

Innovation first

Starting Guide

 ADVANCE
CAD

2017



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INTRODUCTION

This starting guide is a brief introduction to working with Advance CAD, describing the basic methodology and not meant to replace formal training.

The first two chapters of this guide describe the steps involved in installing the software and a short description of Advance CAD's user interface. In the following chapters, the most simple Advance CAD objects, some working methods and dimensioning tools are presented using simple examples as steps in the creation of the floor plan of a small building.

The examples presented in this guide are generic for worldwide use and do not conform to local or specific company standards.

Since not all Advance CAD tools are described in this guide, refer to the *Help* for more details on all commands and parameters.

About Advance CAD

Advance CAD is a CAD software that works under the Windows operating system. It provides a simple user-friendly working environment for creating 2D drawings. A large selection of drawing and dimensioning tools allow the creation of simple as well complex drawings.

Advance CAD uses the native .dwg file format.

Where to find information

Using the help

Advance CAD has a help system that offers step-by-step instructions for every function.

To access the help:

- **Help** tab, **Help** panel: click 

INSTALLATION

To successfully install Advance CAD, certain requirements must be met.



System requirements

For more details, see the *Installation guide* on the Documentation CD or www.graitec.com/en/advance_installation.asp.

Starting the installation

Close all active Windows applications before starting the installation.

Proceed with the installation as follows:

1. Insert the installation DVD in the DVD drive.
2. Start the installation by following one of these procedures:
 - On the DVD – Browser, click **SetupAdvance**.or
 - On the Windows task bar, click .
 - In the Search programs and files field, enter *SetupAdvance.exe*. Double-click the file to start.
3. Select the installation language and click **Install the products**.
4. To install only Advance CAD, select **Custom setup** then select GRAITEC Advance CAD.
5. Click **Next**.
6. Read the license agreement, select **I agree** and click **Next**.
7. On the next screen, select the interface language and the installation path.
 - To select the interface language, click **Customize**. In the next dialog box, select the interface language and the local settings for each installed application and click **<OK>**.
 - To change the destination path, click . In the next dialog box, enter a path or select a different folder in which to install Advance and click **<OK>**.
8. Click **Install** to start the installation.


The installation process starts.

9. Once the installation process is complete, click **Exit**.

After installing Advance CAD, a license is required to use the software. To authorize the software, follow the procedure described in the “*Installation guide*” or contact the reseller.

STARTING ADVANCE CAD

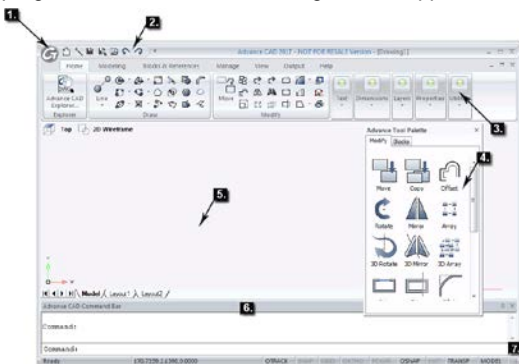
To start Advance CAD:

- Double click the **Advance CAD** icon on the desktop.
- or
- On the Windows task bar, click , then select: **All programs > Graitec > Advance CAD > Advance CAD.**

Advance CAD startup page appears.

ADVANCE CAD USER INTERFACE

Once the program has started, the following window appears:



1. **Menu Browser button**
All the commands and tools are accessed using the Menu Browser. The button in the upper left corner displays the Menu Browser.
2. **Quick Access Toolbar**
The Quick Access Toolbar groups the frequently used commands: New, Open, Save, Undo, Redo, etc. More commands can be added using the Quick Access Toolbar context menu.
3. **Ribbon**
The ribbon consists of several tabs. Each tab contains panels and each panel contains commands and buttons. Some of the buttons open flyouts. The flyout buttons are identified with a black triangle on the lower right corner. The contained commands appear when the button is held down.

4. Tool palettes

For easier access, the most used editing tools are grouped on the tool palette.

5. Drawing area

The drawings are displayed in the drawing area.

6. Command line

On the command line, commands can be entered using the keyboard. Press **Enter** after each entry.

7. Status bar

If the command line is not used, the status bar displays information about the selected command or tool. It also displays the current cursor coordinates, the name of the current layer, mode settings and other information about the current settings.

Some useful tools

- To cancel a command in Advance CAD, press the **Esc** key.
- To repeat a command, press **Enter**.
- The current command and prompts are displayed on the command line window at the bottom of the screen. Press the **F2** key to open and close the command window.
- When the cursor hovers over a ribbon button, the button's tooltip appears.
- The **Undo** command on the Advance CAD Quick Access toolbar cancels one or several commands.



- The **Match properties** command on the Advance CAD **Utilities** panel copies properties from one object to another. The transferred properties are selected from the given list.




WORKING WITH DRAWINGS

New projects are created based on a template file. The template file contains important defaults like the current coordinate system, the orientation, object snap settings, layer assignment and color definitions so that drawing can immediately begin.

Creating a new drawing


To create a new drawing:

1. On the Quick Access Toolbar: click .
2. Select to display the files of *.dwt type.
3. Select the desired template (*.dwt) file.
4. Click **Open**.

Saving the drawing

Advance CAD drawings are saved in *.dwg files.

To save the drawing:

1. On the Quick Access Toolbar: click .
2. Enter the name of the drawing.
3. Click **Save**.

Drawing settings

Prior to drawing, some specific settings should be made:

- Layer settings
- Linear and angular units

Setting layers

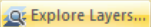

Layers are like transparent overlays on which the drawing information is organized. Drawing objects can be grouped on layers for easier control of their properties and visibility.

Every drawing has at least one layer. An unlimited number of layers can be added. Objects are created on the current layer.

The **Layer Explorer** is used to manage the layers.

Example: Setting layers


In this example, create the layers necessary for a simple drawing: the floor plan of a small building. For every layer, define its properties (the name, the color and the line type).

1. On the **Home** tab, on the **Layers** panel, click .
2. In the Layer Explorer click .

A new layer is created.

Layer Name	Color	Linetype	On/Off	Locked	All Viewp...	Lineweight
0	<input type="checkbox"/> white	Continuous				— Default
Test Layer	<input type="checkbox"/> white	Continuous				— Default

3. Next, modify the layer properties:

- Enter **Axes** for the layer name.
- In the “Color” column, click the rectangle and select another color from the color palette (e.g.  magenta).
- In the “Linetype” column, select **CenterX2**.

Note: *If the desired linetype is not available in the list, it must be loaded.*

- ▶ Click in the “Linetype” column.
- ▶ In the Linetype manager, click **Load** to access the list of additional linetypes.
- ▶ Select **CenterX2** and click **OK**. **CenterX2** is displayed in the Linetype manager.

Layer Name	Color	Linetype	On/Off	Locked	All Viewp...	Lineweight
0	<input type="checkbox"/> white	Continuous				— Default
Axes	<input type="checkbox"/> magenta	CENTERX2				— Default

Using the same process, create new layers and modify the colors and the line type as in the following figure.

Layer Name	Color	Linetype	On/Off	Locked	All Viewp...	Lineweight
0	<input type="checkbox"/> white	Continuous				— Default
Axes	<input type="checkbox"/> magenta	CENTERX2				— Default
Auxiliary	<input type="checkbox"/> red	Continuous				— 0.30 mm
Dimensions	<input type="checkbox"/> white	Continuous				— Default
Doors	<input type="checkbox"/> 250	Continuous				— Default
Furniture	<input type="checkbox"/> 250	Continuous				— Default
Hatch1	<input type="checkbox"/> blue	Continuous				— Default
Hatch2	<input type="checkbox"/> 171	Continuous				— Default
Spiral stair	<input type="checkbox"/> cyan	Continuous				— Default
Wall contours	<input type="checkbox"/> 250	Continuous				— 0.20 mm

To define a layer as current, double-click it in the “Layer Explorer”, or on the **Layers** panel, select it from the drop-down list.



Setting units

With Advance CAD, by default, drawings are created at 1:1 scale.

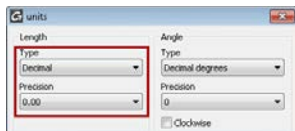
Before starting, the relationship between the drawing units and the real-world units must be defined. A linear drawing unit may represent an inch, a foot, a meter or a mile.

The precision must also be set. The precision settings affect only the display of distances, angles and coordinates.

Example: Setting the project working units

For the small project described in this guide, the input values are in meters, with two decimal places.

1. On the **Manage** tab, on the **Settings** panel, click . The “Units” dialog box appears.
2. Define the following settings for the length units:
 - Select the **Decimal** format.
 - In the “Precision” field select **0.00** to display only two decimal places.



2D DRAWING

Advance CAD objects are created in 2D space using the appropriate tools.

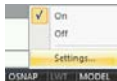
Drawing geometric objects

Advance CAD can create all geometric objects: finite and infinite lines, circles, arcs, ellipses, elliptical arcs, points, etc. A freehand tool is used to create irregular boundaries.

Advance CAD can also create complex objects: polylines, rectangles, spline curves, donuts and planes.

When using a tool, the software prompts for point coordinates, arcs or distances. The following can be done:

- Define coordinates: enter the point coordinates on the command line.
- Use object snaps: select exact geometric points on existing objects without knowing the exact the coordinates of these points.
 - To enable object snaps, on the status bar, right-click OSNAP and select **On**.
 - To set the object snaps, on the status bar, right-click OSNAP and select **Settings**.



In the “Drafting settings” dialog box, the **Object snaps** tab is used to select the OSNAP modes.



There are several ways to create an object. Not all objects and not all creation methods are presented in this guide.

Before drawing the elements, define the current layer.

Drawing lines


Finite and infinite lines can be drawn:

- **Line** – creates a simple line with connected segments, each segment is a separate line object.
- **Ray** – creates a semi-infinite line.
- **Infinite line** – creates an infinite line.

 **Example 1: Drawing semi-infinite lines by a start point and direction**

In this example, create a grid consisting of axes in the X and Y directions, which is used in the next chapters of this guide.

Before starting, activate the **Axes** layer.

1. On the **Home** tab, on the **Draw** panel, select  from the flyout.
2. Press **F8** to activate the ORTHO mode.
3. On the command line, enter **0,0,0** to define the start point in the origin.
4. Move the mouse pointer in the **X** direction and click a point.
5. Press **Enter** to finish.



Using the same process, draw another ray from the origin, in the **Y** direction.

Next, create the horizontal axes, parallel with **X**, using the following coordinates as start points.

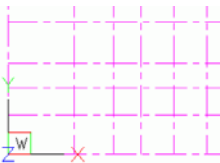
Tip: Press **Enter** to repeat the last executed command – in this case, "Ray".

- 0, 3.16, 0**
- 0, 5.32, 0**
- 0, 7.32, 0**
- 0,10.64, 0**



Using the same process, create vertical axes, parallel with Y, using as start points the following coordinates:

- 5.32, 0, 0**
- 8.48, 0, 0**
- 10.64, 0, 0**
- 13.30, 0, 0**
- 15.96, 0, 0**




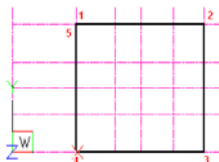
Example 2: Drawing contiguous lines

In this example, create the wall contour as in the picture below using the axis intersection as start and end points.


Before starting, activate the **Wall contours** layer.

*Make sure that OSNAP is active and **end point** and **intersection** are set.*

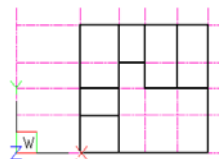
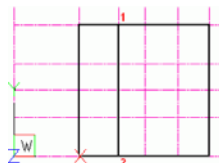
1. On the **Home** tab, on the **Draw** panel, select  from the flyout.
2. Specify the first point of the line.
3. Specify the second point of the line.
4. Specify segment end points as needed to get the contour as in the figure.
5. Press **Enter** to finish.



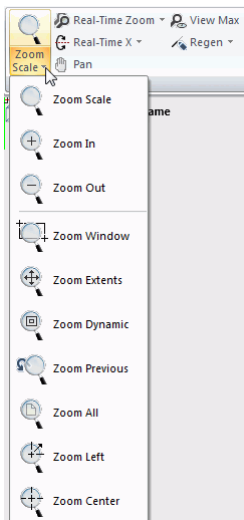
Example 3: Creating a line by two points

1. On the **Home** tab, on the **Draw** panel, select  from the flyout.
2. Specify the first point of the line.
3. Specify the second point of the line.
4. Press **Enter** to finish.

Using the same process, draw all necessary lines as in the figure.



As you draw, you may need to frequently change the magnification and the view position in the drawing area. These tools are grouped on a flyout of the **View** panel of the **View** tab.



Drawing arcs

Arcs are drawn clockwise from the start to the end point. There are several methods to create an arc:

- By 3 arc points
- By start, center and end point
- By center, start point and angle
- By center, start point and length

All tools are grouped in a flyout accessible on the **Draw** panel of the **Home** tab.

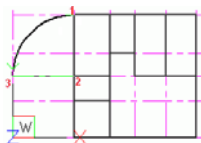


It is also possible to create an arc by trimming a circle. In practice, arcs are often created this way.

Example: Drawing an arc by a start point, center and end point

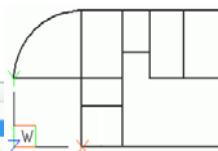
Next, create the contour of the circular wall.

1. On the **Home** tab, on the **Draw** panel, click .
2. Specify the start point of the arc.
3. Specify the center of the arc.
4. Specify the end point of the arc.
5. Press **Enter** to finish.



Draw another line to close the contour.

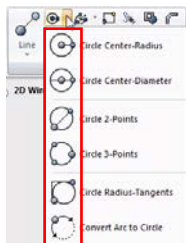
Now that the wall contour lines are drawn, the **Axis** layer can be switched off: in the Layer manager, click in the “On/Off” column to hide the layer.




Drawing circles

The default method for drawing a circle is to specify the center and the radius.

Other alternative methods are:

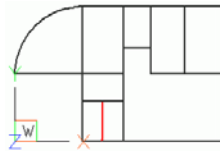


- Two points defining the diameter
- Center and diameter
- By 3 points defining the circumference
- Circle radius and tangents
- Converting an arc to a circle

 **Example:** Drawing a circle by a center point and radius

Draw the section contour of the spiral stair central post. The column has a circular section of **0.40 m** diameter.

Before starting, draw an additional line on the **Auxiliary** layer. The circle center is in the mid point.



*Make sure that OSNAP is active and **mid point** and **perpendicular** are set.*

1. Activate the **Wall contours** layer.

2. On the **Home** tab, on the **Draw** panel, select



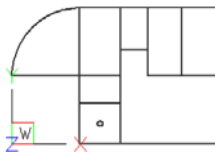
3. Click the additional line middle point to define the center of the circle.



4. On the command line, enter **0.20** for the radius of the circle.

The circle is created. The additional line can be deleted.


Tip: To delete an object, select it and press **Delete**.




Drawing sketches

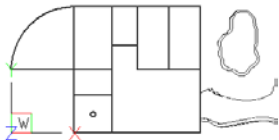
The freehand sketch tool is used to draw irregular shapes.

Freehand sketches consist of many line segments. It is necessary to set the minimum length of the segments. For more accuracy, use small line segments. Click to put the “pen” down and click again to stop drawing.

 **Example:** Drawing a freehand sketch

To draw freely make sure that the ORTHO mode is off.

1. Activate the **Landscape** layer.
2. On the **Home** tab, on the **Draw** panel, click .
3. On the command line, enter **0.1** for the minimum length of the segments.
4. Click to put the “pen” down and draw the sketch line and click again to stop drawing.
5. Press **Enter** to quit the command.



The **Landscape** layer can be hidden.

WORKING METHODS

In practice, it is useful to copy existing objects and modify them. For example, a line can be offset from an existing line, and adjusted to the desired length. The grip points or the “trim” and “extend” commands can also be used.

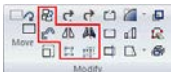
Many editing tools allow moving, rotating or stretching drawing objects. All editing tools are grouped on the **Modify** panel of the **Home** tab.



Copying objects


One or several objects can be copied within a drawing or between drawings using any of the following methods:

- Copy at a location referenced from the original
- Copy aligned parallel to the original
- Copy symmetrically to the original
- Create several copies in a rectangular or circular pattern



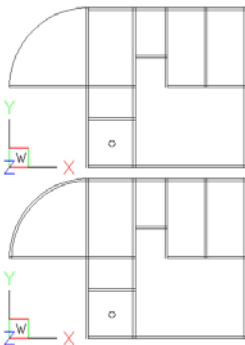
Example 1: Creating parallel copies

The walls of the building used as an example have a thickness of **16 cm**. Next, create parallel lines at the given distance to get a correct representation of the walls.

1. On the **Home** tab, on the **Modify** panel, click .
2. On the command line, enter **0.16** for the distance and press **Enter**.
3. Select the object to copy, for example, the bottom contour line.

4. Click above the line to place the copy.
5. Select another line to copy, or press **Enter** to finish.

Create parallel lines as in the figure.




Using the same process copy the arc also at **16 cm**.




Note: *Parallel copies of curved objects are larger or smaller curves, depending on the side the copy is placed. In this example, a smaller concentric arc is created.*

Example 2: Creating radial copies in a polar pattern

Before starting, draw a line representing the first step of the spiral stair on the **Spiral stair** layer.

Make sure that **OSNAP** is active and **center** is set.


1. On the **Home** tab, on the **Modify** panel, click .
2. In the “Array” dialog box, select **Polar array**.

3. Click , select the line to copy and press **Enter**. 
4. Click  to select the polar array center.
5. Define the center of the polar array in the center of the circle and press **Enter**.

Tip: For easier selection of the center, type **Center** on the command line and press **Enter**. Next, click the circle to snap to its center.

6. In the “Method and Values” area, make the following settings:
 - Enter **18** for the number of objects.
 - Enter **-270** for the angle to create radial lines clockwise.
 - Select **Rotate items as copied** to rotate the objects in the array as shown in the preview area.




7. Click **Preview** to view the result. 
8. Click **OK** to confirm. The radial copies of the line are created.

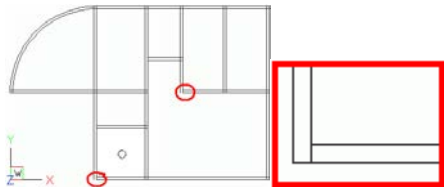
Extending objects

Arcs, lines, 2D polylines and rays can be extended to a boundary defined by other objects or to the point at which they would intersect an implied boundary edge.

Example: Extending lines

Extend the lines to close the wall contour. For a clear view, hide the **Spiral stair** layer.

1. On the **Home** tab, on the **Modify** panel, select  from the flyout.
2. Select the vertical line as a boundary line and press **Enter**.
3. Select the horizontal line that should be extended.
4. Press **Enter** to finish.




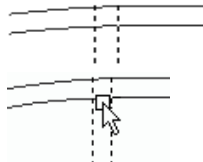
Trimming objects

Advance CAD allows trimming objects so that they end at boundaries defined by other objects (lines, rays, polylines, circles, arcs or ellipses). First select the boundaries, then the objects to trim.

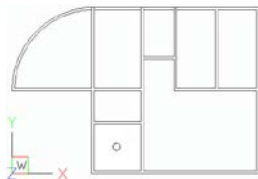
Example 1: Trimming lines

In this example, clean up the intersection of walls. Zoom to the upper end of the circular wall.

1. On the **Home** tab, on the **Modify** panel, click .
2. Select the boundary lines and press **Enter**.
3. Select the lines to trim.




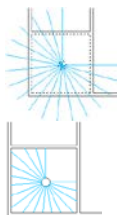
Using the same process, clean up all wall intersections as in the figure.



Example 2: Trimming lines

Display the **Spiral stair** layer.

1. Zoom to the staircase area.
2. On the **Home** tab, on the **Modify** panel, click .
3. Select the boundary lines and the circle and press **Enter**.
4. One by one, select the radial lines at both ends.
5. Press **Enter** to finish.




Chamfering and filleting

Advance CAD allows chamfering and filleting objects. Arcs, circles, ellipses, lines, polylines, rays or splines can be filleted or chamfered.

A fillet connects two objects with an arc of a given radius. A chamfer connects two objects by a line.

Example: Creating a fillet

In this example, create a round corner inside the building.

1. On the **Home** tab, on the **Modify** panel, select  from the flyout.
2. On the command line, type **R** (Radius) to define the fillet radius and press **Enter**.
3. Enter **0.84** for the fillet radius and press **Enter**.
4. Select the inside contour lines of the walls. The fillet is created.

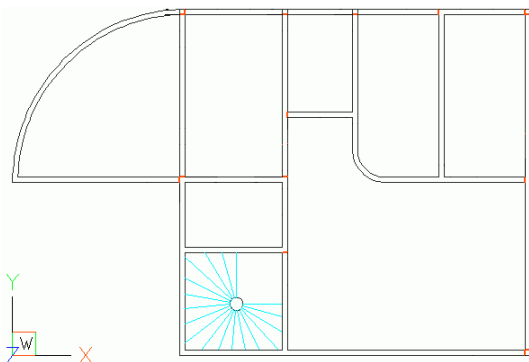



Using the same process create a fillet for the outside contour lines of the wall, this time the radius value is 1.

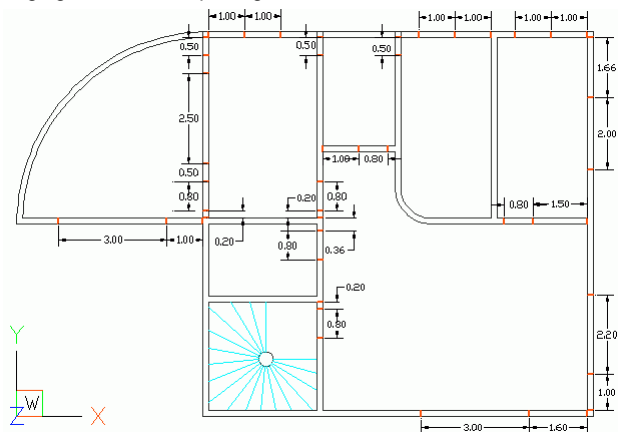
Drawing other elements

Using the tools discussed in this guide, draw the column contour and the windows and doors openings.

Before starting, draw all additional lines on the **Auxiliary** layer as in the following figure.




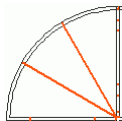
Use Offset tool  to define the openings at the distances given in the following figure. All door openings are **80 cm**.



Example 1: Creating a window opening on the circular wall

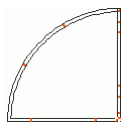
In this example, create a window opening on the circular wall. First, draw two radii at 120° and 150° counter-clockwise.

1. On the **Home** tab, on the **Draw** panel, select  from the flyout.
2. Specify the first point of the line in the arc center.
3. On the command line, type **A** (Angle) to define the line angle and press **Enter**.
4. Enter **120** for the angle value and press **Enter**.
5. Click any point on the outer arc to define the length.
6. Press **Enter** to finish.



Using the same process, draw the other radius at **150°**.

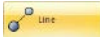

Next, trim the auxiliary lines to create the window opening.

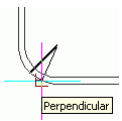


Example 2: Creating a door opening on the round corner

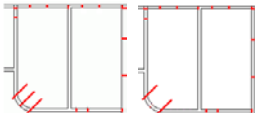
In this example, create a door opening on the round corner. First, draw a circle radius at 45° and create copies on both sides.

Make sure that OSNAP center is activated.


1. On the **Home** tab, on the **Draw** panel, select  from the flyout.
2. On the command line, type **center** to snap the arc center, then click.
3. On the command line, type **A** (Angle) to define the line angle and press **Enter**.
4. Enter **225** for the angle value and press **Enter**.
5. Click any point on the outer arc to define the length.
6. Press **Enter** to finish.
7. Use the Offset tool  to create copies of the line on both sides, at **40 cm**.



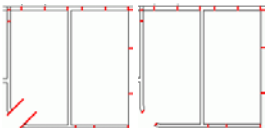
8. Delete the original line.



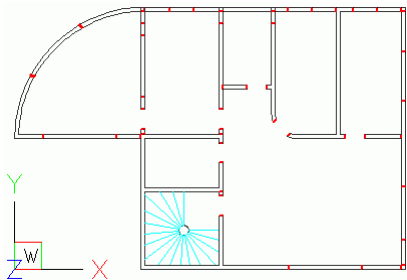
Next, trim the wall contour to create the door opening.

1. On the **Home** tab, on the **Modify** panel, click .
2. Select the auxiliary lines and press **Enter**.
3. Click the wall contour lines between the auxiliary lines.

The door opening is created. Use the trimming tool to adjust the two auxiliary lines.



Next, trim the wall contours to create all the necessary door openings.



Modifying object properties

After creating objects their properties can be modified using object modification tools. The layer, thickness, line type, color and line type scale of one or several objects can be changed.

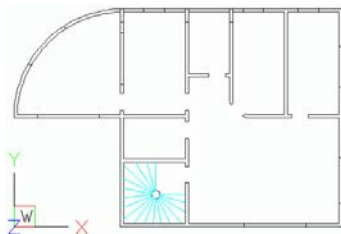
 **Example:** Changing the layer

In this example, move the openings contour lines on the **Wall contours** layer.

1. Select the openings contour lines one by one.
2. Right-click and select **Properties** from the context menu.
3. In the properties dialog box, from the “Layer” drop-down list, select **Wall contours**.
4. In the properties dialog box, click **OK**.

Now that the wall contours and openings are drawn, hide the **Auxiliary** layer.

Layer Name	Color	Linetype	On/Off	Locked	All View...	Lineweight
0	white	Continuous				— Default
Auxs	magenta	CENTERX2				— Default
Auxiliary	red	Continuous				0.30 mm



OTHER TOOLS


Hatches

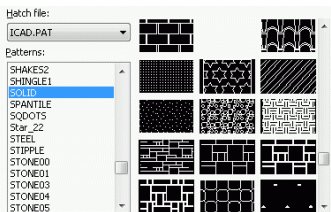
Hatching means filling objects or the area within a specified boundary with a selected pattern. The hatch boundary is a closed contour or a combination of objects such as lines, arcs, circles and polylines.

First select the pattern, then modify the pattern properties and then select the area.

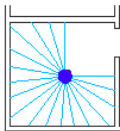
Example 1: Boundary hatch

Use solid hatch for the circular column. Activate the **Hatch1** layer.

1. On the **Home** tab, on the **Draw** panel, click .
2. In the “Boundary hatch” dialog box, on the **Pattern** tab select the solid hatch pattern.




3. On the **Boundary** tab, click **Select objects**.
4. Select the circle and press **Enter**. The “Boundary hatch” dialog box appears again.
5. Click **OK**.



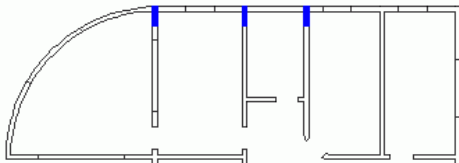
Example 2: Hatching an area

Use solid hatch pattern for the rectangular columns.

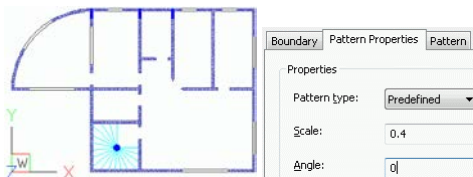
1. On the **Home** tab, on the **Draw** panel, click .
2. In the “Boundary hatch” dialog box, on the **Pattern** tab select the solid hatch pattern.
3. On the **Boundary** tab, click **Select area**.
4. In the drawing, click inside the area to hatch, in this example, inside each rectangular area defining a column section and press **Enter**.

The “Boundary hatch” dialog box appears again.

5. Click **OK**.



Using the same process, hatch the walls using an ANSI38 hatch pattern, at **0.4** scale. Create this hatch on the **Hatch2** layer.



Blocks

Several objects can be grouped into a single object – “block” – and then reused in multiple drawings as many times as necessary.

A block can be defined in the current working area or saved as separate .dwg file.

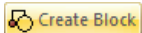
The blocks saved as .dwg files can be grouped on the Tool palette.

Example 1: Creating a block on the drawing

All doors in the example project are of the same type. In this example, create a door symbol with the shape and size given in the following figure and save it as block. Activate the **Doors** layer.





1. Create a line and an arc or a polyline.
2. On the **Blocks & References** tab, on the **Block** panel, click

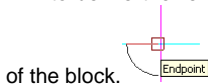
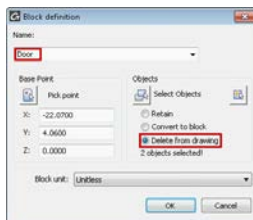


3. In the “Block definition” dialog box, make the following settings:

- In the “Name” field, enter **Door** for the name of the block.

- In the “Objects” area, click , select the elements previously drawn and press **Enter**.

- In the “Base point” area, click  to define the reference point



- Select the **Delete from drawing** option.


The block is created and the block objects are removed from the display.

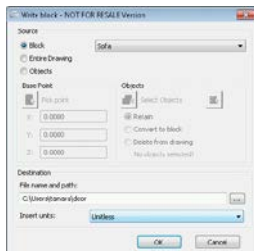
The block is available only in the current drawing.

Blocks created in separate .dwg files can be reused in other drawings.



Example 2: Saving a block in a separate .dwg file


In this example, save the previously created block in a separate .dwg file.

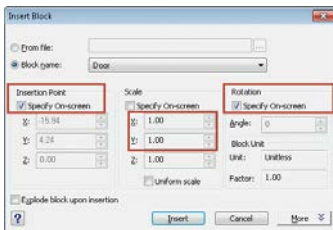
- On the **Blocks & References** tab, on the **Block** panel, click  **Save Block to Disk...**
- In the “Write block” dialog box, make the following settings:
 - Select **Block** as source of the .dwg file.
 - In the “File name and path:” field, enter **Door** as the name of the .dwg file.



The block is saved on the disk in a .dwg file.


Example 3: Inserting a block

- On the **Blocks & References** tab, on the **Block** panel, click .
- In the “Insert block” dialog box, make the following settings:
 - Select the **Door** block.
 - Select the **Specify On-screen** option for the Insertion point and Rotation angle.
 - Enter the X and Y scale factor.
- Click **Insert**.



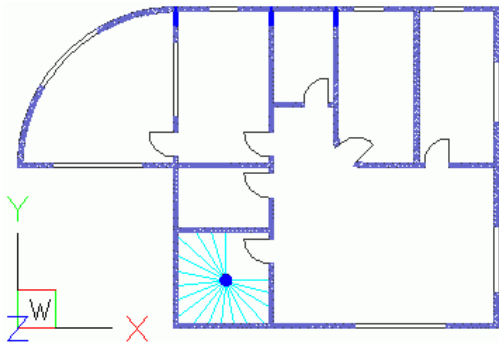
The block appears attached to the cursor.



- Click the insertion point of the block.
- On the command line, enter **0** for the rotation angle.

The door symbol is inserted.

Using a similar process, insert all the necessary door symbols with the corresponding rotation angle.

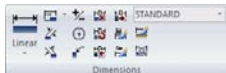


DIMENSIONS

Advance CAD provides tools for creating all dimension types.


- Aligned linear dimensions
- Angular dimensions
- Arc length dimensions
- Linear dimensions from a base point
- Diameter dimensions
- Ordinate point dimensions – displays the X and Y coordinates of the selected point

The **Dimensions** panel of the **Home** tab contains all the necessary tools for creating dimensions.



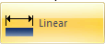
Linear dimensions

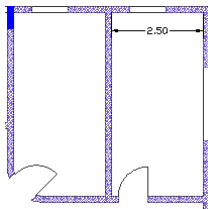
The linear dimensions tool adds horizontal and vertical dimensions to objects.

 **Example 1:** Creating a linear dimension by two points

Dimension the window opening in the inner wall.

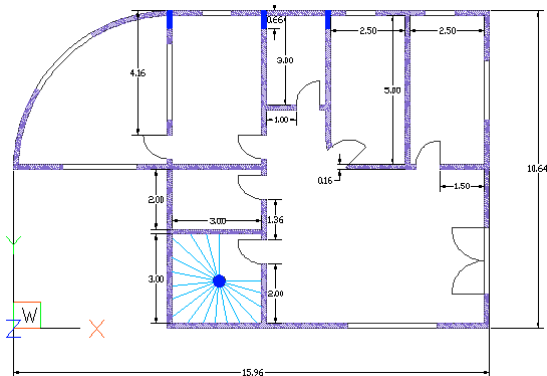
For a clear view, hide the **Furniture** layer. The dimensions are created on the **Dimensions** layer.


1. On the **Home** tab, on the **Dimensions** panel, select  from the flyout.
2. Select the first point to dimension (the origin of the first extension line).
3. Select the second point to dimension (the origin of the second extension line).
4. Click a point to place the dimension line.



Tips: To dimension a single line, instead of selecting the origin of the first extension line, press **Enter**. Select the line to dimension. All you have to do is placing the dimension line.

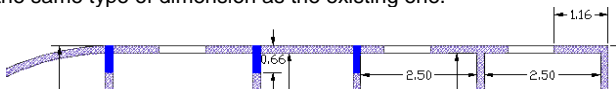
Using the same process, create linear dimensions.




 **Example 2: Creating a continue linear dimension**

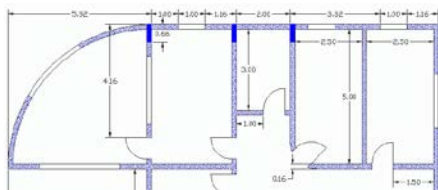
Dimension the upper horizontal wall. First, create a linear dimension for the first segment of the wall.

The continue dimension works only on existing dimension and creates the same type of dimension as the existing one.

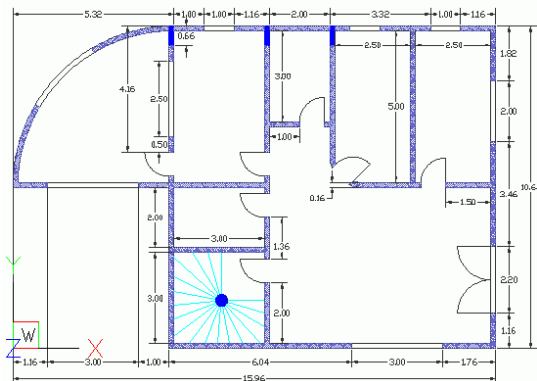


Before starting, activate the **Dimensions** layer.

1. On the **Home** tab, on the **Dimensions** panel, select  from the flyout.
2. Press **Enter** to select the dimension with which to start.
3. Select the dimension with which to start.
4. Select the next extension line origin.
5. To add continued dimensions, keep selecting extension line origins.
6. Press **Enter** twice to end the command.



Using the same process, create all necessary dimensions.



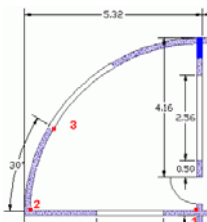
Angular dimension

Angular dimensions are used for annotating the angle between two lines or an arc. Angular dimensions can be created by defining the angle vertex and two endpoints or an angular dimension can be used as a start for a continue dimension.

Example 1: Creating an angular dimension

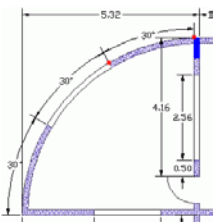
In this example, dimension the window opening on the circular wall.

1. On the **Home** tab, on the **Dimensions** panel, click **Angular**.
2. Press **Enter** to create an angular dimension.
3. Select the angle vertex.
4. Select one side of the angle.
5. Select the other side of the angle.
6. Click a point to define the dimension line position.



Next, use the angular dimension as a start for the continue dimension.

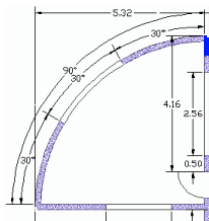
1. On the **Home** tab, on the **Dimensions** panel, select **Continue** from the flyout.
2. Press **Enter** to select the dimension with which to start.
3. Select the dimension with which to start.
4. Select the next extension line origins.
5. Press **Enter** twice to end the command.



Example 2: Creating an arc dimension

1. On the **Home** tab, on the **Dimensions** panel, select **Angular** from the flyout.
2. Select the outer contour line of the circular wall.
3. Click a point to define the dimension line position.


The arc dimension is created.



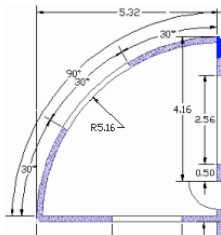
Radial dimension

Radial dimensions are used to annotate the radius of arcs and circles.

 **Example:** Creating a radial dimension


1. On the **Home** tab, **Dimensions** panel, select  from the flyout.
2. Select the inner contour line of the circular wall.
3. Click a point to define the dimension line position.


The radial dimension is created.



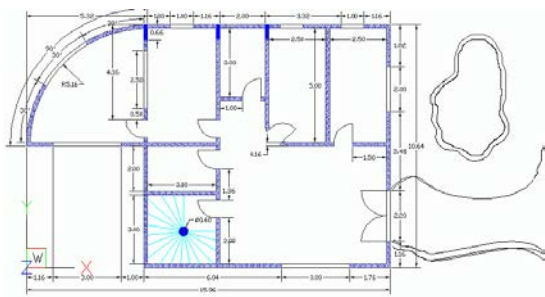
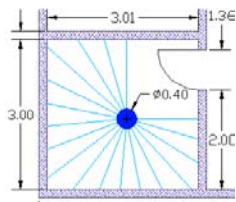
Diameter dimension

Diameter dimensions are used to annotate the diameter of arcs and circles.

 **Example:** Creating a diameter dimension

1. On the **Home** tab, on the **Dimensions** panel, click .
2. Select the circle (the contour of the circular column).
3. Click a point to define the dimension line position.

The diameter dimension is created.



This small exercise was a very simple introduction to Advance CAD.



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