

# BENTLEY® BUILDING ELECTRICAL SYSTEMS™

## A comprehensive building information modeling (BIM) solution for the analysis, design, and documentation of building electrical systems for commercial, institutional, and industrial facilities



Symbol arrangement.

Bentley Building Electrical Systems™ supports all phases of the engineering workflow, from conceptual design to the detailed design and modeling of electrical subsystems including analysis, documentation, and management, integrating design, visualization, drawing production, and reporting of quantities and costs. Used on large and complex projects around the world, Bentley Building Electrical Systems was specifically developed to support workgroups and distributed teams in a managed environment allowing engineers, architects, and contractors to build as one.

BIM enables business-critical benefits over traditional computer-aided drafting (CAD), eliminates waste, significantly reduces errors and omissions, provides greater predictability of costs and performance, allows exploration of more design options, and ultimately results in better buildings. Bentley Building Electrical Systems is part of Bentley's building information modeling (BIM) solution of integrated design, engineering, and management applications for the entire life cycle of constructed assets.

### Design and Modeling of Electrical Subsystems

Streamline the design and modeling process for electrical subsystems, such as lighting, power, fire detection, security, communications, and other building subsystems with comprehensive tools for automated symbol placement, raceway design, cable and circuit routing, schedule generation and more.

### Choice of 2D, 3D, or Both

The building information model can be created and manipulated in a traditional 2D plan or an advanced 3D model environment – using the same tools and interface for either.

### Step-wise refinement of the design process

Bentley Building Electrical Systems utilizes “stepwise refinement” which allows design professionals to add more detailed information at different stages throughout the project lifecycle.

### Integration with analysis

Bi-directional interfaces to a variety of industry-standard power engineering and lighting design analysis programs. These interfaces are localized for maximum benefit to users with country specific codes and standards requirements.

### Automated drawing production and coordination

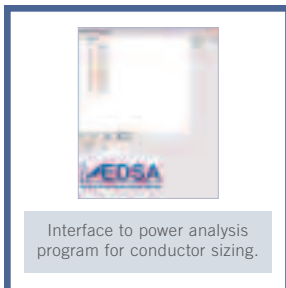
Design and construction deliverables are an output of the design workflow, where, design data is entered once and used multiple times. Powerful features, such as automated generation of schematic diagrams and drawing legends facilitate the rapid creation of construction drawings.

### Integrated schedules and reporting

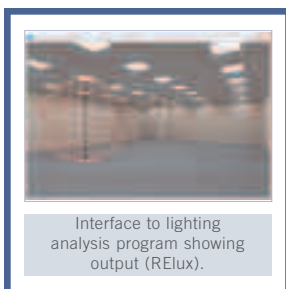
Electrical properties can be used to query the information model, make selective or global changes, and to generate accurate schedules and reports, such as cable and device schedules, cost estimates, and panel schedules, quickly and easily.

### A managed environment

Bentley Building Electrical Systems can be integrated with Bentley® ProjectWise®, a collaboration server that manages access to project information across a LAN, WAN, VPN, or through the Internet, and publishes and synchronizes shared information, manages change, protects intellectual property rights, and more.



Interface to power analysis program for conductor sizing.



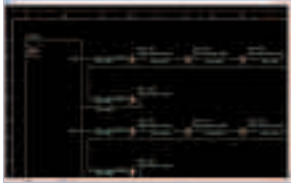
Interface to lighting analysis program showing output (RElux).



## BENTLEY BUILDING ELECTRICAL SYSTEMS AT A GLANCE



3D raceway design.



Schematic diagrams are automatically generated from the model.

### Building information modeling (BIM)

- Design and documentation of lighting, power, fire detection, security, communications, and other electrical subsystems systems
- Choice to work in 2D plan or 3D model or both - with a single set of tools
- Automated circuiting, cable and circuit routing, raceway design, symbol placement
- Attributes and properties significant for design, analysis, installation, and management
- Supports IFC 2x2

### Design automation

- Automated circuiting
- Automated arrangement and alignment of devices
- Ceiling grid functionality
- Automated generation of drawing legends
- Parametric symbols including 2D and 3D
- Comprehensive symbol libraries based on international standards

### Cable management

- Circuit devices
- Route cables in raceway
- Design distribution board circuits
- Point to point, orthogonal, and raceway routed length calculations
- Raceway fill calculations

### Raceway and support design

- Raceway design including cable tray, cable basket, conduit, wireway, modular wiring, busway, and trunking systems
- Parametric generation of raceways in 2D and 3D
- Parametric raceway supports
- Logical connections across design files

### Schematic diagrams

- Automated generation of schematics from model
- Automatic labeling
- Synchronized data with model and schedules 'Click and learn' technology
- Add electrical properties to any graphical object
- Adopt CAD standards
- Store symbols in Symbol Manager for reuse

### Coordinated construction documentation

- Plans, sections, and elevations
  - Schematic diagrams
  - Automatic labeling and drawing legends
  - Cable, panel, circuit, device, and luminaire schedules
  - Cost estimates, bill of materials, and other reports
  - Reports and schedules created in Microsoft Excel format for compatibility with office automation tools for further processing and formatting
- International and custom standards support
- Create, manage, verify, and enforce company and project standards
  - Support for a variety of country-specific component libraries US ANSI/IEEE, UK BS, and DIN/VDE
  - Support of DGN, DWG, DXF, PDF, STEP, IGES, IFC, and other major industry standards

### Clash detection and visualization

- Model electrical equipment access and working clearances to ensure code compliance and adequate working space.
- Review and manage interferences across multiple files and disciplines in conjunction with Bentley Interference Manager™
- Simulated construction schedules in conjunction with Bentley Navigator™ and project management applications, such as Microsoft Project or Primavera P3

### Interoperability with building design, engineering, and analysis

- Fully integrated with Bentley Architecture™, Bentley Structural™, Bentley Building Mechanical Systems™, and more
- Bidirectional interfaces to local industry standard lighting analysis programs including Lumen Designer, RELux, and DIALux.
- Lighting design, analysis, and visualization in the lighting programs
- Bidirectional interfaces to local industry standard power analysis programs including EDSA, Amtech's ProDesign, elcoPower, etc.

### Integration with management environment

- Supported in Bentley ProjectWise, Bentley's comprehensive collaboration server

## SYSTEM REQUIREMENTS

- Software: MicroStation 08.05.03 or higher (MicroStation® TriForma® Configuration)
- Processor: Intel Pentium-based or AMD Athlon™-based PC or workstation
- Operating System: Microsoft Windows XP, Windows® 98/2000 MS Office (Word & Excel for reporting) Office 97, Office 2000, Office XP
- Memory: 512 MB RAM  
Disk Space: 200 MB minimum free disk space
- Input Device: Mouse or digitizing tablet (tablet on Windows requires WINTAB driver or Bentley's Windows Digitizer Tablet Interface)

## 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, customization 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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