

# BENTLEY® MXRENEW®

The v8 Generation

## Pavement renewal software

Bentley MXRENEW is an advanced software tool that fits designs onto existing roadway facilities for rehabilitation and reconstruction. It provides a logical sequence of design steps based on traditional methods, making it easy to use with only a minimum of training. MXRENEW can work standalone or alongside the Bentley MXROAD modeling tool.

During road design, Bentley MXRENEW helps you minimize the volume of pavement construction material while still retaining the minimum required thickness of overlay. It lets you define the geometry of a new design and provide details of paving quantities, drawings, and staking-out reports. The project can involve the overlaying of an existing pavement, new design, or a combination of the two.

At its core, Bentley MX uses 3D string modeling technology—a powerful yet concise method of creating 3D surfaces. The MX interoperable database allows engineers to create and annotate 3D project models in the most popular AEC environments or in Windows. MX interoperability means that you can work on the project in one environment, save it, and open it seamlessly in another environment with no data loss. This allows for maximum productivity of trained staff.

### Total Process Management in a Single Design System

MXRENEW provides the tools to manage the entire design process from survey data import into the design iteration phase, to final scheme working drawings and on to high-quality contract drawings.

### Optimize Pavement Design and Quantities to Control Costs

MXRENEW allows you to design pavement layers and optimize their interaction with the existing surface. Automatic calculation of quantities enables easy analysis of suitability and cost, including regulation and milling. MXRENEW includes the ability to model sidewalk and curb construction details.

### Speed and Ease of Use

The intuitive GUI guides you through each individual design process, ensuring speed and ease of use throughout the entire project cycle.

### Improved Safety and Reliability

MXRENEW allows you to achieve best value from existing pavement construction, improving horizontal and vertical profiles, extending design life, and improving safety and reliability.

### Design Optimization

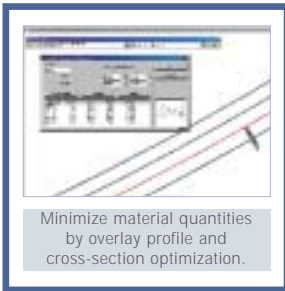
The product allows you to automatically optimize your design, maintaining user-defined minimum overlay depths and road cross slope tolerances, and raising or lowering the vertical profile to achieve the best design in terms of material use, ride quality and drainage characteristics.

### Vertical Profile Design

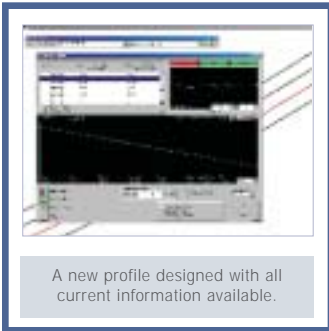
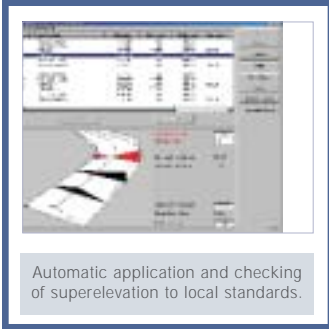
Although MXRENEW can optimize your design surface, it gives you the ability to design your own vertical profile. Typically, a designer may choose to create a smooth vertical profile that is similar to the optimized profile, but still adheres to the design standards of the project. Designing your own profile allows it to match the existing ground surface at the start and end of projects and truly design your tie-ins, instead of leaving some uncertainty to these areas.

### Scenario Investigation

MXRENEW lets you identify any areas where the difference between the design and the existing surface exceeds a chosen depth. This enables fast identification of overall suitability and likely cost of the design when complete.



## BENTLEY MXRENEW AT-A-GLANCE



### Data Input

- MicroStation® DGN
- AutoCAD® DWG and DXF
- MX GENIO
- MX Survey data
- Softdesk® 8, AutoCAD Land Development Desktop Alignment and DTM

### Data Analysis

- Contours
- Color banding by level and gradient
- Drainage flow arrows
- Long sections
- Flat spot identification

### Roadway Design

- Library of standard roadway styles to local standards
- Ability to widen roadways using linear or reverse curves, controlling gradients throughout
- Built-in rules allowing fast and effective application of superelevation while maintaining the designer's ability to apply control
- Intersection design in 3D with the ability to dynamically re-grade curb returns
- Comprehensive tools allowing storage of different styles and modeling of pavement construction

### Interactive Design Editing

- 3D design data editing via sections at individual or over a range of stations
- Edit section elements by slope or push out points, updating cross section and plan views simultaneously
- Enable rapid design by restricting design to predefined boundaries

### Overlay Optimization

- Dynamic control of profile
- Design speed checking
- Fit design to existing pavement edges
- Elevation differences shown during the fitting process

### Pavement Analysis

- Milling and regulation material quantities
- Contour drawings of overlay thickness
- Probe and sensitivity analysis

### Pavement Layer Design

- User-defined style applied to roadway profile
- Dedicated wizard to specify and store different layer types
- Defining of multiple zone and areas of construction for pavement variation along and across the roadway
- Key layers into existing construction

### Reports and Drawings

- Comprehensive material quantity reports
- Accurate stake out information
- 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

## BENTLEY MXRENEW 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 MXURBAN Windows standalone version, no CAD software is required. All other requirements apply.

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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, customization and training.

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