AutoCAD Architecture 2014
My First Project
by Attila G. Horvath

To purchase and download the whole book, follow this link:
While the Publisher and the Author have used their best efforts in preparing this book, they make no representations or warranties to the accuracy or completeness of the contents of this book.

Neither Author nor Publisher shall be liable for any result of the use of knowledge.

All rights reserved!

No part of this work covered by the copyright herein may be reproduced, transmitted, stored, or used in any form or by any means graphic, electronic, or mechanical, including but not limited to photocopying, recording, scanning, digitizing, taping, Web distribution, information networks, or information storage and retrieval systems, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without the prior written permission of the publisher.

ATTENTION! This book is an own intellectual creation, not part of AutoCAD® Architecture program.

© Attila G. Horvath, 2013

ATTENTION! Making sample building of tutorial two drawings are necessary, which can be downloaded from http://autocad-architecture-blog.com/autocad-architecture-2014 web-site after registration, and located at ACA2014-ExtraMaterials library can be unpacked. The two drawings are Sub-Structure.dwg and Layout.dwg.

Autodesk, AutoCAD, ObjectARX, AutoCAD Architecture and Autodesk logo are registered trademarks of Autodesk, Inc. in the U.S.A and in other countries. All other brand names, product names or trademarks are the property of their holders.

© Publisher: George and Steve, LLC

2015 STUTTLE AVE
SARASOTA FL 34239
USA
E-mail: info@cad-fyi.com
www.autocad-architecture-blog.com
Responsibility for publishing: Attila G. Horvath

Metric Sample Chapters
Table of Contents

About the Author

Chapter 1 – Preface
Section 1 - How to Use This Book
Section 2 - Needed Drawings
Section 3 - Introduction of Sample
Section 4 - Terms Used in the Book and Sign Conventions

Chapter 2 - Organize Workspace
Section 1 - Change the Background of Drawing Area
Section 2 - Setting of the Most Used Palettes
Section 3 - View Cube, Navigation Bar and Viewport Controls
Section 4 - Making Special Snaps Active
Section 5 – To Allow Dynamic Input
Section 6 - Setting Used Units
Section 7 - Right-Click Customization
Section 8 - Displaying Layout and Model Tabs
Section 9 - Changing Appearance of Toggles in Application Status Bar
Section 10 - File Tabs
Section 11 - Command line search — Architecture styles

Chapter 3 - Starting Tutorial Project
Section 1 - Creating Project and Making it Active
Section 2 - Setting Necessary Levels

Chapter 4 – Overview of Planned Building

Chapter 5 - Creating Drawings of Building Model
Section 1 - Create Column Grid of Building

Chapter 6 - Creating Ground Floor Drawing
Section 1 – Creating Entry Level Construct Drawing
Section 2 - Inserting Column Grid to Entry Level Drawing
Chapter 7 - Creating and Shaping Ground Floor Walls
Section 1 - Creating Ground Floor External Walls
Section 2 - Creating Internal Walls of Main Building Entry Level
Section 3 - Creating the Final Plan of Ground Floor Internal Walls
Section 4 - Creating the Final Layers of Elevation Walls

Chapter 8 - Inserting Internal Doors
Section 1 - Inserting Doors
Section 2 - Modifying Doors
Section 3 - Inserting Opening Between Living and Dining Room

Chapter 9 - Inserting Doors and Windows into Elevation Wall
Section 1 - Inserting Three Patio Doors in Kitchen-Dining Room
Section 2 - Repositioning Patio Door within Wall
Section 3 - Editing Opening Endcap – Turning in Brick Component by the Openings
Section 4 - Modifying Patio Doors
Section 5 - Moving Patio Door along Wall Length
Section 6 - Adding Windows
Section 7 - Moving Windows along Wall Thickness
Section 8 - Inserting Entrance Door
Section 9 - Modifying Entrance Door

Chapter 10 - Creating Ground Floor Stair
Section 1 - Creating Structure of Stair
Section 2 - Attaching Railing to the Stair

Chapter 11 - Creating Construction Drawing of Chimney
Section 1 - Creating Chimney Body from Wall Object
Section 2 - Creating Chimney Flues with Body Modifier
Section 3 - Inserting the Chimney Body to a New Construct Drawing
Section 4 - Dragging the Chimney as Xref to the Entry Level Drawing

Chapter 12 - Creating Entry Level Spaces
Section 1 – Base Settings
Section 2 - Drawing the Missing Space Separator
Section 3 - Automatic Space Generating
Section 4 - Finalizing Spaces and Filling in their Data
Section 5 - Renumbering Spaces, Adjusting Tag to Places

Chapter 13 - Stretching the Floor Line of Entry Level Walls to the Top of the Floor Slab
Section 1 - Usage of Floor Line Modifier for Entry Level Walls
Section 2 - Result in Edit in Section View

Chapter 14 - Creating Slab above the Entry Level
Section 1 - Creating Slab
Section 2 - Exterior Walls Interference with Slab

Chapter 15 - Creating Roof
Section 1 – Creating Roof for Mud Room

Chapter 16 - Creating Upper Level
Section 1 – Creating Upper Level Drawing from Entry Level

Chapter 17 – Back to the Entry Level
Section 1 - Continue the Modifying Slab above Entry Level

Chapter 18 - Creating Upper Level Construct Drawing
Section 1 - Creating Upper Level Walls
Section 2 - Creating Upper Level Spaces
Section 3 - Creating Upper Level Windows
Section 4 - Inserting Upper Level Internal Doors
Section 5 - Hiding Stair and Railing Models
Section 6 - Creating Roof
Section 7 - Settings of Visualization

Chapter 19 - Creating Garage
Section 1 - Creating Garage Drawing from Entry Level
Section 2 - Creating Garage Walls
Section 3 - Inserting Garage Doors and Windows
Section 4 - Creating Garage Space
Section 5 - Erasing Entry Level
Section 6 - Creating Garage Roof

Chapter 20 – Integrating Outside Drawings into the Project
Section 1 – Integrating Sub-Structure and Layout into the Project

Chapter 21 – Creating View Drawings for Visualization
Section 1 - Creating View Drawing
Section 2 - Correcting Overlap of External Walls
Section 3 - Removing Footing in Visualization Model Drawing

Chapter 22 - Creating Section and Elevation
Section 1 - Creating View Drawing
Section 2 - Generating Elevations
Section 3 - Generating Section
Section 4 - Creating Named Model Space Views

Chapter 23 - Building Model Correction for Section, Elevation
Section 1 - Heightening Walls and Interference with Roof Slabs
Section 2 - Lowering Wall Below Stairs and Fitting Wall to Stairs

Chapter 24 – Reworking Some Building Elements of Entry Level
Section 1 - Adding New Material to External Walls
Section 2 - Creating New Material with Exterior Render Material from Visualization Catalog
Section 3 - Completing Model Representation of Windows with 3D Sill Element
Section 4 - Modifying Roof Covering and Edge Material

Chapter 25 – Copying Styles Between Different Drawings
Section 1 - Copying Entry Level Style Changes Into Upper Level and Garage Drawing

Chapter 26 - Reworking Visualization of Building Model
Section 1 - Modifying Elements of Sub-Structure Drawing

Chapter 27 - Geographic Location
Section 1 – Placing the building on the exact coordinates

Chapter 28 - Creating Visualization Images
Section 1 - Creating Ground Slab
Section 2 - Setting Perspective View with Orbit
Section 3 - Setting Lights by Using Sun and Sky
Section 4 - Rendering 3D Model

Chapter 29 - Finalizing Elevations, Sections
Section 1 - Refreshing Generated Elevations and Section
Section 2 - Dimensioning Section

Chapter 30 - Furnishing
Section 1 – Furnishing Entry Level Plan

Chapter 31 - Finishing Plans for Plotting
Section 1 - Create Entry Level Sheet
Section 2 - Dimensioning Entry Level Plan
Section 3 - Inserting Layout Drawing
Section 4 - Creating Room Schedule Sheet
Section 5 – Creating Sheets of Elevations and Sections

Glossary
About the Author

Attila G. Horvath is an Architect, Interior Design and Computer Engineer. He has been working with AutoCAD and its architectural version since 1991.

During these years he gained widespread experience in 3D processing, visualization, gathering volumes and clash detection, as well as interior designing. These experiences allowed him to participate in design projects ranging from shopping centers, residential complexes, car showrooms, airports, resort hotels to tropicariums. He also followed with attention these projects, which provided him with useful elements for further works.

Attila has been an Authorized AutoCAD Architecture Instructor since 2008 and teaching AutoCAD Architecture software to future architects at the Department of Architectural Representation of Budapest University of Technology and Economics in Hungary. He also took part in creating various tutorial materials for architecture students. Currently he is working as a CAD Manager; presenting the actual use of CAD programs to his clients, the staff of various design offices.

Attila is Author of numerous professional articles and has been writing his own blog for many years. He is member and Vice President of the Association of Hungarian Architecture Desktop Users. He became an Autodesk Authorized Author in 2012. This abundant professional experience of more than 20 years lead him to write the book "My First Project", presenting the use of AutoCAD Architecture software and operating system via actual, real-life situations. He believes that confident knowledge can be achieved by practicing as much as possible - thus his book aiming to be a very strong basic material for anyone who wants to acquire this practical knowledge with AutoCAD Architecture.
Chapter 1 – Preface

Learning to use AutoCAD software is similar to learning a new language. Sometimes when you say something to somebody in a foreign language, you exactly know and understand it but maybe your partner does not. The intention was clear but the execution was not. It is the same with AutoCAD. Although learning AutoCAD is not an easy style, you will have fun learning this exciting technology, even though sometimes you will not understand why the program does not run or freeze. Your intention was obvious and clear, only command prompt was not correct, or the approach was wrong. Please do not give it up in such a situation! I promise you will sit back satisfied drinking a good glass of cold beer!

NOTE: You will find several links in the book. These are short links, referring to the autocad-architecture-blog.com website, where you can have further information on the old and new versions of the program.
Section 1 - How to Use This Book

This book contains a comprehensive introduction to the methods, philosophy and procedures of AutoCAD Architecture 2014. The primary audience for this book are current AutoCAD users, however if beginners do the exercises and chapters related to each other, they will have an overall picture of program’s operation and use; and at the end of the book will have sufficient experience to confidently use of the AutoCAD 2014. Using the book requires a base AutoCAD and PC knowledge and practice.

This book shows, through a sample from beginning to end the mindset of the program, and technique of its using. In doing so, however, the book does not attempt to be an entire fledged model in every respect, and documentation development. Rather, the intention is to introduce the more functions, and possibilities of AutoCAD Architecture 2014 software.

The desired end result - another order of importance, by other means - in some places it would be easier to produce, but in this case the book could show less possibilities of the program.

The described exercises assume that the reader continuously performs them from the beginning and gradually practices the handling techniques of the program. After some time the detailed explanation (like which mouse button to click and where) will decrease.

Section 2 - Needed Drawings

ATTENTION! Creating sample building of tutorial two drawings are necessary, which can be downloaded from http://autocad-architecture-blog.com/autocad-architecture-2014 web-site after registration, and located at ACA2014-ExtraMaterials library can be unpacked. The two drawings are Sub-Structure.dwg and Layout.dwg.

Section 3 - Introduction of Sample

The exercises are based on a two-storey house plan. The original plans can be found at www.freegreen.com. The exercises - with the consent of the page - sometimes changed, sometimes simplified and do not fully cover the initial design work.
The exercises described in this book process a relatively small building, but try to use a wide range of program features. Nevertheless, the AutoCAD® Architecture 2014 software has many tools, and objects have a lot of skills that the sample does not use.

The exercises carried out two-three times provide a good basis for confident usage of the software and for knowledge of the logic used by the program.

Section 4 - Terms Used in the Book and Sign Conventions

Below treatments of technical elements are described, which are frequently mentioned in the exercises of the Textbook.

1. Basic Mouse Techniques

The following terms will be used to clarify the instructions for use of the mouse.

(Left-)Click Quickly press and release the left mouse button.
Right-Click Quickly press and release the right mouse button.
Double-Click Rapidly click the left mouse button twice.
Click in Click inside of any kind of element, object to set something in it.
Click on Click anywhere on any kind of element or object to open it.
Drag Press and hold down the left mouse button while you move the mouse.
Select Position the mouse pointer/draw cursor over an item and click the left mouse button.

In AutoCAD the main management tool is the left mouse button. Thus, clicking always means with the left mouse button click in or specify a point.

If the right mouse button is to click, it is always indicated separately.

The right mouse button click - if an object is selected – is a typical way to display the context menu. If there is no pre-selection of an object, clicking the right mouse button is equal press ENTER. See chapter 2.7.

2. ... select or choose... (icons, menu items)

Selecting or choosing an icon or menu item means clicking with left mouse button on it. It is a typical way of starting commands.

3. ... select... (objects, drawing elements)

Selection in AutoCAD could be only one element selection or more elements could be selected at the same time. Selecting an element is to move cursor above its contour or internal line and click with left mouse button. More elements could be selected one by one, but it is better to use the so-called Window selection, means selected all objects completely inside a rectangle defined by two points.

Click the left mouse button on an empty field and the program begins to draw a selection box. Drag the cursor to the left or right, and specify the opposite corner point of the selection window.

Dragging the cursor from right to left AutoCAD draws a so-called Crossing selection that has dashed contour, and in AutoCAD 2014 its fill color is light green in default mode. Crossing selection select all objects within its borders or which are sectioned by the window contour.
Dragging cursor from left to the right, AutoCAD draws a **Window Selection** with continuous contour, and in AutoCAD 2014 its fill color is light blue in default mode. The Window Selection selects only those objects which are fully inside in the window.

In most cases selection in AutoCAD is a recursive operation, after a selection operation program will initiate new selections until you indicate by pressing ENTER to finish selection operation. Then the commands run will continue.

**You can take back from the objects already selected** if any kind of selections (single, crossing, window) is done by pressing SHIFT button.

4. ... click with right mouse button ... above (icon) object...

Typically this mode displays local menus. To show short-cut menus, enter or return, click the right mouse button.
5. ... Snap Mode Off/On

Automatic tracking point, other name Object Snap Mode helps that on object’s special points - typically on the ENDpoint, INTersection, PERpendicular and NEArest point – we can specify a point, as an insertion point, or as a start or end point for specifying distance. Object Snap Mode can be turned on or off by pressing **F3 functional tab**, even during a command performing. Setting mode of ‘searched’ special points can be found in the book exercises.

6. ... ORTHO Mode Off/On

When ORTHO MODE is turned on, the cursor can move only horizontally or vertically relative to the UCS and the current grid rotation angle. Horizontal is defined as being parallel to the X axis of the UCS and vertical as being parallel to the Y axis.

Ortho Mode is used when you specify an angle or distance by means of two points using a pointing device. In Ortho Mode, cursor movement is constrained to the horizontal or vertical direction relative to the User Coordinate System.

Operating mode can be turned on or off by pressing **F8 functional tab**, even during a command performing.

7. Typographical conventions

The following special treatment of characters and fonts in the textual content help you to understand the meaning of words or sentences in AutoCAD 2014.

*Italic* Command prompts.

*Bold* Important and highlighted parts of the text.

Tips, notes, and cautions given in the book help you identify and remember important concepts, commands, procedures, and tricks used by professionals that would otherwise be discovered only after much experience.

8. Save

Although during exercises you are always warned to save your drawing, it is recommended you to do it very often in your work. It is possible to set the automatic saving even in every minute but it is better if user controls it by himself by clicking on the **Save** button or pressing **Ctrl+S**. In case of bigger drawing using the Automatic save can take for a few seconds which inhibits the work.
Chapter 2 – Organizing your workspace

Before starting the exercises, organize your workspace just like in the below figure.
Section 1 - Change the Background of Drawing Window

NOTE: For better vision of the figures, the color of the drawing window was changed to white, and the GRID (F7) was turned off. Although the color of the objects was set to dark background, if somebody would like to change the color of the drawing window background, he can do it in the following place. Click on the Customize icon next to the Command line and then the Options from the flyout in order to open the panel.

On displaying Options panel, go to the Display tab and by clicking on the Colors button open the Drawing Window Colors panel. You can see here in the first field which Context is active. In the second field you can choose the Interface element that you would like to change. Choose the Uniform background to set its color to desired values, and then using the Apply & Close button close the panel, and finally also close Options panel.
Section 2 - Setting of the Most Used Palettes

Dock the Tool Palettes to the left side and the Properties palette to the right side.

**Drawing window**
- File Tabs
- View Cube
- Navigation Bar
- Properties Palette
- Drawing Window Status Bar
- Command Window
- Application Status Bar
- Tool Palette
- Project Navigator
- Viewport Controls
- Ribbon

If the above two palettes are in „hidden” mode or not hidden but in „floating” mode according to the next figure, right-click on the title bar of the palettes and check the drop-up menu if there is a check mark next to the „Allow Docking” menu item.

If there is no checkmark, click on the menu item, and then try to dock the palette on the left or right side of the screen.

At the same time turn off the „Auto-hide” toggle.

Press the Ctrl+1 key pair many times one after the other to check, or to practice how to hide and to display the Properties palette.
Attila G. Horvath

AutoCAD Architecture 2014 - My First Project

Repeat it pressing Ctrl+3 key pair to hide or to display the Tool Palettes.
Section 3 - View Cube, Navigation Bar and Viewport Controls

Sometimes during your work the visual style and the view of your drawing will be alternated. Three tools will be used.

One of these can be found in the upper left corner of the drawing area, called Viewport Controls, and consists of three labels.

Click - (minus) to display options, changing the viewport configuration, or controlling the display of navigation tools.

Click TOP to choose between several standard and custom views.

Click 2D Wireframe to choose one of several visual styles. Most of the other visual styles are used for 3D visualization.

The second tool is the View Cube situated in the upper right corner of the drawing area. The View Cube is a 3D navigation tool and appears when the 3D graphics system is enabled and allows you to switch between standard and isometric views. If it is not shown use the Ribbon menu View tab > Windows panel > User Interface > View Cube route to be shown again.

The third is the Navigation Bar; basically it is situated vertically under the View Cube. From here other navigation tools can be reached, like the Pan, the Zoom tools and the Orbit tools. If there is not, it can be displayed already described in the View Cube.
Section 4 - Making Special Snaps Active

In the work you often need to find special points of objects, like ENDpoints, MIDpoints, INTersection and PERpendicular.

1. Right-Click above the OSNAP toggle below the status bar of the AutoCAD window, and choose from the drop-up menu Settings....

2. Pay attention that in the displaying dialog box only in figure shown toggles are turned on.

ATTENTION! Pay attention to the Allow general object snap settings to act upon wall justification line toggle is turned off.
3. Press **OK** to close the dialog box.

**ATTENTION!** Later on you will continuously need the function to find special points of the editorial work.

However, there will be editing steps, when now set automatically grip (Object Snap Mode) interferes your work. As a typical case, when an object’s start point, insertion point, etc… does not go to the specified place, because the automatic ENDpoint, INTersection or PERpendicular "pulls on" the point or the object.

In this case, the simplest, if using F3 function key the object snap mode is temporarily **turned off**, and then when it is needed again, it is also **switched back** by pressing the **F3**.

**TIP:** If the OSNAP is on and you cannot safely specify the desired object snap, it is recommended to use SHIFT + Right-Click. Then the necessary object snap can be chosen from a list. In this case, all others will be turned off for only specifying one point and only just selected one will be active. After clicking, original status will be restored at once. This works even when the OSNAP is off, but temporarily you want to use the object snap while specifying a point.
Section 5 – To Allow Dynamic Input

The new versions of AutoCAD Architecture ensure to type dynamic input in editing operations (e.g.: for the length of the next wall segment), and ensure not to display prompts and options of each commands (only) at the command window, but next to the crosshair, as well (the latter are in a drop-down menu).

In the following operation mode will be turned to ‘fully utilization’.

1. Right-click above the DYN toggle on the down AutoCAD status bar and choose the Settings… from the drop-up menu.

2. Ensure that in the displayed dialog box toggles shown in figure are turned on.

3. Press OK and exit the panel.

4. Pay attention that the DYN (F12) toggle is turned on.
Section 6 - Setting Used Units

Click on the Customize icon next to the Command Window, and then click on the Options... to open the panel.

For good operation of ACA 2013 is important to set parameter value of both Source content units, and Target drawing units to millimeters on the Options panel User Preferences tab, in the Insertion scale field.
Without this setting the **Xref drawings coming from Project Navigator with Drag and Drop techniques** will be displayed in incorrect size and unit.

Do not close the Options panel, the next settings will be made here as well.

**Section 7 - Right-Click Customization**

In order to see the same result whenever you do these exercises, it is necessary to customize the operation of the right button of the mouse.

Stay on the User Preferences tab, open the **Right-Click Customization** panel and make the necessary settings according to the figure. Turn on the **Turn on time-sensitive right-click** toggle in the end, because the Default Mode and the Command Mode will become inactive.

Close the panel with the **Apply & Close**, then close the Options panel by pressing **OK**.
It means that using the right mouse button not a menu will drop up but in command mode the first click is equivalent to pressing Enter.

**NOTE:** Pressing **ENTER** term is used many times in this book. With these settings it is suitable and more comfortable to use the right mouse button instead of **ENTER**, so you needn't release the mouse during your work. In fact, if someone has a better hand, he may also use the SPACE button, it will result the same.

**NOTE:** The Shortcut menu has different names, like flyout, pop-up menu and drop-up menu used in this book.

**Section 8 - Displaying Layout and Model Tabs**

At the former AutoCAD Model space and Paper space Layout tabs were lined down in the editing window shown in down figure.

In new version these tabs were hidden, replacing them two icons displays down on the application status bar, with them their displays are controlled. The old method is more expressive, so now turn back the old mode.
1. Go with cursor under the editing window, above the **icon next to the MODEL title**, and then Right-Click.

2. Choose the **Display Layout and Model Tabs** command from the drop-up menu.

3. The Layout tabs will be displayed traditional way at the bottom of the editing window.

4. If you want to use the new method again, go above one of these tabs, and then Right-Click. You can find there the **Hide Layout and Model tabs** command for this purpose.

**Section 9 - Changing Appearance of Toggles in Application Status Bar**

In the former AutoCAD status changes in the Application Status Bar were available in text form, namely in shortened form. From the 2009 version these status change toggles – because of space saving - can be displayed in icon forms, as well.

Now for easier handling you reset it to text form.

With a Right-Click above any icon, turn off the **Use Icons** toggle.
Section 10 - File Tabs

The New Drawing File Tabs in AutoCAD 2014 provide easy access to your open drawings. Each open file is displayed as a tab on the top of your AutoCAD window. Select to make them active.

You can control the displays of the Drawing Tabs if you go to the View ribbon tab and then you will see the User Interface panel and control for File Tabs, you can turn them off and on any time.

NOTE: More information about File Tabs can be found on the following link: http://bit.ly/15VJEtw
Section 11 - Command line search — Architecture styles

AutoCAD 2014 has added more features to the Command Line search, and also extended it to allow faster and easier access to all architecture styles in a drawing.

To customize the search features on the left of the Command Line, you simply select the wrench icon and choose Input Search Options. Select Architecture in the Input Search Options, Content Type dialogue box. Once this is checked, type in any part of styling on the Command Line, this place list of all the styles that contain that word.

Chapter 3 - Starting Tutorial Project

In this work section planning the project of the sample building will be created, starting data will be filled in, and then the levels and the divisions of the future building will be defined.

NOTE: For better review the colors of the drawing window were changed from dark grey to white. It can be done on the Options panel, Display tab Colors…button.
Section 1 - Creating Project and Making it Active

1. Start the **Project Browser**. The simplest way is to start it from the Quick Access Toolbar, but you can reach it also from the **Application menu**, then **Open** and **Project** line. If the Project Navigator is open, the start icon of the Project Browser is in its lower icon line.
2. At the top left side of displaying **Project Browser** panel position to the **Local Disk (C)** library, to the root directory of the C:\drive.

   ![Project Browser](image1)

3. Click on the **New Project** icon at the lower left corner.

   ![New Project](image2)

4. On the displaying **Add Project** panel fill in the following data: Project Number: **000**, Project Name: **ACA2014-MyFirstProject**, Project Description: **Two-storey house**

   ![Add Project](image3)

5. Check if the **Create from template project** checkbox is turned off.
6. Press OK button and accept the set data.

7. At the top left of the Project Browser panel check if the new project is the current project.

8. Press the CLOSE button, and the Project Browser panel will disappear.

9. The Project Navigator palette will appear in AutoCAD editing window.

10. Click with right mouse button on the title bar of the Project Navigator, and then in the flyout turn on the Allow Docking.

11. Drag the Project Navigator palette to the left side so that it is docked over the Tool Palettes.
Attila G. Horvath
AutoCAD Architecture 2014 - My First Project

Metric Sample Chapters
12. Click **Ctrl+3** and hide for now the Tool Palettes, and then turn to the **Project** tab on full height popped Project Navigator palette, if you are not there.
Section 2 - Setting Necessary Levels

1. On the Project tab of the Project Navigator palette click on the Edit Levels icon in the title bar of the Levels section.

2. Levels named panel displays with the following content.

3. Override the data of the only existed level according to the values shown in figure.

4. Make sure if the Auto-Adjust Elevation checkbox is turned on in this panel.
5. Click on the level name with the right mouse button and select from the pop-up menu the **Add Level Above** option. Then click on the same level with the right button, select the **Add Level Below** option, and then below the new level insert a new level again.

**NOTE:** Using the Add Level toggle in all cases a new level can be inserted above the marked level.

6. Override the data of **Levels** according to the data shown in figure.

**TIP:** The Auto-Adjust Elevation is on; it is recommended you to write data from the bottom to the top. First fill the Basement Floor Elevation data, and then fill the Floor to Floor Height. Then the next level can come and so on.

7. If you finish rewriting data, click **OK** to close the panel.
8. After closing the panel, another panel will display, which warns to the possible effects of modifying levels. Clicking on the **Yes** button, accept that it drives the modifications to the needed drawings. (Otherwise such ones not yet exist.)

![Levels panel](image)

9. On the same Project tab, in the title bar of the **Divisions** section display the **Divisions panel** using the **Edit Divisions toggle**.

![AutoCAD Architecture 2014 - English dialog box](image)
10. On the Divisions panel override the name and the data of the Division shown in the figure and then clicking on the Add Divisions toggle, give a new division to it and rename it shown in the figure, as well.

11. Exit the panel by using OK button.
Chapter 4 – Overview of Planned Building

South-West View
North-West View

East Elevation
North Elevation

South Elevation
West Elevation
Entry Level Floor Plan

Upper Level Floor Plan
Chapter 5 - Creating Drawings of Building Model

To purchase and download the whole book, follow this link:

Buy Now
Chapter 6 - Creating Ground Floor Drawing

To purchase and download the whole book, follow this link:
Chapter 7 - Creating and Shaping Ground Floor Walls

To purchase and download the whole book, follow this link:
Each of the ground floor internal doors and windows are Single doors, except the opening between the future Kitchen and the future Living room, which is an empty Cased Opening. First step the Single doors are placed with the same sizes, and then later modify the different sized doors. It is not necessary desperately to pay attention the correct swing of the door because it is easy to change it by flipping.

To purchase and download the whole book, follow this link:
Chapter 9 - Inserting Doors and Windows into Elevation Wall

To purchase and download the whole book, follow this link:

[Buy Now]
Chapter 10 - Creating Ground Floor Stair

To purchase and download the whole book, follow this link:
Chapter 11 - Creating Construction Drawing of Chimney

To purchase and download the whole book, follow this link:

[Buy Now]
Chapter 12 - Creating Entry Level Spaces

To purchase and download the whole book, follow this link:

[Buy Now]
Chapter 13 - Stretching the Floor Line of Entry Level Walls to the Top of the Floor Slab

To purchase and download the whole book, follow this link:

[Buy Now]
Chapter 14 - Creating Slab above the Entry Level

To purchase and download the whole book, follow this link:
Chapter 15 - Creating Roof

To purchase and download the whole book, follow this link:

[Buy Now]
Chapter 16 - Creating Upper Level

To purchase and download the whole book, follow this link:

[Buy Now]
Chapter 17 – Back to the Entry Level

To purchase and download the whole book, follow this link:

![Buy Now](image_url)
Chapter 18 - Creating Upper Level Construct Drawing

To purchase and download the whole book, follow this link:

Buy Now
Chapter 19 - Creating Garage

To purchase and download the whole book, follow this link:

[Buy Now]
Chapter 20 – Integrating Outside Drawings into the Project

To purchase and download the whole book, follow this link:

[Buy Now]
Chapter 21 – Creating View Drawings for Visualization

To purchase and download the whole book, follow this link:

Buy Now
Chapter 22 - Creating Section and Elevation

To purchase and download the whole book, follow this link:

[Buy Now]
Chapter 23 - Building Model Correction for Section, Elevation
Chapter 24 – Reworking Some Building Elements of Entry Level

To purchase and download the whole book, follow this link:
Chapter 25 – Copying Styles Between Different Drawings
To purchase and download the whole book, follow this link:

**Buy Now**
Chapter 26 - Reworking Visualization of Building Model

To purchase and download the whole book, follow this link:

Buy Now
Chapter 27 - Geographic Location

To purchase and download the whole book, follow this link:
Chapter 28 - Creating Visualization Images

On the following pages you will create the visualization image like in the below figure.

To purchase and download the whole book, follow this link:
Chapter 29 - Finalizing Elevations, Sections
To purchase and download the whole book, follow this link:

[Buy Now]
Chapter 30 - Furnishing

To purchase and download the whole book, follow this link:

*Buy Now*
Chapter 31 - Finishing Plans for Plotting

To purchase and download the whole book, follow this link:

**Buy Now**
Glossary

AEC Objects
AEC (architectural, engineering and construction) content consists of drawing files, architectural symbols, object styles, and annotation routines. You use AEC content to create and annotate your drawings. Doors and windows are examples of design content, while schedule tables and keynotes are examples of documentation content. You can access AEC content from either the Content Browser or the AEC Content tab in DesignCenter®.

Annotation Scale
Annotation scale is used to determine text height or the overall scale of an annotation object. The approach used to calculate an annotation scale depends on whether the object is placed in model space or on a layout.

Annotation scaling allows you to plot annotation at the same height or size regardless of the viewport zoom scale. Annotation scales can be associated with annotative objects in AutoCAD Architecture so that these objects can be sized properly for specific annotation scales in model space and displayed correctly in paper space. You can also toggle on or off the display of annotation objects that do not participate in the current annotation scale.

Application Menu

The Application menu contains commands that are relevant for the drawing as a whole. The Application menu offers tools to help you manage your AutoCAD files. It also gives you a convenient way to find recently used files or to get to a file you already have open.
Associative spaces

Associative spaces are generated from boundary objects. When the boundary objects change, the space updates accordingly.

Autodesk Material Library

The Autodesk library, with more than 700 materials and 1000 textures, is included with the product. You can copy Autodesk materials into the drawing, and edit and save them to your own library. Use the Materials Browser to navigate and manage both Autodesk and user-defined materials.
Autodesk Library contains predefined materials for use by Autodesk applications that support materials. Although you cannot edit the Autodesk library, you can use these materials as a basis for customized materials that you can save in the user library.

Constructs
The Construct drawing is a unique drawing developed as part of the project and associated with a level and division. Construct drawing includes the walls, doors and windows. The construct is attached to a View drawing.

Constructs are the main building blocks (or base drawing files) of the building model. A construct represents one unique portion of a building, such as a building core, an apartment, or an entire floor.

You assign a construct to a level and a division within the project. For example, you could assign an architectural construct named Interior Partitions—First Floor/South Wing to the first level and the south wing division of the building. You could also assign the structural construct Framing—First Floor/South Wing to the first level and south wing division, but it has a different purpose. Constructs can span more than one level, a requirement for objects such as curtain walls.
Content Browser

The Content Browser lets you store, share, and exchange AutoCAD Architecture content, tools, and tool palettes. The Content Browser runs independently of the software, allowing you to exchange tools and tool palettes with other Autodesk applications.

The Content Browser is a library of tool catalogs containing tools, tool palettes, and tool packages. You can publish catalogs so that multiple users have access to standard tools for projects.

You can start it if you drop down **Tools** icon on **Home** tab of the Ribbon or you press Ctrl+4.
Copy

Copies object a specified distance in a specified direction.
Use coordinates, grid snap, object snaps, and other tools to copy objects with precision.
You can also use grips to move and copy objects quickly. To copy objects a specified distance, you can also use direct distance entry with Ortho mode and polar tracking.
You can also select objects and drag them to a new location using the left mouse button over one of the selected objects; press Ctrl to make a copy. Using this method, you can drag objects between open drawings and other applications. If you drag with the right mouse button instead of the left, a shortcut menu is displayed after you drag the objects. The menu options include Move Here, Copy Here, Paste as Block, and Cancel. You’ll find a new Array option in the Copy command. It lets you create a linear, non-associative array on the fly!
CTB, STB

A plot style table is a collection of plot styles assigned to a layout or to the Model tab. There are two types of plot style tables: color-dependent plot style tables and named plot style tables.

Color-dependent plot style tables (CTB) use an object's color to determine characteristics such as lineweight. Every red object in a drawing is plotted the same way. While you can edit plot styles in a color-dependent plot style table, you cannot add or delete plot styles. There are 256 plot styles in a color-dependent plot style table, one for each color.

Named plot style tables (STB) contain user-defined plot styles. When you use a named plot style table, objects that have the same color may be plotted differently, based on the plot style assigned to the object. A named plot style table can contain as many or as few plot styles as required. Named plot styles can be assigned to objects or layers, just like any other property.

You can use the Plot Style Manager to add, delete, rename, copy, and edit plot style tables. Both color-dependent and named plot style tables are stored in the Plot Styles folder by default.

In case of plotting of AutoCAD drawing it is important setting that drawing will be plotted by COLOR settings (CTB – Color Table) or you can set different linetypes by NAMED PLOT STYLES.

A drawing has already been defined during its creation – by selecting template drawing – if it uses CTB or STB plotting. Setting of Default type is on the Plot and Publish tab of the Options panel. Here you can set if the future drawings have CTB or STB settings.

The problem is if you get a drawing required STB extension file, and you don't have it but you would like to plot this drawing by colors. The solution is the CONVERTPSTYLES command. Using it the drawing can be converted from STB mode into CTB mode.
Pay attention that in this case the command – if you start it in CTB mode – will work in reverse mode. It means that you convert the drawing from CTB mode into STB mode.

**Display Configuration**

A display configuration typically is created for a specific design task or drawing type. To use a display configuration, you assign it to a viewport.

The Display Manager is a utility for managing display configurations, display sets, and display representations: renaming them or deleting them, copying them between drawings, emailing them to other users, and purging unused elements from drawings.
Doors And Windows Assembly

Door and window assemblies provide a grid or framework for inserting objects such as windows and doors. With this framework, you can create complex window and door assemblies, which can then be inserted in standard walls or used as repeated elements in curtain walls.

Door and window assemblies are made up of 1 or more grids. Each grid has either a horizontal division or a vertical division, but you can nest the grids to create a variety of patterns from simple to complex.

Grids are the foundation of curtain walls, curtain wall units, and door and window assemblies. Every grid has four element types:

**Divisions:** Define the direction of the grid (horizontal or vertical) and the number of cells

**Cell Infills:** Contain another grid, a panel infill, or an object such as a window or a door

**Frames:** Define the edge around the outside of the primary grid and nested grids

**Mullions:** Define the edges between the cells
Each element type is assigned a default definition that describes what elements of that type look like. You can create new element definitions and assign those definitions within the door and window assembly. For example, you can create multiple infill definitions and then assign different infills to specific cells in the grid. Likewise, you can create multiple frame definitions and then assign a different definition to each frame edge (top, bottom, left, right). This is also true for mullion definitions.

**DWT (DRAWING TEMPLATE)**

All drawings start from either a default drawing template file or a custom drawing template file that you create. Drawing template files store default settings, styles, and additional data. When AutoCAD starts, it opens an empty drawing file based on a drawing template file. A drawing template file uses a .DWT file extension, and it specifies the styles, settings, and layouts in a drawing, including title blocks. The default templates are provided as samples. Page setups provide the settings that are used for publishing and plotting. When you create a sheet set, you specify a drawing template (DWT) file that contains one or more page setups for all new sheets. This DWT file is called the *sheet creation template*. Another DWT file, called the *page setup overrides* file, contains page setups that can be specified to override the page setups in each sheet. You specify the page setup overrides file in the Sheet Set Properties dialog box.
Dynamic Input, DYN (F12)

The new versions of AutoCAD Architecture ensure to type dynamic input in editing operations (e.g.: for the length of the next wall segment), and ensure not to display prompts and options of each commands (only) at the command window, but next to the crosshair, as well (the latter are in a drop-down menu).

Dynamic Input toggle is located on the Application status bar allows you to view dynamic dimensions and respond to the command prompts in the workspace. You can easily turn the Dynamic Input toggle ON or OFF by using F12 functional tab.

Right-Click above the DYN toggle on the down AutoCAD status bar and choose the Settings… from the drop-up menu.
Elements

Drawings created as elements are the simplest components of the building that are repeated in the design. An element could be a drawing of a bathroom layout that is repeated several times in the final drawing. Element drawings are attached to Construct drawings.

An element is a generic building block for multiple use. For example, you can create an element for a repeating design object like a desk/chair combination to place in a number of cubicles. You can also create an element for a typical bathroom layout and reference it multiple times into one or more constructs. Because you can annotate individual instances of an external reference, you can use the same element and annotate it differently in different locations.

You can place the same element in different levels and divisions. If you create a bathroom layout as an element, you can use it on the second floor of the west wing as well as on the first floor of the east wing. To place the element on a specific floor and wing, you reference it into a construct. For example, you could create an element named Generic Bathroom Layout and reference it into constructs named First Floor—Left Apartment, First Floor—Middle Apartment, First Floor—Right Apartment, and so on.
Elevation Line

You can create elevations of the building models in your drawings by first drawing an elevation line and mark, and then creating a 2D or 3D elevation based on that line. You can control the size and shape of any elevation that you create, and you can update an existing elevation when the objects included in the elevation are modified. 2D elevations are created with hidden and overlapping lines removed. You can control the appearance of 2D elevations by applying rules that are controlled by the style and display properties of the 2D elevation.

The first step in creating elevations is to draw an elevation line relative to your building model. The elevation line defines the extents of the elevation view of the building model. You can create vertical elevations and horizontal elevations. When you generate an elevation from an elevation line, you specify the type of elevation object that is created. In plan view, the elevation line is displayed as you would expect on a construction document. In an isometric view, the same elevation line is displayed with a boundary that defines the depth of elevation view.
You can change the elevation line to control the elevation that you create. Using the elevation line’s grips, you can change the height and shape of the elevation. You can also add a lower extension to the elevation and create elevation subdivisions.

You can change elevation line properties before you create an elevation. You can also change elevation line properties and update an elevation that you have already created.

**Global Cut Plane**

The global cut plane cuts all objects in a drawing at the same height. It is defined separately for each of the display configurations that can be applied to a drawing, so you can have, for example, one cut plane height for a regular plan view and another cut plane height for a Reflected view.

The global cut plane is used on all objects that do not have an object-specific cut plane override.

When you set a cut plane for a display configuration, you also set a display range above and below the cut plane. This is the range in which objects, even when they do not intersect the cut plane, are displayed. For example, if you set the cut plane to 3'-6" [1400 mm] and define the visible range above the cut plane at 6'-0" [2000 mm] and the visible range below the cut plane at 3'-0" [1000 mm], then your objects are cut at 3'-6" [1400 mm]. Objects that lie between 3'-6" [1400 mm] and 6'-0" [2000 mm] as well as objects that lie between 3'-6" [1400 mm] and 3'-0" [1000 mm] are also displayed, but with different display for above and below the cut plane. Objects that lie outside the range - for example, a window that is inserted at 2'-6" [800 mm] - are not displayed at all.

**Grid**

An area covered with regularly spaced dots or lines to aid drawing. The grid spacing is adjustable. The grid is never plotted. Using Grid Mode is like having a grid under your drawing to help you with layout. The grid also shows the X and Y axes that start at the origin of the drawing. Grid mode can help you visually determine the distance with which you are working in any given view.

GRID can be turned ON or OFF by clicking on \[\text{icon}\] or by pressing F7. You can display further settings of GRID Right-Click on its icon.
i-drop

i-drop is a drag-and-drop method of inserting content from the Web into your current drawing. (not available in AutoCAD LT)

Using i-drop, you can easily insert content such as drawings and catalog items into an open drawing. Specific examples of i-drop content that you can insert include a block of a chair or window or a bitmap of a linoleum sample.
Isolate Objects - Lamp icon

You can create a temporary drawing view where only selected (isolated) objects appear. When you are finished, you can dismiss the view, or save the drawing in that view.

There are 2 basic ways of creating a view with only selected objects.

You can use the icon in the drawing window status to isolate objects. A red icon ( _) means that there are already objects isolated.

Mass Element

Mass elements are primitive parametric objects that have specific shapes, such as arch, box, cylinder, and gable. They function as the building blocks of conceptual design (also schematic design) in AutoCAD Architecture. You can create preliminary studies, or mass models, by grouping mass elements together in mass groups.
To create mass elements, you start with basic shapes and manipulate them for the desired result. The twelve basic mass element shapes are Arch, Barrel Vault, Box, Pyramid, Isosceles Triangle, Right Triangle, Cone, Cylinder, Dome, Sphere, Gable, and Drape. You can also create custom mass elements by extruding and revolving profiles and by creating free form mass elements.

You can modify a mass element based on its shape. For example, you can specify the width, depth, and height of a Box mass element, and the radius and height of a Cylinder mass element.

**Model Space View**

On the Model tab, you create drawings in model space. After you have completed your drawing, you can switch to a named layout tab to begin designing a layout environment from which to plot. You can always return to the Model tab to make design changes, panning and zooming without affecting the views in the layout viewports defined in a layout.

A model space view is a portion of a view drawing that may be displayed in its own paper space viewport on a sheet. Model space views are an evolution of the Named Views concept of AutoCAD. Unlike Named Views, a model space view has a defined boundary. When a model space view is placed onto a sheet, a sheet view is created. A view drawing can contain any number of model space views.

Clicking double any time on this name, program will enlarge on this View, and write its name.
Move

Move actions move selected objects a specified distance and angle. A move action associated with a point parameter moves all objects in a selection set in any direction. The point parameter is the location of the grip for the move action in the block reference.

A move action associated with a linear parameter moves all objects in a selection set only in the direction of the linear parameter. The parameter key point is the location of the grip in the block reference.

Applying a move action to a polar parameter gives the same result as applying a move action to a point parameter.

Multi-View Blocks

A multi-view block is an AutoCAD Architecture object that can have different representations in different view directions. You create a multi-view block from AutoCAD blocks that represent the different views of the custom object that you are creating.

Multi-view blocks can represent different types of objects in AutoCAD Architecture. They are typically used to represent the following items:

- Furniture and fixtures, such as tables and kitchen sinks
• Annotation components, such as revision clouds or fire rating signs
• Schedule tags, such as door numbers

Multi-view blocks can be displayed differently in each view direction and each display representation. For example, the top view of a multi-view block representing a kitchen sink shows the top of the sink; the bottom view shows the bottom of the sink; and there are representations for left, right, front, and back views. Additionally, you can define a different group of displays for each display representation, so that you can have one set of views for Plan view and another for Reflected view.

You can use a multi-view block as a cutout in objects such as walls, slabs, and curtain walls. You create a view block to represent the cutting body. The block forms the body that will be subtracted from objects by applying the multi-view block as interference. For example, you can create a skylight as a multi-view block and specify the block as a subtractive Boolean in a slab.

**Navigation Bar**

The navigation bar is a user interface element where you can access both unified and product-specific navigation tools.

![Navigation Bar](image)

Basically it is situated vertically under the View Cube. From here other navigation tools can be reached, like the Pan, the Zoom tools and the Orbit tools.

You start navigation tools by clicking one of the buttons on the navigation bar or selecting one of the tools from a list that is displayed when you click the smaller portion of a split button.
Offset

It creates concentric circles, parallel lines, and parallel curves. You can offset an object at a specified distance or through a point. After you offset objects, you can trim and extend them as an efficient method to create drawings containing many parallel lines and curves. The OFFSET command repeats for convenience. To exit the command, press ENTER.

Offset an object to create a new object whose shape is parallel to the original object. For example, if you offset a circle or an arc, a larger or smaller circle or arc is created, depending on which side you specify for the offset. If you offset a polyline, the result is a polyline that parallels the original.

An effective drawing technique is to offset objects and then trim or extend their ends.

Orbit

Use the 3D tools to orbit, swivel, adjust distance, zoom, and pan in a 3D view. 3D Orbit moves around a target. The target of the view stays stationary while the camera location, or point of view, moves. The center of the viewport, not the center of the objects you’re viewing, is the target point.
Selecting one of more objects before starting this command limits the display to those objects only. While the command is active, right-click to display additional options from a shortcut menu.

Click in a drawing area and drag the pointing device in any direction to start the objects moving in the direction that you're dragging. Release the button on the pointing device and the objects continue their orbit in the direction that you specified. The speed set for the cursor movement determines the speed at which the objects spin.

You can change the direction of the continuous orbit by clicking and dragging again. You can also change the display of the continuous orbit by right-clicking in the drawing area and choosing an option from the shortcut menu. For example, you can choose Visual Aids, Grid to add a grid to the view without exiting Continuous Orbit.

**Ortho**

Ortho mode is used when you specify an angle or distance by means of two points using a pointing device. In Ortho mode, cursor movement is constrained to the horizontal or vertical direction relative to the User Coordinate System.
Operating mode can be turned on or off on the Status bar or by pressing **F8 functional tab**, even during a command performing.

**Osnap**

Object Snap

Automatic tracking point, other name Object Snap Mode helps that on object’s special points - typically on the ENDpoint, INTersection, PERpendicular and NEArest point – we can specify a point, as an insertion point, or as a start or end point for specifying distance. Object Snap Mode can be turned on or off by pressing **F3 functional tab**, even during a command performing. Setting mode of “searched” special points can be found in the book exercises.

To make further settings, Right-Click above the **OSNAP** toggle below the status bar of the AutoCAD window, and choose from the drop-up menu **Settings**...
Pay attention that no more than 4 or 5 toggles should be on, because it can slow the workflow. The program will continuously try to find these special points, and in case of denser drawing it will strongly restrain the efficiency.

During our editing work we constantly need the program to find special points.

However, there are editing steps, when newly set automatically grip (Object Snap Mode) interferes your work. As a typical case, when an object’s start point, insertion point, etc... does not go to the specified place, because the automatic ENDpoint, INTersection or PERpendicular "pulls on" the point or the object.

In this case, the simplest, if using F3 function key the object snap mode is temporarily turned off, and then when it is needed again, it will be also switched back by pressing the F3.

**TIP:** If the OSNAP is on and you can not safely specify the desired object snap, it is recommended to use SHIFT + Right-Click. Then the necessary object snap can be chosen from a list. In this case, all others will be turned off for only specifying one point and only just selected one will be active. After clicking, original status will be restored at once. This works even when the OSNAP is off, but temporarily you want to use the object snap while specifying a point.

**Allow general object snap settings to act upon wall justification line toggle**

When placing walls the object snap modes can be applied to wall components or the wall justification lines. The Object snap tab of the Drafting Settings dialog box includes the object snap modes and the AutoCAD Architecture toggle: Allow general object snap settings to act upon wall justification line.

When this toggle is turned on, the modes of object snap will snap to the wall justification line rather than to components or the linework of hatching. If this toggle is turned on when placing walls, wall endpoints automatically connect to adjoining wall justification lines.
Paper Space, Model Space

There are two distinct working environments, called "model space" and "paper space," in which you can work with objects in a drawing.

- By default, you start working in a limitless three-dimensional drawing area called model space. You begin by deciding whether one unit represents one millimeter, one centimeter, one inch, one foot, or whatever unit is most convenient. You then draw at 1:1 scale.

- To prepare your drawing for printing, switch to paper space. Here you can set up different layouts with title blocks and notes; and on each layout, you create layout viewports that display different views of model space. In the layout viewports, you scale the model space views relative to paper space. One unit in paper space represents the actual distance on a sheet of paper, either in millimeters or inches, depending on how you configure your page setup.

Model space is accessible from the Model tab and paper space is accessible from the layout tabs.

These tabs can be hidden, appearing instead as buttons on the status bar at the bottom-center of the application window. To display the tabs again, Right-Click either the Model or the layout button and click Display Layout and Model Tabs on the shortcut menu.

Project Browser

The Project Browser is where you perform high-level project-related tasks, such as creating a new project, selecting the currently active project, and setting project properties.
In the Project Browser, you create new projects, configure the project settings and project standards, add detail information, and select the current project. When you set a project current, either from the context menu or by double-clicking the file name, the project is migrated to a format compatible with the current version of AutoCAD Architecture. If you also repath the project, all project drawings are migrated as well, and you will be unable to open the project in any older version of the software.
**Project Navigator**

The Project Navigator palette is the central location to create, modify, and access AutoCAD Architecture project files. You typically have the Project Navigator palette open in the workspace while you work on a project. After you have selected a project in the Project Browser, you open the Project Navigator to create and edit the actual building and documentation data. Here you create elements, constructs, model views, detail views, section views, and sheets, connecting them with one another.
Although project files and categories you create on the Project Navigator palette are shown as files and folders in Windows Explorer, you should not move, copy, delete, or rename project files from there. Such changes are not updated on the Project Navigator palette, and you could get an inconsistent view of your project data. Any changes you make to the project on the Project Navigator palette are managed and coordinated by the software. Also note that any changes you make on the Project Navigator palette (such as renaming, deleting, or changing the file’s properties) cannot be undone using the AutoCAD UNDO command.

**Properties palette**

The Properties palette provides a central location to view and modify both the physical and graphical properties of an object. The object can be one you are about to draw, or one that is already selected in the drawing area. Using the Extended Data tab of the Properties palette, you can also attach other kinds of information to an object, such as classifications, notes, reference documents, hyperlinks, and property set data. You typically keep the Properties palette open during an AutoCAD Architecture session.
Quick Access Toolbar

The Quick Access toolbar is a customizable toolbar located at the top of the application window, just to the right of the Application menu button.

By default, this toolbar contains a set of frequently used commands for the application. You can add and remove commands as needed. Once a Quick Access toolbar has been defined, it can be displayed in the application window by assigning it to the Quick Access Toolbar node of a workspace under the Workspace Contents pane.

Rectangle

Creates a rectangular polyline from the specified the rectangle parameters (length, width, rotation) and type of corners (fillet, chamfer, or square).
Relative Coordinates

Relative coordinates are based on the last point entered. Use relative coordinates when you know the location of a point in relation to the previous point.

To specify relative coordinates, precede the coordinate values with an @ sign. For example, entering @3,4 specifies a point 3 units along the X axis and 4 units along the Y axis from the last point specified.

Ribbon menu

The ribbon is the central location for accessing commands in AutoCAD Architecture. The ribbon is organized into tabs that reflect common tasks in the drawing process. There are 2 types of tabs:

- Static tabs are available regardless of which objects are selected in the drawing area. The commands on these tabs were previously located on the menus and toolbars.

- Contextual tabs display depending on the object selected in the drawing area. When you select a door, a contextual tab for doors is displayed. The commands on the contextual tabs reflect the commands on the context menu of an object.

The ribbon is composed of a series of panels, which are organized into tabs labeled by task. Ribbon panels contain many of the same tools and controls available in toolbars and dialog boxes.
Roof, Roof Slab

Roofs are AEC objects that you can use to model an entire multiple-face roof surface. You can create roofs independently of other objects, or you can place a roof on a shape defined by a polyline or by a closed set of walls. After creating the roof, you can change its overall dimensions and slope, or edit its edges and faces individually. For more flexibility in customizing a roof, you can convert it to a collection of individual roof slabs.

A Roof Slab models a single face of a roof. Roof slab objects also differ from roof objects in that each roof slab is a separate entity with no direct connection to other entities. When you use multiple roof slabs to model an entire roof surface, you have more flexibility in editing the roof, but the combined topology (3D geometry) of the roof is not calculated automatically. For this reason, it is recommended that when you design complex roofs, you start with a roof object. Then, when the design is substantially complete, but you need more flexibility for customizing edges and other details, you can convert the roof to individual roof slabs.
While roof slabs do not dynamically interact with each other, they do allow significant control over the roof geometry. For example, you can trim roof slabs individually, extend them, and miter them with other roof slabs. You can also cut holes in roof slabs, add or subtract mass elements, and apply detailed fascia and soffit profiles to any edge at any angle and orientation. Because roof slabs are style-based, you can apply design changes globally.

Section/Elevation Problem

In ACA 2013 program the generated Sections/Elevations are incorrect.

This behavior is as follows. The generated Elevations/Sections are completely wireframe. Each object can be seen. Hidden is not made to eliminate the hidden objects.

I met this problem in June, 2012, and I found the error correction for it, which can be downloaded from the next link:

http://usa.autodesk.com/adsk/servlet/ps/dl/index?siteID=123112&id=2334435&linkID=9240658#section1

usa.autodesk.com > Home > Services & Support > AutoCAD Architecture Services & Support

Downloadable package contains two files, which you have to copy in the root library of the program named AutoCAD 2013. You can find here AutoCAD, ACA and MEP, so you have to copy it in only one place, or to override the existing ones.

After restarting the program, Elevation/Section generating will work correctly. If you have already generated one, it is enough to Refresh it.

Section Line

A section represents a building model as if the model were cut vertically to show interior detail. You can create two-dimensional (2D) or three-dimensional (3D) section objects, or a live section view of the model. You can control the size and shape of the section you generate and assign materials to the section for an optimal visual representation of the sectioned objects. Section objects remain linked to the building model that you used to create them, unless you explode the section. Because of this link between the section and the building model, any changes to the building model can be reflected in the section as well.

The section line defines the extents of the section that you extract from the building model. Sections lines can be straight or jogged. You can also specify the length and the height of the area defined by the section line. Section marks that typically contain a letter or number and indicate the direction of the section appear at each end of the section line.

After you draw the section line, you can create a section object or a live section view from the line.

When you generate a section from a section line, you specify the type of section object that is created.

When you create a live section view from a section line, you do not create a new section object but instead switch to a special view of the 3D building model. You do not select objects to include in the section; the live section view includes all objects in the drawing. The section line controls how objects are displayed in a live section view. Objects or parts of objects that are within the bounding box of the section line retain their
original display properties. Objects or parts of objects that are outside of the section line are either not displayed at all or are displayed with a special display component for the sectioned body.

**Selection Cycling**

Selection cycling allows you to select objects that are overlapping. You can configure the display settings of the selection cycling list box.

**Sheets**

Sheets are used to plot view drawings of your building project. The sheet system in AutoCAD Architecture consists of these components:
• Sheet: A sheet is a paper space layout that has been registered as a sheet. A sheet can contain one or more views.
• Sheet views: A sheet view is a paper space viewport created by dragging and dropping a model space view from the Project Navigator onto a sheet.
• Sheet sets: A sheet set is a collection of sheets. Within the sheet set, sheets are organized in sheet subsets.
• Sheet drawing: A sheet drawing is a drawing file containing one or more sheets.

Sheets, sheet subsets, sheet views, and sheet drawings are listed on the Sheets tabs of the Project Navigator.

The National CAD Standard (NCS) mandates that sheets should be stored in individual drawings, each with one sheet layout. The drawing name should be the sheet number in its sheet set. The AutoCAD Architecture Project Navigator follows this standard, so that each new sheet is placed in a new sheet drawing. You can, however, create multiple sheets in one sheet drawing, if necessary.

A sheet drawing is a DWG file. As opposed to other non-project drawing files, an XML file with the same name is created when you create a sheet drawing. The accompanying XML file contains information to connect the drawing file with the project.
Solution Tips

The intended interaction among objects in an AutoCAD Architecture drawing depends on various rules about how objects are placed in relation to one another. Whenever the software identifies a problem with the placement of objects or their components, a solution tip icon is displayed to identify the location of the problem, as shown.
Move the cursor over the icon to display a message that describes the problem and provides one or more possible solutions. Some solution tips provide complete instructions for resolving the problem. Where more detailed instructions are required, you can press F1 to access the relevant topic in Help.

**Problem:**
Error with the stair winder type Single point.

**Possible Solution(s):**
- Uncheck "Use Riser Line" in the Style Manager.
- Adjust the turn point to be not on the edge or corner of the stair.
By default, solution tip icons are displayed when you are drafting, but not during plotting or publishing. You can change these settings in the Options dialog box.

Tool Palettes
Tool palettes provide the main method for accessing tools to create objects in your model. You can have tools for standard objects as well as for objects with specific styles and properties. Tool palettes are organized by tool palette groups in a tool palettes set. You can create your own tool palettes, or you can copy existing tool palettes from the Content Browser.
ViewCube

The ViewCube is a navigation tool that is displayed when you are working in 2D model space or 3D visual style. With ViewCube, you can switch between standard and isometric views.

The ViewCube is a persistent, clickable and draggable interface that you use to switch between standard and isometric views of your model. When you display the ViewCube, it is shown in one of the corners of the drawing area over the model in an inactive state. The ViewCube tool provides visual feedback about the current viewpoint of the model as view changes occur. When the cursor is positioned over the ViewCube tool, it becomes active. You can drag or click the ViewCube, switch to one of the available preset views, roll the current view, or change to the Home view of the model.
If it is not shown, use the Ribbon menu View tab > Windows panel > User Interface > ViewCube route to be shown again.

Viewport Controls

Viewport Controls well-known from 3D MAX appeared in AutoCAD. Let’s see how it works here.
Viewport Controls are displayed at the top-left corner of each viewport, and provide a convenient way of changing views, visual styles, and other settings.

The labels display the current viewport settings. For example, the labels might read
You can click within each of the three bracketed areas to change the settings.

- Click + with left button to display options for maximizing the viewport, if screen is divided to more viewports, to change the viewport configuration, or to control the display of navigation tools.
- Click Top to choose between several standard and custom views.
- Click 2D Wireframe to choose one of several visual styles. Most of the other visual styles are used for 3D visualization.

You can set one by one what kind of navigation tool (ViewCube, SteeringWheels, NavigationBar) you would like to display.

**TIP:** Clicking double on [-] the last divided and used view will be displayed automatically. Click it double again and the View will be maximized in which you last clicked.
VPCONTROL: Controls whether the menus for viewport tools, views, and visual styles located in the upper-left corner of every viewport are displayed or not. OFF status (0) hides viewport controls. ON status (1) displays viewport controls. You can control OFF and ON status on the Options panel, 3D Modeling tab.

Colors of Controls can be set on the Options panel, Display tab, Colors window. Of course, it can be set separately in all Contexts. It means if you want it will be white in 2D style, but in 3D it will be red.

Views

After the structure of the building project is defined, and constructs are assigned to levels and divisions, you can start to create view drawings. A view drawing references a number of constructs to present a specific view of the building project. To create a view drawing, you first decide which portion of the building you wish to look at and which type of view to generate. You could, for example, create a first-floor reflected ceiling plan or a second-floor framing plan, or create a composite view of all floors in the building. View drawings automatically reference the appropriate constructs according to their level/division assignments within the building. For example, to create a floor plan of the west wing of the second floor, you would create a view that references all constructs assigned to the second floor and the west wing. This would also include a curtain wall spanning the first through fifth floors.
There are 3 different types of View drawings in the Drawing Management feature:

**General view drawing:** A general view drawing contains referenced constructs from the project, representing a specific view on the building model. General view drawings are based on the general view template defined in the project settings.

You can reference a view drawing in a sheet. When you reference the view drawing into a sheet, a sheet view is created that contains the view drawing reference.

**Detail view drawing:** A detail view drawing contains one or more model space views that show a defined portion of the detail drawing in the level of detail you specify. A model space view containing a detail can be associated with a callout. Detail view drawings are based on the detail view template defined in the project settings.

**Section/Elevation view drawing:** A section/elevation view drawing contains one or more model space views, each showing a defined portion of the section/elevation view drawing. A model space view containing a section or elevation can be associated with a callout. Section/Elevation view drawings are based on the section/elevation view template defined in the project settings.

**Visual Style Controls**

Visual styles control the display of edges, lighting and shading. Control the effect of a visual style by changing its properties. When you apply a visual style or change its settings, the associated viewport is automatically updated to reflect those changes.

The Visual Styles Manager displays all styles available in the drawing. Settings for the selected style are displayed in the panel below the sample images.

From the ribbon, you can change some frequently used settings or open the Visual Styles Manager.
The following predefined visual styles are supplied with the product:

- **2D Wireframe**: Displays objects using lines and curves to represent the boundaries.
- **Conceptual**: Displays objects using smooth shading and the Gooch face style. The Gooch face style transitions between cool and warm colors, rather than dark and light. The effect is less realistic, but it can make the details of the model easier to see.
- **Hidden**: Displays objects using wireframe representation and hides lines representing back faces.
- **Realistic**: Displays objects using smooth shading and materials.
- **Shaded**: Displays objects using smooth shading.
- **Shaded with Edges**: Displays objects using smooth shading and visible edges.
- **Shades of Gray**: Displays objects using smooth shading and monochromatic shades of gray.
- **Sketchy**: Displays objects with a hand-sketched effect by using the Line Extensions and Jitter edge modifiers.
- **Wireframe**: Displays objects using lines and curves to represent the boundaries.
- **X-ray**: Displays objects with partial transparency.
In shaded visual styles, faces are lit by two distant light sources that follow the viewpoint as you move around the model. This default lighting is designed to illuminate all faces in the model so that they are visually discernable. Default lighting is available only when other lights, including the sun, are off.

Select a visual style and change its settings at any time. The changes are reflected in the viewports to which the visual style is applied. Any changes you make to the current visual style are saved in the drawing.

**Wall Body Modifier**

Body modifiers use the 3-dimensional (3D) geometry of an object, such as a mass element or a mass group, to add to, subtract from, or completely replace one component in a wall. If the wall has only one component, the body modifier applies to the entire wall. If the wall has multiple components, the modifier applies only to the component that you specify.

If you add the body modifier to a wall component, or use a body modifier to replace the component, the body modifier uses the material assignment and display properties of the wall component.
After you create a body modifier from an object, you can delete the original object. However, if you have created a complex object, such as a mass group comprising many mass elements, you may want to retain the object in the drawing until you are sure you have the results you want for the wall.

Wall Cleanup Group Definitions

A wall cleanup group definition is a designation that you can assign to individual walls to control how intersecting walls clean up. Walls that belong to the same cleanup group clean up where they intersect according to the priority assigned to each component in each wall. Walls that belong to different cleanup groups do not clean up when they meet at corners or intersections.

Cleanup Group Definition: if you have defined a wall that should not clean up with other walls that are not of the same type, you can pre-set the cleanup group definition that it is inserted with.

Important: To pre-set the wall cleanup group definition, you must first specify the library drawing in which the cleanup group definition exists, then define the cleanup group to use. Even if the cleanup group already exists in the current drawing, it will not be used unless you specify the definition location.

To create, edit, copy, or purge cleanup group definitions, you access the Style Manager. The Style Manager provides a central location in AutoCAD Architecture where you can work with definitions and styles from multiple drawings and templates.
Wall Cleanups and Priority

Walls with multiple components clean up based on the priority assigned to each component and the location of each component within the wall. Matching component edges with the same priority are extended or trimmed to their intersection points. Components with a higher priority (a low priority number) cut through components with a lower priority (a high priority number).
The Drawing Management feature uses external references (Xrefs) as a means to create a project and maintain it. Elements are referenced into constructs, constructs are referenced into views, and views are referenced into sheets. The mechanism of referencing is identical to the regular AutoCAD External References Management feature. However, the background methods employed have additional features. Xrefs that are created in drawing management can automatically make use of project data, while those that are created manually through the xref palette or command line cannot. For example, a construct that is placed on a specific level will use that level's elevation data (as defined by the project) to control the Z-axis insertion point when being xrefed into a view.

If you are working in a project environment, the best practice for referencing project drawings into other project drawings is to use the Project Navigator rather than the standard AutoCAD Xref Manager. The AutoCAD Xref Manager cannot differentiate between project drawings and non-project drawings. If you reference a non-project file into a project file by mistake, you cannot use the full Drawing Management functionality on that file.

Overlay: AutoCAD ignores other Xref attachments that are nested in the selected file. This avoids multiple attachments of other files and eliminates the possibility of circular references (referencing the current file into itself through another file).

Attach: Inserts references to external files such as other drawings, raster images, and underlays. If you attach a drawing that contains an attached xref, the attached xref appears in the current drawing. You can select multiple DWG files to attach. Like blocks, attached xrefs can be nested. If another person is currently editing the xref, the attached drawing is based on the most recently saved version.

When you insert an external reference into a drawing, the Manage Xrefs icon will display in the right low corner of the drawing area.

If you click on it, you can open the External References Palette, where you can manage inserted Xrefs.
External References Palette

Through this palette you can manage external references attached to the current drawing. The External References palette organizes, displays, and manages referenced files, such as DWG files (xrefs), DWF, DWFx, PDF, or DGN underlays, and raster images. Only DWG, DWF, DWFx, PDF, and raster image files can be opened directly from the External References palette.

The External References palette contains several buttons, and is split into two panes. The upper pane, called the File References Pane, can display file references in a list or in a tree structure. Shortcut menus and function keys provide options for working with the files. The lower pane, called the Details / Preview Pane, can display properties for the selected file references or it can display a thumbnail preview of the selected file reference.
**TIP:** When you select a drawing on the upper pane, the same drawing will be selected either in the drawing area.

To purchase and download the whole book, follow this link: