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Preface

Autodesk Revit 2025

Autodesk Revit is a Building Information Modeling software designed for Architects, Structural Engineers, MEP Engineers, Designers, and Contractors. The software has the capability to design the 3D model of a building with its various components, annotate the model with 2D drafting elements, and access building information from the building model's database.

Autodesk Revit also has the capability of executing 4D BIM with tools to plan and track various stages in the building's lifecycle, from concept to construction and later demolition.

Revit was developed by Charles River Software, in Newton, Massachusetts on October 31, 1997. Leonid Raiz and Irwin Jungreis were the key developers of Revit, which was designed specifically with Architecture in mind. The Charles River Software company was later renamed to Revit Technology Corporation. In 2002, Autodesk purchased Revit from Revit Technology Corporation for their building solutions and infrastructure group.

The MEP discipline of Revit was introduced to the users in 2006 as Revit MEP. This software is primarily used in designing the Mechanical, Electrical, and Plumbing and Piping systems, which are the three disciplines of building services. In Revit, you can create the plans, elevations, sections, schedules, and 3D models of a building project that can be easily accessed and shared between different users.

The **Exploring Autodesk Revit 2025 for MEP** textbook explains the concepts and principles of MEP in Revit through practical examples, tutorials, and exercises. This enables the users to harness the power of BIM with Autodesk Revit for their specific use. In this textbook, the author explains in detail the procedure of evaluating HVAC cooling and heating loads and the usage of tools required for designing HVAC, electrical, and plumbing design. In addition, in this textbook, you will learn tools and concepts for creating families and process to document the final drawings.

In this textbook, special emphasis has been laid on the concepts of space modeling and tools to create systems for all disciplines (MEP). Each concept in this textbook is explained using the detailed description and relevant graphical examples and illustrations. The accompanying tutorials and exercises, which relate to the real world projects, help you understand the usage and abilities of the tools available in Autodesk Revit. Along with the main text, the chapters have been punctuated with tips and notes to make the concepts clear, thereby enabling you to create your own innovative projects.

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The main features of this textbook are as follows:

- **Project-based Approach**
  The author has adopted the project-based approach and the learn-by-doing theme throughout the textbook. This approach guides the users through the process of creating the designs given in the tutorials.

- **Real-World Designs as Projects**
  The author has used real-world building designs and architectural examples as projects in this textbook so that the users can correlate them to the real-time designs.

- **Tips and Notes**
  Additional information related to various topics is provided to the users in the form of tips and notes.

- **Learning Objectives**
  The first page of every chapter summarizes the topics that are covered in that chapter.

- **Self-Evaluation Test, Review Questions, and Exercises**
  The chapters end with a Self-Evaluation Test so that the users can assess their knowledge of the chapter. The answers to Self-Evaluation Test are given at the end of the chapter. Also, the Review Questions and Exercises are given at the end of chapter and they can be used by the instructors as test questions and exercises.

- **Heavily Illustrated Text**
  The text in this book is heavily illustrated with about 200 line diagrams and screen capture images.

Symbols Used in the Textbook



Note
The author has provided additional information to the users about the topic being discussed in the form of Notes.



Tip
Special information on various techniques is provided in the form of Tips that will increase the efficiency of the users.



New
This icon indicates that the command or tool being discussed is new.



Enhanced

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This icon indicates that the command or tool being discussed is enhanced.

Formatting Conventions Used in the Textbook

Please refer to the following list for the formatting conventions used in this textbook.

- Names of tools, buttons, options, browser, palette, panels, and tabs are written in boldface.

  Example: The **Duct** tool, the **Modify** button, the **HVAC** panel, the **Systems** tab, **Properties** palette, **Project Browser**, and so on.

- Names of dialog boxes, drop-downs, drop-down lists, list boxes, areas, edit boxes, check boxes, and radio buttons are written in boldface.

  Example: The **Options** dialog box, the **Wire** drop-down in the **Electrical** panel of the **Systems** tab, the **Name** edit box in the **Name** dialog box, the **Chain** check box in the **Options Bar**, and so on.

- Values entered in edit boxes are written in boldface.

  Example: Enter **4”** (**100mm**) in the **Offset** edit box.

- Names of the files saved are italicized.

  Example: *c03_Office-Space_tut2.rvt*

- The methods of invoking a tool/option from the ribbon, Application Menu, or the shortcut keys are given in a shaded box.

  Ribbon: Systems > Electrical > Wire drop-down > Arc Wire
  File menu: New
  Shortcut Keys: CTRL+N

- When you select an element or a component, a contextual tab is displayed depending upon the entity selected. For example: **Modify | (Elements / Components)**.

Naming Conventions Used in the Textbook

Tool

If you click on an item in a panel of the ribbon and a command is invoked to create/edit an object or perform some action, then that item is termed as **tool**.

For example:
Duct tool, **Air Terminal** tool, **Isolated** tool
Filled Region tool, **Trim/Extend to Corner** tool, **Rotate** tool

If you click on an item in a panel of the ribbon and a dialog box is invoked wherein you can set the properties to create/edit an object, then that item is also termed as **tool**, refer to Figure 1.

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For example:
Load Family tool, **Duct** tool, **Wall** tool
Plumbing Fixture tool, **Visibility/Graphics** tool

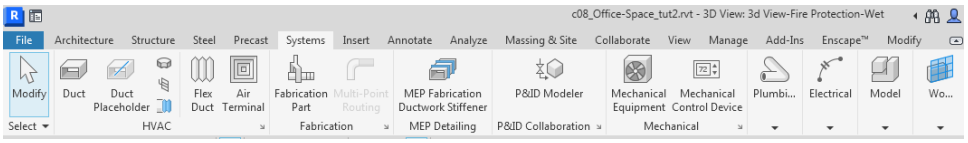


Figure 1 *Tools in the ribbon*

Button

The item in a dialog box that has a 3d shape like a button is termed as **button**. For example, **OK** button, **Cancel** button, **Apply** button, and so on. If the item in a ribbon is used to exit a tool or a mode, it is also termed as button. For example, **Modify** button, **Finish Editing System** button, **Cancel Editing System** button, and so on; refer to Figure 2.

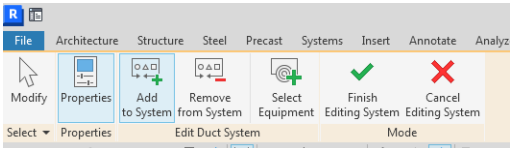
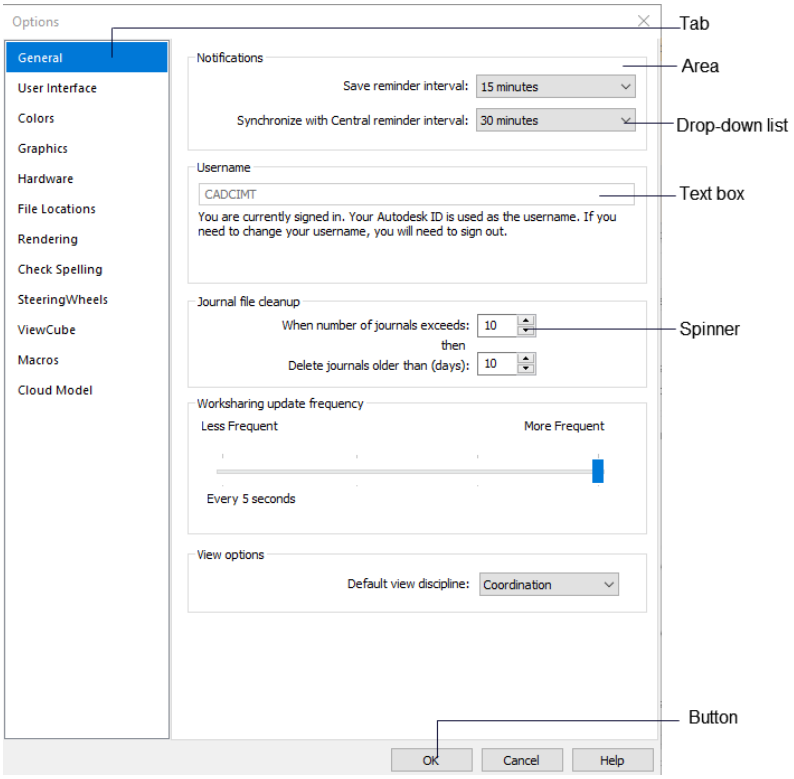


Figure 2 *Choosing the* ***Finish Editing System*** *button*

Dialog Box

In this textbook, different terms are used for referring to the components of a dialog box. Refer to Figure 3 for the terminology used.



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Drop-down

A drop-down is the one in which a set of common tools are grouped together for creating an object. You can identify a drop-down with a down arrow on it. These drop-downs are given a name based on the tools grouped in them. For example, **Wall** drop-down, **Component** drop-down, **Region** drop-down, and so on; refer to Figure 4.

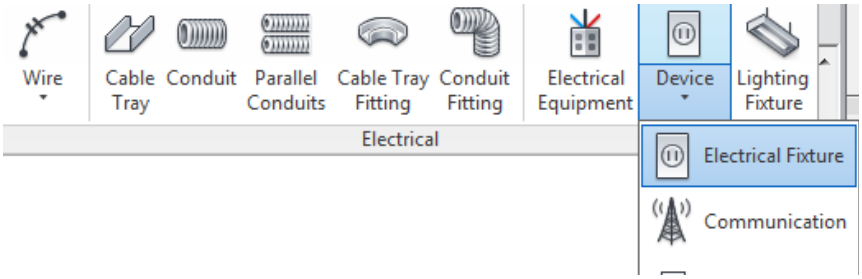


Figure 4 *Choosing a tool from the drop-down*

Drop-down List

A drop-down list is the one in which a set of options are grouped together. You can set various parameters using these options. You can identify a drop-down list with a down arrow on it. For example, **Type Selector** drop-down list, **Units** drop-down list, and so on; refer to Figure 5.

Options

Options are the items that are available in shortcut menus, drop-down lists, dialog boxes, and so on. For example, choose the **Zoom In Region** option from the shortcut menu displayed on right-clicking in the drawing area; refer to Figure 6.

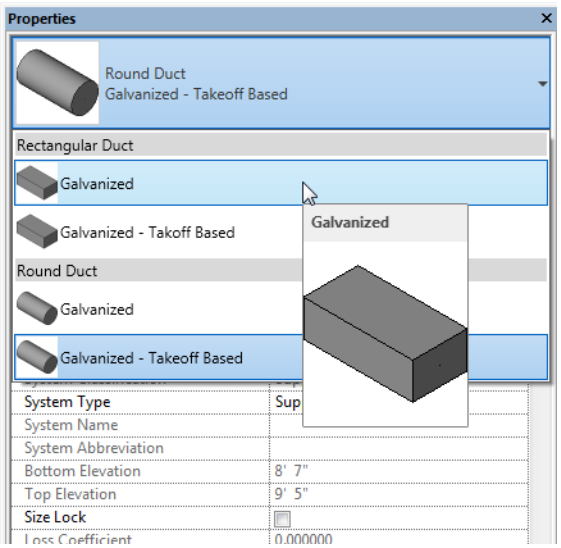


Figure 5 *Selecting an option from the* ***Type Selector*** *drop-down list*

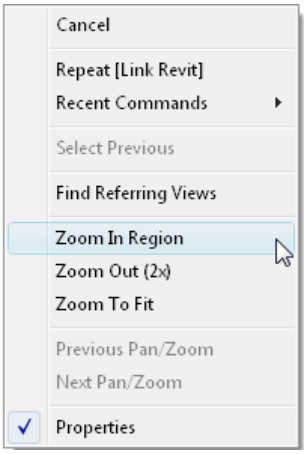


Figure 6 *Choosing an option from the shortcut menu*

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Free Companion Website

It has been our constant endeavor to provide you the best textbooks and services at affordable price. In this endeavor, we have come out with a Free Companion website that will facilitate the process of teaching and learning of Autodesk Revit 2025. If you purchase this textbook, you will get access to the files on the Companion website.

The resources available for the faculty and students in this website are as follows:

Faculty Resources

- **Technical Support**
  You can get online technical support by contacting ***techsupport@cadcim.com***.

- **Instructor Guide**
  Solutions to all review questions and exercises in the textbook are provided in this guide to help the faculty members test the skills of the students.

- **Revit Files**
  The Revit files (*.rvt*) used in tutorials and exercises are available for free download.

Student Resources

- **Technical Support**
  You can get online technical support by contacting ***techsupport@cadcim.com***.

- **Revit Files**
  The Revit files (*.rvt*) used in tutorials are available for free download.

- **Learning Resources**
  Additional learning resources available at ***https://revitxperts.blogspot.com***.

If you face any problem in accessing these files, please contact the publisher at ***sales@cadcim.com***or the author at ***stickoo@pnw.edu*** or ***tickoo525@gmail.com***.

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