

# BENTLEY® MXRAIL®

The  
**v8**Generation

## A modelling tool for railways and junction layouts

Bentley MXRAIL is a dedicated, easy-to-use tool for railway design work. It enables you to design three-dimensional alignments representing plain line track, simple turnouts, diamond crossings, crossovers and complex multi-lead layouts. Because it is compliant with RT60 standards, and through close work with Network Rail, Bentley MXRAIL holds a leading position in the railway industry and readily meets the Permanent Way Engineer's needs.

Bentley MXRAIL can be used for improvements of track alignment, railway stations, and goods yards, as well as design of light, high-speed, and freight rail. Offering total control and accuracy over the most critical and difficult areas of track design, Bentley MXRAIL is a complete track design solution that is fast, flexible, accurate and easy to use.

At its core, Bentley MXRAIL uses 3D string modelling technology – a powerful yet concise method of creating 3D surfaces. An interoperable database allows you to create and annotate 3D project models in the most popular CAD platforms or in Windows. This means that you can work on the project in one environment, save it, and open it seamlessly in another environment with no loss of data. This promotes maximum productivity of trained staff.

### Reduced Design Time

Dynamic horizontal and vertical regression analysis tools enable you to position and manipulate “best fit” elements throughout the alignment matching process. By working in this manner, considerable time savings can be achieved on even the smallest projects.

### Flexibility in Design Layout

You can place track components with ease, using a choice of placement points, providing flexibility for the design of layouts. This approach to track design gives you the ability to iterate and evaluate different designs, dramatically reducing design time with no compromise in accuracy.

### Customisable to Project or International Standards

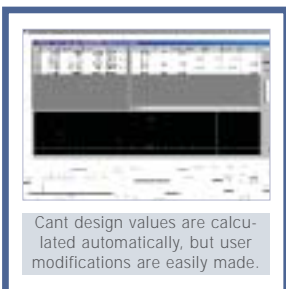
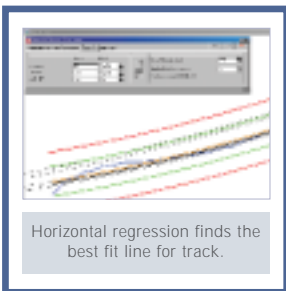
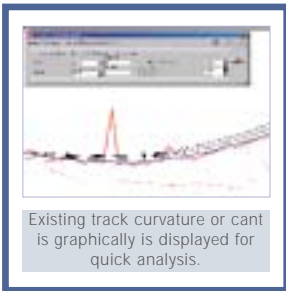
The automated switch and crossing generator enables the rapid creation of user-defined turnout and crossing libraries. You can design to meet specific project requirements and then reuse your standard settings on subsequent projects.

### Easy Identification and Resolution of Any Problem Areas

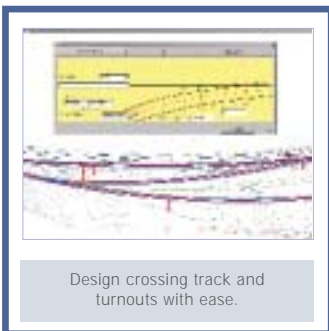
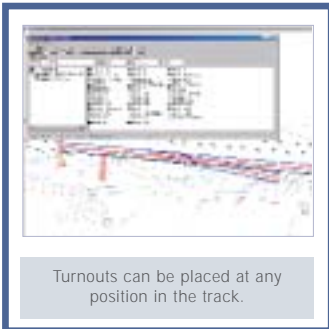
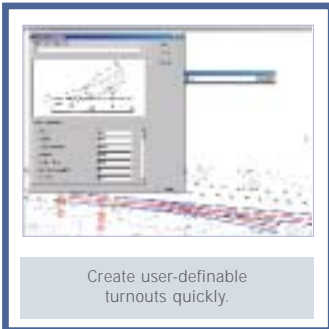
Easy-to-view graphical styles show the locations of bearing discontinuities, point spacing, and level consistency problems. These location markers – within the survey quality checker – allow you to immediately assess the importance of a problem, whether it be a survey error or a misalignment in an existing track. The ability to validate data and identify errors prevents the loss of valuable design time through working on defective survey data.

### Reduction in Manual Calculations

By providing a full library of turn outs and crossing items, Bentley MXRAIL reduces the need for manual calculations and designs. By automating these processes and using the standard items, you can gain significant savings in both design time and costs



## BENTLEY MXRAIL AT-A-GLANCE



### BENTLEY MXRAIL SYSTEM REQUIREMENTS

- \*Software: MicroStation® V8 or higher, AutoCAD 2000 or higher
- Processor: Intel® Pentium® 500Hz minimum, Intel Pentium 900Hz recommended
- Operating System: Microsoft® Windows® 2000 SP2, Microsoft Windows XP
- Memory: 128 MB minimum, 256 MB recommended
- Disk Space: 450 MB
- Input Device: Mouse

\*For the MXRAIL in Windows standalone version, no CAD software is required. All other requirements apply.

### Data Interoperability

- Seamless integration between CAD platforms in both DGN and DWG environments
- Data import from almost any source

### Analysis Tools

- Analysis of point spacing, bearing, and gradient continuity of surveyed track
- Dynamic horizontal and vertical regression of existing track geometry
- User-definable slew tolerances

### Alignment and Track Design

- Dynamic and advanced tools for interactive alignment creation
- Variety of transition types to local and international standards
- Comprehensive geometric reporting including on-the-fly volumetrics allows optimisation of cut/fill percentages
- High- and low-speed rail route capability with use of vertical circular curves
- Ability to snap to existing terrain features with clearance checking
- Creation of alignment from standard CAD entities
- Automatic creation of rails to any track gauge

### Switches and Crossings

- Interactive placement of switches and crossings
- Ability to dynamically amend turnout positions with speed and ease
- Simple turnouts, diamond crossings, crossovers, and complex multi-lead layouts
- Ability to apply levels and cant to switch and crossing assemblies
- Country-specific library of turnouts and associated crossings
- Creation of bespoke libraries for use on light-rail schemes and international projects

### Cant Design

- Analyse and extract cant from existing track
- Calculation using built-in rules or input cant values for new design
- Ability to assess acceptability and investigate alternative design solutions
- Ability to design the cant for the whole track in one step

### Reports

- Dynamic reports for access to a wide range of reporting options, from an expanding toolbar, including export to Microsoft Excel
- User-definable horizontal and vertical alignment geometry reports
- Graphic display of slews and output of values to a text file
- Creation of reports from volumetric analysis tool for calculating cut/fill areas and volumes

### LandXML Support

- Export of existing and design surfaces to other systems via XML

### Integration with Bentley Content Management and Publishing Solutions

- Tight integration with Bentley content management and publishing solutions 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

## CALL TODAY FOR MORE INFORMATION

Bentley Systems, Incorporated, is a global provider of collaborative software solutions that enable our users to create, manage and publish architectural, engineering and construction (AEC) content. As a part of those solutions, Bentley provides professional services including implementation, integration, customisation and training.

Visit us on the Web for more information about Bentley solutions and services. [www.bentley.com](http://www.bentley.com)

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