AutoCAD MEP 2018 for Designers (4th Edition)

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DEDICATION

To teachers, who make it possible to disseminate knowledge
to enlighten the young and curious minds
of our future generations

To students, who are dedicated to learning new technologies
and making the world a better place to live in

SPECIAL RECOGNITION

A special thanks to Mr. Denis Cadu and the ADN team of Autodesk Inc.
for their valuable support and professional guidance to
procure the software for writing this textbook

THANKS

To the faculty and students of the MET department of
Purdue University Northwest for their cooperation

To employees of CADCIM Technologies for their valuable help

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Preface

AutoCAD MEP 2018

AutoCAD MEP, also known as AMEP, is based on the AutoCAD Architecture platform. Here, MEP stands for Mechanical, Electrical, and Plumbing. The software has all the required features for creating a Mechanical, Electrical, and Plumbing system. It includes all the features of the AutoCAD platform such as Blocks, Layers, 3D Models, and so on. It also includes architectural features such as walls, doors, windows, and so on.

In AMEP, you can add objects with actual parameters to the project. These objects are available in various categories of AutoCAD MEP library and can be customized according to the requirements of the users.

AutoCAD MEP 2018 for Designers textbook is written with the intention of helping the readers effectively use the designing and drafting tools of AutoCAD MEP 2018. This textbook provides a simple and clear explanation of tools that are commonly used in AutoCAD MEP 2018. After reading this textbook, you will be able to design HVAC system, piping system, plumbing system, and electrical layout of a building. The chapter on schematics will enable the users generate the schematic drawings of a system for easy representation. The examples and tutorials used in this textbook ensure that the users can relate the knowledge from this textbook with the actual industry designs.

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

The main features of this textbook are as follows:

- **Tutorial Approach**
  The author has adopted the tutorial point-of-view and the learn-by-doing approach throughout the textbook. This approach guides the users easily understand the process of designing and drafting with the help of tutorials.

- **Real-World Projects as Tutorials**
  The author has used about real-world mechanical engineering projects as tutorials in this textbook. This enables the readers to relate the tutorials to the engineering industry. In addition, there are exercises that are also based on the real-world engineering projects.

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

- **Heavily Illustrated Text**
  The text in this book is heavily illustrated with about 400 line diagrams and screen capture images.

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

Symbols Used in the Textbook

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.

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, and palettes are written in boldface.	Example: The **Wall** tool, the **OK** button, the **Left** option, and so on.
• Names of dialog boxes, drop-downs, drop-down lists, list boxes, areas, edit boxes, check boxes, radio buttons, and palettes are written in boldface.	Example: The **Detail Component Manager** dialog box, the **Walls** drop-down, the **Width** edit box in the **PROPERTIES** palette, the **Schematic Curve** check box in the **Drafting Settings** dialog box, the **Keyboard entry** radio button of the **User Preferences** tab in the **Options** dialog box, and so on.
• Values entered in edit boxes are written in boldface.	Example: Enter **5** in the **Radius** edit box.
• Names and paths of the files are written in italics.	Example: *C:\amep\c03*, *c03tut03.dwg*, and so on

Naming Conventions Used in the Textbook

Tool

If you click on an item in a **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: **Line** tool, **Dimension** tool, **Wall** tool
To Modify: **Move** tool, **Explode** tool, **Rotate** tool
Action: **Zoom All** tool, **Pan** tool, **Copy** tool

If you click on an item in 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:
Air Handler tool, **Pump** tool, **Junction Box** tool

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.

Dialog Box

In this textbook, different terms are used for referring to the components of a dialog box. Refer to Figure 1 for the terminology used.

TOOL PALETTE

A TOOL PALETTE is the one in which a set of common tools are grouped together for performing an action. For example, **TOOL PALETTES - PIPING**, **TOOL PALETTES - ARCHITECTURAL**, **TOOL PALETTES - HVAC**, and so on, refer to Figure 2.

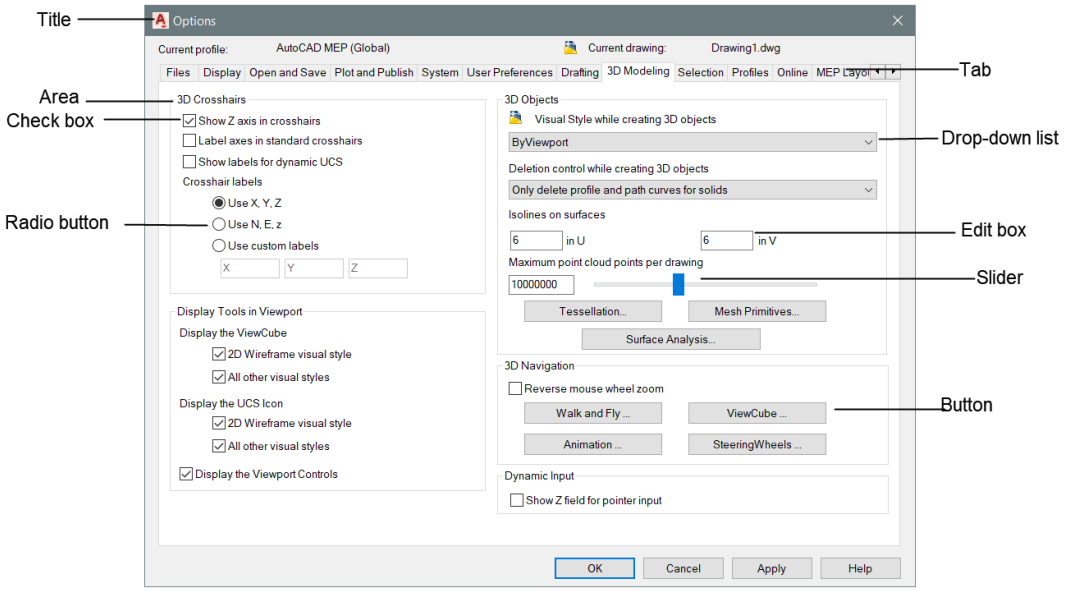

Figure 1 *The components of a dialog box*

PROPERTIES Palette

The **PROPERTIES** palette looks similar to the TOOL PALETTE but in this palette, only the properties of the objects are displayed. You can edit these properties as per your requirement. Figure 3 shows the **PROPERTIES** palette displayed after selecting a wall from the drawing area.

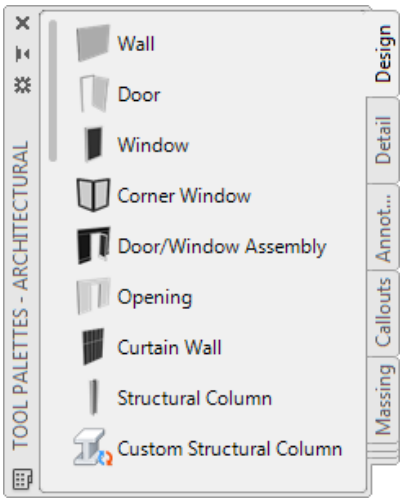

Figure 2 *Tools in the* ***TOOL PALETTES - ARCHITECTURAL***

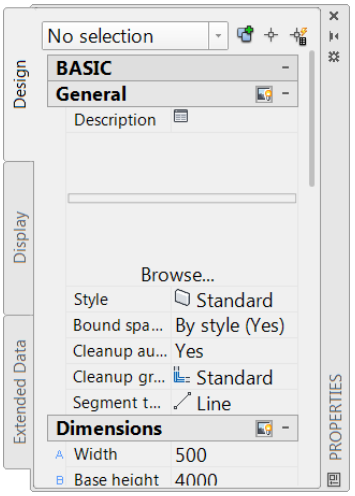

Figure 3 *Properties in the* ***PROPERTIES*** *palette*

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 MEP. If you purchase this book, you will get access to the files on the Companion website by visiting *www.cadcim.com*.

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

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.

- **PowerPoint Presentations**
  The contents of the book are arranged in PowerPoint slides that can be used by the faculty for their lectures.

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

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- **Part Files**
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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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