



New York City College of Technology

Autocad
Zoning Studies
3D Modeling and using Flatshot

Professor Paul C. King, RA, AIA, ARA
Pking@CityTech.Cuny.Edu
Prof.Paul.King@Gmail.com

<http://professorpaulking.wordpress.com/>

<http://students.autodesk.com/>

Lesson 02

Zoning Sheets

Assignment

- Sample 1
- Sample 2
- Sample 3
- Sample 4

Autocad

3D Modeling

- Extrude 2D to 3D
- Standard 3D Views
- Vpoint 1,2,3
- Solids & Boolean Operations

FLATSHOT

- 3D to 2D dwgs
- Insert & Rename
- Scale Blocks

2D ISOMETRIC

- Grid and Snap Settings

Wrap up

BTECH 3

Assignment



NEW YORK CITY
COLLEGE OF TECHNOLOGY
THE CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF ARCHITECTURAL TECHNOLOGY

ARCH 2330 BUILDING TECHNOLOGY III

Assignment Name: Site Plan & Zoning Diagram

Computer Program(s): AutoCAD, Revit, Web Browser and Blackboard

Student Learning Objectives:

Upon successful completion of this assignment, the student will:

- Develop an understanding of NYC zoning codes and be able to interpret for a specific location.
- Construct scaled site plan showing block and lot site and format on Titleblock.
- Construct scaled Isometric drawing showing zoning

Student Skills Learning Objectives: (AutoCAD)

Upon successful completion of this assignment, the student will:

- Be able to draw an isometric line drawing using isometric grids
- Be able to draw an isometric 3d model
- Be able to add annotation and dimensions
- Understand the use of Paperspace/Modelspace and External References
- Under the use of layers, lineweights and linetypes
- Understand the use of variables including LTscale & PSLtScale

Assessment:

To evaluate the student's achievement of the learning objectives, the professor will do the following:

- Evaluate the student's site plan and zoning diagrams drawings.
- Evaluate the student's use of annotation including drawing titles, notes and dimensions.
- Evaluate the student's understanding and correct interpretation of relevant zoning regulations.
- Drawing will be evaluated on its own and as part of the AutoCAD drawing set submission.

Project Description:

Students will develop a zoning study for the project site incorporating factors including but not limited to OSR, FAR, Setbacks, Sky Exposure Plane, Street wall requirements, available bonuses, use/type, etc. Students will be required to read and identify NYC Zoning code and determine what is relevant to the project and will produce an accurate zoning sheet for their drawing set.

Process:

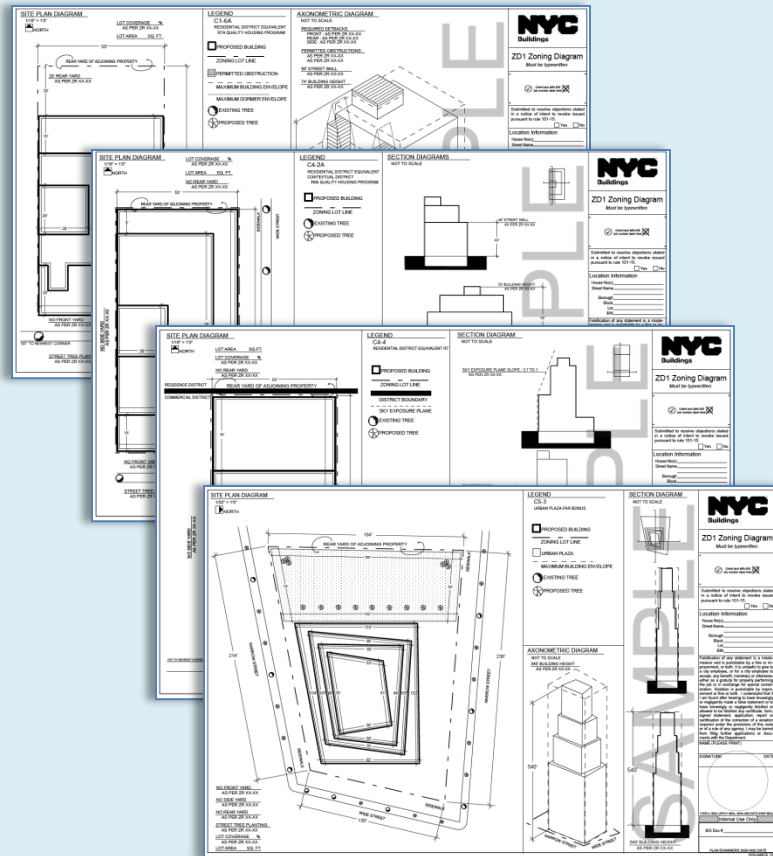
- Locate Site using Oasisnyc.net
- Locate all relevant zoning related resources at NYC.gov. Site all sources (ie. ZR 33-12.3)
- Complete all necessary calculations.
- Produce Zoning sheet including site plan (1:20 or 1:30), Isometric Zoning Diagrams, sections and notes
- Keep all relevant sections of the zoning code in your teams' project binder.
- Post completed sheet as a pdf and as a drawing file by the assigned deadline & add description.

References:

- NYC Zoning <http://www.nyc.gov/html/dcp/html/subcats/zoning.shtml>
- Zoning Diagram Guide http://www.nyc.gov/html/dob/downloads/pdf/zd1_guide.pdf
- Oasis NYC Maps <http://oasisnyc.net/map.aspx>

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Wrap up

BTECH 3

Sample 1

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<p>SITE PLAN DIAGRAM 1/16" = 1'0"</p> <p>LOT COVERAGE % AS PER ZR XX-XX</p> <p>LOT AREA SQ. FT.</p> <p>REAR YARD OF ADJOINING PROPERTY</p> <p>20' REAR YARD AS PER ZR XX-XX</p> <p>NO FRONT YARD AS PER ZR XX-XX</p> <p>NO SIDE YARD AS PER ZR XX-XX</p> <p>107' TO NEAREST CORNER</p> <p>78' TO NEAREST CORNER</p> <p>STREET TREE PLANTING AS PER ZR XX-XX</p> <p>SIDEWALK</p> <p>NARROW STREET</p>	<p>LEGEND</p> <p>C1-6A RESIDENTIAL DISTRICT EQUIVALENT R7A QUALITY HOUSING PROGRAM</p> <p>PROPOSED BUILDING</p> <p>ZONING LOT LINE</p> <p>PERMITTED OBSTRUCTION</p> <p>MAXIMUM BUILDING ENVELOPE</p> <p>MAXIMUM DORMER ENVELOPE</p> <p>EXISTING TREE</p> <p>PROPOSED TREE</p>	<p>AXONOMETRIC DIAGRAM NOT TO SCALE</p> <p>REQUIRED SETBACKS FRONT : AS PER ZR XX-XX REAR : AS PER ZR XX-XX SIDE : AS PER ZR XX-XX</p> <p>PERMITTED OBSTRUCTIONS AS PER ZR XX-XX AS PER ZR XX-XX</p> <p>56' STREET WALL AS PER ZR XX-XX</p> <p>74' BUILDING HEIGHT AS PER ZR XX-XX</p> <p>NARROW STREET</p>	<p>NYC Buildings</p> <p>ZD1 Zoning Diagram <i>Must be typewritten.</i></p> <p>Submitted to resolve objections stated in a notice of intent to revoke issued pursuant to rule 101-15.</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Location Information</p> <p>House No(s) _____ Street Name _____ Borough _____ Block _____ Lot _____ BIN _____</p> <p>Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both. It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both. I understand that if I am found after hearing to have knowingly or negligently made a false statement or to have knowingly or negligently falsified or allowed to be falsified any certificate, form, signed statement, application, report or certification of the correction of a violation required under the provisions of this code or of a rule of any agency, I may be barred from filing further applications or documents with the Department.</p> <p>NAME (PLEASE PRINT) _____</p> <p>SIGNATURE _____ DATE _____</p> <p>P.E.R.A. SEAL (APPLY SEAL, SIGN AND DATE OVER SEAL)</p> <p>Internal Use Only</p> <p>BIS Doc # _____</p> <p>PLAN EXAMINERS SIGN AND DATE _____ ISSUANCE 7/00</p>
<p>SECTION DIAGRAM NOT TO SCALE</p> <p>56' STREET WALL AS PER ZR XX-XX</p> <p>74' BUILDING HEIGHT AS PER ZR XX-XX</p>	<p>PLAN EXAMINERS SIGN AND DATE _____ ISSUANCE 7/00</p>		

Sample 2

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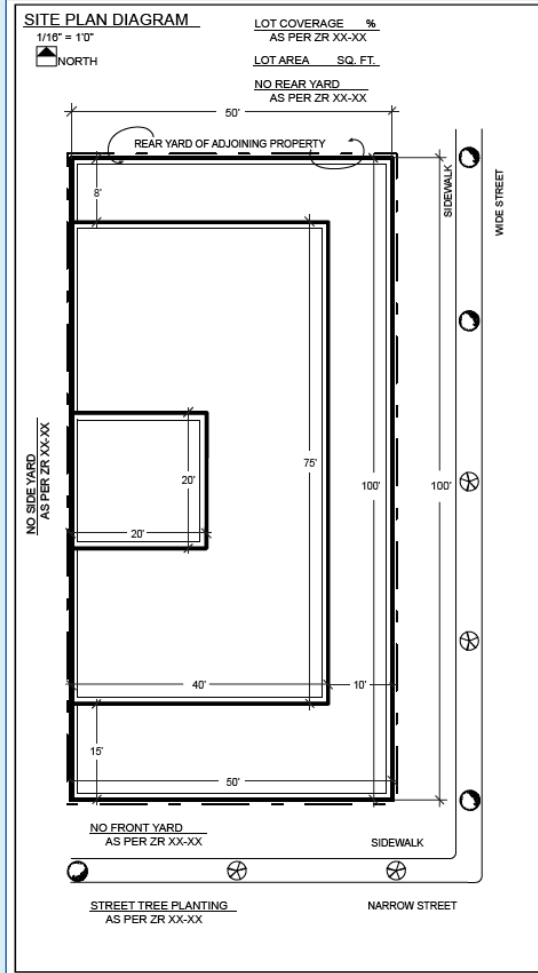
FLATSHOT

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2D ISOMETRIC

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Wrap up



NYC Buildings

ZD1 Zoning Diagram
Must be typewritten.

Orient and affix BIS
 job number label here

Submitted to resolve objections stated in a notice of intent to revoke issued pursuant to rule 101-15.
 Yes No

Location Information
House No(s) _____
Street Name _____
Borough _____
Block _____
Lot _____
BIN _____

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ISSUANCE 7/00

Sample 3

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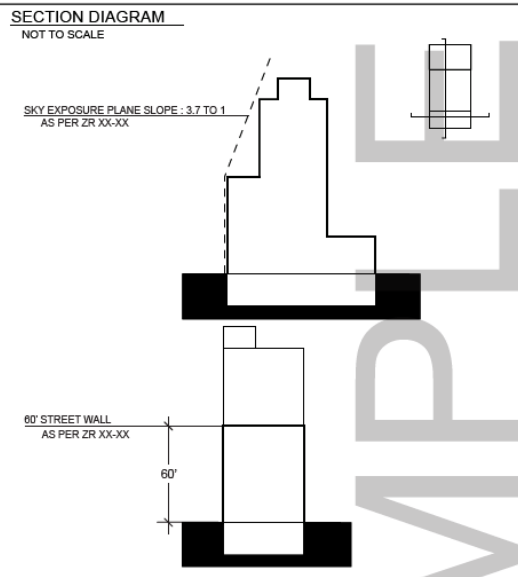
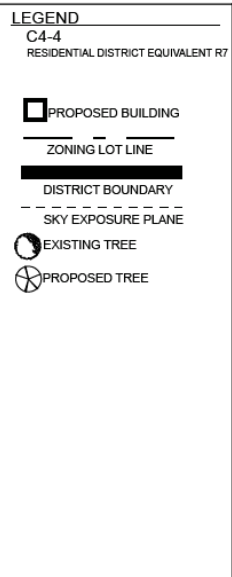
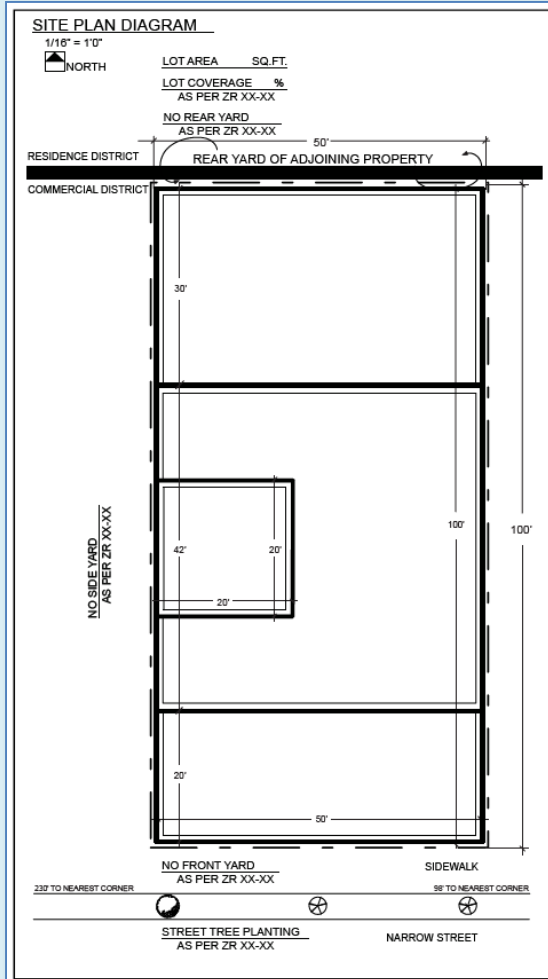
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PLAN EXAMINERS SIGN AND DATE _____
ISSUANCE 7/09

Sample 4

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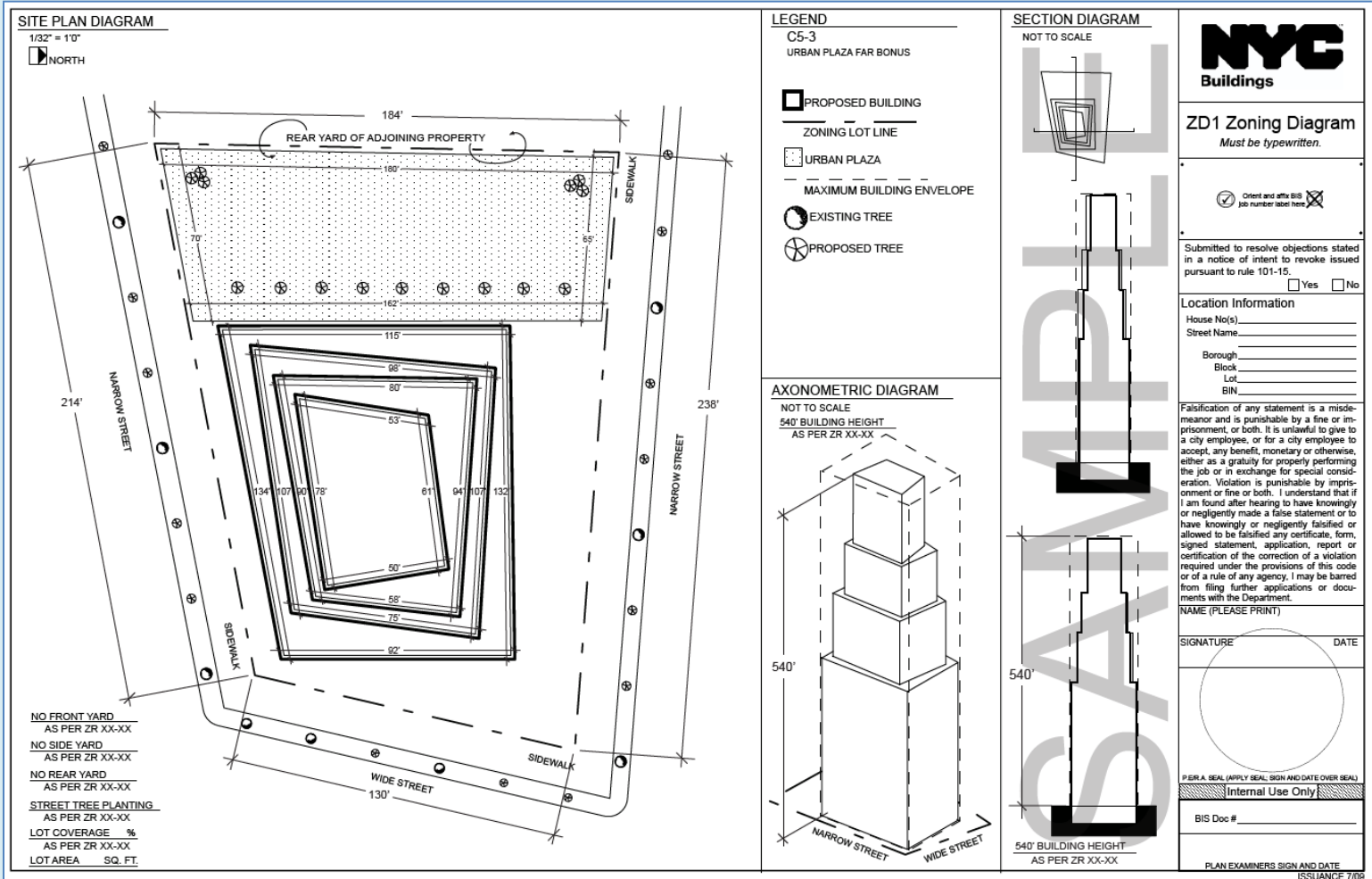
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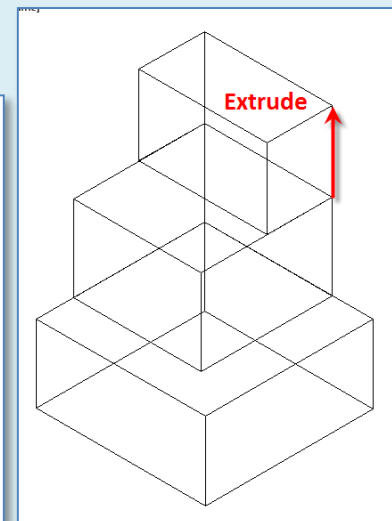
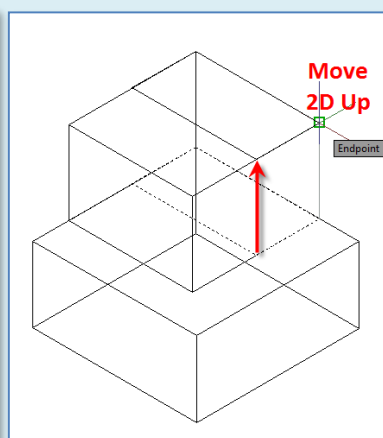
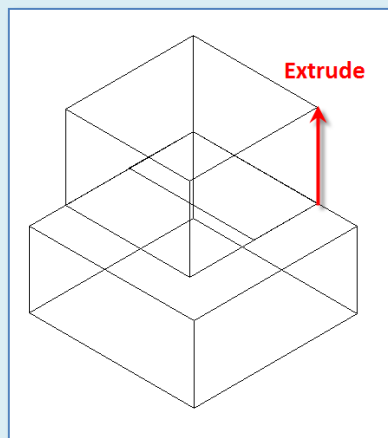
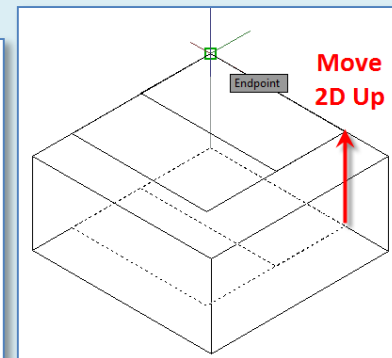
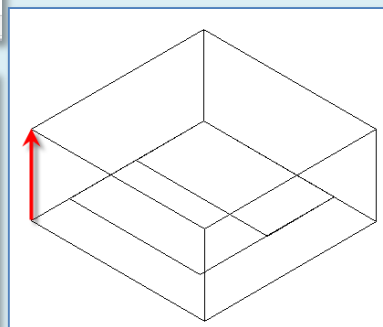
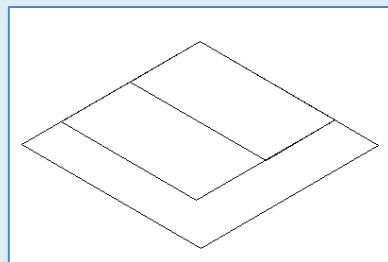
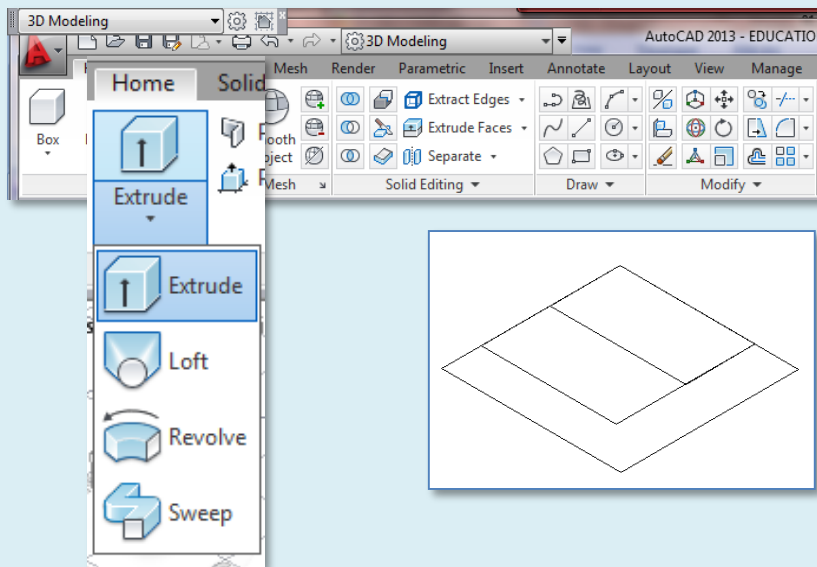
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2D ISOMETRIC

- Grid and Snap Settings

Wrap up

Extrude 2D Geometry to 3D Solids



- Draw 2D
- Extrude
- Move 2D Up
- Repeat Extrude
- Repeat Move

View Menu & Viewcube : Standard Isometric Views

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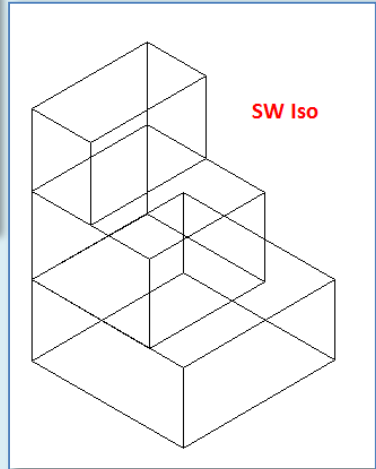
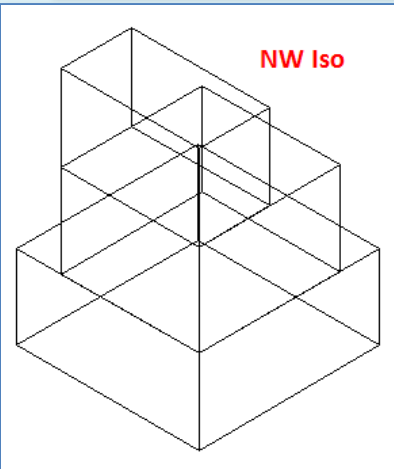
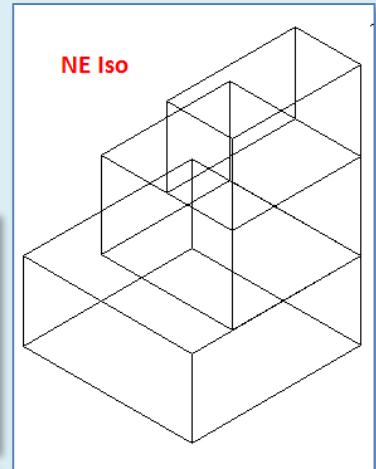
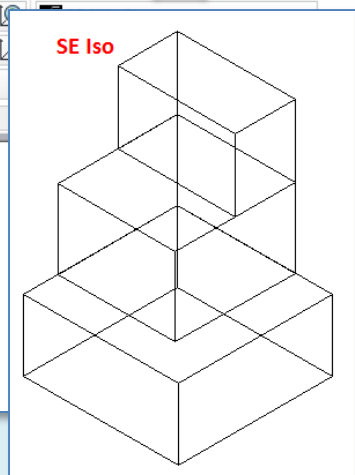
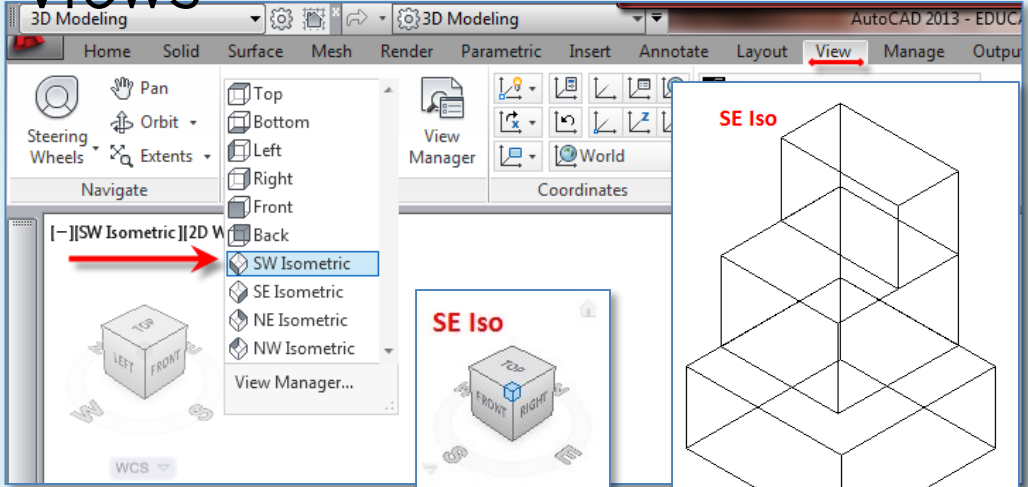
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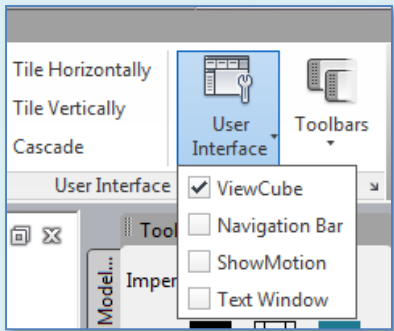
2D ISOMETRIC

- Grid and Snap Settings

Wrap up



• ViewCube



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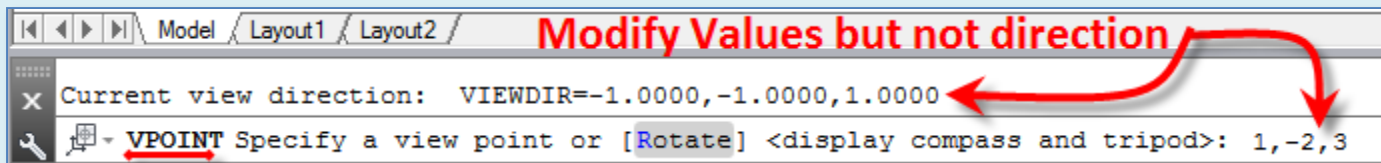
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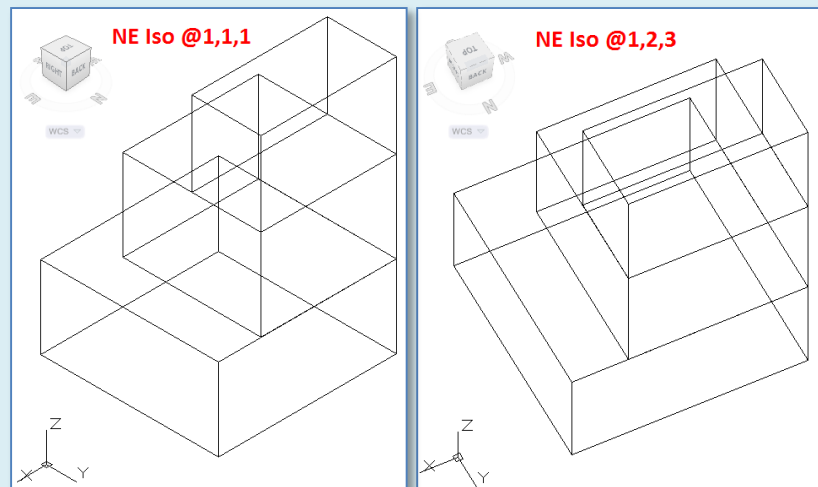
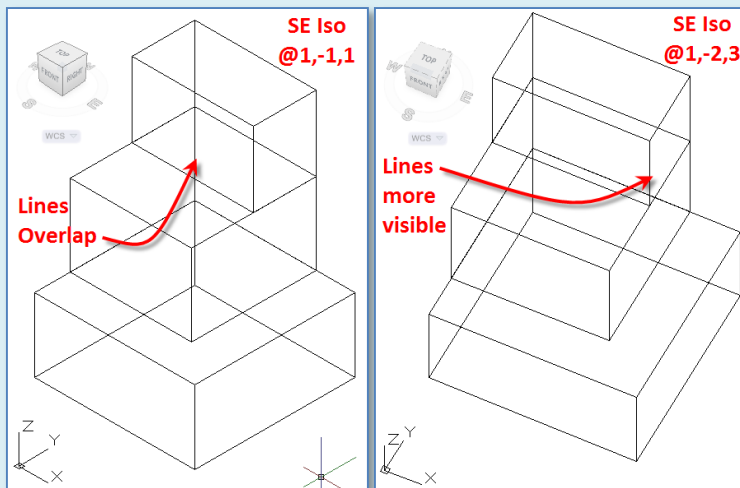
- Grid and Snap Settings

Wrap up

Vpoint Command 1,2,3 X,Y,Z



- SE Isometric
- At the Command Prompt
- Vpoint <1,-1,1> 1,-2,3



- NE Isometric
- At the Command Prompt
- Vpoint <1,1,1> 1,2,3

3D Solids & Boolean Operations : Overview

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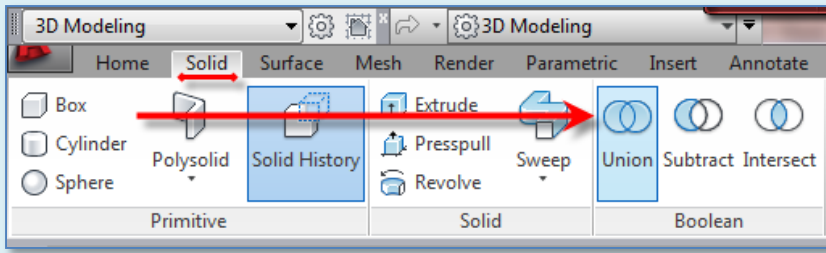
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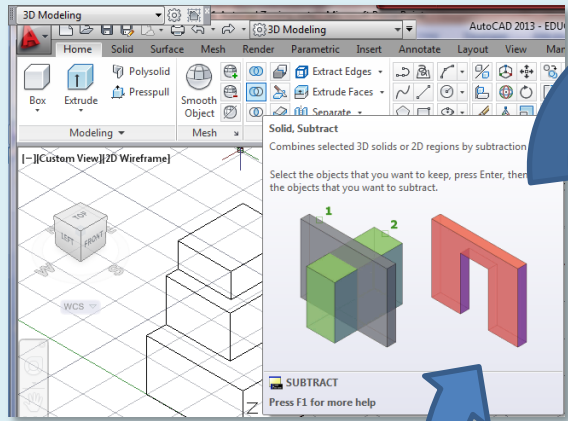
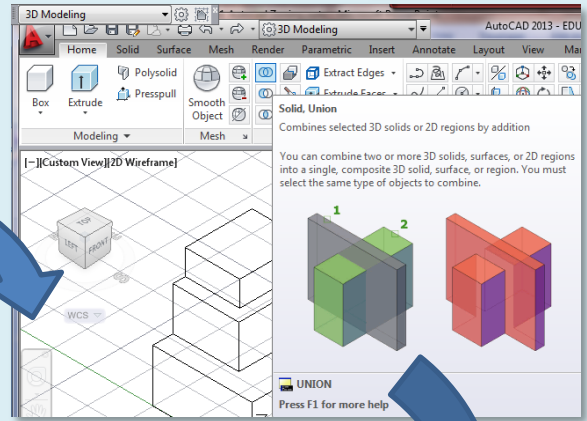
2D ISOMETRIC

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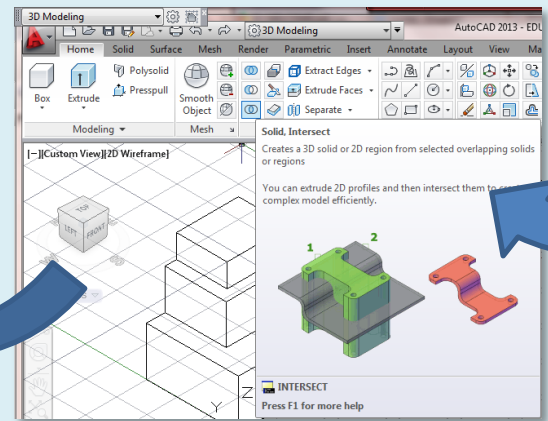
Wrap up



Union



Subtract



Intersect

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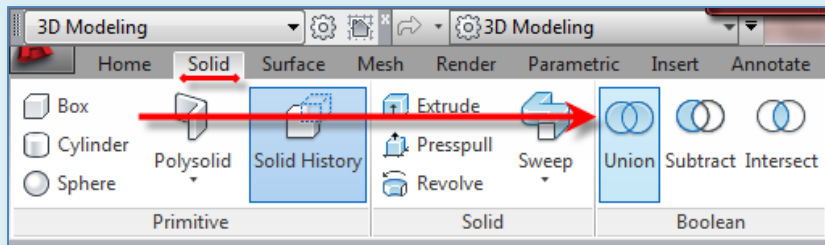
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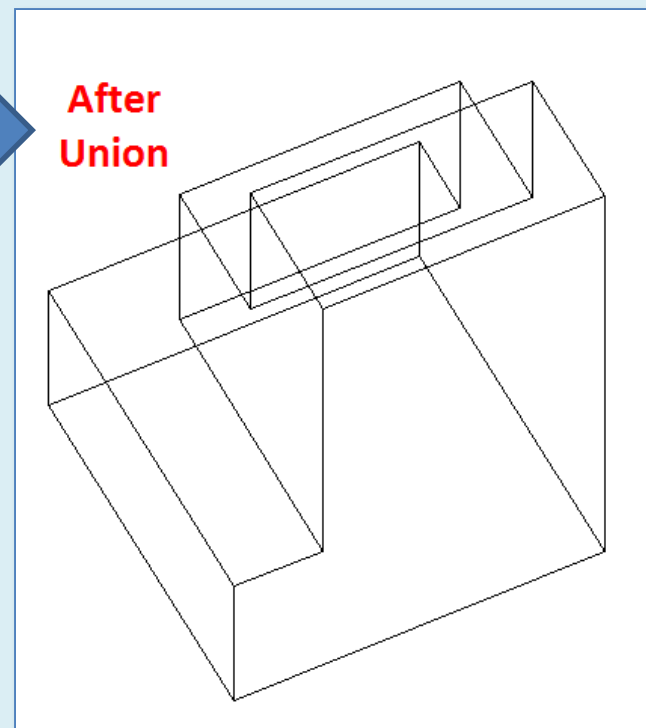
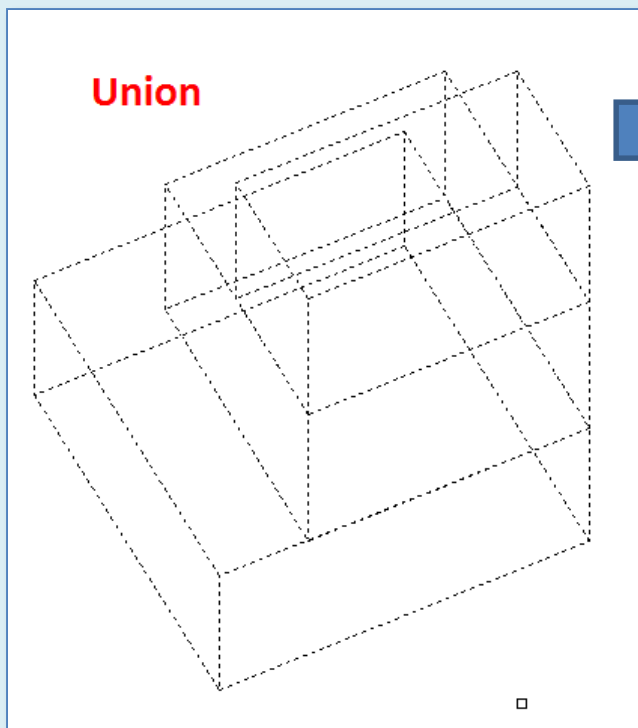
- Grid and Snap Settings

Wrap up

3D Solids & Boolean Operations : Union



- Solid > Union
- Adjacent edges are gone



FlatShot : 3D Isometric to 2D Isometric Block

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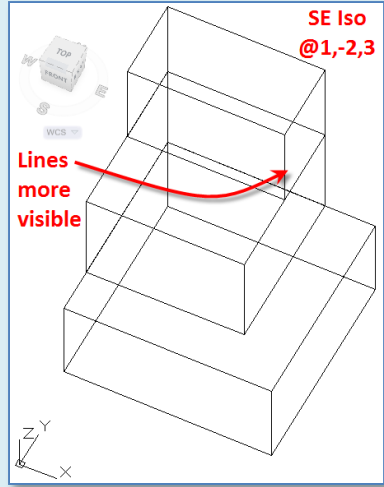
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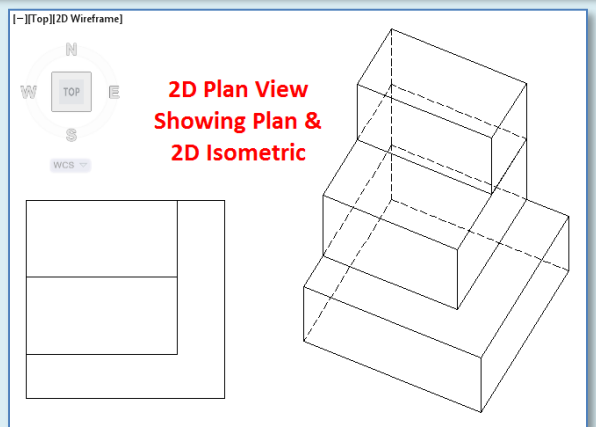
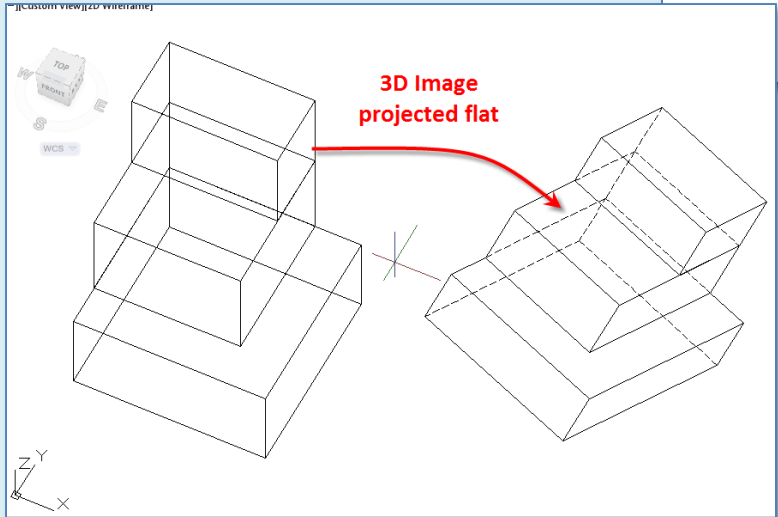
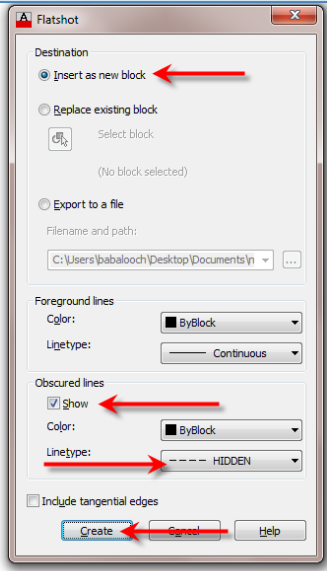
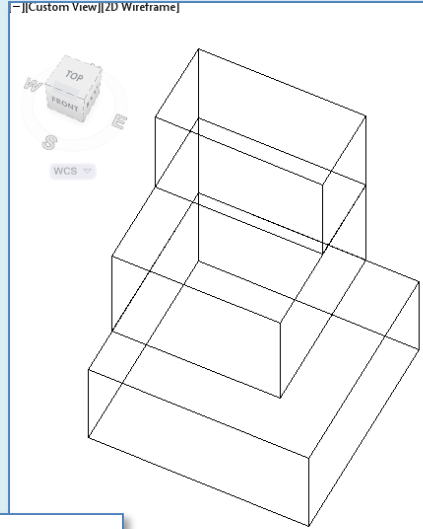
2D ISOMETRIC

- Grid and Snap Settings

Wrap up



- SE Isometric
- Vpoint 1,-2,3
- Flatshot
- Obscured Lines (Show)
- Linetype (Hidden)
- Create



FlatShot : 3D Isometric to 2D Isometric Block

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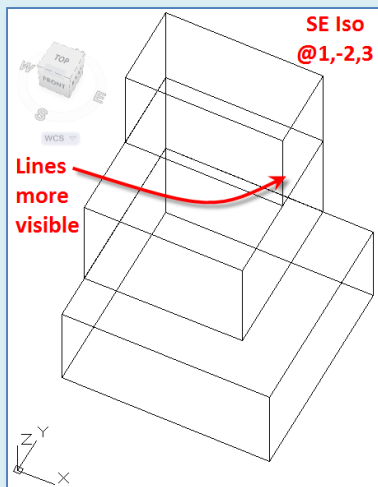
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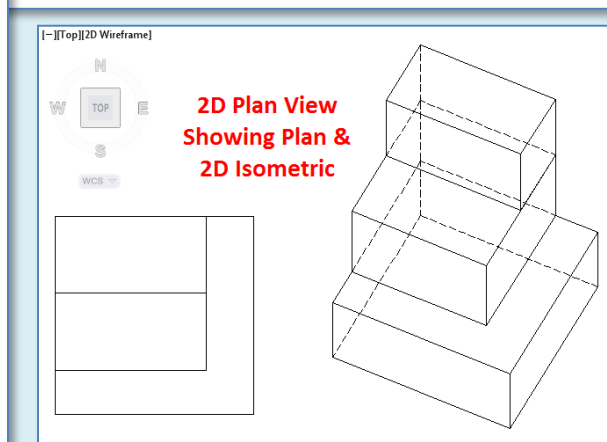
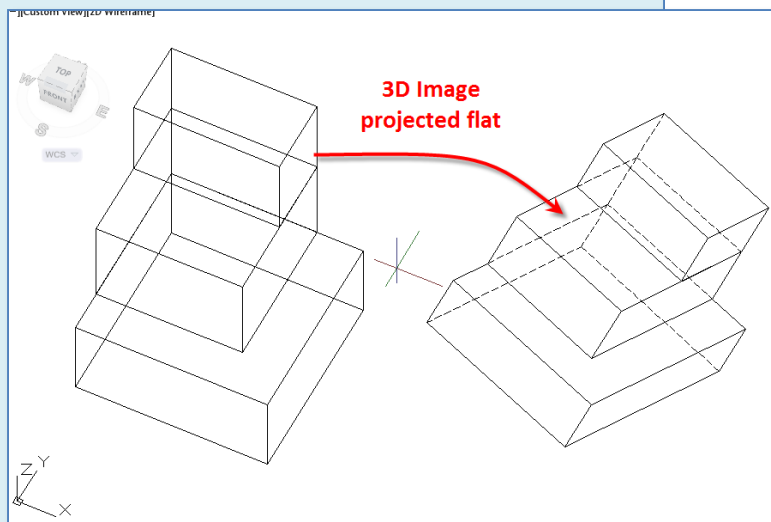
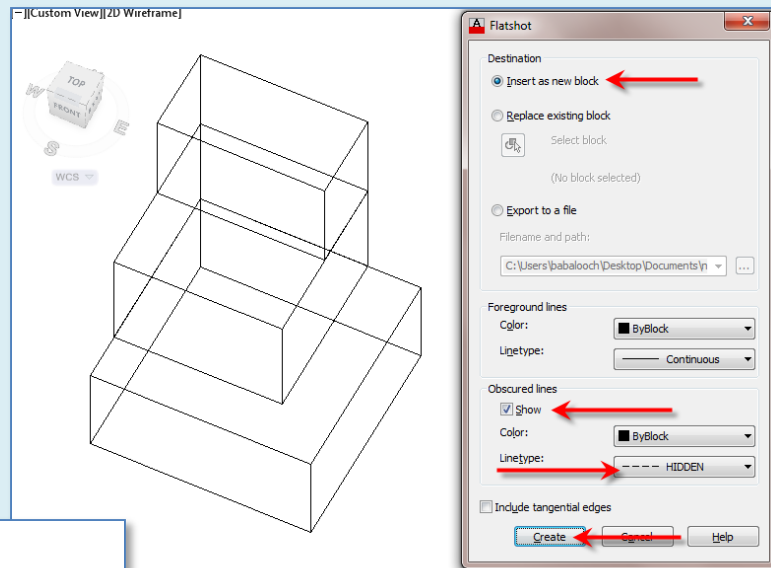
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- SE Isometric
- Vpoint 1,-2,3
- USE 1,1,1 Combos
- Flatshot
- Obscured Lines (Show)
- Linetype (Hidden)
- Create



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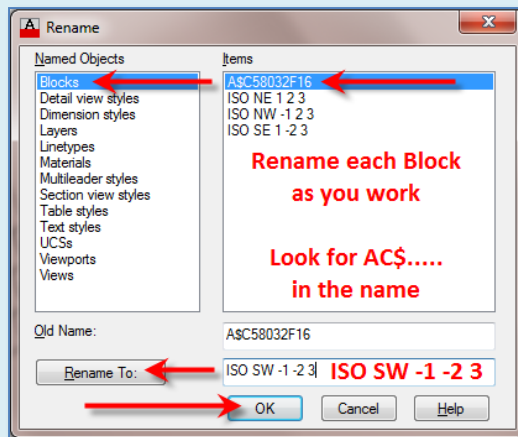
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- Scale Blocks

2D ISOMETRIC

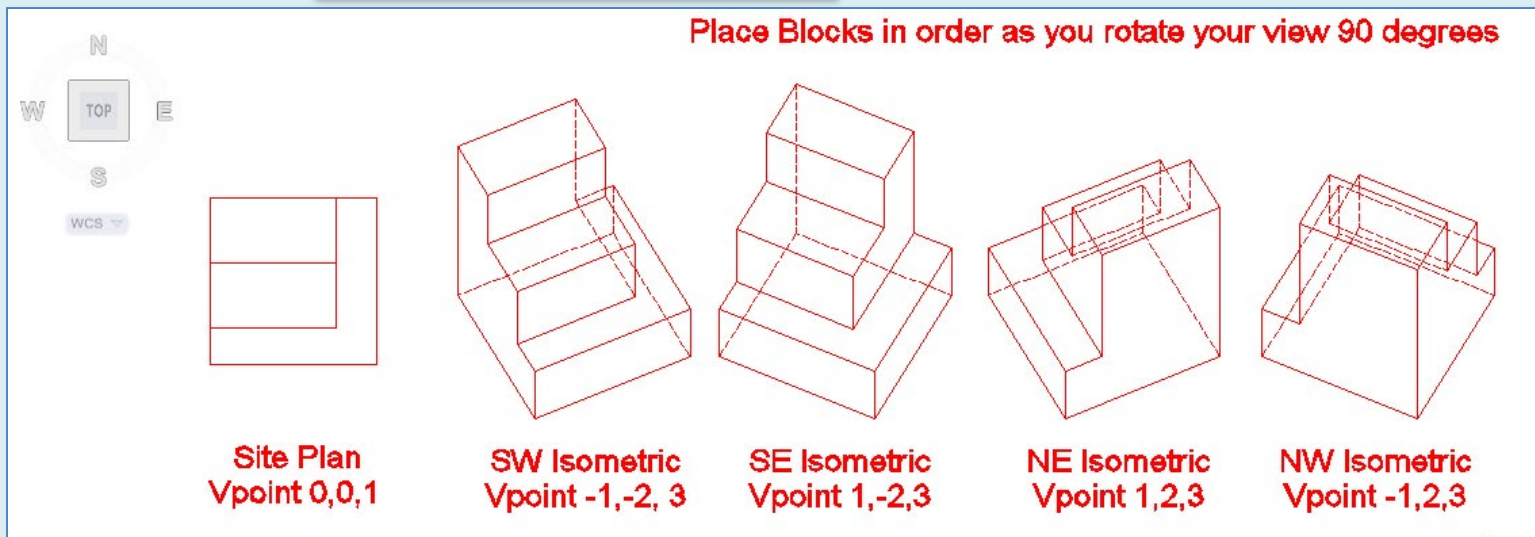
- Grid and Snap Settings

Wrap up

FlatShot : Insert and Rename Blocks



- Plan View
- Insert each as you go
- Place them in order
- Rename that one at a time



FlatShot : Scale Blocks

Lesson 02

Zoning Sheets

- Assignment
- Sample 1
- Sample 2
- Sample 3
- Sample 4

Autocad 3D Modeling

- Extrude 2D to 3D
- Standard 3D Views
- Vpoint 1,2,3
- Solids & Boolean Operations

FLATSHOT

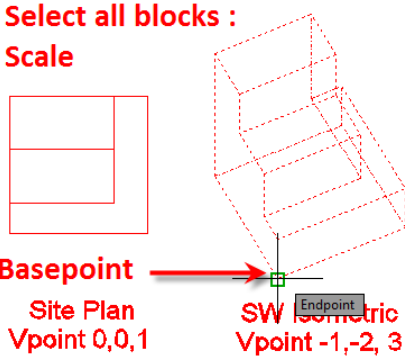
- 3D to 2D dwgs
- Insert & Rename
- Scale Blocks

2D ISOMETRIC

- Grid and Snap Settings

Wrap up

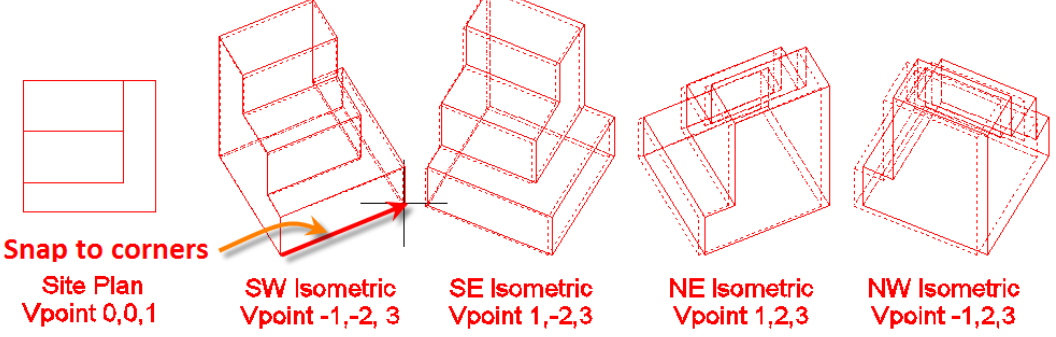
Select all blocks :
Scale



Basepoint
Site Plan
Vpoint 0,0,1

Endpoint
SW Isometric
Vpoint -1,-2, 3

Reference : Endpoint to Endpoint



Snap to corners

Site Plan
Vpoint 0,0,1

SW Isometric
Vpoint -1,-2, 3

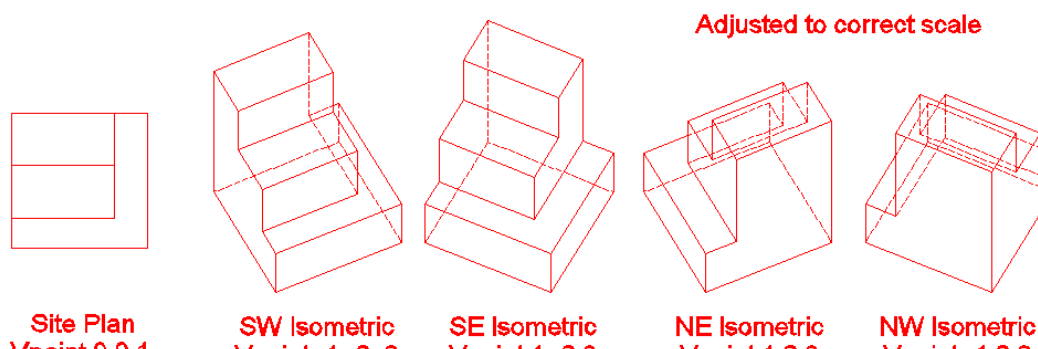
SE Isometric
Vpoint 1,-2,3

NE Isometric
Vpoint 1,2,3

NW Isometric
Vpoint -1,2,3

- Requires known dimension

Adjusted to correct scale



Site Plan
Vpoint 0,0,1

SW Isometric
Vpoint -1,-2, 3

SE Isometric
Vpoint 1,-2,3

NE Isometric
Vpoint 1,2,3

NW Isometric
Vpoint -1,2,3

- Scale
- Select Objects
- Basepoint
- Snap to endpoints
- Enter new length

Drafting a 2D Isometric : Setting Grid & Snap

Lesson 02

Zoning Sheets

- Assignment
- Sample 1
- Sample 2
- Sample 3
- Sample 4

Autocad 3D Modeling

- Extrude 2D to 3D
- Standard 3D Views
- Vpoint 1,2,3
- Solids & Boolean Operations

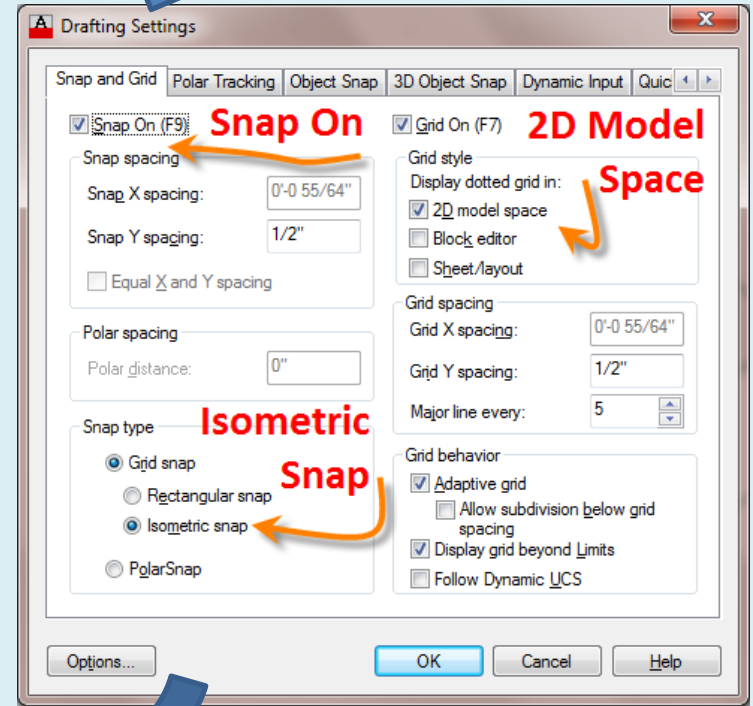
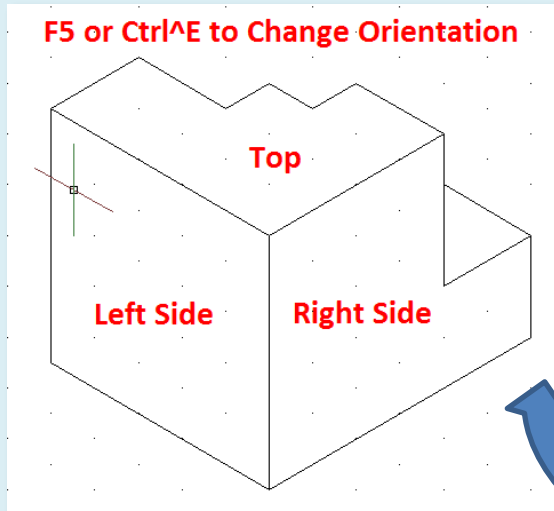
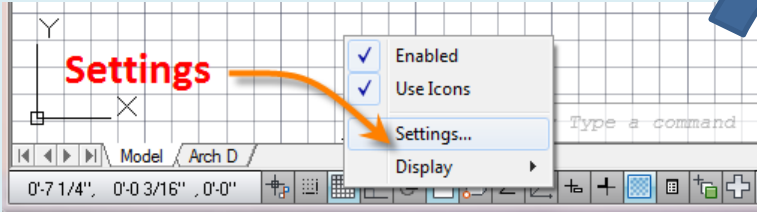
FLATSHOT

- 3D to 2D dwgs
- Insert & Rename
- Scale Blocks

2D ISOMETRIC

- Grid and Snap Settings

Wrap up



Lesson 02

Zoning Sheets

- Assignment
- Sample 1
- Sample 2
- Sample 3
- Sample 4

Autocad

3D Modeling

- Extrude 2D to 3D
- Standard 3D Views
- Vpoint 1,2,3
- Solids & Boolean Operations

FLATSHOT

- 3D to 2D dwgs
- Insert & Rename
- Scale Blocks

2D ISOMETRIC

- Grid and Snap Settings

Wrap up

BTECH 3

Lesson 02 – Wrap up

- Assignment
 - *Obscure line – hidden*
 - *Rename Blocks*
 - *Scale Blocks accurately*
- *Develop isometric zoning diagrams*
- *Extrude*
- *Vpoint*
- *2D Isometric drawings*
 - *Grid & Snap*
- *Boolean Operations*
 - *Union*
 - *Subtract*
 - *Intersect*
- *Flatshot*