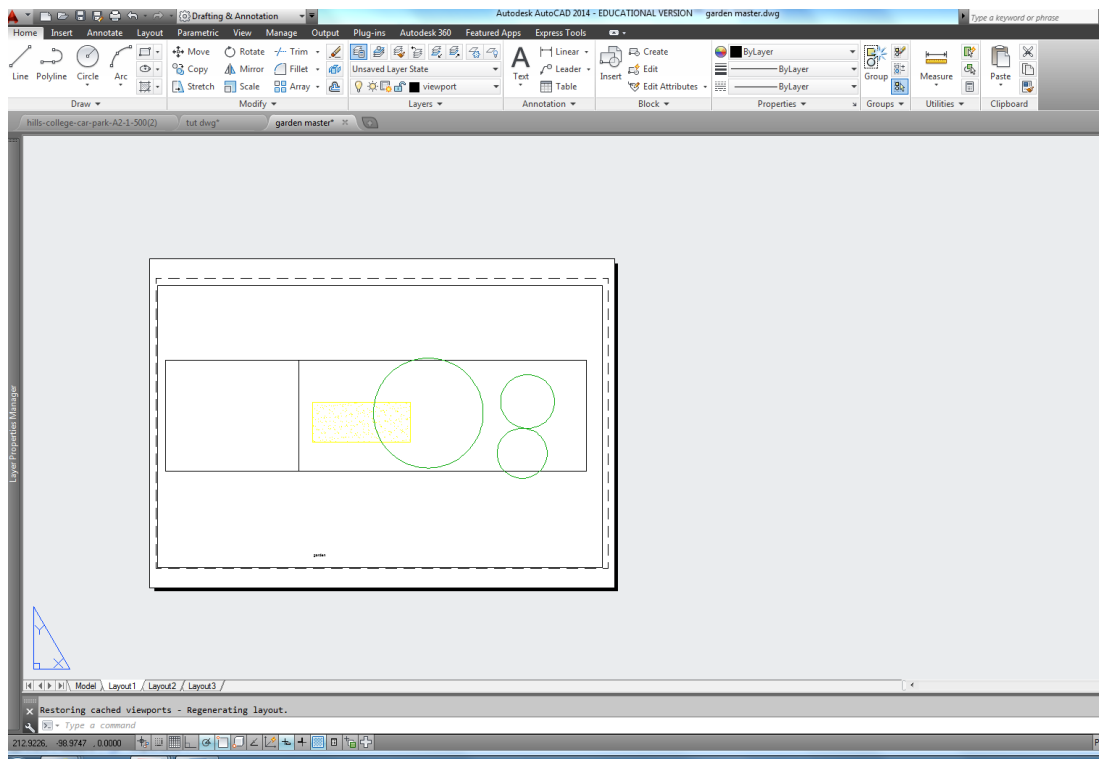
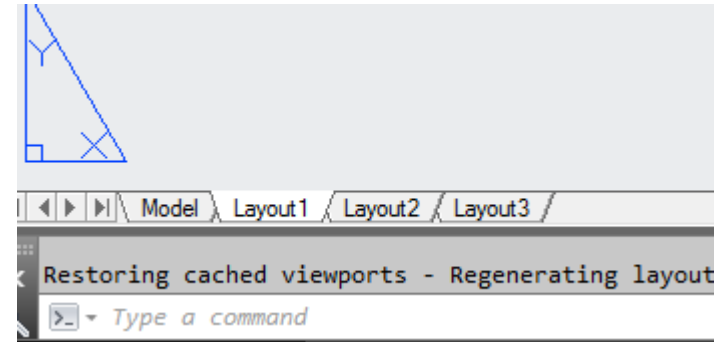


SESSION FOUR

In this session we will look again at Setting Up Your Drawing Sheet, Viewports, Scaling viewports and Printing your work

Once you've drawn your work in the Model space and you're ready to print, you need to set up your Drawing Sheet Layout (i.e. the piece of paper) you'll be printing your work on. In theory the the only thing that will limit how big the piece of paper can be is the size the paper the printer you're sending it to can take. In most cases this will be A0 (841 x 1189mm) although more common printing sizes will be A1 (594 x 841mm) and A2 (594 x 420mm). In the case of this workshop we will be setting up an A3 page (420 x 297mm) as this can be easily printed to the colour plotters and will best suit the scale of the drawing done.

CREATE A NEW LAYER CALLED VIEWPORT WITH A CONTINUOUS LINETYPE. MAKE IT THE CURRENT LAYER



SETTING UP YOUR PAGE LAYOUT:

This basically means setting up the piece of paper you'll be printing your work on and is quick to do.

Simply click on the tag that says "Layout 1" next to the Model tag on your Autocad document (see right)

You will leave your working "Model" space and move to the "Layout" space (see below).

You'll notice a box on the sheet of paper that may show some of your work or a grid in it if the grid is still on. This is a Viewport, which are like windows into the Model space where you've been drawing your work. It is from these that you can zoom in to your work at a scale to fit onto the piece of paper.

SETTING UP YOUR PAGE LAYOUT (contd):

The first thing you need to do is set the page size and Plot Style (“Plotting” is Cad’s version of printing). Do this by right clicking over the “Layout 1” tag and then clicking on “Page Setup Manager” (see right).

Make sure “Layout 1” is highlighted and then click on Modify
This will take you to your Page Setup for Layout 1 and here you need to change a number of things: (see Image far right)

Printer/plotter

- For the moment set to either “None” or “DWG to PDF.pc3”

Paper size

- Set to A3 (420 x 297mm) -

What to plot,

- select “Layout”-

plot style table

-If you want colour leave it as it is. Generally we produce construction drawings and planting plans in black and white so would set this to “Grayscale”

Plot Scale

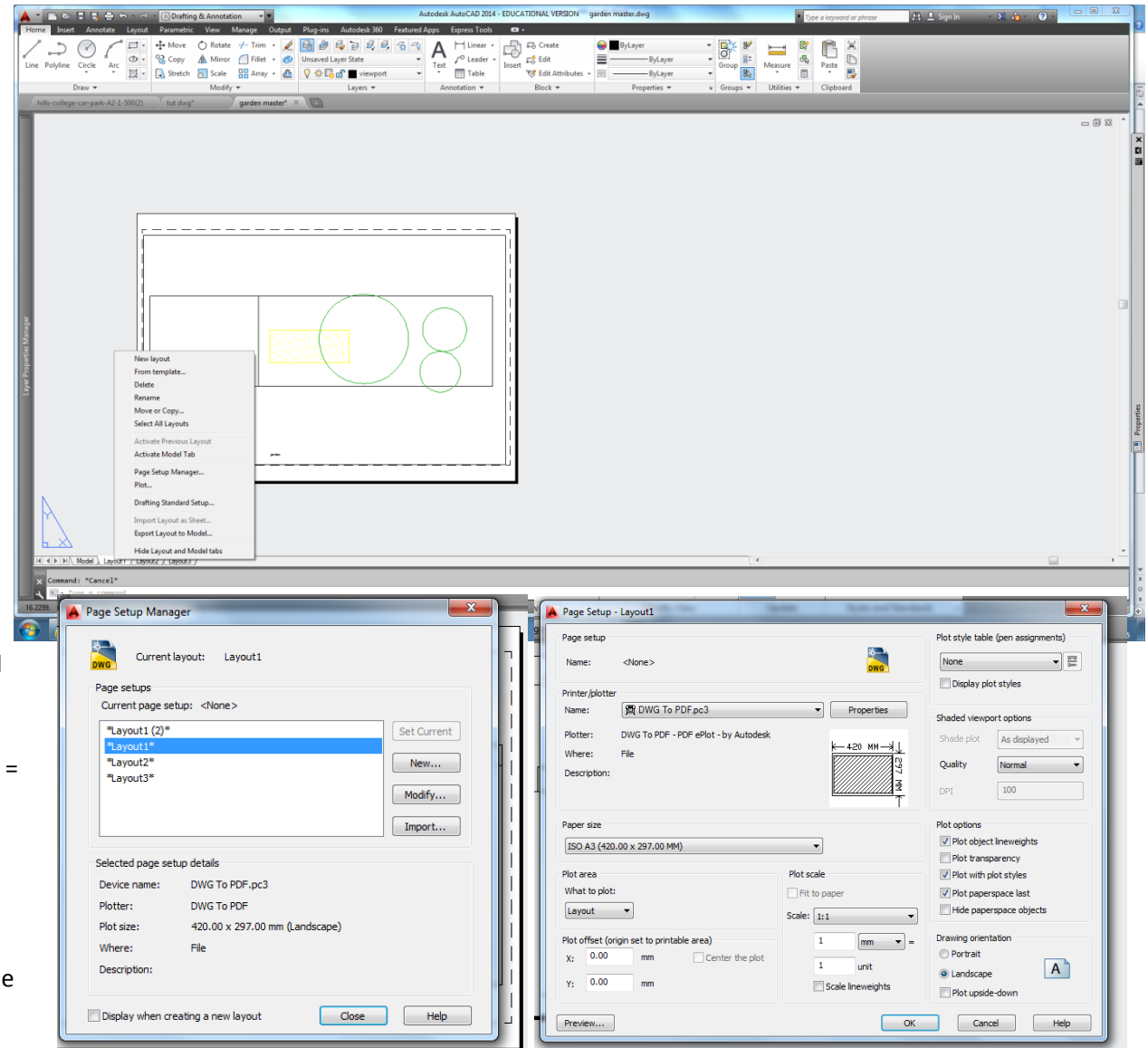
Make sure “Plot Scale” reads as in the image – ie scale 1:1 and 1 mm = 1 unit.

drawing orientation

- set to “Landscape”

Once this is done, click “OK” and then Close the Page Setup Manager

You’ll notice the paper size has changed and should now be 420 x 297mm (you can test this by typing DI and measuring the length of the paper or by using the ‘Measure’ tool in the ‘Utilities’ toolset)



Viewports – zooming and panning in model space in the viewport to change what is visible

You can drag the Viewport so that it fits onto the piece of paper. Do this by clicking on the border of the Viewport and then dragging it by one of its four corners where there's a blue box, and this will make it bigger. Roughly stretch it to fit the A3 sheet (you can change the size of the Viewport at anytime).

Next double click inside the Viewport (its borders will go bolder in colour and you'll notice the "PAPER" tag changes to "MODEL" - see Image right). Scroll with the mouse to zoom in and out. Use the Zoom Extents tool ("Z" return "E" return) and you will zoom in the Viewport to all the drawing work you've done. This is a great way of finding your work in the Viewport.

Use the Pan tool ("P" return) to centre your garden design, press return again once you're done and and you'll be ready to scale the design to a suitable size for your A3 sheet.

Viewports and Scaling:

Note – AutoCAD scales work are set to work with drawings created with mm as units. If you've drawn your garden in metres then the simplest thing is to return to Model space and Scale everything you've drawn by a factor of a 1000.

Scaling can be done in a number of ways.

1. double click inside the viewport so you're in model space in the viewport. Type "Z" (zoom) and return, "S" (scale) and return, and then typing the scale you want, in this case 1:100, by typing 1/100xp and pressing return. Click on "MODEL" to change back to "PAPER" and stop zooming in and out of the Viewport.

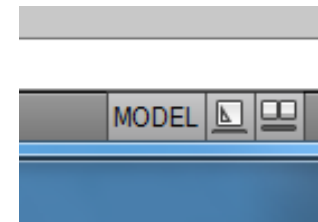
This should be fairly suitable for the size of the garden drawing to fit comfortably on the A3 sheet. If you wanted to zoom to a different scale (for example to show a particular part of your design in more detail) you would simply go through the same process and type "1/50xp" for 1:50 scale, "1/20xp" for a 1:20 scale etc.

2. Click on the outline of the viewport. To the right of where it says Paper there will now be either a decimal number or a scale such as 1: 50. Click on the down arrow alongside this to open the scales toolset. Click on the scale you want and the image inside the viewport will instantly change to the new scale. If you want to create your own scales or edit the existing ones then click on 'Custom' and 'Edit Drawing Scales' menu appears. To create a new scale click 'Add'; name the new scale; then adjust the scale properties – note . 1:100 would read 1 paper unit = 100 drawing units. Click OK. Your new scale appears in the edit drawing scales list. Using the 'move up' and 'move down' button allows you to place your new scale/s wherever you want.

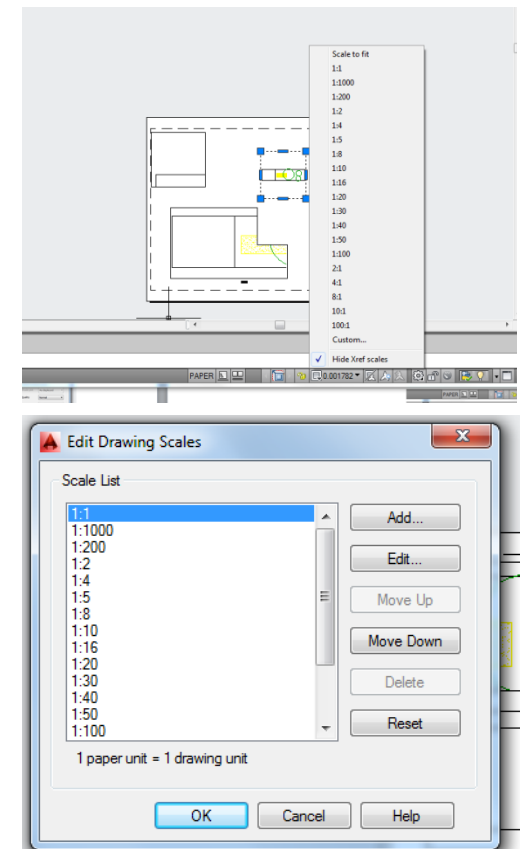
3. Click on the outline of the viewport. Open the properties toolbar. Adjust the scale in the 'Standard scale' box by clicking in the box and then choosing the down arrow and selecting from the list that appears.

4. as per 3 but type a decimal into the 'Custom scale' box eg 0.01 = 1:100; 0.02 = 1:50 etc.

NB if you have metres as a unit – type 100/your desired scale into the custom scale box eg $1000/500=2 =1:500$.



"PAPER" tag changes to "MODEL" when you double click in the Viewport space. Click on it to change back from "MODEL" to "PAPER"



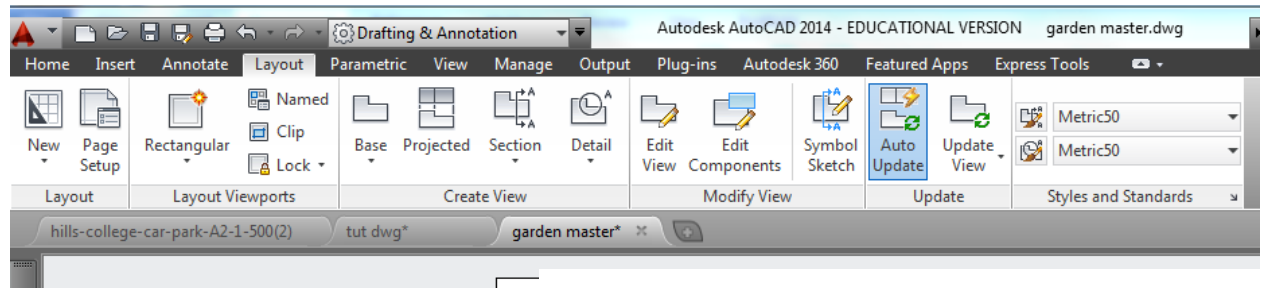
CREATING NEW LAYOUTS AND VIEWPORTS

Click on the Layout Tab alongside Annotation.

To create a new layout

click on 'New' in the layout toolset. When prompted - Name the layout. A new layout with that name now appears in the bottom left alongside Model, Layout 1 and Layout2.

You can also access the Page Layout menu from this toolset.



To create a new viewport.

Open one of your new layouts.

Using page set up manager and 'Modify' change the new layout size to A1.

(How long since you saved?)

click on '**Rectangular**' in the 'Layout Viewports'. Draw a rectangular viewport as you would a rectangle.

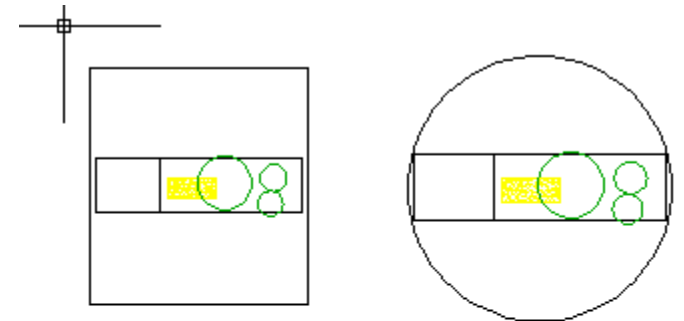
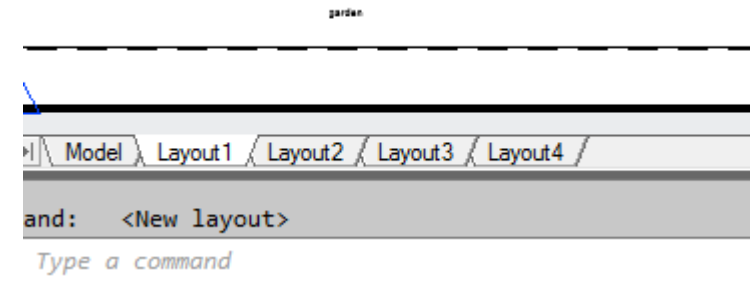
Your model space drawing (or part of it) now appears in this new viewport. This viewport can be adjusted in terms of size, position, scale etc as before.

Click on the down arrow beneath rectangular gives 2 more options.

'**Polygonal**' allows you to draw a viewport with any shape you like. See it like drawing a polyline and use to C to close at the end of drawing it.

'**Object**' allows you to turn any 'sealed' object into a viewport – draw a circle and try it.

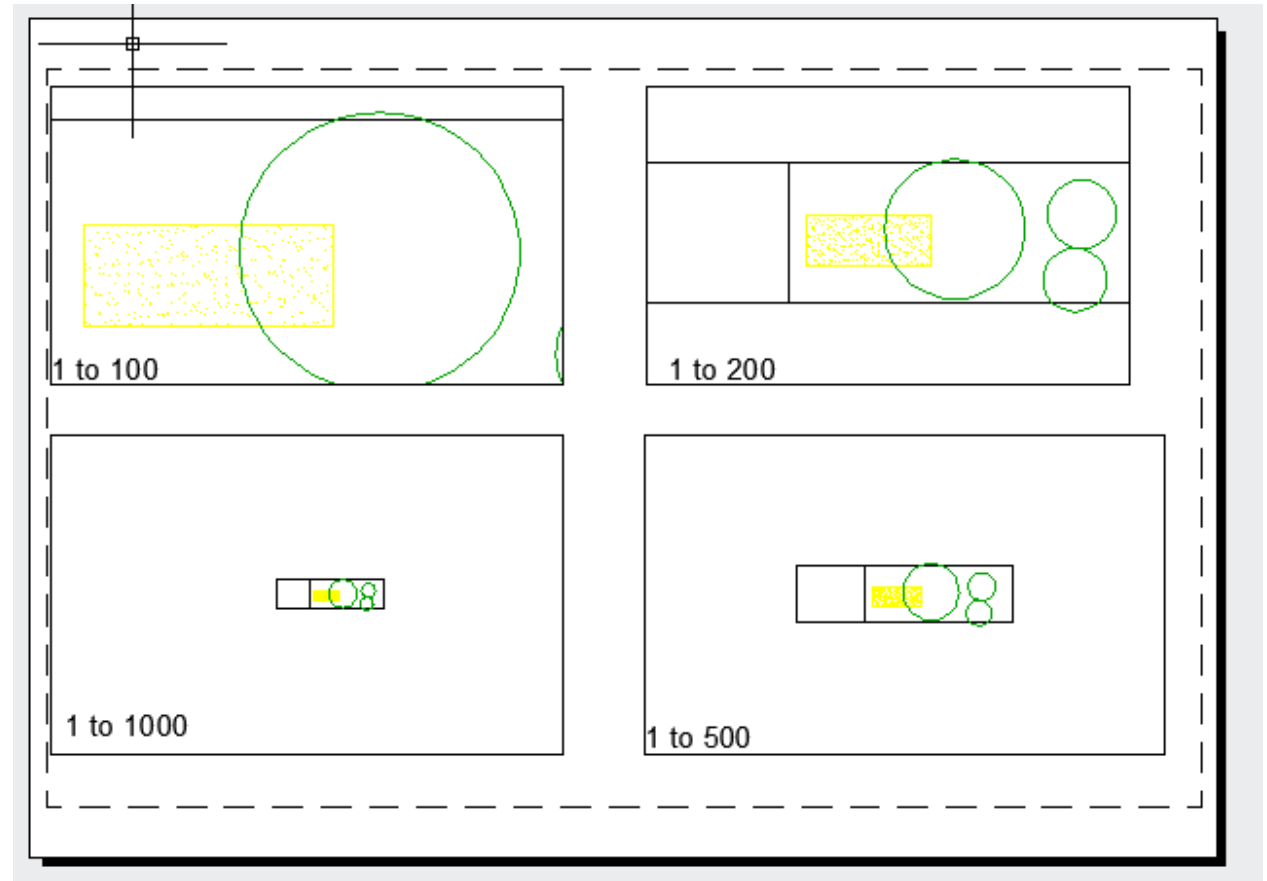
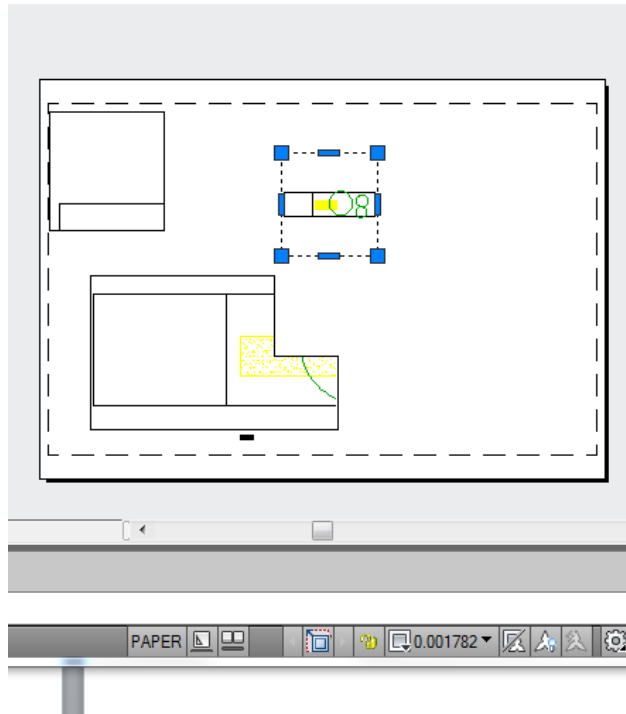
There are other options – when you click on 'rectangle' look at the command line. 2, 3 and 4 create sets of viewports arranged either vertically or horizontally within the rectangle you draw.



The idea is to create a range of viewports showing various aspects of your drawing at appropriate scales- see right.

Note- you can copy and paste viewports.

They will retain the original scale but this can later be changed – see image on the right.



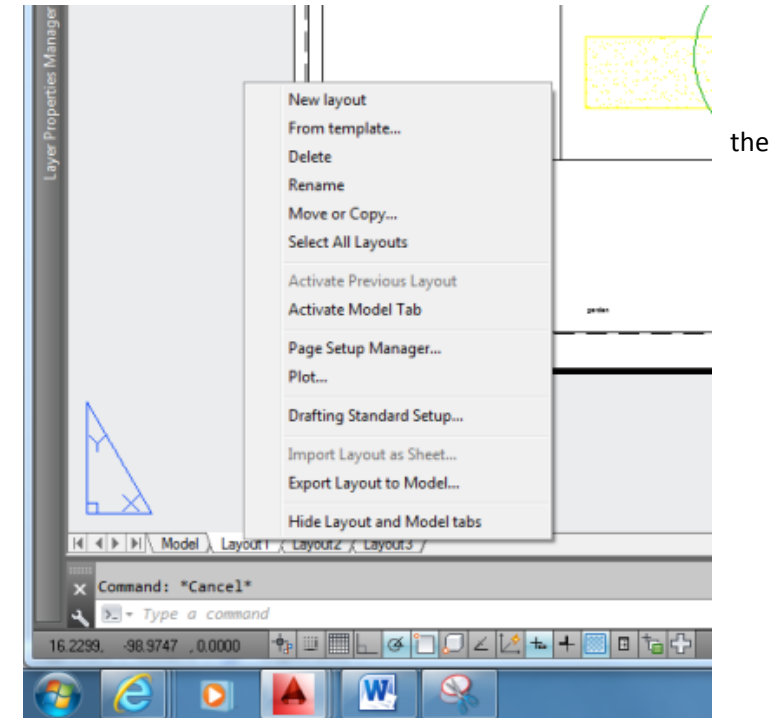
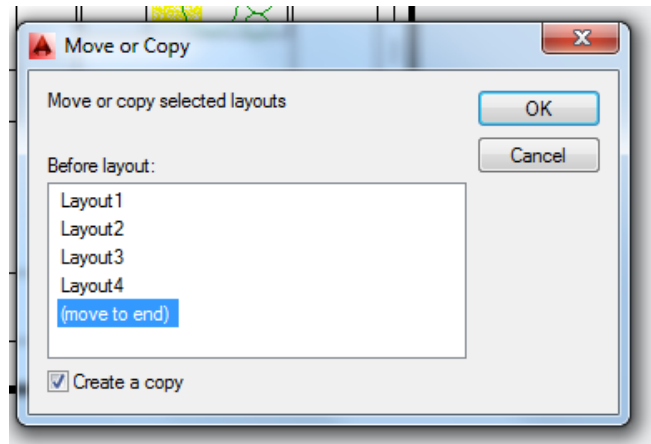
MODIFYING LAYOUTS

Right click on the relevant layout and the 'menu' emerges as before with Page set up.

Rename will be useful both in practice and in your work in Uni.

Moving and Copying layouts

Select 'Move or Copy'. Both options are available through the same menu. Move allows you to organise order of layouts. Copy allows you copy layouts you have created. This is ESSENTIAL when creating working drawings with a title block and key etc..



TASK - CREATE A DRAWING SHEET:

Before you print, you'll need to create a finished layout sheet with titles and a key.

You can use the Drawing and Modifying Tools (Polyline, Rectangle, Text, Copy Move Array etc) in Paper Space just like you do in Model Space .

First create a "Titleblock" layer to do this in.

The Titleblock is always on the bottom right of the drawing sheet. The key is usually above this though sometimes sheet space makes this difficult.

You will need to state the following information in the Titleblock:-

Project Title; Drawing Title; Drawing Number; Sheet number (" sheet 1 of 2" etc); Drawing Scale (always say at which paper size the scale works at eg "1 : 200 @A2") ; Date of drawing; who drawn by; revision number and date.

You will also need a key for any of the symbols and hatches you've used. You can create the key in the Model space next to where you've been drawing your design and then create another Viewport in your Layout and zoom in to the Key OR you can create separate viewports in Paperspace. The advantage of this method is that you can turn layers on and off or 'Freeze' them in the separate key viewports. You can use array to create your key. Draw the object you are going to put the key info in. put text alongside it (you will need to create a paper space text style) Then use array to replicate them. Turn the rectangles into viwports using the 'Object' option.

Always have a north arrow.

PRINTING:

To print, simply right click on the Layout tab and click Plot. The Plot box will come up (see Image right) which should have the correct settings from before when editing the Page Setup Manager. If you do want to change Plot settings (for example you may want to print to a different printer or use a different plot style) you can do so here. This will not change the size of the actual paper in your Layout but does mean you can print to different sizes and styles as you need.

However for now, all you need to do is click on Preview in the bottom left hand corner of the box - this is just to check that everything looks clear on your plan.

If it looks ready to go, just close the preview box and click "OK". You will then be asked where you want to save your PDF. Save it and then you can open it and print it. Alternatively if you wish to print straight from the Cad drawing, you can do so by changing the Printer/plotter to a printer that can print A3.

If you want to change elements in your drawing such as text sizes or hatch scales if you think they don't look right, you simply close the Preview box, Cancel the plot and then return to your Model space where you've been drawing and edit what you wish to change.

