

The AutoCAD solution for mechanical,
electrical, and plumbing engineering.

AutoCAD[®]

MEP 2009

Autodesk[®]

More Productivity, Same Skills

Michigan-based Peter Basso Associates uses AutoCAD MEP software to enhance design processes and drawing productivity by

- Designing all ductwork, piping, plumbing, lighting, and power systems, together with numerous medical gas systems
- Reducing design time while achieving a well-documented solution
- Significantly improving coordination
- Creating higher-quality construction documents

AutoCAD® MEP software is the version of AutoCAD® software for mechanical, electrical, and plumbing (MEP) engineers, designers, and drafters. Intuitive system drawing and design tools help to make creating and sharing construction documents easier and more efficient.

Create and produce more precise construction documents faster with AutoCAD MEP. Single-line and double-line system design and productivity tools help automate production and minimize coordination errors between MEP design teams, architects, and structural engineers.

AutoCAD MEP can reduce drafting time, while a flexible, customizable workflow fits easily into existing AutoCAD-based workflows. Working in the familiar AutoCAD-based environment enables you to easily implement new design tools at your own pace, enhancing creative design and reducing time-consuming drafting.

The familiar environment offers users almost immediate productivity gains, with the flexibility to learn additional features at their own pace. The industry-leading DWG™ format makes it easy to share and communicate with architects and structural design professionals.



Image courtesy of Peter Basso Associates Inc.

AutoCAD MEP enables engineers at Peter Basso Associates Inc. to quickly and accurately create construction documents that are much more valuable than traditional 2D drawings.

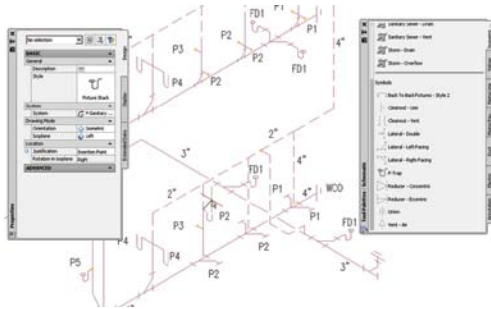
—Dustin Tiemeyer
Design Technology Manager
Peter Basso Associates Inc.

Increase Productivity with the Right Tools

Reduce confusion and keep team members focused on the task at hand. AutoCAD MEP software provides discipline-specific tools and functionality for mechanical, electrical, and plumbing engineers, designers, and drafters in a single, consistent environment across projects and disciplines.

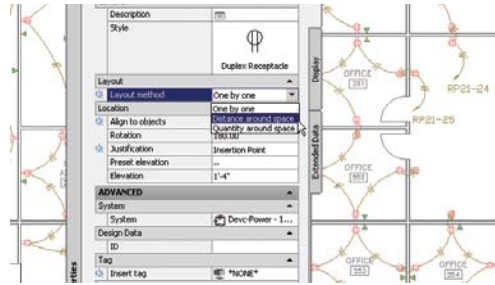
Schematic Design

Easily create riser diagrams and schematic plans with enhanced schematic tool palettes that logically group commonly used tools. In addition, the Properties palette provides easier schematic object configurations. Convert existing AutoCAD blocks to schematic symbols for quick use in schematic design.



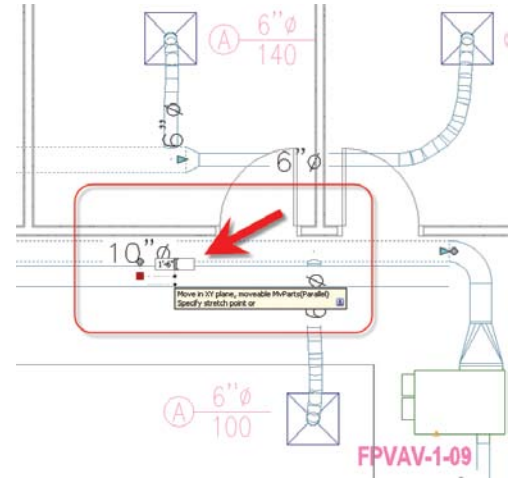
Properties Palette

The Properties palette provides a central location for viewing and modifying the properties of an object. Review information or change styles, dimensions, locations, property set data, and other important characteristics. Change basic properties or the object itself. Easy access to equipment parts and the ability to easily modify available equipment and devices help to enhance accuracy and improve productivity.



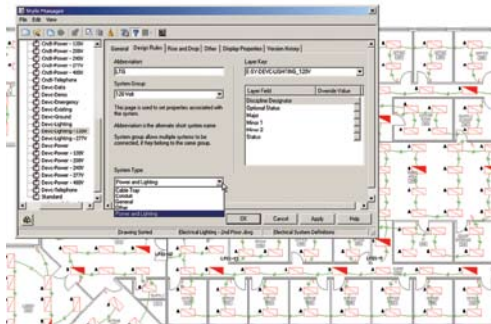
Designing with Dynamic Input and Grips

Make precise and accurate modifications to your mechanical, electrical, plumbing designs directly in the drawing area with dynamic input and grips. Add commands at the cursor instead of the command prompt. "Heads-up display" helps you focus on the screen instead of the keyboard to increase productivity.



Working with Systems

In AutoCAD MEP, a system is a network of connected parts representing a real-world building system, maintaining the same layers, colors, and relationships. New parts inherit the current system's property defaults, such as size and shape, providing a fast and consistent method of laying out a design. Systems also make it easier to modify connected parts by simultaneously applying changes to the entire network of parts.



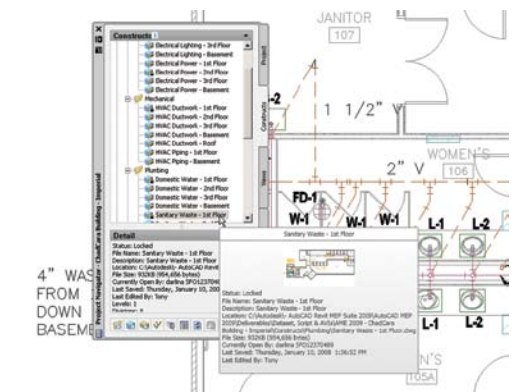
Templates

Templates are drawings with defined settings used to create new drawings. AutoCAD MEP includes metric and imperial unit templates containing specified drawing units, drawing scales, layout tabs, and typical plotting setups. The templates also contain a set of display configurations specific to working with mechanical, electrical, and plumbing objects. The templates help you get up to speed and use AutoCAD MEP to quickly increase productivity.



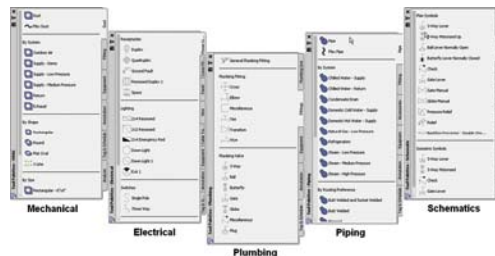
Project Navigator—Drawing Management

Manage project drawings, easily creating coordinated views based on design parameters. Create and manage project drawing sheet sets for all mechanical, electrical, plumbing construction documents. All design team members access the most current documents from a centralized project directory, from project templates to sections and elevations.



Discipline-Specific Tool Palettes

Tool palettes are logical tool groups used to add objects to drawings. AutoCAD MEP offers a large inventory of both common and discipline-specific tool palettes, including annotation and call-out tools for system documentation as well as mechanical, electrical, plumbing, and schematic design tools.



Edit-in-View

Streamline design productivity and modify mechanical, electrical, and plumbing system design with multiple views. Choose to work in elevation or another view of the design, not only in plan view.

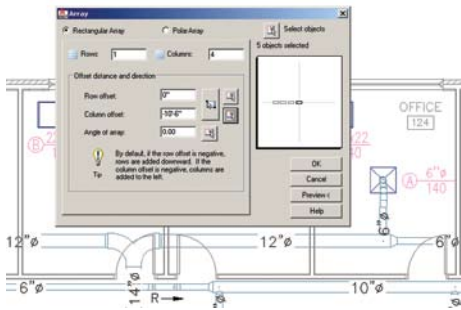


Transform Traditional Drafting

Leverage the power of AutoCAD MEP software and your existing AutoCAD knowledge to automate tedious drafting processes and rejuvenate your construction documentation.

Work with AutoCAD Commands

All the familiar AutoCAD commands are also available in AutoCAD MEP software. Copy, move, and array your duct, pipe, conduit, or cable tray, and then automatically snap in the desired orientation and view. Enhanced AutoCAD MEP commands enable you to copy, move, and align all in one easy step.



Construction Annotation

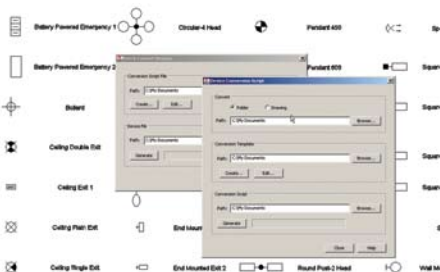
Annotate once for all scales. Annotative text enables setting of paper text height and changes for each view based on its scale. Annotative symbols automatically adjust based on the scale of the view. Hidden lines and hatch-on objects make it easier to interpret design intent. Display the schematic view, rather than the model-generated view of an object.

Work with Catalog-Based Content

The AutoCAD MEP parts catalogs provide an extensive collection of parts for use during design. Query the parts catalogs to assist with part selection and retrieve parts for integration into your designs. Store parts you create in a catalog for future use. Choose parts from multiple catalogs to increase design selection.

Convert AutoCAD Blocks and Symbols to AutoCAD MEP Content

Individually convert single or batch-convert multiple AutoCAD blocks, MvBlocks, or MvParts to a device or schematic symbol. Extrude standard 2D blocks to create a 3D solid, and then add connectors to create AutoCAD MEP content to be used with your mechanical, electrical, and plumbing designs.



AutoCAD and AutoCAD Architecture Support

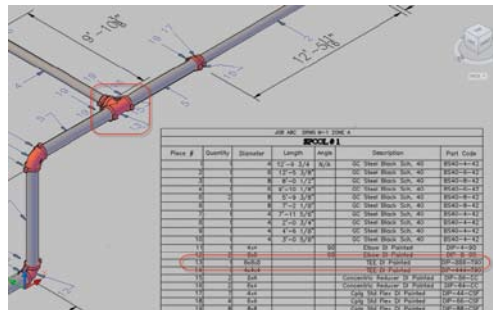
Work on flat 2D AutoCAD floor plans or AutoCAD® Architecture geometric model floor plans. Reference architectural floor base plans developed in any AutoCAD-based software application for better design and documentation coordination.

Export to AutoCAD

Designers can quickly and easily generate DWG files compatible with past versions of AutoCAD software. Complete graphic representation of devices and symbols are maintained exactly as shown on construction documents, enabling easy collaboration with extended design teams.

Design to Fabrication

With the seamless integration of fabrication partner tools into AutoCAD MEP software, redrawing models for fabrication is no longer necessary, enabling design to fabrication in just a few clicks. Using design models in the fabrication of sheet metal, plumbing, and piping makes it easier to create shop drawings in the fabrication partner application. For more information on fabrication partner solutions, see www.autodesk.com/partnerproducts.

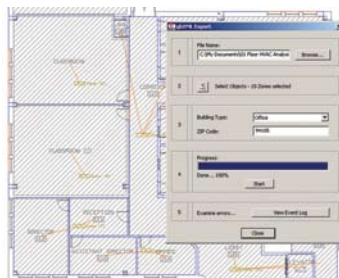


Create Manufacturer-Specific Content

Using content templates, create manufacturer-specific content for ducts, fittings, pipe, and pipe fittings. Content can then be brought back into AutoCAD MEP and added to the catalog. Devise piping and HVAC designs according to manufacturer specifications, resulting in more accurate design of mechanical and piping systems.

Import/Export to gbXML

Import to and from AutoCAD MEP using industry-standard green building extensible markup language (gbXML) file format.



Using AutoCAD MEP with its powerful visual design coordination capabilities, we were able to lay out these extremely complex mechanical rooms—easily—knowing ahead of time whether there was an interference. It was also a lot easier for us to coordinate the plant and mechanical rooms.

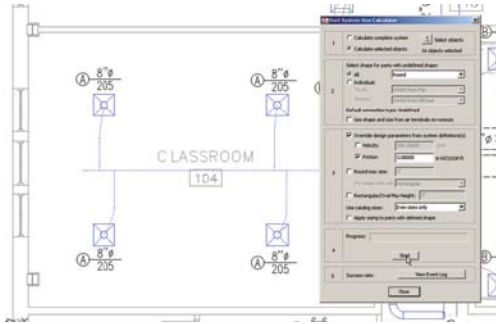
—Jean Abi Aad
Corporate Engineering Manager
Kharafi National

Smart, Accurate Construction Documents

AutoCAD MEP software reduces requests for information by enabling more accurate, consistent construction documents, together with seamless collaboration across project teams.

Single/Double-Line Duct Design

Create construction documents efficiently with single line for design development and convert to double line for construction documents. Lay out mechanical systems in single line with unsized parts early in the design process, and then use duct-sizing tools and convert the layout to double line. Enhanced sizing tools help to increase drafting productivity when going from design development to construction documentation.



Seamless Sections and Elevations

No longer wait until the end of your design process to create sections and elevations. Quickly create sections and elevations at any time. When your design changes, all sections and elevations update automatically, virtually eliminating manual updates. Sections help to ensure that the design is accurate and add clarity to construction documents.

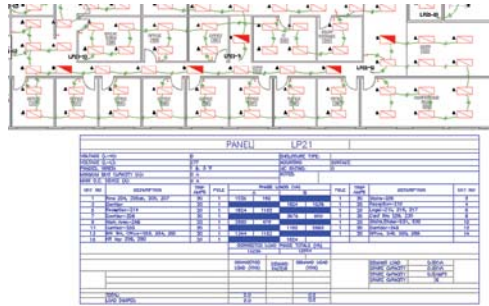


Circuit Manager

Use a single location to manage and edit circuit information. Automatic prompts notify users of potential overloads based on conductor size, reducing errors and minimizing the need for rework. In addition, the Circuit Manager reads the circuits from multiple fixtures and devices across multiple floor plans. View linked panels and loads together in the Circuit Manager, which uses the space tag information to enter descriptions for all circuits.

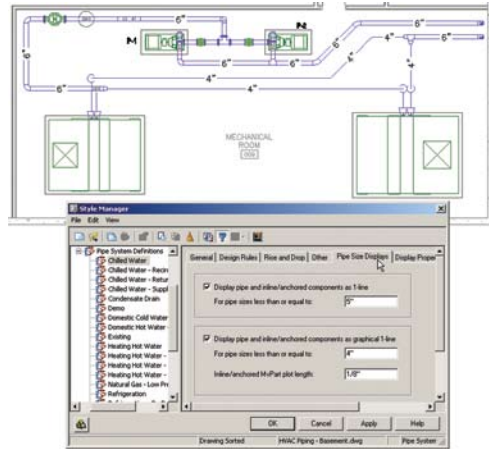
Faster Scheduling

Create schedules faster than you can with traditional CAD drawing processes. Engineers, designers, and drafters can schedule engineering system data, calculate values, and use new table styles to lay out room and analysis schedules. Schedules are automatically updated as the design changes, reducing errors. Create schedules as you lay out your design, and see the schedule populate automatically, saving time.



Single/Double-Line Piping

Draw pipe systems that include multiple levels of size and complexity, and accurately represent physical systems. Use both single-line and double-line piping within the same design, with small pipe shown as single line and larger pipe as double line for clarity. Custom fittings mean you can design unique layouts on the fly. New water/wastewater content eases creation of relevant facilities. All piping is based on current piping standards and specifications. With easy-to-use routing solutions, you can lay out your piping design with ease.



Spaces and Zones

Assign engineering spaces from existing 2D architectural floor plans or design drawings. Room measurements are automatically calculated, including square footage, meters, and volumes per area. Use AutoCAD MEP together with industry-leading analysis applications to automatically calculate load capacity and airflow rate requirements per area. Spaces and zone information is used when exporting to gbXML for import into third-party analysis programs. The analysis can then be used to properly design the heating, ventilation, and air conditioning (HVAC), lighting, and power for each space and zone.

Electrical Layout

Lay out electrical design based on your workflow. Circuit the devices as you lay them out or later in the design process. Automatically generate wiring to increase productivity and create accurate construction documents.

Plumbing Design

AutoCAD MEP accurately calculates the slope of plumbing lines. Add invert elevations anywhere along a plumbing run. Size the sanitary system plumbing lines based on fixture units that are read directly from the plumbing fixtures themselves. Easily modify the plumbing fixture unit table based on local standards.

Engineering Display Themes

Use display themes to graphically present and analyze design intent. Check your HVAC design calculations based on friction loss or velocity to validate performance for a particular area or room. Also use the display theme *By Pressure Class* to visually show the high, medium, and low pressure per piping class to easily identify potential design flaws. Display themes are depicted as color-filled displays complete with legends.



Autodesk software helps us provide a more comprehensive, integrated solution to our clients and meet our long-term strategic goals.

—Mark Butler
Senior Systems Analyst
HDR

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