



Preview Guide

Introduction

Autodesk® Building Systems 3 software is the premier CAD solution for mechanical, plumbing, and electrical engineers to use in the design, development, and construction documentation of complex electrical and mechanical building systems. Now a single, stand-alone application, Autodesk Building Systems incorporates mechanical, electrical, and plumbing modules along with Autodesk® Architectural Desktop. And since it's built on Autodesk® Architectural Desktop software's object technology, coordination among design teams and team members has never been easier within the complex building design process.

Today's competitive environment imposes greater demands on your project team. Autodesk Building Systems helps your business gain the competitive advantages needed to

- Design faster and more accurately with discipline-specific tools
- Eliminate coordination mistakes that occur in multiple unrelated 2D drawings
- Easily create custom and manufacturer-specific content, thereby increasing your productivity as a team

By enabling you to work in 2D, 3D, or both using traditional CAD drafting or model-based design methods, Autodesk Building Systems software provides a building design solution that respects your current design and documentation processes while bringing you intelligent building objects and functionality that support the needs of your industry.

Autodesk Building Systems contains the documentation and annotation tools that help you increase design productivity by controlling layer and graphic standards and automating important drafting tasks, such as depicting crossed objects with hidden lines. Because your drawings are better coordinated, you reduce errors and minimize project design time. Each module has distinct features that are discipline specific. These features reduce the workflow inefficiencies and drafting inaccuracies that typically occur during building design and successive phases of development. By dynamically updating design data, such as sections and schedules, Autodesk Building Systems minimizes the tedious task of making revisions.

The Internet has become a fundamental part of business, driving industry solutions to become dynamic with technology. To address these changes in the way you do business, all Autodesk's building design products have Internet capabilities that enhance collaboration among members of the design and construction team. Autodesk provides a suite of web related business solutions that complement your process needs, from project file collaboration to product support and content-sharing services.

The result of the building information technology developed by Autodesk is powerful digital design data that helps to reduce costs during construction while providing increased value to every member of the project team, from architects to engineers to contractors to building owners.

Improvements

Autodesk Building Systems exhibits a number of improvements over Autodesk® Building Mechanical 2 and Autodesk® Building Electrical 2 software, including the addition of a plumbing module. Other improvements, made for mechanical and electrical modules, include

- Dynamic hidden line representation
- Parametric content creation
- Improved MvPart Builder
- Addition of routing features for duct, piping, conduit, and cable tray
- Expanded scheduling properties
- Schematic system definitions
- Additional content
- Catalog Editor enhancements
- Isometric schematics

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Project Setup

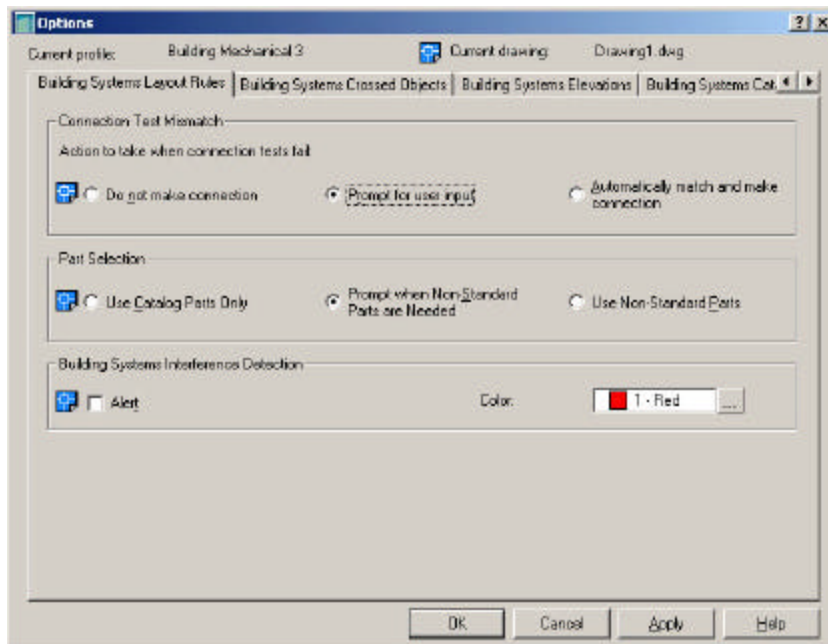
The project setup features of Autodesk Building Systems help you establish drafting and layout standards that satisfy your clients' needs with minimal effort. The software also enables you to standardize your design process using option tabs, preferences, template files, and catalogs, helping to reduce rework and minimize errors.

Options Tabs

Options tabs give you an easy way to customize your software settings. Whether you're establishing layout rules or deciding where to locate catalogs on the office network, you are the one who determines how the application best suits your needs.

Building Systems Layout Rules

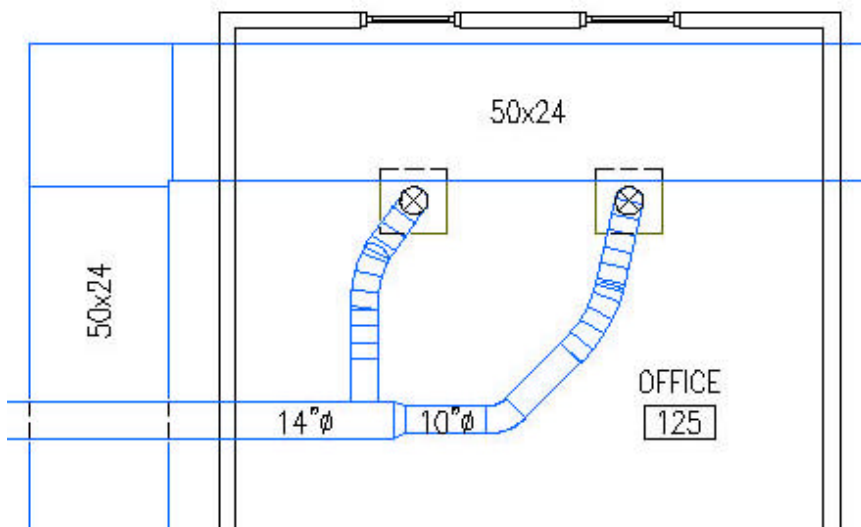
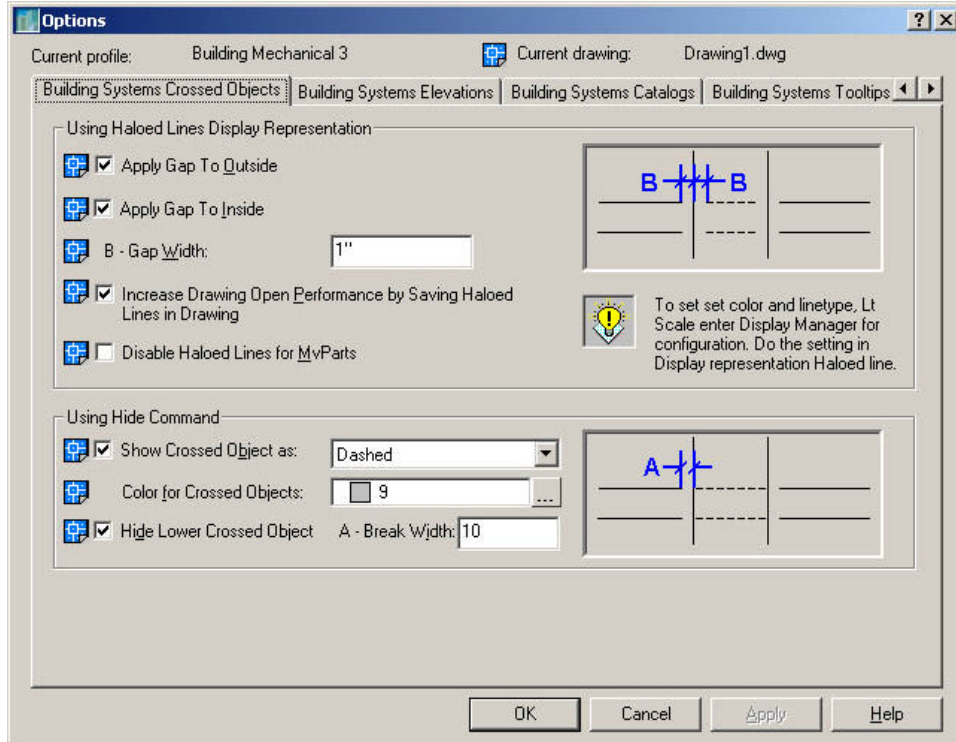
Using layout rules, you can control connections tests and part selections, and toggle interference detection on and off. Each of these settings affects how you interact with the application as you design.



The ability to adjust layout settings gives you more control of your CAD environment.

Building Systems Crossed Objects

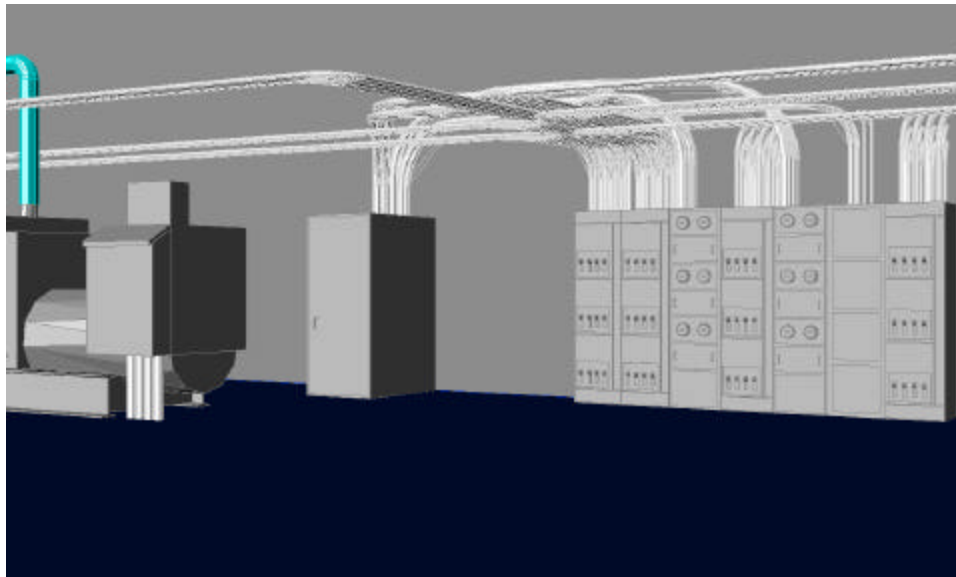
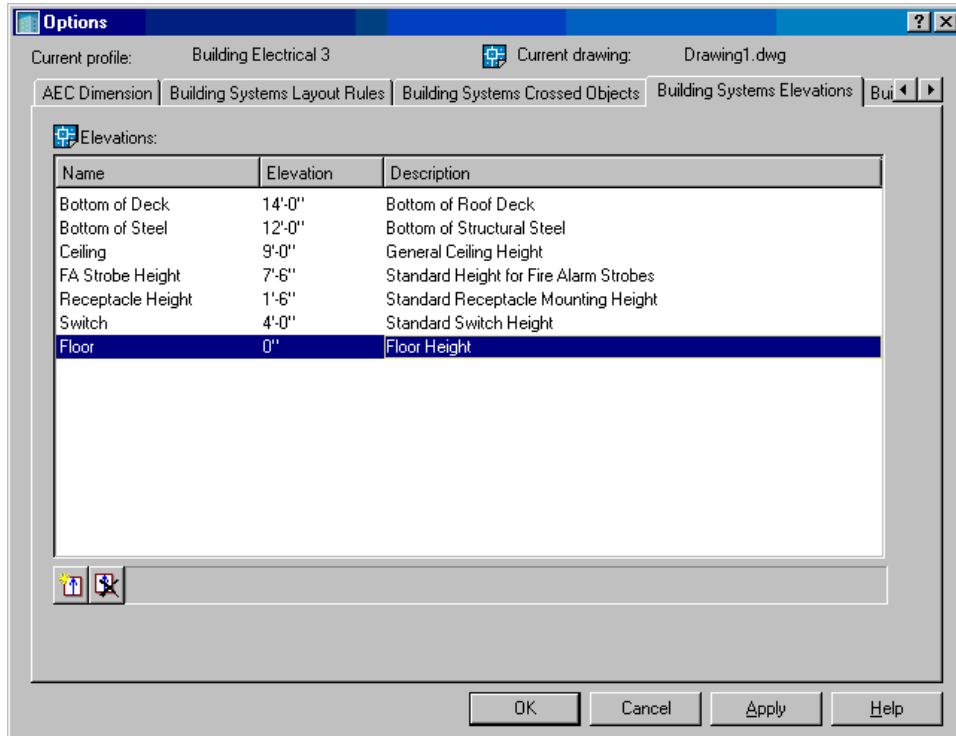
The ability to accurately depict crossed objects for construction documentation purposes has been significantly improved in Autodesk Building Systems software. Autodesk has provided options and settings that give you more control over the appearance of haloed lines in your drawing.



Use the haloed lines display representation to control how crossed objects display.

Building Systems Elevations

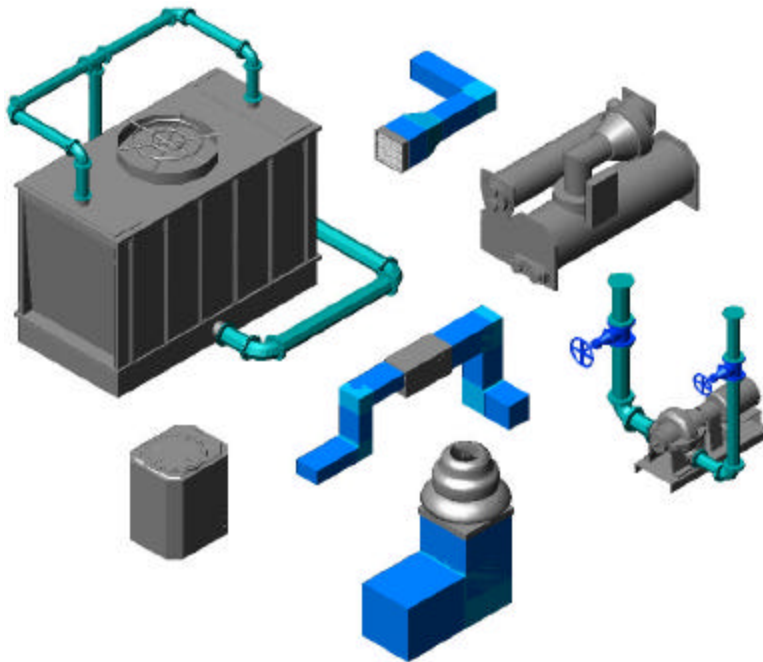
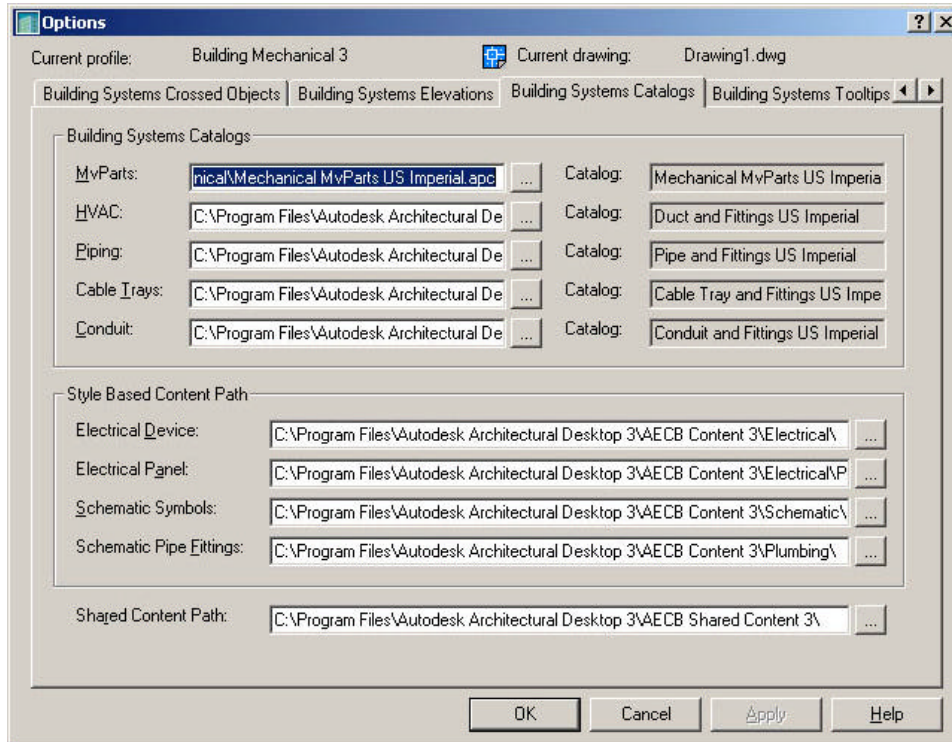
Establish preset elevations for different engineering systems to help in managing the heights of different building systems components. That way you can concentrate more on design while eliminating common drafting errors.



Using preset elevations makes it easier to manage different system heights.

Building Systems Catalogs

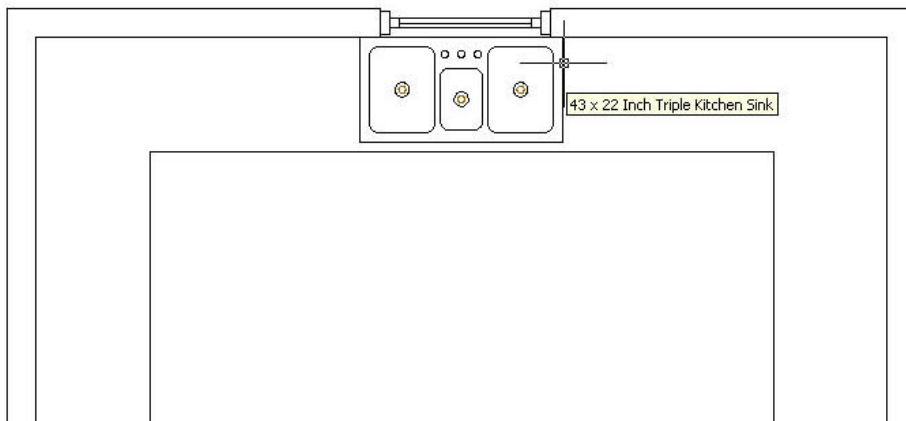
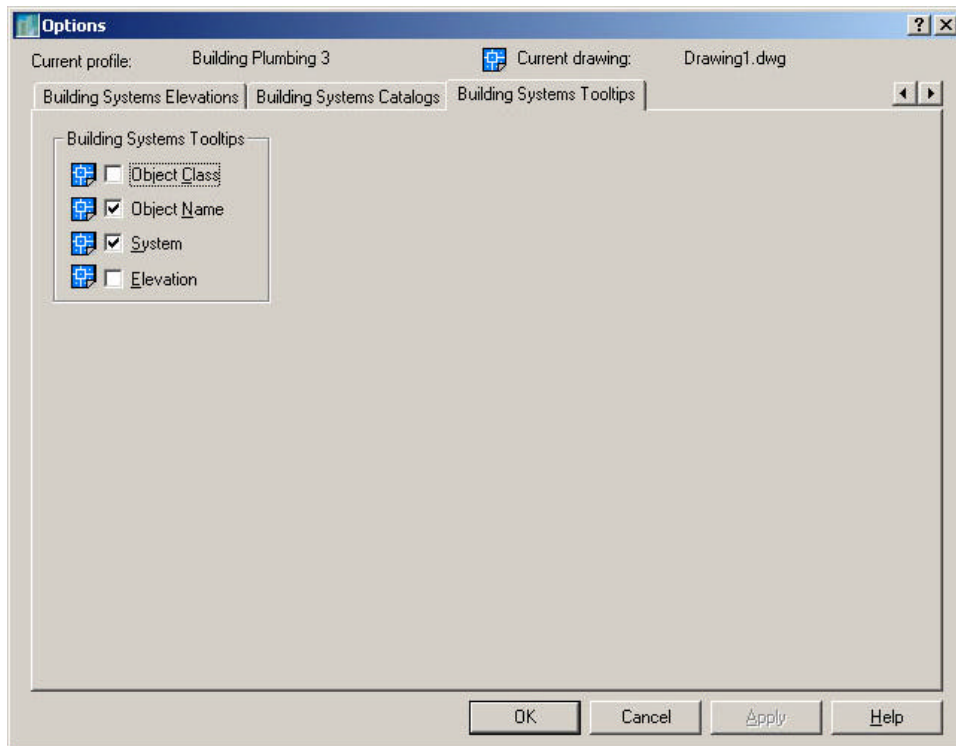
Improve organization by easily managing the different industry-specific catalogs for mechanical, plumbing, and electrical disciplines. The CAD manager or computer systems administrator can locate the building systems content anywhere on the network, which allows for a more secure working environment.



Use the vast assortment of equipment provided to complete your layouts quickly.

Building Systems Tooltips

The building information model provides the ability to select any helpful information you would like to see highlighted when you move the cursor over intelligent building systems objects. This keeps you better informed of the systems and their components.



Use tooltips to track important information about your design.

System Definitions

Before you draw the first piece of duct or design a complex electrical system, you'll want to take advantage of the System Definitions tools provided in Autodesk Building Systems. With the Style Manager, specifying a system definition is a snap. Key components of system definitions include

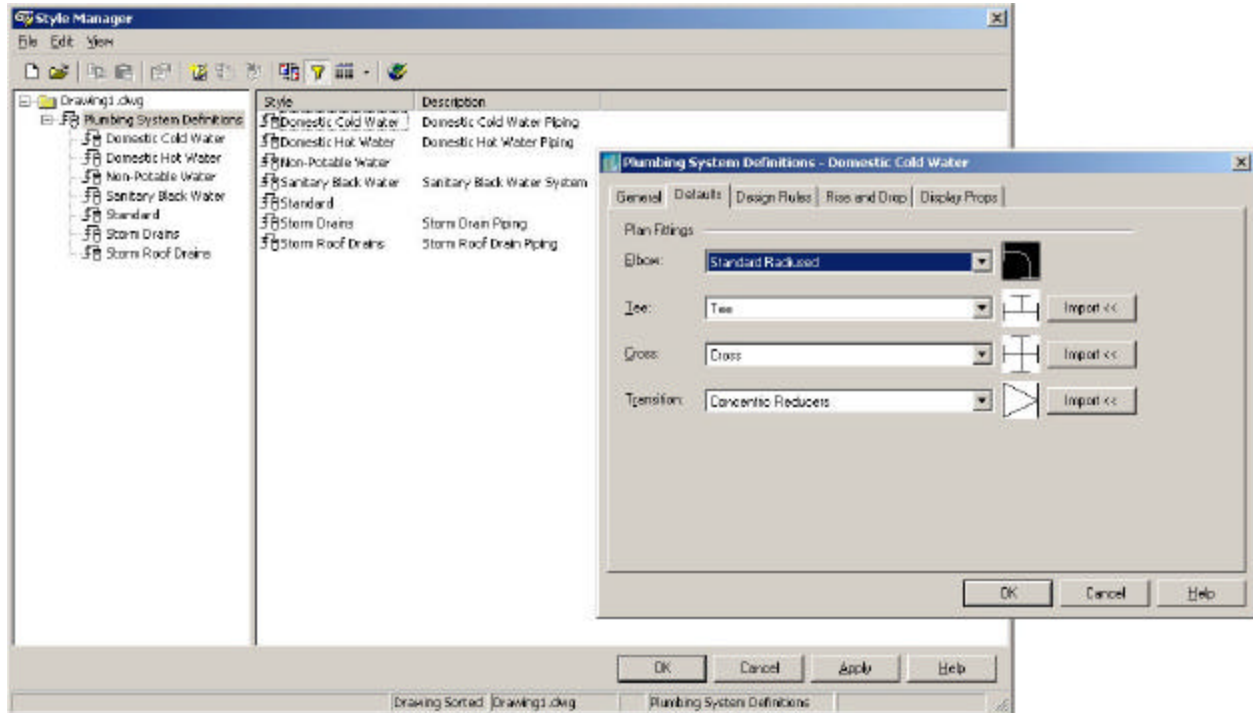
Defaults: Before you design your systems, specify default parts you want to use.

Display Representation of Objects: View an object many ways without redrawing; produce multiple drawing sheets and documents from a single object model.

Layer Management: Take advantage of different layering standards, edit those standards, and apply them to your drawing.

Layer Keys: Create your own layer keys to establish your company standards.

Rise/Drop Symbolology: Determine what symbology to use when depicting a rise or drop in ductwork or piping.

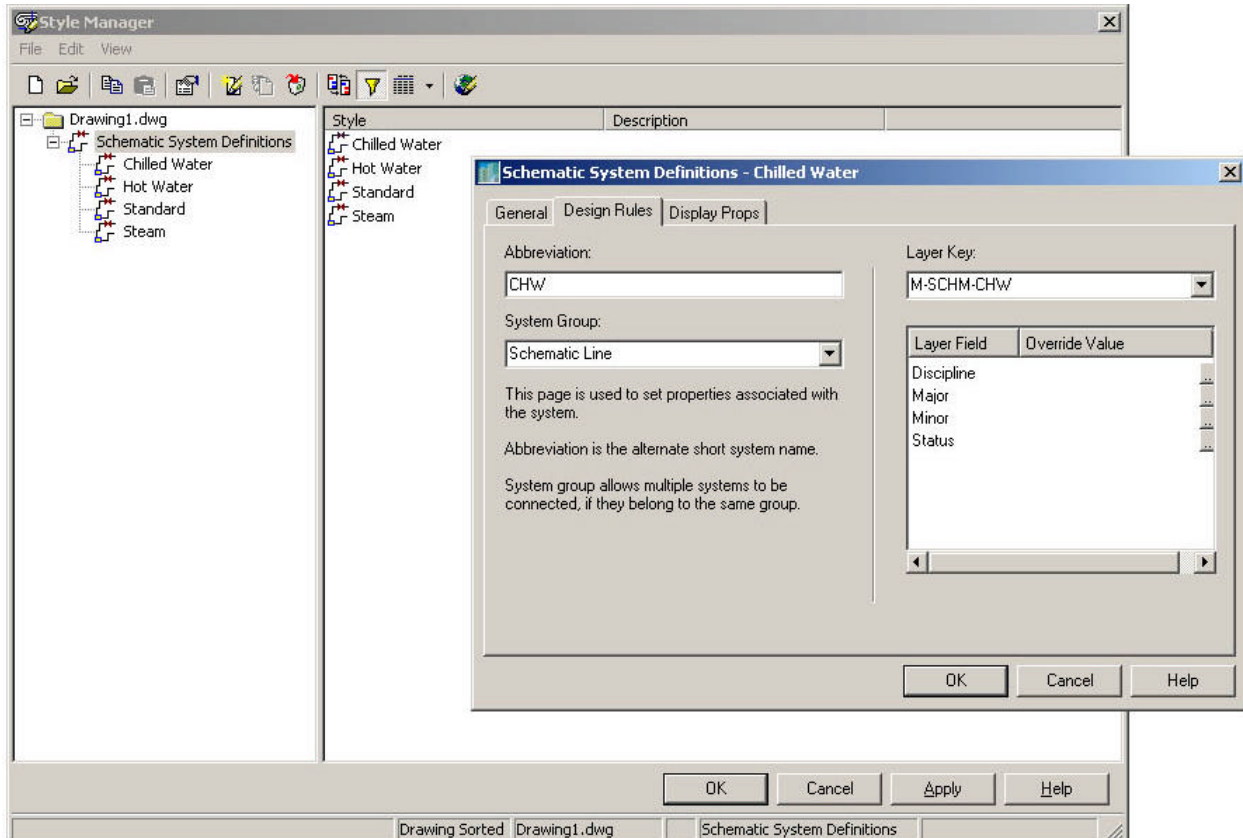


The System Definitions dialog box gives you control over important properties for each type of system.



Schematic System Definitions

By assigning system definitions to schematic lines and schematic symbols, you'll discover it has never been easier to create diagrams and details. Now you can draw schematic lines and symbols and insert them on the desired layer, with the color and line types you choose.



Assign schematic system definitions for easier management of detail properties.

Preferences

Each component draw function, such as Add Duct, Add Pipe, Add Cable Tray, or Add Schematic Pipes, has its own user-defined preferences. These settings are timesaving enhancements that increase design productivity by minimizing drafting tasks:

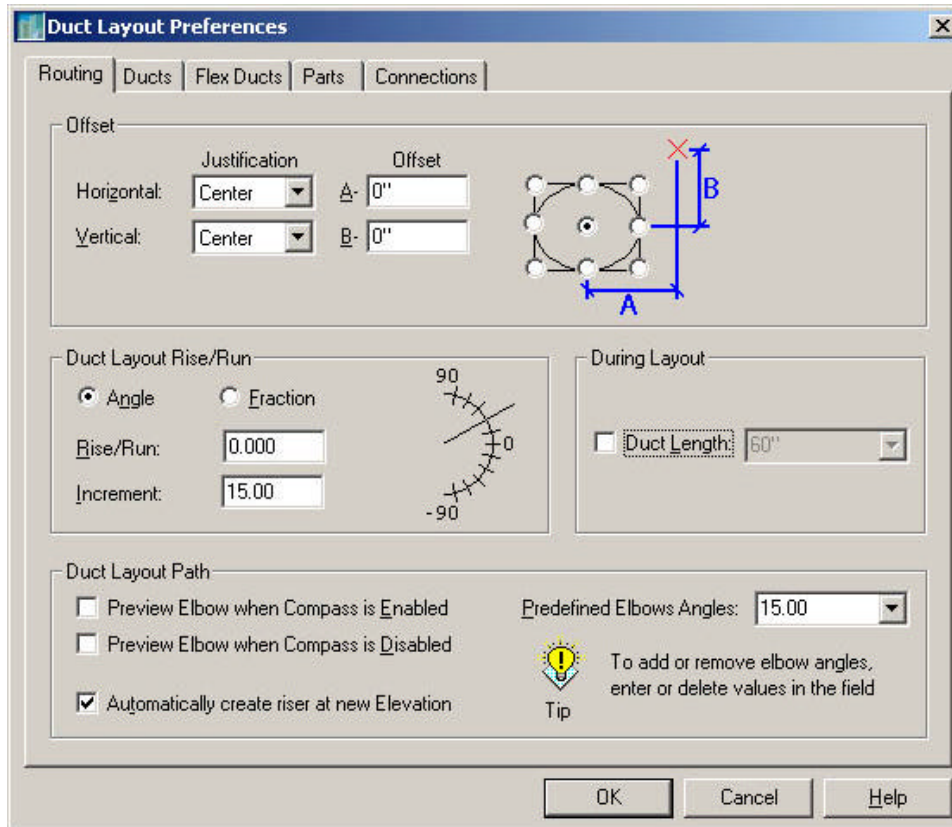
Duct: Routing justification, duct layout rise/run, internal lining and insulation, labeling, segmentation lengths, annotation graphics, part selection, and connection styles

Pipe: Routing justification, pipe layout rise/run, insulation, labeling, segmentation lengths, annotation graphics, part selection, and connection styles

Cable Tray: Routing justification, cable tray layout rise/run, labeling, segmentation lengths, annotation graphics, part selection, and connection styles

Conduit: Routing justification, conduit layout rise/run, labeling, segmentation lengths, annotation graphics, part selection, and connection styles

Schematic Plumbing Pipe: Labeling and flow arrow display control

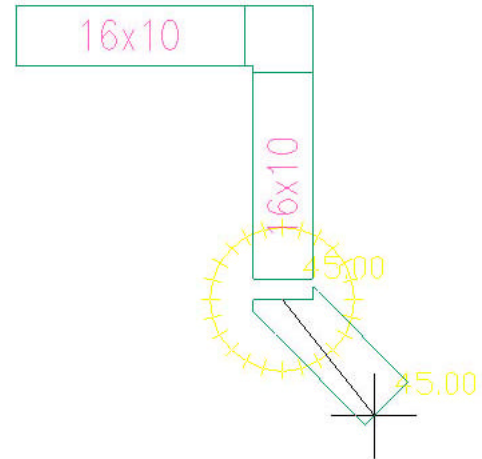
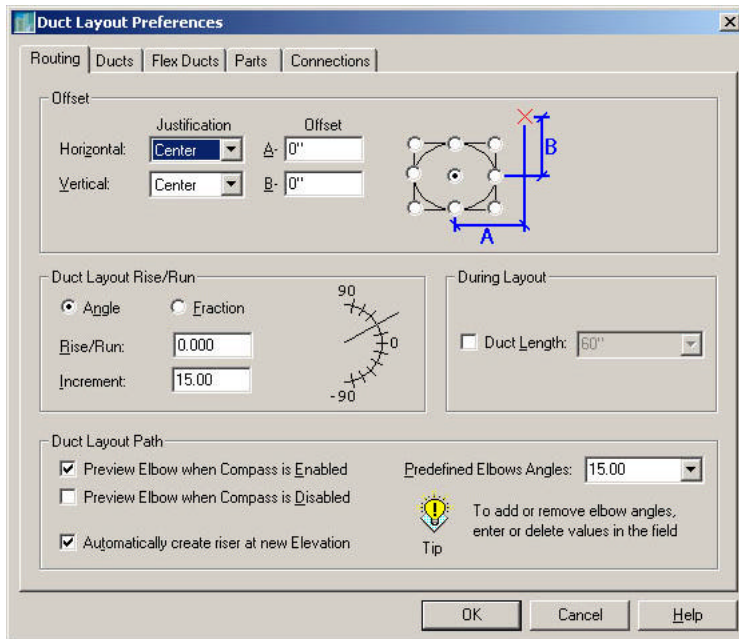


Adjust your duct and pipe layout preferences to increase your productivity.



Additional Layout Settings

Now you can preview duct and pipe elbows before laying them out, saving yourself time by reducing errors while you draft. Another innovative feature is the ability to route ductwork or piping using a predetermined elbow angle. You first select an elbow angle and then pick the location you want to route to. The application draws the duct and determines where the elbow should be placed that corresponds to the appropriate angle.



Preview duct elbows before inserting them to reduce rework.

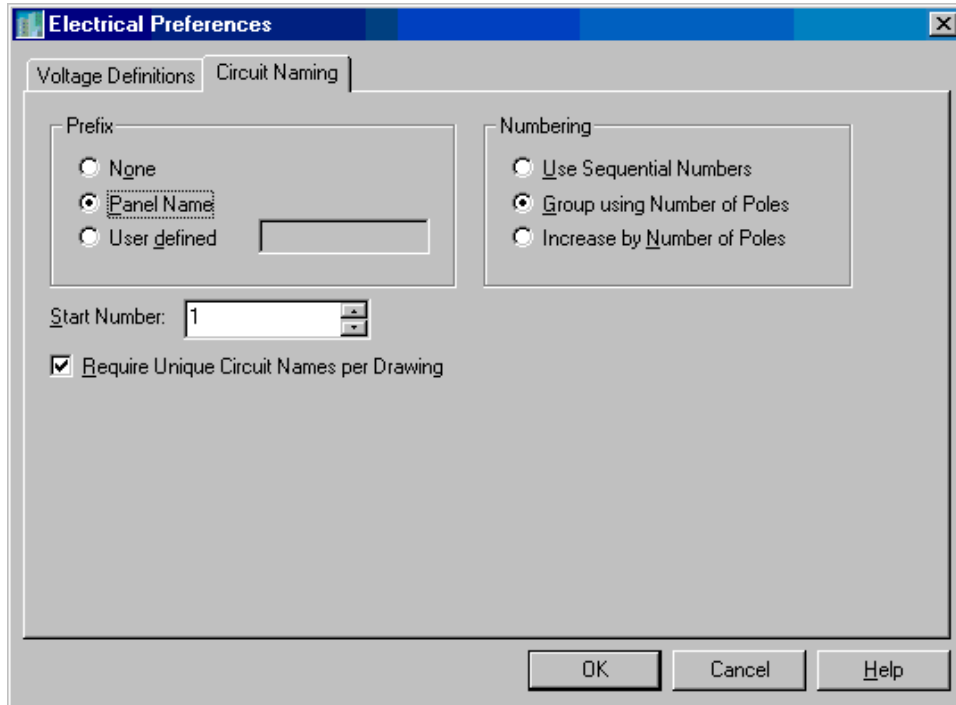


Electrical Preferences

Using the Electrical Preferences settings, you can control the behavior of the electrical building information model.

Circuit Naming

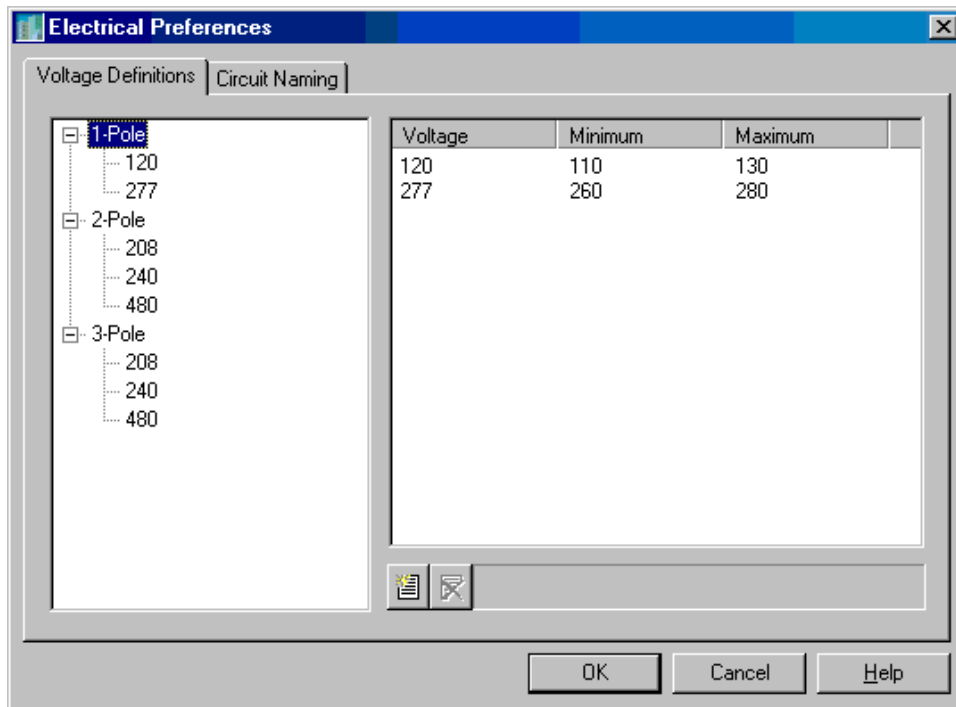
Using the Circuit Naming tab, you specify how circuits are named when they are created in the drawing. Whether you create the circuits en masse or one at a time, the Circuit Naming preferences are always checked when a new circuit is created. As a result, circuit naming in the building information model is consistent with minimum input and manual coordination.



Customize circuit names to project standards.

Voltage Definitions

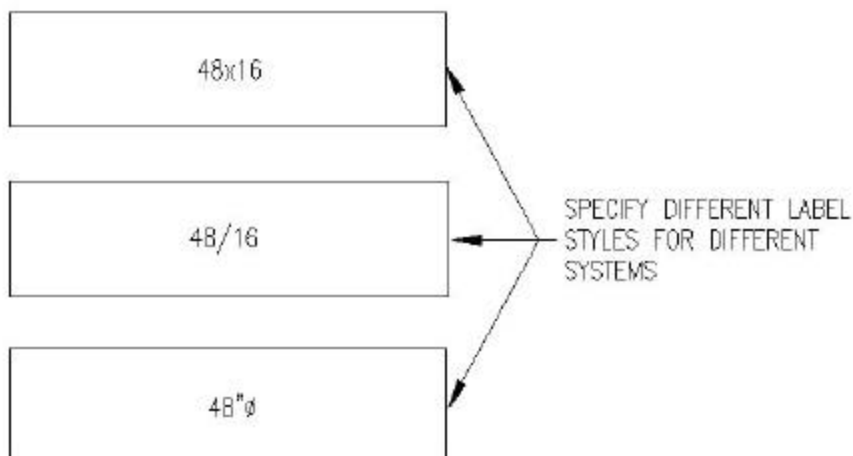
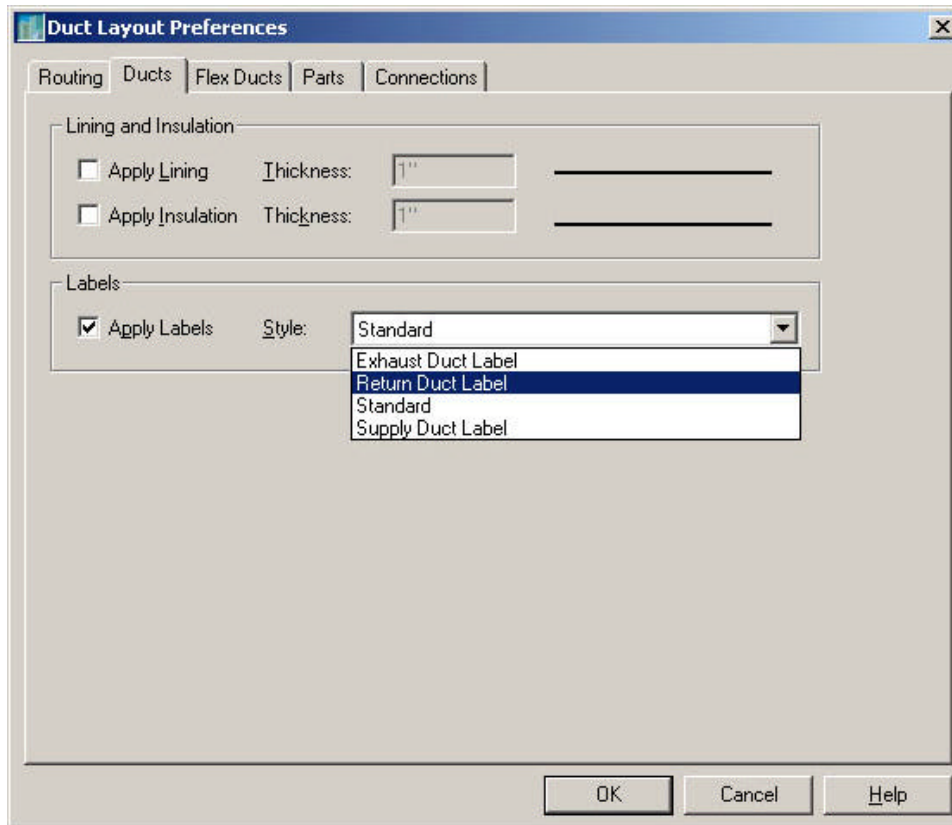
On the Voltage Definitions tab you can set up voltages that are used in the electrical building information model, and you can set up connection ranges. These ranges help you produce a consistent electrical building information model. The electrical module checks the connection ranges in the building model and does not allow connection of equipment that does not meet the criteria specified in the voltage definitions. This feature helps you coordinate the electrical requirements of equipment.



Set up voltages for the electrical systems in your project.

Labels

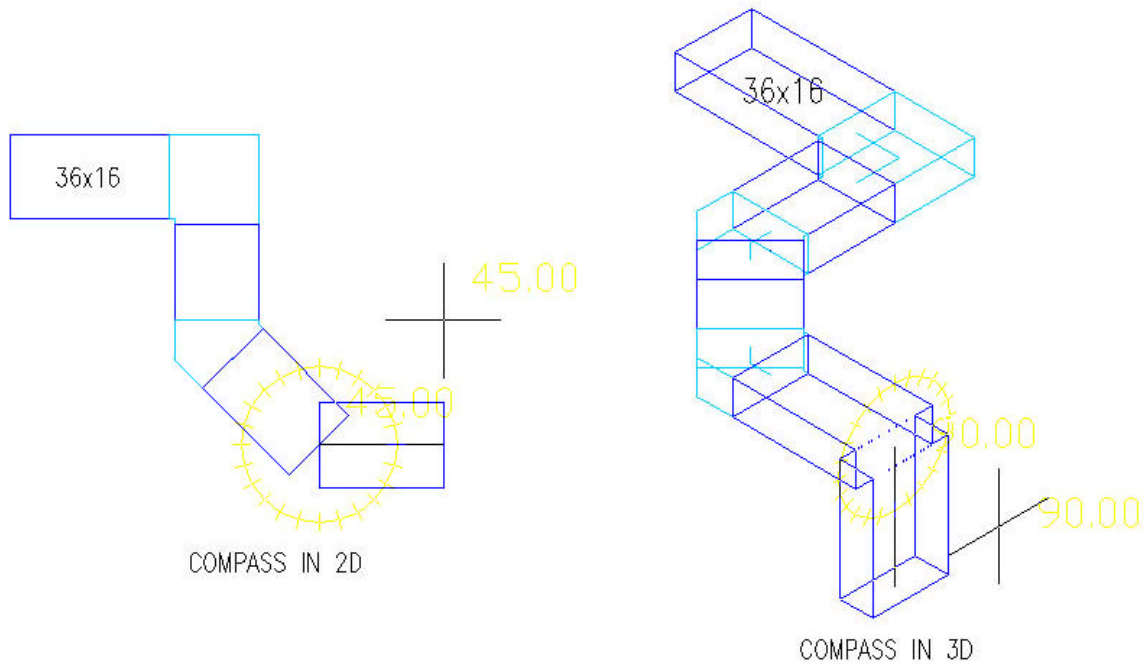
Using the labeling tools, you can quickly and easily create your construction documentation. Because labeling is style based, you can make your labels look exactly the way you want them to and apply different labels to different systems. This versatility enables you to add labels manually to ductwork and piping or have the program add the labeling automatically.



You can customize label styles to fit your needs.

Compass

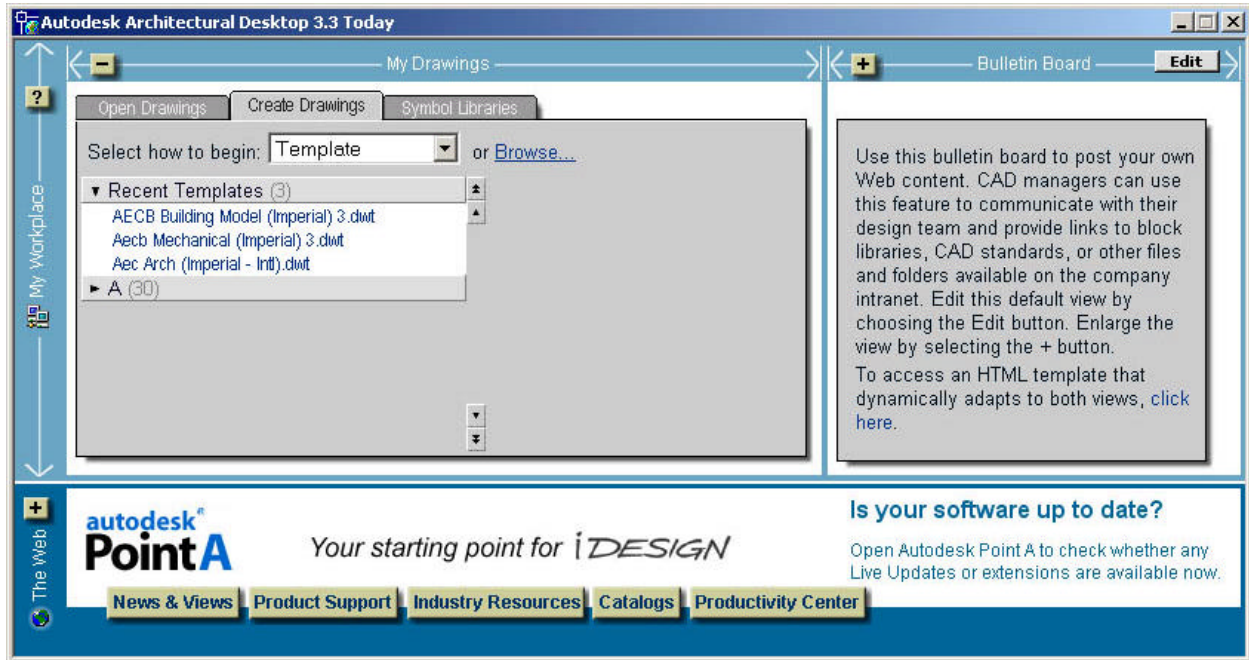
You can use the compass to route your ductwork or piping through a series of complex bends and junctions in 2D or 3D without having to worry about your user coordinate system (UCS).



Easily route different components in 3D without the hassles of specifying a user coordinate system.

Templates

Templates are a great way to implement company standards for all building system drawings. Templates eliminate the need for each user to establish layer standards, preferences, and layouts for each drawing. Templates help reduce errors, increase drawing accuracy, and help ensure that every document you send has the same look and feel. All these benefits result in significant cost savings.



Establish company standards using templates to minimize project setup time.

Building Information Modeling

At Autodesk, building information modeling is our strategy for the application of information technology to the building industry. Products that use building information modeling have three characteristics:

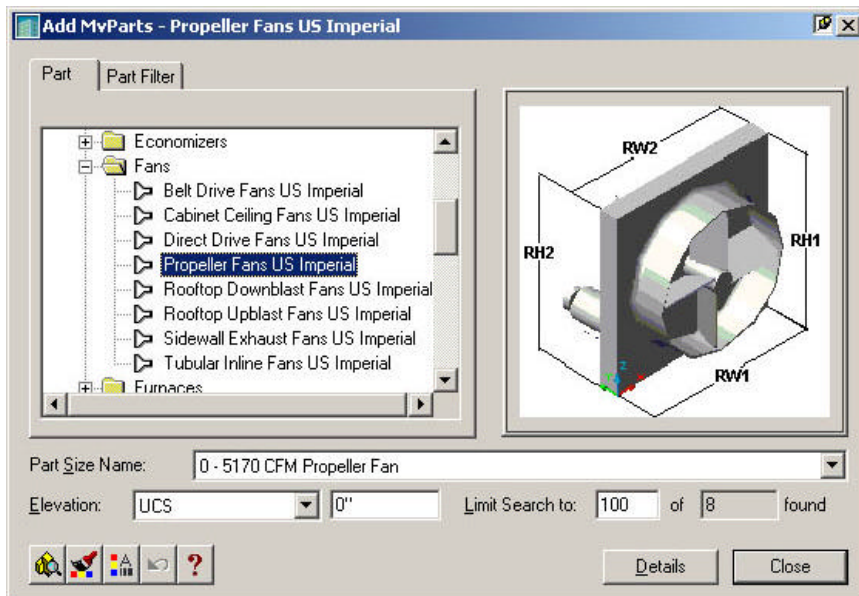
- They create and operate on digital databases for collaboration.
- They manage change throughout building models so that they are coordinated in all other areas.
- They capture and preserve information for reuse by additional industry-specific applications.
- The application of building information modeling solutions reduces design errors, increases design productivity, and decreases costs for building industry professionals in the design, construction, and operation of buildings.

More information about building information modeling can be found in the Autodesk Building Information Modeling white paper at www.autodesk.com/buildinginformation.

Mechanical

MvParts—Equipment

Autodesk Building Systems provides a series of 2D and 3D multiview blocks with enhanced properties called MvParts. The extensive collection of objects is arranged into type-specific subsets or families called catalogs. You can retrieve industry-specific equipment from the catalogs and integrate it into your design. You can then query this equipment to assist with labeling and scheduling, or you can store custom parts for future use.



The intelligence of MvParts helps with the early stages of design.

Content

The catalogs for the mechanical module offer an innovative approach to identifying, viewing, and inserting equipment into your design. Additional content has been added with this release to expand the extensive library of content already available:

- **Air Handlers:** Modular, split system, rooftop
- **Air Terminals:** Perforated, linear slot, plaque
- **Boilers:** Water tube, fire tube
- **Cooling Towers**
- **Duct Fittings:** Tees, elbows, takeoffs, crosses
- **Fans:** Inline, downblast, upblast, cabinet ceiling, sidewall, propeller
- **Heat Pumps**
- **Heaters:** Baseboard, cabinet, wall mounted
- **Pipe Fittings:** Tees, elbows, takeoffs, crosses, end caps
- **Pumps:** Base mounted, split case, inline, close coupled
- **Refrigeration Equipment:** Air-cooled chillers, centrifugal chillers, absorption chillers
- **Valves:** Gate, three-way, butterfly, check, globe
- **VAV Boxes:** Dual duct, shut off, fan powered (parallel and series)

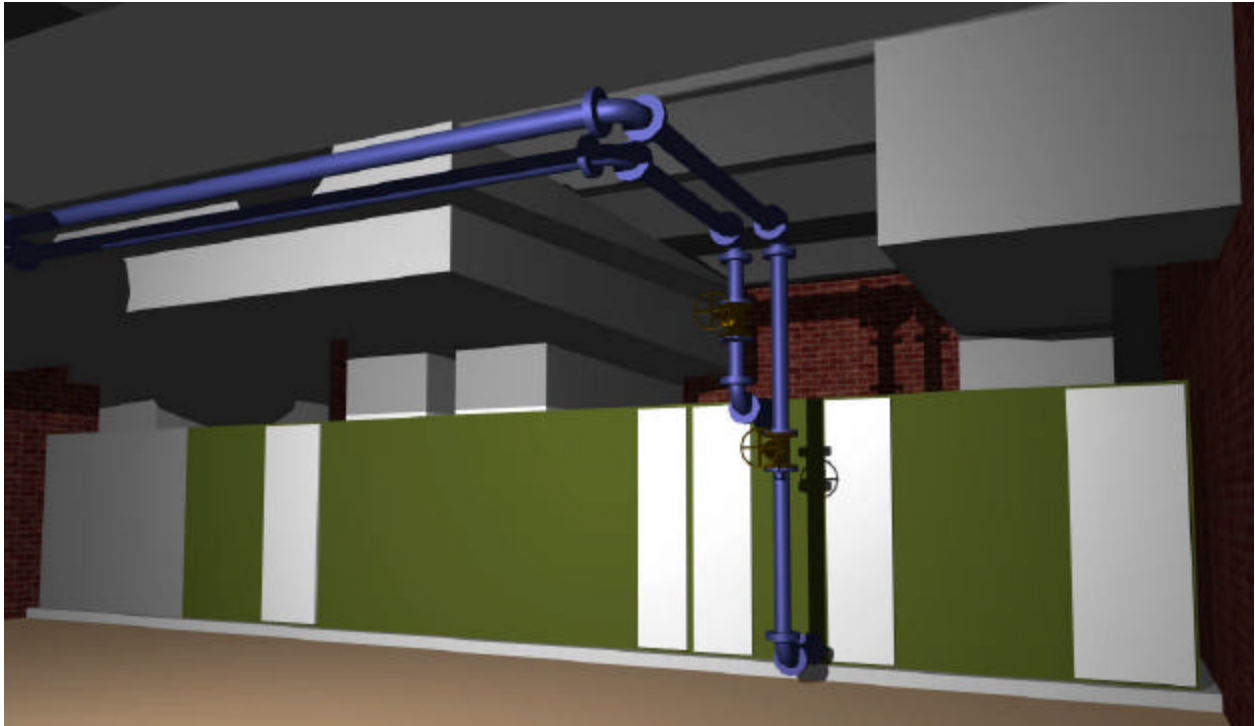


New Content for Mechanical Module

- **Additional pumps**
- **Additional types and sizes of diffusers, grilles, and registers**
- **More damper types and sizes**
- **Pressure-regulating valves and motor-controlled valves**
- **Pressure regulators**
- **Suction diffusers**
- **Steam unit heaters**
- **Tanks**

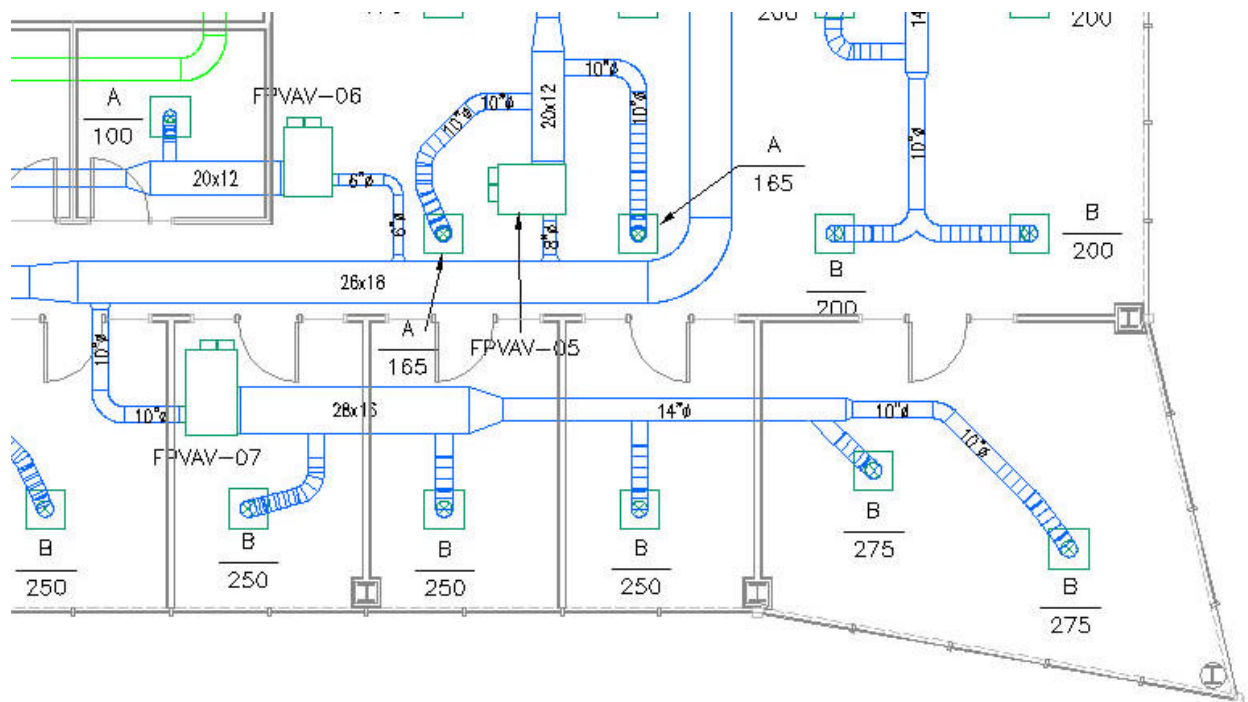
Ductwork

When you use Autodesk Building Systems software, creating a duct design is even faster and easier than before. Because you're generating a 3D model, you can take advantage of features like interference detection and automatic sections.



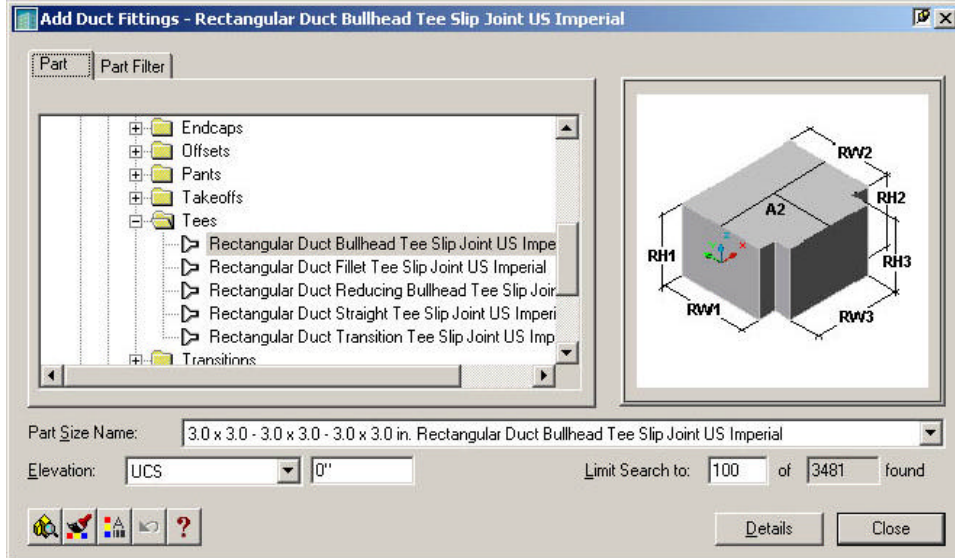
Easily create 3D mechanical rooms.

Ductwork Layout: Ductwork design is generally the largest contributor to hours spent on a design project. With even more timesaving enhancements and features, Autodesk Building Systems software helps you increase productivity by automating much of the ductwork design process.



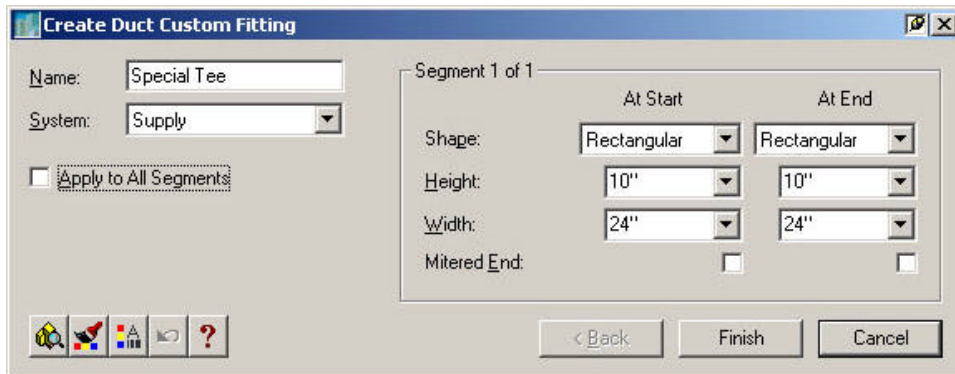
Ductwork layout is easy with the mechanical module.

Duct Fittings: The most commonly used duct fittings are automatically inserted as you design your ductwork, saving you from time-consuming interruptions. When other duct fittings (such as bull-head tees, pant-legs, end caps, or wyes) are needed, use the Add Duct Fittings command. Because the duct fittings options are based on commonly used technology, you'll get a ductwork design that models a real-world installation, thereby reducing errors and minimizing project design time.



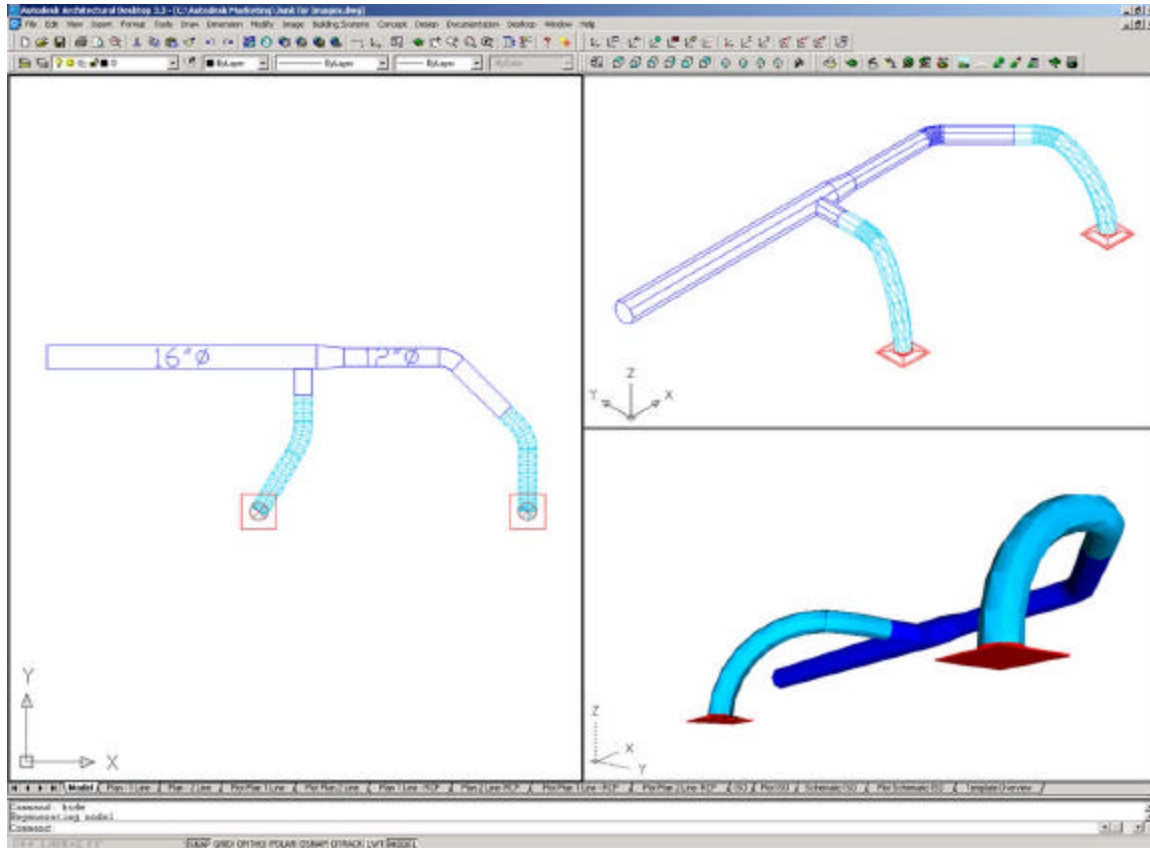
Quickly insert the right duct fitting for your design.

Custom Duct Fittings: Just about every duct system requires some sort of unique fitting or part. For this situation Autodesk Building Systems has the Create Duct Custom Fitting tool. Using the geometry of simple AutoCAD® entities, the Create Duct Custom Fitting command constructs an object-based fitting that can be used and modified in the same fashion as a normal fitting. These special fittings enable you to create such complex ductwork designs as mechanical rooms, surgery suites, and custom exhaust applications—whatever your customers need.



Creating custom duct fittings is easy using lines, arcs, and circles.

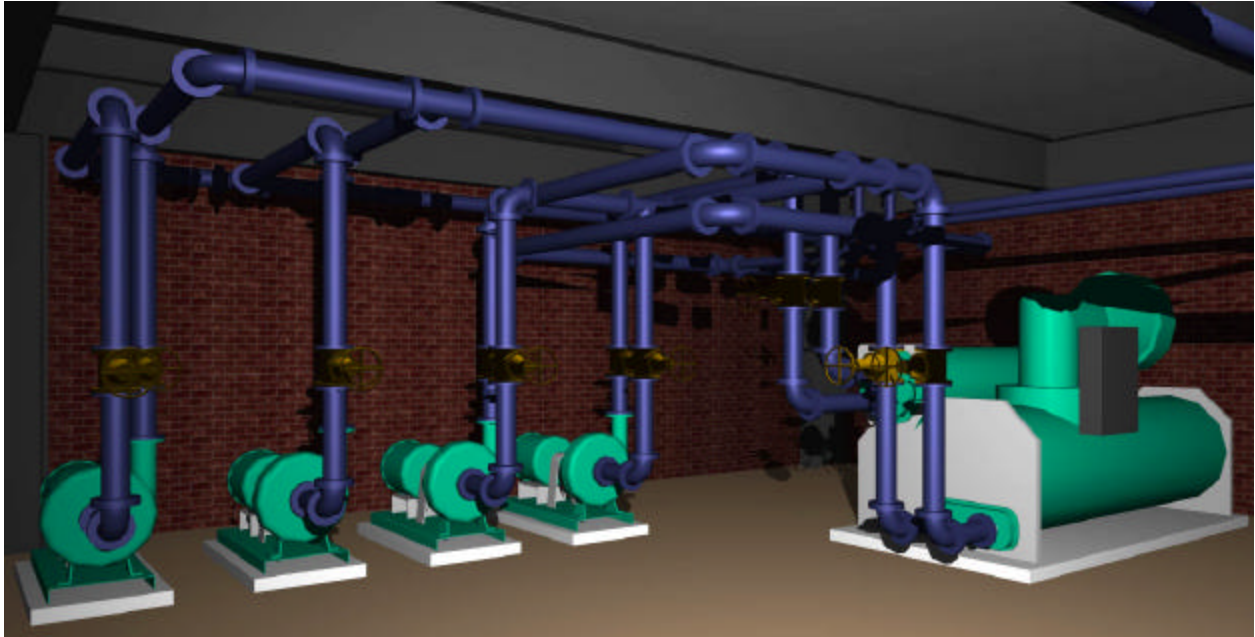
Flex Duct: You can draw flexible duct using the Add Flex Duct command. With the flex duct-specific layout preferences you can change properties like pattern of flex duct, insulation, routing, and connections to get the look you want. Routing the flex duct from the terminal connection point to the takeoff couldn't be easier, and modifications can be made using grips. Because flexible duct is an intelligent object, you can take advantage of interference detection, making it easier to coordinate ductwork, piping, and electrical systems.



Use flexible duct to connect to your diffusers and grilles or show a flexible connection to equipment where vibrations might be a concern.

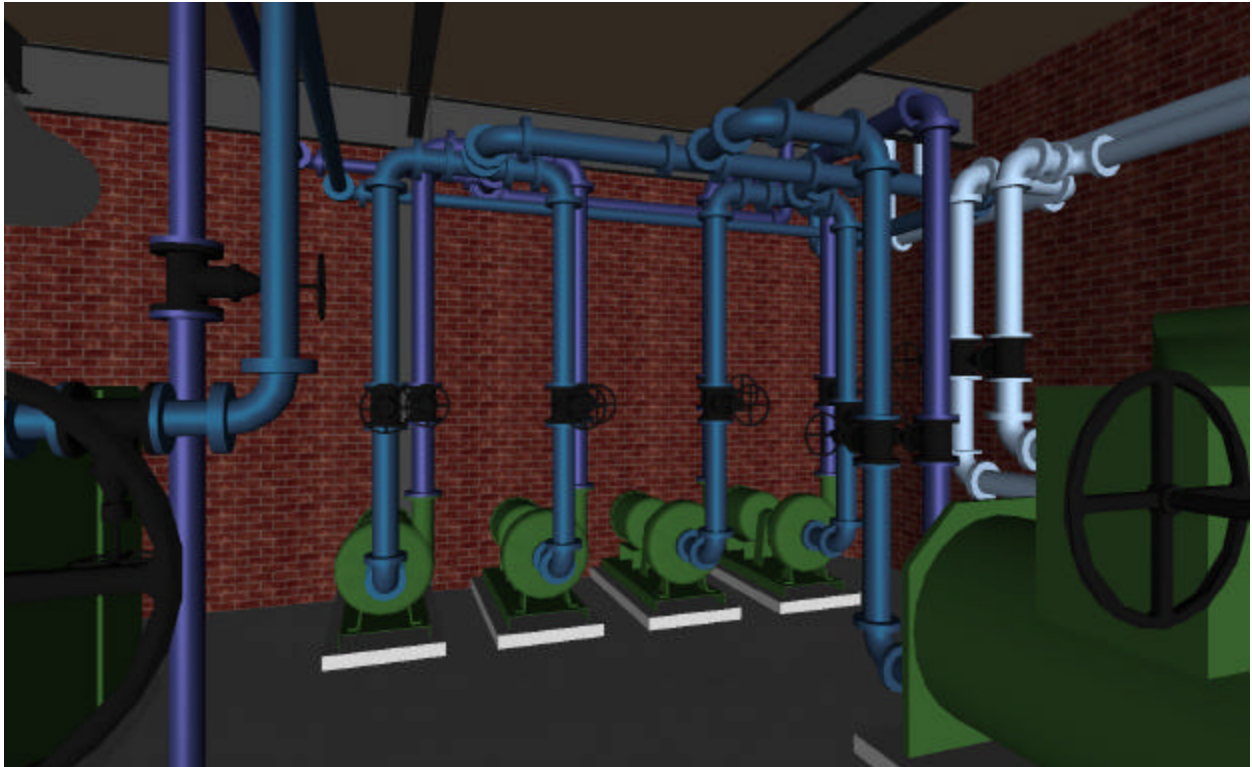
Mechanical Piping

Adding mechanical pipe to your engineering design is much like adding ductwork. All piping is drawn using object-based technology, giving you a 3D model of the mechanical piping system. This creates a more accurate piping design, which reduces errors and increases cost savings.



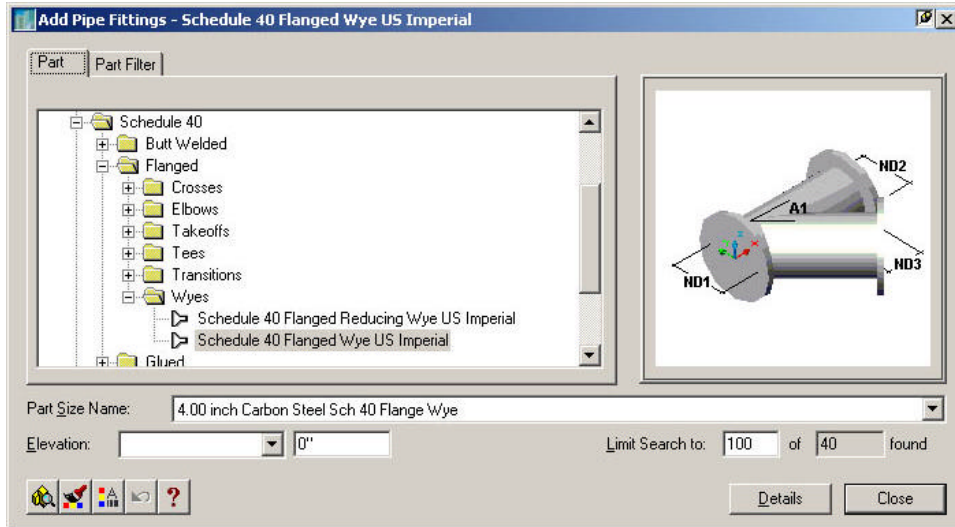
Give a real-world look and feel to your clients' mechanical rooms.

Pipe: Designing a piping system using Autodesk Building Systems is quick and easy. Whether you're laying out a chilled water system, a hot water heating system or even a steam system, you'll save time in your design process using tools like the compass and the new Suggested Layout methods added in this release. Because you're using objects to build your building information model it's simple to edit properties like elevation, system type, size, fittings, thickness gauge, and materials.



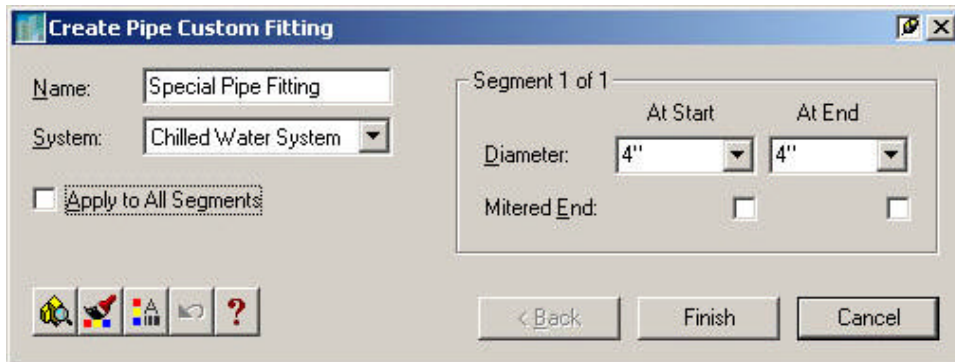
Laying out your piping design couldn't be easier.

Pipe Fittings: Autodesk Building Systems automatically inserts pipe fittings while you draw. To place a specific fitting such as a tee, a coupling, a cross, an end cap, or a takeoff, use the Add Pipe Fittings command. All pipe fittings and connections are based on industry standards. This results in a more accurate, intelligent building model and minimizes costly change orders that occur during construction. You can easily change the design without redrawing, and by reducing design time you save money.



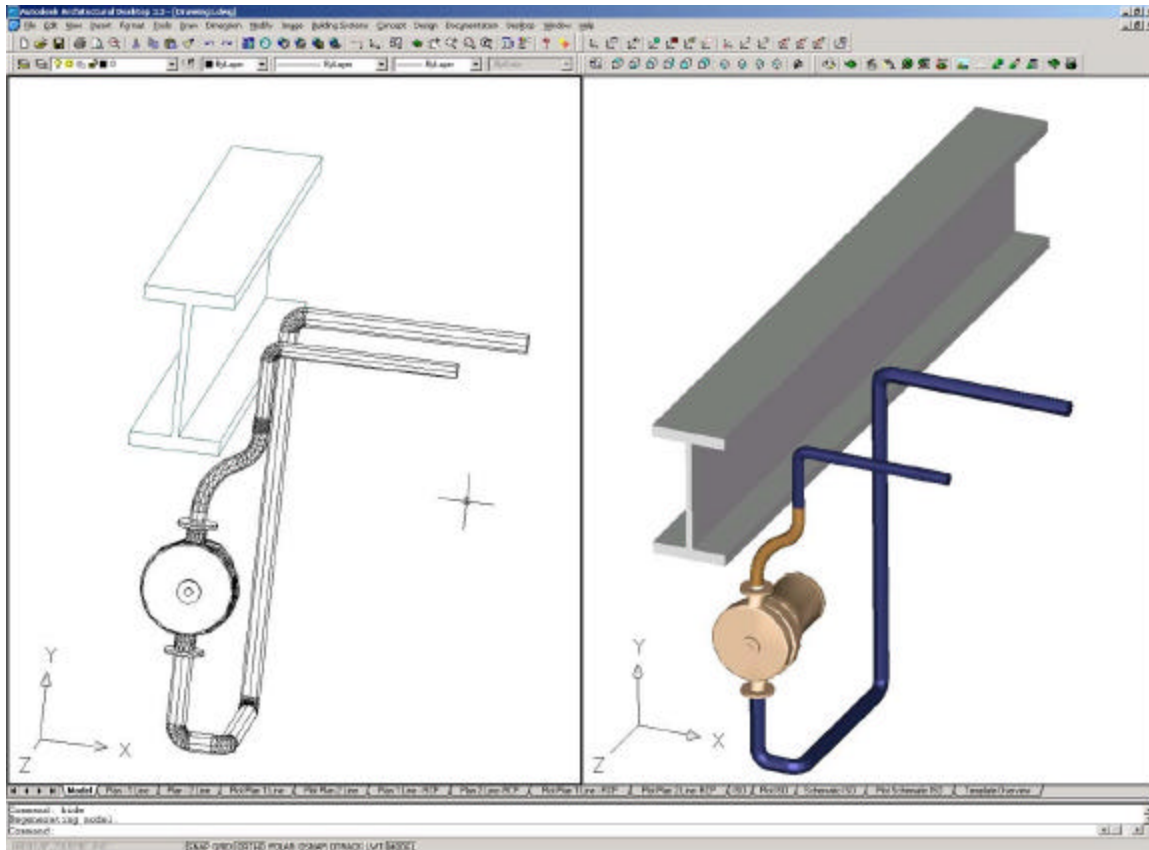
Insert a wye fitting or just about anything you need to complete your piping design.

Custom Pipe Fittings: To create a custom pipe fitting, simply draw the fitting using AutoCAD lines, arcs, circles, or polylines. Once you've drawn the fitting, use the Create Pipe Custom Fitting command to specify a start and end condition. You can modify this intelligent 3D fitting just as you would a normal fitting. With the ability to produce custom fittings on the fly, you can approach any design problem knowing that you have the tools to solve it.



Need a unique fitting? Try creating an intelligent one using simple AutoCAD entities.

Flex Pipe: Whether it's a vibration isolation problem or just a tight space, the Add Flex Pipe command connects your equipment to your mechanical piping system with ease. Like the Add Flex Duct command, the Add Flex Pipe command is routed using line segments, arc segments, or new spline segments, any of which can be used with the compass. You can also specify flex pipe properties that are unique to mechanical piping systems—a useful feature for automatically creating a bill of materials. Because schedules are dynamically linked, they reflect updates and revisions when they happen, minimizing documentation time and increasing accuracy.

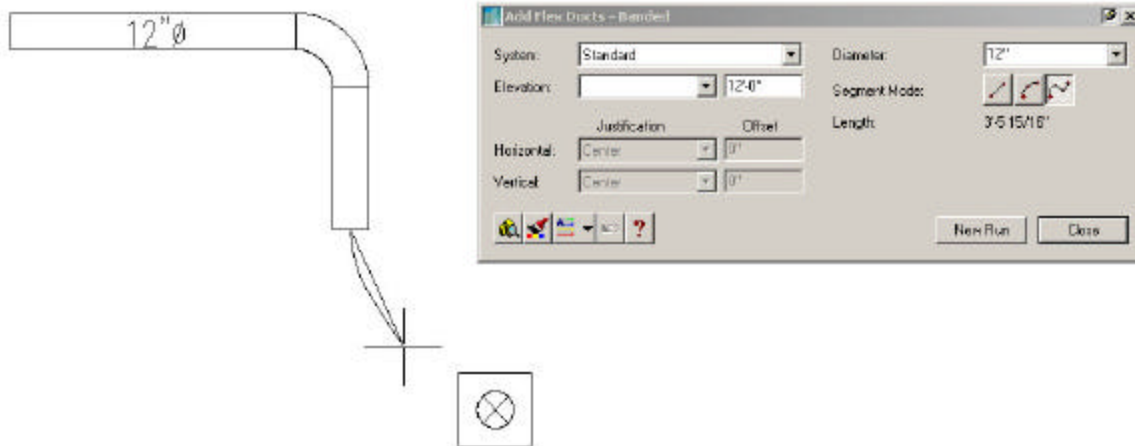


Get to pumps and other mechanical equipment in hard-to-reach places using flexible pipe.



Splined Flex Duct and Piping

For a smoother look, Autodesk has added the ability to control the segments of flex duct and piping using a spline in lieu of an arc or a segment. Now your flexible components can more closely resemble a real-world installation.

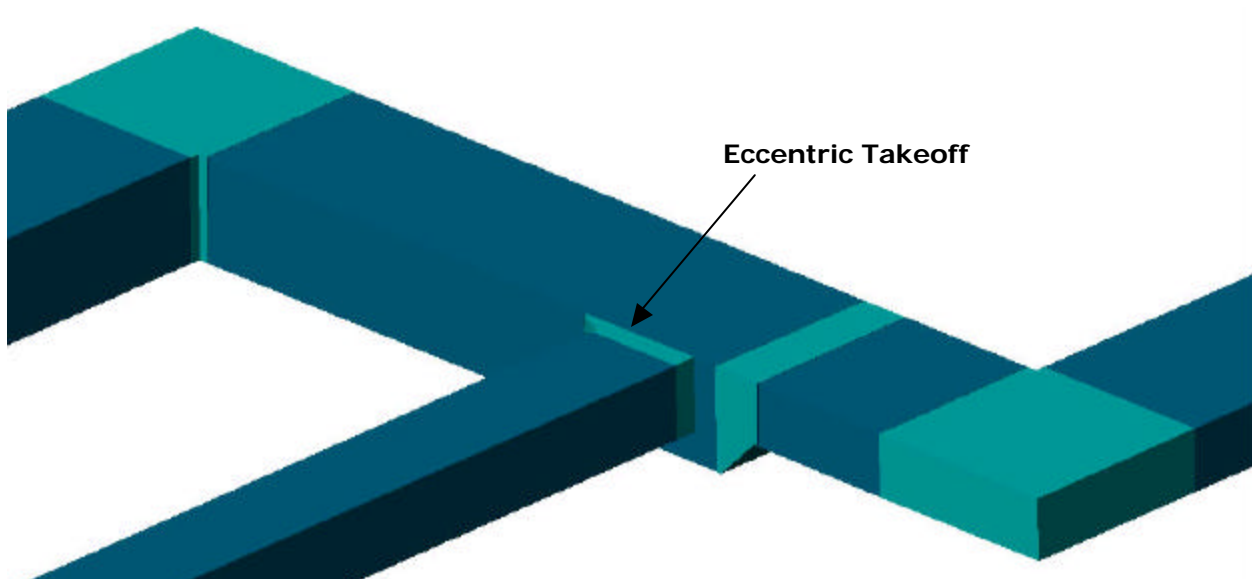


Achieve a smoother look to your flex duct and flex pipe.



Eccentric Takeoffs

When space is at a premium and you need to keep your piping and ductwork tight up against the structure, use the new eccentric takeoffs offered in Autodesk Building Systems software. You'll be able to insert your duct and pipe takeoffs and align them to a specified edge of the main duct or pipe run.

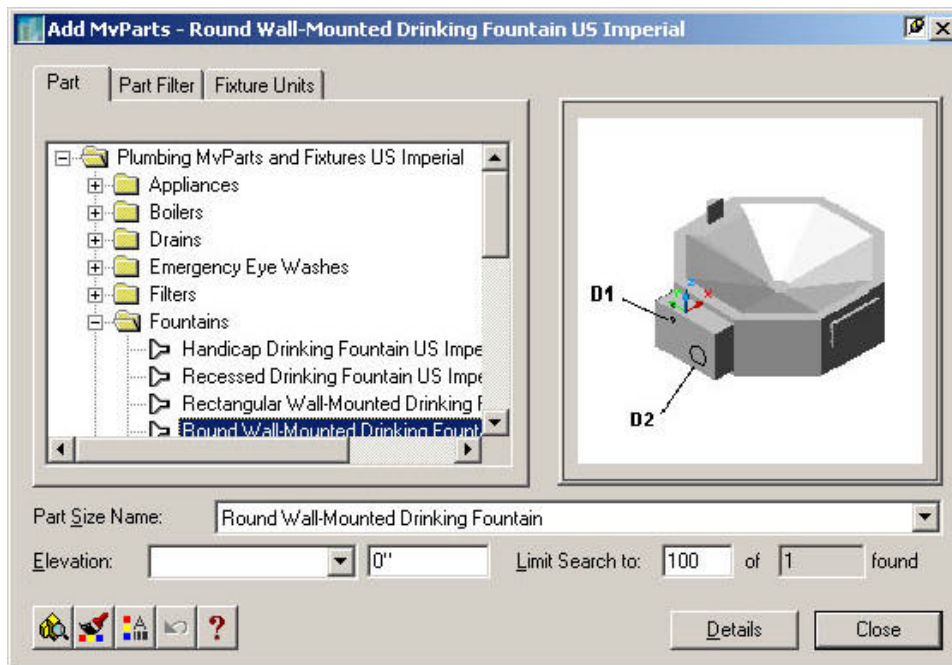


When space is at a premium, every inch counts. Route your ductwork and piping adjacent a chase wall or to the underside of structural beams.

Plumbing

MvParts—Fixtures and Equipment

The content catalogs in the Autodesk Building Systems plumbing module offer an innovative approach to identifying, viewing, and inserting plumbing fixtures and equipment into your plumbing design. The intelligent MvParts increase your productivity by minimizing modification time and by assisting with scheduling and labeling. Fixture unit properties (used for pipe sizing) can be specified independently for fixtures and equipment selections.



The intelligence of MvParts helps with the early stages of design.

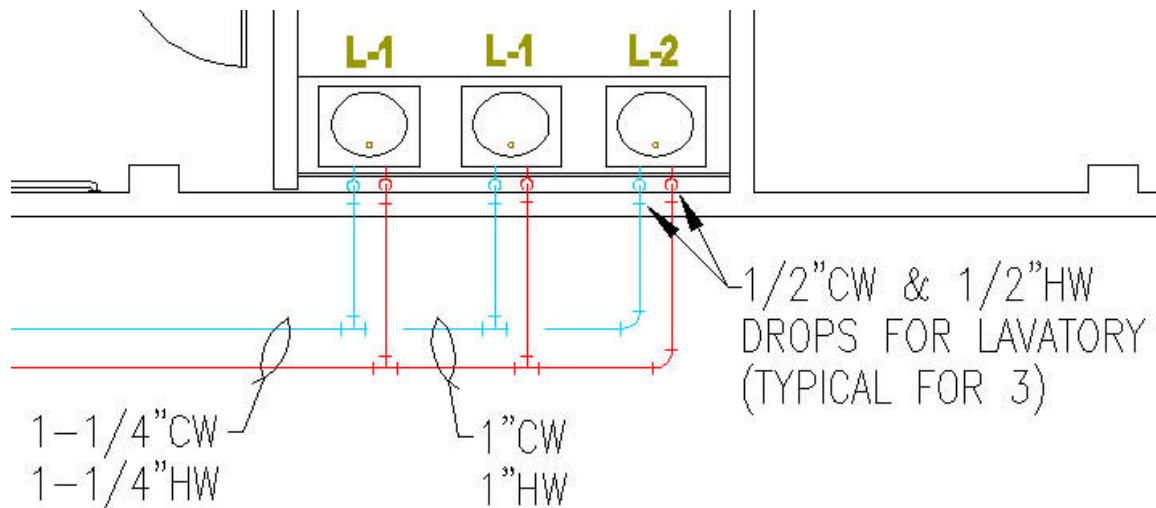
Here are the new fixtures and equipment available:

- **Appliances**—Dishwashers and washing machines
- **Boilers**—Hot water boilers
- **Drains**—Rectangular and round floor drains
- **Emergency Eye Washes**
- **Filters**—Sand filter, rack mounted, wall mounted
- **Fountains**—Handicap, recessed, rectangular, wall mounted
- **Heaters**—Cabinet unit heaters, baseboard, steam heaters, unit heaters
- **Lavatories**—Oval, rectangular, vanity, wall mounted
- **Pressure Regulators**—Hand knob operated, wrench operated
- **Pumps**—Horizontal discharge sewage, pressure operated, inline, vertical discharge sewage, vertical pressure operated

- **Showers**—Corner shower stall, rectangular shower stall, rectangular shower stall with seat
- **Sinks**—Floor sink, two-compartment and three-compartment sinks, service sink, scrub sink, utility sink
- **Strainers**—Basket
- **Suction Diffusers**—Flanged suction, threaded suction
- **Tanks**—Vertical storage tanks, fuel tanks, mixing tanks
- **Toilets**—Bidet, floor mounted, flush tank, wall mounted
- **Tubs**—Whirlpool, bathtub
- **Urinals**—Wall hung, urinal stall
- **Water Heaters**—Instantaneous hot water heater, standard water heater
- **Water Softeners**

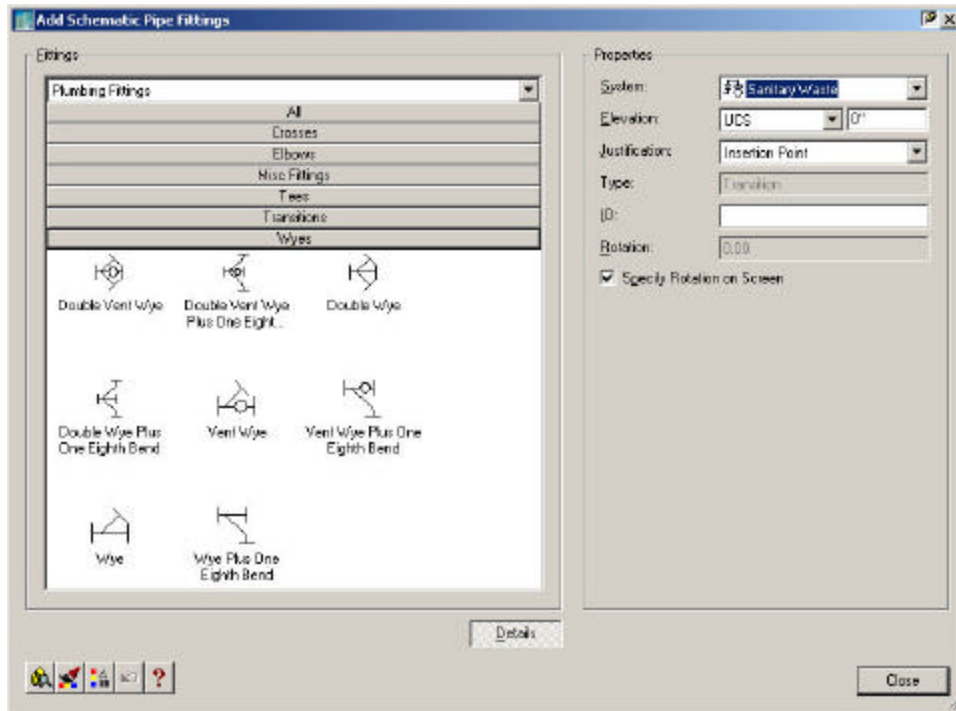
Plumbing Piping

Plumbing Schematic Piping helps you to design your plumbing systems more quickly and easily. Powerful design tools that automatically calculate slope and invert elevations of piping systems, for example, increase your productivity and minimize errors. Because the Autodesk Building Plumbing module controls your layer and graphics standards, your documents are well coordinated, thus saving time in the production phase.



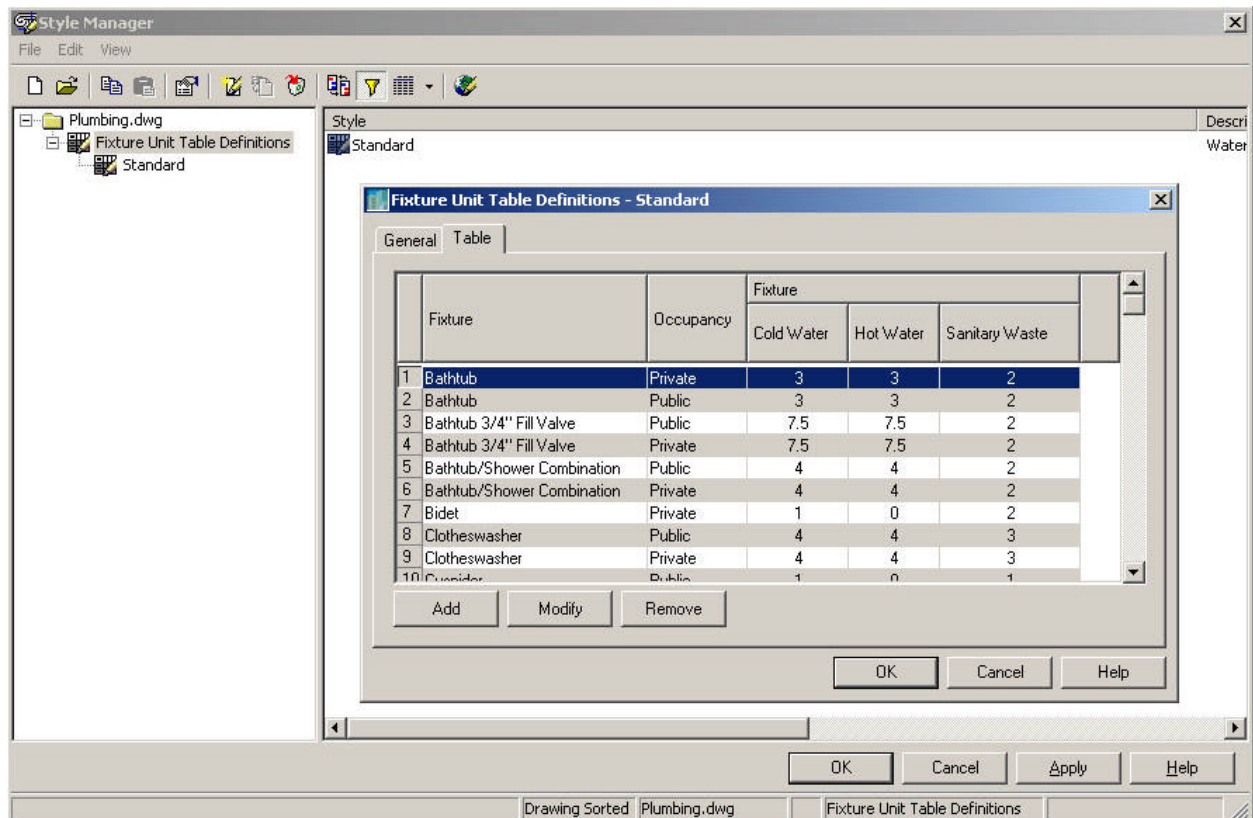
Easily create plumbing system designs using plumbing module tools.

Plumbing Pipe and Fittings: Even though the plumbing module automatically inserts elbows, tees, crosses, and transitions, you sometimes need to insert plumbing fittings manually. Whether it's a double-vented sanitary tee, shut-off valve, or cleanout, inserting plumbing fittings into your design has never been more efficient. Because the fittings automatically trim and align themselves properly to the plumbing schematic piping, your design time is reduced.



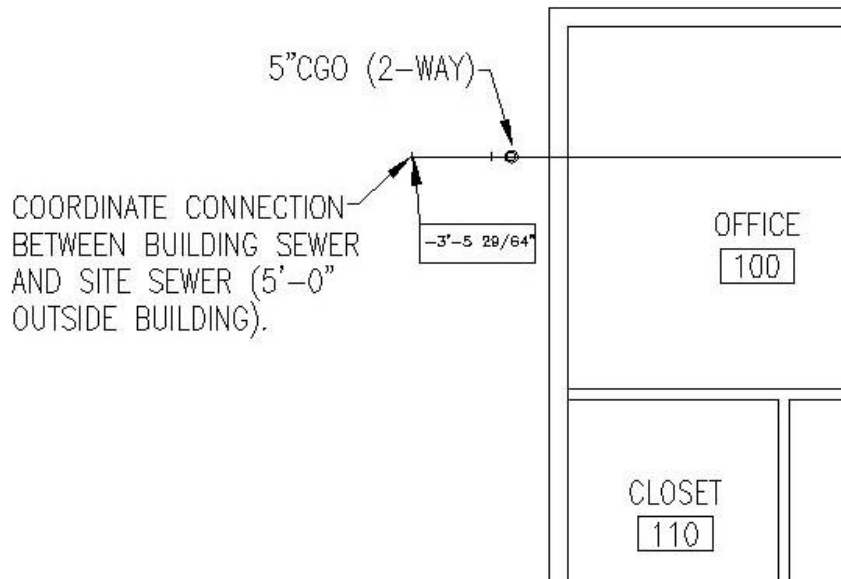
Drag easily identifiable plumbing fittings into your design.

Plumbing Tools: The Autodesk Building System plumbing module provides pipe sizing tables for supply piping (hot and cold domestic water) and sanitary waste, as well as a fixture unit table. Each of these tables is fully customizable. You can also create your own sizing tables. The module uses these tables to size various plumbing piping systems automatically, decreasing project cycle times and thus reducing costs.



Save time and money by letting the Autodesk Building Systems plumbing module size your systems.

Elevation Tags: An important requirement of a plumbing engineer's design is to coordinate the invert elevation of the building sanitary sewer and the site sewer system. For the purpose of construction documentation it's important to label the elevations of the building sewer piping at critical points. The plumbing module of Autodesk Building Systems calculates the elevation of the sanitary sewer piping based on slope and enables you tag those elevations easily.

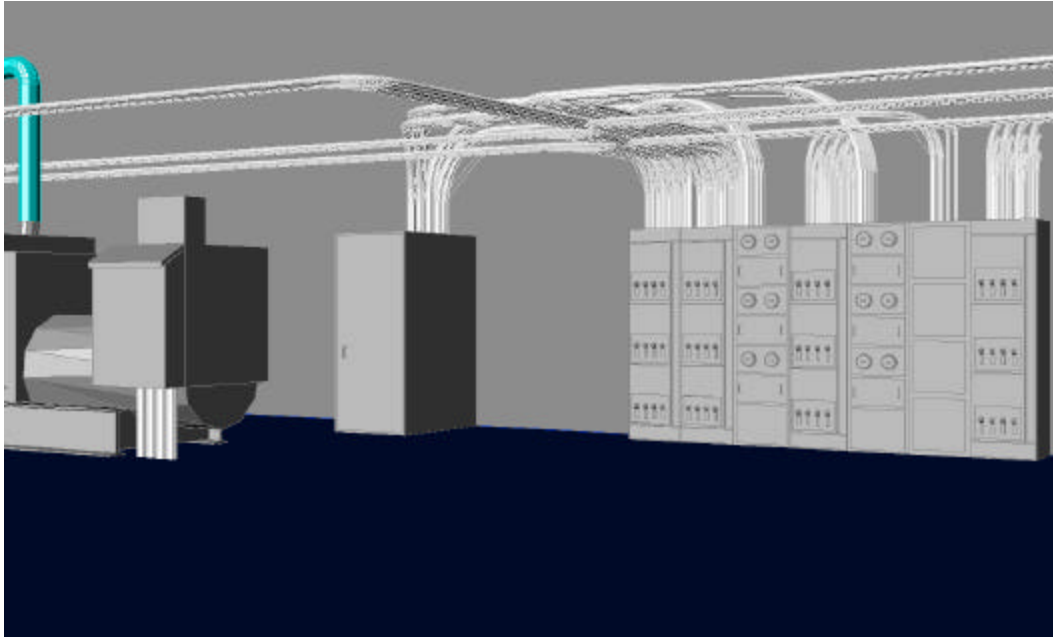


Tag your sanitary piping elevations.

Electrical

MvParts—Electrical Equipment

The electrical module of Autodesk Building Systems software gives you a more complete library of electrical equipment than previous releases. The industry-specific equipment acts in much the same way as its real-world counterparts. With intelligent connections and enhanced properties, the electrical MvParts can be easily integrated into your design, saving time otherwise needed for labeling, scheduling, and modifications.



Use interference detection with electrical MvParts in tight electrical rooms.



New Content in the Electrical Module

- **Aluminum rigid conduit**
- **Automatic transfer switches**
- **Emergency generators**
- **Equipment switches**
- **Junction boxes**
- **Junction box tees**
- **Motor control centers**
- **New cable tray elbows**
- **Short-radius conduit elbows**
- **Starters**
- **Switchboards**
- **Termination boxes**
- **Threaded GRC and IMC conduit and fittings**
- **Transformers**
- **Uninterruptible power supplies**
- **Variable frequency drives**

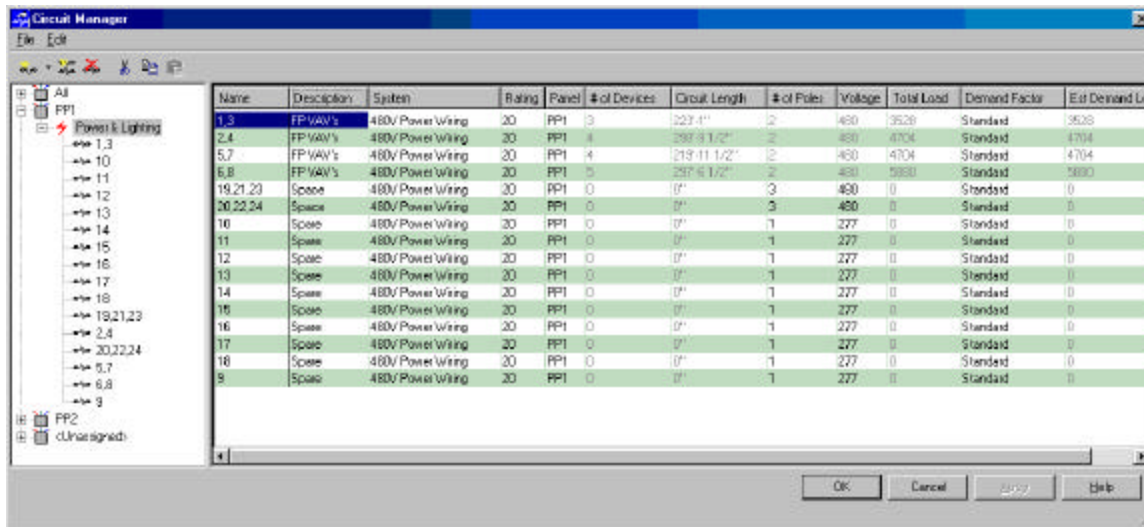


Circuits

Circuits are one of the key components in building the logical part of an electrical building information model. Using circuit objects, you can connect devices to panels with or without wiring. You can also easily display and modify information about the circuits in the drawing.

By setting properties on the device, you specify which panel the device is connected to. The circuit object provides a connection from the panel to the device. The circuit object can be multipole, in that it can be defined as a single, two-pole, or three-pole circuit and can operate at a specific voltage. You can also apply simple demand factors to circuits in the drawing so that you can complete feeder and service calculations more easily.

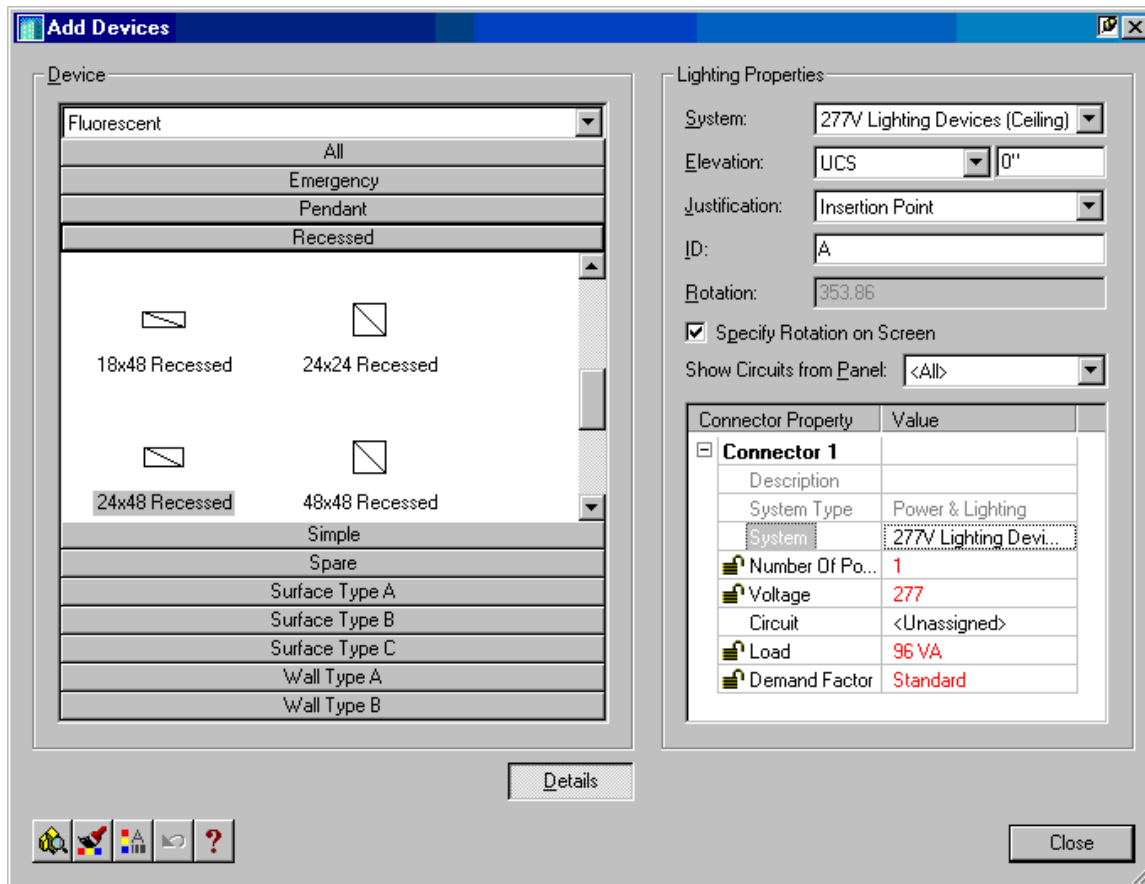
Circuit Manager: The Circuit Manager is the central location for accessing the new circuit object as well as all circuit information. With the Circuit Manager you can create and delete circuits and move them between panels. It's also where you enter much of the data needed to complete the panel schedule. Information from the electrical building information model, such as number of devices, total load, estimated demand load, estimated circuit, circuit description, and circuit rating length, is also displayed in the Circuit Manager.



Use the Circuit Manager to create, edit, and control circuits.

Devices

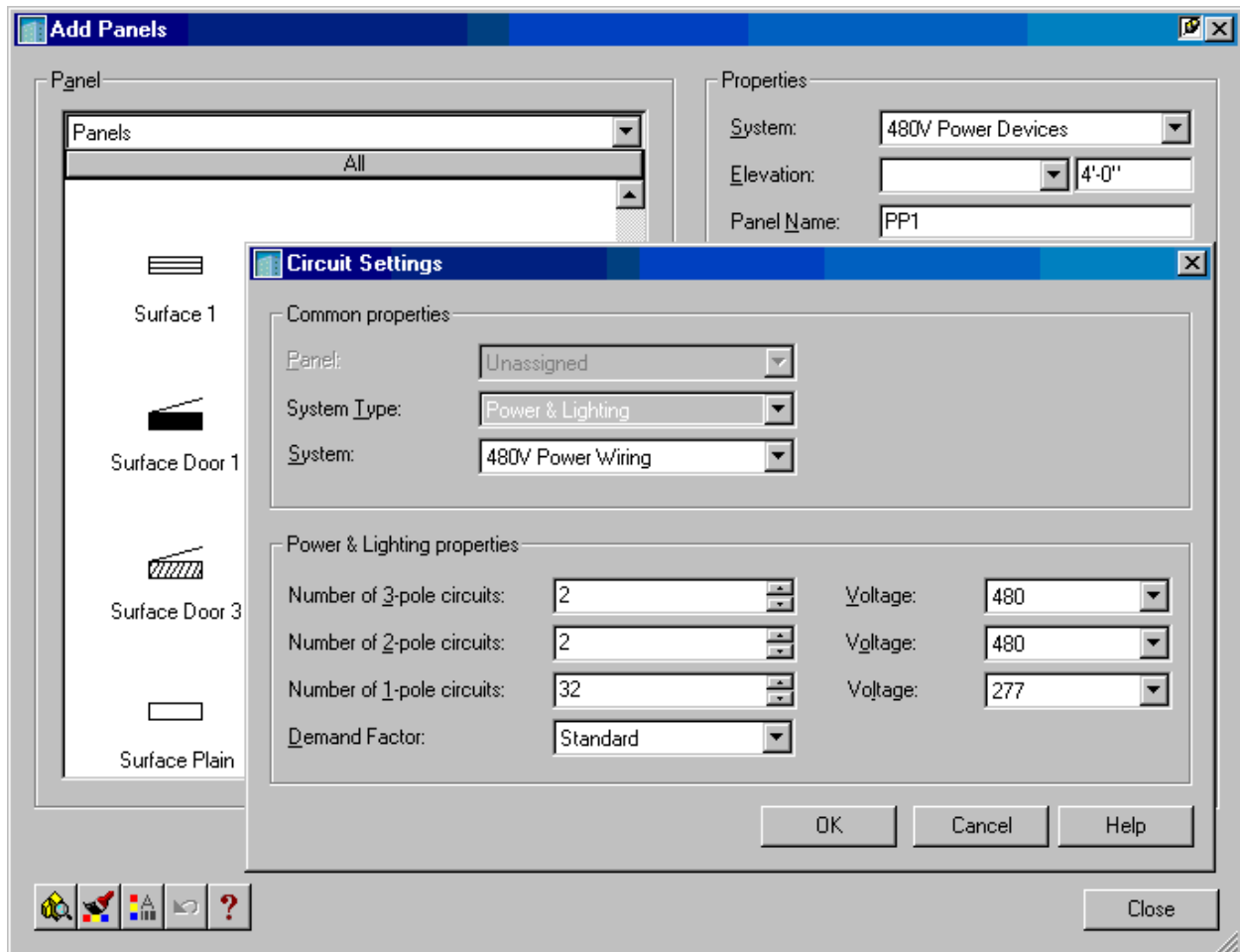
Electrical devices in Autodesk Building Systems provide traditional 2D symbology that supports your current design and documentation process. Also provided are 3D object representations that help you to complete the building information model. The feature enables detection of interferences with other objects created using the mechanical and plumbing modules, as well as structural members created using Autodesk Architectural Desktop. Electrical properties such as voltage, number of poles, and load can be applied to devices, and devices can be connected to multiple types of circuits. You can also preset many of the device properties in content files, or within a single drawing, which helps you to create a better-coordinated, more consistent design.



Set device properties for better consistency and coordination.

Panels

The electrical module of Autodesk Building Systems software introduces a new Panel feature that provides a means for distributing and grouping circuits in the logical electrical model. You can select panels from an externally defined set of panel styles and add new circuits automatically when a new panel is inserted into the drawing. You can specify the number and types of circuits to be added when a new panel is created by filling out a few key options before inserting the panel. This makes it quick and easy to create circuits associated with panels. You can also add panels to the externally defined set of panel styles to meet your company's existing standards.



Use panels to group circuits.

Panel Schedule - PP2

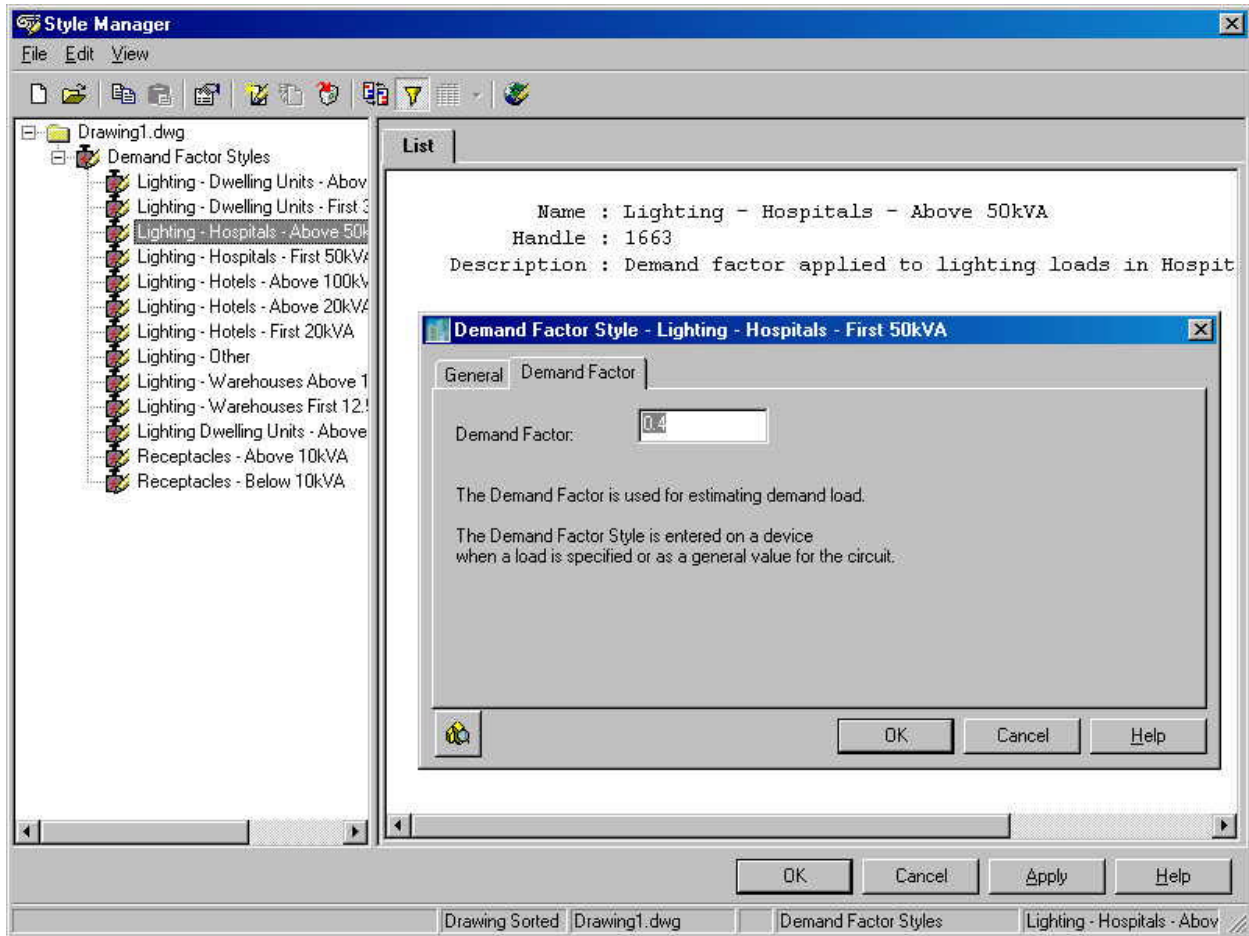
DRAWING: C:\My Documents\REA Marketing\Dataset\Full Power.d
PANEL PP2

37



Demand Factors

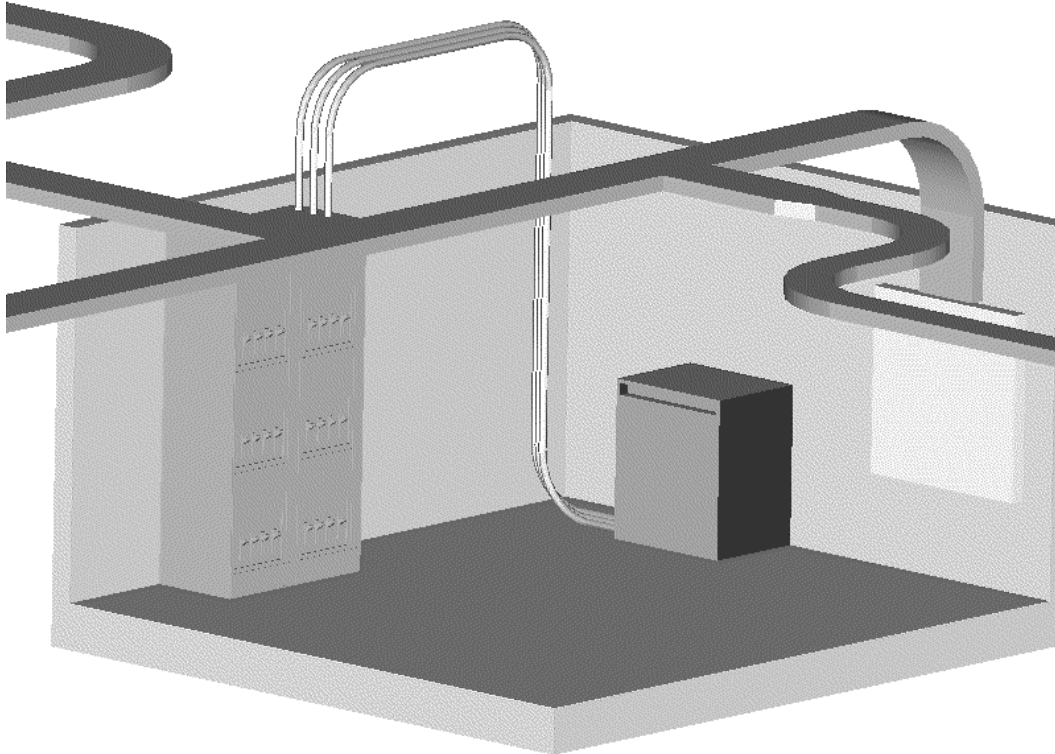
Electrical engineers use demand factors to estimate the demand load on a circuit, feeder, panel, or service. You can apply Demand Factors to each connector on an electrical device, to an entire circuit, or to both.



Create multiple demand factor styles for your electrical design.

Conduit, Cable Trays, and Fittings

With the addition of cable trays, cable tray fittings, conduits, and conduit fittings, the electrical module provides a 3D electrical capability to help you complete the building information model. You can use intelligent 3D objects to check for interference with other building systems objects. Not only does this improve coordination between disciplines, it also increases productivity and minimizes errors. Now you can route cable trays and conduits, check for interferences, and still provide a 2D plan representation for construction documentation.



Use cable tray and conduit to create a 3D model of the electrical system.

Common Tools

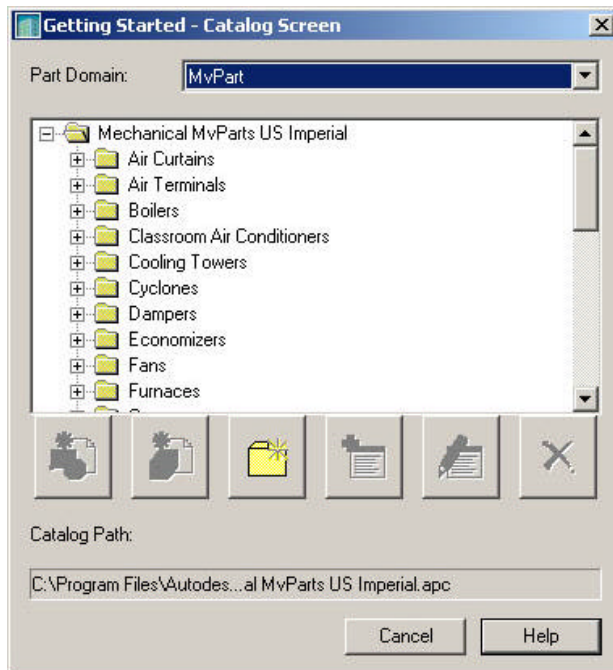
Many of the drafting tools and features are the same across the three modules of Autodesk Building Systems and are referred to as common tools. This section includes the following topics:

- **Improved MvPart Builder**
- **New Content Builder**
- **Catalog Editor Enhancements**
- **Schematics**
- **Interference Detection**
- **Scheduling**
- **Sections**
- **Layer Manager**
- **Display Manager**
- **Style Manager**
- **i-drop® Technology**



Improved MvPart Builder

In response to users' feedback the MvPart Builder is significantly improved for this release. The dialog boxes are more user friendly, and creating a piece of equipment using solid model blocks is a snap. You can create the different view blocks, as well as the bitmap image, automatically. Placing and creating the connectors is more intuitive than before.

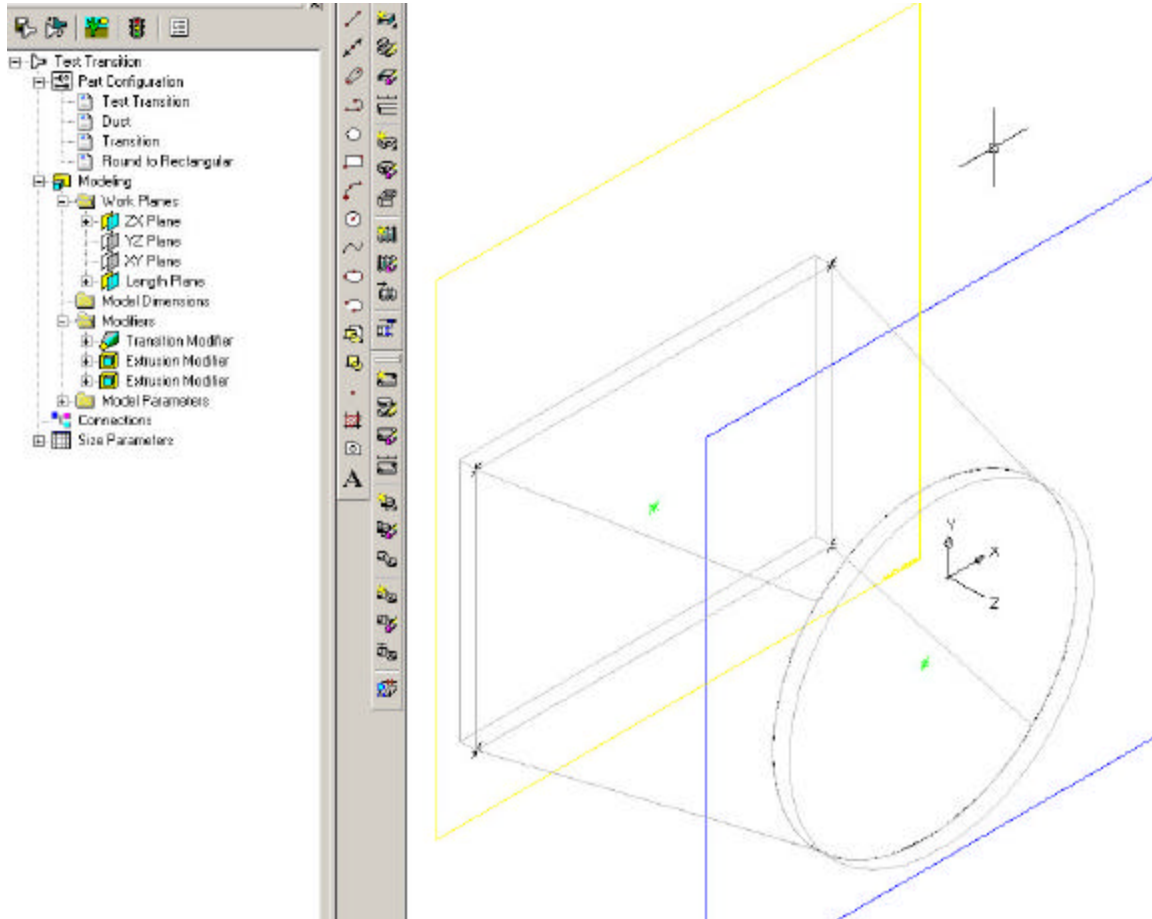


Dialog boxes have changed to create a more user friendly interface.

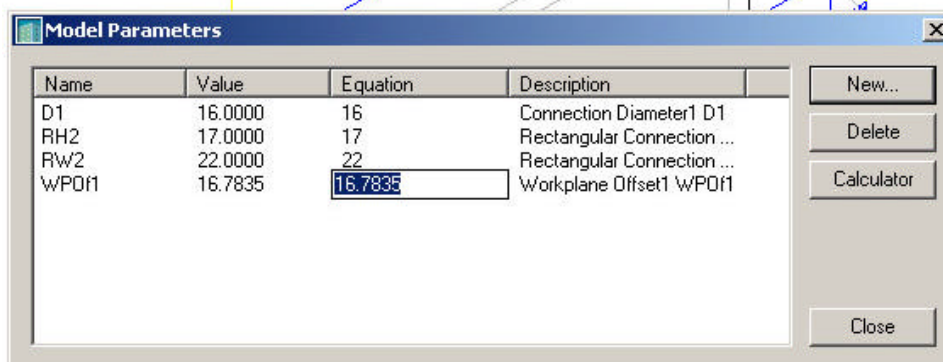


New Content Builder

The new Content Builder is a parametric part creation tool that enables you to model different parts and equipment for your mechanical, electrical, and plumbing designs. Each part created can intelligently size itself based on logical size data, saving you time when generating libraries of equipment and fittings. Sizes can be predefined and published with the part in Table Data Storage or custom-sized at runtime, which gives you added flexibility.



Use the Content Builder to produce parametric MvParts and fittings.



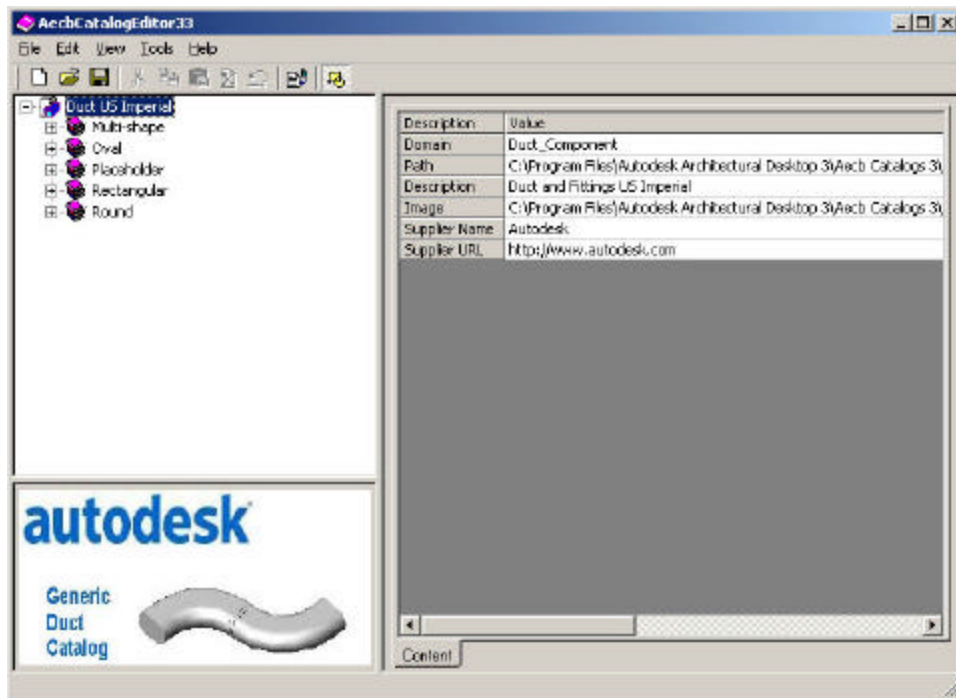
Part sizes are easily added and edited with the Content Builder.

With the Content Builder you can easily copy part families by clicking the Save Part Family As button. This feature lets you navigate to a new location in the content tree to save the part. It relieves you of the need to remodel each part for every material and connection type.



Catalog Editor Enhancements

The Catalog Editor is a stand-alone, single document interface application that runs outside the AutoCAD environment. It is designed to enable you or your CAD manager to edit or add content to the extensive catalogs already being provided.



Enjoy a more user friendly Catalog Editor.

The improvements include

- Excel-like behavior
- Ability to add and delete properties
- More intuitive user interface
- Simplified tree structure
- Editing capabilities
- Right-click context menus



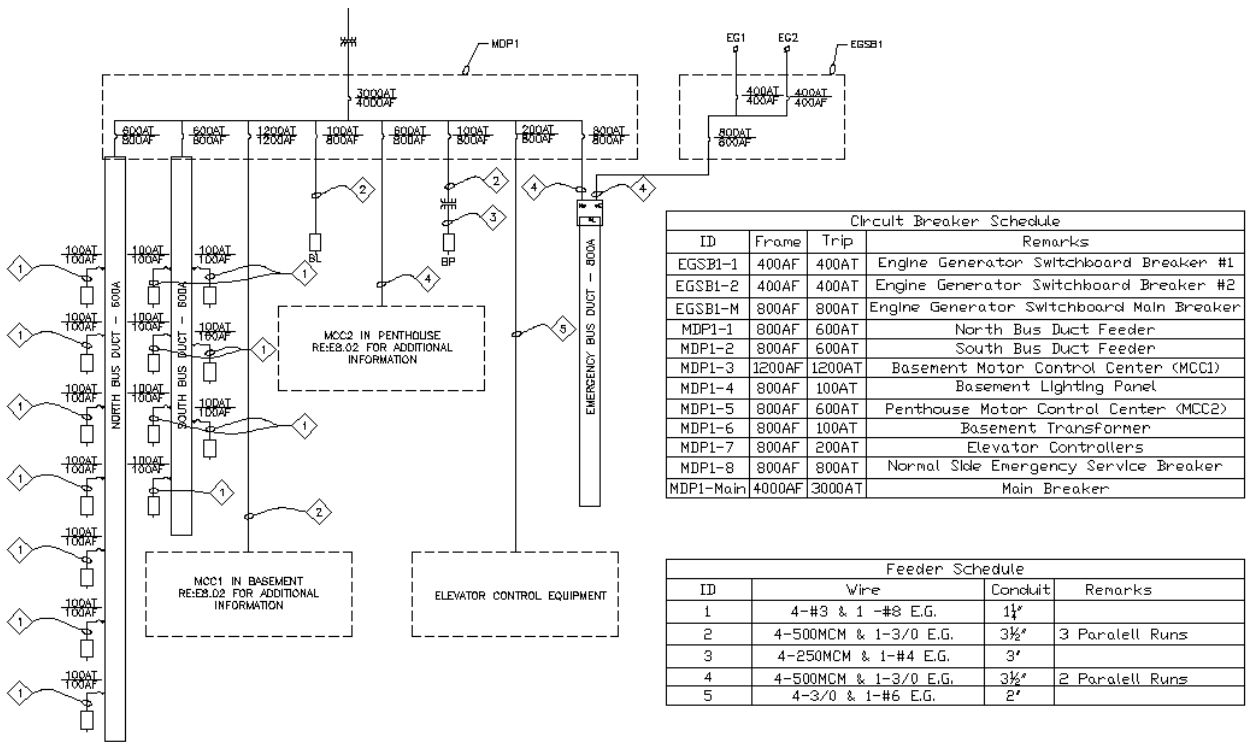
With the more user friendly environment made possible by these enhancements, you'll find it a lot easier to create or edit parts for your catalogs.

Schematics

There will always be a need to produce 2D, not-to-scale, flow diagrams and details of intricate building systems. The schematic tools in Autodesk Building Systems meet this need.

Schematic Diagrams and Details

With intelligent schematic symbols you can connect to schematic lines without the hassles of trimming lines, rotating symbols, or repairing broken lines. You can further enhance your schematic representations by creating schematic styles for symbols and lines. With style settings you can control design rules for cleanup, annotation, overlapping graphics, display management, and other drafting practices that are crucial in developing high-quality, detailed schematics.

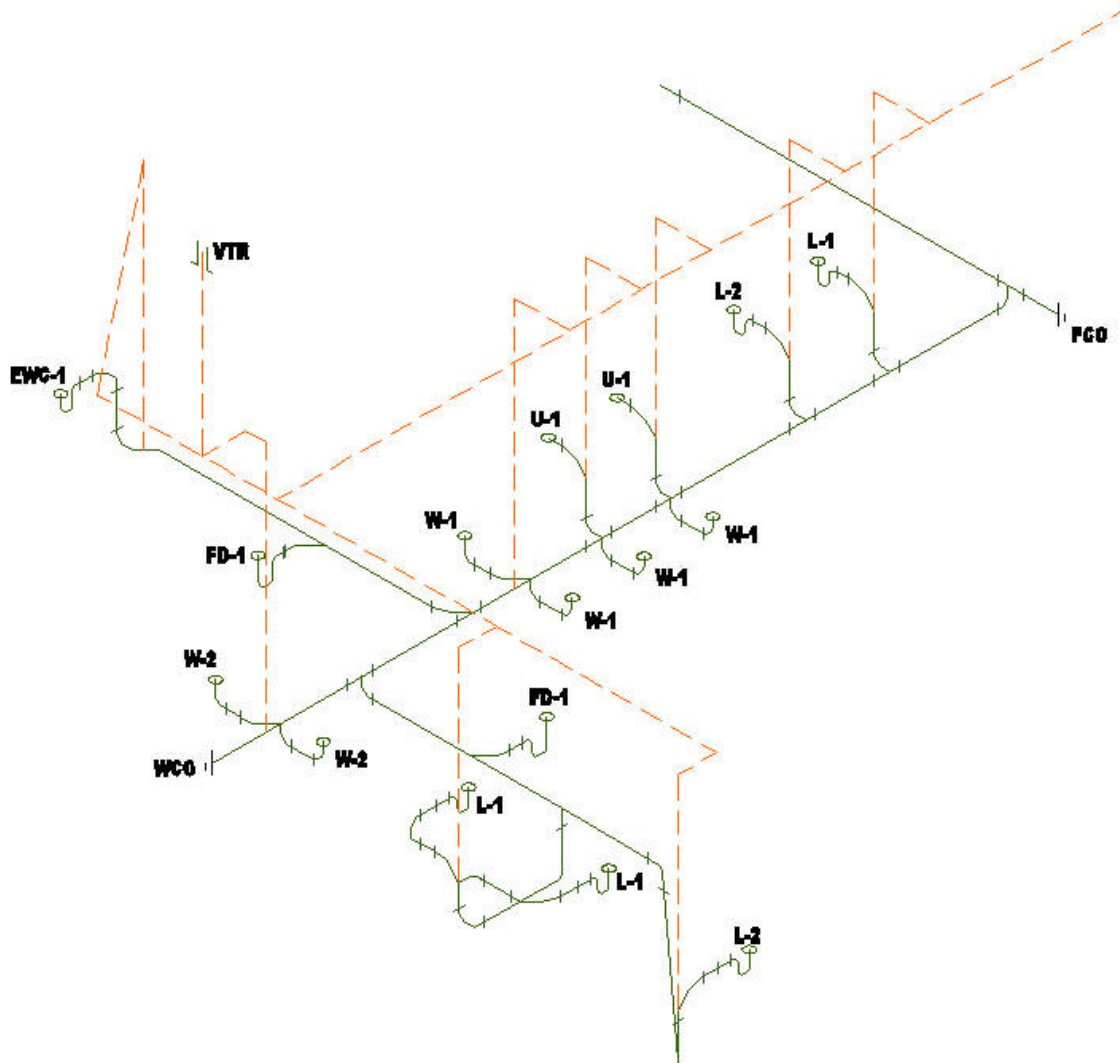


Schematics are easy to create when intelligent symbols automatically trim the schematic line.



Isometric Schematic Diagrams

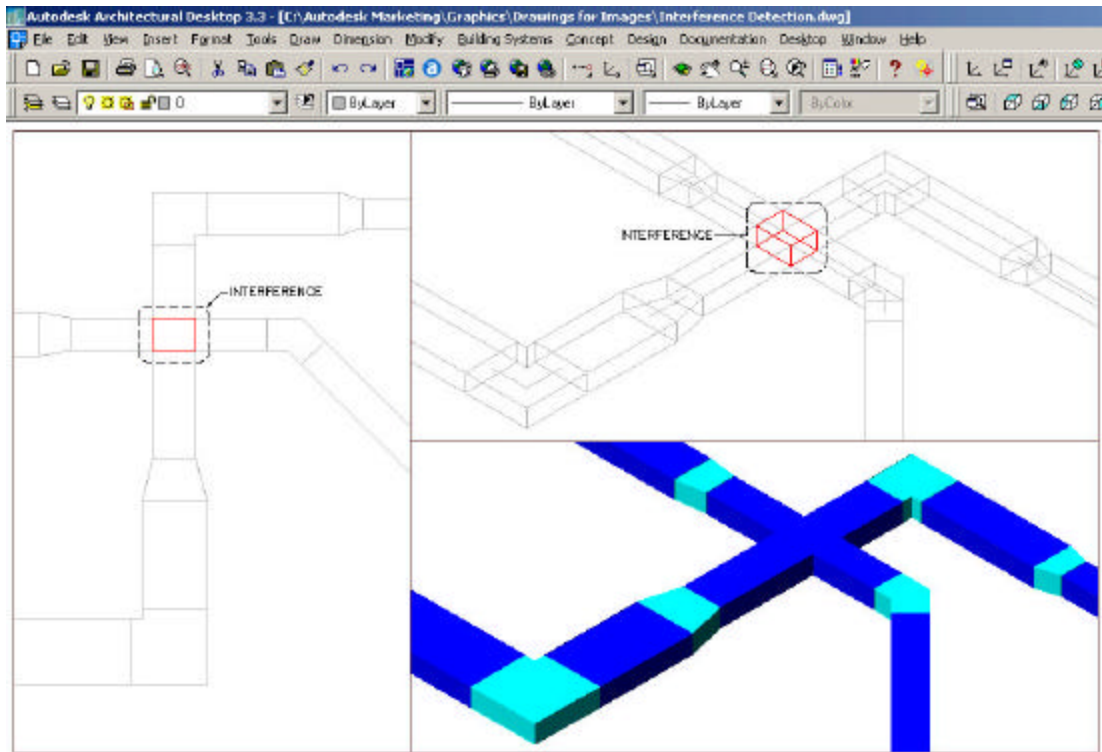
In addition to creating standard schematics drawings you now have the ability to lay out isometric schematic diagrams. After you select Isometric Mode in either the Schematic Line or Schematic Symbols dialog box, the cursor, as well as the symbols and fittings, adjusts to the correct iso-plane.



Produce isometric riser diagrams quickly and easily.

Interference Detection

One of the greatest advantages of creating a 3D model is the ability to check for conflicts between mechanical, electrical, and plumbing systems and the structural components of a building. For a large project this process is time consuming, and it is unlikely that all occurrences would be detected. Autodesk Building Systems can highlight the interferences to make them easier to locate. Intelligent feedback, like interference detection, helps you create a more accurate building model, minimizing costly errors.

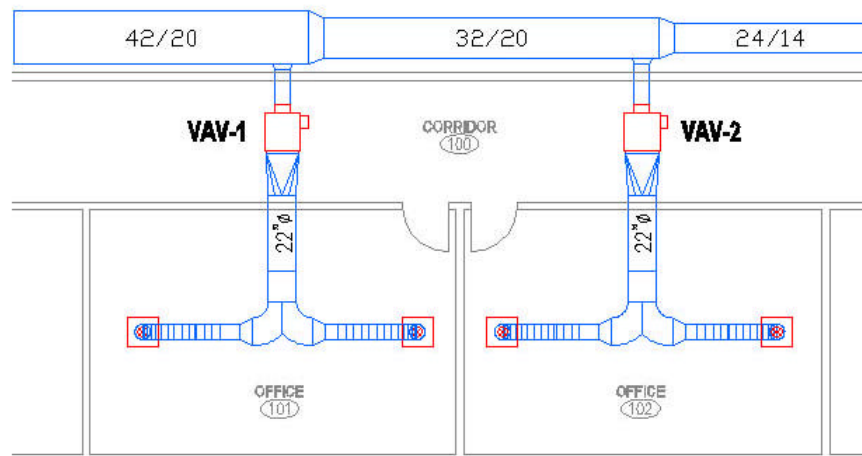


Let Autodesk Building Systems find problem areas in your design automatically.

Scheduling

Using the schedule generator you can track any object or entity in your designs. Because schedules are dynamically linked to your design data, they automatically update as your design changes. You can easily create detailed schedules from the building model to achieve significant improvements in productivity and accuracy. Using Autodesk Building Systems schedules, you can be confident that design information is synchronized with documentation, ensuring accuracy and saving time.

SHUT OFF VAV BOX SCHEDULE									
TAG	CFM		MIN. INLET S.P. (IN. W.C.)	INLET SIZE	REHEAT		CONTROLS	MANUFACTURER	NOTES
	MAX.	MIN.			GPM	KW			
VAV-1	1200	360	1.5	12"	1.5	-	PNEUMATIC	TRANE	ABOVE CEILING GRID
VAV-2	1200	360	1.5	12"	1.5	-	PNEUMATIC	TRANE	ABOVE CEILING GRID



Schedule VAV boxes, diffusers, air handlers, and anything else you need using Autodesk Building Systems scheduling tools.



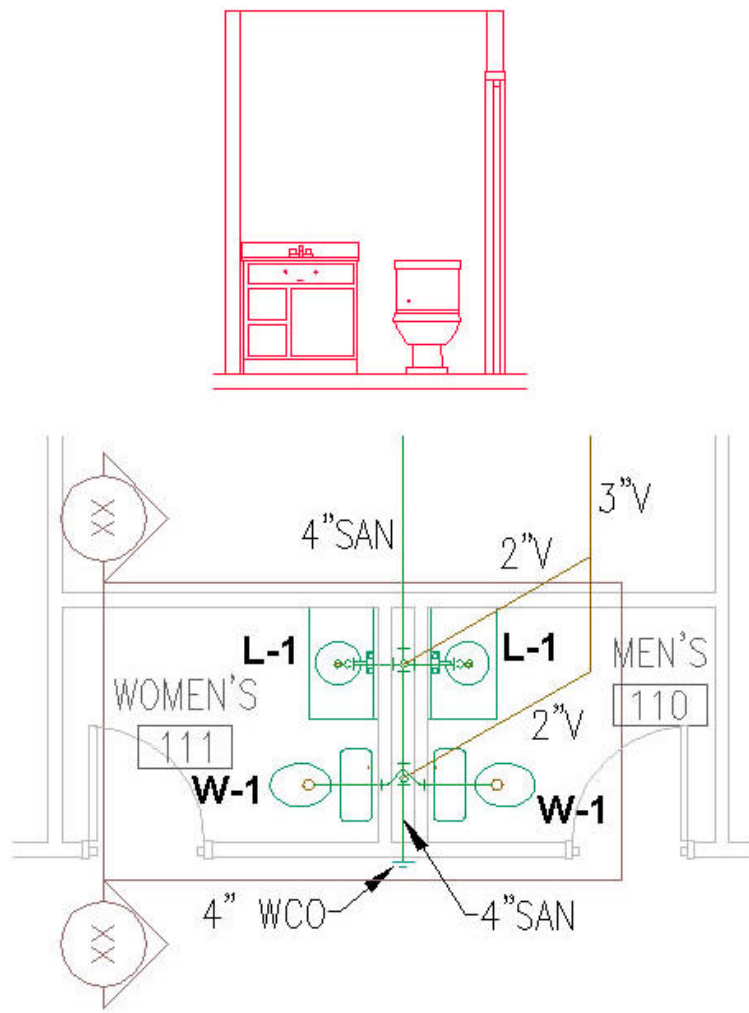
Expanded Scheduling Properties

Each object in the Autodesk Building Systems software has predefined industry-specific property sets associated with it, and these property sets can be used to create schedules. Autodesk Building Systems 3 has increased the amount of data available for scheduling to further automate the process. This equates to an increase in productivity and money in your pocket.

Sections

The primary goal of Autodesk Building Systems sections and elevations is to reduce the amount of time and effort it takes to produce a presentation-quality section and elevation from a building model. Autodesk wants to help ensure that your section and elevation information remains consistent with your design model. Because the sections and elevations are linked to your design, you don't have to make separate revisions for your design and

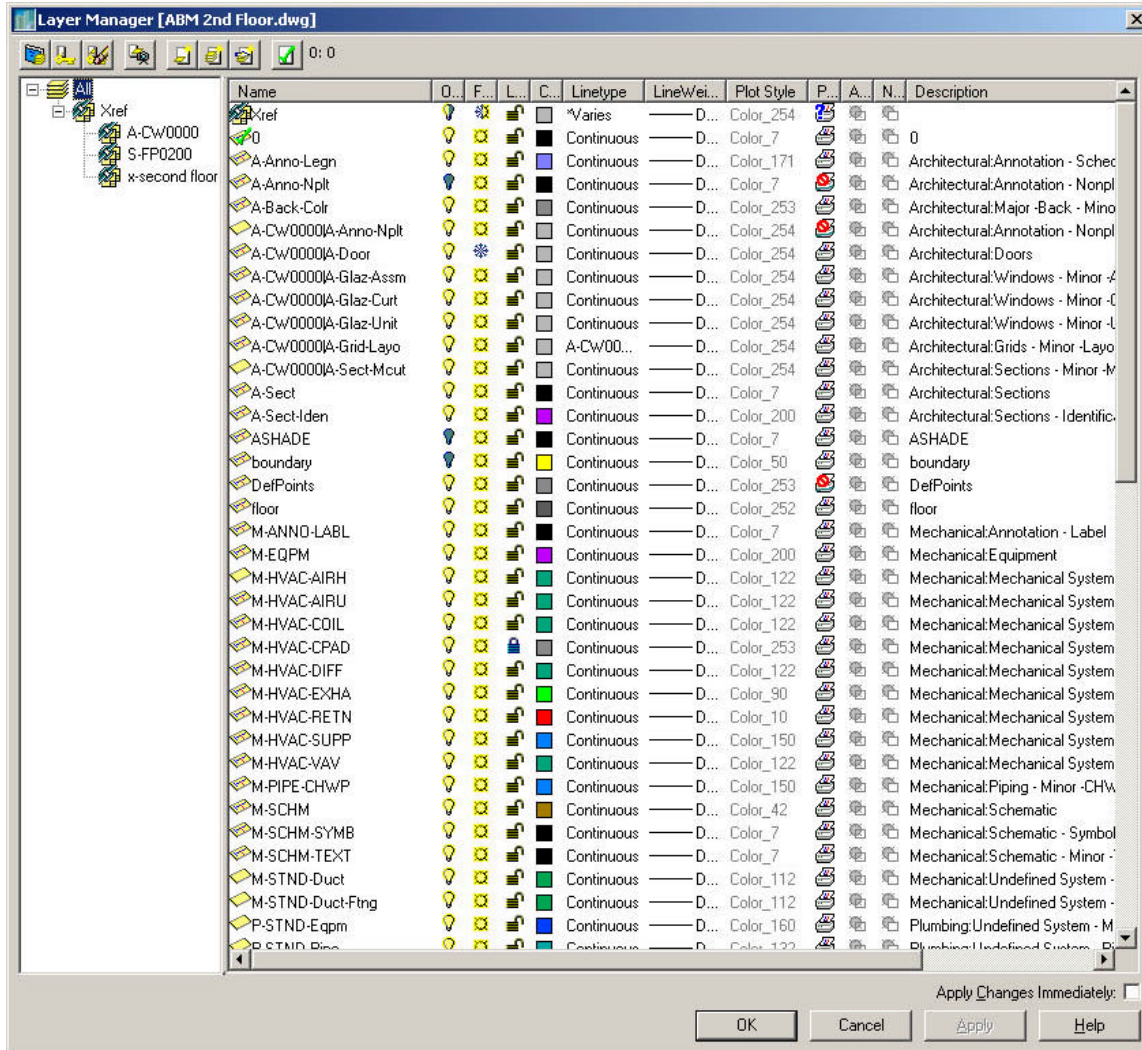
construction documentation data, saving time and ensuring the accuracy of your data and design.



Generate sections of important areas in your designs.

Layer Manager

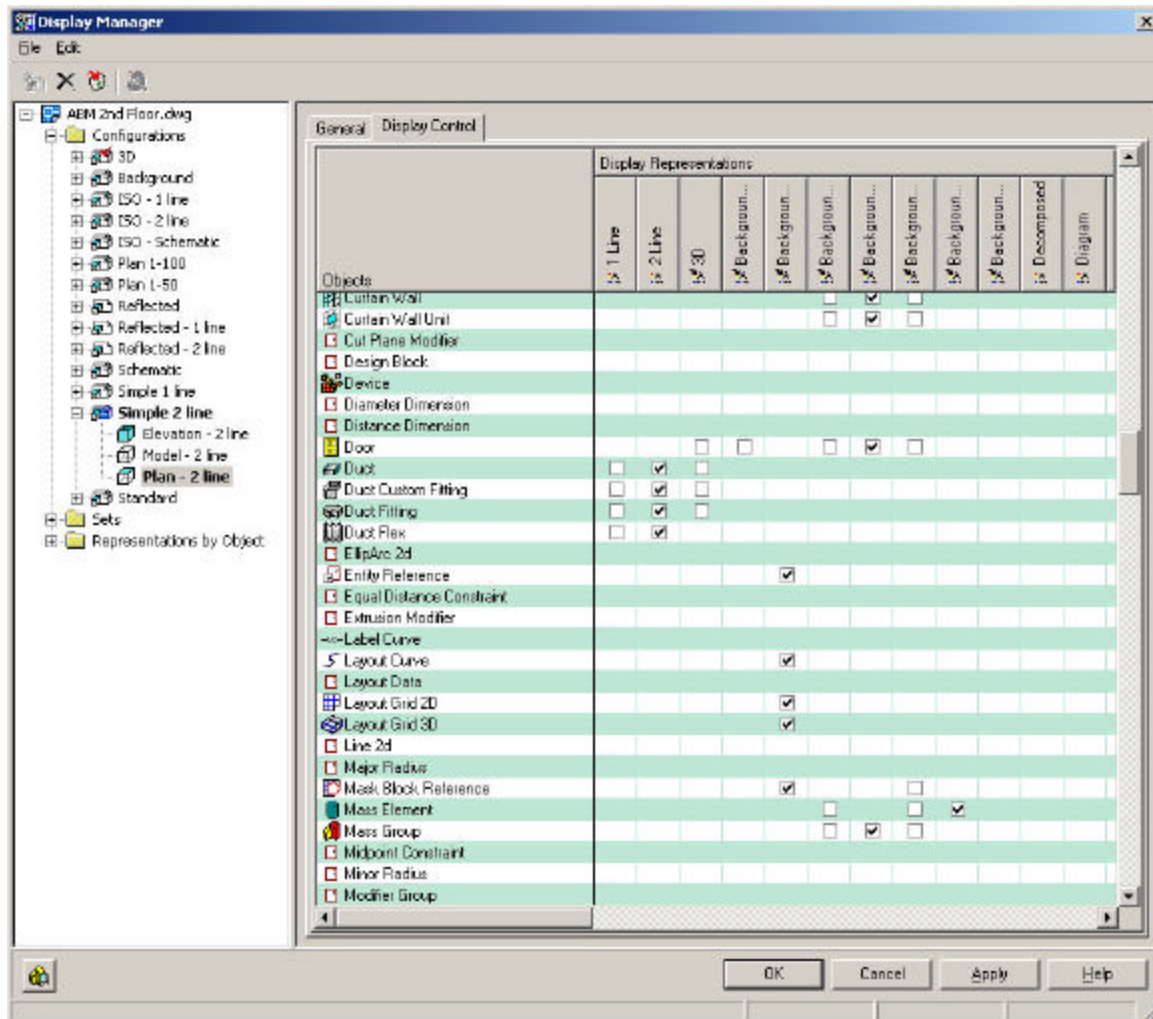
Use the Layer Manager to manage design data based on industry or company layer standards, which, in turn, enables more efficient CAD management. Because Layer Manager works hand in hand with System Definitions, you'll be more productive while you design your building systems.



The Layer Manager interface helps you become more efficient when handling layers.

Display Manager

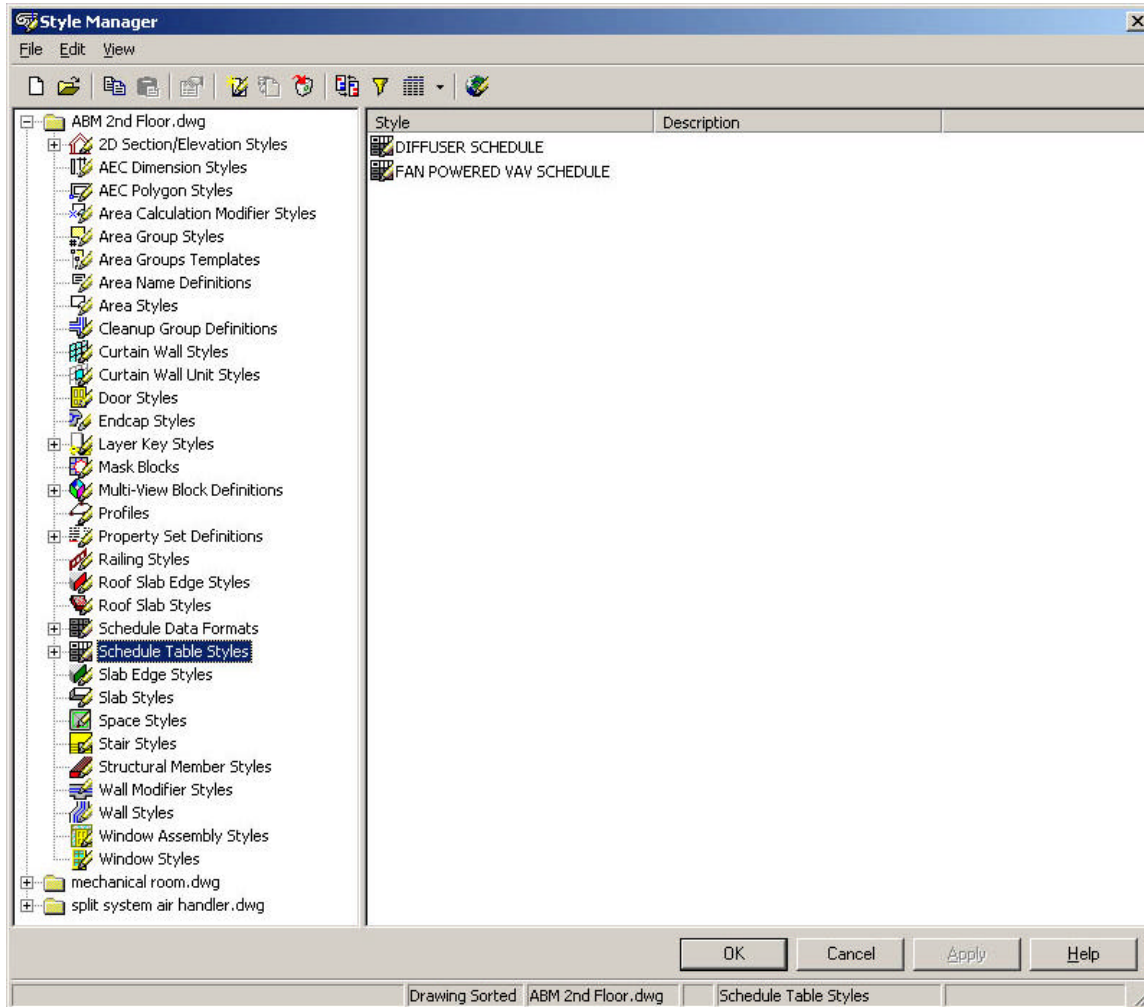
With its easy-to-use interface the Display Manager helps you quickly navigate through object representations, sets, and display configurations while actually seeing and understanding their relationships. The Display Manager also enables you create multiple construction plans, such as single line drawings and demolition drawings, and show existing work without having to re-create design data.



Use the power of display representations when creating your construction documentation.

Style Manager

The Style Manager in Autodesk Building Systems is streamlined, much like the Properties window in AutoCAD software. You can access every object style through one centralized interface for style editing, creation, and importing. There's even a Filter option in the dialog box that enables you to focus only on the styles that are relevant to the current design. Using Internet-integrated features, you can quickly download custom content from the Web. The Style Manager helps you create, define, or modify all building systems objects through one interface, reducing the time it takes to learn different dialog boxes and increasing productivity in the process.



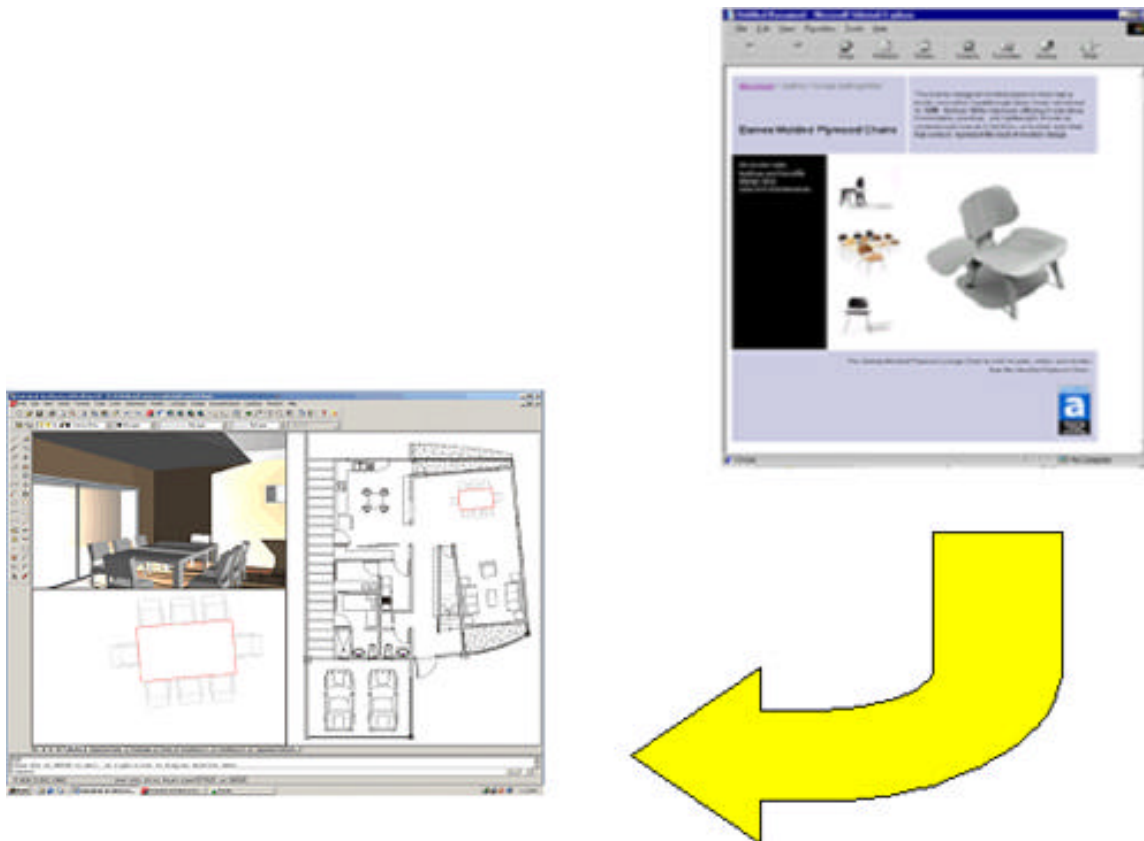
The Style Manager is a centralized location for styles, formats, and definitions.

i-drop

With i-drop[®] technology you can create web content and give users the ability to drag that content from a web page directly into design products. For example, imagine you are an HVAC system designer who needs to lay out some equipment into your Autodesk Building Systems session. Now imagine that an air handling unit manufacturer's website contains an online library of their equipment from which you can drag the air handler directly into your

design session. Forget about downloading and then inserting it. Now you can drag any DWG or VIZ file from an i-drop enabled website and drop its geometry directly into your Autodesk product.

Besides geometry, you can also see cost information, materials, specifications, and more. Because i-drop is an XML-based technology, the data it can carry in addition to an object's geometry is virtually limitless.



Use i-drop technology to insert equipment into your design.

Conclusion

Today's industry demands productivity, accuracy, and speed. Autodesk Building Systems provides that in a powerful modeling application for mechanical, electrical, and plumbing engineering design development and construction documentation. Because you can work in both 2D and 3D, the extra time formerly required for creating a virtual building model is a thing of the past.

Autodesk Building Systems respects your existing design practices, which means that you can gain a competitive advantage with the intelligence of building information design methods when you're ready. In doing so, you'll be producing valuable design data that will support the building throughout its life cycle. You'll also increase productivity through improved coordination, reduce errors and omissions, and minimize project cycle times, all of which adds up to increased profitability for your business. Get the competitive advantage with Autodesk Building Systems.

For more information about Autodesk Building Systems software, please visit **www.autodesk.com/buildingsystems** or contact your local Autodesk Authorized Reseller (**www.autodesk.com/reseller**).

autodesk

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