

# Questions and Answers

Autodesk® Building Systems is the AutoCAD® software-based design and construction documentation software solution for mechanical/electrical/plumbing (MEP) engineers, designers, and drafters.

Increase productivity, accuracy, and coordination by maximizing the efficiency of your AutoCAD-based engineering workflow, while minimizing coordination errors between mechanical, electrical, and plumbing engineering design teams as well as with architects and structural engineers.

Autodesk Building Systems: A better, faster AutoCAD for MEP engineering, building design, and documentation.

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# 1. General Product Information

## **1.1 What is Autodesk Building Systems?**

Autodesk Building Systems is AutoCAD-based design and construction documentation software for mechanical/electrical/plumbing (MEP) engineers, designers, and drafters. Increase productivity, accuracy, and coordination by maximizing the efficiency of your AutoCAD-based engineering workflow, while minimizing coordination errors between mechanical, electrical, and plumbing engineering design teams as well as with architects and structural engineers.

## **1.2 What are the main benefits of Autodesk Building Systems software?**

- **Productivity**

Work in a familiar AutoCAD environment with a purpose-built AutoCAD product developed specifically for mechanical, electrical, and plumbing design and documentation workflows. Flexibly implement Autodesk Building Systems, adapting it to existing workflows to improve the design process. Move from schematic design to documentation faster through automated production of construction documents. As with Autodesk Building Systems 2006, in 2007 you can connect systems through external reference files (xrefs) and make modifications while maintaining the integrity of the system by keeping components connected.

Spend more time designing and less time drafting by working in an intuitive design environment, using discipline-specific engineering tool palettes containing “real world” equipment.

- **Accuracy**

With Autodesk Building Systems your designs are coordinated with your construction documents. Reduce requests for information (RFIs) and costly design changes in the field with construction documents that are dynamically updated. Incorporate industry-based parts and equipment into design layouts for more efficient design development and construction documentation. Get instant feedback directly from Autodesk Building Systems to maximize coordination with architectural and structural designs. Reuse design data by linking Autodesk Building Systems to industry-leading analysis, cost estimation, and fabrication software applications.

Improve the accuracy of your designs with easy access to the engineering design data automatically created as part of your workflow process. Access engineering data and calculations through the scheduling tools to generate accurate schedules for your mechanical, electrical, or plumbing systems, minimizing the amount of manual editing.

- **Coordination**

Help minimize design and documentation coordination errors between mechanical, electrical, and plumbing engineering design teams as well as with architects and structural engineers within an AutoCAD-based A&E (architectural design and engineering) workflow. Collaborate by taking advantage of architectural base plans developed using AutoCAD-based software applications such as AutoCAD LT® or

Autodesk® Architectural Desktop. And because Autodesk Building Systems is interoperable with the Autodesk® Buzzsaw® on-demand collaborative project management solution—data sharing among the extended design team has never been easier, resulting in better coordination between engineers, architects, and builders.

With Autodesk Building Systems 2007 you can collaborate even more smoothly by publishing your data to the web or to 3D DWF™ file format. Publish all or part of your design in 2D or 3D, enabling your clients or other design team members to view your drawings using Autodesk® DWF™ Viewer while protecting your designs from unwanted changes. And to simplify review cycles, use Autodesk® Design Review (formerly known as DWF™ Composer) to mark up and redline drawings fast and efficiently.

### **1.3 What are the main enhancements in Autodesk Building Systems 2007?**

Autodesk Building Systems 2007 builds on the concepts introduced in previous versions of the software. The following list highlights just some of the features included in Autodesk Building Systems 2007.

- **Ease of use**

- Single-line and double-line

- With improvements to single-line and double-line layout and modify tools for all three disciplines in Autodesk Building Systems 2007, you can be even more productive. Layout tools make it easier to convert one-line designs to double-line through intuitive onscreen modification. Show mixed representation of both double line, single line, and graphical single line. Speed up your construction documentation process.

- Discipline-specific tool user interface

- Tailor the look and feel of Autodesk Building Systems to your engineering discipline user requirements. Autodesk Buildings Systems gives you the flexibility to set up a discipline specific theme for the user interface. This means that you can set up a mechanical, electrical or plumbing only theme for the user interface, a combination of any two of the disciplines such as mechanical and electrical or have all three disciplines displayed. Also save time and accelerate ease of use by finding drafting tools easily. Use purpose-built tool palettes for mechanical, electrical, plumbing, and piping which can be customized to your specific requirements.

- Onscreen editing

- Grips enhance design productivity and enable you to focus more on design. Grip functionality includes Lengthen Grip and Sticky Move, Flip Fitting and Inline Equipment (Valves), and Flip Takeoffs.

- **Ease of migration from lines, arcs, and circles**

- Convert AutoCAD 2D symbols to Autodesk Building Systems content

- Easily convert existing AutoCAD or Autodesk Architectural Desktop symbols to Autodesk Building Systems content. Now, with Autodesk Building Systems 2007 you can easily import all your existing AutoCAD blocks used to represent symbols and devices in your construction documentation to Autodesk Building Systems, in one easy step, using the new Import Batch tool.

#### Working with enhanced AutoCAD commands in Autodesk Building Systems

Increase speed and productivity Copy, move, and align all in one step with enhanced AutoCAD commands unique to Autodesk Building Systems. Automatically snap in the required orientation and view. Quickly array along duct, pipe, conduit, or cable trays and easily fillet plumbing piping.

#### Implementation and customizing MEP templates

Implement your company standards and drive drawing consistency by using templates to make all your construction documents the same. Templates are a key tool for implementing company standards and styles. Also use system definitions, layer key and styles, device styles, and much more.

- **Construction documents**

#### Sections and Elevations

Create sections and elevations quickly in seconds rather than hours. When designers make a change in the design, sections and elevations update automatically, saving time and helping ensure accuracy in the design. Take a live section of any part of your design, each design change is reflected in real time, minimizing tedious manual updates.

#### Scheduling

Create schedules in seconds too, saving hours over traditional CAD drawing processes. Schedules are automatically updated as the design changes helping to reduce errors in your construction documents. Now engineers, designers and drafters can schedule engineering system data, calculated values and use new table styles for room and analysis schedules layout.

#### Support hatching

Clearly identify design intent using the hatch by theme feature to check for accuracy in design and system layout. You can hatch all elements within a drawing. Duct, piping, conduit, and cable trays can be hatched by size, load, or pressure class. Save your themes in the templates for access on any project.

For a complete list of all the features in Autodesk Building Systems please visit:

[www.autodesk.com/buildingsystems](http://www.autodesk.com/buildingsystems)

### ***1.4 Who should consider purchasing Autodesk Building Systems software?***

Mechanical, electrical, and plumbing engineers, designers, and drafters should consider Autodesk Building Systems for its benefits as a design and construction documentation software application. Building owners as well as contractors can also benefit from using Autodesk Building Systems software to reduce coordination issues before they appear in the field, thus minimizing time-consuming and costly changes. Autodesk Building Systems is suitable for commercial, institutional, and light industrial design and construction projects, such as office buildings, schools, research labs, hospitals, and central utility/wastewater treatment plants.

### ***1.5 Do I need to purchase AutoCAD or Autodesk Architectural Desktop to run Autodesk Building Systems?***

No. Autodesk Building Systems 2007 is built on the same technology as Autodesk Architectural Desktop 2007—which includes all AutoCAD 2007 functionality—providing an all-in-one, purpose-built AutoCAD for MEP systems engineering design and

documentation. You do not need to purchase separate licenses of those products to use Autodesk Building Systems.

### ***1.6 Is there an easy way to share designs with project team members who are not using Autodesk Building Systems?***

Yes. The Export to AutoCAD feature “flattens” the design to basic AutoCAD entities, making it easy to collaborate with members of your extended design team who may not be using Autodesk Building Systems software. This release supports Export to AutoCAD 2000/2000i/2002/2004/2005/2006/2007 DWG and DXF™ formats, making it possible for users of these versions of AutoCAD to open Autodesk Building Systems 2007 files.

### ***1.7 Where is Autodesk Building Systems 2007 available?***

Autodesk Building Systems 2007 is available worldwide in U.S. English and international English. The international English version is available outside North and South America and includes specific U.K. metric content and additional features unique for markets that use the BSI (British Standard Institution) industry standards.

### ***1.8 Where can I purchase Autodesk Building Systems?***

To purchase Autodesk Building Systems, contact your local Autodesk Reseller for more information. To locate one near you, visit [www.autodesk.com/reseller](http://www.autodesk.com/reseller). Autodesk Building Systems is also available through the Autodesk online store at [www.autodesk.com/estore](http://www.autodesk.com/estore).

### ***1.9 Is Autodesk Building Systems Subscription aware?***

Yes. Autodesk Building Systems is Subscription Aware, which means you can access subscription services, including web support and online training, directly through the Help menu. Autodesk Building Systems subscription customers also have access to regularly updated content produced specifically for mechanical, electrical and plumbing design.

## **2. Technology**

### ***2.1 Do I have to work in 3D using Autodesk Building Systems?***

No, there is no requirement for the engineer, designer, or drafter to use the 3D functionality in Autodesk Building Systems to see improvements in productivity and accuracy. With Autodesk Building Systems you increase productivity and accuracy without leaving the 2D view.

For example, you can lay out your double-line duct or piping in plan view, just as you would in AutoCAD software. The advantage over AutoCAD is that Autodesk Building Systems automatically places the fittings and elbows in the run, eliminating the need to insert them manually.

### ***2.2 How does Autodesk Building Systems address the need for flow diagrams and detailed schematics?***

Autodesk Building Systems has a group of features devoted to schematic diagrams. With the schematic tools, you can create detailed schematics of chilled water systems, air systems, electrical power riser diagrams, plumbing details, and even isometric diagrams. Autodesk Building Systems provides schematic symbols with intelligent connectors that enable anchoring to schematic lines without the time-consuming hassle of trimming lines,

rotating symbols, or repairing broken lines. By using the isometric mode you can quickly lay out isometric diagrams where symbols and lines automatically adjust to the correct isoplane as you develop your drawing. And with direct manipulation you can easily change the plane orientation, rotation, and location of schematic symbols on-the-fly, saving time by minimizing tedious drafting tasks.

### ***2.3 Does Autodesk Building Systems support engineering design calculations and analysis?***

Yes. Autodesk Building Systems supports engineering design calculations and analysis through the connectivity between objects and the engineering data stored in the objects.

Size duct automatically while laying out ductwork based on traditional duct design methods, including equal friction and static regain. Use circuit tools to automatically total circuit and power loads. Generate circuit reports that can be exported directly to a bidirectional Microsoft® Excel® spreadsheet, where you can quickly size wires, panels, and main service lines. And use the Circuit Manager to automatically flag overloads based on calculated loads and wire sizes. Size supply piping (hot and cold domestic water) and sanitary waste with automated tools based on customizable plumbing code and fixture unit pipe-sizing tables.

Autodesk has also been working closely with various industry-leading analysis, fabrication, and cost-estimating applications to facilitate the reuse of your design data. (Refer to question 3.6 for more information on third-party applications.)

### ***2.4 What content is provided with Autodesk Building Systems? Can I create custom content?***

Autodesk Building Systems provides an extensive collection of parts, such as fittings, equipment, and fixtures, based on common industry standards for increased accuracy throughout your mechanical, electrical, plumbing, and fire protection designs. Comprehensive catalogs included with the software organize the collection of available parts by discipline and type.

Autodesk Building Systems also provides several ways to create custom content. There is the Content Builder for creating block-based fittings and equipment, and styles that provide a quick and easy way to create electrical devices and schematic symbols. In addition, as with the previous version of the software, Autodesk Building Systems 2007 supports i-drop® technology, which enables you to share parts through published catalogs and the web. Autodesk Building Systems 2007 continues to support standards-based pipe classes, as well as ANSI/ASME and ANSI/ASTM standards introduced with Autodesk Building Systems 2006. New pipe-related equipment includes more valves, clarifiers, heat exchangers and pumps, and HVAC and electrical content, such as duct silencers and access doors, in response to user requests.

### ***2.5 Does Autodesk Building Systems support metric units?***

Yes. Autodesk Building Systems supports metric units in addition to imperial units. Metric templates and a collection of metric content are provided with Autodesk Building Systems. Metric content is located in a catalog separate from that for imperial content in the Autodesk Building Systems application. Metric content available is based on GSA (General Services Administration) U.S. guidelines and BSI (British Standard Institution) U.K. guidelines.

## 3. Compatibility

### ***3.1 Is Autodesk Building Systems 2007 interoperable with other AutoCAD-based products?***

Yes. AutoCAD software is the foundation for an interoperable family of Autodesk products, which includes Autodesk Building Systems. Sharing the same file format framework—DWG format for reading and writing drawing files—helps to ensure that each generation of AutoCAD-based products is interoperable with Autodesk Building Systems.

Interoperable products include AutoCAD, AutoCAD LT, Autodesk Architectural Desktop, Autodesk Map<sup>®</sup> 3D, AutoCAD<sup>®</sup> Mechanical, AutoCAD<sup>®</sup> Electrical, and Autodesk<sup>®</sup> Land Desktop.

Autodesk Building Systems 2007 has introduced a file format change from that used in Autodesk Building Systems 2006. The Autodesk Building Systems 2007 file format is the same as that used in all AutoCAD 2007-based products, including Architectural Desktop 2007. (Refer to question 3.4 for more information on the file format change.)

### ***3.2 What about object compatibility between Autodesk Building Systems and Autodesk Revit Building, Autodesk Revit Structure, and Autodesk Revit Systems?***

Autodesk<sup>®</sup> Revit<sup>®</sup>-based products can read and write ACIS<sup>®</sup> solids. This capability gives users a way to export their models from Autodesk Building Systems software and import or link 3D information into Autodesk<sup>®</sup> Revit<sup>®</sup> Building, Autodesk<sup>®</sup> Revit<sup>®</sup> Structure, or Autodesk<sup>®</sup> Revit<sup>®</sup> Systems software. Use this method to cut sections and perform visual interference detection.

### ***3.3 What is the Autodesk Building Systems object enabler?***

The Autodesk Building Systems 2007 object enabler is a free download that enables users outside the Autodesk Building Systems application to view object data created in Autodesk Building Systems. With the proper version of the Autodesk Building Systems object enabler, any AutoCAD 2000/2000i/2002/ 2004/2005/2006/2007 or AutoCAD LT 2006 or 2007 user can open and view Autodesk Building Systems design files. For more information or to download the Autodesk Building Systems object enabler, go to [www.autodesk.com/aecobjecten](http://www.autodesk.com/aecobjecten).

### ***3.4 Can I open files created in Autodesk Building Systems 2006 or earlier with Autodesk Building Systems 2007?***

Yes, you can always open files created in previous version of Autodesk Building Systems. However, in order to deliver important new features sought by customers, the file format requires occasional updating. When a file format change is made the files saved to the latest version of AutoCAD and related products cannot be read by prior versions of the software. However, you can always save files in a format that is backward compatible with older versions of AutoCAD and related products. This is useful for people sharing files with others who haven't upgraded recently and applies to the AutoCAD-based products Architectural Desktop and Autodesk Building Systems as well.

Autodesk is committed to working with our customers to make sure that they benefit from the exciting new features in future releases while minimizing the inconvenience a file format change introduces.

### **3.5 What versions of AutoCAD does the Autodesk Building Systems Export to AutoCAD feature support?**

This release supports export to AutoCAD 2000/2000i/2002/2004/2005/2006/2007 DWG and DXF formats, making it possible for users of these versions of AutoCAD to open Autodesk Building Systems 2007 files without using object enablers. (Please refer to question 3.3 for more information on object enablers).

### **3.6 Is Autodesk Building Systems compatible with third-party engineering applications? Which partners are working with Autodesk to provide this functionality?**

Yes. By exporting to standard file formats, such as gbXML and ddXML, and taking advantage of the API available for Autodesk Building Systems, you can extract crucial engineering design data from Autodesk Building Systems 2007 for interoperability with third-party applications from industry leaders. Autodesk is working with industry leaders, including Trane, GeoPraxis, Elite, Wendes, and EastCoast CAD, to provide this functionality for engineering design analysis, cost estimating, and fabrication (some of these applications may not yet be available). Your existing third-party applications may be compatible with the current release of Autodesk Building Systems. Contact your independent software supplier for details. For more information about the availability of third-party applications compatible with Autodesk Building Systems 2007, visit [www.autodesk.com/partnerproducts](http://www.autodesk.com/partnerproducts).

## **4. Platforms, System Requirements, and Network**

### **4.1 What are the system requirements for Autodesk Building Systems 2007?**

The following are the recommended hardware and operating system requirements for running Autodesk Building Systems 2007.

#### **Recommended System Requirements**

- Intel® Pentium® 4 or AMD-K7™ processor, 3.0 GHz or higher
- Microsoft® Windows® XP (Professional, Home Edition, or Tablet PC Edition, SP2 or later) or Windows 2000 Professional (SP4 or later)
- 2 GB RAM
- 3.7 GB free disk space for full application install
- 1280x1024 video display adapter capable of 32-bit color
- Modem (connection to Internet) with Microsoft Internet Explorer 6.0 or later (SP1 or later)
- Sound card for multimedia learning
- TCP/IP or IPX support (required only for multiuser or floating license configurations)

**4.2 Is a network version of Autodesk Building Systems available? Have there been any improvements to software deployment through network licensing?**

Yes. Autodesk Building Systems software uses standard Autodesk network license management. Enhanced Autodesk standard licensing software helps you get the full benefit from your Autodesk Building Systems licenses. For example, with the new license borrowing feature you can install a time-limited license on your computer while disabling the license on the server for that same period. You can then run Autodesk Building Systems without having a connection to the license server.

## 5. Support and Training

**5.1 Can I rely on my AutoCAD knowledge to use Autodesk Building Systems? How quickly can I learn the new features in Autodesk Building Systems 2007?**

Because Autodesk Building Systems is built on the AutoCAD application, your existing knowledge of AutoCAD software gives you a sound base from which to build your Autodesk Building Systems skills. Training improves productivity, increases return on investment, and enhances your Autodesk Building Systems knowledge, which is why Autodesk recommends training on Autodesk Building Systems from an approved Autodesk Reseller. In addition, self-paced e-Learning options are available to subscription members. For more information, contact your Autodesk Authorized Reseller or visit [www.autodesk.com/subscription](http://www.autodesk.com/subscription).

**5.2 My organization has recently implemented Autodesk Building Systems 2006. How much training or retraining is required to effectively use Autodesk Building Systems 2007?**

Autodesk Building Systems 2007 builds on the concepts introduced in Autodesk® Building Systems 2006. As a result, you can start using Autodesk Building Systems 2007 with little training. Users proficient in earlier versions of Autodesk Building Systems can use Autodesk Building Systems 2007 in the same way.

**5.3 Where do I find training courses for Autodesk Building Systems?**

Training courses are available from Autodesk Consulting, Autodesk Authorized Training Center (ATC®) locations, and Autodesk Resellers. Training courses through Autodesk Consulting include Autodesk Virtual Classroom Training (online, instructor-led), custom training to match your organization's specific needs, and Autodesk Classroom Training. For more information about Autodesk's training services, visit [www.autodesk.com/buildingsystems-training](http://www.autodesk.com/buildingsystems-training). You can also enroll in instructor-led training at Autodesk Authorized Training Centers around the world. These training centers use Autodesk Official Training Courseware (AOTC) to deliver comprehensive courses for new and intermediate Autodesk Building Systems users. An Autodesk ATC also delivers custom courses on Autodesk Building Systems and other Autodesk products. To learn more, visit [www.autodesk.com/buildingsystems-atc](http://www.autodesk.com/buildingsystems-atc)

Check with your local Autodesk Authorized Reseller for a schedule of Autodesk Building Systems training classes. To locate a reseller, visit [www.autodesk.com/reseller](http://www.autodesk.com/reseller).

#### **5.4 How do I obtain technical support for Autodesk Building Systems?**

Autodesk Resellers provide support services for Autodesk Building Systems software and all other Autodesk products. To locate a reseller near you visit [www.autodesk.com/reseller](http://www.autodesk.com/reseller). You can find a complete list of support options available from Autodesk at [www.autodesk.com/buildingsystems-support](http://www.autodesk.com/buildingsystems-support).

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