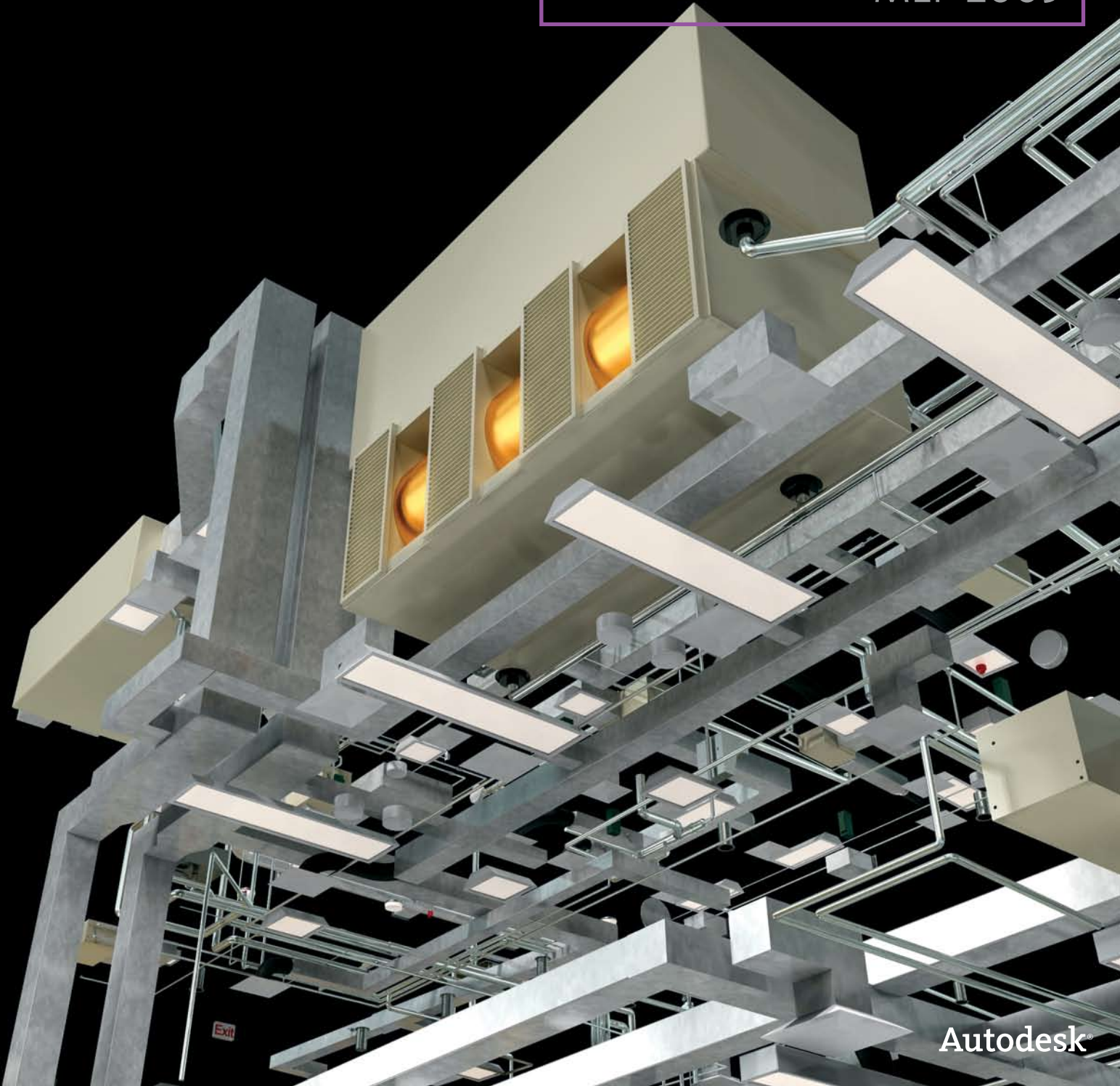


Building information modeling for mechanical, electrical, and plumbing engineering.

Revit®

MEP 2009



Autodesk®

Design. Analyze. Optimize.

Revit® MEP software is an intuitive mechanical, electrical, and plumbing system design tool, enabling enhanced coordination and rapid design within a building information model. Optimize systems engineering through data-driven system sizing and design. Use the building performance analysis tools within the Revit MEP building information modeling (BIM) software application to support sustainable design. Accelerate accurate decision making through faster engineering design data creation and more reliable client communications. Using consistent, compatible models created in Revit® Architecture or Revit® Structure software, you can minimize time-consuming errors between mechanical, electrical, and plumbing (MEP) engineers, structural engineers, and architects. Automatic change management across your evolving design and documentation set helps to keep your plans consistent and your projects on track.

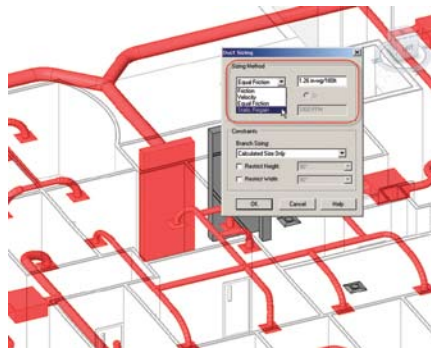
Experience the BIM advantage by designing optimized engineering systems, and enhance building performance with analysis support. Enable appropriate feedback on your design's scope, schedule, and budget.

Sustainable Design Support

Revit MEP software provides integrated heating and cooling loads analysis tools to help you perform energy analysis, evaluate system loads, and produce heating and cooling load reports for a project. Provide optimal systems design with the same building information model, with realistic, real-time design scenarios aiding better decision-making support. Revit MEP helps to minimize design errors and better define your project's overall sustainability strategy. Take full advantage of the data-rich Revit MEP model to support better decision making through integrated building performance analysis tools. Revit MEP also supports green building extensible markup language (gbXML), containing information for spaces and zones as well as lighting fixture element data. Export the gbXML file for use with a third-party analysis application for calculating loads. Create high-performance, sustainable buildings with extensive analysis of heating and cooling load, LEED daylighting, thermal energy, and more.

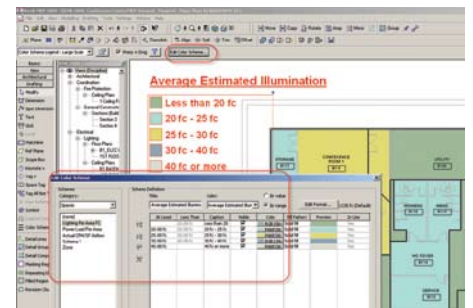
Duct and Pipe Sizing/Pressure Calculations

Built-in calculators make it possible to perform sizing and pressure loss calculations according to industry-standard methods and specifications, including the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) fitting loss database. System sizing tools instantly update the size and design parameters of duct and pipe elements, without the need for file exchanges or third-party applications. Select a dynamic sizing method for the ductwork and piping systems in your plans using Duct Sizing and Pipe Sizing tools. Use the friction, velocity, static regain, or equal friction sizing method for duct sizing. Use the velocity or friction method for pipe sizing.



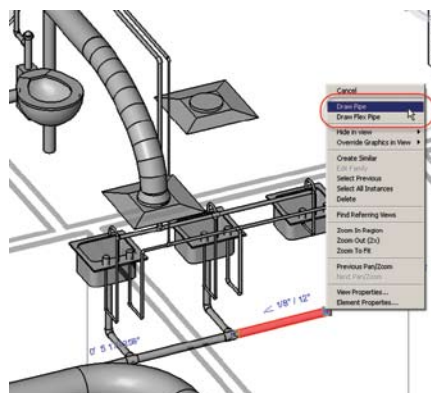
HVAC/Electrical Space Design

Communicate design intent visually with room color-fill plans that facilitate client validation of design reviews and criteria. All revisions and alterations to color-fill plans are updated automatically across your model. Create any number of schemes, and maintain consistency for the duration of your project. Three-dimensional modeling for ductwork and piping enables you to create HVAC systems that can be clearly shown using customer color schemes for design airflow, actual airflow, mechanical zones, and more. Create electrical color schemes for power loads, lighting per area, and more. With color schemes, deciphering spreadsheets and using colored pencils on printed plans are no longer necessary.



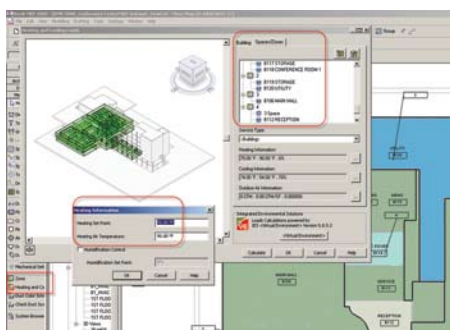
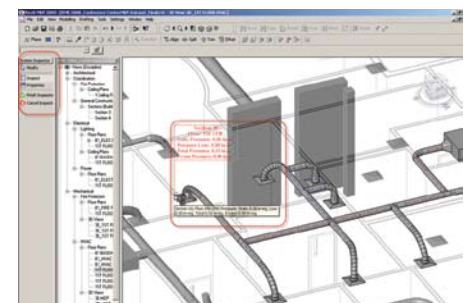
Duct and Pipe System Modeling

Intuitive layout tools enable easy model modifications. As always, Revit MEP software automatically updates your model views and sheets, helping to maintain document and project consistency. Create HVAC systems with mechanical functionality providing 3D modeling for ductwork and piping. Easily modify the model by dragging design elements on the screen in almost any view. Modeling can also be done in both section and elevation views. All model views and sheets update automatically whenever a change is made anywhere for accurate, coordinated designs and documents at all times.



System Inspector (Critical Path)

Quickly identify and adjust high pressure loss areas in your system, enhancing economy and efficiency. Interactively modify fittings, shape, or configuration, and instantly see the updated static pressure loss and changes to flow properties. Revit MEP software displays the critical flow path for branches, main trunks, or entire systems.

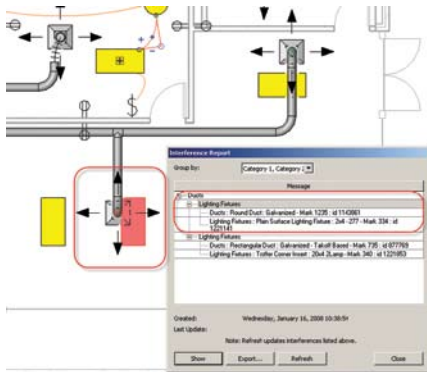


Change is good. Parametric change is better for coordination.

Revit MEP software helps maximize the effectiveness of leveraging your architectural and engineering BIM design and construction documentation processes. Enhance client communications and accelerate decision making through in-process visualization. Smoothly collaborate with Revit Architecture and Revit Structure using a Revit model. Built on the latest version of the Revit® platform, Revit MEP provides all the competitive advantages of BIM.

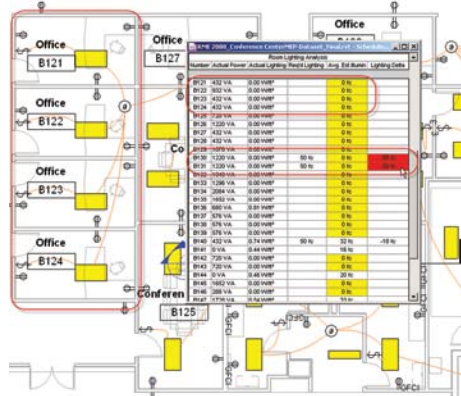
Interference Checking

Coordinate major building elements and systems during design, avoiding collisions between elements and reducing the risk of construction cost overruns. Choose which building elements to check for interference, whether duct and structural beams, or lighting fixtures and diffusers. Revit MEP automatically generates a report with the ability to zoom into the area of interference for easy clash resolution.



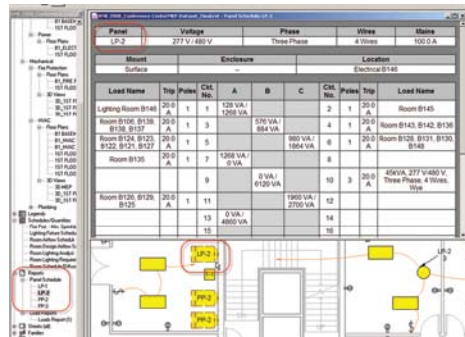
Bidirectional Associativity

A change anywhere is a change everywhere. Storing your information in a single, consistent database helps to ensure that your entire model is always up-to-date. Parametric technology automatically manages all change propagation and keeps your project on track. The ability to change a schedule and automatically update the model is a key benefit of using Revit MEP software.



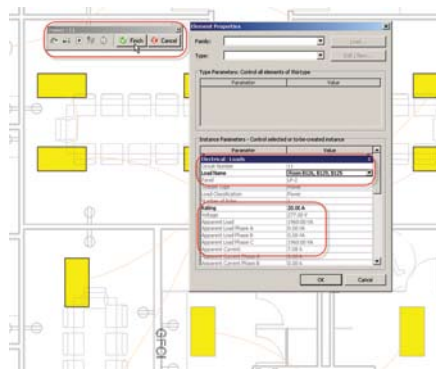
Panel Schedules

Automatically create electrical panel schedules in your designs. Balance loads or change circuits for a device through panel schedules. Easily edit the panel circuits through a built-in panel circuit editor. Panel schedules can be formatted like most Revit schedules. Benefit from multiple panel schedules and the ability to change electrical devices directly in the panel schedule.



Lighting and Power Circuitry

Use circuits to track loads, monitor attached devices, and verify circuit lengths. Define wire types, voltage ranges, distribution systems, and demand factors to prevent overloads and mismatched voltages. Accurately calculate the estimated demand loads on feeders and panels to size equipment quickly and efficiently. Using circuits to track loads, number of devices, and circuit lengths helps to minimize errors in the electrical design. Create high-performance, sustainable buildings with extensive analysis of heating and cooling load, LEED daylighting, thermal energy, and more.

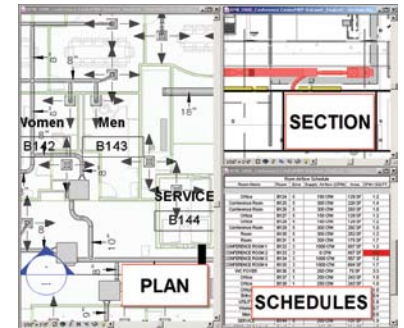


Parametric Components

Parametric components offer open, graphical systems for design thinking and precisely detailed design intent. Use parametric components for your most elaborate mechanical, electrical, and plumbing engineering assemblies, with no need for programming languages or software coding.

Construction Documentation

Automatically generate plan, section, elevation, detail, and schedule views that precisely reflect design information. Synchronized model views from a common database enable consistent, coordinated change management. Benefit from more accurate, coordinated construction documents that BIM provides for the mechanical, electrical, and plumbing design team.

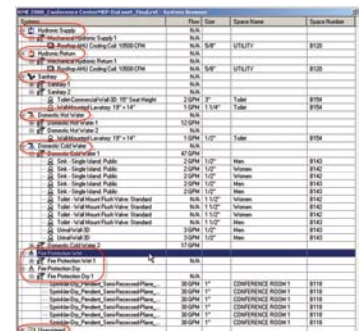


Automatic Sheet Drawing References

Sections, elevations, and call-out references are more accurate, while all data, graphics, details, schedules, drawings, and sheets in the drawing set are current and coordinated. No longer spend hours coordinating sheet sets: Revit MEP helps automate the process with ease.

System Browser

Easily perform model continuity checks on defined system types, quickly see unbalanced loads, and identify orphaned elements not connected to systems. Help to ensure that all mechanical, electrical, and plumbing system elements are connected and contributing to system load requirements for accurate sizing. Revit MEP software gives engineers confidence that the mechanical, electrical, and plumbing systems designs are complete.



DWG/DWF/DXF/DGN Support

Native support for DWG,™ DWF,™ DXF,™ and DGN formats help ensure fully compatible data exchange. The ability to import, export, and link data with the industry-leading DWG format makes Revit MEP one of the best coordination and collaboration solutions available.

Visualize. Communicate.

Create realistic representations of mechanical, electrical, and plumbing engineering systems, enhancing communication of your designs and those of your clients. Benefit from automated exchange of engineering design data from detailed building information models. Help identify errors earlier, and reduce the need for costly redesigns later.

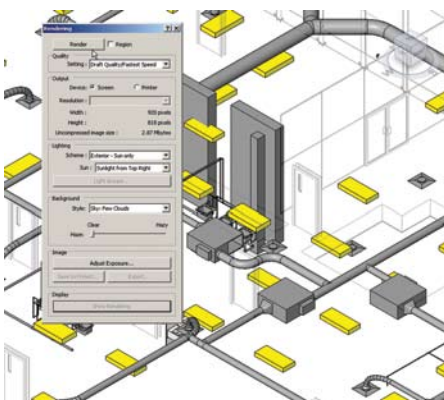
Worksharing

Revit MEP worksharing distributes the power of the parametric modeling environment across the project team. Worksharing provides a complete range of collaboration modes, from entirely on-the-fly, simultaneous access to the shared model, through the formal division of the project into discrete shared units, to complete separation of project elements or systems into individually managed linked models. Design teams can effectively collaborate and interact based on workflow and project requirements through worksharing.



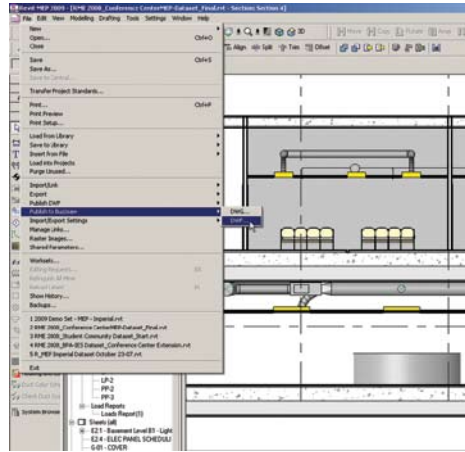
Rendering

Building designs are often presented to clients in the form of rendered, photorealistic images. Revit MEP software renders 3D project views with various effects, such as lights, plants, decals, and people. Add sunlight to an interior scene of the model for radiosity solutions. Select families with transparent materials as daylight sources. Revit MEP enables clients to see the building systems design before it is built through photorealistic images.



Publish to Autodesk Buzzsaw

Publish to Autodesk® Buzzsaw® functionality enables team members to seamlessly upload Revit MEP files to a predetermined Buzzsaw project site. With the addition of default template assignments, you can assign properties to a view and set those properties back to their original state before project publication or printing.

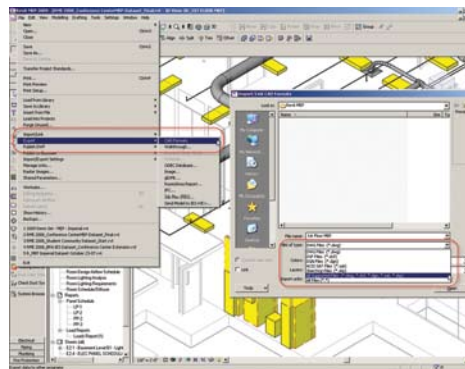


Interface to External Databases

Facilitate communications with third-party estimating, planning, procurement, and facility management tools by outputting Revit MEP model data to any ODBC-compliant database.

Import/Export ACIS Solids with AutoCAD-Based Applications

Revit-based products can read and write ACIS® solids, enabling easy import and export between Revit MEP models and other AutoCAD® software-based architectural or engineering applications. Import or link 3D solid geometry into AutoCAD® Architecture or AutoCAD® MEP software.



Application Programming Interface (API)

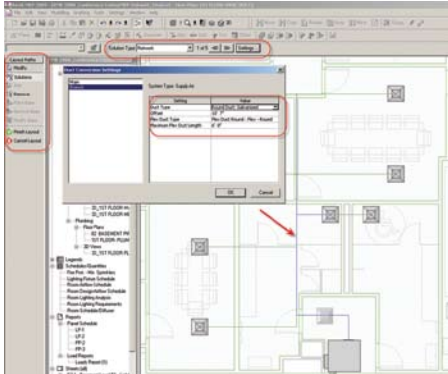
A rich programming environment, the Revit API facilitates and extends Revit functionality throughout the building industry.

Superb coordination and visualization, ease of use, cost-effectiveness, and ability to rapidly change designs to meet ever-growing client demands are key indicators for parametric BIM technology as the design methodology of choice over conventional methods.

—Tim DeRuyscher, PE
Executive Vice President
RobsonWoese Inc.

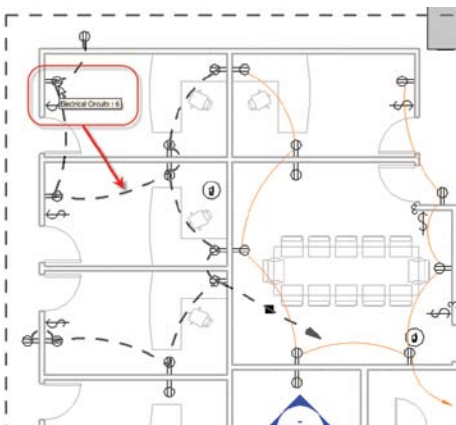
Auto-Route Duct

Easily route and constrain complex duct runs between any two points. Choose from multiple path options to determine the best path for your design. Connection preferences and fitting selections are used to determine the routing path. Automatic routing alleviates tedious layout tasks and allows time for more detailed design and analysis.



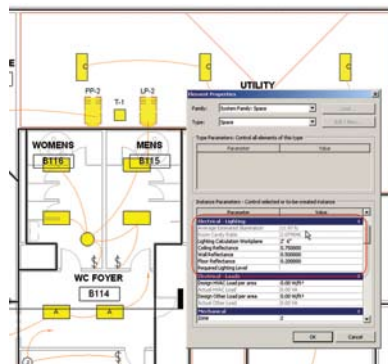
Auto-Wire Circuits

Automatic wiring of lighting fixtures and receptacles includes the home-run to the panel assigned to those electrical devices. Automated wire path layout tools provide path options, enabling you to choose appropriate routing for annotation. Also show multiple circuits on the home-run to help ensure accuracy of the design. Annotating construction documents is not only easy, it also increases accuracy.



Lighting Calculations

Zonal cavity estimation automatically calculates room lighting levels. Set room surface reflectivity values, attach industry-standard Illuminating Engineering Society data files, and define workplane heights for automatic calculation of average illumination.



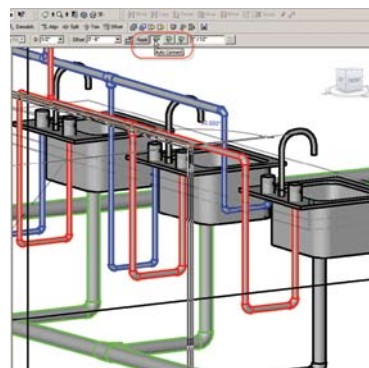
Voltage Drops and Derating Factors

Identify voltage drops and apply derating factors as you design, enhancing your design data with crucial engineering information. Evaluating the best electrical system for the design is a key benefit of using Revit MEP software.



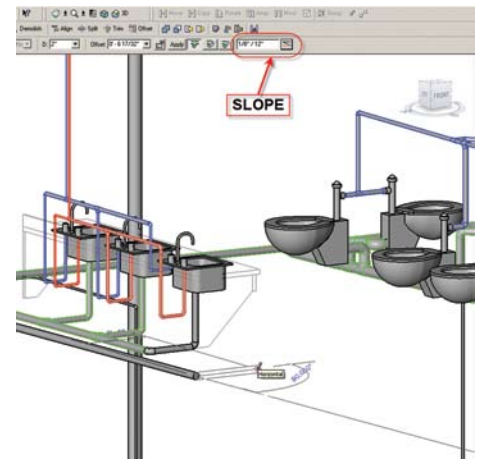
Plumbing System Modeling

Complete 3D parametric modeling of system layout automatically places all risers and drops according to the plumbing system design. Changes are automatically updated across your designs and views. Benefit from accurate and coordinated plumbing designs and construction documentation at all times.



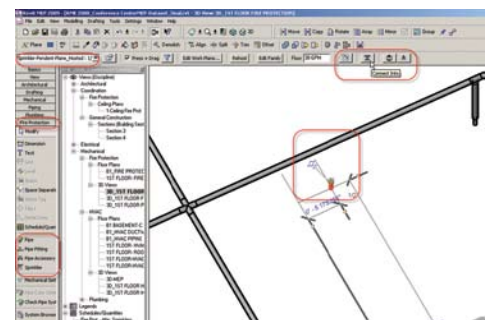
Sloped Pipe and Invert Elevations

Model sloped piping for all plumbing systems according to industry code. Easily define the rise over run, and lay out your plumbing design. Calculation is automatic and slope propagation is a breeze when applying a slope to a run of multiple pipe selections through fittings. Add invert elevation tags at the ends of pipe runs, minimizing guesswork and manual calculations typical of sloped pipe.



Fire Protection System Modeling

Intuitive layout tools enable easy layout of fire protection systems. Create fire protection systems as logical entities to facilitate specifying parameters for sizing components. Create a fire protection system by placing sprinklers in a project and assigning them to a system. Then, using automated layout tools, determine the best routing for the piping that connects the system components. Fire protection plans are easy to create and allow for coordination with mechanical, electrical, and plumbing systems.



At SEi we have a history of being able to design very complex and challenging mechanical, electrical, and plumbing engineering projects. With the arrival of Revit MEP, we see significant improvement in our ability to support such projects in a more synchronized environment, with the architect, throughout the design process.

—Robert Gracilieri
CEO
SEi Companies

Autodesk Design Review

Directly publish to DWF format from Revit MEP for an easy and secure way to distribute and share designs or construction documentation. The free* Autodesk® Design Review application gives your project team an easy way to view, print, mark up, and measure changes to drawings without the original design creation software. To learn more, visit www.autodesk.com/designreview.

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AutoCAD Revit MEP Suite

Revit MEP software is available as part of AutoCAD® Revit® MEP Suite, which also includes Autodesk's industry-leading AutoCAD-based software application for mechanical, electrical, and plumbing engineering, AutoCAD MEP. For more information about AutoCAD Revit MEP Suite, visit www.autodesk.com/revitmepsuite.

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