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Preface

AutoCAD Plant 3D

AutoCAD Plant 3D 2025, a product of Autodesk Inc, is a plant layout design software. It is extensively used in the industry to create and modify the P&IDs and 3D models of the process plants. Built on the AutoCAD platform, this software allows you to carry out the design process in a project based manner. The modern toolset available with this software allows designers and engineers, who model and document process plants, to generate and share isometric drawings, orthographic drawings, and materials reports. You can also integrate Plant 3D with Navisworks and can import designs created in Revit and Inventor.

The **AutoCAD Plant 3D 2025 for Designers** textbook explains the readers to effectively use the designing tools in AutoCAD Plant 3D. The accompanying tutorials and exercises, which relate to the real world projects, help you understand the usage and abilities of the tools available in AutoCAD Plant 3D 2025. You will learn how to setup a project, create and edit P&IDs, design a 3D Plant model, generate isometric/orthographic drawings, as well as how to publish and print drawings. The chapters in this textbook are structured in a pedagogical sequence that makes this textbook very effective in learning the features and capabilities of the software.

Since AutoCAD Plant 3D is based on AutoCAD platform, a user must have the basic knowledge of AutoCAD. In this textbook, the basic tools of AutoCAD are not explained while explaining the working of Plant 3D tools assuming that the user knows AutoCAD basics.

The salient features of this textbook are as follows:

- **Tutorial Approach**
  The author has adopted tutorial point-of-view and learn-by-doing theme throughout the textbook. This approach guides the users understand the concepts and processes easily.

- **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**
  Every chapter ends with 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, Review Questions and Exercises are given at the end of the chapters and they can be used by the instructor as test questions and exercises.

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- **Heavily Illustrated Text**
  The text in this book is heavily illustrated with about 600 line diagrams and screen capture images.

Symbols Used in the Book



Note
The author has provided additional information related to various topics in the form of notes.



Tip
The author has provided a lot of useful information to the users about the topic being discussed in the form of tips.



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



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

Formatting Conventions Used in the Book

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

- Command names are capitalized and written in boldface letters.

  Example: The **MOVE** command

- A key icon appears when you have to respond by pressing the Enter or the Return key.

  

- Command sequences are indented. The responses are indicated in boldface. The directions are indicated in italics and the comments are enclosed in parentheses.

  Command: **MOVE**
  Select object: **G**
  Enter group name: *Enter a group name (the group name is group1)*

- The methods of invoking a tool/option from the **Ribbon**, **Menu Bar**, **Quick Access Toolbar**, **Application menu**, Status Bar, and Command prompt are enclosed in a shaded box.

  Ribbon: Structure > Parts > Footing
  Menu Bar: File > Open
  Quick Access Toolbar: Open
  Application Menu: Open > Drawing
  Command: OPEN

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Naming Conventions Used in the Book

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:
To Create: Route Pipe tool, **Create Supports** tool, **Create Ortho View** tool
To Edit: Modify Equipment tool, **Attach Supports** tool, **Detach Supports** tool
Action: Zoom tool, **Move** tool, **Copy** 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.

For example:
To Create: Create Equipment tool, **Create Supports** tool
To Edit: Edit Attributes tool, **Block Editor** tool

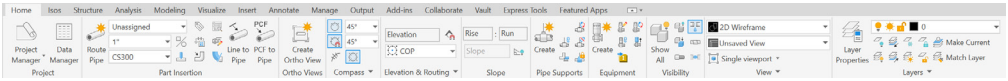

Figure 1 *Various tools in the* ***Ribbon***

Button

If you click on an item in a toolbar or a panel of the **Ribbon** and the display of the corresponding object is toggled on/off, then that item is termed as **Button**. For example, **Grid** button, **Snap** button, **Ortho** button, **Route Pipe** button, **Line to Pipe** button, and so on; refer to Figure 2.

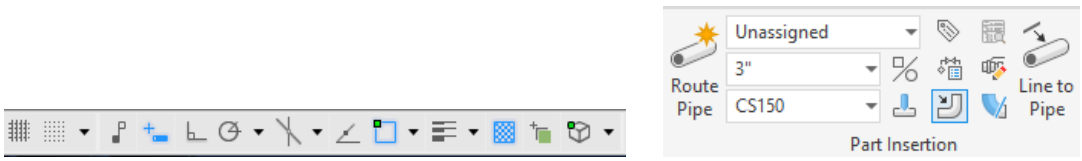

Figure 2 *Various buttons displayed in the Status Bar and* ***Ribbon***

The item in a dialog box that has a 3D shape like a button is also termed as **Button**. For example, **OK** button, **Cancel** button, **Apply** button, and so on.

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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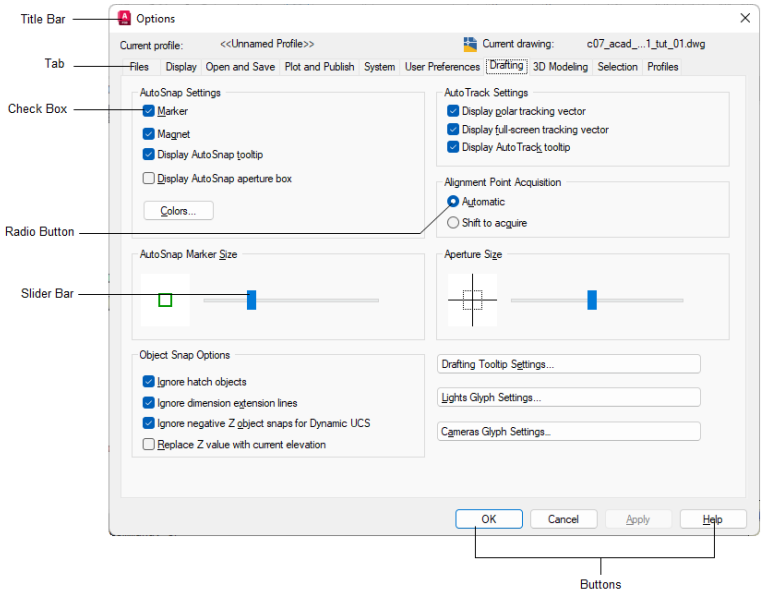

Figure 3 *The components in a dialog box*

Drop-down

A drop-down is the one in which a set of common tools are grouped together for performing an action. 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, **Project** drop-down, **Settings** drop-down, **Create Light** drop-down, and so on; refer to Figure 4.

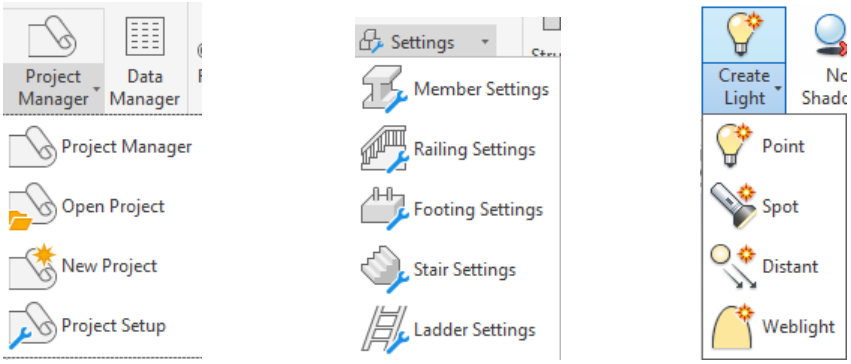

Figure 4 *The* ***Project****,* ***Settings****, and* ***Create Light*** *drop-downs*

Drop-down List

A drop-down list is the one in which a set of options are grouped together. You can set parameters using these options. You can identify a drop-down list with a down arrow on it. To know the name of a drop-down list, move the cursor over it; its name will be displayed as a tool tip. For example, **Line Number Selector** drop-down list, **Linetype** drop-down list, **Object Color** drop-down list, **Visual Styles** drop-down list, and so on, refer to Figure 5.

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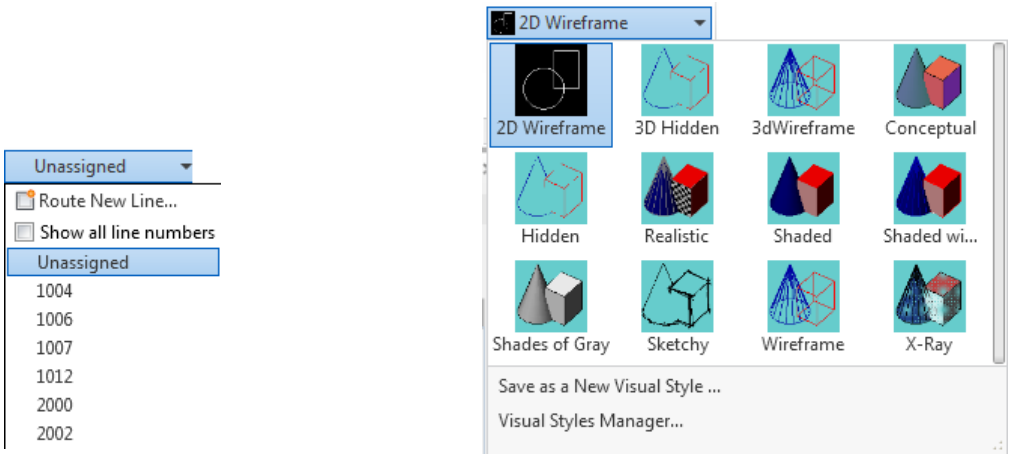

Figure 5 *The* ***Line Number Selector*** *and* ***Visual Styles*** *drop-down lists*

Options

Options are the items that are available in shortcut menu, drop-down list, Command prompt, **Properties** panel, and so on. For example, choose the **Properties** option from the shortcut menu displayed on right-clicking in the drawing area, refer to Figure 6.

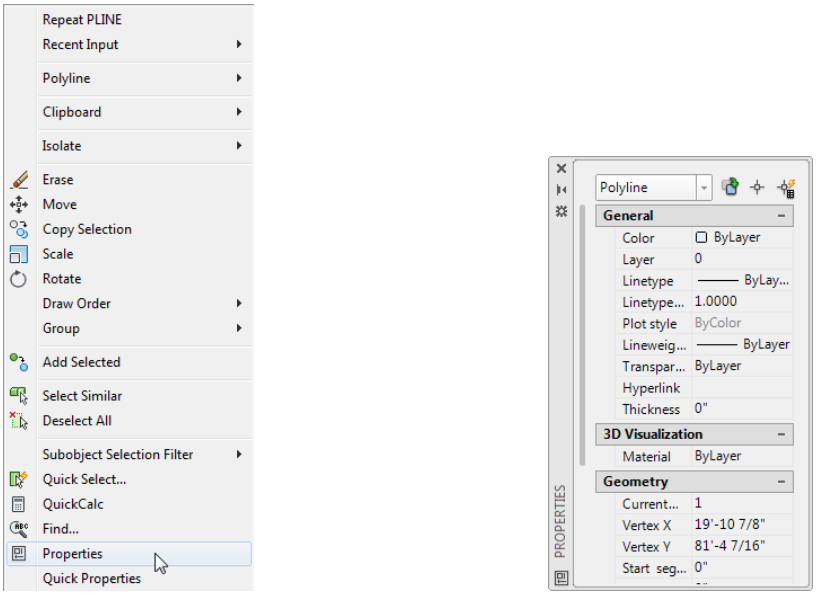

Figure 6 *Options in a shortcut menu and the* ***PROPERTIES*** *palette*

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 AutoCAD Plant 3D. If you purchase this textbook, you will get access to the companion website.

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

Faculty Resources

- **Technical Support**
  The faculty 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 link to help faculty members test the skills of the students.

- **Part Files**
  The part files used in illustrations, tutorials, and exercises are available for free download.

- **Input Files**
  The input files used in tutorials and exercises are available for free download.

Student Resources

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

- **Part Files**
  The part files used in illustrations and tutorials are available for free download.

- **Input Files**
  The input files used in tutorials and exercises are available for free download.

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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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