

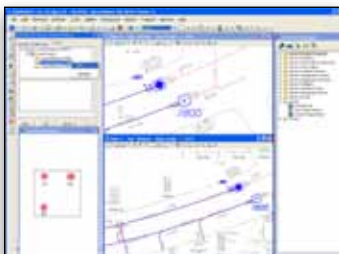
Bentley® Electric

Efficient GIS for Electric Utilities

Bentley Electric capitalizes on Bentley's GIS platform to address the facility management, modeling, and maintenance issues that electric utilities encounter in day-to-day operations. It combines the best of GIS and CAD to provide easy layouts and documentation, painless edits, and intelligent data validation that allow you to focus on simple drawing workflows to model and maintain your network.



Bentley Electric combines CAD and GIS tools to easily build an accurate electric network model.



Layout underground infrastructure with the included conduit tools.



Bentley Electric includes several powerful and configurable network trace tools.

Industry Standard Data Model

Bentley Electric includes a robust data model based on years of experience modeling electric utilities. The data model encapsulates properties, connectivity, relationships, and the rules that maintain the integrity of the data. The standard data model allows the utility to install the product and see immediate productivity gains; however, the Bentley Electric data model may also be modified or replaced completely if necessary.

Free Form Placements

Placing an intelligent electric feature according to the electric model is as simple as placing any other feature. The user is free to utilize efficient workflows to layout facilities rather than being bound by system constraints.

Inference Engine

The Bentley Electric advanced inference engine operates behind the scenes using rules to automatically establish network and attachment relationships as the user lays out facilities in the GIS.

Feature Editing

The Bentley Electric feature editor allows the user precise control to modify properties, connectivity, attachment relationships, and parent-child relationships while maintaining data integrity.

Conduit Management

Bentley Electric includes a robust set of tools to add and manage complex underground networks including the internal details of underground structures. These tools leverage the Inference Engine and the Feature Editor to set connectivity and relationships. With the Diagram Editor, conduit arrangements can be visualized and edited with a cross section and wall layout display.

Network Tracing

Bentley Electric includes several unique trace capabilities, which can provide useful decision-making information to designers, engineers, and field crews. Individual and composite visualization of trace results allow users to easily interpret the results. Designers can also easily layout sections of the network based on trace results.

Choice of Data Stores

Bentley Electric supports multiple persistence models that include DGN/RDBMS, Oracle Spatial, and other GIS data stores. Your choice of data store allows users to store and access data as best suits their needs and IT infrastructure. Interoperability with many industry data formats for GIS, imagery, and other information makes it easy to access and share data.

Leverages Bentley's Geospatial Architecture

Bentley Electric leverages the capabilities of MicroStation® and includes the full geospatial functionality of Bentley Map® to optimize workflows for electric utilities. The Bentley Geospatial Server, as well as other Bentley products, further extends the capabilities of Bentley Electric to meet the requirements of any organization.

Easily Configurable and Customizable

The Bentley Electric data model is completely configurable with the model administrator using standard tools. This approach offers significant cost savings. Bentley Electric is entirely customizable through a robust customization model and is accessible to Visual Basic for Applications (VBA).

Integration with Bentley® Expert Designer

Seamless integration with Bentley Expert Designer adds powerful new capabilities, including on-the-fly design cost estimation, design cost comparison, automatic compatible unit assignment, configurable workflows, and support for work management and asset management solutions, to name just a few.

System Requirements

Processor

Intel or AMD processor 3.0 GHz or greater

Operating System

Windows 7, Windows Vista, Windows Vista x64, Microsoft Windows XP Professional SP2 or higher recommended, Microsoft Windows XP Professional x64 SP2 or higher recommended

Memory

1GB Memory or more typically results in better performance

Hard Disk

500 MB minimum free disk space for product installation (1 GB to allow for additional Bentley Geospatial Server Client Applications)

Input Device

Mouse or digitizing tablet

Output Device

Most industry-standard Windows compatible devices are supported

Video

Hardware assisted Direct X Graphics Card with at least 128 MB of video RAM is highly recommended

Find out about Bentley at: www.bentley.com

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Bentley Electric At-A-Glance

Comprehensive Electric Utilities Platform

- Electric utilities asset management and mapping
- Utilization of Oracle Spatial for enhanced enterprise integration
- Complete network connectivity and tracing
- Presentation and visualization
- Easy configuration
- Flexible customization
- Work prints generation
- Fully integrated with Bentley Expert Designer

All the Power of MicroStation

- Smart, quick drawing and editing of GIS features in a MicroStation environment
- Raster management
- Dimensioning
- AccuSnap, AccuDraw®
- Display priority, transparency
- Photorealistic visualization and animation
- Geocoordinate system and reprojection
- Superior MicroStation printing and publishing

Intelligent Industry Standard Data Model

- Industry standard data model for distribution (includes primary and secondary)
- Separate network models for primary and secondary
- Attachment (structural) relationship model
- Conduit and cable relationship model
- Comprehensive feature properties
- Parent-child relationship model
- Comprehensive child feature properties for each phase
- Network model consists of nodes and edges with direct associations to Bentley Electric features
- Place and edit commands enforce connectivity rules
- Flexible rules allow free form placement of Bentley Electric features
- Logical connectivity model maintained in a relational database or in the DGN
- Switch Cabinets and internals configured as compound features

- Various persistence models supported to give users a choice of data stores for the network and associated information in Oracle Spatial, RDBMS/DGN, and traditional GIS

Facility Layout and Documentation

- MicroStation and Bentley Map leveraged for placement and edit functionality
- Place commands available via the Command Manager, a menu, or toolbars
- Image integration via MicroStation Raster Manager
- Fast free-form placements of structures, conductors, and devices
- Inference engine for building automatic connectivity, structural relationships, and parent-child relationships during placement
- Enforcement of company standards through property-based annotation and symbology
- Edit and review all structures, conductors, and devices
- Maintenance of network connectivity, structural relationships, and parent-child relationships during edits
- Automatic and semi-automatic validation and cleanup tools
- Multiple features placed with one action
- Single placement for switch cabinets and their contents
- MicroStation Link Sets supported in managed and unmanaged environments

Network Trace Analysis

- Parameter based network trace capabilities:
 - » Trace out (radial)
 - » Trace upstream (to source)
 - » Trace downstream (away from source)
 - » Trace shortest path between two devices
 - » Trace multiple paths between two points (multiple conduit paths along a single route)
 - » Trace redundant paths between two points (spatial separation between paths)
- Predefined default stop criteria

- User definable criteria supported
- Trace result presentation and reporting
 - » Cumulative trace results
 - » Individual and composite visualization of results
 - » Tabular presentation with auto-locate
 - » Place from trace result
 - » XML reporting
- API for customizations

Conduit Management

- Enhanced underground network data model
- Structure and trench route layout
- Conduit and cable management tools
- Inference assisted connectivity and relationships
- Diagram Editor for cross section and wall layout
- Specialized conduit network tracing and XML reporting
- Place by Trace Result to semi-automate placement of conduit and cable along trench and conduit routes

Presentation/Visualization

- Spatial analysis
- Thematic display
- Query and browse

Configurable and Customizable

- Configurable with the Model Administrator
- Reconfigurable Industry Standard Data Model
- Customizable using standard industry and MicroStation tools

Integration

- Fully integrated with Bentley Expert Designer
- Work Management Systems
- ERP Integration