ЎЗБЕКИСТОН РЕСПУБЛИКАСИ АЛОҚА, АХБОРОТЛАШТИРИШ ВА ТЕЛЕКОММУНИКАЦИЯ ТЕХНОЛОГИЯЛАРИ ДАВЛАТ ҚЎМИТАСИ

ТОШКЕНТ АХБОРОТТЕХНОЛОГИЯЛАРИ УНИВЕРСИТЕТИ ФАРҒОНА ФИЛИАЛИ

«АХБОРОТ ТЕХНОЛОГИЯЛАРИ» КАФЕДРАСИ

«ҲИМОЯГА»

Кафедра мудири

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« _____ »_____2014 й

CREATION AND IMPLEMENTING PART

МАВЗУСИДА

МАЛАКАВИЙ БИТИРУВ ИШИ

БИТИРУВЧИ: Р.Муроталиев

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Фарғона – 2014 йил

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Annotation

This diploma work for the bachelor's degree is directed how to create three dimensional modeling in AutoCAD 2013 and learn how It is made. It has many advantages such as we can draw something once that, we need not draw It again because this program can copy, move , remove, create 3D model et cetera.

It is clear that we live in three dimensional world, so life is changing better side than in the past. Three dimensional life requires three dimensional modeling. We can create every kind of equipment even It is robot by using Autocad 3D. AutoCAD is the best wa to create three dimensional house, because we can create our little model of house in advance.

Moreover we can see 3D movies more and more on TV. AutoCAD program can create details for 3D movies.

President Islam Karimov Addresses the International Conference in Samarkand

17 May 2014, 10:51

It is an enormous pleasure to me to greet you, participants of the conference, and first and foremost our esteemed guests – heads and representatives of prominent international organizations and institutions, scientific and research centers, universities and other higher education institutions, renowned scholars and specialists – and express my profound respect and gratitude for your acceptance of our invitation

to take part in this forum.

Аннотация

Ушбу бакалаврлик дипломи уч ўлчамли модел яратиш ва кандай яратилишини ўрганиш учун йўналтирилган. Бунда AutoCAD 2013 дастуридан фодаланилди. Бу дастурда кўп имкониятлар бор, шунингдек бирор нарса чизсак ёки яратсак, шу чизма бошка жойда керак бўлиб колса уни кайта чизишлигимиз шарт емас, чунки бу дастурда нусха олиш, жойини ўзгартириш, олиб ташлаш ва бошка кулайликлар бор.

Хаммамизга маълумки биз уч ўлчамли дунёда яшаймиз. Демак, хаёт ўтган даврга караганда кизикарлирок томонга ўзгариб бормокда.

Бу дастурда замонавий уйларни лойихасини яратишда жудаям макъул дастурдир, чунки биз бу окрали олдиндан кандай уй курмочилигимизни ва ўзимиз хохлаган даражадаги кулайликларга ега бўлган замонавий уй куришда фойдалансак бўлади.

Ундан ташкари ҳозирги 3D форматидаги фильмлар кўпайиб бормокда ва шу фильмдаги образларни 3D қиёфасини ҳам яратиш имкониятига эгадир.

Introduction

We live in three dimensional world, yet most of our drawings represent only two dimensions. If you are looking for an informative resource to gain info on 3d technology, then this is the right place for you. The purpose is to offer you in depth information on what is 3D technology, the history as well as the latest technological developments in this field.

What is 3D technology? In simple words, 3D technology stands for three-dimensional technology that offers a wide array of possibilities in near future in almost every walk of life and especially in entertainment segment. The use of 3d technology in TVs, laptops and other products is growing because the basic content required to support such products includes sports and movies. Lately, the technology has been successful in earning quite a momentum as a valid, widely adopted entertainment technology.

3D technology explained here also points to an important fact that it is not just confined to films being shown in theaters and now the broadcasts made by televisions and direct-to-video films have also started to incorporate similar methods, principally for marketing purposes.

Know more about the application of three-dimensional technology among diverse spheres by explore in the given site. The detailed information featured here would definitely help to sharpen up your knowledge about 3d technology and

other useful and related information to understand the concept of 3D technology.

You may have already found out why CAD has many advantages over manual drafting. One big advantage is that once you've drawn something, you shouldn't have to draw it again. If you manually drew a house plan, you would have to draw a front elevation, side elevations, and possibly a perspective view. With one 3-D CAD model, you can generate views from any angle either inside or outside the house. Afterwards, if your client needs something changed, you can then make the changes once. If you're drawing mechanical parts, you can generate virtual prototypes or even create rapid prototypes. This level of engineering would be impossible without CAD.

As computers and software get more sophisticated, working in 3D becomes more popular. You have more power in desktop machine today, than was dreamed of when CAD first appeared. Once you are comfortable working in 3D, you'll find that you will rarely want to draw in 2D again.live in a three-

ANALYTICAL PART

1.1 Launch AutoCAD

1. Choose Start, Programs, Autodesk , AutoCAD from the Windows program manager.

OR

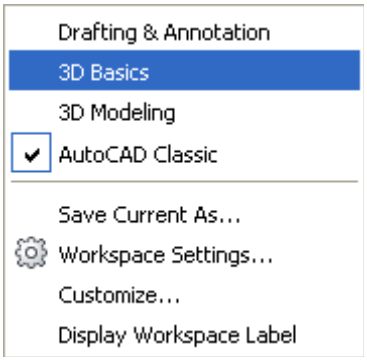
2. Double-click the AutoCAD icon from your desktop.

Workspaces

AutoCAD workspaces are sets of menus, toolbars and dockable windows (such as the Properties palette, DesignCenter, and the Tool palettes window) that are grouped and organized so that you can work in a custom, task-oriented drawing environment.

1. Click the Workspace Switching icon.

2. Click **3D Basics** and OK.



1.2 3D Basics Interface

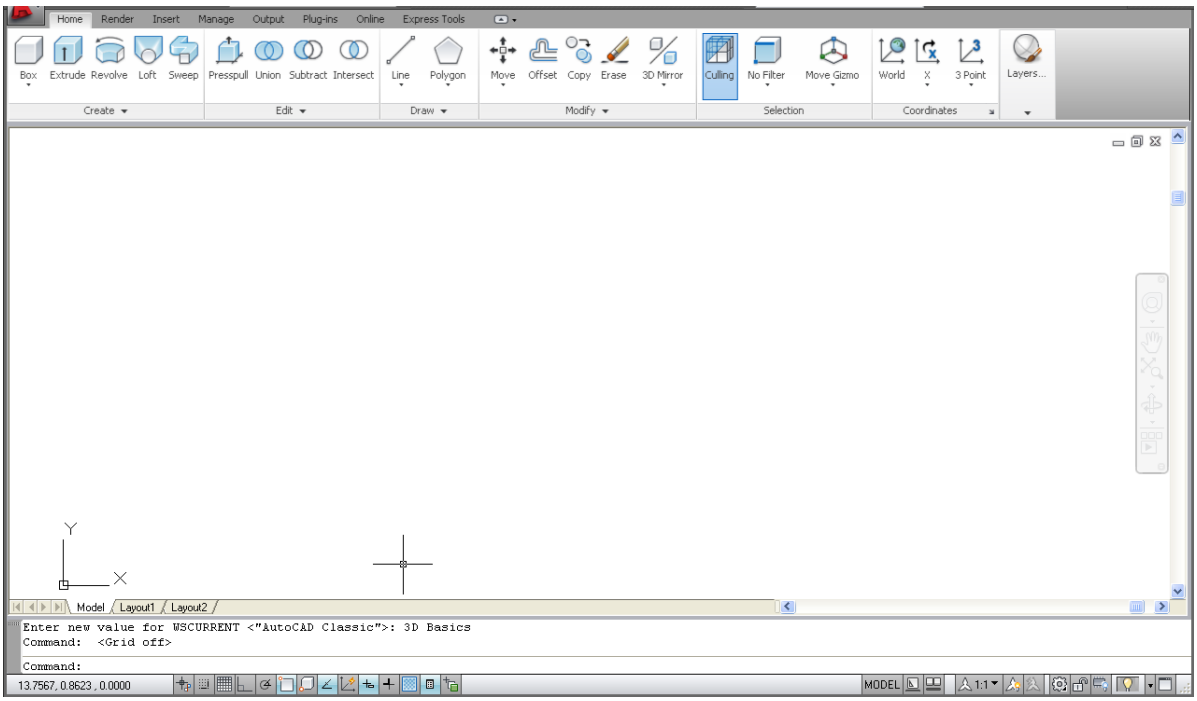
The following is AutoCAD's 3D Basic interface. The 3D Basic ribbons are as follows:

- Create
- Edit
- Draw
- Modify
- Selection
- Coordinates
- Layers and Views

The 3D Basic pulldown menus are as follows:

- Home
- Render
- Insert
- Manage
- Output
- Plug-ins
- Online
- Express Tools

Figure 1.1 We can create them to the following 1.2



1.3 3D Modeling Interface

The 3D Modeling panels are as follows:

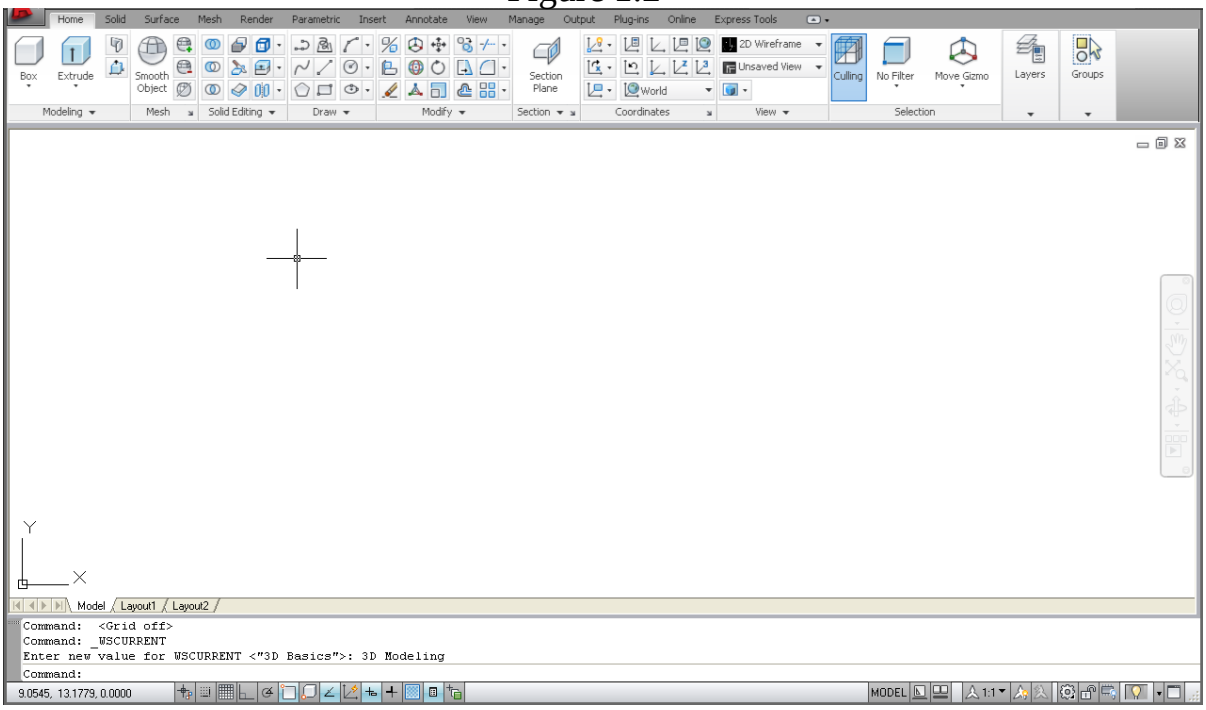
- Modeling
- Mesh
- Solid Editing
- Draw
- Modify
- Section
- Coordinates
- View
- Selection
- Layers and Groups

The 3D Modeling pulldown menus are as follows:

- Home
- Solid
- Surfaces
- Mesh
- Render
- Parametric
- Insert, Annotate, View, Manage, Output, Plug-ins,

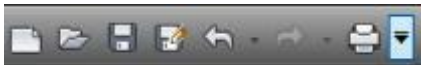
Online, and Express Tools

Figure 1.2



Viewports

1. Open a drawing or create simple objects as shown below.
2. Click the dropdown menu in the shortcut tools and choose Show Menu Bar.



3. Choose View, Viewports, 4 Viewports.

OR

4. Type -VPORTS at the command prompt.

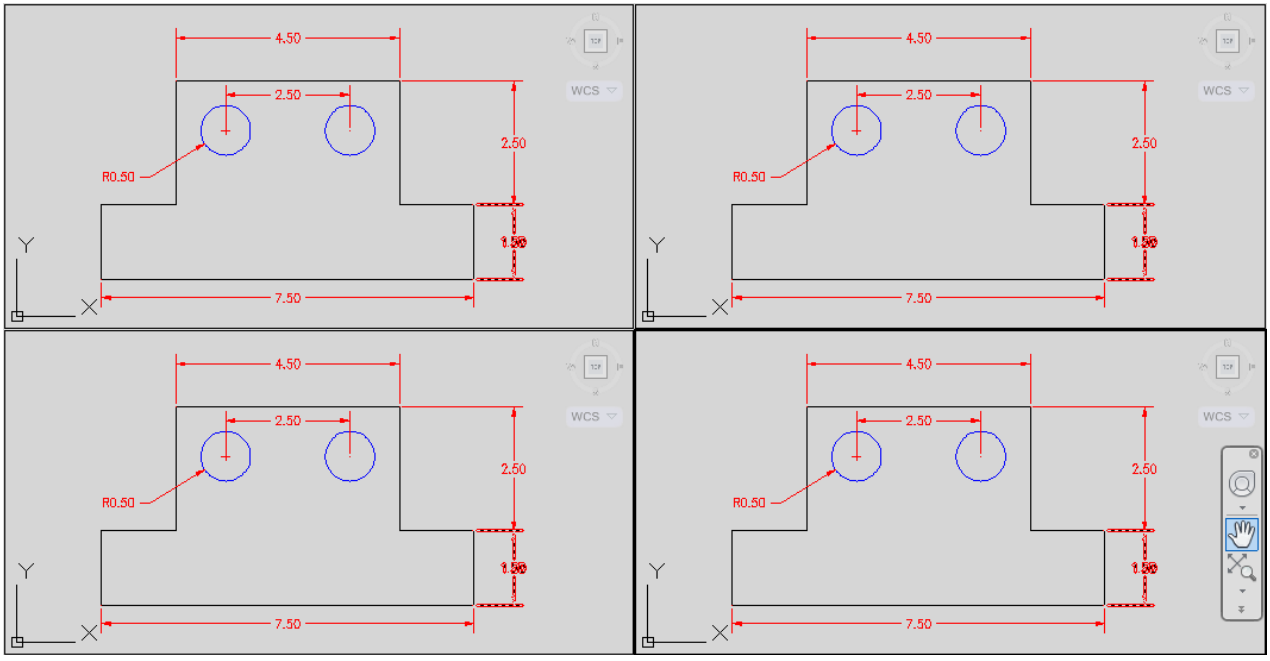
Command: **-VPORTS**

Enter an option [Save/Restore/Delete/Join/SIngle/?/2/3/4] **4: enter**

Enter a configuration option [Horizontal/Vertical/Above/Below/Left/Right] <Right>: **enter**

Your screen will look something like the figure below with four views in one AutoCAD drawing.

Figure 1.3



Preset 3D Viewports

1. Choose View, Viewports, New Viewports
2. Click the dropdown option for **Setup** and click **3D**.
3. Choose **Four: Right** as the viewport option

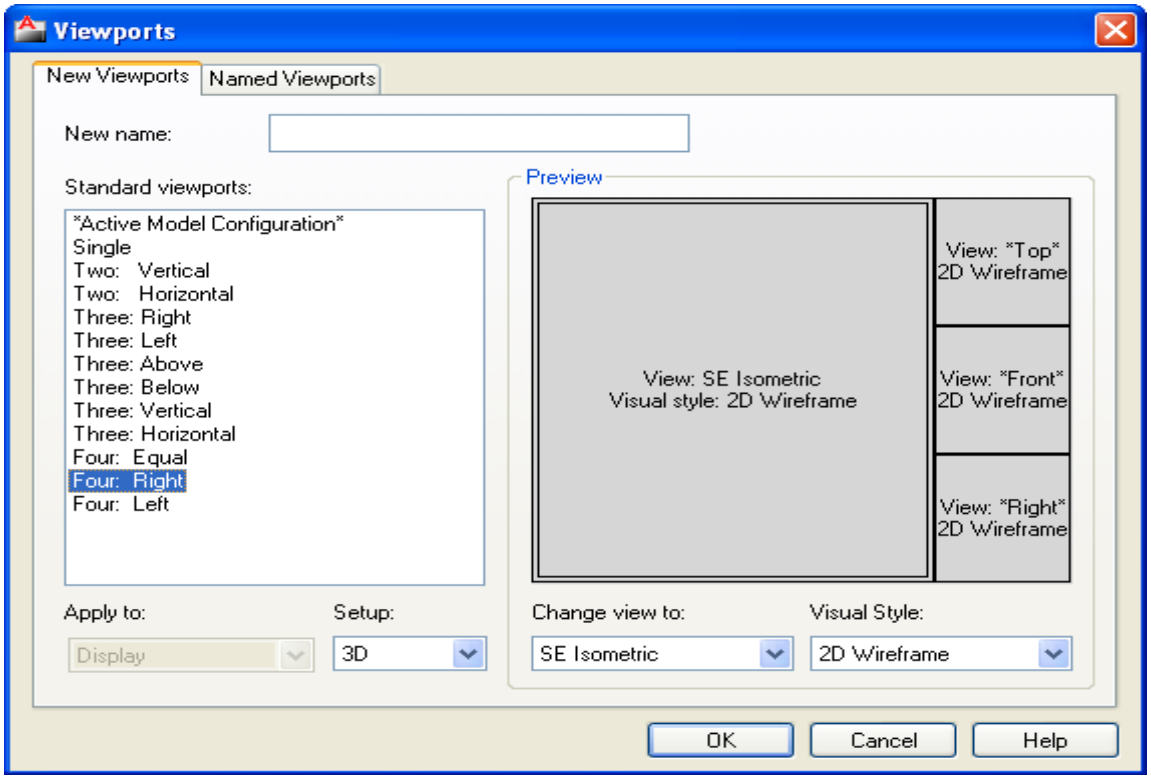
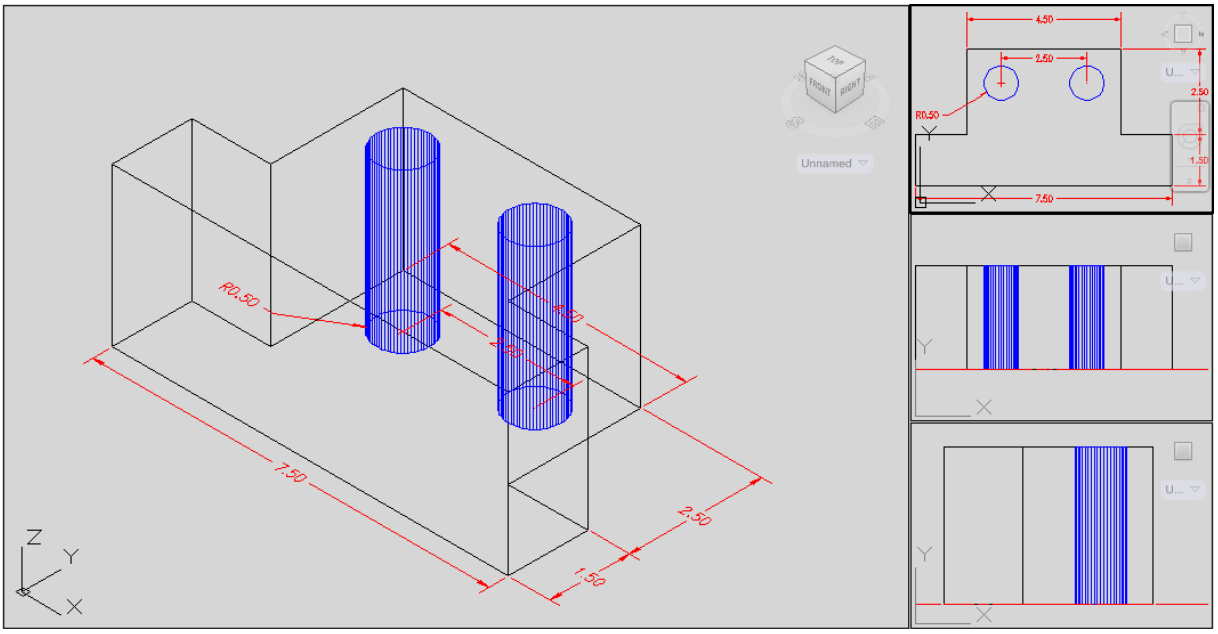


Figure 1.4 After following figure we will go on turn by turn **Steering Wheel**

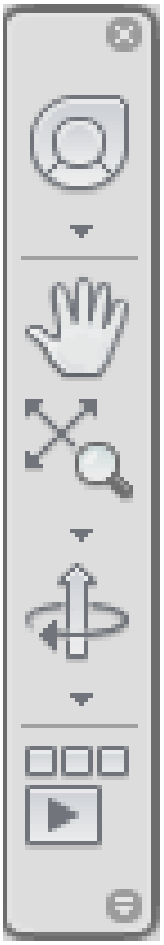


SteeringWheels are menus that track the cursor over the drawing window, and provide access to 2D and 3D navigation tools from a single interface.

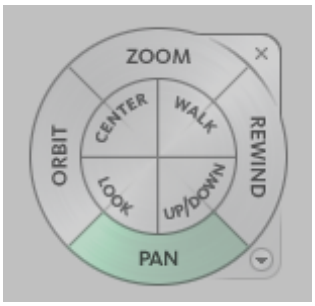
SteeringWheels, or "wheels," are divided into wedges; each wedge contains a single navigation tool. You can start a navigation tool by clicking a wedge or by clicking and dragging the cursor over a wedge.

Full Navigation Wheel

1. Click the Full Navigation Wheel icon.

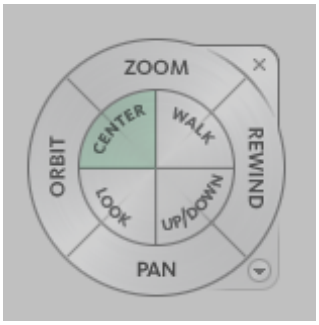


2D Navigation Wheel (Zoom/Pan)

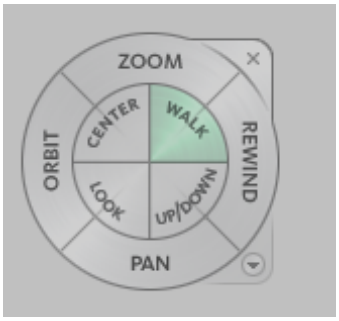


View Object Wheel – Center a model and define the pivot point to use with the Orbit tool. Zoom and orbit a model.

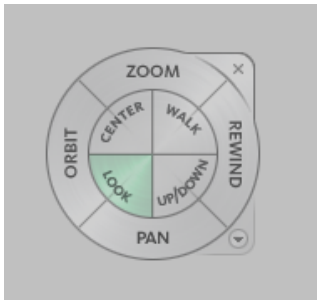
Center

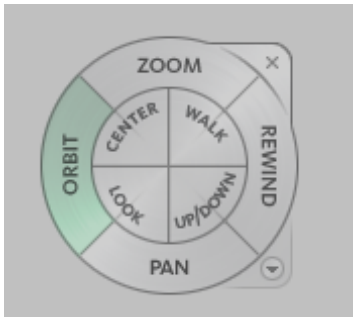


Walk/Up/ Down



Rewind



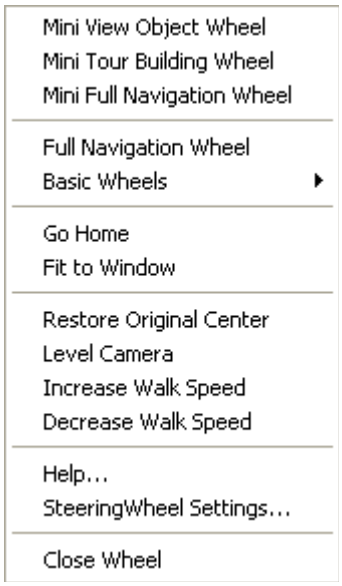


Look

Orbit

Shortcuts

1. Right-click on the wheel to view shortcuts**.**



Steering Wheel Settings

1. Right-click on the steering wheel and choose SteeringWheel Settings…

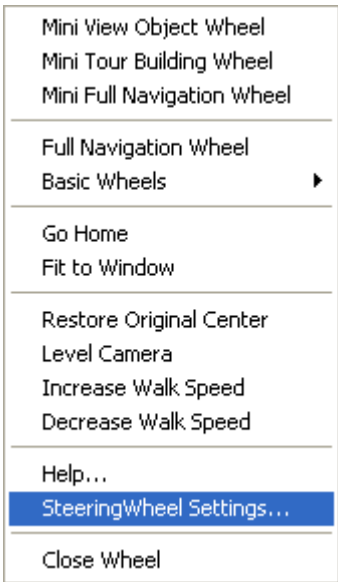
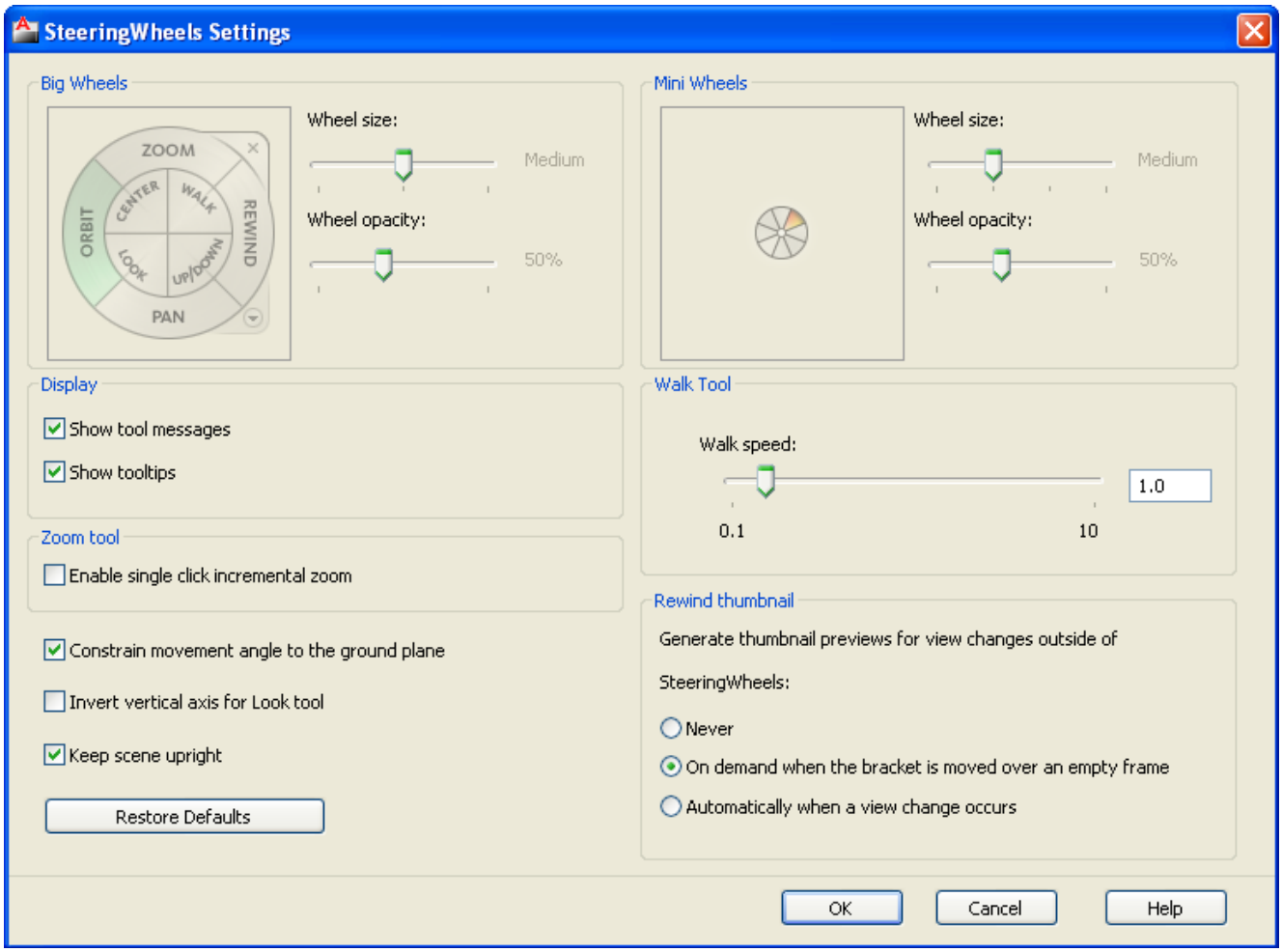


Figure 1.6



Plan View

1. Choose — View, 3D Views, Plan View , World UCS.

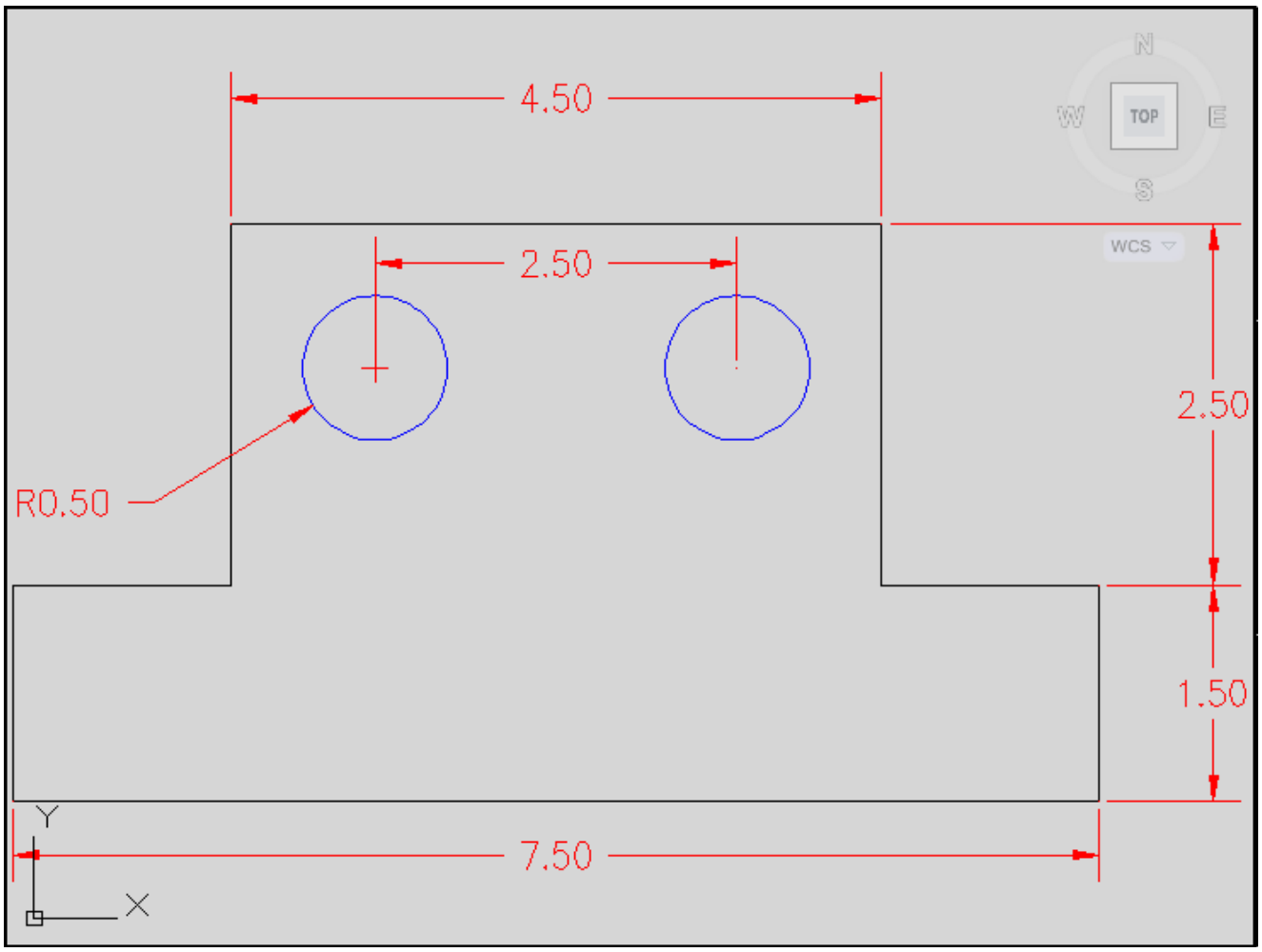
   or

2. Type — PLAN at the command prompt.

   Command: **PLAN**

   Enter an option [Current Ucs/Ucs/World] <Current>: World

Figrue 1.7



Thickness Command

1. Begin a new drawing using a 3D Modeling workspace.
2. Choose View, Viewports, 2 Viewports.
3. Press **ENTER** for the default of two vertical viewports.
4. Type **PLAN** and **World** in the left viewport.
5. Choose SE Isometric for the right viewport.
6. Type THICKNESS at the command prompt.
   Command: **THICKNESS**
   Enter new value for THICKNESS <0.0000>: **3**
7. Draw a 5",2" rectangle using in the LINE command in the left view.

The lines will have a 3D "thickness" that can be seen in the 3D view.

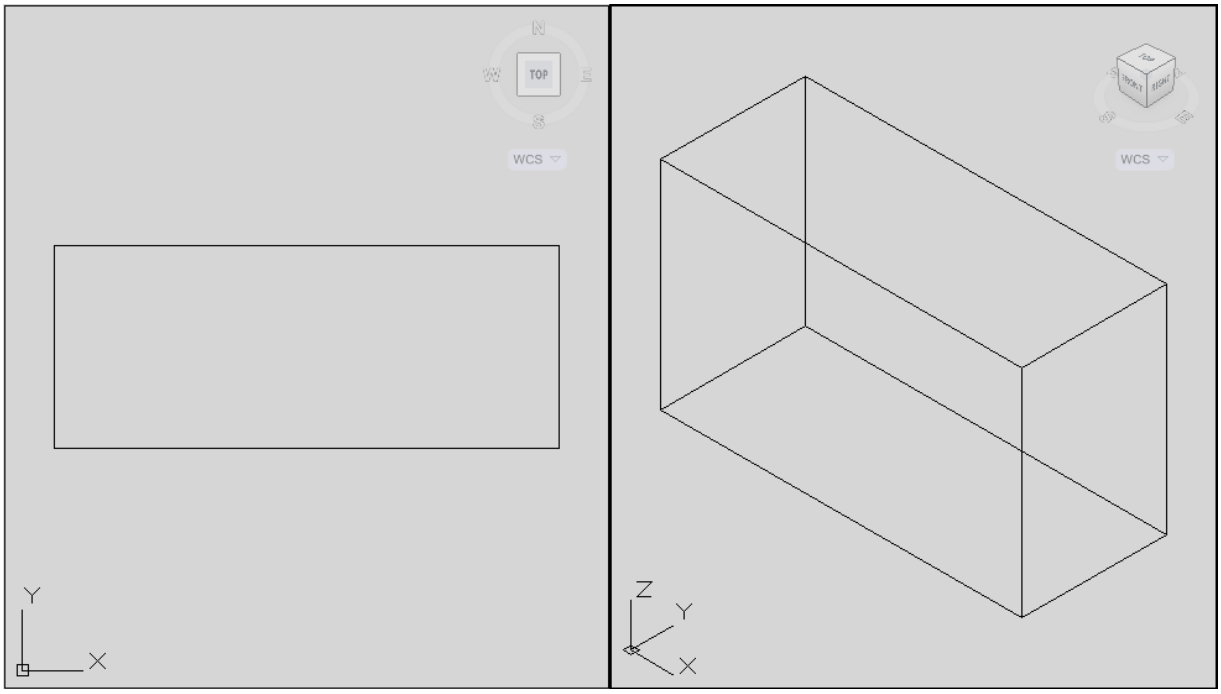
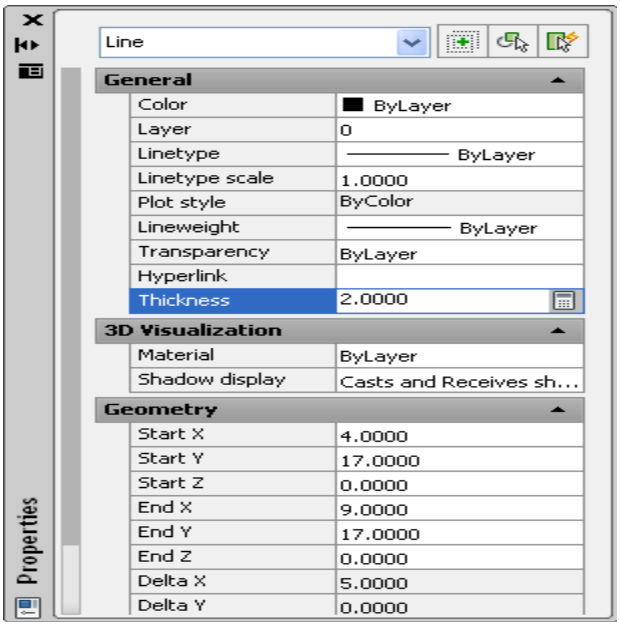


Figure 1.8

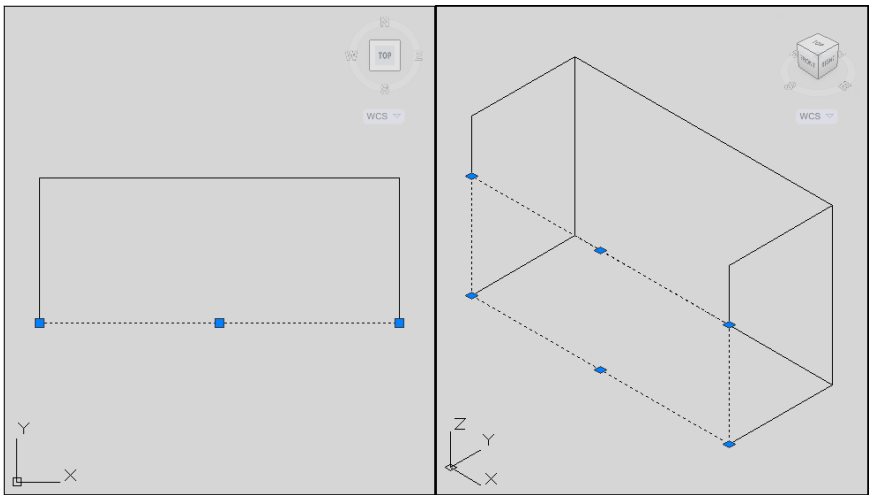
Change Existing Thickness

1. Select the object whose thickness you would like to change (e.g. one line of the rectangle you drew in 2.1.
2. Choose **Modify, Properties…**or right click and choose Properties…
3. Type a new line thickness.



The result is a new line thickness for the selected object.

Figure 1.9



HIDE Command

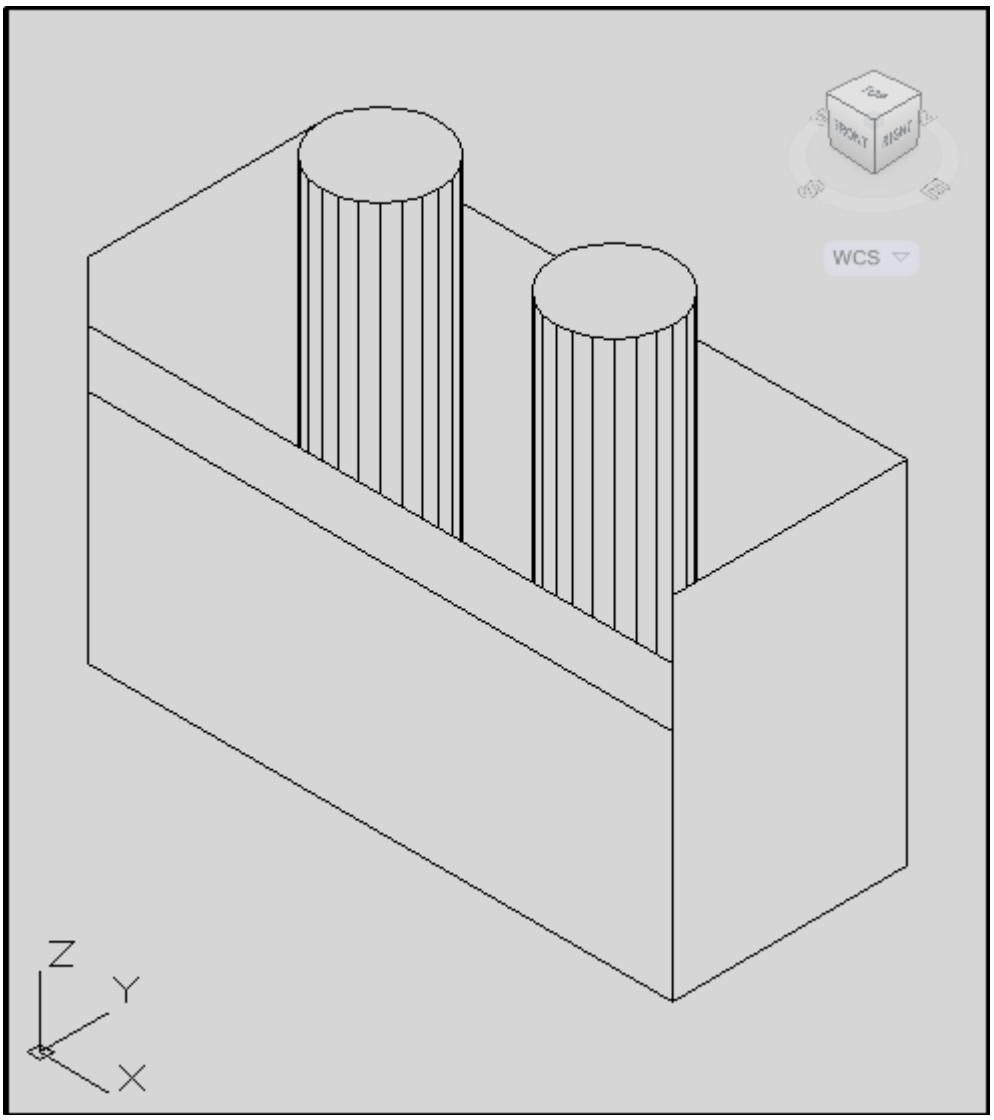
Regenerates a three-dimensional model with hidden lines

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose **View, Hide**.

or

3. Type HIDE at the command prompt.
   Command: **HIDE**

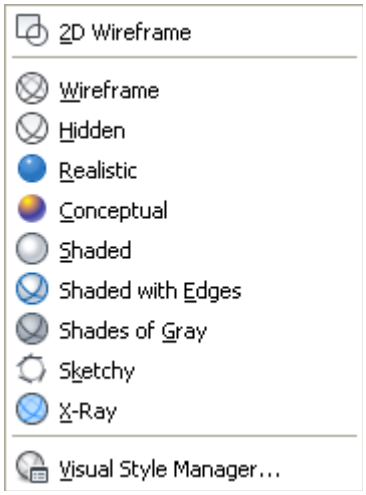
Figure 1.10



Visual Styles

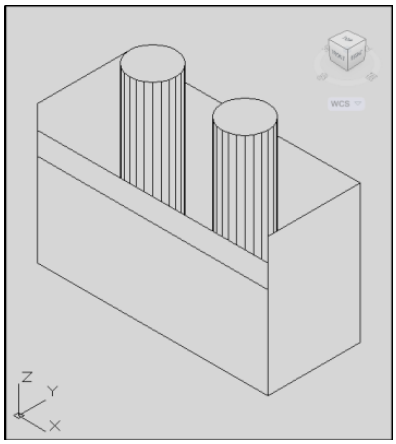
A visual style is a collection of settings that control the display of edges and shading in the viewport.

Open	a drawing with 3D objects and display in a 3D view.
Choose	View, Visual Styles and one of the following style options.

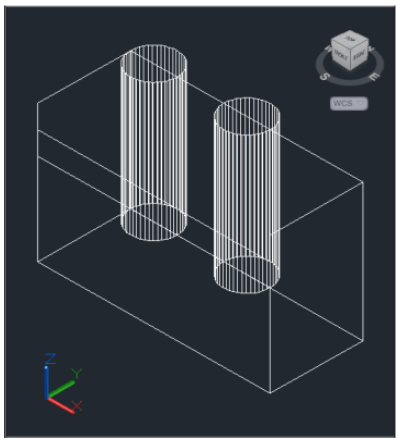


Visual Styles

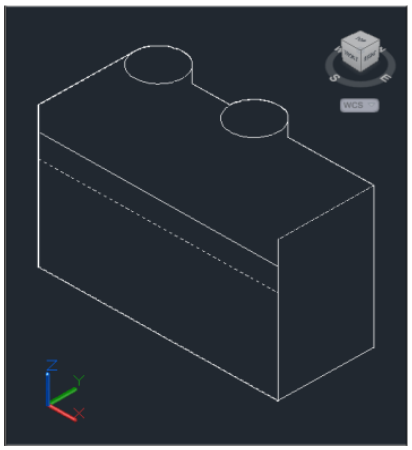
2D Wireframe



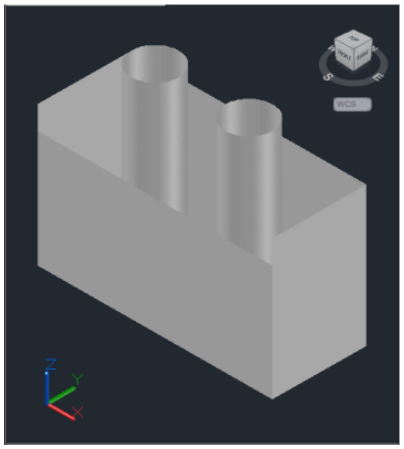
3D Wireframe



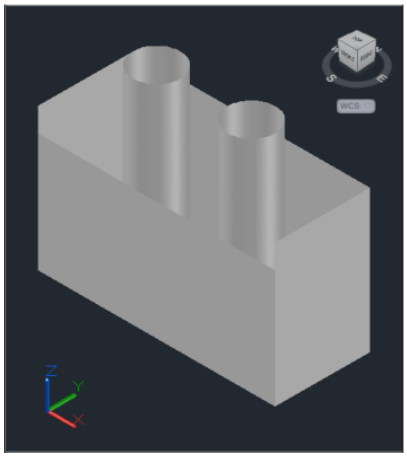
3D Hidden



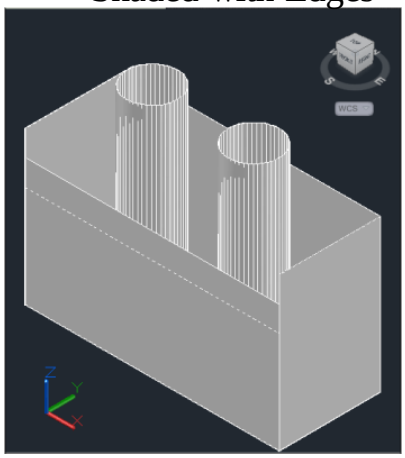
Realistic



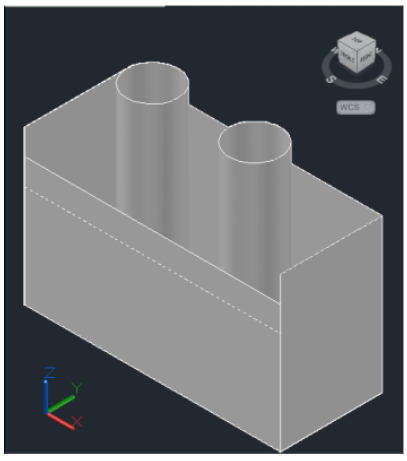
Shaded



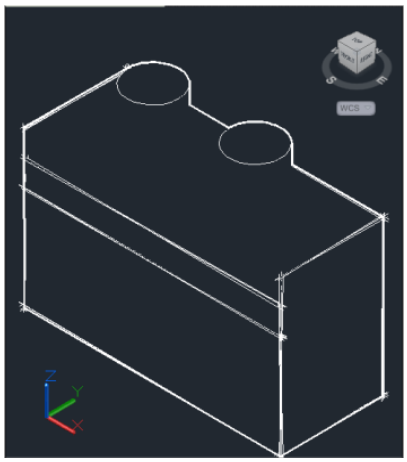
Shaded with Edges



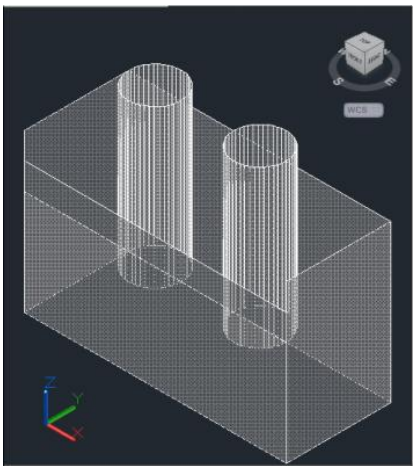
Shades of Gray



Sketchy



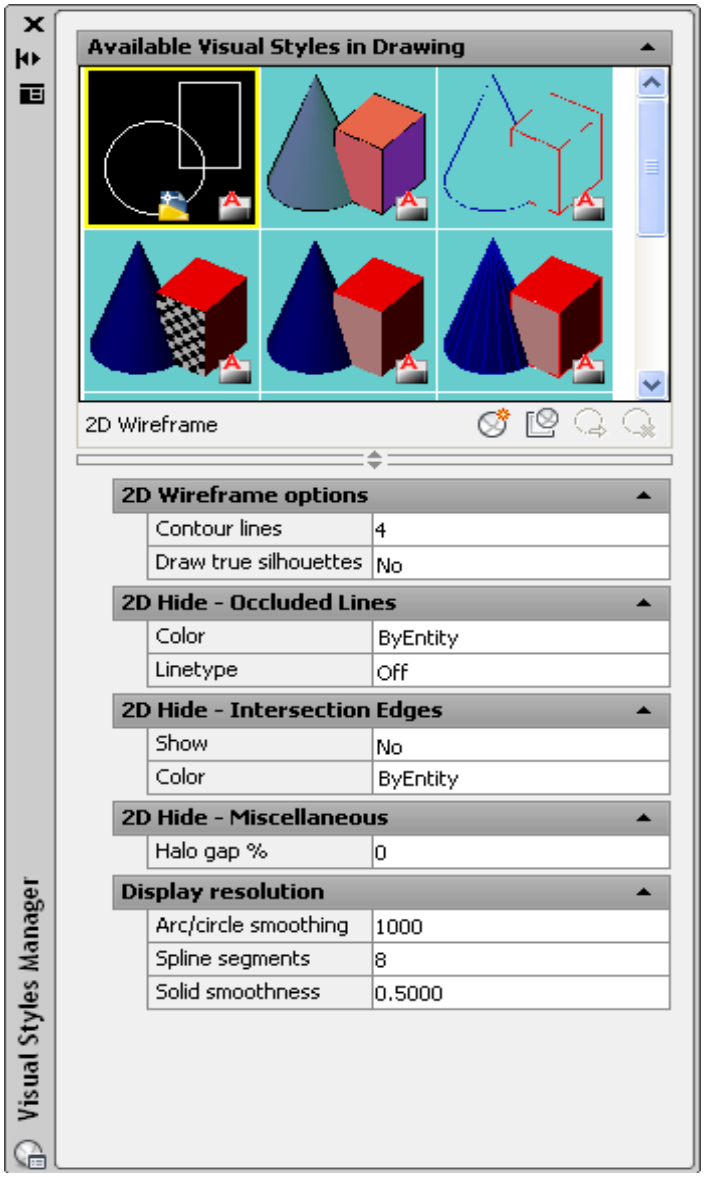
XRay



Visual Style Manager

The Visual Styles Manager displays sample images of the visual styles available in the drawing. The selected visual style is indicated by a yellow border, and its settings are displayed in the panel below the sample images.

1. Choose **View, Visual Styles, Visual Styles Manager…**
   or
2. Type VISUALSTYLES at the command prompt.
   Command: **VISUALSTYLES**
3. Choose the desired option from one of those available in the drawing for 2D Wireframe, 3D Wireframe, 3D Hidden, Realistic, or Conceptual options.



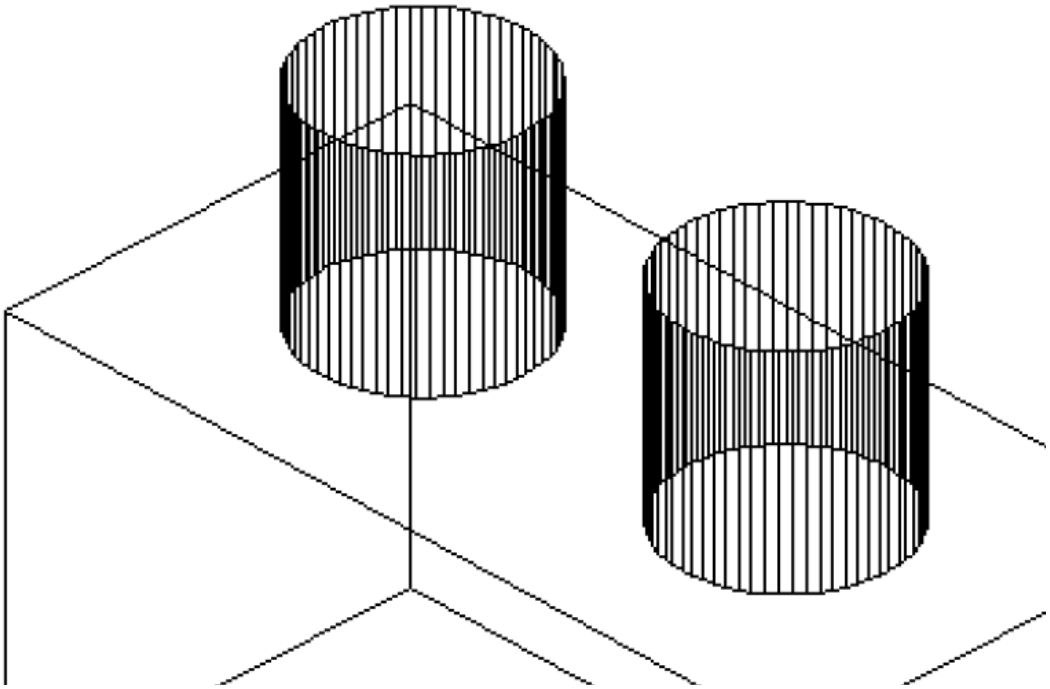
Constrained 3D Orbit

3DORBIT activates a 3D Orbit view in the current viewport. You can view your entire drawing or select one or more objects before starting the command.

When 3DORBIT is active, the target of the view stays stationary and the camera location, or point of view, moves around the target. However, from the user's point of view, it appears as if the 3D model is turning as the mouse cursor is dragged. In this way, you can specify any view of the model.

1.	Open	a drawing with 3D objects.
2.	Choose	View, Orbit, Constrained Orbit.
		or
3.	Type	3D Orbit at the command prompt.
		Command: **3DOrbit**
4.	Click	and drag to move your object in 3D.

Figure 1.11

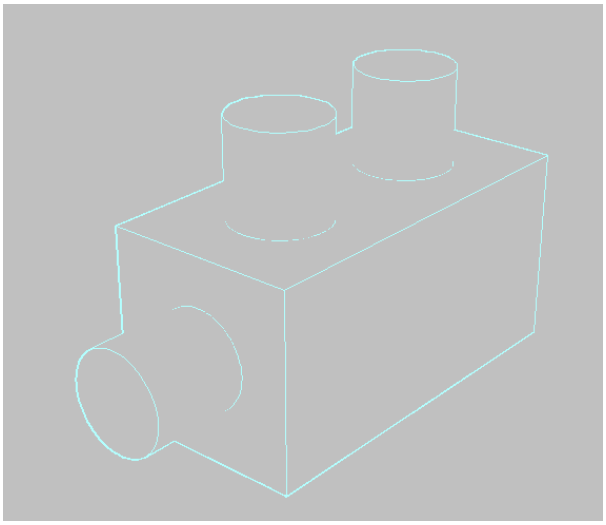


Displays your objects in one of the following selected styles:

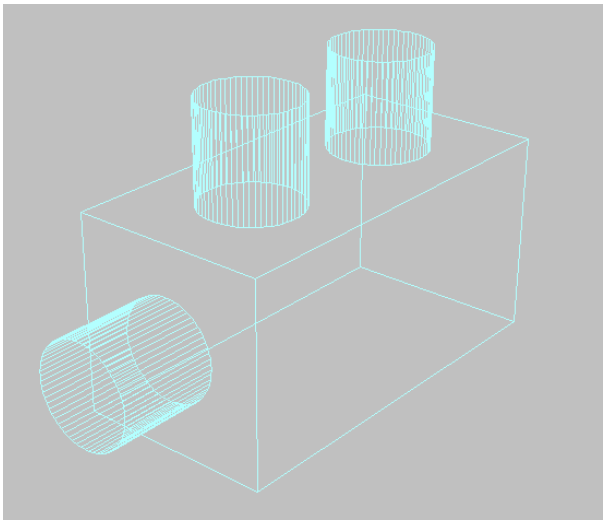
1. Click the **right mouse** button while in the 3D Orbit command.
2. Choose **Visual Styles** from the pop-up menu.
3. Choose one of the Visual Styles.

Visual Style Examples

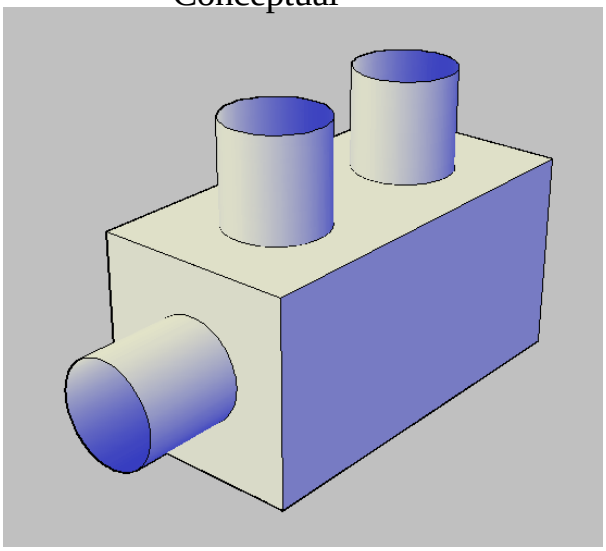
3D Hidden



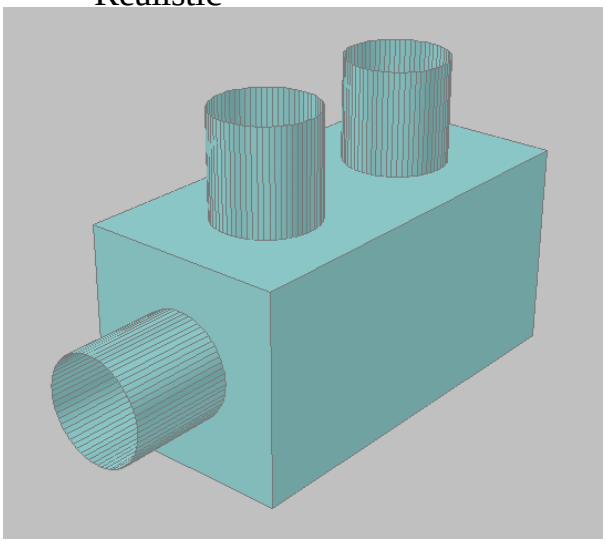
3D Wireframe



Conceptual



Realistic



Creating a Camera

Sets a camera and target location to create and save a 3D perspective view of objects.

1. Open a drawing with 3D objects.
2. Choose View, Create Camera.

   or

3. Type CAMERA at the command prompt.

Command: **CAMERA**

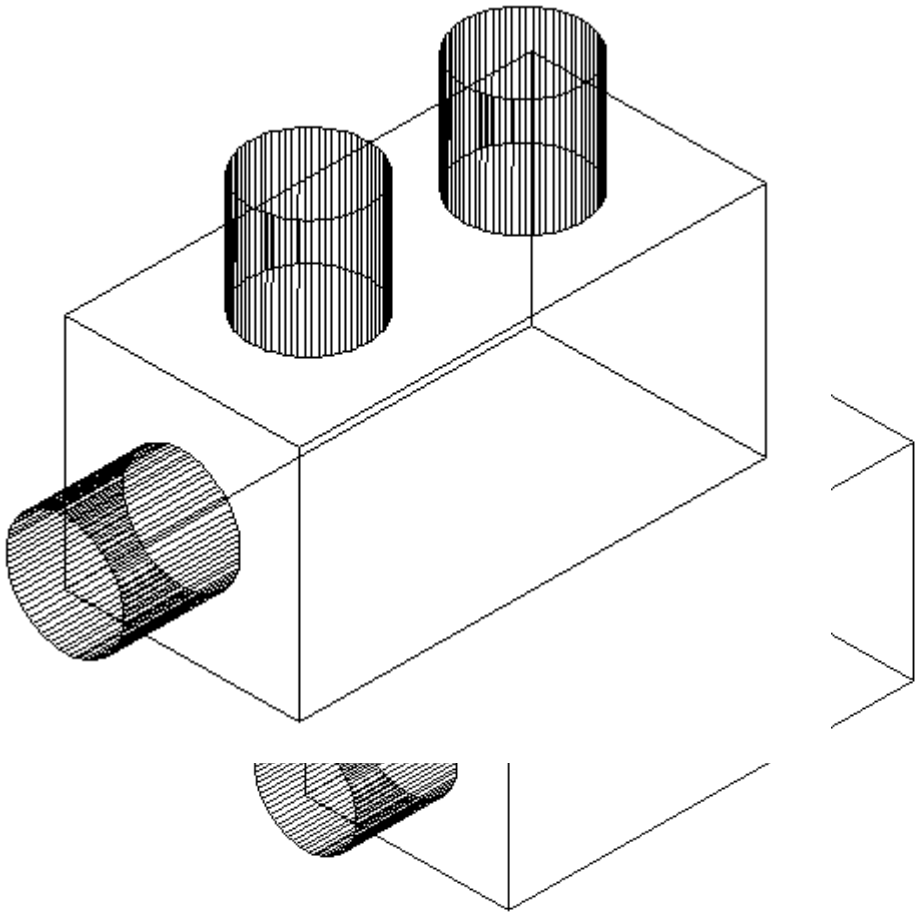
Current camera settings: Height=0.0000 Lens Length=50.0000 mm

Specify camera location: **.XY**

of (need Z): **7**

Specify target location: **endp**

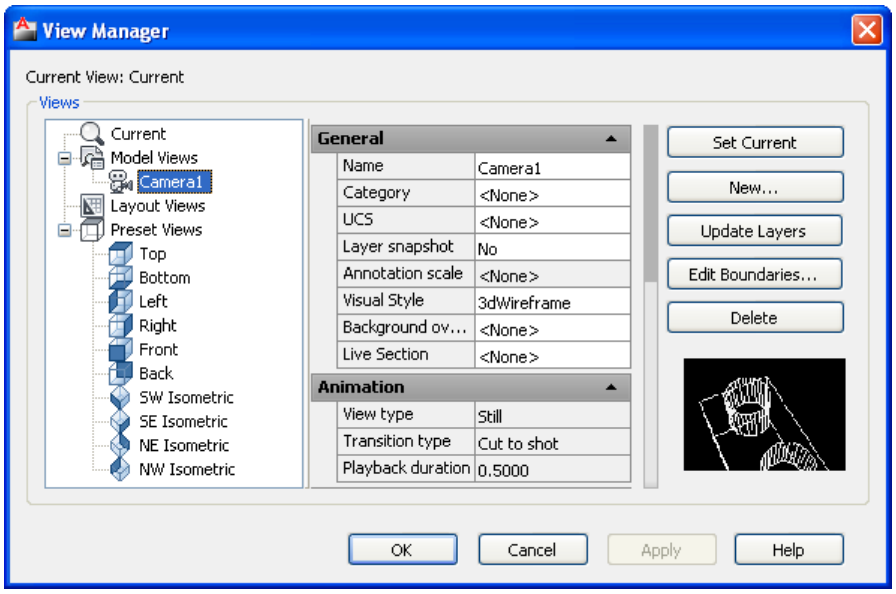
Enter an option [?/Name/LOcation/Height/Target/LEns/Clipping/View/eXit]<eXit>: X



Viewing a Camera

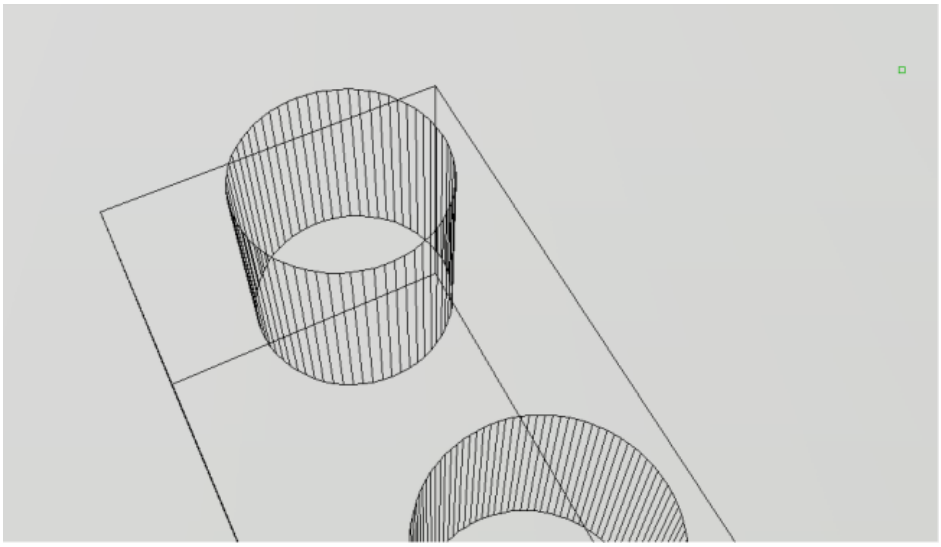
Once a camera is created, it becomes a named view in the drawing and can be viewed using the Named View Manager. You can also view the camera using the view option when creating the camera.

1. Choose View, 3D Views, Southwest Isometric to be sure you are not in an existing camera view.
2. Choose **View, Named Views**.
3. Click the plus (+) sign beside Model Views.
4. Click Camera1, Set Current, Apply, and OK.



View from Camera

Figure 1.14



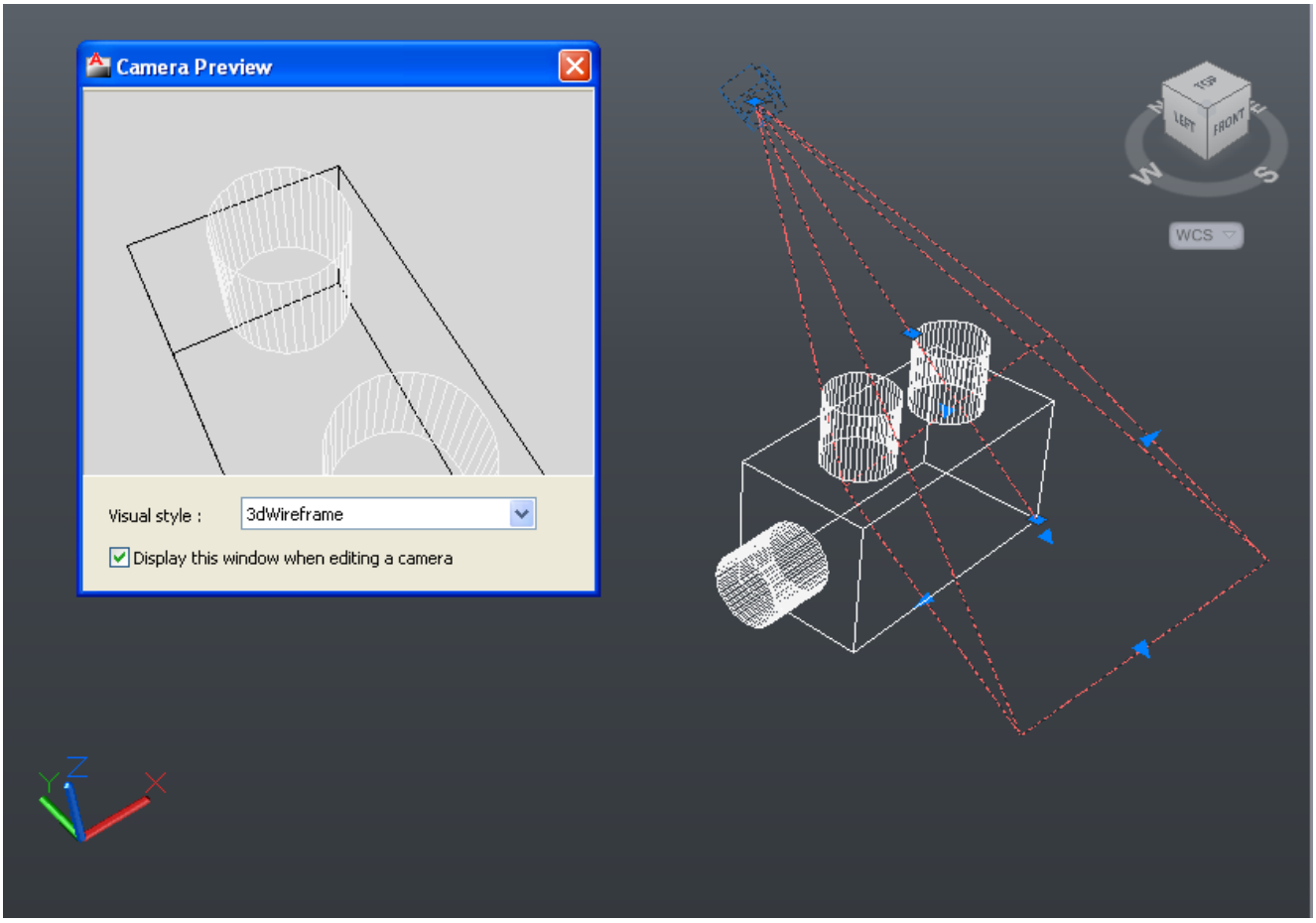
Camera Preview

Camera preview is a quick and easy way to see the properties of a camera before viewing from the camera.

1. Choose View, 3D Views, Southwest Isometric to be sure you are not in an existing camera view.
2. Zoom out until you see the camera in your 3D view.
3. Click once on a camera in your view.

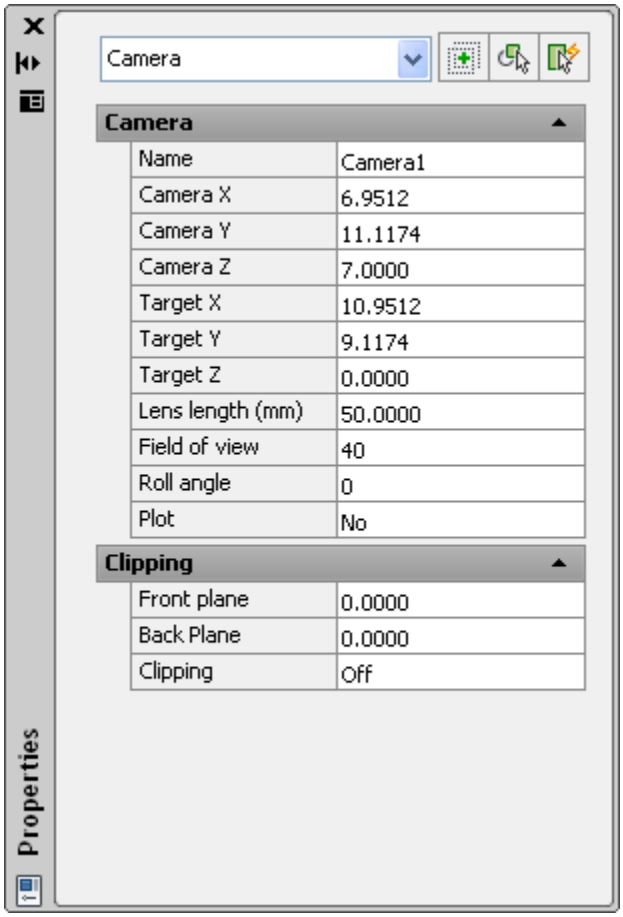
The Camera Preview dialog box will show the view from the chosen camera. You can change the Visual style of this preview by clicking the Visual Style dropdown.

Figure 1.15



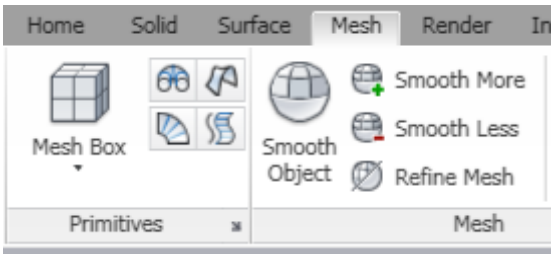
Camera Properties

1. Double click a camera in a 3D isometric view,
2. Choose one of the following properties to change.



Basic Mesh Commands

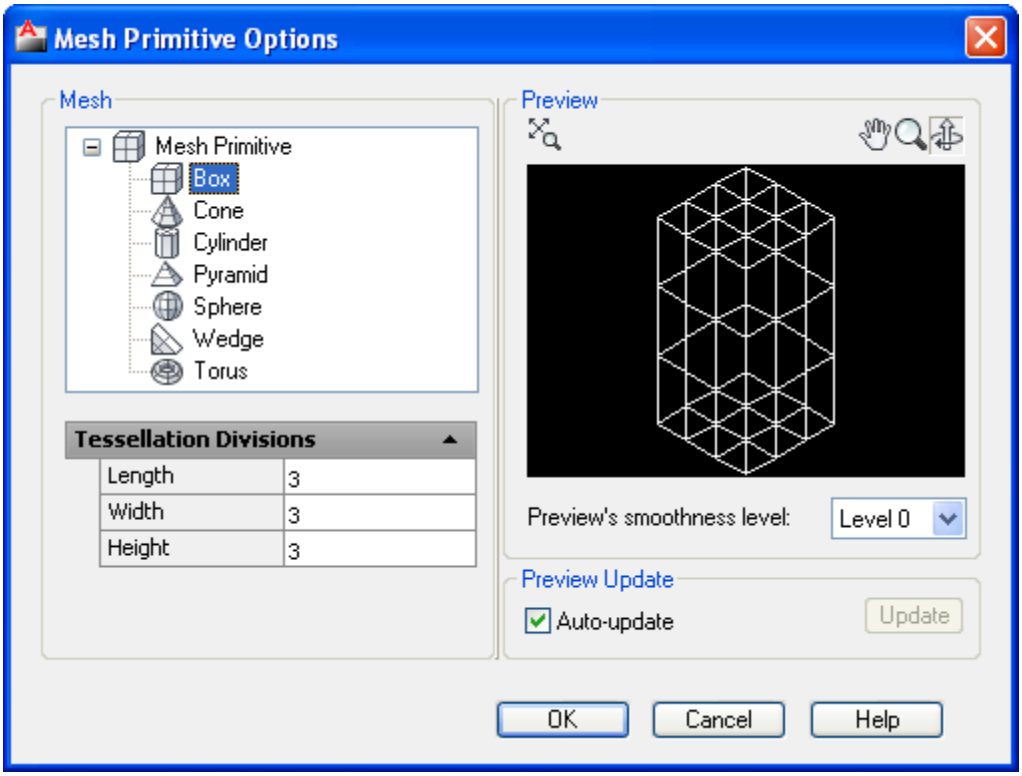
1. Click the **3D Modeling** dropdown option from the Solids panel.
2. Click the Mesh tab.
3. Click the Primitives panel.
4. Click the Primitive drop-down.



Mesh Primitive Options

The following settings can be adjusted for mesh primitives.

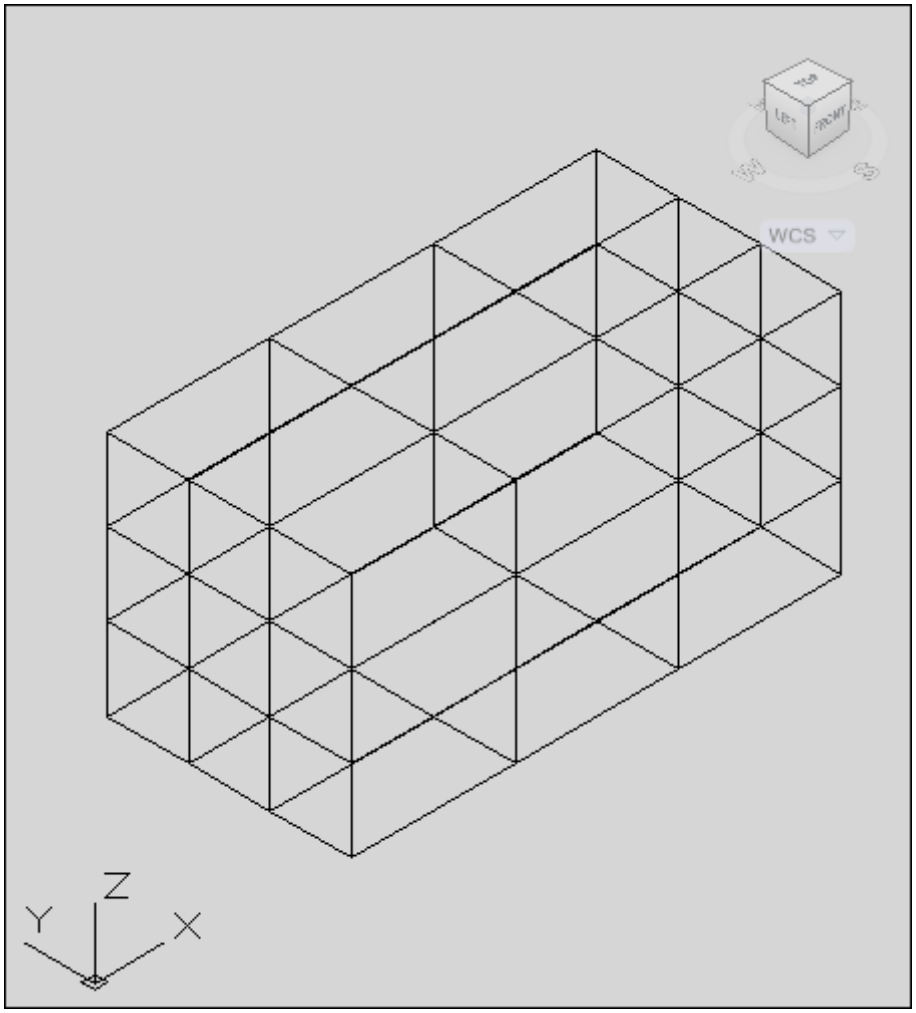
Figure 1.16



Mesh Box

1. Choose Mesh box from the Primitives panel.
   Command: **MESH**
   Current smoothness level is set to : 0
   Enter an option
   [Box/Cone/CYlinder/Pyramid/Sphere/Wedge/Torus/
   SEttings] <Box>: **_BOX**
   Specify first corner or [Center]: pick point
   Specify other corner or [Cube/Length]: **@4,2**
   Specify height or [2Point] <3.0000>: **2**

Figure 1.17



Mesh Cone

1. Choose Mesh cone from the Primitives panel.

Command: **MESH**

Current smoothness level is set to : 0

Enter an option

[Box/Cone/CYlinder/Pyramid/Sphere/Wedge/Torus/S

Ettings] <C one>: **CONE**

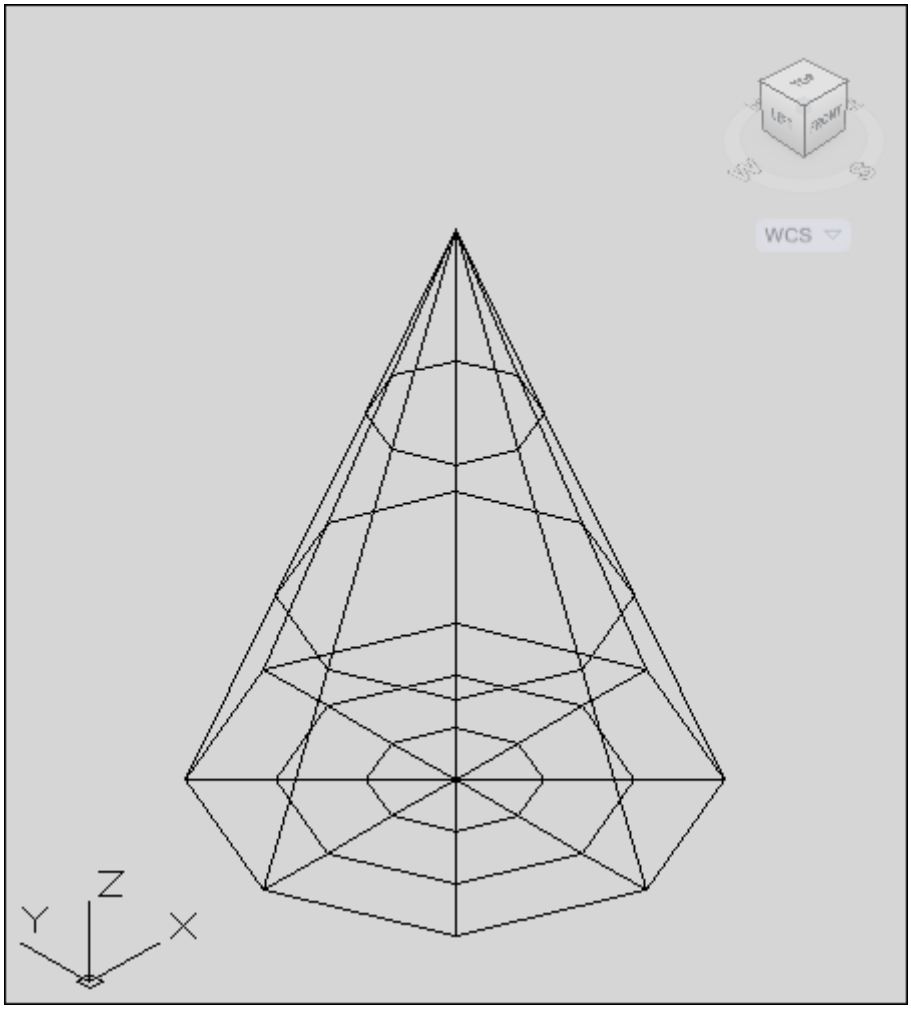
Specify center point of base or [3P/2P/Ttr/Elliptical]:

Specify base radius or [Diameter] <1.5074>: **2**

Specify height or [2Point/Axis endpoint/Top radius]

<2.0000>: **5**

Figure 1.18



Mesh Cylinder

1. Choose Mesh cylinder from the Primitives panel.

   Command: **MESH**

   Current smoothness level is set to : 0

   Enter an option

   [Box/Cone/CYlinder/Pyramid/Sphere/Wedge/Torus/

   SEttings]

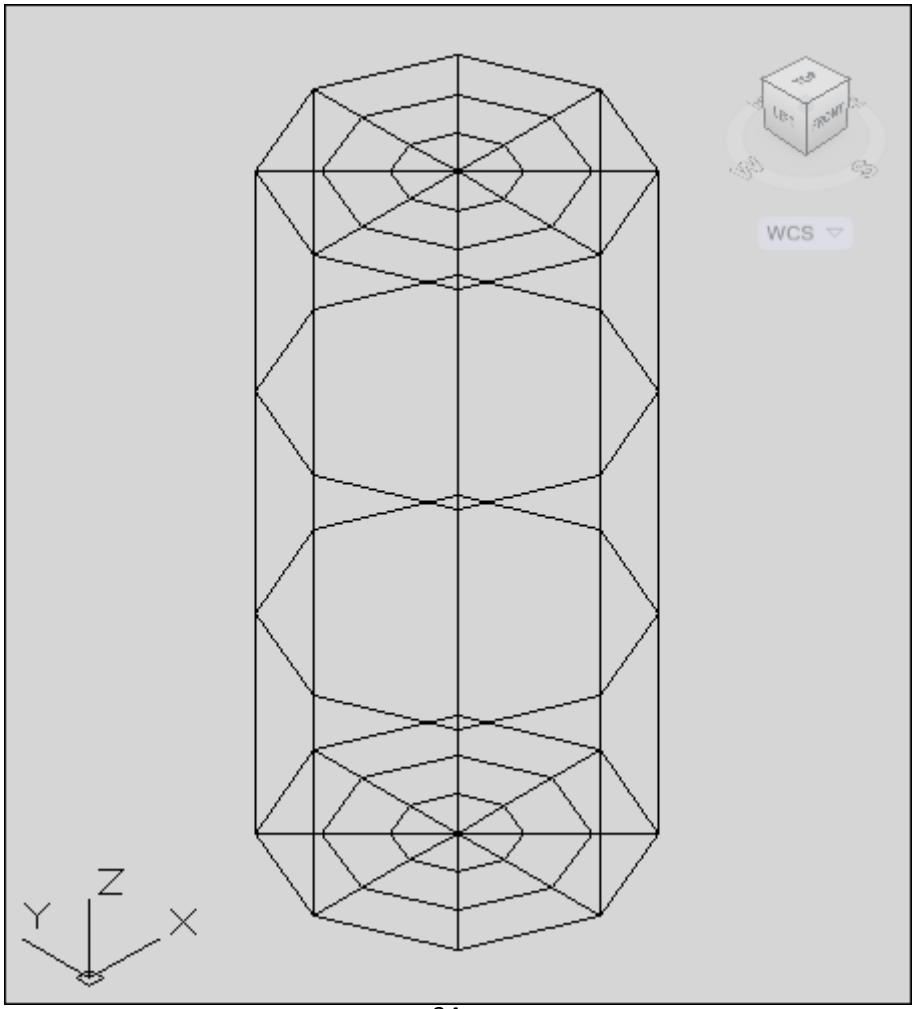
   <Cylinder>: **CYLINDER**

   Specify center point of base or [3P/2P/Ttr/Elliptical]:

   Specify base radius or [Diameter] <2.0000>: **2**

   Specify height or [2Point/Axis endpoint] <5.0000>: **8**

Figure 1.19

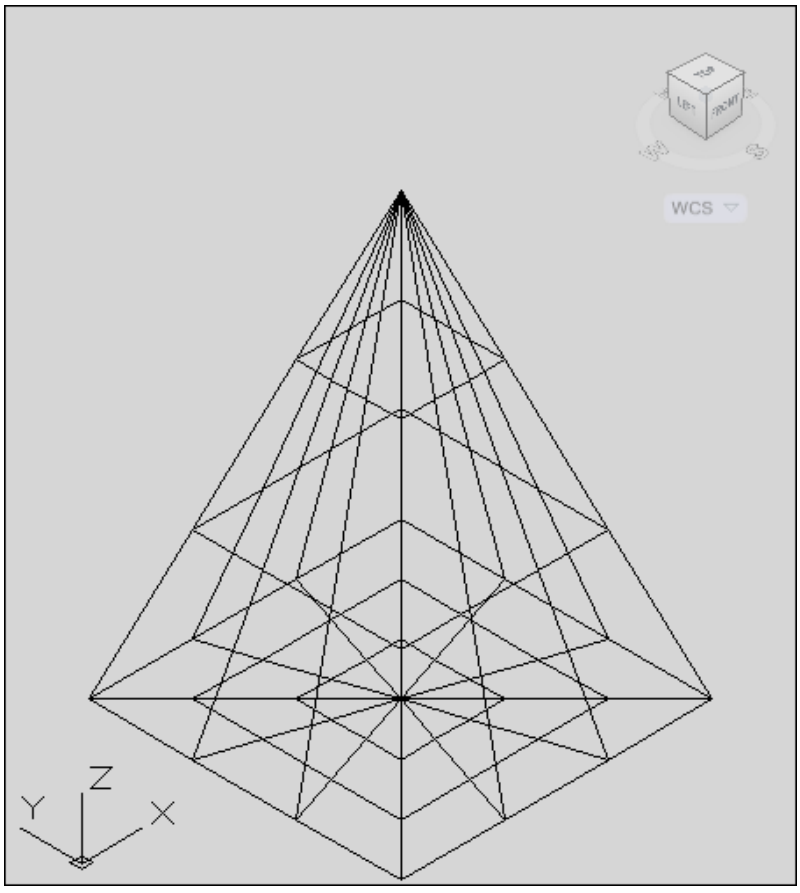


Mesh Pyramid

1. Choose Mesh pyramid from the Primitives panel.

Command: **MESH**
Current smoothness level is set to : 0
Enter an option
[Box/Cone/CYlinder/Pyramid/Sphere/Wedge/Torus/S
Ettings]
<Pyramid>: **PYRAMID**
4 sides Circumscribed
Specify center point of base or [Edge/Sides]:
Specify base radius or [Inscribed] <2.0000>:
Specify height or [2Point/Axis endpoint/Top radius]
<8.0000>: **4**

Figure 1.20



Mesh Sphere

1. Choose Mesh sphere from the Primitives panel.

   Command: **MESH**

   Current smoothness level is set to : 0

   Enter an option

   [Box/Cone/CYlinder/Pyramid/Sphere/Wedge/Torus/S

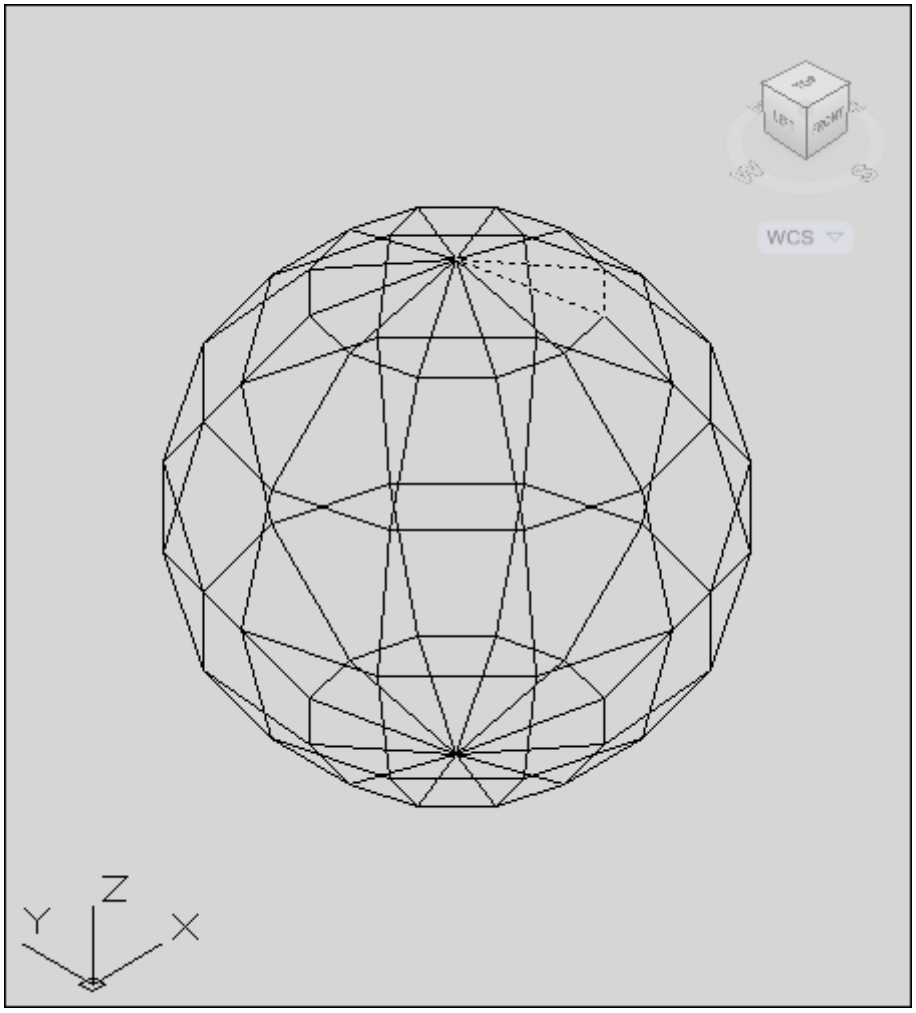
   Ettings]

   <Pyramid>: **SPHERE**

   Specify center point or [3P/2P/Ttr]:

   Specify radius or [Diameter] <2.0000>:

Figure 1.21



Extrude

Creates unique solid primitives by extruding existing two-dimensional objects. You can extrude multiple objects with EXTRUDE.

1. Type EXTRUDE at the command prompt.

   Command: **extrude**

   Current wire frame density: ISOLINES=4

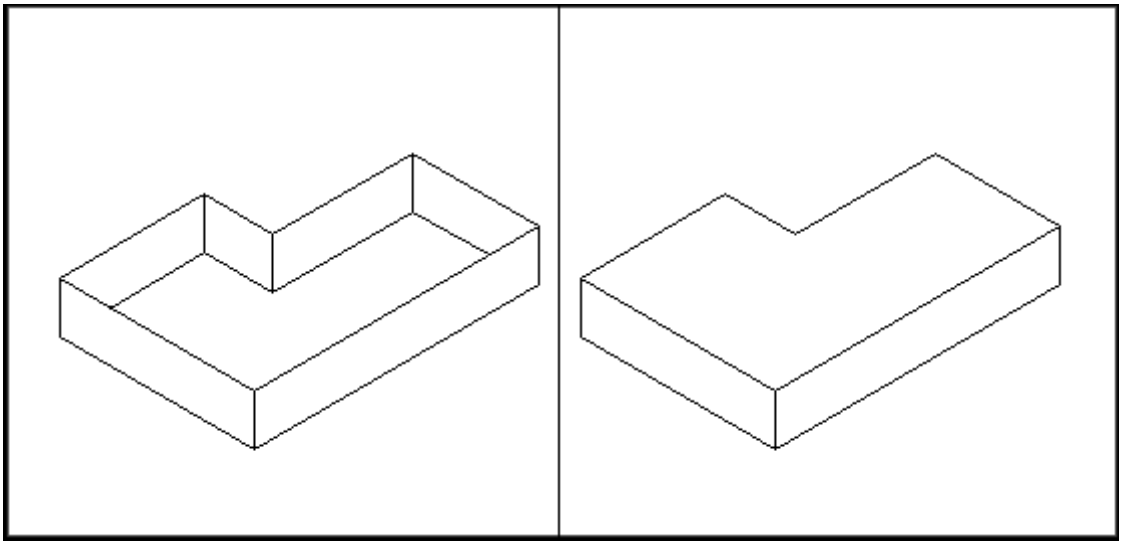
   Select objects: **pick objects**

   Select objects: **enter**

   Specify height of extrusion or [Direction/Path/Taper angle]: **2**

Lines with a Thickness of 2” *Lines Extruded 2”*

Figure 1.22



Extrude with Path

1. Type EXTRUDE at the command prompt.

   Command: **extrude**

   Current wire frame density: ISOLINES=4

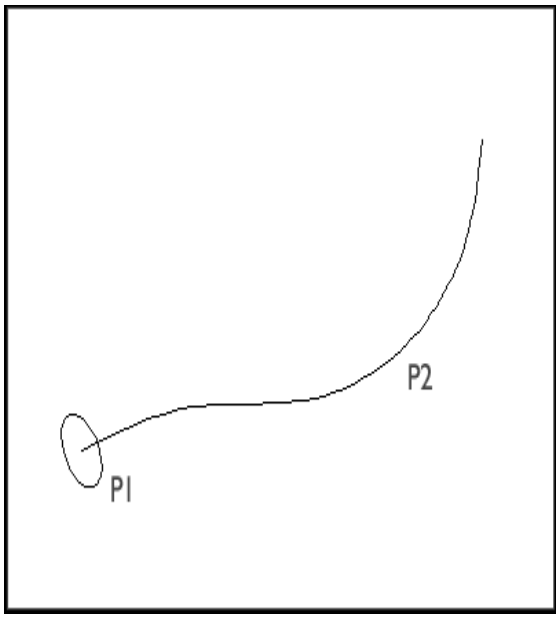
   Select objects to extrude: 1 found

   Select objects to extrude: **pick circle (P1)**

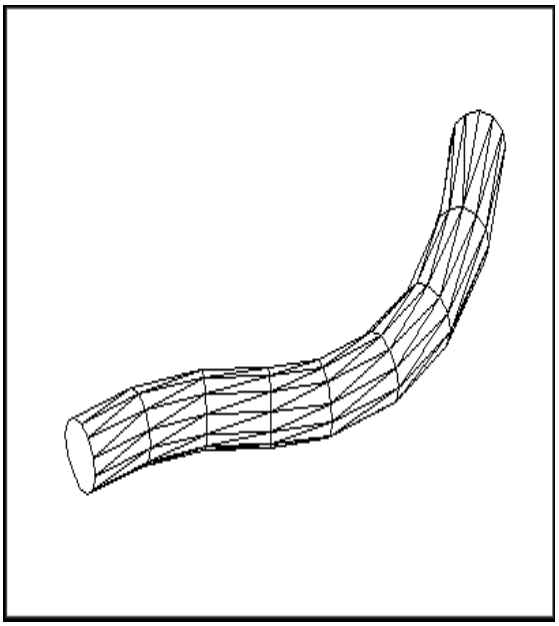
   Specify height of extrusion or [Direction/Path/Taper angle] <4.0000>: **p**

   Select extrusion path or [Taper angle]: **pick P2**

Circle Extruded Along a Path



Hidden Line Removal of Extruded Circle



3D Move

Displays the move grip tool in a 3D view and moves objects specified distance.

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose Modify, 3D Operations, 3DMove.

   or
3. Type 3DMOVE at the command prompt.

   Command: **3Dmove**

   Select objects: pick object to move

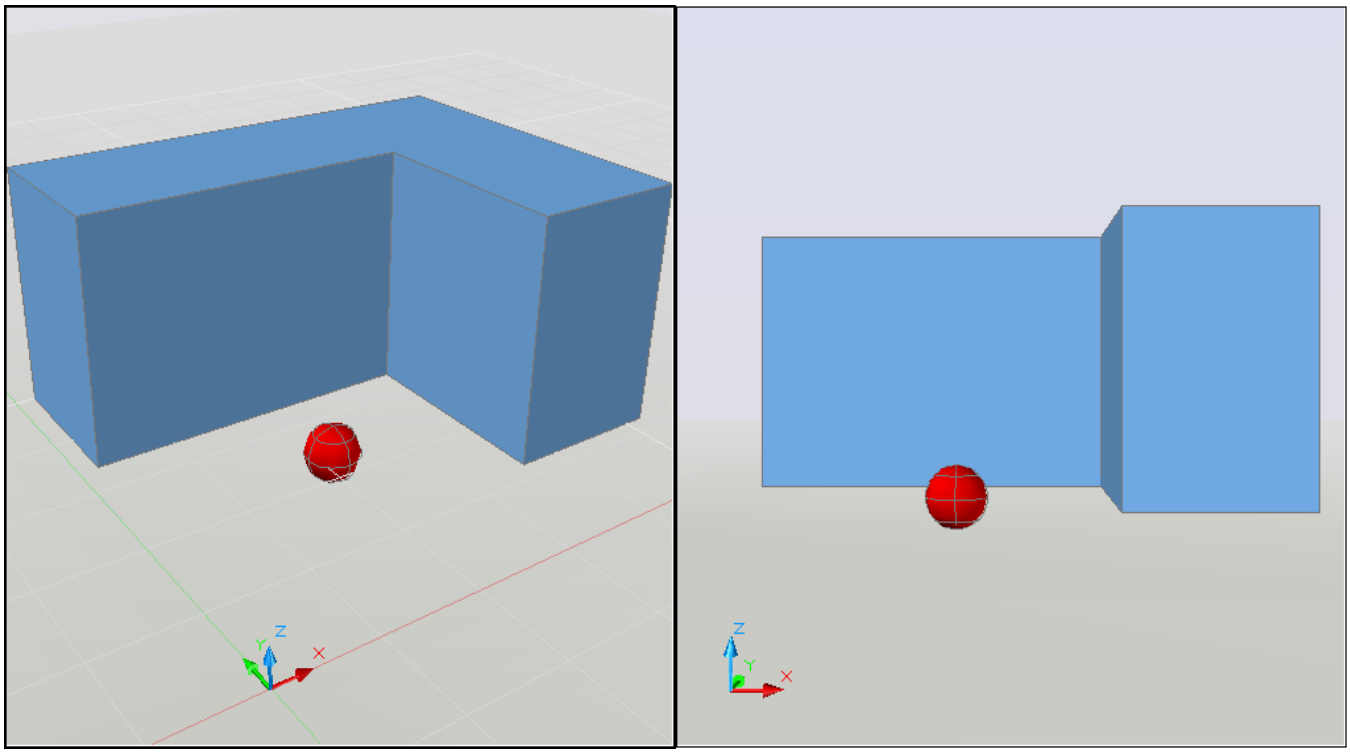
   1 found

   Select objects: enter

   Specify base point or [Displacement] <Displacement>: **D**

   Specify displacement <0.0000, 0.0000, 0.0000>: **0,0,2**

Figure 1.23



3D Rotate

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose Modify, 3D Operations, 3DRotate.

   or
3. Type 3DROTATE at the command prompt.

   Command: **3DROTATE**

   Current positive angle in UCS:
   ANGDIR=counterclockwise ANGBASE=0

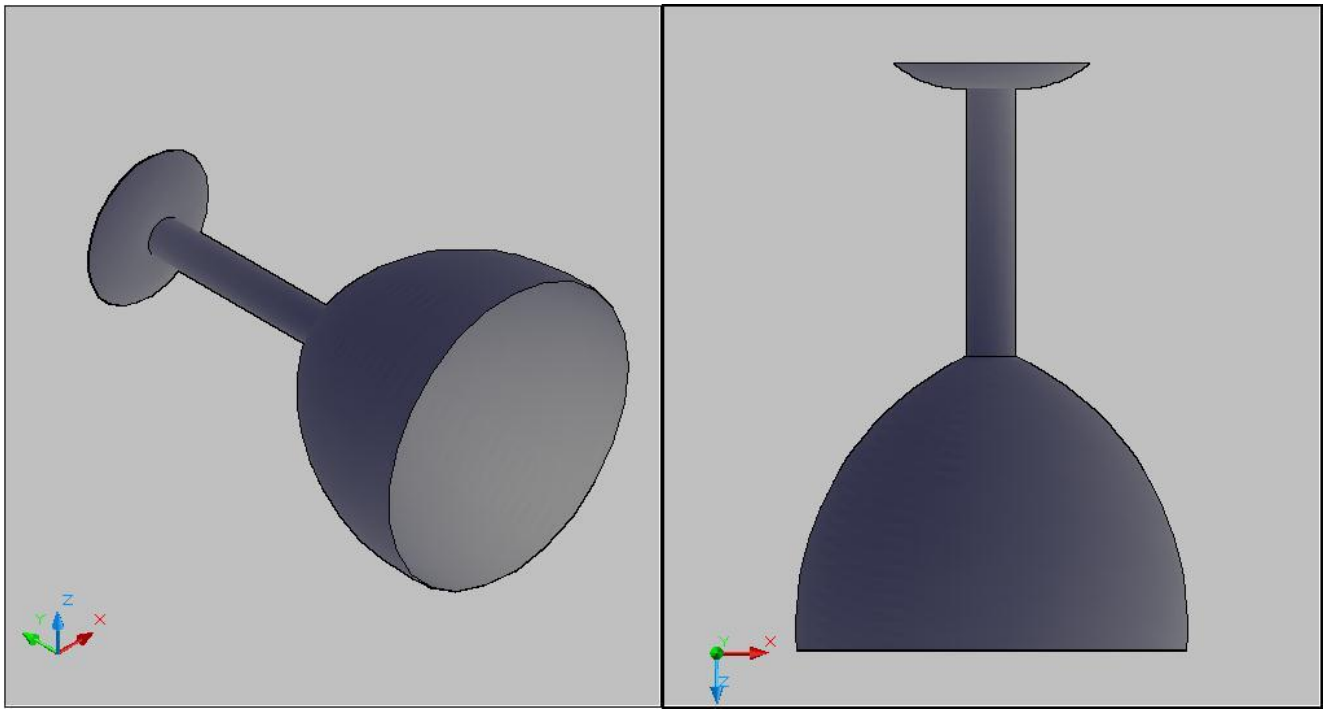
   Select objects: pick object and press enter

   Specify base point: **pick point**

   Pick a rotation axis: **select X axis**

   Specify angle start point: **-90**

Figure 1.24



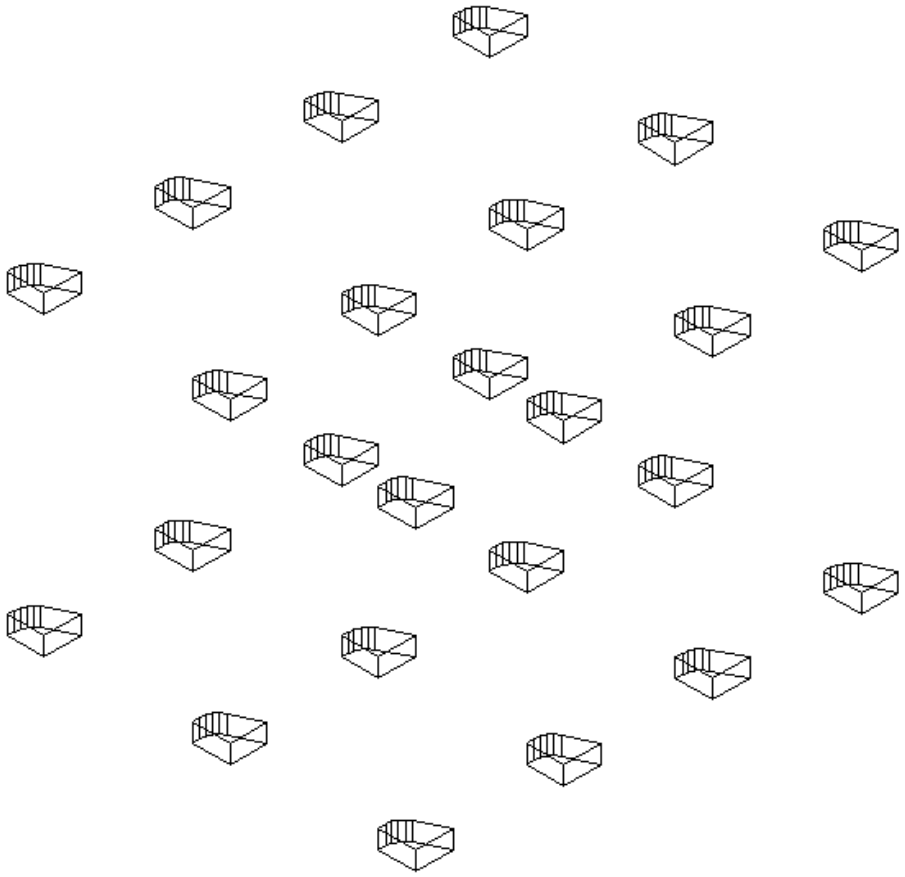
3D Rectangular Array

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose Modify, 3D Operations, 3DArray.

   or
3. Type 3DARRAY at the command prompt.

   Command: 3darray
   Select objects: pick object and press enter
   Enter the type of array [Rectangular/Polar] <R>: R
   Enter the number of rows (---) <1>: 3
   Enter the number of columns (|||) <1>: 4
   Enter the number of levels (...) <1>: 2
   Specify the distance between rows (---): 5
   Specify the distance between columns (|||): 4
   Specify the distance between levels (...): 8

Figure 1.25



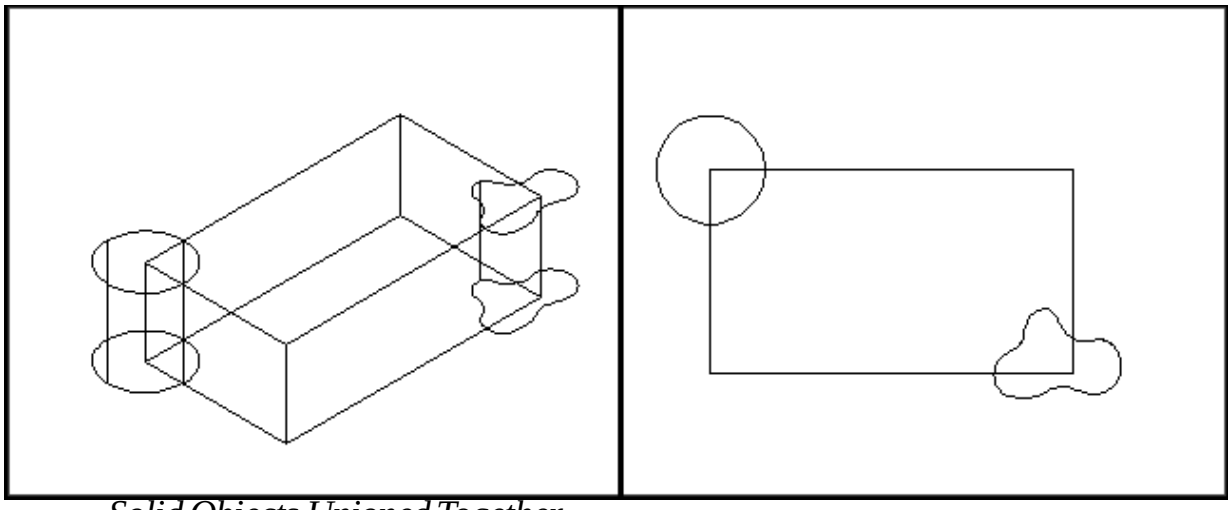
Union

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose Modify, Solids Editing, Union.

   or
3. Type UNION at the command prompt.

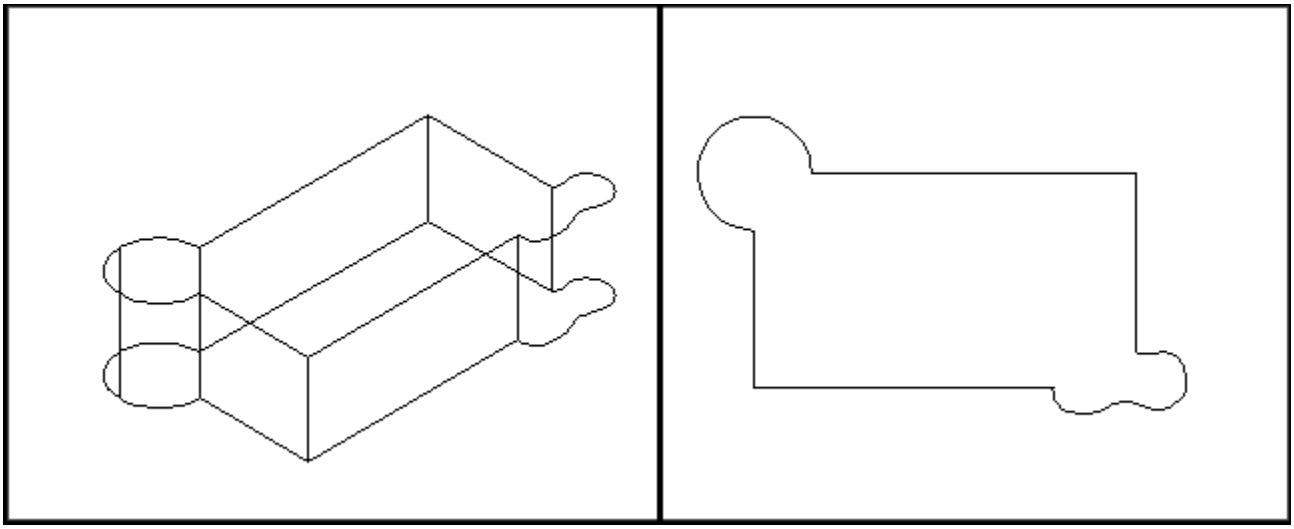
Command: **UNION**
Select objects: pick objects to union
Select objects: **ENTER**

Figure 1.3.1



Solid Objects Unioned Together

Figure 1.3.2



Subtract

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose Modify, Solids Editing, Subtract.

   or
3. Type SUBTRACT at the command prompt.

Command: **SUBTRACT**

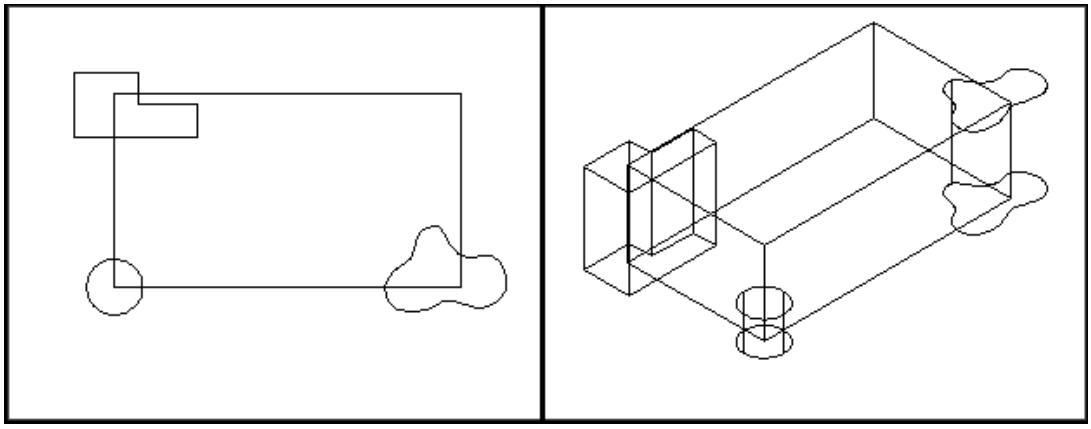
SUBTRACT Select solids and regions to subtract from...

Select objects: **pick the main box**

Select objects: **(press enter)**

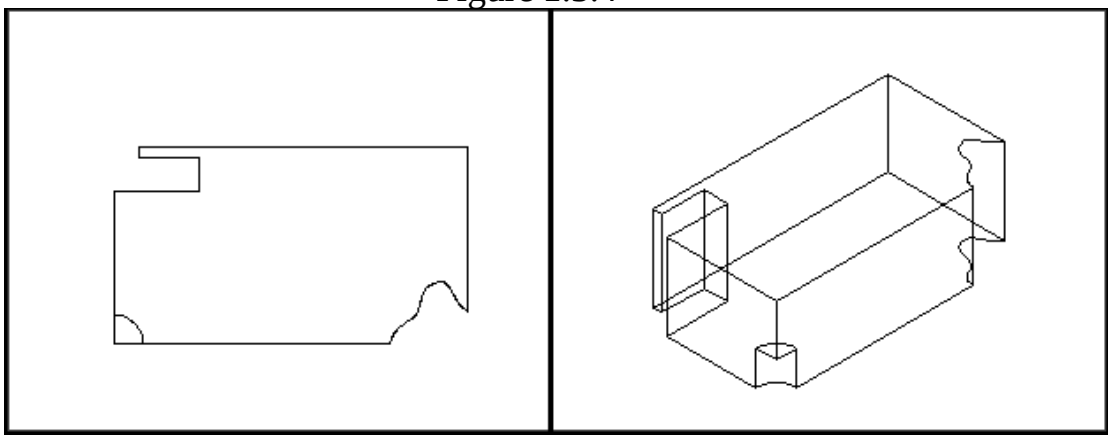
Select solids and regions to subtract... Select objects: **pick the other solids** Select objects: **enter**

Figure 1.3.3



Objects Subtracted from Box

Figure 1.3.4

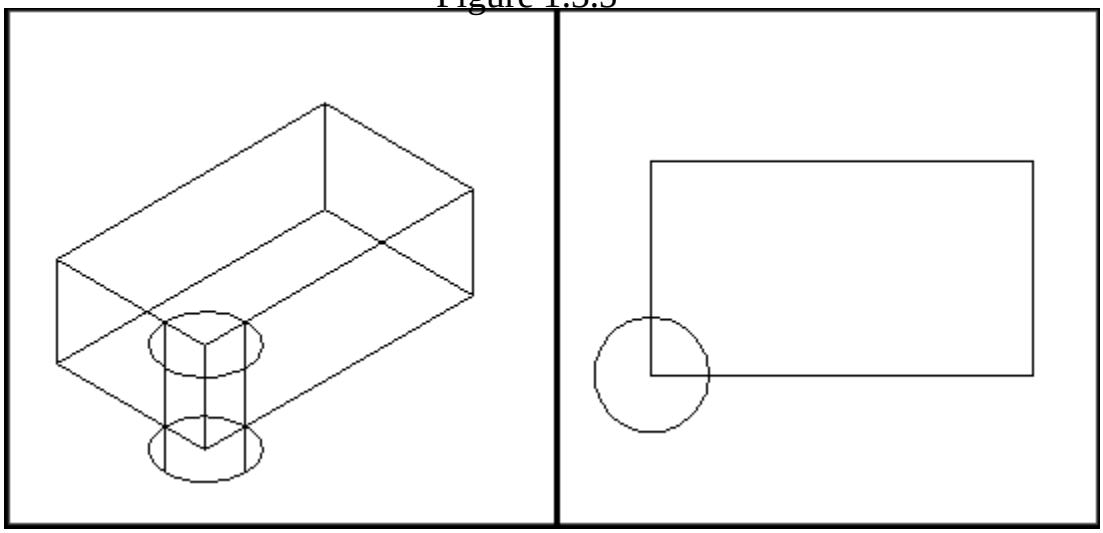


Intersect

1. Choose Modify, Solids Editing, Intersect
   or
2. Type INTERSECT at the command prompt.

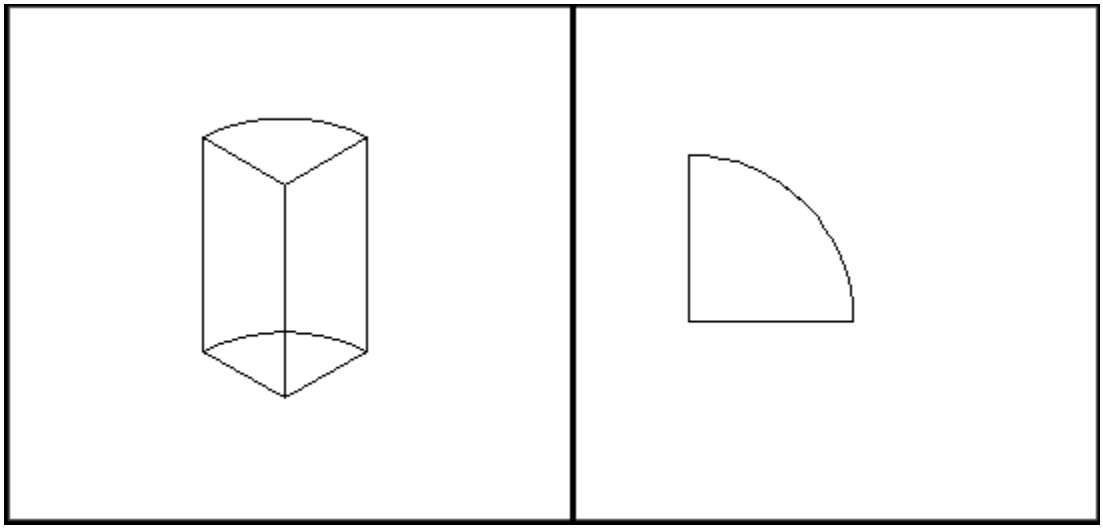
Command: **INTERSECT**
Select objects: pick objects
Select objects: **enter**

Figure 1.3.5



Intersection of Cylinder and Box

Figure 1.3.6



DESIGNING PART

2.1 Render Command

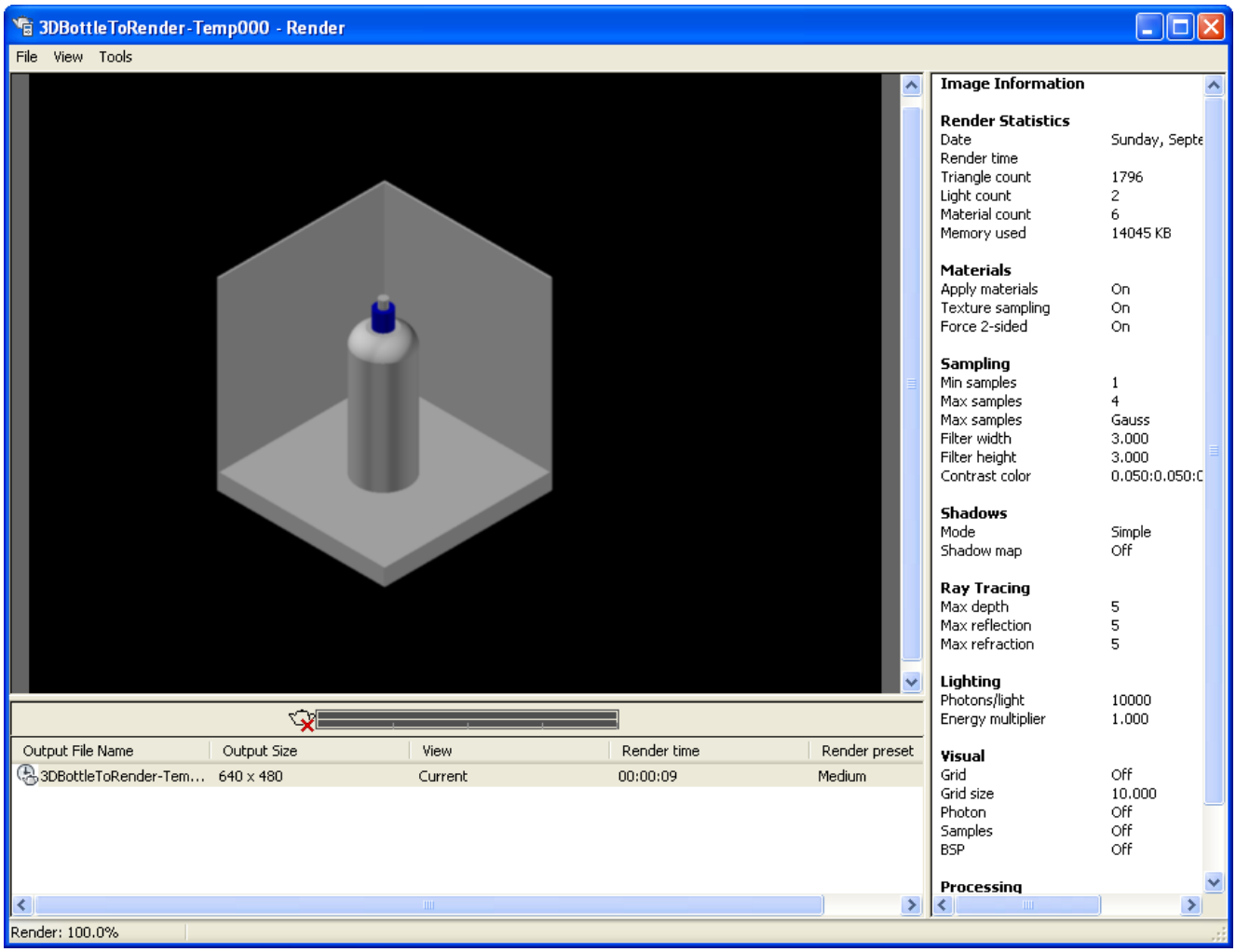
Creates a photorealistic or realistically shaded image of a three-dimensional wireframe or solid model.

1. Open an AutoCAD drawing with 3D objects to render.
2. Choose View, Render, Render...

   or
3. Type RENDER at the command prompt.

   Command: **RENDER**

The following render window is the result of default rendering
Figure 2.1.1

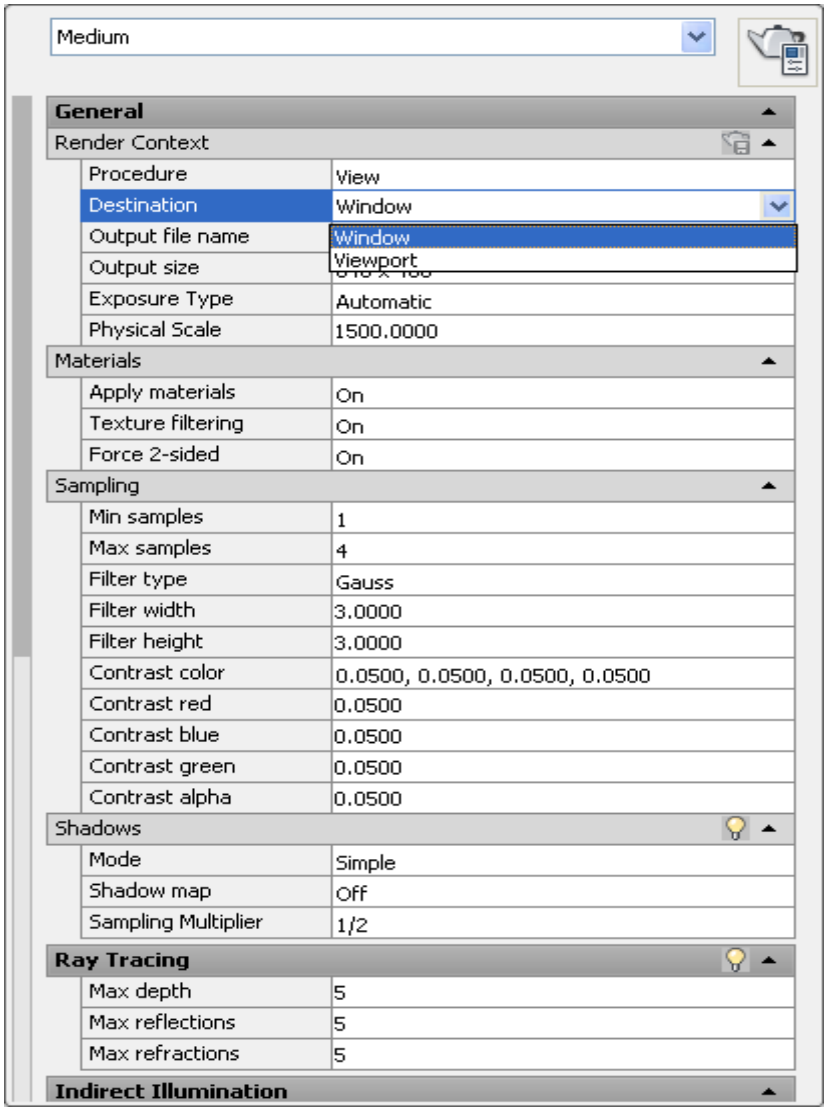


Render Destination

You are able to determine the output site that the renderer uses to display the rendered image. Two options are the render window and viewport.

1. Choose View, Render, Advanced Render Settings...
   or
2. Type RPREF at the command prompt.
   Command: **RPERF**
3. Click the dropdown option for destination and choose **Viewport**.
4. Close the render preferences and render your objects to the viewport.

Figure 2.1.2

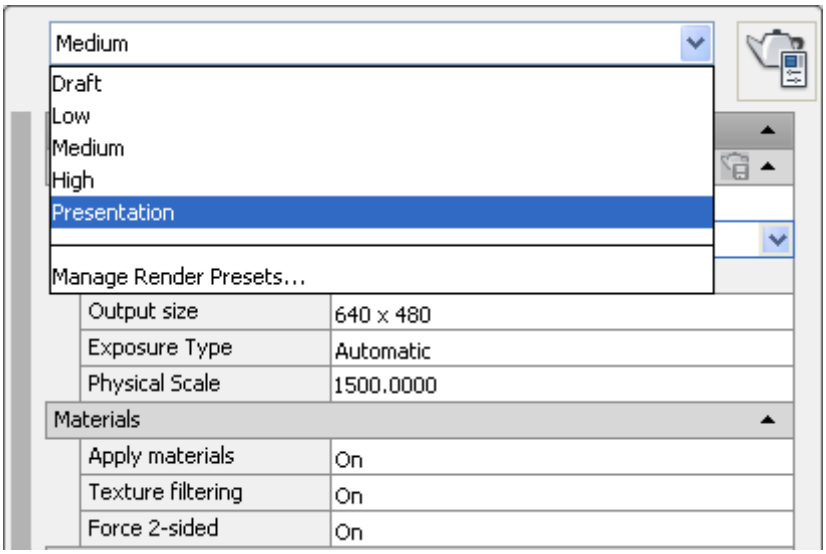


Render Quality

1. Choose View, Render, Advanced Render Settings...
   or
2. Type RPREF at the command prompt.
   Command: **RPREF**
3. Click the dropdown option for the render quality and choose **Presentation**.
4. Close the render preferences and render your view.

Note: Depending on the objects, lights, materials, etc. in your model, rendering in presentation mode might take a long time.

Figure 2.1.3

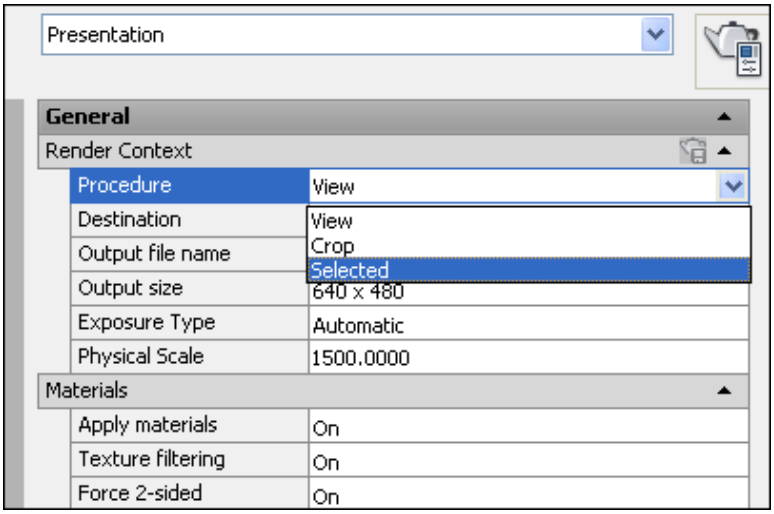


Render Selection

Controls the parts of the model that gets processed during rendering. The render procedure has three settings: View, Crop, and Selected.

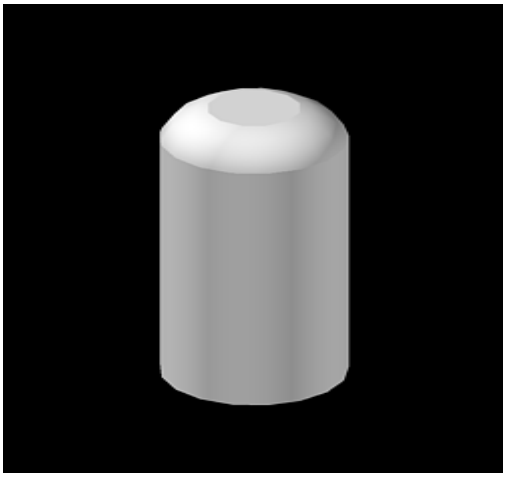
1. Choose View, Render, Advanced Render Settings...
   or
2. Type RPREF at the command prompt.
   Command: **RPREF**
3. Click the dropdown option for Procedure and choose **Selected**.

Figure 2.1.4



4. Close the render preferences and render selected objects.

This result is a selected object in the drawing that is rendered.



Render Cropped Window

1. Choose View, Render, Advanced Render Settings...

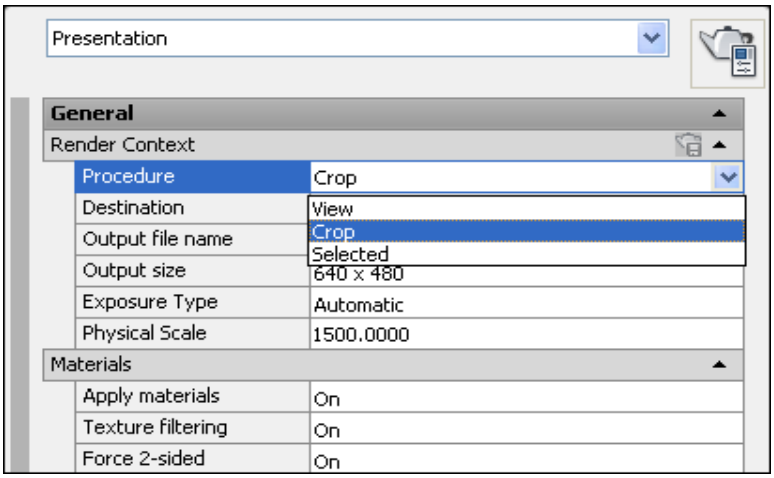
   or

2. Type RPREF at the command prompt.

   Command: **RPREF**

3. Click dropdown option for Procedure and choose **Crop**.

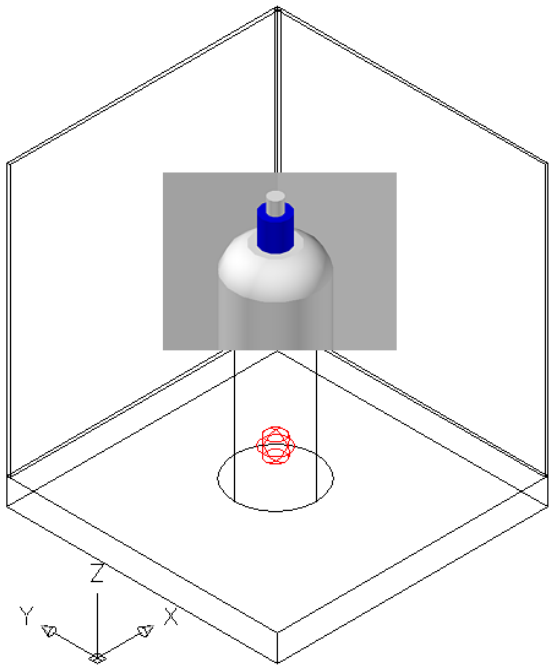
Figure 2.1.5



4. Close the render preferences and render a cropped window.

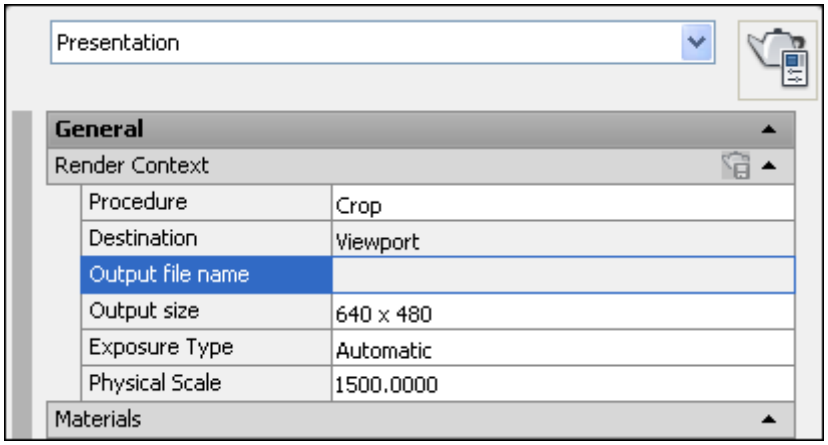
   The result is a cropped portion of the drawing that is rendered.

Figure 2.1.6



2.2 Render to File

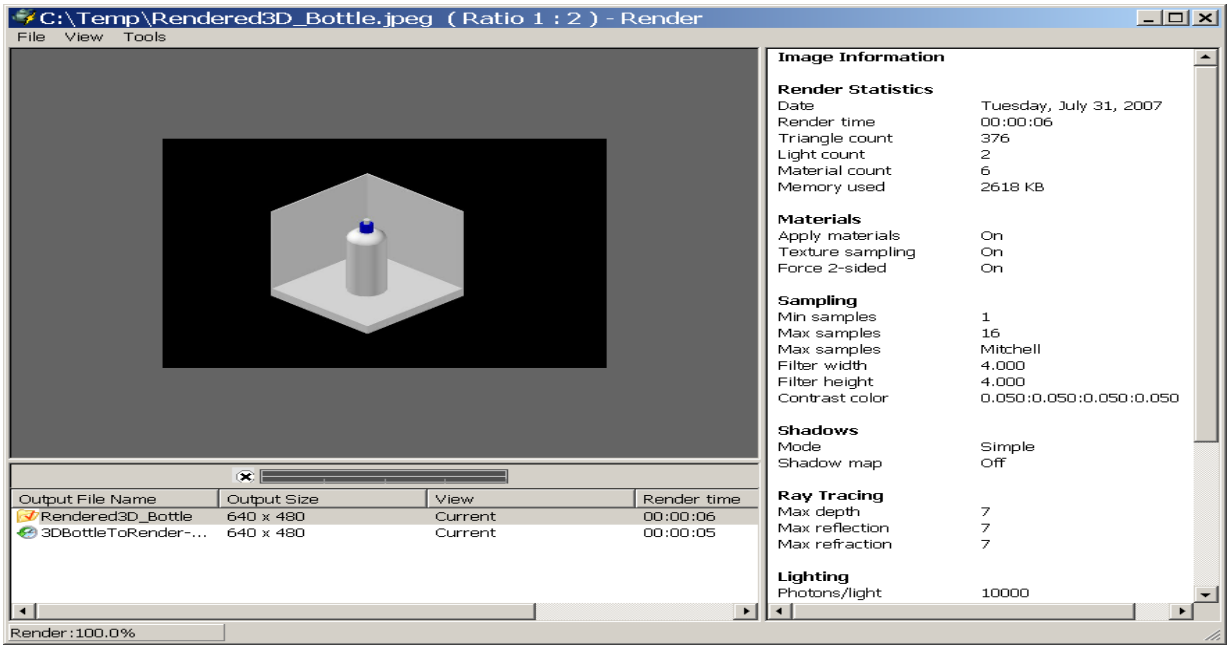
1. Type RPREF at the command prompt.
2. Click the small disk beside the title for “Render Content”.
3. Click the option for Output file name.



4. Choose a location, format, and file name for your rendered objects.
5. Adjust the image quality and click OK.
6. Close the render preferences and render your objects.

The result is a rendered image to a file that you can copy , print, or manipulate in any imaging software application.

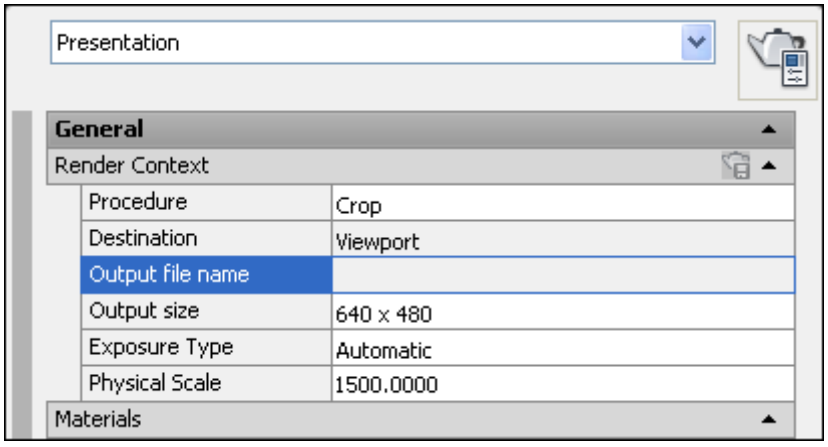
Figure 2.2.1



Turn Off Render to File

1. Open an AutoCAD drawing with 3D objects to render.
2. Choose View, Render, Advanced Render Settings...
   or
3. Type RPREF at the command prompt.
   Command: **RPREF**
4. Click the small disk beside the title for "Render Content".

You will notice that the Output file name option will be grayed out.

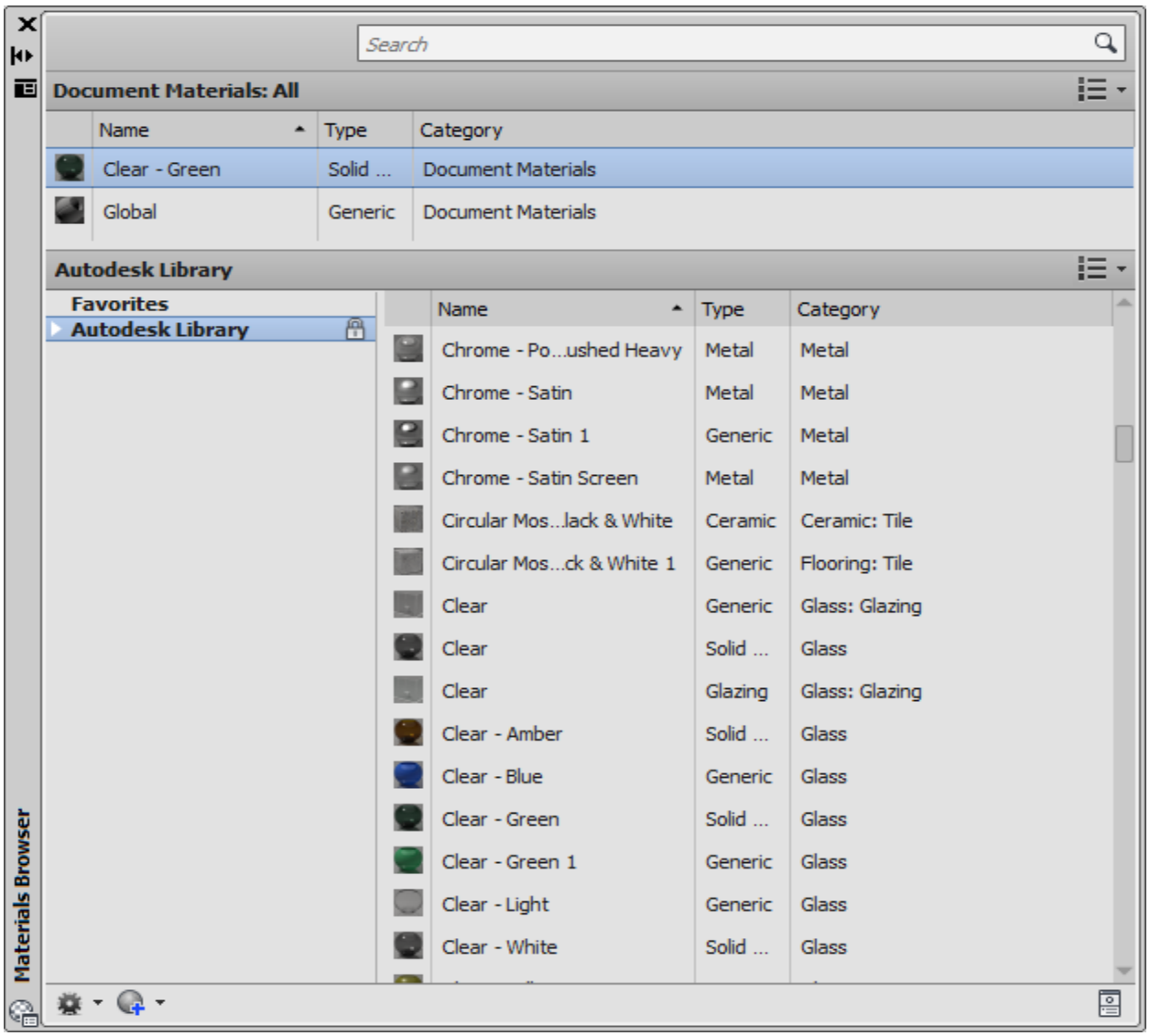


1. Open an AutoCAD drawing with 3D objects to add materials to.
2. Choose **View, Render, Materials Brower ...**

   or
3. Type MATERIALS or MATBROSWEROPEN at the command prompt.

   Command: **MATERIALS or MARBROWSEROPEN**
4. Click the categories button to see more swatches.
5. Browse the various materials in the Autodesk Library.

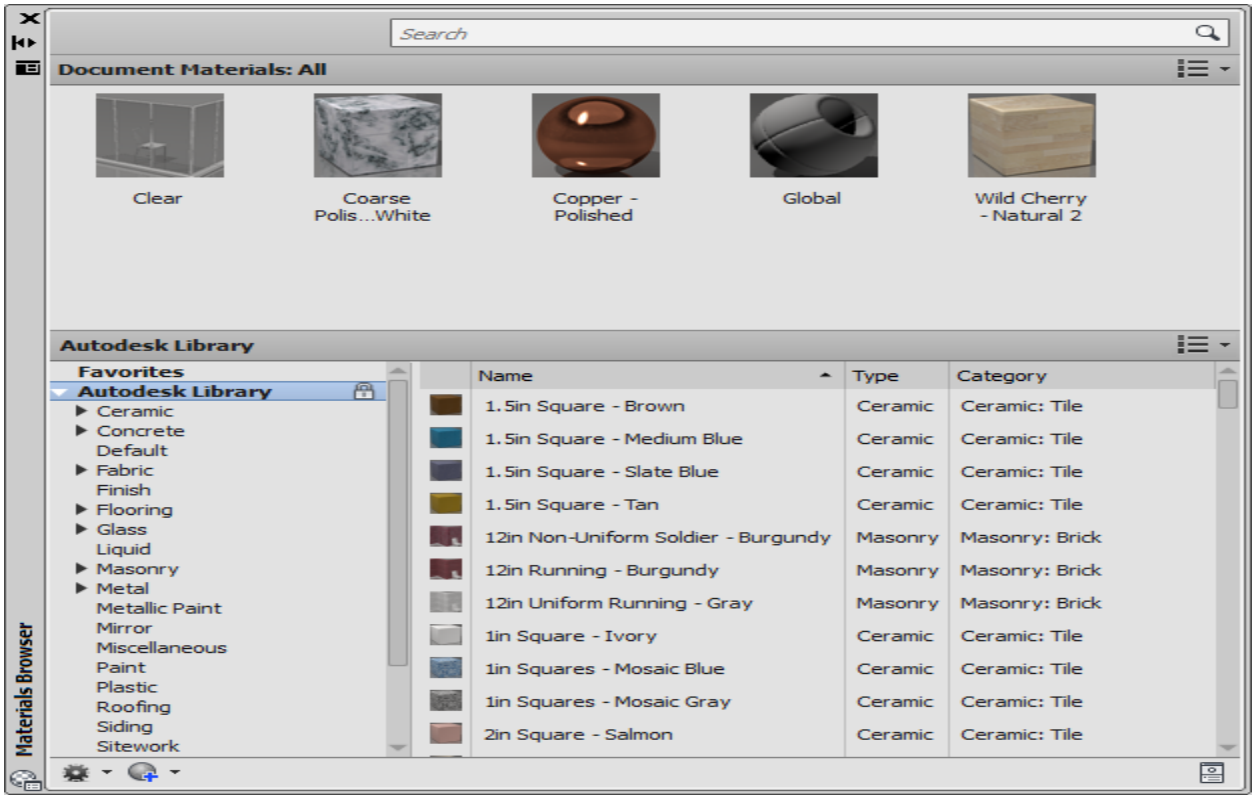
Figure 2.2.2



Apply Material to Objects

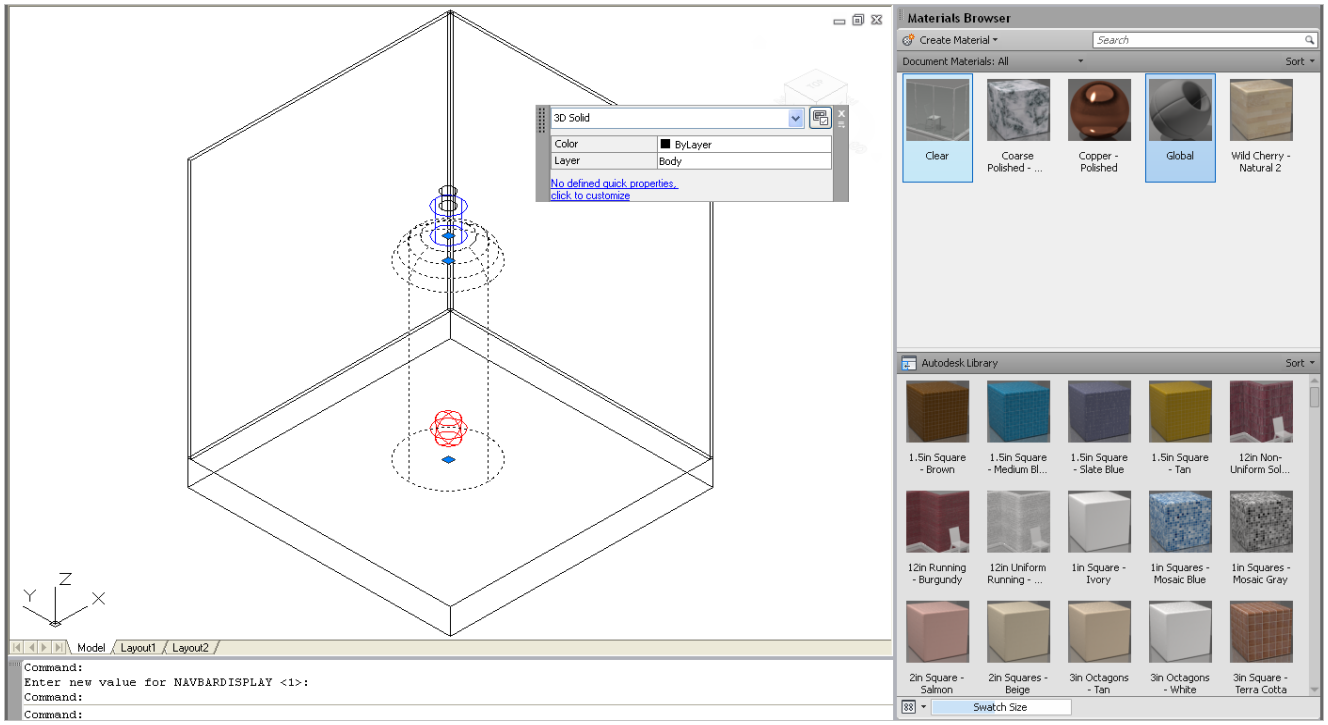
1. Click and drag the following materials into the document section of the materials browser.

Figure 2.2.3



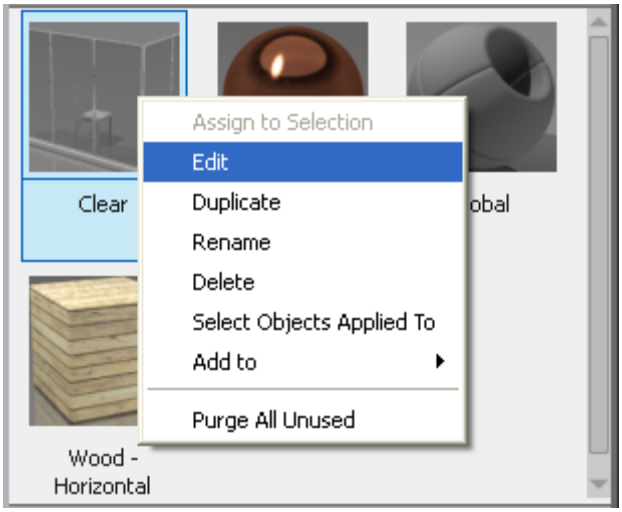
2. Select an object and select a material.

Figure 2.2.4



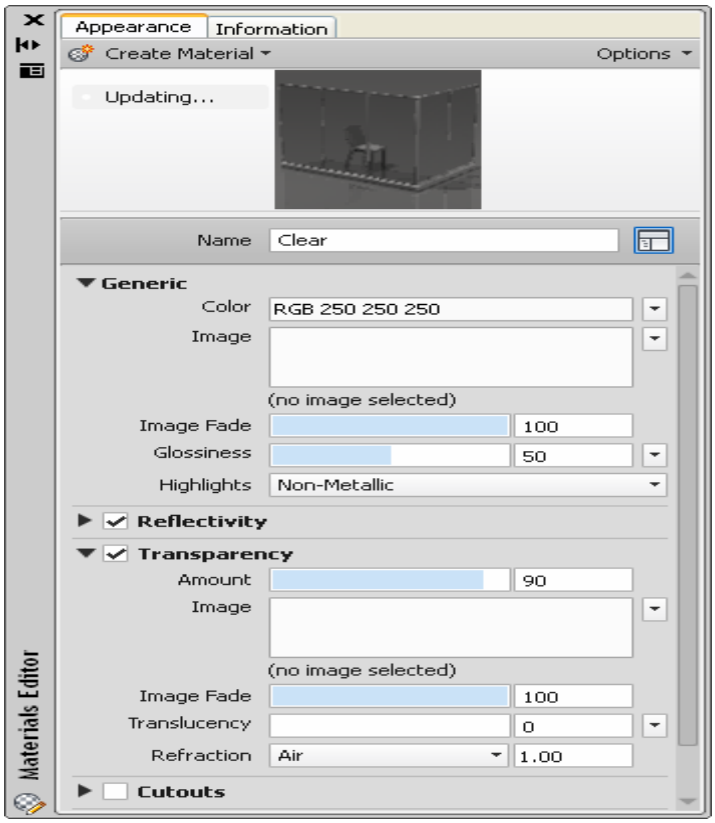
Edit Material

1. Right-click a material in the Document Materials section.
2. Click Edit.



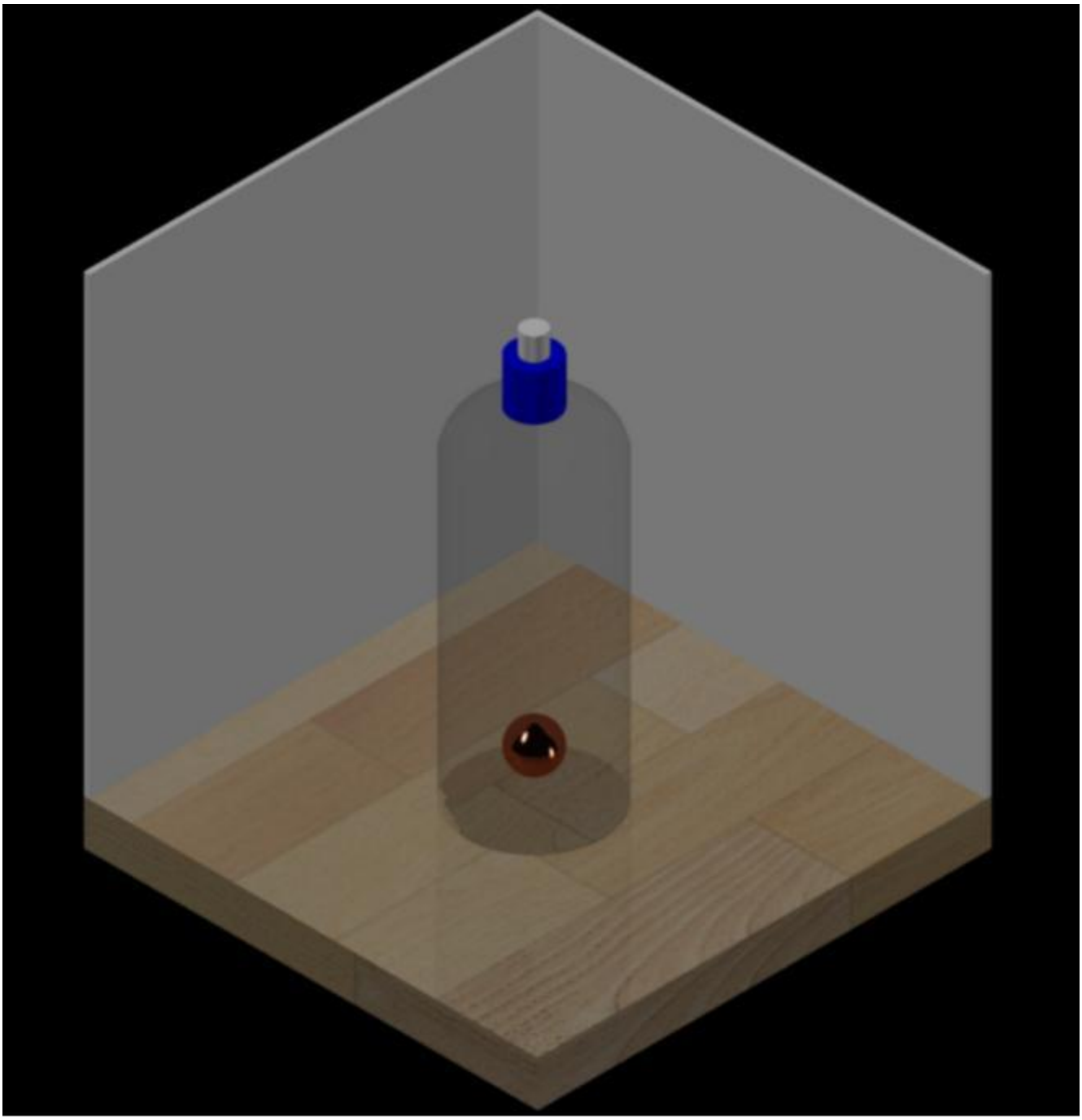
3. Change one or more properties of the material.

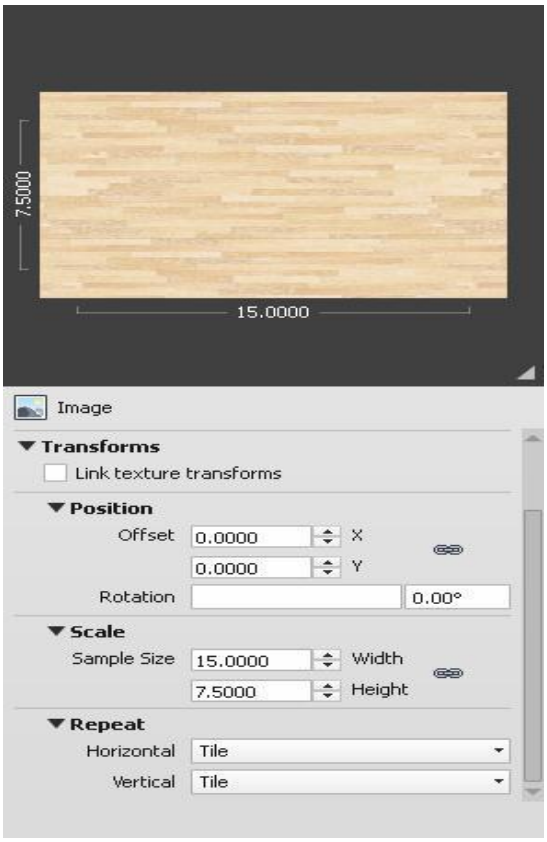
Figure 2.2.5



Render the viewport to see the material changes

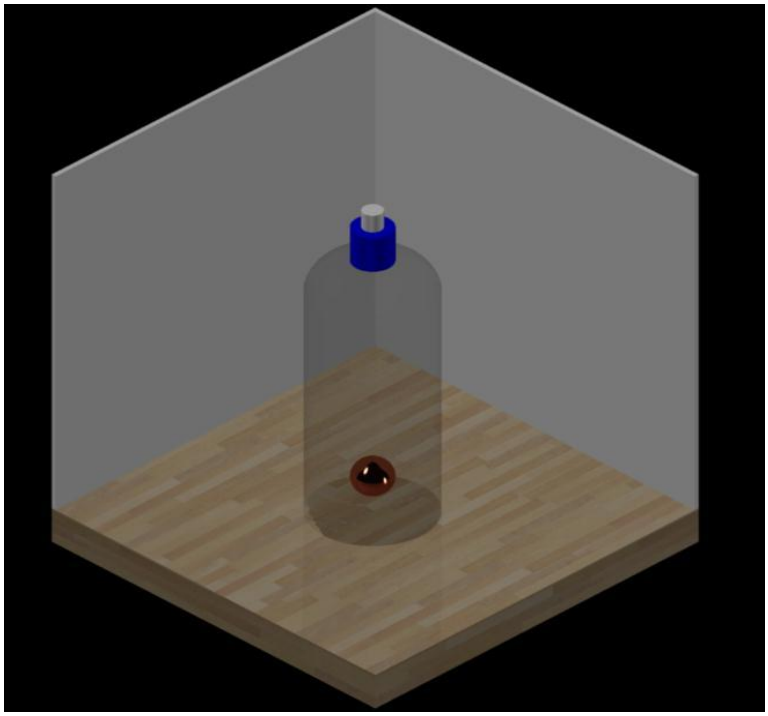
Figure 2.2.6





Render the viewport to see the newly scaled material.

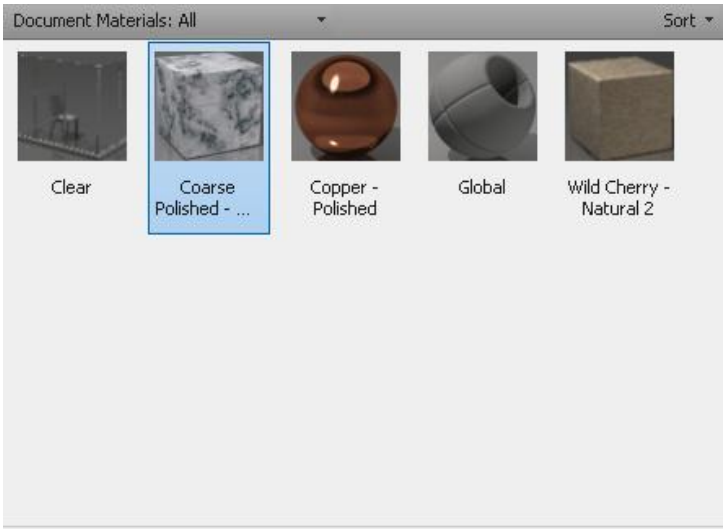
Figure 2.2.7



Applying Materials by Layer

You can attach a material to an entire layer using the Material Attach command.

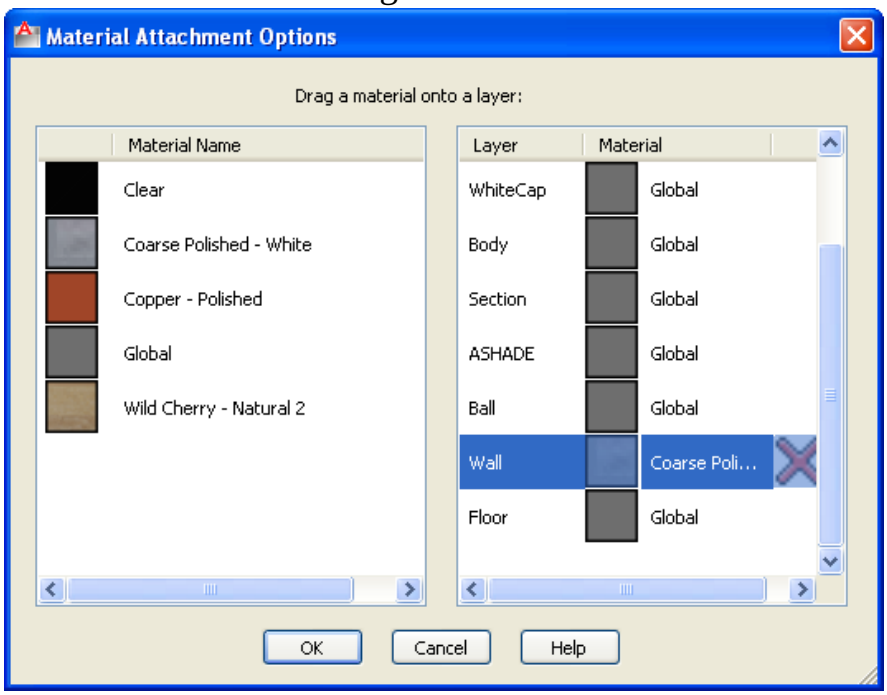
1. Add the material Course Polished White to your Document Materials.



2. Type MATERIALATTACH at the command prompt.
   Command: **MATERIALATTACH**

3. Click and drag the concrete material onto layer Wall.

Figure 2.2.8

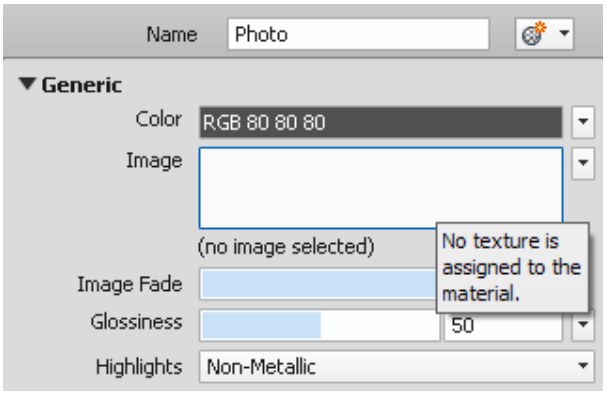


2.3Create Photo as Material

1. Choose **View, Render, Materials...**

   or

2. Type MATERIALS at the command prompt.
   Command: **MATERIALS**
3. Click the **Create Material** button and **New Generic Material**.
4. Name the material **Photo**.
5. Click the blank **image box and** navigate to the location where images are located, choose a photo image, and click Open.

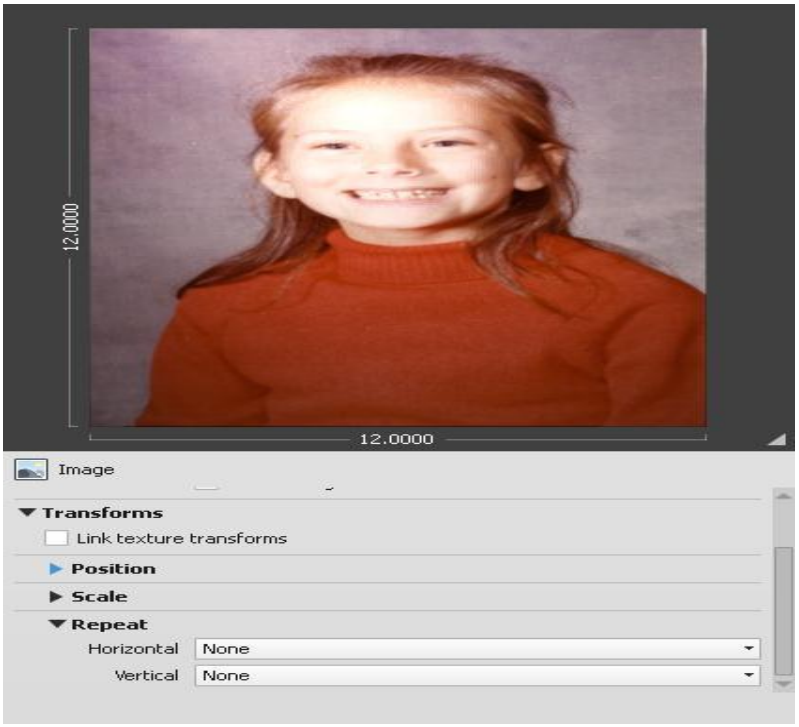


The photo is added as an image material

Figure 2.3.1

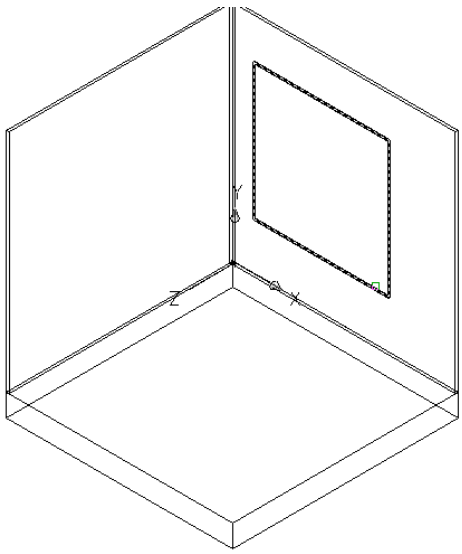
6. Choose the dropdown option for **Transforms**.
7. Choose the dropdown for **Repeat** and set the Horizontal and Vertical repeats to **None**.

Figure 2.3.2



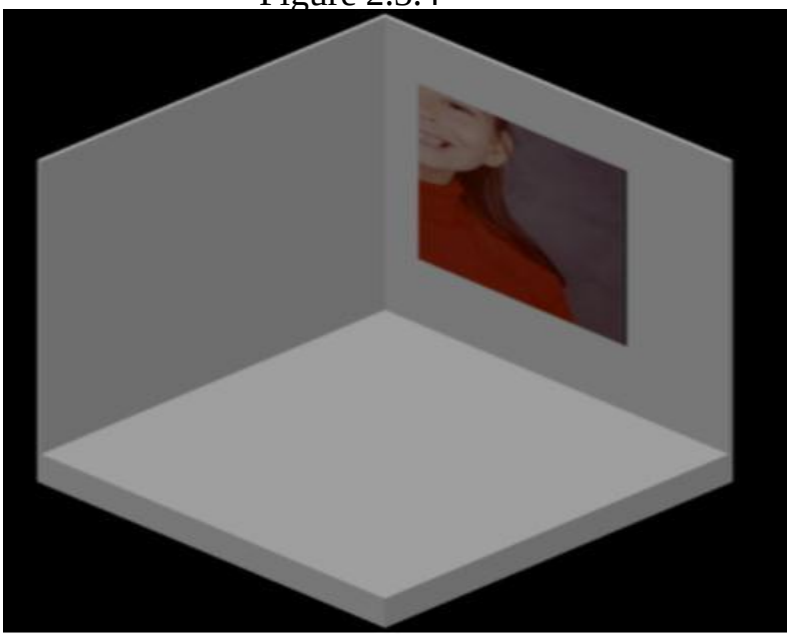
8. Apply the material to the 3D face in the drawing.

Figure 2.3.3

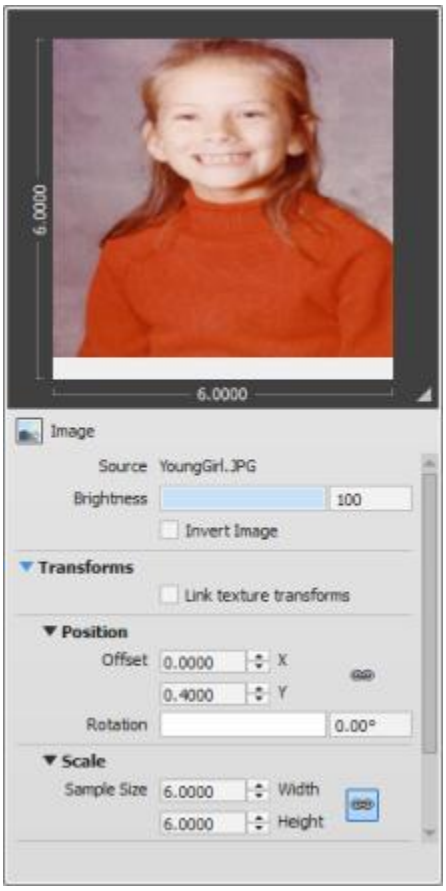


9. Render the viewport.

Figure 2.3.4

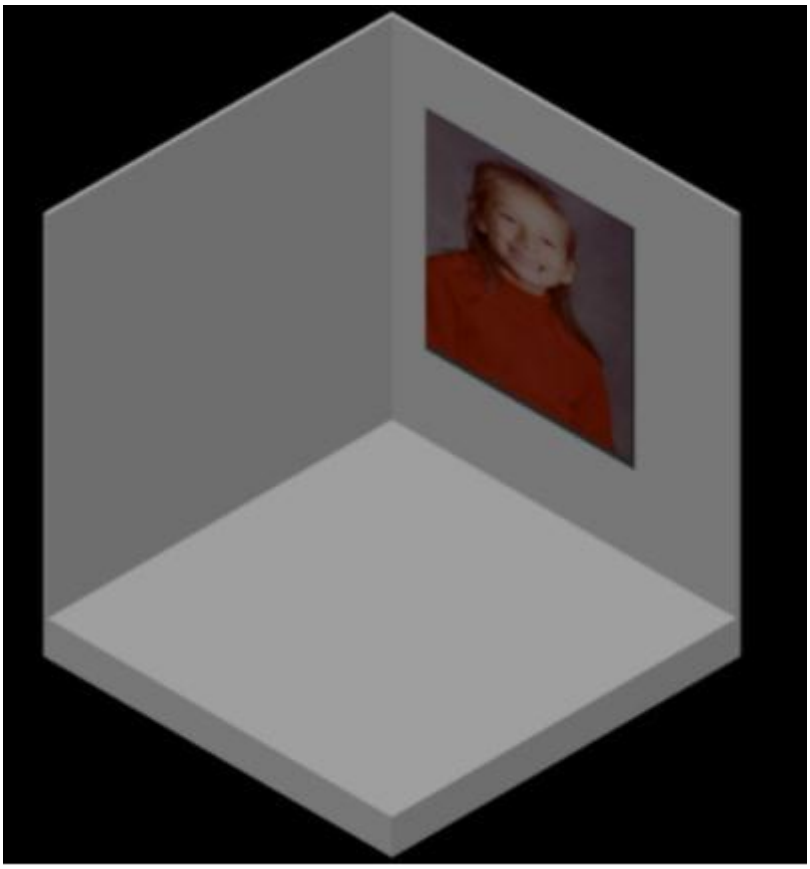


10. Edit the material image transforms as follows.



11. Render the viewport.

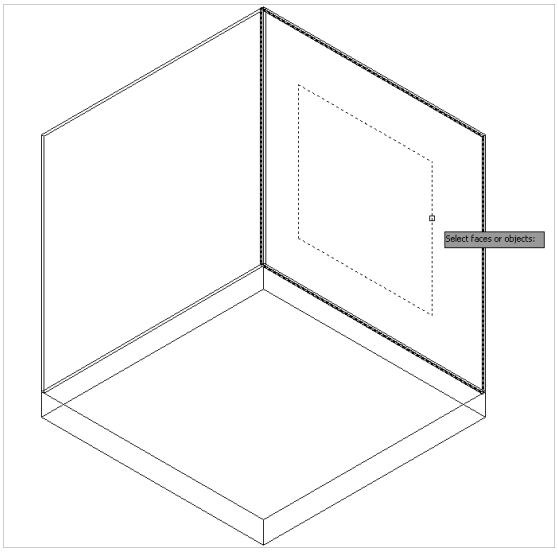
Figure 2.3.5



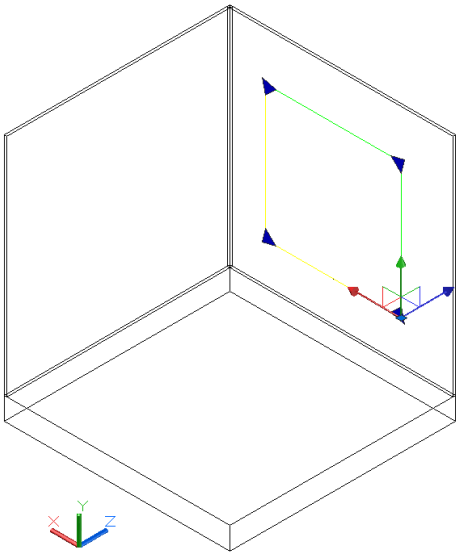
2.4 Material Mapping (Photo)

1. Type MATERIALMAP at the command prompt.

Command: **MATERIALMAP**
Select an option
[Box/Planar/Spherical/Cylindrical/copY
mapping to/Reset
mapping]<Box>: PLANAR
Select faces or objects: 1 found

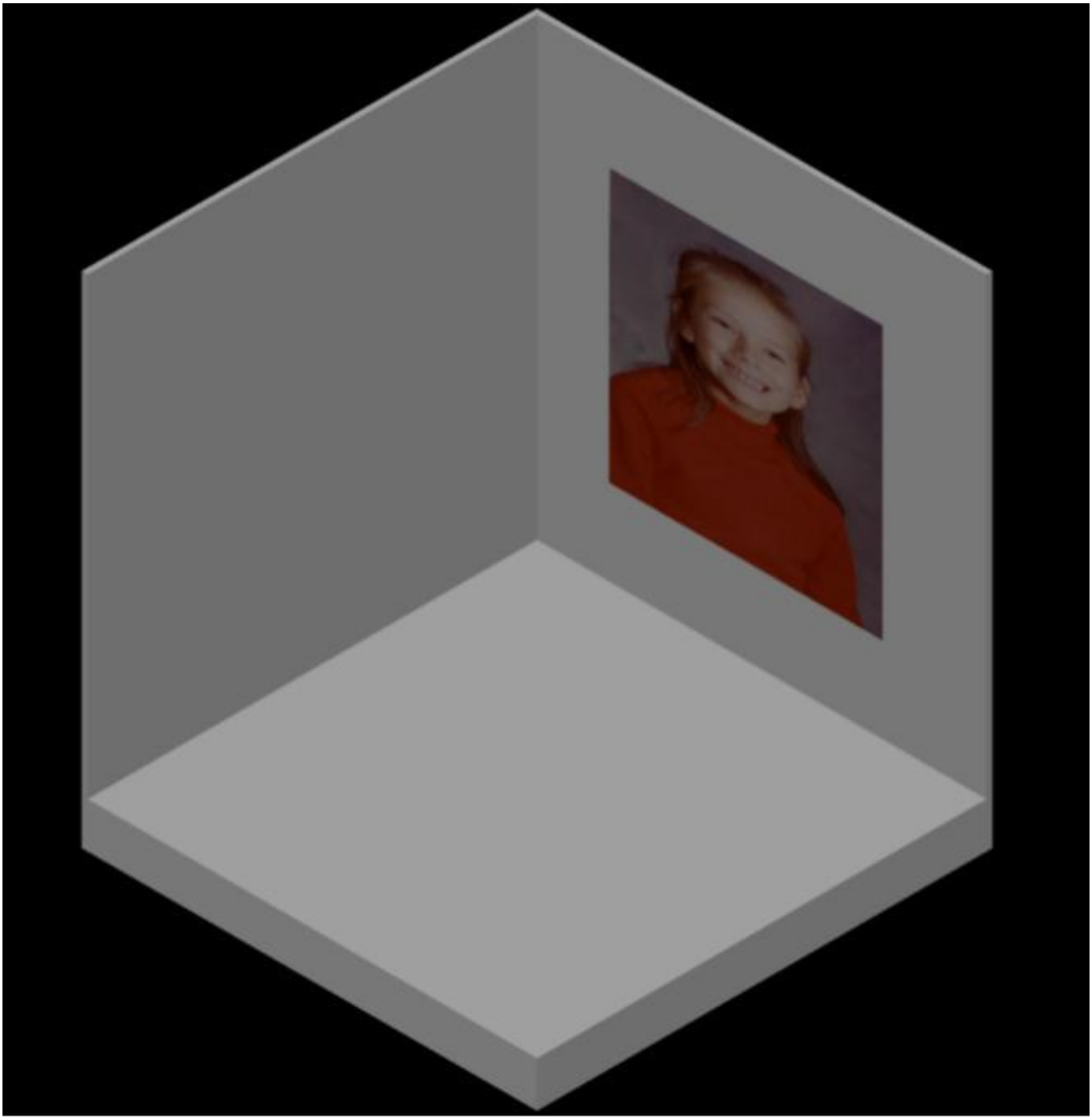


Select faces or objects: enter



Accept the mapping or
[Move/Rotate/reseT/sWitch mapping mode]:enter
Regenerating model.

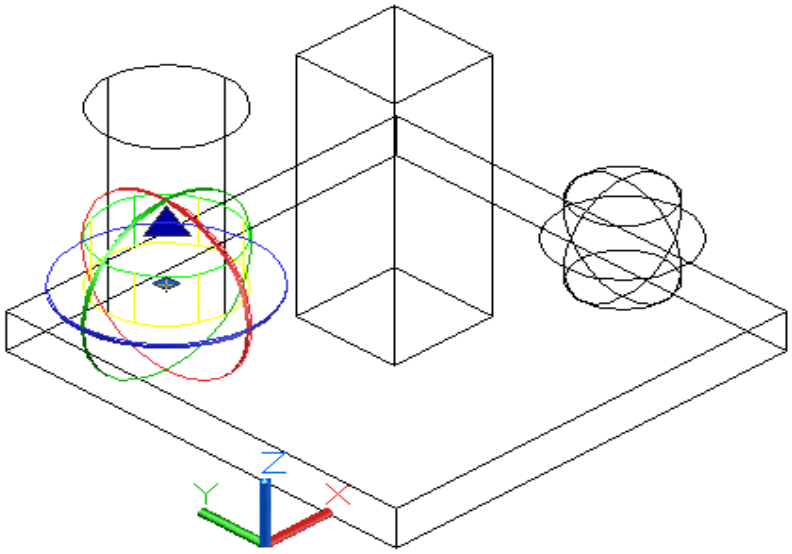
Figure 2.4.1



2.5 Material Mapping (Shapes)

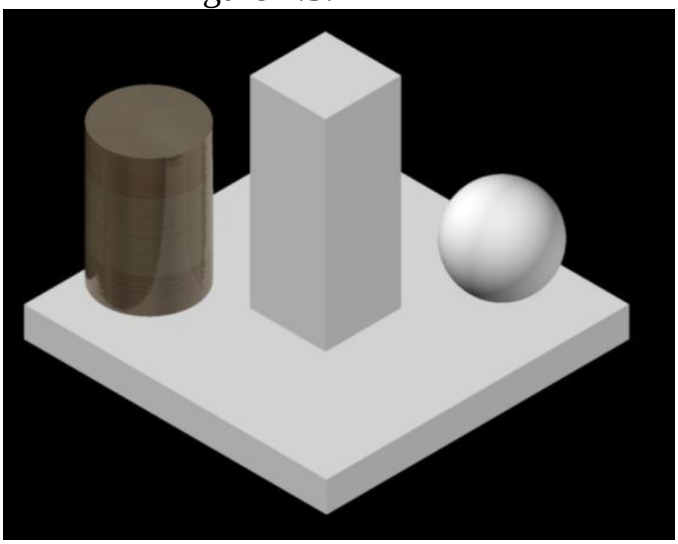
1. Open a drawing with a box, cylinder, and sphere.
2. Attach an image material to the cylinder (for example. Wild Cherry Natural 2).
3. Type MATERIALMAP at the command prompt. Command: **MATERIALMAP**
4. Choose Cylinder and then pick the cylinder in the drawing.
5. Use the grips to move the mapping plane along the cylinder.

Figure 2.5.1

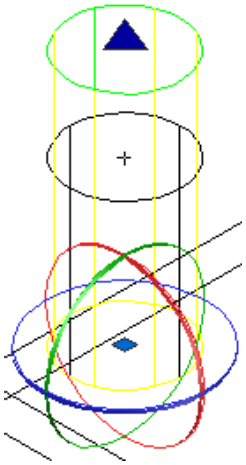


6. Press enter and render the drawing.

Figure 2.5.2



7. Change the material mapping again for the cylinder.



8. Render the viewport.

Practice adjusting the material map for the box and sphere.

Purge Materials from Drawings

1. Type MATERIALS at the command prompt.
   Command: **MATERIALS**
2. Right-click anywhere in Document Material section.
3. Click Purge All Unused.

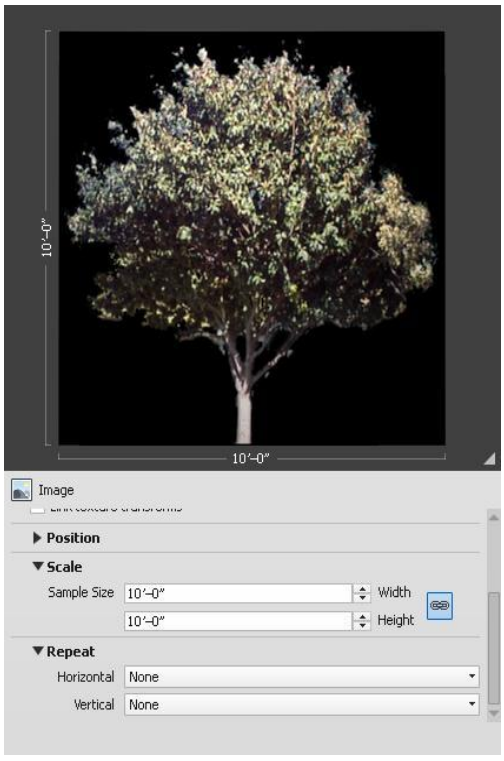
Figure 2.5.3

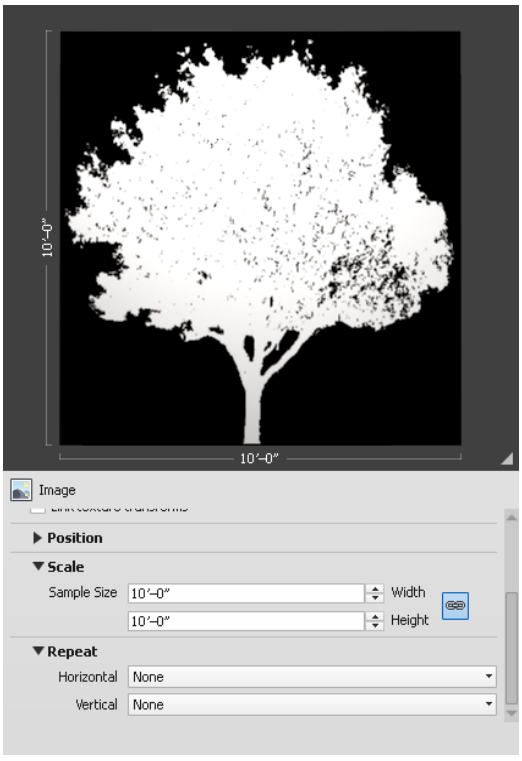
NOTE: You can only purge a material if it is not in use.

Cutout Materials

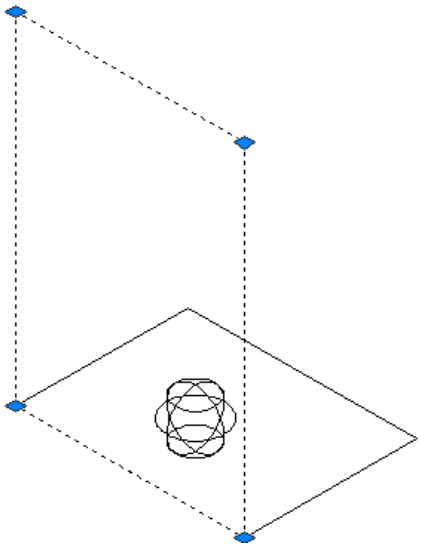
1.	Choose	**View, Render, Materials Broswer…**
		or
2.	Type	MATERIALS at the command prompt. Command: **MATERIALS**
3.	Click	**Create Material** and create a new generic material called **Magnolia Tree**.
4.	Click	Image and add an image for a tree.
5.	Select	Scale and change both the width and height to **10'**.
6.	Select	Repeat and set both horizontal and vertical to **None**.
7.	Click	Cutout and select the same image as the tree as a black and white cutout.
8.	Select	Scale and change both the width and height to **10'**.
9.	Select	Repeat and set both horizontal and vertical to **None**.

Figure 2.5.4

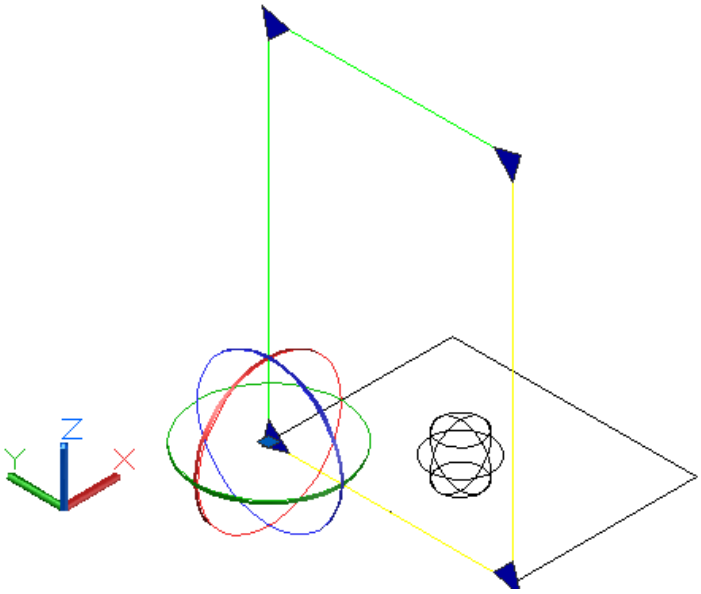




10. Apply the material to an object.



11. Set the material mapping to planar.



CREATION AND IMPLEMENTING OF DESIGNING

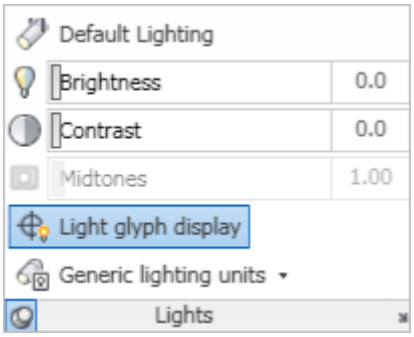
Default Lighting

When there are no lights in a scene, the scene is shaded with default lighting. Default lighting is derived from two distant sources that follow th
e
viewpoint as you move around the model. All faces in the model are illuminated so that they are visually discernible. You can control brightnes
s
and contrast, but you do not need to create or place lights yourself.

When you insert custom lights or add sunlight, you can disable the default lighting. You can apply default lighting to the viewport only; at the same time, you can apply custom lights to the rendering.

ON/OFF

1. Choose Default Lighting from the Lighting ribbon



or

2. Type DEFAULTLIGHTING at the command prompt.

   Command: DEFAULTLIGHTING

   Enter new value for DEFAULTLIGHTING <0>: **1**

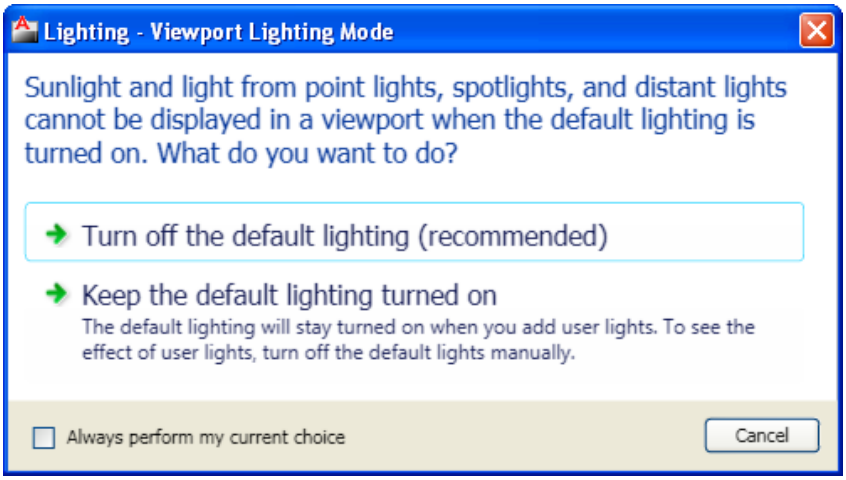
Point Lights

A point light radiates light in all directions from its location.

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose View, Render, Light, New Point Light.

   or
3. Type POINTLIGHT at the command prompt.

   Command: **POINTLIGHT**
4. Click Turn Off default lighting in the following prompt if default lighting was on:



   Specify source location <0,0,0>: **.XY**

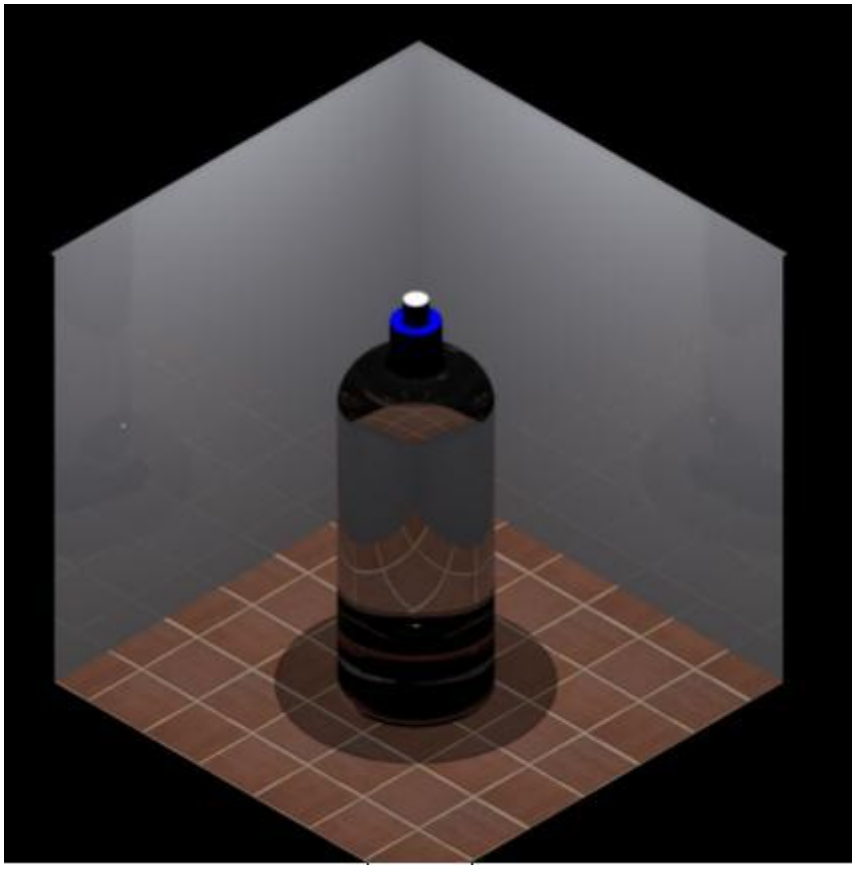
   of pick bottom center of bottle

   (need Z): **15**

   Enter an option to change [Name/Intensity/Status/shadoW/Attenuation/Color/eXit] <eXit>: **press enter**
5. Render the current viewport.

View rendered using a point light

Figure 3.1



Editing Lights with Light List

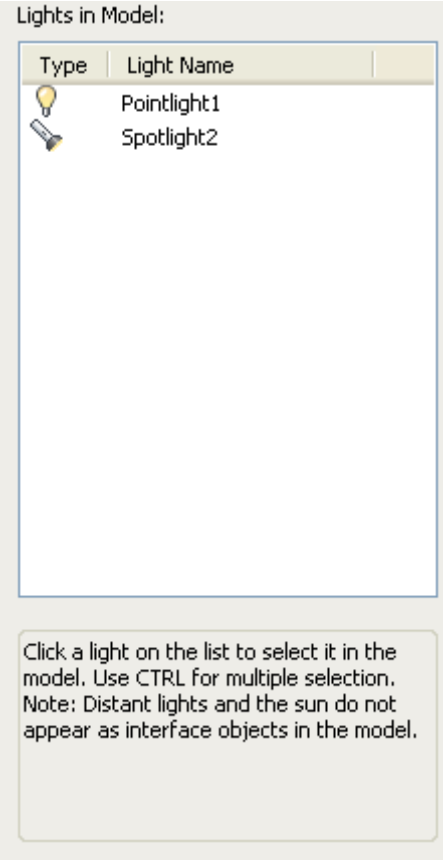
The lightlist command allows you to modify lights in a drawing. This includes turning lights off, deleting lights, or changing the properties of on
e
or more lights.

1. Open a drawing with lights.
2. Choose View, Render, Light, Lightlist.

   or

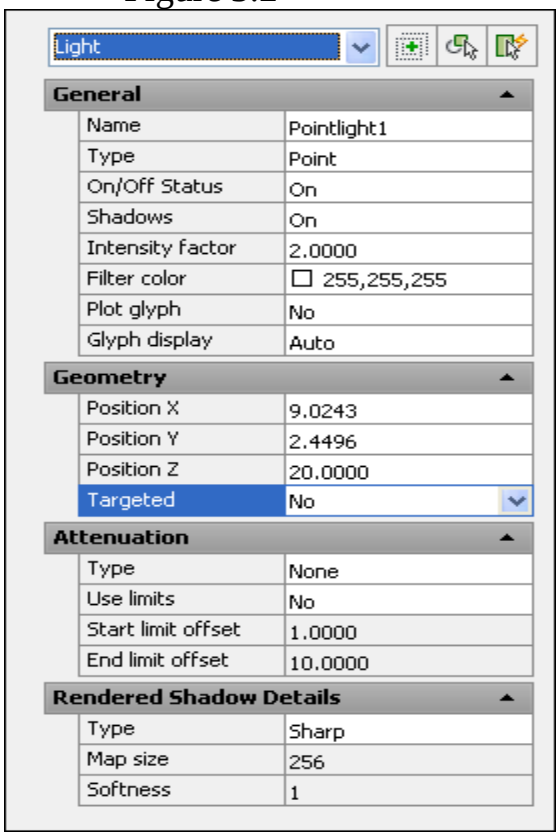
3. Type LIGHTLIST at the command prompt.

   Command: **LIGHTLIST**



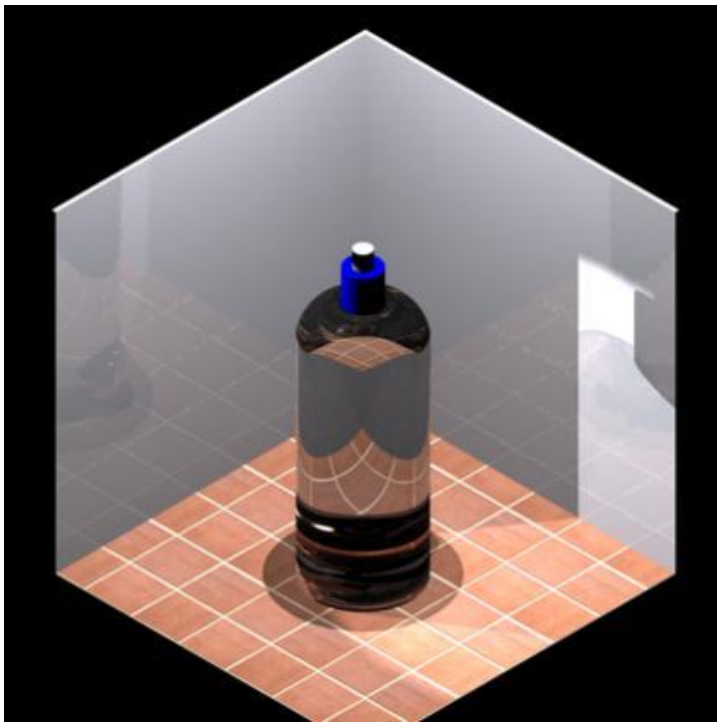
4. Double-click the point light in the drawing to modify its properties.

Figure 3.2



Render the viewport to see the changes to the light

Figure 3.3



Distant Lights

A distant light emits uniform parallel light rays in one direction only
.
You specify a FROM point and a TO point anywhere in the viewpo
rt
to define the direction of the light. There is no light glyph to represent a distant light in your drawing.

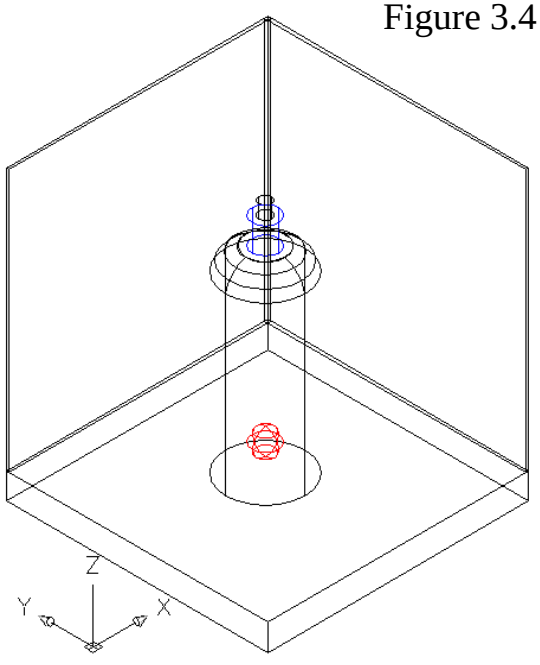
1. Open a drawing with 3D objects and display in a 3D view.
2. Choose View, Render, Light, New Distant Light.

   or

3. Type DISTANTLIGHT at the command prompt.

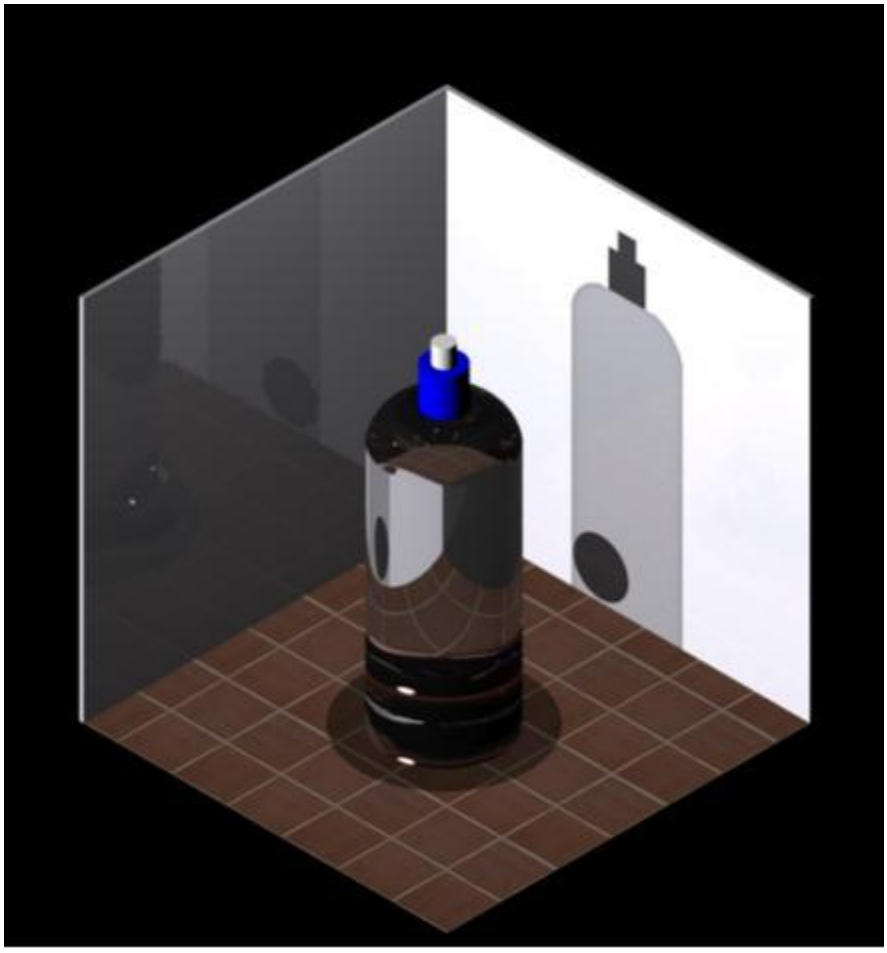
   Command: **DISTANTLIGHT**
   Specify light direction FROM <0,0,0> or [Vector]: **.XY**
   of **MID P1**
   of (need Z): **5**
   Specify light direction TO <1,1,1>: **.XY**
   of **MID P2**
   of (need Z): **5**
   Enter an option to change
   [Name/Intensity/Status/shadoW/Color/eXit] <eXit>:
   enter

Figure 3.4



View rendered using a point and distant light

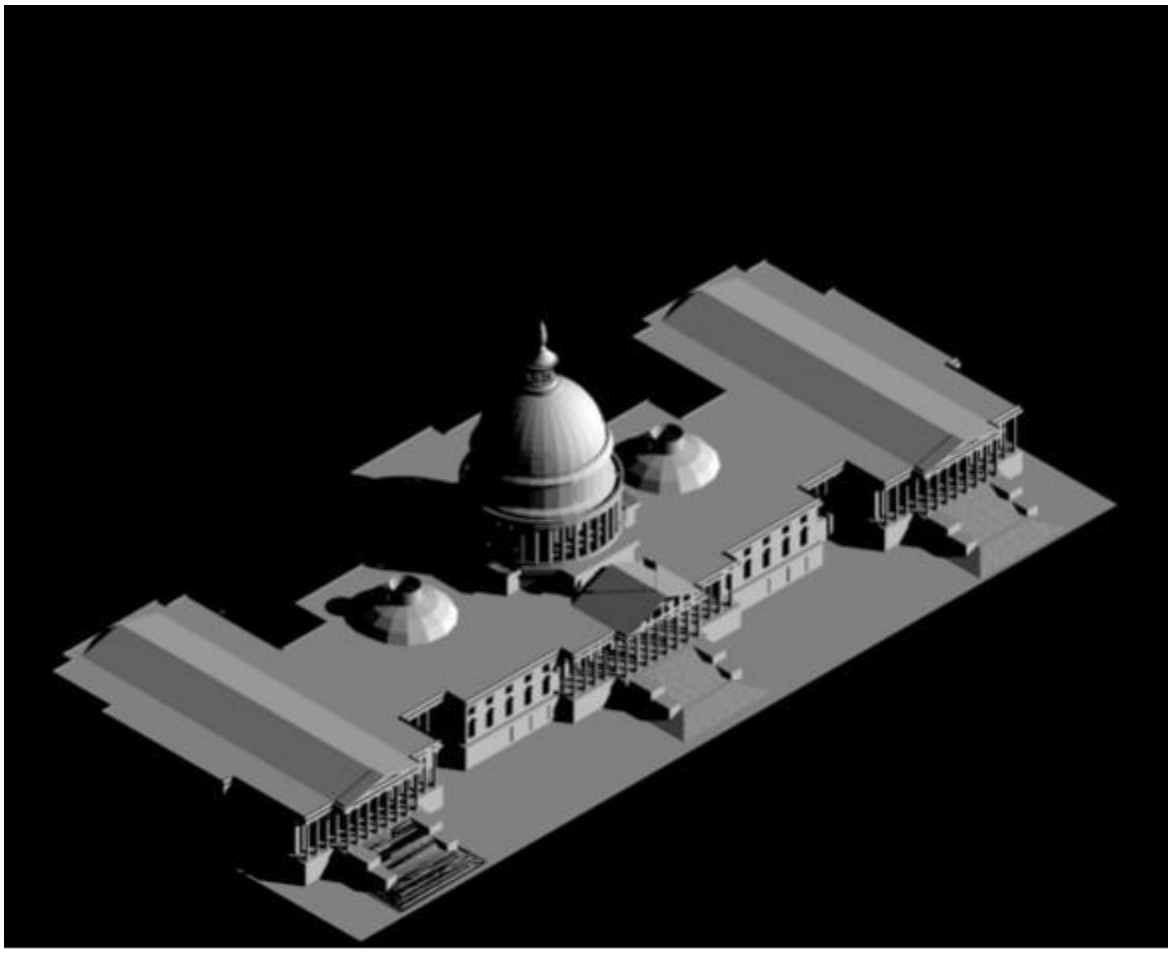
Figure 3.5



3.1 Sun Properties

1.	Open	a drawing with a geographic location identified.
2.	Choose	View, Render, Light, Sun Properties.
		or
3.	Type	SUNPROPERTIES at the command prompt.
		Command: **SUNPROPERTIES**
4.	Click	the Status dropdown and click **ON**.
5.	Change	the date to **November 2 2010**
		(or the next election date).
6.	Change	other properties as desired and render the model.

US Capitol Building rendered
Figure 3.1.1



3.2 Render Environment

You can use environmental features to set up atmospheric effects or background images.

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose View, Render, Advanced Render Environment...
   or
3. Type RENDERENVIRONMENT at the command prompt.
   Command: RENDERENVIRONMENT
4. Select Enable Fog On and set the following near and far percents.

Fog / Depth Cue	
Enable Fog	On
Color	128,128,128
Fog Background	Off
Near Distance	50.0000
Far Distance	100.0000
Near Fog Perc...	50.0000
Far Fog Perce...	100.0000

Before fog After fog

Figure 3.2.2

Solid Background

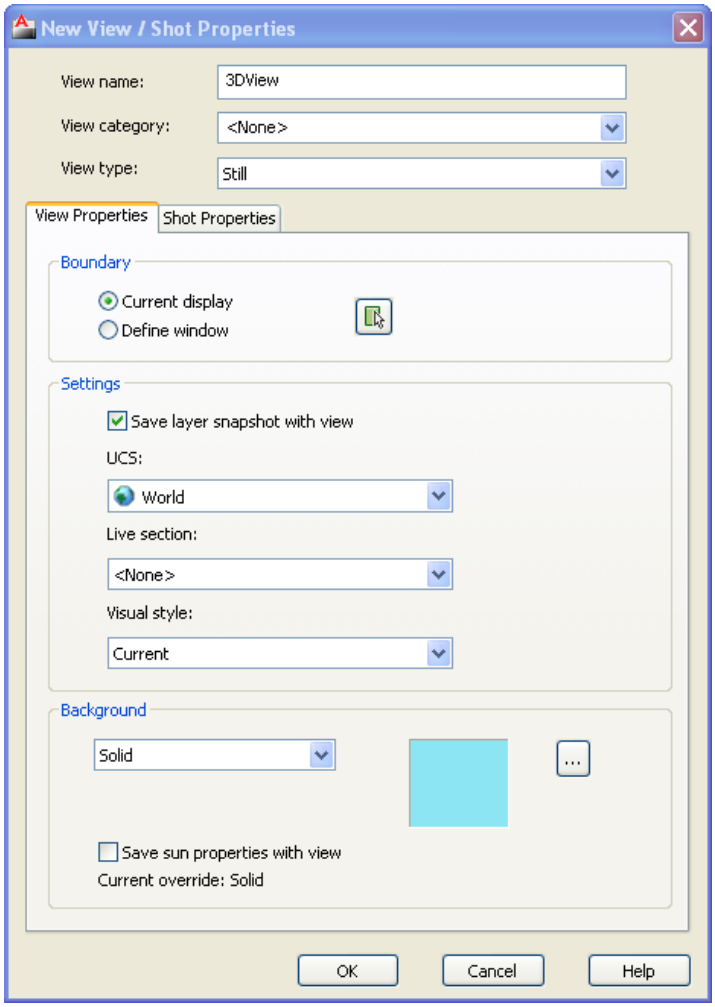
A background is a backdrop that displays behind your model. Backgrounds can be a single color, a multi-color gradient, or a bitmap image.

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose View, Named Views.

   or
3. Type VIEW at the command prompt.

   Command: **VIEW**
4. Choose **New…**
5. Type a name for your new view.
6. Click the drop down box under background and choose Solid.
7. Choose a color for your solid background.

Figure 3.2.3



8. Set the new view to be the current view.
9. Render the viewport.

Figure 3.2.4

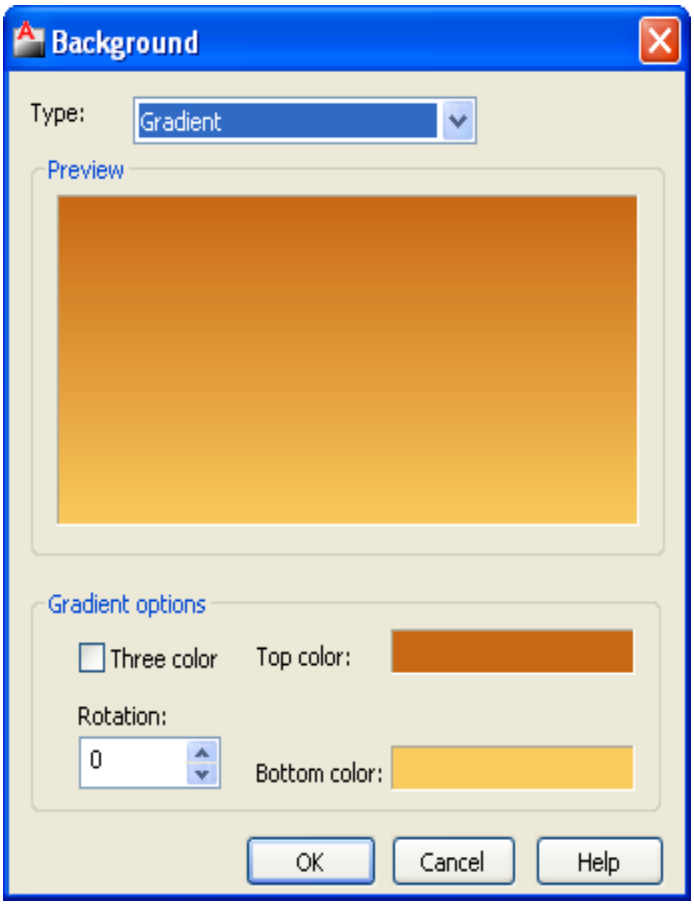
Gradient Environment

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose View, Named Views.

   or
3. Type VIEW at the command prompt.

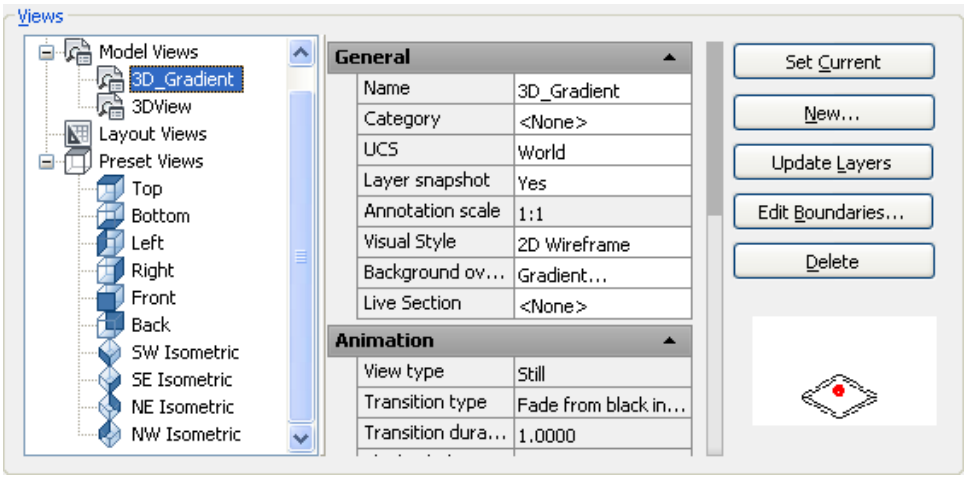
   Command: **VIEW**
4. Choose **New…**
5. Type a name for your new view.
6. Click the check box beside background.
7. Choose the dropdown option for background type and choose gradient.
8. Choose Colors for your gradient background.

Figure 3.2.5



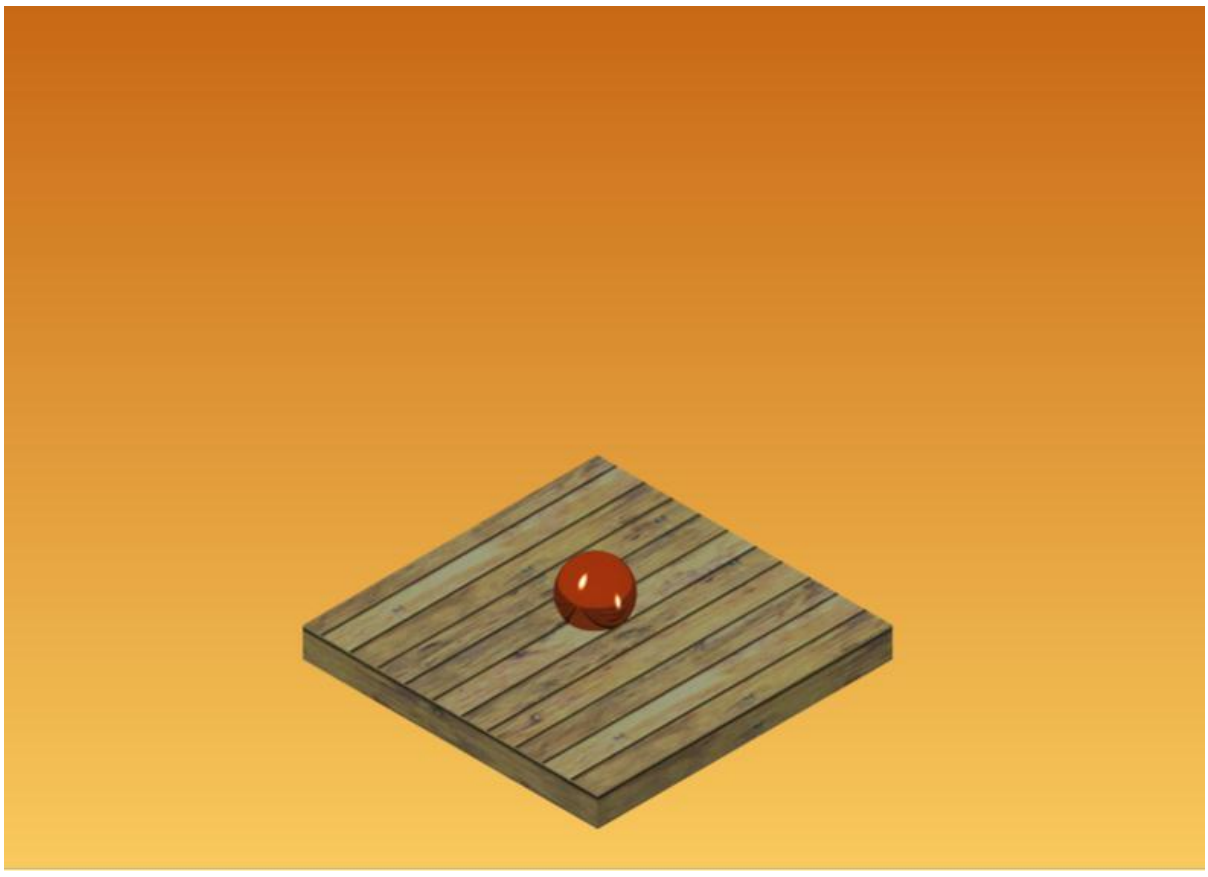
9. Set the new view to be current.

Figure 3.2.6



10. Render the viewport.

Figure 3.2.7



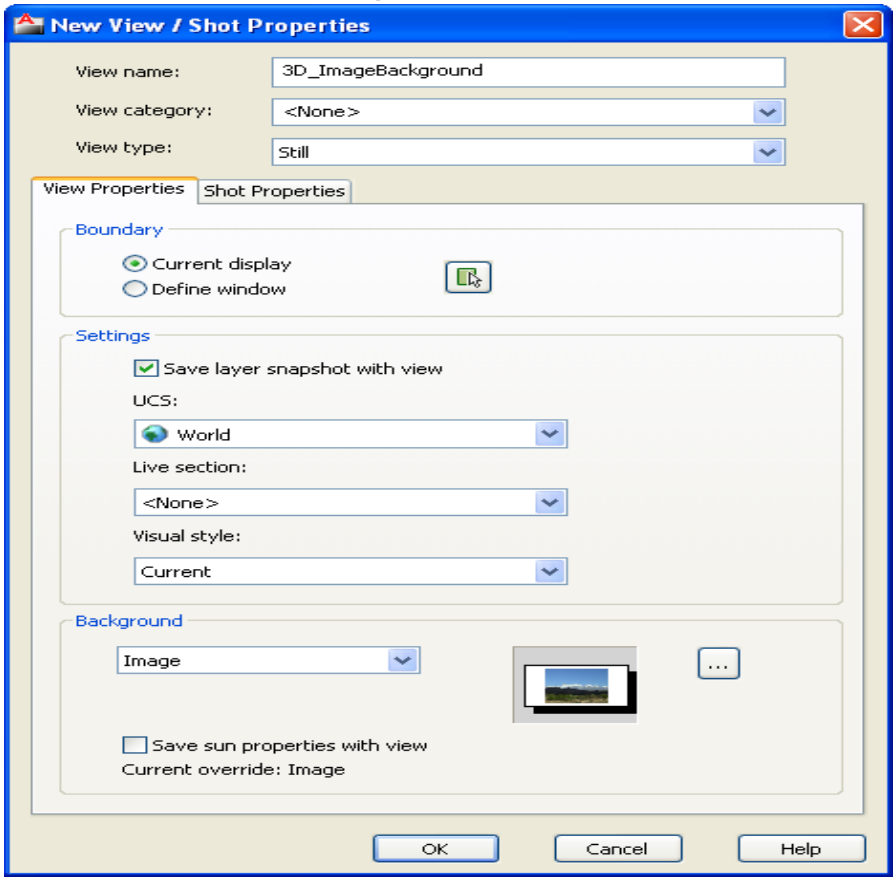
3.3 Image Background

1. Open a drawing with 3D objects and display in a 3D view.
2. Choose View, Named Views.

   or
3. Type VIEW at the command prompt.

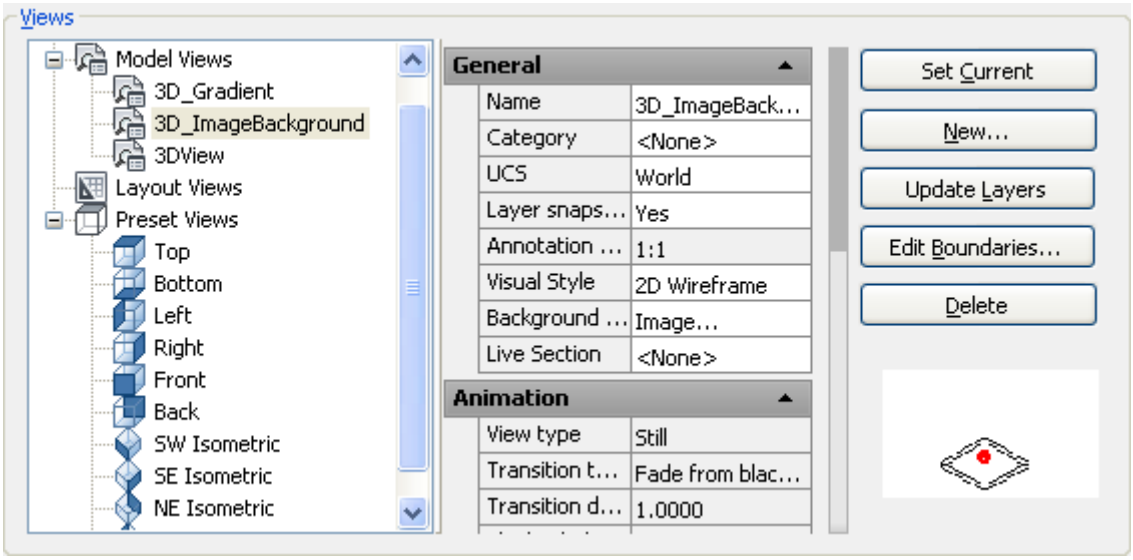
   Command: **VIEW**
4. Choose **New…**
5. Type a name for your new view.
6. Click the check box beside background.
7. Choose the dropdown option for background type and choose image.
8. Click the Browse button and choose an image for your background.

Figure 3.3.1



9. Set the new view to be the current view.

Figure 3.3.2



10. Render the viewport.

Figure 3.3.3

Defence of labour

Requirements to condition of the work on computer

Microclimate premisesses. The Parameters microclimate and their feature.

A Condition of the air ambience of the premises. The Qualitative composition of the air. The Contents of dust and other polluting material in worker to zone. An Electromagnetic fields and x-ray radiation. The Natural ventilation; The Artificial ventilation; The Air conditioning.

Illumination

The Natural illumination. The Influence to solar radiation on premiseses.

The Color decorating of the interior of the premises as method of protection solar radiation:

-An Artificial illumination. The System of the artificial illumination. The Choice lamp;

-A Standertization of the artificial illumination.

Production noise

-A Standartization of the production noise in computer premises;

-Barriering design and internal sewer of the premises.

Electrical safety

-A Danger of the defeat by electric current;

-An Earth of the computer equipment, requirements;

-A Facility collective and the individual safety when work with equipment;

-A Rendering first help before vrachebnoy at electrical trauma.

Fireman safety

A Reasons fire.

- A Primary facilities fire;

-A Way to evacuations in the event of arising the fire;

-A Fireman water-supply.

On each point, previously than proceed with development action, is conducted analysis existing bad and dangerous production factor, under development actions

must be concrete and provide the decision sanitary-hygenic, technical and organizing problems, which prevent the negative factors and create the comfortable of the condition of the work.

The Section is terminated by formation to instructions safety when functioning(working) on computer.

Calculation Intensity Noise

The Noise and vibration present itself professional bad if their intensity exceeds the certain level. For fight with noise are used general and the individual means of protection. Correct planning has Big importance and accomodation enterprise and their separate shop to other noisy enterprise. The Noise is in production premiseses possible vastly to reduce facing a sewer material. When designing and installation different mechanism equipments necessary to provide possibility of the reduction to vibrations and noise to account of the installing the equipment on special shock absorber, reduction revolving details, change the striking interaction unaccented In given problem necessary:

1. Define the total intensity of the noise from three sources on given worker a place;
2. Define the intensity of the noise if wall and ceiling cover material;
3. Formulate the findings.

The Methods of the calculation:

1. The Calculation of the change level to intensities of the noise with change the distance R from the source of the noise is produced on formula:

$$L_R \approx L_1 - 20 \lg R - 8, \partial Б, (4.1)$$

where LR and L1 - a level to intensities of the noise of the source on distance R metre and one metre accordingly.

If between source of the noise and worker revenge there is wall-barrier, level to intensities of the noise falls on N db

$$N = 14,5 \lg G = 15, \partial Б, (4.2)$$

where G - a mass one m2 wall-barriers

Level to intensities of the noise on worker place with account of the influence wall-barriers is defined as

$$L'_R = L_R - N, \partial Б, (4.3)$$

Total intensity of the noise two sources with level LA and LV, is defined as

$$L_\Sigma = L_A + \Delta L, \partial Б, (4.4)$$

where LA - most from two summiruemых level, db;

ΔL - an adjustment, hanging from difference level, is defined on table 4.1.

In table 4.2. consider the level to intensities of the noise, with provision for influences wall-barriers.

At determination of the total power several sources summation follows to conduct consecutively, as from the most intensive.

Follows to take into account that L_Σ it is defined for three sources of the noise and each source is considered with corresponding to wall-barrier.

The Parameters (the type of the material, thickness and mass 1 m2) wall-barriers to take from table 4.3.

Table 4.1

Source level Difference La-Lv, ,db	0	1	2	3	4	5	6	7	8	9	10	15	20
Adjustment, ΔL ,db	3,0	2,5	2,0	1,8	1,5	1,2	1	0,8	0,6	0,5	0,4	0,2	0

Table 4.2

Raw data		Last numeral of the number of the student ticket									
		1	2	3	4	5	6	7	8	9	0
Source of the noise 1	R,м	2,5	2,0	3	3,5	4	4,5	5	5,5	6	6,5
	L_1,dB	80	90	95	100	100	110	100	90	90	100
	№ wall-barriers	1	2	3	4	5	6	7	8	9	10
Source of the noise 2	R,м	7	7,5	8	8,5	9	9,5	8,5	8,5	8	7,5
	L_1,dB	110	100	90	80	80	80	90	90	100	110
	№ wall-barriers	11	12	13	14	15	15	14	13	12	11
Source of the noise 3	R, m	7	6,5	6	5,5	5	4,5	4	3,5	3	2.5
	L_1,dB	95	90	95	100	105	110	105	100	95	90
	№ wall-barriers	10	9	8	7	6	5	4	3	2	1

Table 4.3

№	Material and designs	Thickness to designs, m	Mass 1/m2 barriers, kgs
1	Wall brick	0,12	250
2	Wall brick	0,25	470
3	Wall brick	0,38	690
4	Wall brick	0,52	934
5	Paperboard in several layers	0,02	12

6	Paperboard in several layers	0,04	24
7	Voylok	0,025	8
8	Voylok	0,05	16
9	Reinforced concrete	0,1	240
10	Reinforced concrete	0,2	480
11	Wall from shlakobetona	0,14	150
12	Stena iz shlakobetona	0,28	300
13	Partiton from boards by thickness 0,02 m, with two sides	0,06	70
14	Partiton from boards by thickness 0,01 m, with two sides	0.18	95
15	Gypsum partiton	0,11	117

At determination of the intensities of the noise after covering sewer and ceiling material for simplicity is allowed neglect the action direct sound fine, consider that wall- barriers are found inwardly premiseses and on influences do not render.

Total sewer and ceiling is defined as.

$$M = S_{nm} \cdot \alpha = S_c \cdot \beta = S_{nm.} \cdot \gamma \text{, } ед.погл \text{ .,} (4.5)$$

where Snm, Ss - accordingly area of the ceiling and sewer of the premises.

Table 4.4

	Penultimate numeral of the number of the student ticket									
	1	2	3	4	5	6	7	8	9	0
S_{nm}, m^2	100	150	200	250	300	350	400	450	500	550
S_c ,m^2	160	180	200	220	250	260	280	300	320	340
α_1,10^{-3}	20	25	30	35	40	45	40	35	30	25
α_2 10^{-2}	95	90	85	80	75	70	75	80	85	90
β_1,10^{-3}	34	33	32	31	30	31	32	33	34	35
β_2,10^{-2}	75	80	85	90	95	90	85	80	75	70

α, β, γ - accordingly factors of the absorption material, which cover ceiling, wall and floor.

Is it Here taken into account that area flap and ceiling of the premises are. Reduction to intensities of the noise will form

$$K = 10 \lg \frac{M_2}{M_1}, \partial Б \ , (4.6)$$

where M1, M2,- accordingly without covering sewer and ceiling special material (M1) and after covering such material (M2), ed. has bent.

Importance M1, is calculated with use factor a1 and M2 - with use a2, and the Floor usually material is not covered and at calculation to take that floor parquet.

Level to intensities of the noise on worker place with account of the covering sewer and ceiling material will form

$$L'_{\Sigma} = L_{\Sigma} - K \ , \partial Б \ , (4.7)$$

Conclusion

I am Davlatbek Abdulkhamidov and I am a fours year student of Tashkent University of Information Technologies. I made graduation qualification work on this theme “Three dimensional modeling in AutoCAD”

It consists of three main parts, they are: analytical part, designing part and creation and implementing part. Also one additional part that is Introduction part. The analytical part includes main information of the diploma work. While the creating diploma work I learned completely working with 3D models and how to create them , copy, move and edit.

It is common that people visualize mentally in 3D. This is demonstrated by thinking of a simple object like an ashtray. Take a moment and think of an ashtray right now. Nobody thinks of it as three projection views. It is visualized as a single pictorial object - an ashtray. Autocad 3D modeling works the same way, with the designer creating a 3D model on screen as if it was in his mind. Having manipulated and added entities to complete the Autocad 3D model, he can orient the model to look at it in plan or side or front elevations. These elevations become the 2D projection drawings - exactly the same drawings that would be created with traditional 2D methods. Parts can be viewed individually or as an assembly thus allowing both detail and assembly drawings to evolve from the single assembled model without having to separate it in to individual parts.

Nowadays new 3D technologies are developing very highly in the world, especially USA and Eastern Europe. So I hope that It comes quickly to my country also. That’s way I started to work with 3D model. Most people learning Autocad 3D believe it is merely about learning 3D geometry, and they grasp the 3D geometry issues quickly. However, if the '3D Design Process' is not covered while learning Autocad 3D, users remain unaware of its significance with the result that Autocad 3D modeling is made to fit within the same old '2D Design

Process' - An awkward and inefficient alliance indeed that severely limits the benefits of learning 3D geometry and leads directly to the uncertainties about the value of doing Autocad 3D modeling.

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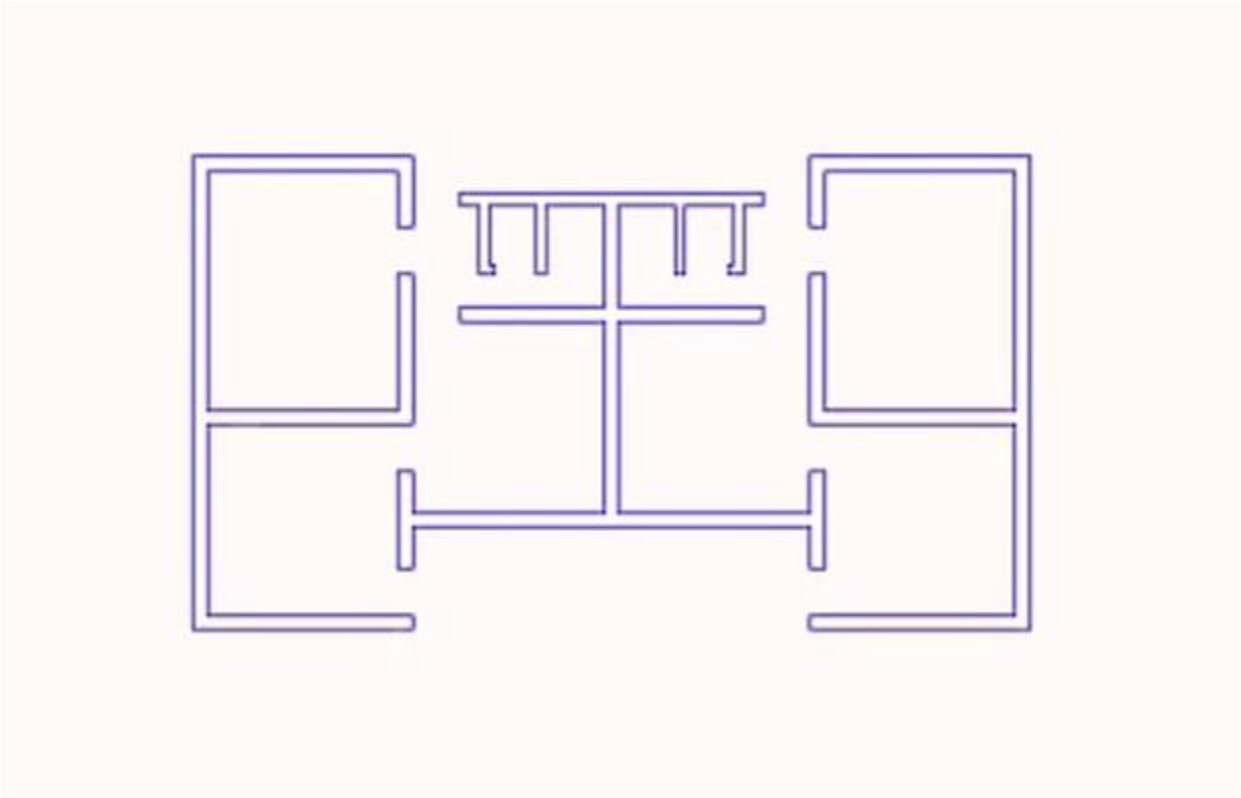

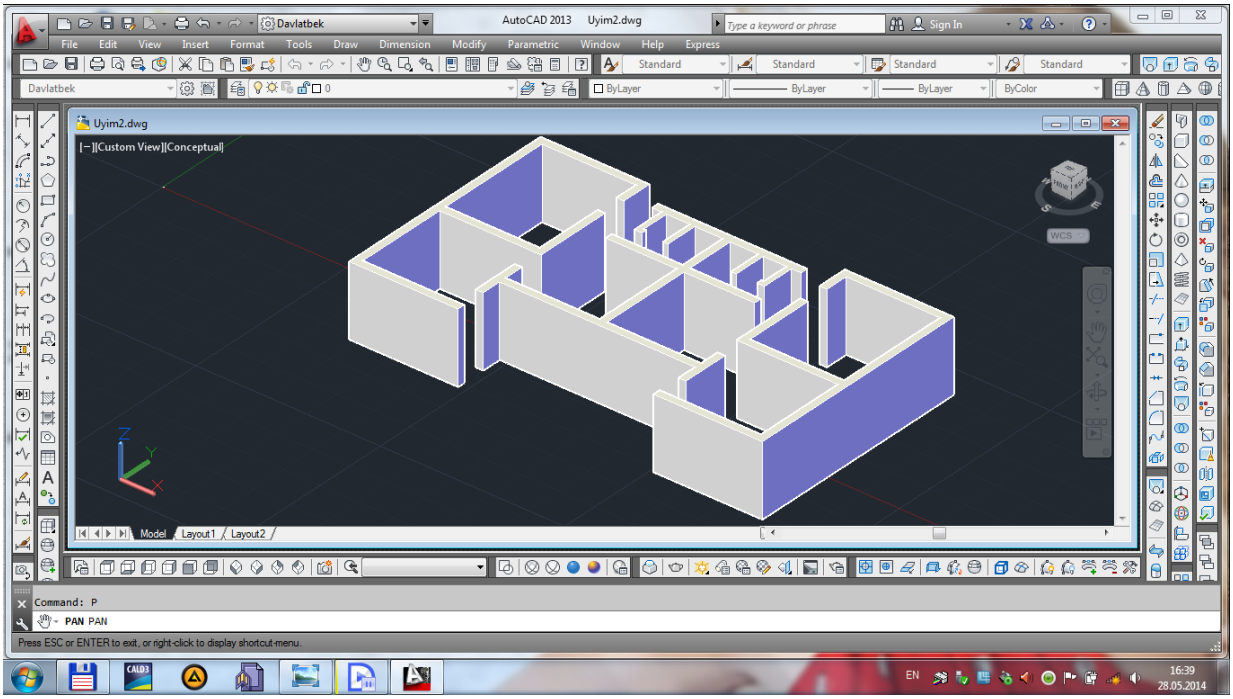

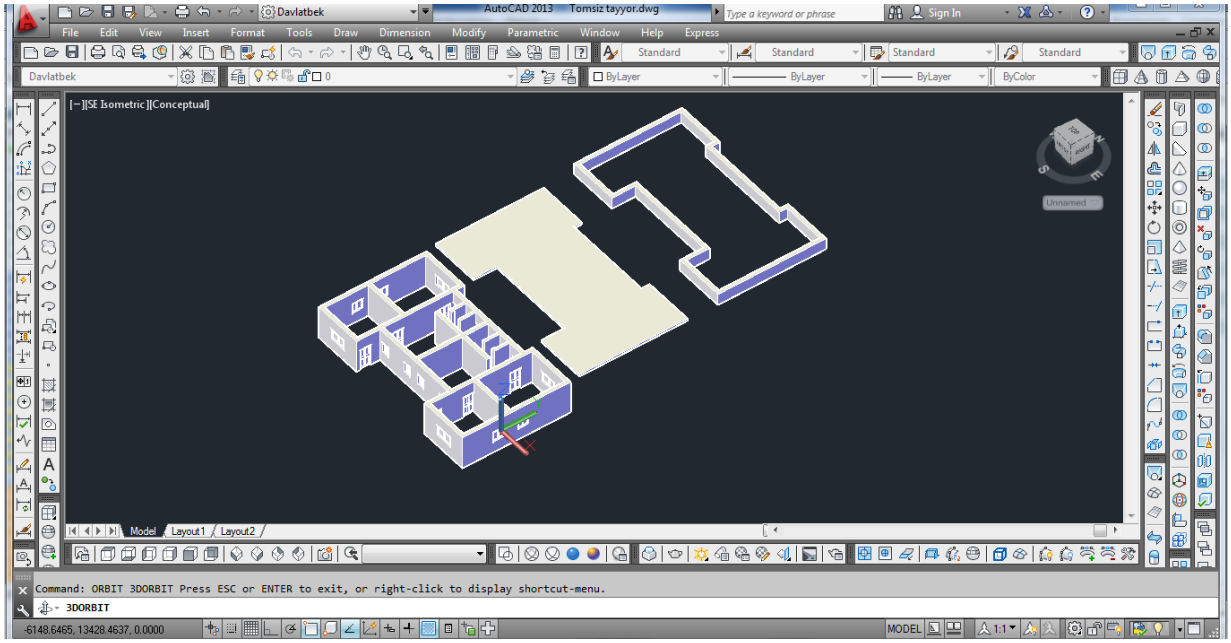
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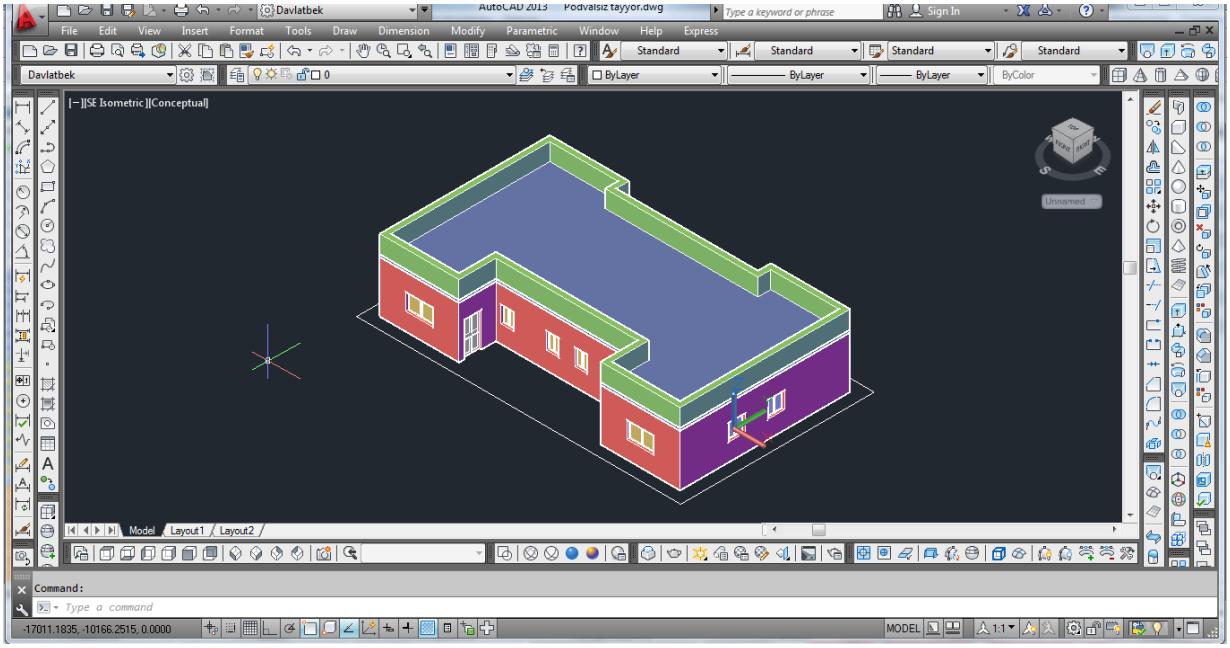
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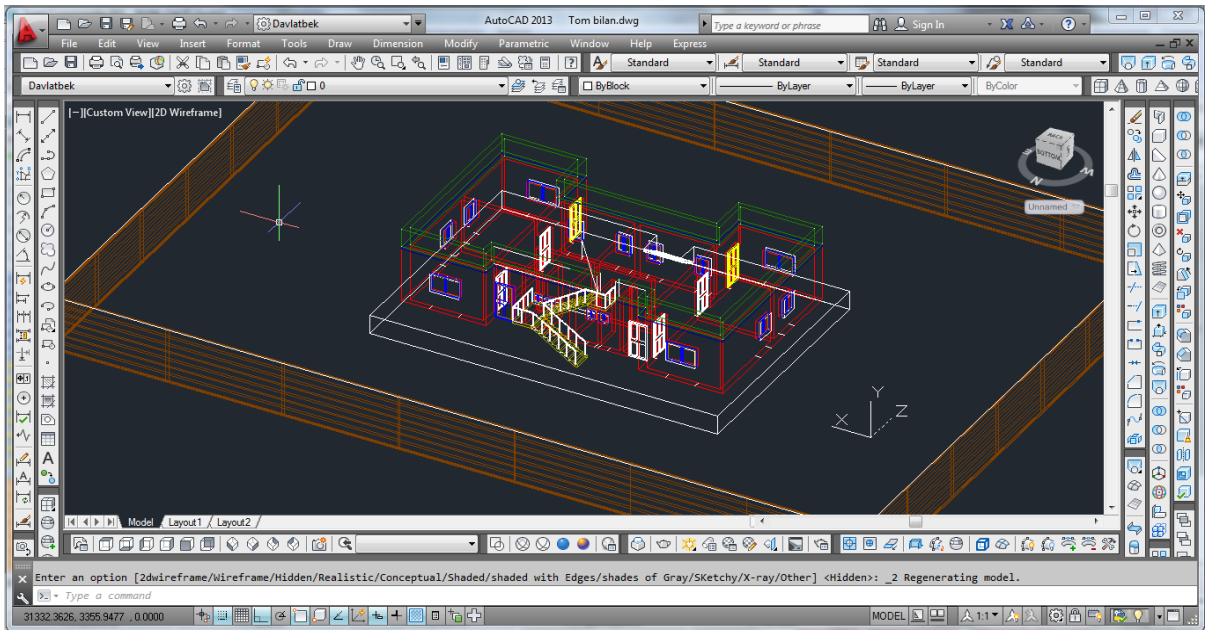
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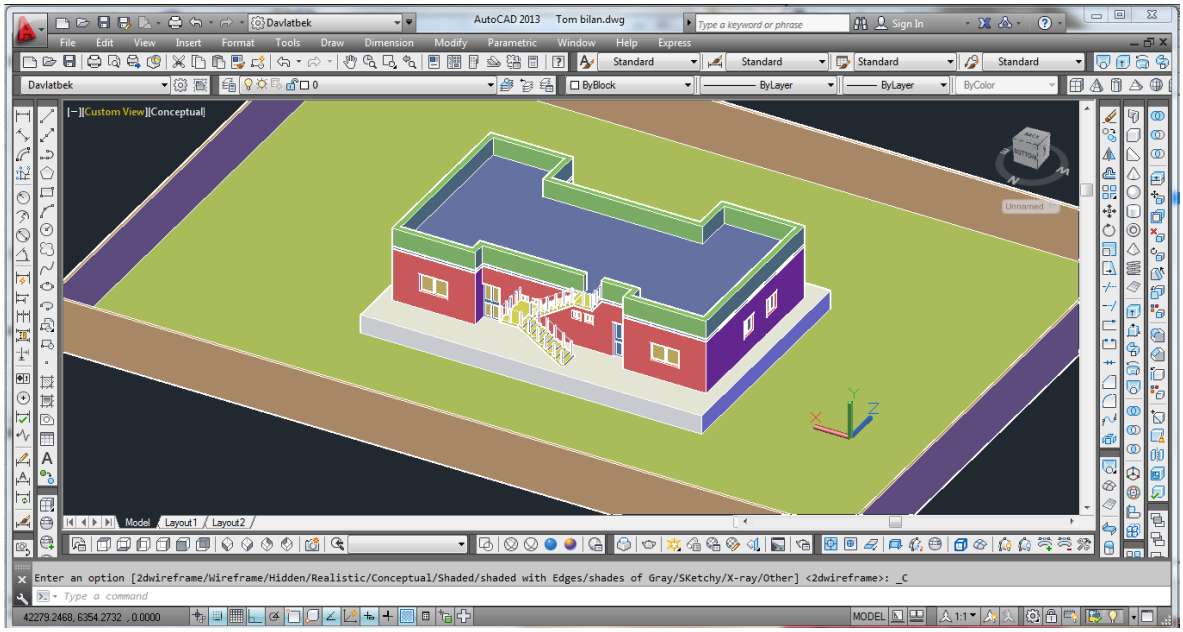
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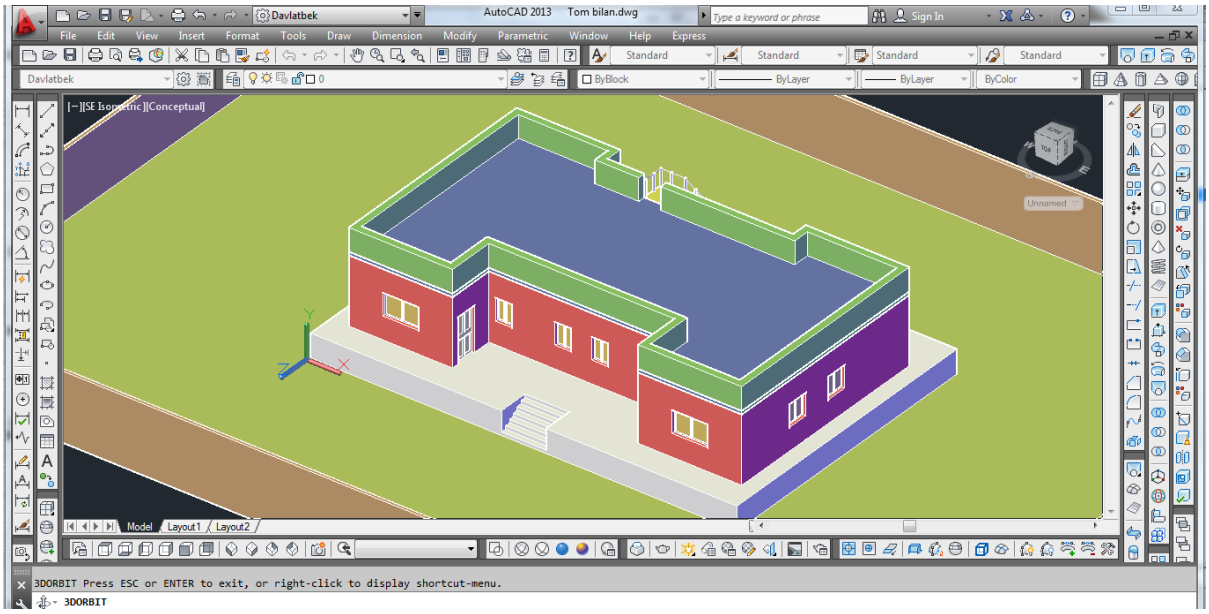
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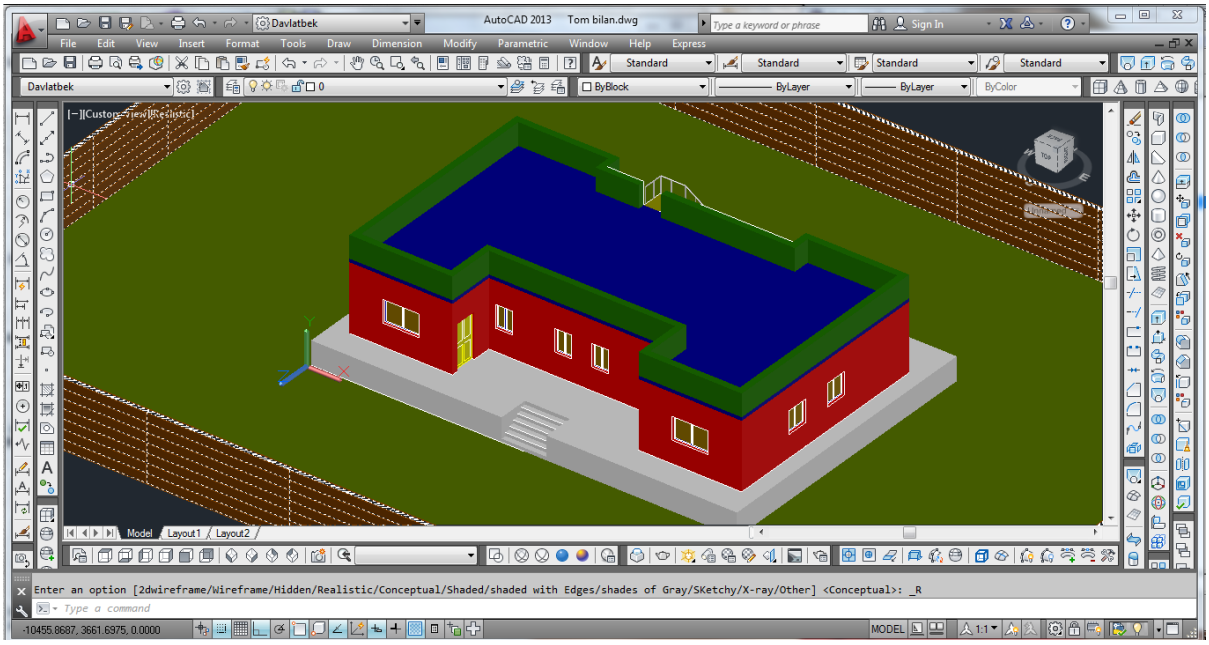
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