting, including “on the fly” volumetrics to allow optimisation of cut and fill percentages
- Ability to snap to existing terrain features with clearance checking
- Parallel Alignment creation
- Creation of alignments directly from CAD elements

Road Design

- Library of standard road styles to many standards
- Ability to widen roads using linear or reverse curves, controlling gradients throughout
- Built-in rules for fast and efficient application of superelevation

- Junction and roundabout design in 3D with the ability to dynamically re-grade kerb returns
- Storage of different road styles and modeling of pavement construction

Interactive Design Editing

- 3D design data editing via cross sections at individual or over a range of chainages / stations
- Ability to edit section elements by slope or push out points, updating cross section and plan views simultaneously
- Rapid design through the ability to restrict designs with pre-defined boundaries (e.g. right-of-way limits)

Quantities and Reports

- Quantities Manager providing automatic extraction of quantities for estimating
- Dynamic Reports provide access to a wide range of reporting options from an expanding toolbar
- User-definable horizontal and vertical alignment geometry reports
- Ability to create reports from Volumetric Analysis tool for calculating cut and fill areas and volumes

Earthworks Design

- Ability to design any engineering earthworks strategy applicable to any geological condition and to any standard
- Intuitive, easy to use graphical user interface allowing you to drag and drop styles to define complex, custom cut/fill strategies

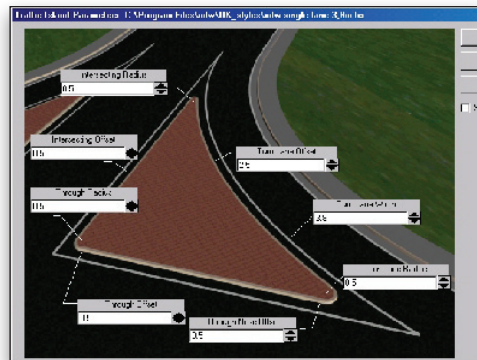
- Storage of strategies in a library of simple, multiple and combination slopes, including a thumbnail preview for easy review

Google Earth Integration

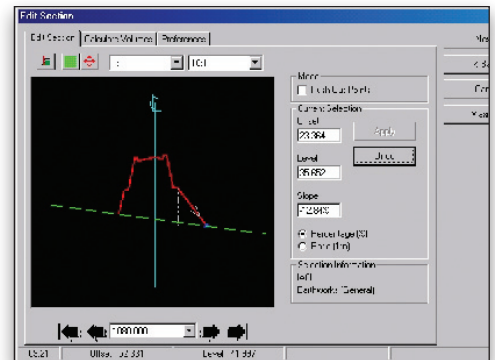
- Publish MX models to KML or KMZ files
- Share, open and view data in Google Earth
- Publish Saved Views from MX to the Google Earth environment
- Add 2D drawings and other high resolution overlays
- Augment imagery with Digital Terrain Mapping (DTM)

Integration

- Tight integration with Bentley content management and publishing products to bring collaborative design data to the entire project team in a secure environment
- Integration of Digital Interplot at the production end, enabling automated plot set generation and Web-based access to plot archives



Easily incorporate 3D traffic islands into intersection design and analysis.



Edit cross sections at individual chainages or over a range of chainages.