

Chapter 2

Working with Projects and Drawings

Learning Objectives

After completing this chapter, you will be able to:

- Create new projects and drawings
- Open existing projects
- Add existing and new drawings to the current project
- Copy existing projects
- Understand the working of the **PROJECT MANAGER**



INTRODUCTION

AutoCAD Electrical is a project-based software in which wiring diagrams related to each other are grouped under a project. A project is a set of electrical wiring diagrams that form a project file <project_name>.wdp. Each project is defined by an ASCII text file with .wdp extension. These project files contain a list of project information such as project settings, project or drawing properties, names and descriptions of drawing files, symbol library paths, and so on. You can have an unlimited number of projects. However, only one project can be active at a time. The list of these projects is displayed in the **PROJECT MANAGER**.

PROJECT MANAGER

Command: AEPROJECT



The **PROJECT MANAGER** is used to create new projects, open existing projects, add new drawings to a project, re-order drawing files, access existing projects, and modify existing information in a project. By default, the **PROJECT MANAGER** is displayed and docked on the left of the screen, refer to Figure 2-1. If the **PROJECT MANAGER** is not displayed by default, choose the **Manager** tool from the **Project Tools** panel of the **Project** tab; the **PROJECT MANAGER** will be displayed.

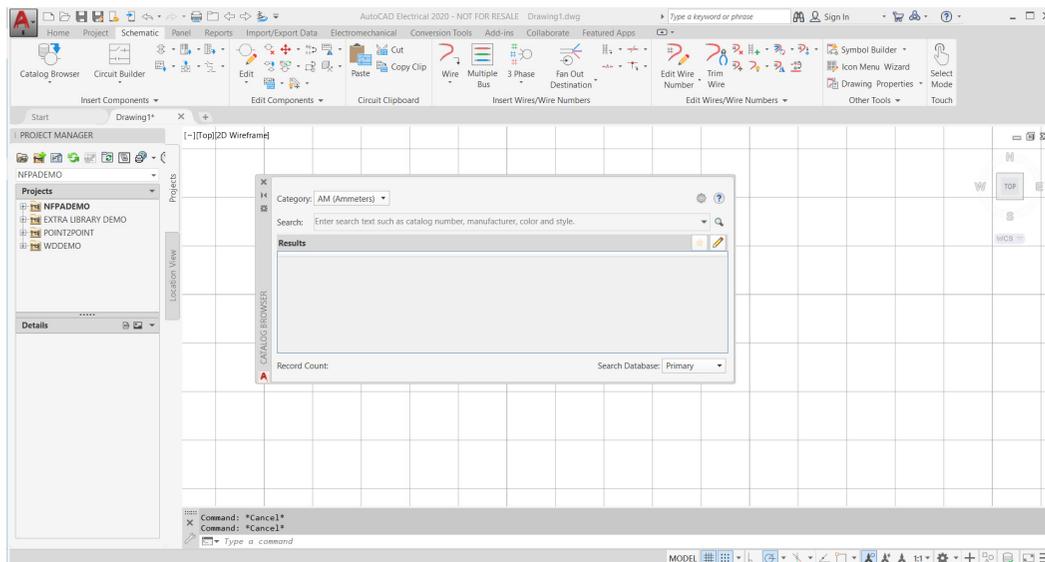


Figure 2-1 AutoCAD Electrical screen with the **PROJECT MANAGER**

Alternatively, choose the **Project Manager** tool from the **ACE:Main Electrical 2** toolbar to display the **PROJECT MANAGER**. The **PROJECT MANAGER** is similar to other AutoCAD Electrical tool palettes. You can dock the **PROJECT MANAGER** at a specific location on the screen. Also, if you do not want to use the project tools, you can hide the **PROJECT MANAGER**.

The **PROJECT MANAGER** is divided into two tabs: **Projects** and **Location View**. These tabs are discussed in brief next.

Projects TAB

In the **PROJECT MANAGER**, the **Projects** tab is chosen by default, refer to Figure 2-1. When you double-click on the title bar of the **PROJECT MANAGER**, it gets undocked and is displayed separately on the screen, refer to Figure 2-2. When you right-click on the title bar of the undocked **PROJECT MANAGER**, a shortcut menu is displayed, as shown in Figure 2-3. You can change the appearance, location, and display settings of the **PROJECT MANAGER** by choosing the respective options from the shortcut menu.

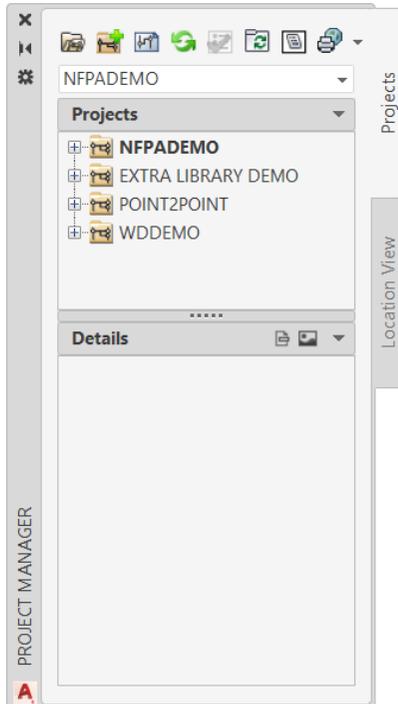


Figure 2-2 The undocked **PROJECT MANAGER**

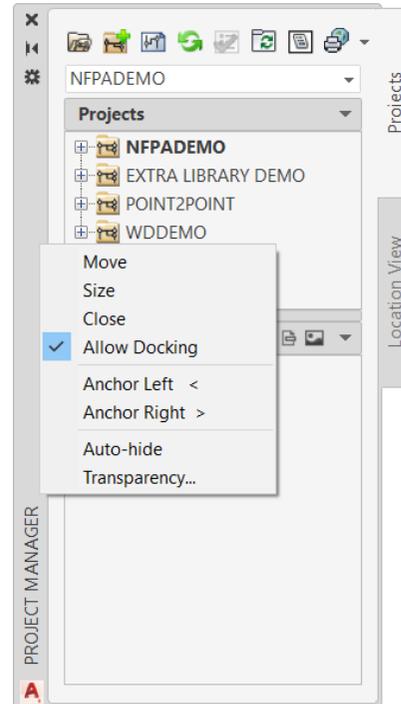


Figure 2-3 The shortcut menu displayed by right-clicking on the title bar of the **PROJECT MANAGER**

When you double-click on a project name in the **Projects** rollout, a list of drawings associated with the project will be displayed. Also, the details of the selected project will be displayed in the **Details** rollout of the **PROJECT MANAGER**, as shown in Figure 2-4. The name of the active project will appear in bold text in the **Projects** rollout of the **PROJECT MANAGER**.

When you right-click on a drawing name, a shortcut menu will be displayed. You can use the options in this shortcut menu to open, close, copy, remove, replace, rename, or access other editing options to modify the drawing file. You can open a drawing file by double-clicking on it in the **PROJECT MANAGER** and the corresponding drawing file name will appear in bold text in the **Projects** rollout of the **PROJECT MANAGER**.



Note

You cannot create two projects with the same name in the **PROJECT MANAGER**. Moreover by using the **PROJECT MANAGER**, you can switch to different projects and change their settings.

Opening a Project



You can open an existing project by using the **Open Project** button from the **PROJECT MANAGER**. On doing so, the **Select Project File** dialog box will be displayed. Next, select the existing project from this dialog box and choose the **Open** button; the selected project's name will be automatically displayed in the **Projects** rollout in bold text and it will become an active project.

Creating a New Project

Command: ACENEWPROJECT



You can create a new project by choosing the **New Project** button from the **PROJECT MANAGER**. On doing so, the **Create New Project** dialog box will be displayed. Alternatively, use the **ACENEWPROJECT** command to create a new project.

Working with Drawings

You can add any number of drawings to your project at any time. A project file can have drawings located in different directories. But, it is recommended that you save your drawings and project file (*.wdp*) in the same folder. When you create a new drawing, an invisible smart block, **WD_M**, will automatically be added to your drawing at location 0,0. The **WD_M** block defines drawing settings. These settings may be different from the project settings. Thus, you can have different settings for different drawings in a single project. Also, each AutoCAD Electrical drawing should contain only one copy of invisible **WD_M** block. If multiple **WD_M** blocks are present in the drawing, the settings may not be stored and read consistently. Also, note that the drawing to be created will automatically get added to the active project.

Creating a New Drawing

Command: ACENEWDRAWING



The **New Drawing** button is used to create a new drawing file. To do so, choose the **New Drawing** button from the **PROJECT MANAGER**; the **Create New Drawing** dialog box will be displayed.

Alternatively, invoke this dialog box by using the **ACENEWDRAWING** command or by right-clicking on the **Projects** rollout of the **PROJECT MANAGER** and then choosing the **New Drawing** option from the shortcut menu displayed. **aults to Drawing Settings** message box; the default values of the project will be added to the **WD_M** block definition of the newly added drawing. If you choose the **No** button, the new drawing will retain its existing settings. Choose the **Cancel** button to exit the command.

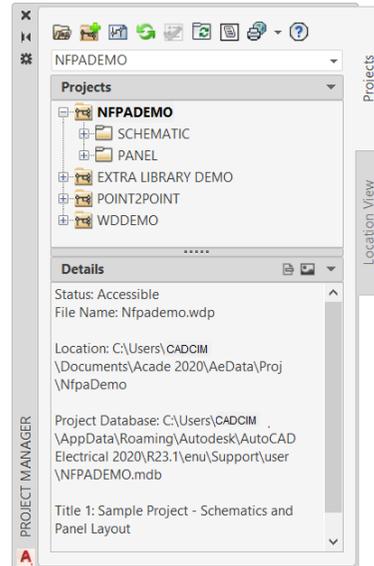


Figure 2-4 The **PROJECT MANAGER** displaying the **Details** rollout



Note

You can have a single drawing in multiple projects.

Adding Existing Drawings to the Current Project

You can also add the existing drawings to the current project. To do so, right-click on the project name in the Projects rollout of the **PROJECT MANAGER**; a shortcut menu will be displayed, as shown in Figure 2-5. Choose the **Add Drawings** option from the shortcut menu; the **Select Files to Add** dialog box will be displayed. In this dialog box, select the desired project folder from the **Look in** drop-down list and then select drawings to be added to the project. Next, choose the **Add** button; the **Apply Project Defaults to Drawing Settings** message box will be displayed.

If you choose the **Yes** button, the default values of the project will be added to the WD_M block definition of the newly added drawing. But if you choose the **No** button, the new drawing will retain its existing settings. Also, the selected drawings will be added to your project and will appear at the end of the Project Drawing list.



Note

You can select multiple drawing files at a time from the **Select Files to Add** dialog box by pressing the **SHIFT** or **CTRL** key.

You can group drawings, remove drawings, assign description to drawings, preview drawings, configure the drawing list display, and so on by using the **PROJECT MANAGER**. Also, you can access the existing project and modify its related information using the **PROJECT MANAGER**.

Configuring the Drawing List Display

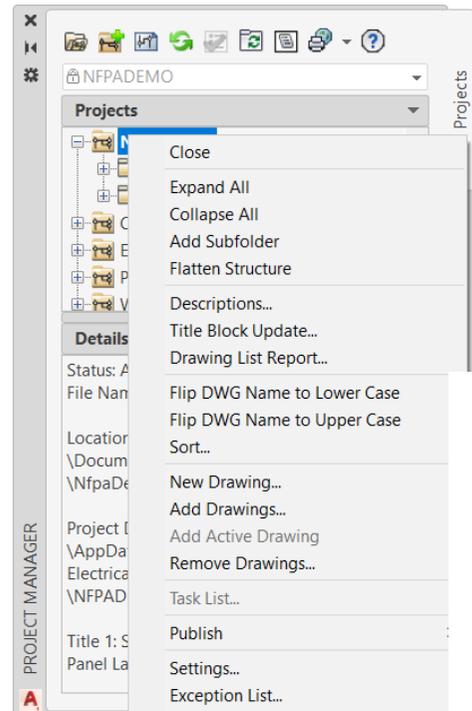
The **Drawing List Display Configuration** button is used to configure the information related to various drawings in the **Projects** rollout of the **PROJECT MANAGER**. This button is used to display the required information such as drawing number, description, and so on. By default, only the name of the drawing is displayed in the **Projects** rollout of the **PROJECT MANAGER**. Choose the **Drawing List Display Configuration** button from the **PROJECT MANAGER**; the **Drawing List Display Configuration** dialog box will be displayed, as shown in Figure 2-6.

Copying a Project

Command: AECOPYPROJECT



The **Copy** tool is used to copy the entire project as well as copy the drawings present within that project. To do so, choose the **Copy** tool from the **Project Tools** panel of the **Project** tab; the **Copy Project: Step 1 - Select Existing Project to Copy** wizard will be displayed.



*Figure 2-5 The shortcut menu displayed by right-clicking on the active project name in the **PROJECT MANAGER***

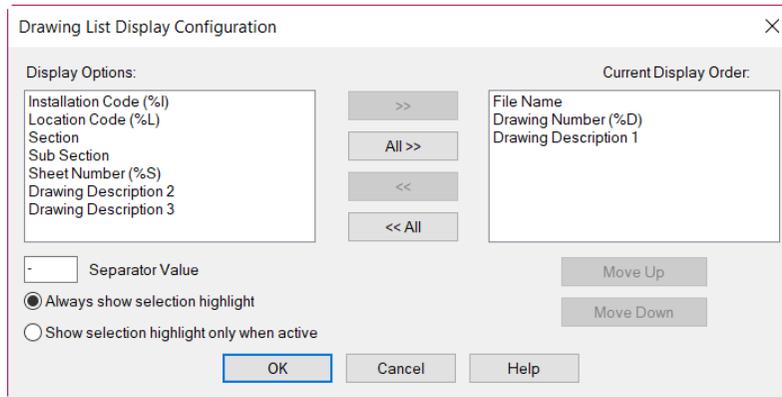


Figure 2-6 The *Drawing List Display Configuration* dialog box



Note

Before copying drawings to a new project, you need to close all drawings of that project.

Next, enter the name and path of the existing project in the **Enter existing project name** edit box. Alternatively, choose the **Browse** button from this dialog box to select the existing project; the **Select existing project to copy** dialog box will be displayed. Next, double-click on the project folder that you want to copy. Select the project's *.wdp* file and choose the **Open** button; the name and path of the existing project will be displayed in the **Enter existing project name** edit box. You can also choose the **Copy Active Project** button available in this dialog box to copy the currently active project.

Choose the **OK** button; the **Copy Project: Step 2 - Select path and name for new project** wizard will be displayed. Enter a name for the new project in the **File name** edit box and select the path for the new project from the **Save in** drop-down list. By default, the *.wdp* extension will be displayed in the **Save as type** edit box. Next, choose the **Save** button; the **Select Drawings to Process** dialog box will be displayed.

Select the drawing files that you want to copy in the project from the top list of this dialog box. Next, choose the **Process** button; the selected drawings will be transferred from the top list of the **Select Drawings to Process** dialog box to the bottom list. The other options in the **Select Drawings to Process** dialog box have already been discussed. Choose the **OK** button from the **Select Drawings to Process** dialog box; the **Copy Project: Step 4 -- Enter Base Path for Project Drawings** wizard will be displayed.

In this dialog box, enter the directory path where the new project will be saved. The directory path will be created, if it does not exist. In the **Select Project-Related Files to be Copied** area, you can specify the project related files that need to be copied to the project that you want to create. Note that the project related files to be copied will be activated in the **Select Project-Related Files to be Copied** area. To copy these files, select the check boxes on the left of the respective files and then choose the **OK** button; the **Copy Project: Step 5 -- Adjust new drawing file names** wizard will be displayed.

Choose the **Edit** button in this wizard to edit the file name and path of the selected drawing, if needed. Similarly, choose the **Find/Replace** button to find or replace a drawing file name and

its path. Next, choose the **OK** button; the name of the new project will be displayed at the top in the **Projects** rollout in bold text and will become the active project.

Deleting a Project

Command: AEDELETEPROJECT

 The **Delete** tool or the **AEDELETEPROJECT** command is used to delete an existing project and its drawings permanently. To do so, choose the **Delete** tool from the **Project Tools** panel of the **Project** tab; the **Select Existing Project to Delete** dialog box will be displayed.

Enter the name of the project file to be deleted in the **File name** edit box. Alternatively, select a project name from the list displayed in the **Select Existing Project to Delete** dialog box. Next, double-click on the name of the project folder, if it exists. Select the project definition file (.wdp) and choose the **Open** button; the **Project File Delete Utility** dialog box will be displayed. In this dialog box, the **Delete “.wdp” project list file** check box is used to permanently delete the selected project file with .wdp extension. The **Delete project’s AutoCAD drawing files** check box is used to delete only the drawing files of a project. Note that this check box will be activated only if the related project consists of drawing files.

The **List** button will be activated only if you select the **Delete project’s AutoCAD drawing files** check box. Choose the **List** button; the **Select Drawings to Process** dialog box will be displayed. Select the drawings to be deleted from the drawing file list of the project. Next, choose the **OK** button from the **Select Drawings to Process** dialog box; the **Project File Delete Utility** dialog box will be displayed again. Choose the **Delete Files** button from the **Project File Delete Utility** dialog box; the selected files will be deleted permanently, and you cannot retrieve them.

Location View TAB

The options in the **Location View** tab of the **PROJECT MANAGER** are used to display and filter the components based on the installation and location codes, display details and connections of the components, and so on. Figure 2-7 shows the **PROJECT MANAGER** with the **Location View** tab chosen.

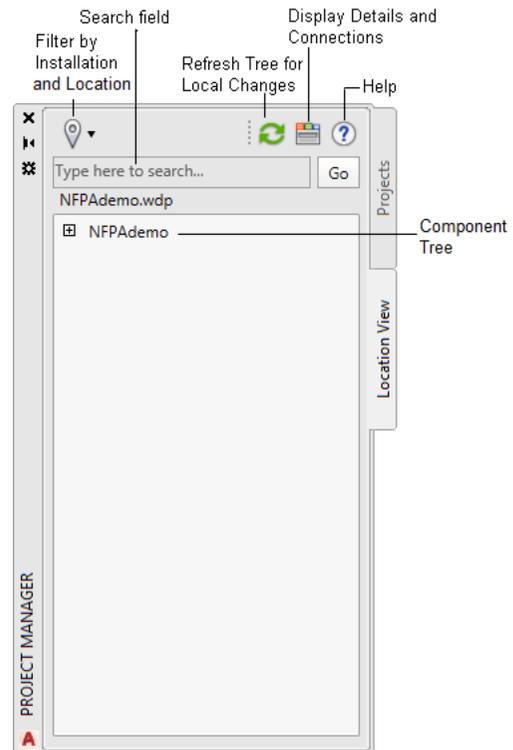


Figure 2-7 The **PROJECT MANAGER** with the **Location View** tab chosen

TUTORIALS

Tutorial 1

In this tutorial, you will create a new project and add project description to it, refer to Figure 2-8. You will also create a new drawing in the project. **(Expected time: 10 min)**

The following steps are required to complete this tutorial:

- a. Create a new project.
- b. Open the CADCIM project.
- c. Create a new drawing.

Creating a New Project

1. Start AutoCAD Electrical 2020 by double-clicking on the shortcut icon of AutoCAD Electrical 2020 on the desktop of your computer to start AutoCAD Electrical 2020.
2. In the AutoCAD Electrical 2020 interface, click on the **Start Drawing** window. The **PROJECT MANAGER** is displayed by default on the left of the screen. If not displayed, choose the **Manager** tool from the **Project Tools** panel of the **Project** tab. Alternatively, choose the **Project Manager** tool from the **ACE:Main Electrical 2** toolbar to display the **PROJECT MANAGER**.
3. In the **PROJECT MANAGER**, make sure the **Projects** tab is chosen. Next, choose the **New Project** button; the **Create New Project** dialog box is displayed, as shown in Figure 2-9.
4. Enter **CADCIM** in the **Name** edit box.
5. Choose the **Browse** button; the **Browse For Folder** dialog box is displayed. By default, the **Proj** folder is selected in this dialog box. Choose the **OK** button; the location of the project is automatically displayed in the **Location** edit box.
6. Select the **Create Folder with Project Name** check box, if not selected.
7. By default, the name and path of the existing project is displayed in the **Copy Settings from Project File** edit box as `c:\Users\User Name\Documents\AcadE 2020\AeData\proj\NFPAdemo\NFPAdemo.wdp`. If not displayed, choose the **Browse** button; the **Select Project File** dialog box is displayed. Select the **NFPAdemo** folder and then select the **NFPAdemo.wdp** project file.

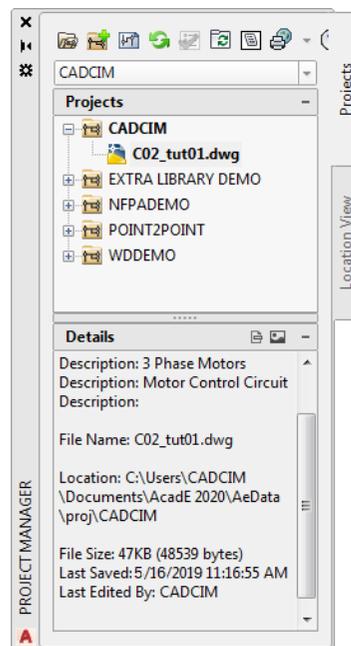


Figure 2-8 The **PROJECT MANAGER** displaying the **CADCIM** project and its description

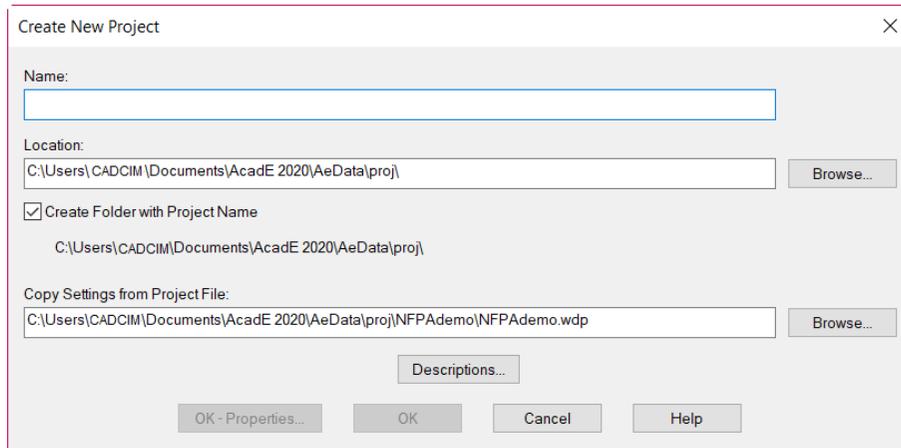


Figure 2-9 The Create New Project dialog box

Next, choose the **Open** button; the path and name of the existing project is displayed in the **Copy Settings from Project File** edit box.

8. Choose the **Descriptions** button from the **Create New Project** dialog box; the **Project Description** dialog box is displayed.
9. Enter the following information in the **Project Description** dialog box, as shown in Figure 2-10.

LINE1= CADCIM
 LINE2= AutoCAD Electrical
 LINE3= Sample Project
 LINE4= 1
 LINE5= 16/05/2019
 LINE6= Sham
 LINE7= John
 LINE8= Crystal
 LINE9= 1.00

Next, select the **in reports** check box corresponding to each of these lines to include this description in the reports, refer to Figure 2-10.



Note

*The information that you enter in the description lines of the **Project Description** dialog box will be displayed at a particular location in the title block of the drawing files of the **CADCIM** project, as shown in Figure 2-11.*

10. Choose the **OK** button from the **Project Description** dialog box to save the changes made in this dialog box.

Line	Text	checkbox in reports
Line1	CADCIM	<input checked="" type="checkbox"/>
Line2	AutoCAD Electrical	<input checked="" type="checkbox"/>
Line3	Sample Project	<input checked="" type="checkbox"/>
Line4	1	<input checked="" type="checkbox"/>
Line5	16/05/2019	<input checked="" type="checkbox"/>
Line6	Sham	<input checked="" type="checkbox"/>
Line7	John	<input checked="" type="checkbox"/>
Line8	Crystal	<input checked="" type="checkbox"/>
Line9	1.00	<input checked="" type="checkbox"/>
Line10		<input type="checkbox"/>
Line11		<input type="checkbox"/>
Line12		<input type="checkbox"/>

Figure 2-10 The Project Description dialog box

11. Choose the **OK** button from the **Create New Project** dialog box. You will notice that the **CADCIM** project appears in bold text at the top of the project list displayed in the **PROJECT MANAGER**, refer to Figure 2-12.
12. Next, select the **CADCIM** project from the **PROJECT MANAGER**.
13. Choose the **Details** button from the **Details/Preview** rollout. You will notice that the project description/information entered in the first nine lines of the **Project Description** dialog box is displayed in the **Details/Preview** area, as shown in Figure 2-12.



Note

1. It is recommended to save all the tutorials in the forthcoming chapters in the **CADCIM** project.
2. If the **CADCIM** project is not displayed in the **Projects** rollout of the **PROJECT MANAGER**, select the **Open Project** option from the Project selection drop-down list; the **Select Project File** dialog box is displayed. Select the **Proj** folder from the **Look in** drop-down list and then double-click on the **CADCIM** folder name. Next, select the **CADCIM** file and choose the **Open** button; the **CADCIM** project is displayed in the **Projects** rollout and it becomes the active project.

Creating a New Drawing

1. In the **PROJECT MANAGER**, choose the **New Drawing** button; the **Create New Drawing** dialog box is displayed, as shown in Figure 2-13.

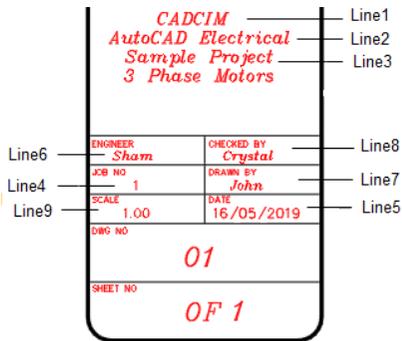


Figure 2-11 The title block showing the description entered in the **Project Description** dialog box

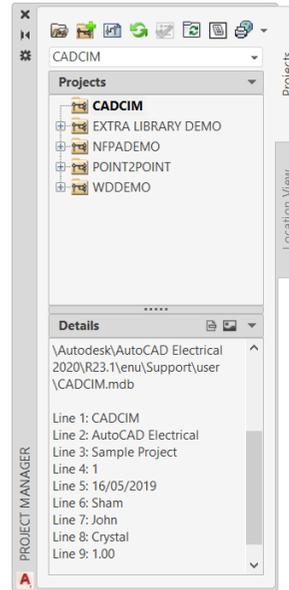


Figure 2-12 The **PROJECT MANAGER** displaying the **CADCIM** project and its description

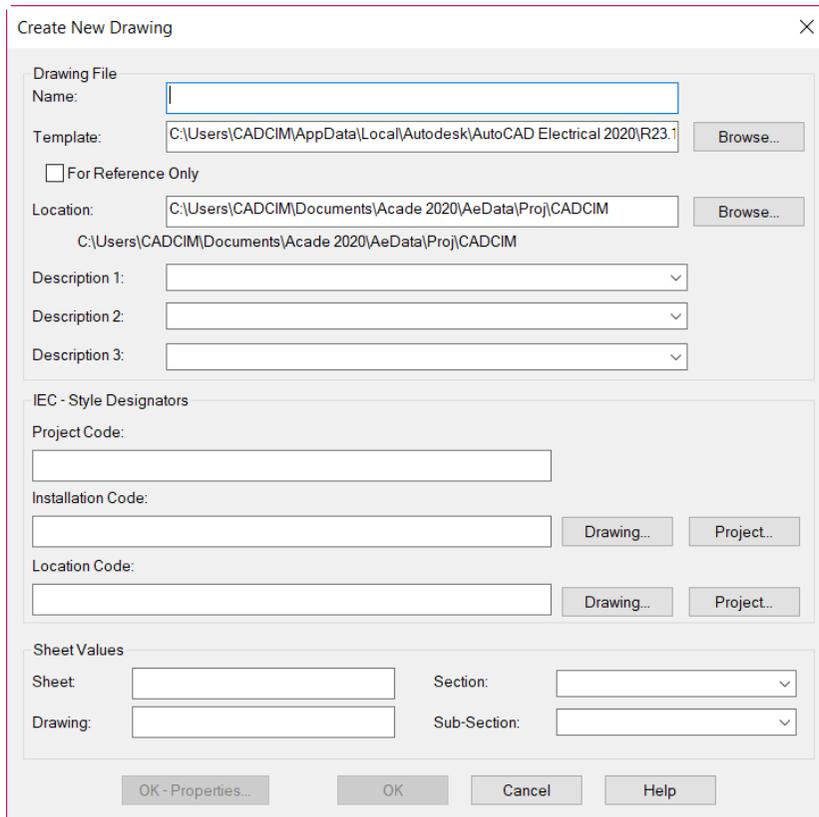


Figure 2-13 The **Create New Drawing** dialog box

2. Enter **C02_tut01** in the **Name** edit box. Next, choose the **Browse** button; the **Select template** dialog box is displayed. In this dialog box, select **ACAD_ELECTRICAL.dwt** from the list displayed and then choose the **Open** button; the name and path of the template is displayed in the **Template** edit box.
3. Clear the **For Reference Only** check box, if selected. Next, choose the **Browse** button available on the right of the **Location** edit box; the **Browse For Folder** dialog box is displayed. By default, the **CADCIM** project is selected. Choose the **OK** button; the location of the drawing is automatically displayed in the **Location** edit box.
4. Enter **3 Phase Motors** in the **Description 1** edit box.
5. Enter **Motor Control Circuit** in the **Description 2** edit box and enter **01** in the **Drawing** edit box of the **Sheet Values** area.
6. Choose the **OK** button from the **Create New Drawing** dialog box; you will notice that the drawing that you created gets added to the active project. To view the drawing that you created, double-click on **CADCIM** in the **PROJECT MANAGER**; the drawing list is displayed and the drawing *C02_tut01.dwg* appears in bold text in the **PROJECT MANAGER**. In this case, the active project is **CADCIM**; and therefore, the drawing gets added to this project. Click on the drawing; the details and the preview of the drawing are displayed in the **PROJECT MANAGER**, as shown in Figures 2-14 and 2-15.

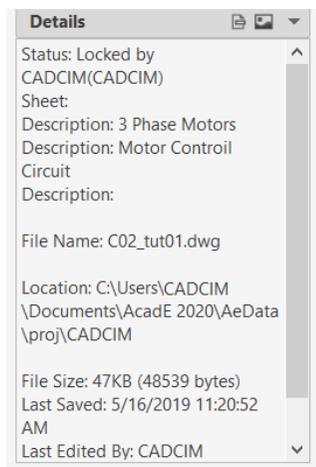


Figure 2-14 The Details rollout displaying the description of C02_tut01.dwg

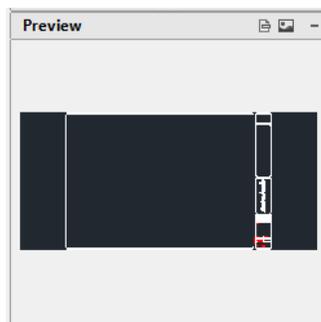


Figure 2-15 The Preview area displaying the preview of C02_tut01.dwg

Tutorial 2

In this tutorial, you will add and remove drawings from the **CADCIM** project and replace the drawings of the **POINT2POINT** project with the **CADCIM** project that you created in Tutorial 1 of this chapter. **(Expected time: 15 min)**

The following steps are required to complete this tutorial:

- a. Add drawings from the existing project.
- b. Remove the drawing.
- c. Replace the drawing.

Adding Drawings from the Existing Project

1. Right-click on the **CADCIM** project; a shortcut menu is displayed. Choose the **Add Drawings** option from the shortcut menu; the **Select Files to Add** dialog box is displayed.
2. Select the **Proj** folder from the **Look in** drop-down list; a list of all the projects saved in this folder is displayed. Next, double-click on the **NfpaDemo** folder from the **Select Files to Add** dialog box; the drawings present in this folder are displayed.
3. Press SHIFT/CTRL and select the *DEMO01*, *DEMO02*, *DEMO03*, *DEMO04*, and *DEMO05* drawings. Next, choose the **Add** button; the **Apply Project Defaults to Drawing Settings** message box is displayed.
4. Choose the **Yes** button from this message box; the selected drawings are added to the **CADCIM** project, as shown in Figure 2-16.

Removing the Drawing

1. Right-click on the *DEMO01.dwg* drawing and then choose the **Remove** option from the shortcut menu displayed; the **PROJECT MANAGER - Remove Files** message box is displayed. Choose the **Yes** button in this message box; the *DEMO01.dwg* drawing is removed from the drawing list, see Figure 2-17.

Replacing the Drawing

In this section, you will replace the *DEMO02.dwg* drawing of the **CADCIM** project with the *Connector.dwg* of the **POINT2POINT** project.

1. Right-click on the *DEMO02.dwg* drawing; a shortcut menu is displayed. Choose the **Replace** option from the shortcut menu; the **Select Replacement Drawing** dialog box is displayed.
2. Select the **Proj** folder from the **Look in** drop-down list. Next, double-click on the **Point2Point** folder; the *Connector.dwg* drawing is displayed in the **Select Replacement Drawing** dialog box.
3. Select the *Connector.dwg* drawing from this dialog box and choose the **Select** button; the **Apply Project Defaults to Drawing Settings** message box is displayed. Next, choose the **Yes** button; the *DEMO02.dwg* is replaced with the *Connector.dwg* drawing in the **CADCIM** project, as shown in Figure 2-18.

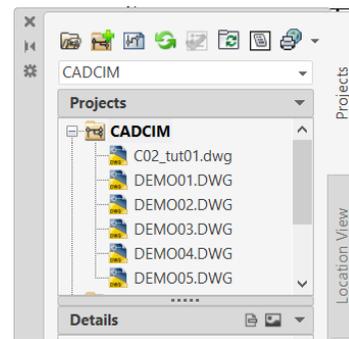


Figure 2-16 The **PROJECT MANAGER** displaying the **CADCIM** project with the drawings added to it

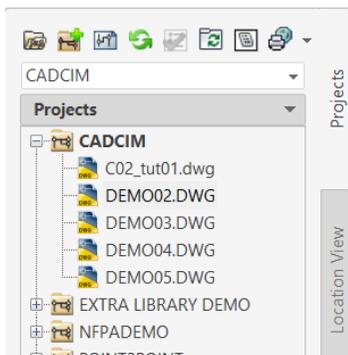


Figure 2-17 The **PROJECT MANAGER** displaying the **CADCIM** project after removing the **DEMO01.dwg** drawing

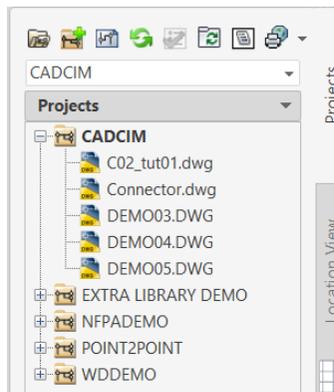


Figure 2-18 The **PROJECT MANAGER** displaying the **CADCIM** project with the **DEMO02.dwg** drawing replaced by the **Connector.dwg** drawing

Tutorial 3

In this tutorial, you will create a subfolder within a **CADCIM** project and configure the drawing list display for the **CADCIM** project. **(Expected time: 15 min)**

The following steps are required to complete this tutorial:

- a. Create a subfolder.
- b. Configure the drawing list display.

Creating a Subfolder

In this section, you will create a subfolder in the **CADCIM** project that is created in Tutorial 1.

1. Make sure that the **CADCIM** project is activated in the **PROJECT MANAGER**. Next, right-click on it; a shortcut menu is displayed.
2. Choose the **Add Subfolder** option from the shortcut menu; a subfolder with the name **NEW FOLDER** is created within the **CADCIM** project. Rename it as **TUTORIALS**.
3. Drag and drop the **C02_tut01.dwg** drawing created in Tutorial 1 on the **TUTORIALS** subfolder; the **C02_tut01.dwg** drawing is moved to the **TUTORIALS** subfolder; refer to Figure 2-19.

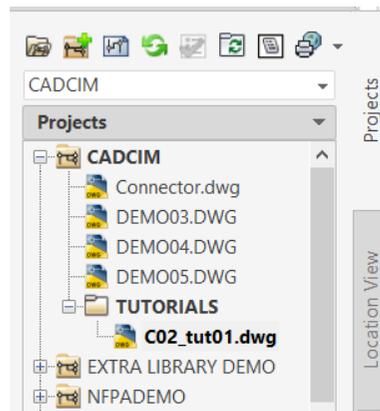


Figure 2-19 The **C02_tut01.dwg** moved to the **TUTORIALS** subfolder

**Note**

1. In AutoCAD electrical, all projects and their subfolder names are displayed in uppercase.
2. You can collapse the **CADCIM** project by right-clicking on its name and choosing the **Collapse All** option from the shortcut menu displayed.

Configuring the Drawing List Display

1. Choose the **Drawing List Display Configuration** button from the **PROJECT MANAGER**; the **Drawing List Display Configuration** dialog box is displayed. You will notice that only the **File Name** is displayed in the **Current Display Order** area.
2. Select **Drawing Number(%D)** from the **Display Options** area and then choose the **>>** button; **Drawing Number(%D)** is moved to the **Current Display Order** area. Similarly, select **Drawing Description 1** from the **Display Options** area and choose the **>>** button; **Drawing Description 1** is moved to the **Current Display Order** area. Next, choose the **OK** button to close the **Drawing List Display Configuration** dialog box.

You will notice that drawing numbers are added to the first four drawings in the **CADCIM** project and description is added to the *C02_tut01.dwg*.

Self-Evaluation Test

Answer the following questions and then compare them to those given at the end of this chapter:

1. The _____ option is used to create copies of an existing project with all the drawings and related files.
2. Choose the _____ button to preview a selected drawing.
3. A project file is an ASCII text file. (T/F)
4. The **PROJECT MANAGER** is used to manage the project files only. (T/F)

Review Questions

Answer the following questions:

1. Which of the following buttons is used to change the appearance of a drawing list displayed in the **PROJECT MANAGER**?
 - (a) **Plot Project**
 - (b) **Project Task List**
 - (c) **Move Up**
 - (d) **Drawing List Display Configuration**

2. Which of the following options is used to add existing drawing(s) to a project?
 - (a) **Descriptions**
 - (b) **Add Active Drawing**
 - (c) **Add Drawings**
 - (d) **Title Block Update**
3. The **Remove Drawings** option is used both for removing and deleting a drawing file. (T/F)
4. You can close only the non-active projects. (T/F)
5. Projects can be closed by using the Project selection drop-down list. (T/F)

EXERCISES

Exercise 1

Create a new project with the project name **NEW_PROJECT** and add appropriate description to it. **(Expected time: 10 min)**



Note

*It is recommended to save all exercises of the forthcoming chapters in the **NEW_PROJECT** project.*

Exercise 2

Create a new drawing with the name *C02_exer02.dwg* in the project created in Exercise 1 and add appropriate description to it. **(Expected time: 10 min)**

Answers to Self-Evaluation Test

1. Copy Project, 2. Preview, 3. T, 4. F