

Top 10 Reasons

Autodesk Revit MEP software is the building information modeling (BIM) software for mechanical, electrical, and plumbing (MEP) engineers.

1. Building Information Modeling for MEP Engineers

Autodesk Revit® MEP building information modeling software provides purpose-built tools for building systems design and analysis.

- With parametric change management technology, modifications are coordinated more consistently across the model.
- Choose from multiple auto-layout path suggestions to determine the best path for your design, or modify the auto-layouts and let Autodesk Revit MEP create the appropriate ductwork and fittings automatically.
- The ability to change a schedule and automatically update the model is a key benefit of Autodesk Revit MEP.

2. Sustainable Building Design and Analysis

By using the rich building information model, with realistic, real-time design scenarios, MEP engineers can make better decisions and minimize design errors to fit a project's sustainability strategy.

- Autodesk Revit MEP provides support for green building extensible markup language (gbXML). Export the gbXML file for use with sustainable building design and analysis solutions such as Autodesk Green Building Studio and Autodesk Ecotect conceptual building performance analysis software, as well as third-party analysis applications.
- Create high-performance, sustainable buildings based on informed decisions from extensive analysis of heating and cooling loads, lighting/daylighting, thermal energy, and more.

3. Native Heating and Cooling Load Calculation

Autodesk Revit MEP provides native integrated heating and cooling load calculation tools to help you perform energy analysis, evaluate system loads, and produce heating and cooling load reports for a project.

- Use heating and cooling load calculation information and intuitive 3D layout tools to create HVAC ductwork and systems.
- Lay out primary and secondary HVAC systems based on integrated, automatically propagated load calculation results.

- Route and size complex duct and pipe runs between any two points based on calculated loads and system requirements.

4. Mechanical Systems and Duct Layout Modeling

Once your air terminals and mechanical equipment are placed, you can create supply, return, and exhaust systems to connect the components of the air system.

- Use the System Browser to verify that all of the components are assigned to an air system.
- Layout Path tools let you specify routing parameters for ductwork, to view different layout path solutions, and to manually modify layout path solutions for the air system.
- Perform duct sizing using friction and/or velocity, equal friction, or static regain sizing methods using Autodesk Revit MEP duct-sizing tools. The sizing methods used in Autodesk Revit MEP use the ASHRAE database, which contains information about losses for various duct fittings.

5. Electrical Lighting, Wire Path Layout and Power Circuit Layout

Create single and multi-circuit wiring for electrical devices, fixtures, and power receptacles automatically, using intuitive circuit creation and automated wire path layout tools.

- Increase coordination in your documentation and design layout with specific switch systems topology, independent of lighting circuits and wiring.
- Minimize design errors by using circuits to track loads, attached devices, and circuit lengths.
- Define wire types, voltage ranges and distribution systems to help ensure compatibility of electrical connections and prevent overloads and mismatched voltages.

6. Electrical Power Load Balancing, Wire Sizing, and Panel Schedule Generation

Use circuit analysis tools to quickly total and balance loads, automatically size wiring based on circuit ratings, and generate panel schedules for accurate documentation.

- Autodesk Revit MEP provides a powerful panel load-tracking tool which displays "live" circuit information automatically.
- Ensure balanced circuit loads to prevent excess voltage drop.
- Automatically balance all phase loads and update the circuit manager with updated circuit information.
- Easily adjust circuit breaker sizes based on actual load demands, and calculate, verify, and adjust wire sizes automatically based on the circuit rating.

7. Plumbing Systems Modeling

Create plumbing systems that facilitate calculations for flow and sizing of equipment.

- Once a plumbing system is created, use the Layout Path tool to define the routing for pipes, and automatically create the piping for the system.
- Some fixtures, accessories, and mechanical equipment can be inserted in line with existing pipe segments, automatically making connections where they are placed.
- Transitions are automatically inserted when it is necessary to match the size of the pipe segment.
- Create multiple plumbing systems including sanitary, sewer, domestic hot and cold water and grey water systems.

8. Fire Protection Systems Modeling

- Create a fire protection system by placing sprinklers in a project and assigning them to a fire protection system. Then, using automated layout tools, you can determine the best routing for the piping that connects the system components.

- Check Pipe System tool helps to examine the piping that you created to verify that each system is complete and properly connected.
- Use Pipe Accessory tool to add pipe accessories to a fire protection system.

9. Multidiscipline Coordination and Interference Checking

Realize the inherent coordination benefits of one central or linked model for all design, development, and cross-discipline coordination.

- Optimize workflows by linking and managing central architectural and structural models to MEP working files.
- Help ensure design and constructability integrity by instantly cutting building sections and performing interference checking between building components—it's as easy as drawing a section line in plan view.
- Coordinate MEP vertical clearances with architecture and structure, reducing and possibly eliminating costly RFIs and change orders.
- Perform interference checking quickly and easily by selecting building components from other disciplines within the Interference Checking tool dialog.

10. Design for Constructability

- Use manufacturer-specific fittings/content at the design stage, enabling you to automatically generate construction detail drawings.
- Identify direct interferences as well as soft clashes for coordination purposes.
- Generate a clash report that can be distributed to the extended design team for clash resolution.

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