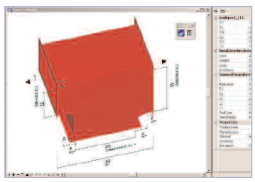
# BENTLEY® BUILDING MECHANICAL SYSTEMS™

## A comprehensive building information modeling (BIM) solution for the design and documentation of heating, ventilation, air-conditioning, and plumbing systems for buildings and industrial plants

A multidisciplinary building information model

With an intuitive user interface, extensive libraries of components, and powerful modeling, drafting, and reporting tools, Bentley Building Mechanical Systems supports all phases of the engineering workflow, from the design and modeling of air-handling and plumbing systems to analysis and construction documentation. Integrating design, visualization, drawing production, and reporting of quantities and costs, Bentley Building Mechanical Systems is part of Bentley's BIM solution of integrated design, engineering, and management applications for the entire lifecycle of constructed assets. Used on large and complex projects around the world, Bentley Building Mechanical Systems was specifically developed to support workgroups and distributed teams in a managed environment, allowing architects, engineers, and contractors to build as one.

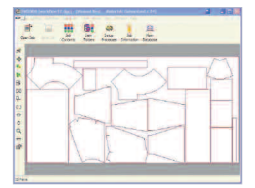


Parametric fittings

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.

### Design and modeling of air-handling and plumbing systems

Components such as rectangular, round, oval or flexible ducts; pipes; connectors; in-line devices; valves; grilles and diffusers; dampers; filters; and silencers are fully parametric, thus allowing dimension-driven creation and modification. A variety of country-specific standards are supported, and metric and imperial components can also be chosen from selected manufacturers' catalogs. Rapid design and production is facilitated through automatic placement of transitions and connectors, automatic diffuser hookup to ducts, and automatic sloping of complete piping systems.



Integration with CAM-Duct (M.A.P.) for automated fabrication

### 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.

### Automated drawing production and coordination

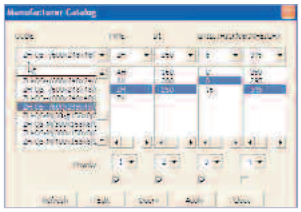
Plans, sections, and elevations comply with user-definable drawing standards and rules for resymbolization and annotation. Options are provided for single-line duct or pipe representation, removal or display of hidden lines, and extensive labeling and annotation of ducts, pipes, and fittings. Coordination and consistency is thereby ensured across all documentation.

### Integrated schedules and reporting

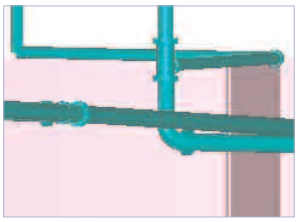
User-definable attributes and properties associated with mechanical and plumbing components can be used to query the information model, to make selective or global changes to the geometry and nongraphical information, and to generate accurate component schedules and material takeoffs.

### Integration with analysis and fabrication

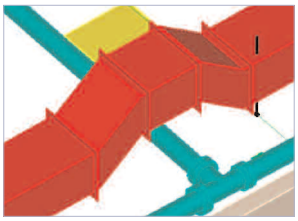
Duct and piping systems can be analyzed for connectivity and flow paths, while a Bentley duct sizer and the Trane Ductulator allow performance-based duct sizing. Custom components, ducts, and fittings can be created with Visual Basic for Applications (VBA) to meet fabrication standards. The interface to CAM-Duct (M.A.P.) provides seamless integration from design to fabrication.



Support of manufacturers' catalogs



Automatic sloping of pipe system



A multidisciplinary building information model

## A managed environment

Bentley Building Mechanical 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.

## Bentley Building Mechanical Systems at a glance

### Building information modeling (BIM)

- Design and construction documentation of air-handling and piping/plumbing systems
- Choice to work in 2D plans, 3D models, or both - with a single set of tools
- Automatic connector placement, diffuser hookup, and sloping of complete systems
- Attributes and properties significant for design, analysis, construction, and operations

### Parametric component design

- Parametric, dimension-driven creation and modification of components
- Access to component product manufacturers, such as Lindab
- Creation of custom components with VBA scripts and XML

### Coordinated construction documentation

- Rule-based creation of plans, sections, and elevations
- Automatic resymbolization of 3D components to 2D representations
- User-definable annotation and labeling
- Material takeoffs, component schedules, and other reports
- 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 U.S. and other country-specific component libraries
- 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 Electrical Systems, and more
- A shared multidisciplinary model for team collaboration and coordination
- Wall attribute checking to determine fire damper requirements
- 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
- Export to CAM-Duct (M.A.P.) for automated fabrication

### Integration with managed environment

- Fully supported in Bentley ProjectWise, Bentley's comprehensive collaboration server

## System Requirements

- Software: MicroStation v8.5 or higher (MicroStation TriForma extension)
- Processor: Intel Pentium-based or AMD Athlon-based PC or workstation
- Operating system: Microsoft Windows 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

## Call Today for More Information

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 2005 revenues of $336 million and more than 2,000 colleagues around the world, Bentley is the leading provider of AEC software to the Engineering News-Record Top 500 Design Firms and major owner-operators.

Visit us on the Web for more information about Bentley solutions and services. www.bentley.com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