

BENTLEY® BUILDING ELECTRICAL SYSTEMS

A COMPREHENSIVE BUILDING INFORMATION MODELING (BIM) SOLUTION FOR THE DESIGN AND DOCUMENTATION OF BUILDING ELECTRICAL SYSTEMS FOR COMMERCIAL, INSTITUTIONAL, AND INDUSTRIAL FACILITIES

Bentley Building Electrical Systems is a focused application for electrical engineers, designers, and electrical BIM practitioners responsible for design, construction, operations, and maintenance of facility electrical systems. Design, analyze, document, collaborate, build and manage power, lighting, fire detection, security, communications, and other electrical/electronic systems in a Building Information Management (BIM) environment.

With an intuitive user interface, powerful modeling, design, and reporting tools, and extensive libraries of components, Bentley Building Electrical Systems supports all phases of the engineering workflow, from conceptual to detailed design, from modeling of complex electrical subsystems to analysis, documentation, and management, integrating design, visualization, drawing production, and reporting of quantities and costs. It is an integral part of Bentley's building information modeling solution of integrated design, engineering, and management applications for the entire life cycle of constructed assets. 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'.

Intelligent, building information modeling provides business-critical benefits over computer-aided design (CAD), e.g. it 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.

Design and modeling of electrical subsystems

Focusing on electrical design and engineering, Bentley Building Electrical Systems streamlines the design and modeling process for a variety of electrical subsystems, such as lighting, power, fire detection, security, communications, and other building subsystems. A comprehensive range of dedicated tools facilitate automated symbol placement, raceway design, cable and circuit routing, schedule generation and more, supporting a variety of international, country-specific, and user-defined standards.

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 an identical interface.

Step-wise refinement of the design process

The concept of "stepwise refinement" allows design

professionals to add more detailed information at different stages in the project lifecycle to support the incremental process of electrical design and to manage design changes.

Automated drawing production and coordination

Instead of driving the process, design and construction deliverables are virtually a by-product of the design workflow. Design data is entered only once and re-used over and over again. Powerful features, such as automated generation of schematic diagrams and drawing legends, facilitate the rapid creation of construction drawings. Plans, sections, and elevations comply with user-definable drawing standards and rules for resymbolization and annotation. Coordination and consistency is thereby ensured across all documentation.

Integrated schedules and reporting

Electrical properties and user-definable attributes associated with electrical components can be used to query the information model, to make selective or global changes to electrical systems and non-graphical information, and to generate accurate schedules and reports, such as cable and device schedules, cost estimates, panel schedules, etc.

Integration with analysis

Bi-directional interfaces to a variety of industry-standard power engineering and lighting design analysis programs, such as EDSA, ProDesign, Lumen Designer, DIALux and Relux, are provided. Interactive design and analytical interfaces in the design process ensure good design practices and eliminate errors associated with manual data input.

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.



Automated symbol placement and circuit routing



Raceway design



Interface to lighting design analysis program

SYSTEM REQUIREMENTS

Software: MicroStation® v8.9 (MicroStation® TriForma® Configuration) Microsoft Word & Excel (for reporting)

Processor: Intel® Pentium®-based or AMD Athlon™-based PC or workstation

Operating System: Microsoft® Windows Vista, XP, Windows® 98/2000

Memory: 128 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)

ABOUT BENTLEY

Bentley Systems, Incorporated provides software for the lifecycle of the world's infrastructure. The company's comprehensive portfolio for the building, plant, civil, and geospatial verticals spans architecture, engineering, construction (AEC) and operations. With revenues now surpassing \$400 million annually, and more than 2400 colleagues globally, Bentley is the leading provider of AEC software to the Engineering News-Record Top Design Firms and major owner-operators, and was named the world's No. 2 provider of GIS/geospatial software solutions in a recent Daratech research study.

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BENTLEY BUILDING ELECTRICAL SYSTEMS AT-A-GLANCE

Building information modeling

- Design and documentation of lighting, power, fire detection, security, communications, and other electrical subsystems
- Choice to work in 2D plan or 3D model (or both) with the same tools and interface
- Automated circuiting, cable routing, raceway design, symbol placement
- Attributes and properties significant for design, analysis, installation, and management
- IFC 2x3 support

Cable management

- Management of circuit devices, cables routes in raceways, and distribution board circuits
- Point to point, orthogonal, and raceway routed length calculations
- Raceway fill calculations

Raceway and support design

- Parametric raceway design, including cable trays and baskets, conduits, wireways, busways, and trucking systems in 2D and 3D
- Parametric raceway supports
- Logical connections across files

Integration with lighting design & power analysis software

- Bi-directional interface with EDSA, ProDesign, elcoPower, and other industry-standard power-engineering programs.

- Bi-directional interface with Lumen Designer, DIALux, Relux and other industry-standard lighting analysis programs for design and visualization.
- Update model automatically with imported design changes to conductor size, luminaire types, arrangements, and manufacturer's data.

Comprehensive symbol libraries

- Symbols based on international standards
- Parametric 2D and 3D symbols
- Symbol Manager

Coordinated construction documentation

- Plans, sections, and elevations
- Automated schematic and block 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 further processing and formatting
- Data synchronization between models and schedules

International and company standards support

- Create, manage, verify, and enforce company and project standards

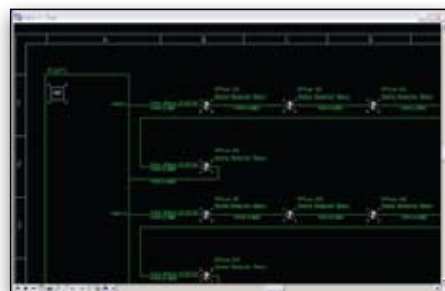
- Support for a variety of country-specific component libraries, e.g. US ANSI/IEEE, UK BS, and DIN/VDE
- Support of DGN, DWG, DXF, PDF, STEP, IGES, IFC, and other major industry standards

Interoperability with Building Design, Engineering, and Analysis

- Fully integrated with Bentley Architecture, Bentley Structural, Bentley Building Mechanical Systems, and more
- A shared multi-disciplinary model for team collaboration and coordination
- Detect and manage interferences across multiple files and disciplines and ensure work access and clearances of electrical equipment in conjunction with Bentley Interference Manager
- Simulation of construction schedules in conjunction with Bentley Navigator and project management applications, such as Microsoft Project or Primavera P3

Integration with management environment

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



Schematic diagram



Circuit load report