AutoCAD

David Rey

School of Civil and Environmental Engineering

May 2017

CAD lecture 4

- Layers
- Arrays
- 3D
- Photorealism
- How to complete the computer based quiz for CAD assessment

Isometric view – easy method

- Polar, Osnap, Otrack tabs on
- Polar tab > Right click > settings
- Snap and grid tab > Snap : on
- Polar tracking tab > increment angle : 30
- > Polar angle measurement : Relative to last segments
- Object snap tab > set as appropriate

Layers

- Line properties
  - Colour
  - Width
  - Style
- Useful for managing different content
- Layers toolbar usually docked

Layers

- To create a new layer : Layer properties manger>New layer> type a name, Double click at Select line type>load or select and ok
- Example: Title block layer, Dimension layer
- To transfer to another layer : Left click the line or object, layer drop down menu, left click layer name, <return>
- Freeze and on/off
- Current viewport options when in Layout tabs

Similar tools

- Layers
  - Line properties
- Blocks
  - For repeatedly used elements
  - Example: Door, tree, appliance
  - Standard toolbar > Tool palettes > imperial Structures
  - Store in a palette for reuse
  - Can be exploded back to root elements
- External references
  - Xref
  - From another file/diagram
  - Cannot be exploded back

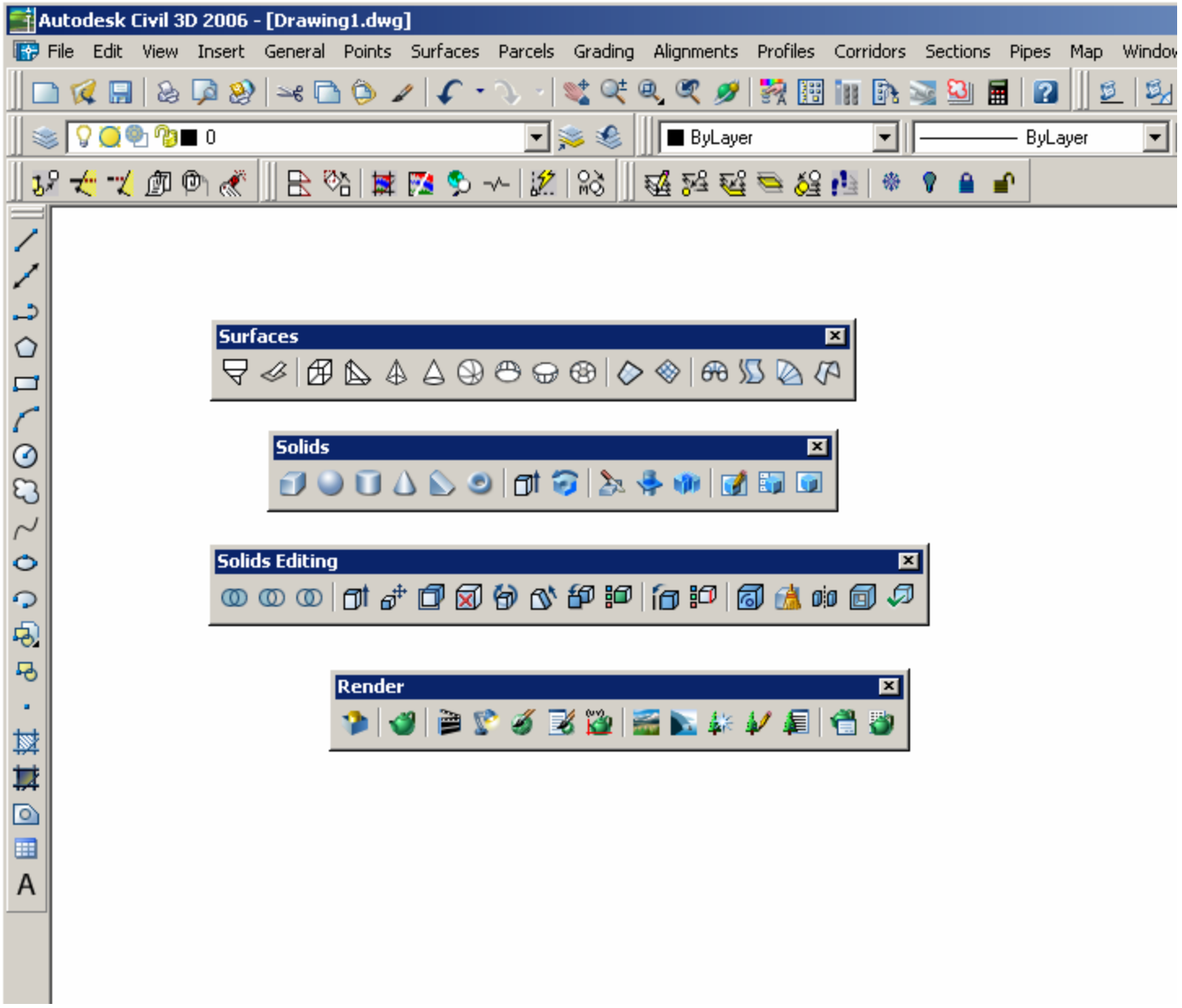
Arrays

- For repeating a drawing element at regular interval and pattern
- Example: Trees, rooms, rivets on a bridge beam
- On Modify toolbar click Array
- Array dialogue box based on a row column and angle concept

- Design centre > Home - space planner > Blocks > Computer terminal > copy and paste
- Modify toolbar > Array > pick centre point > pick object >

3D

- Surfaces and wire frame diagrams
- Solids
- Solids editing
- 3D view settings


Autodesk Civil 3D 2006 - [Drawing1.dwg]
File Edit View Insert General Points Surfaces Parcels Grading Alignments Profiles Corridors Sections Pipes Map Windo
0
ByLayer
ByLayer
Surfaces
Solids
Solids Editing
Render
A

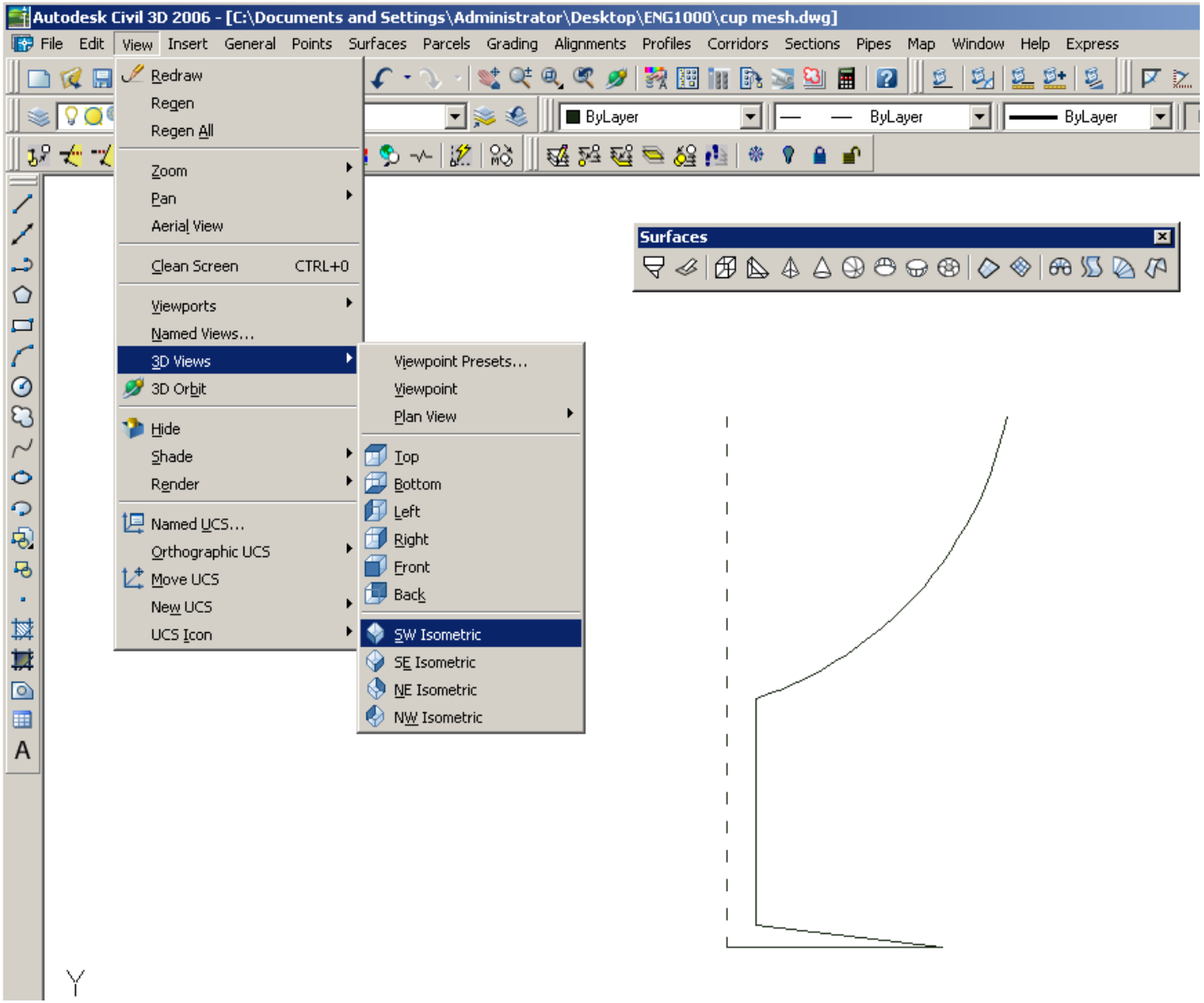
Surfaces

- Number of simple objects available
- ‘Revolved surfaces’ tool useful for drawing some symmetric objects
- Use polyline to draw the outline to be rotated

mesh

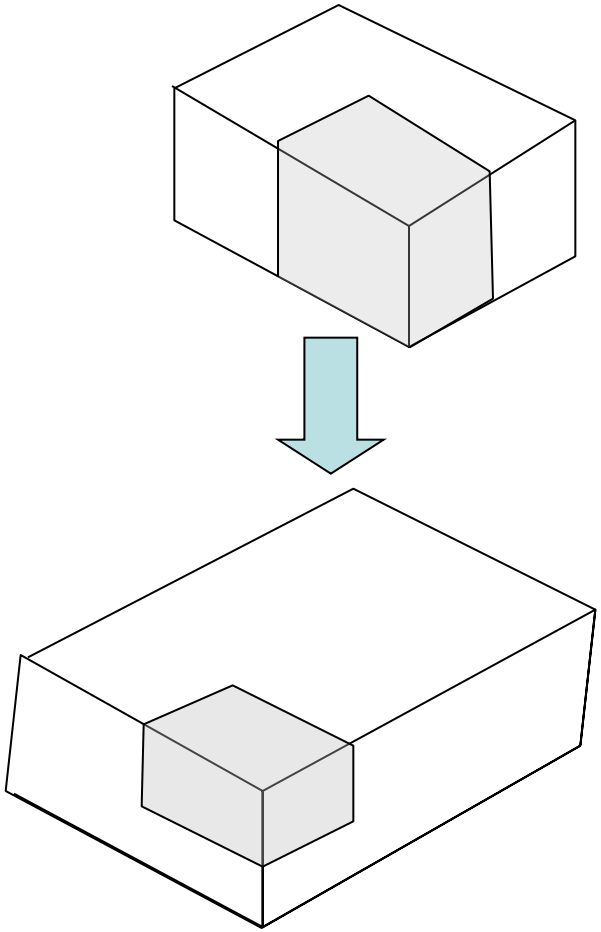
Surfaces

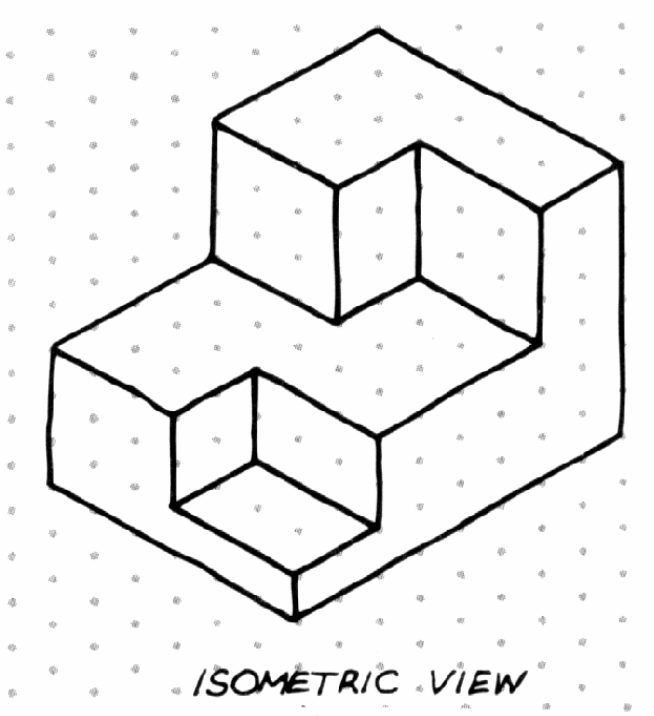
- View menu > 3D views > SW Isometric
- Surfaces toolbar

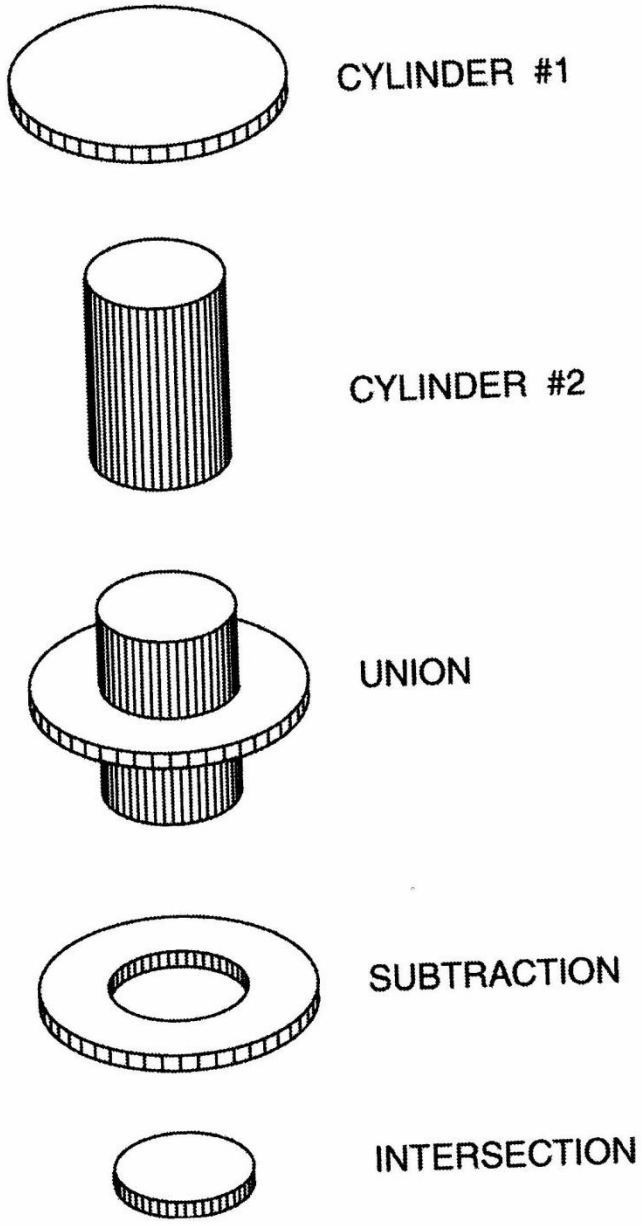

Autodesk Civil 3D 2006 - [C:\Documents and Settings\Administrator\Desktop\ENG1000\cup mesh.dwg]
File Edit View Insert General Points Surfaces Parcels Grading Alignments Profiles Corridors Sections Pipes Map Window Help Express
Redraw
Regen
Regen All
Zoom
Pan
Aerial View
Clean Screen CTRL+0
Viewports
Named Views...
3D Views
3D Orbit
Hide
Shade
Render
Named UCS...
Orthographic UCS
Move UCS
New UCS
UCS Icon
Viewpoint Presets...
Viewpoint
Plan View
Top
Bottom
Left
Right
Front
Back
SW Isometric
SE Isometric
NE Isometric
NW Isometric
ByLayer
ByLayer
ByLayer
Surfaces
Y

Solids

- Solids toolbar and Solids editing toolbar
- Union, subtraction, intersection
- Consider how a solid object can be produced by piecing together simple solids like plates, cubes and spheres



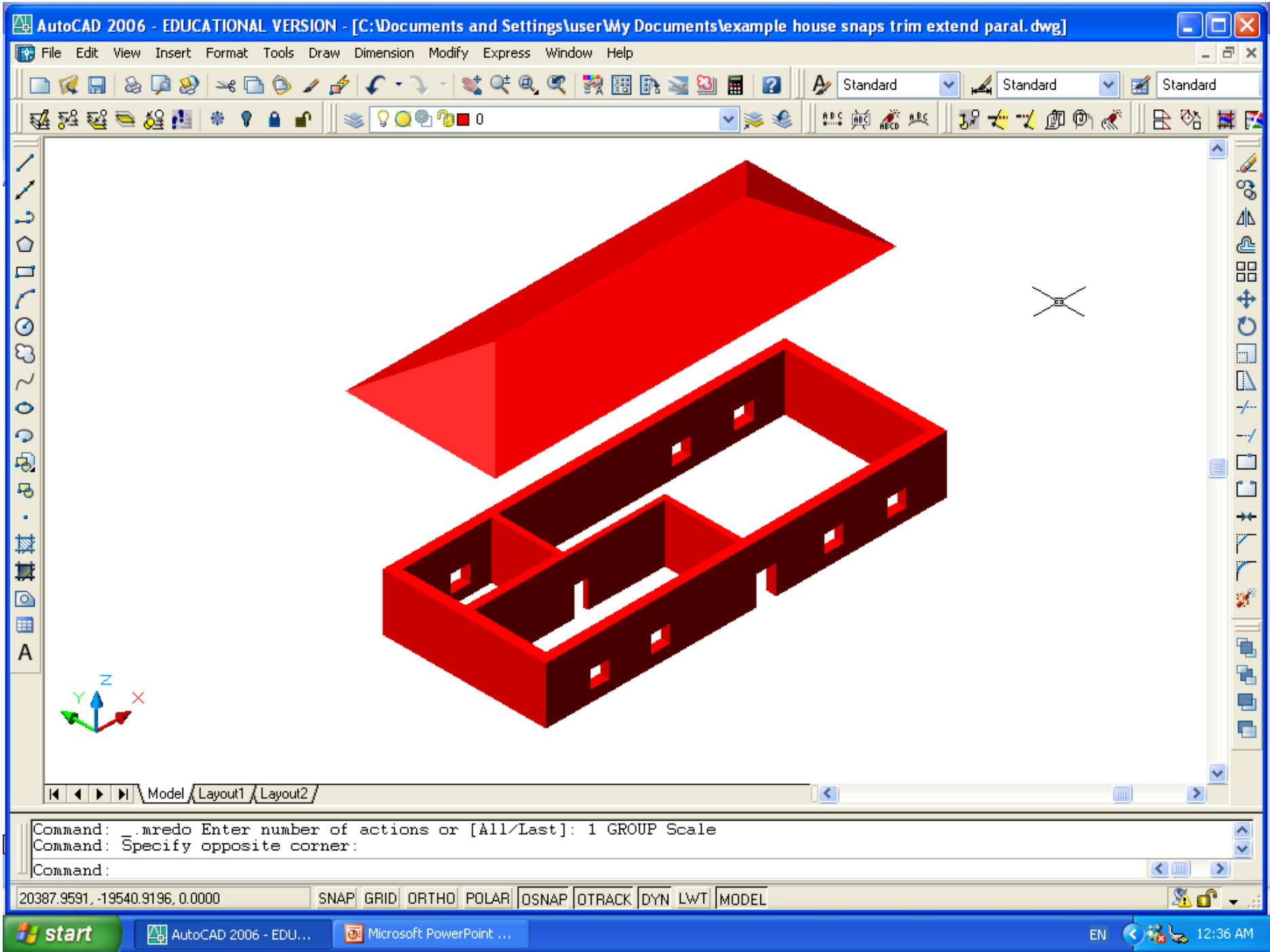

ISOMETRIC VIEW



Source: Dix and Riley (2006)

Rendering

- Creation of photorealistic diagram
- Option to mimic different materials – Render material style dialogue box


AutoCAD 2006 - EDUCATIONAL VERSION - [C:\Documents and Settings\user\My Documents\example house snaps trim extend paral.dwg]
File Edit View Insert Format Tools Draw Dimension Modify Express Window Help
Standard
Standard
Standard
0
Z
Y
X
Model
Layout1
Layout2
Command: _.mredo Enter number of actions or [All/Last]: 1 GROUP Scale
Command: Specify opposite corner:
Command:
20387.9591, -19540.9196, 0.0000
SNAP GRID ORTHO POLAR OSNAP OTRACK DYN LWT MODEL
start
AutoCAD 2006 - EDU...
Microsoft PowerPoint ...
EN
12:36 AM

- Organise the 3D diagram building task as a series of solid additions and subtractions
- Begin with a plan view or a side view that allows placing regular solid shapes
- Avoid using black lines if you intend to apply render or shade

Quiz

- Worth 9 % of assessment
- Moodle -> ENGG1000
- Release date:
  - 4 May, Thursday, 3 pm – 9 pm.
- Do the quiz from anywhere you have access to Moodle
- AutoCAD software not required
- 5 attempts are allowed (no feedback is given) BUT ONLY LAST ATTEMPT IS MARKED

Questions cover:

- Class notes
- Hands on work
- AutoCAD commands
- Engineering drawings
- Australian standards

Summary

- Layers
- Arrays
- 3D
- Please complete Moodle based quiz for CAD assessment

- Good luck!