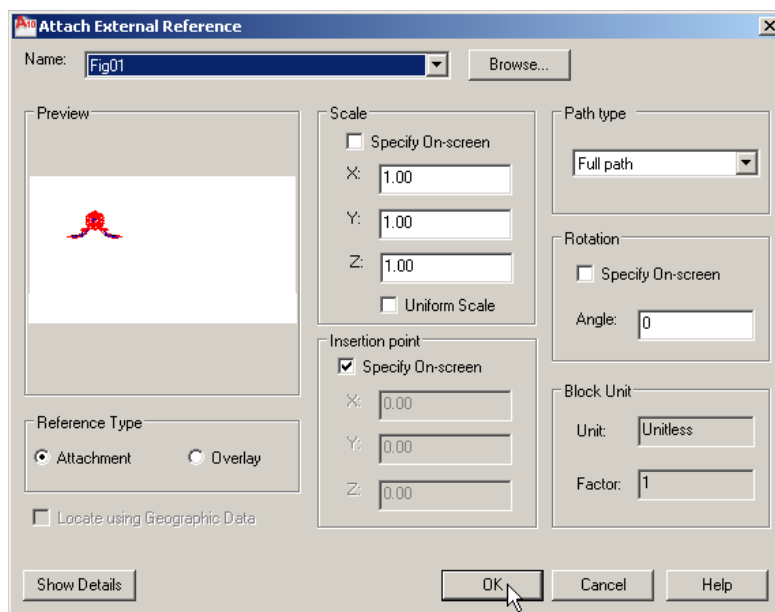
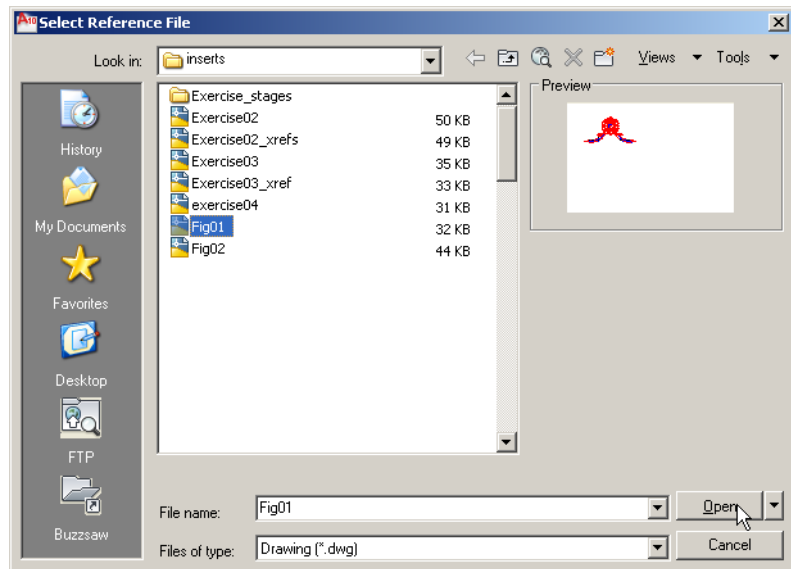
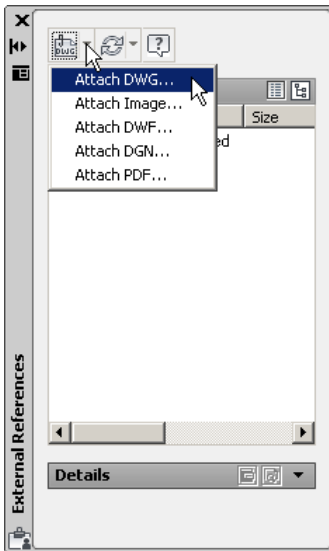
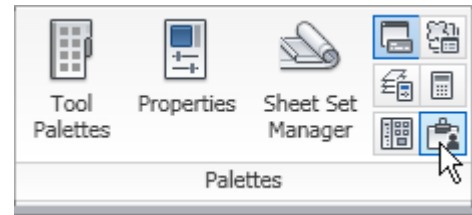
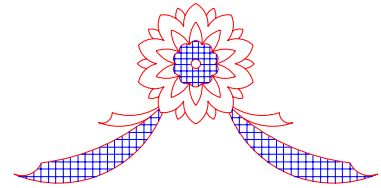


# Introduction to AutoCAD 2010

Alf Yarwood

## Chapter 10 Exercise 1

1. Open **AutoCAD 2010** with a *double-click* on its shortcut icon in the Windows desktop.
2. Open the template **acadiso.dwt**.
3. Construct the drawing as shown using the **Circle**, **Arc** and **Array** tools and save it as a **wblock** with the name **Chapter10/fig01.dwg**. Close the drawing.
4. Open the **acadiso.dwt** template.
5. *Click External References...* in the **View/Palettes** panel. The **External References** palette appears. *Click Attach DWG...* in the popup list from the **Attach DWG** icon.
6. The **Select Reference File** dialog appears. Select **Chapter10/ Fig.01.dwg** followed with a *click* on the **Open** button.



7. The **External Reference** dialog appears with the selected file name showing. *Click* the **OK** button. The command line shows:

**Command: \_XATTACH**

**Attach Xref "Fig01": C:\Chapter10\inserts\Fig01.dwg**

**"Fig01" loaded.**

**Specify insertion point or [Scale/X/Y/Z/**

**Rotate/PScale/PX/PY/PZ/PRotate]: pick**

**Regenerating model.**

**Command:**

8. The drawing appears in the AutoCAD window. Remember it is an **xref** and is therefore a block.

9. Construct a **Rectangular Array** of the block in four phases:

(a) In a single column of **4** rows spaced at **-75**.

(b) Using the **Copy** tool, copy the original drawing to form the top of a second array, and again to form the top of the right-hand array.

(c) Construct the central array as a single column of **5** rows spaced at **-75**.

(d) Construct the right-hand array as a single column of **4** rows spaced at **-75**.

10. Save the drawing - e.g. as **Chapter10/Fig02.dwg**. Close the drawing.

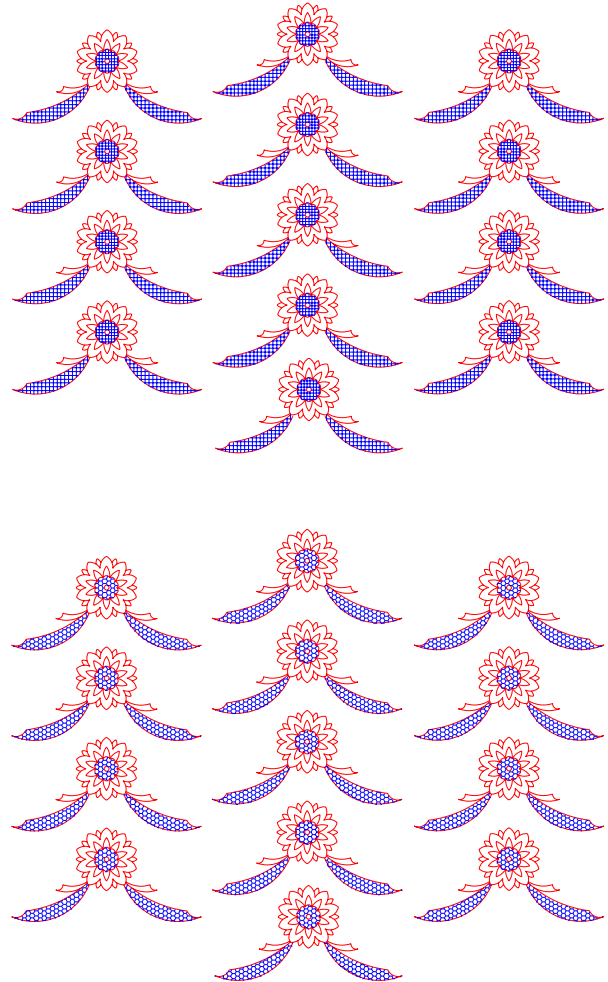
11. Open the drawing **Fig01.dwg** and, with the **Erase** tool, erase all hatching and re-hatch with a different hatch pattern.

12. Save the drawing to the same file name **Fig01.dwg**.

13. Open the drawing **Fig02.dwg** containing the arrayed **xrefs**. It will be seen that the drawings have changed to the new hatch pattern.

14. Save your drawing with the file name **10\_Exercise01.dwg** to your floppy disk.

15. *Left-click* the **Close** button of the drawing window.



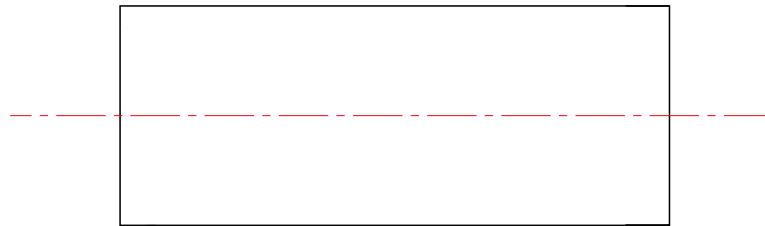
## Chapter 10 Exercise 2

1. Open **acadiso.dwt** - *left-click* **New...** in the **Quick Access** toolbar.
2. Construct the drawing as requested - showing the two ends in front view. Save to the file name **roller.dwg**.
3. Close the drawing window and open the **acadiso.dwt** template and construct the drawing of the spindle. Save

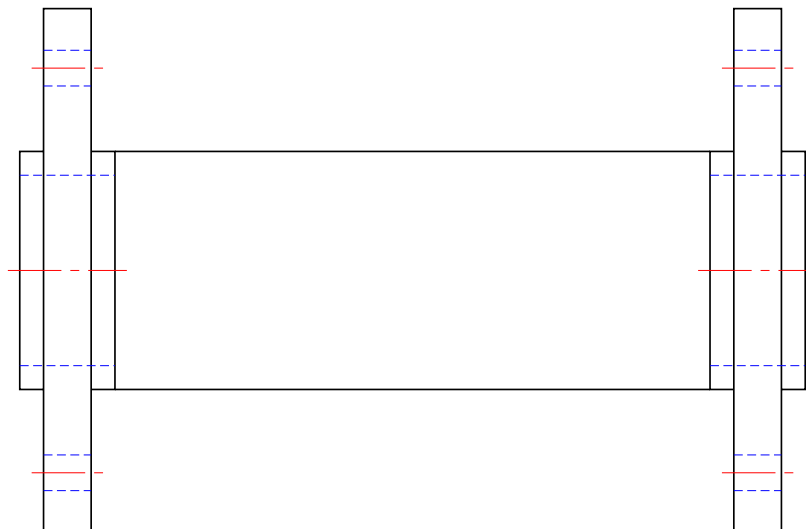


to the file name **assembly.dwg**. Close the drawing.

4. Open **roller.dwg** and insert the drawing of the spindle (**assembly.dwg**) as an **External Reference (xref)** into position between the two ends of the drawing **roller.dwg**. Save the drawing to the same file name **roller.dwg**.
5. Reopen the file **assembly.dwg** (of the spindle) and make changes as requested. Save the drawing to the same

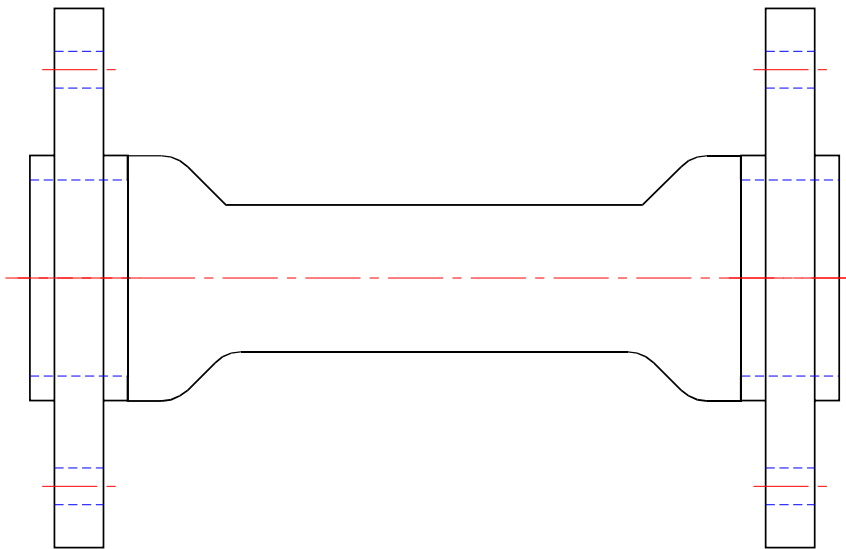


file name - **assembly.dwg**.



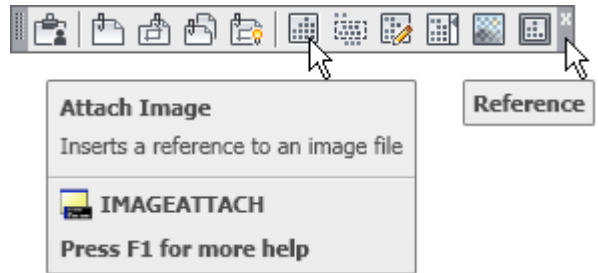


6. Reopen **roller.dwg** and note the change in the outline of the spindle.
7. Save your drawing with the file name **10\_Exercise02.dwg** to your floppy disk.
8. *Left-click* the **Close** button of the drawing window.



### Chapter 10 Exercise 3

1. Open **acadiso.dwt** - *left-click* **New...** in the **Quick Access** toolbar.



2. *Left-click* the **Attach Image** icon in the **Reference** toolbar

3. The **Select Reference File** dialog appears. Select the file to be opened - in this example **Barcelona 059.jpg** and *click* the **Open** button of the dialog.

4. The **Attach Image** dialog appears showing a preview of the selected file. *Click* the dialog's **OK** button. The command line shows:

**Command: xattach**

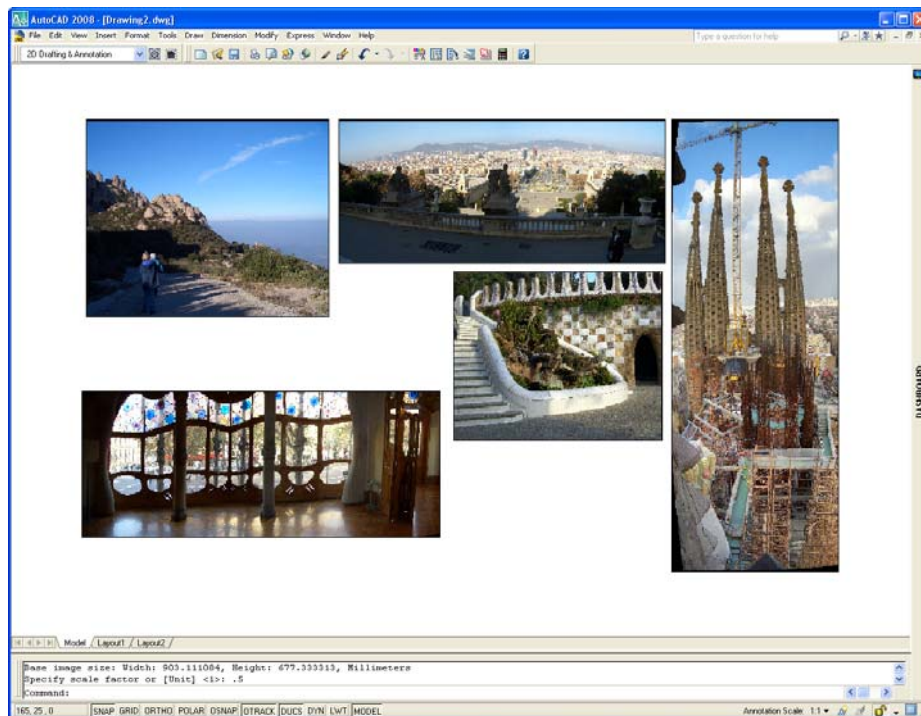
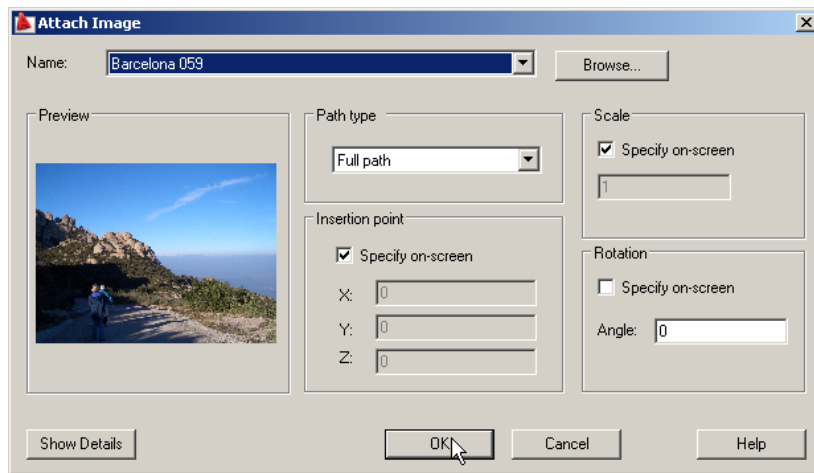
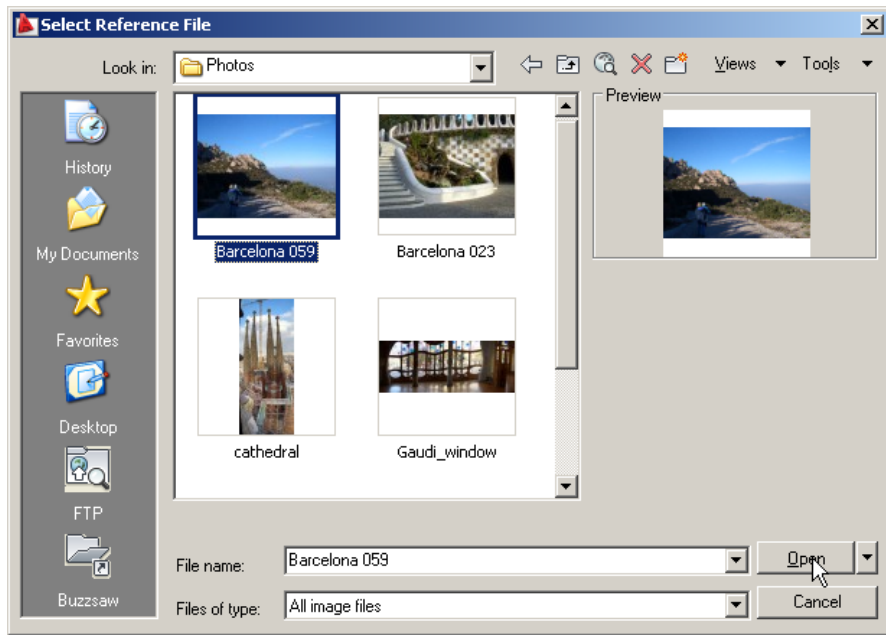
**Specify insertion point <0,0>:**

**Base image size: Width: 1.000000, Height: 0.750000, Millimetres**

**Specify scale factor <1>:** *drag* the corner of the image to its desired size and *right-click*

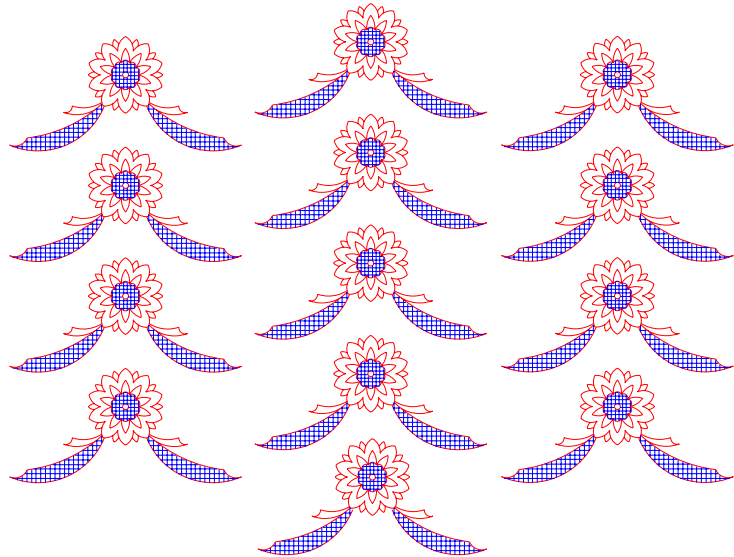
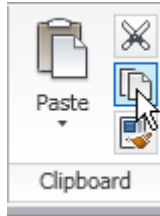
**Command**

5. Insert several **\*.jpg** images in this manner *entering* a different scale for each.
6. Save your drawing with the file name **8\_Exercise03.dwg** to your floppy disk.
7. *Left-click* the **Close** button of the drawing window.

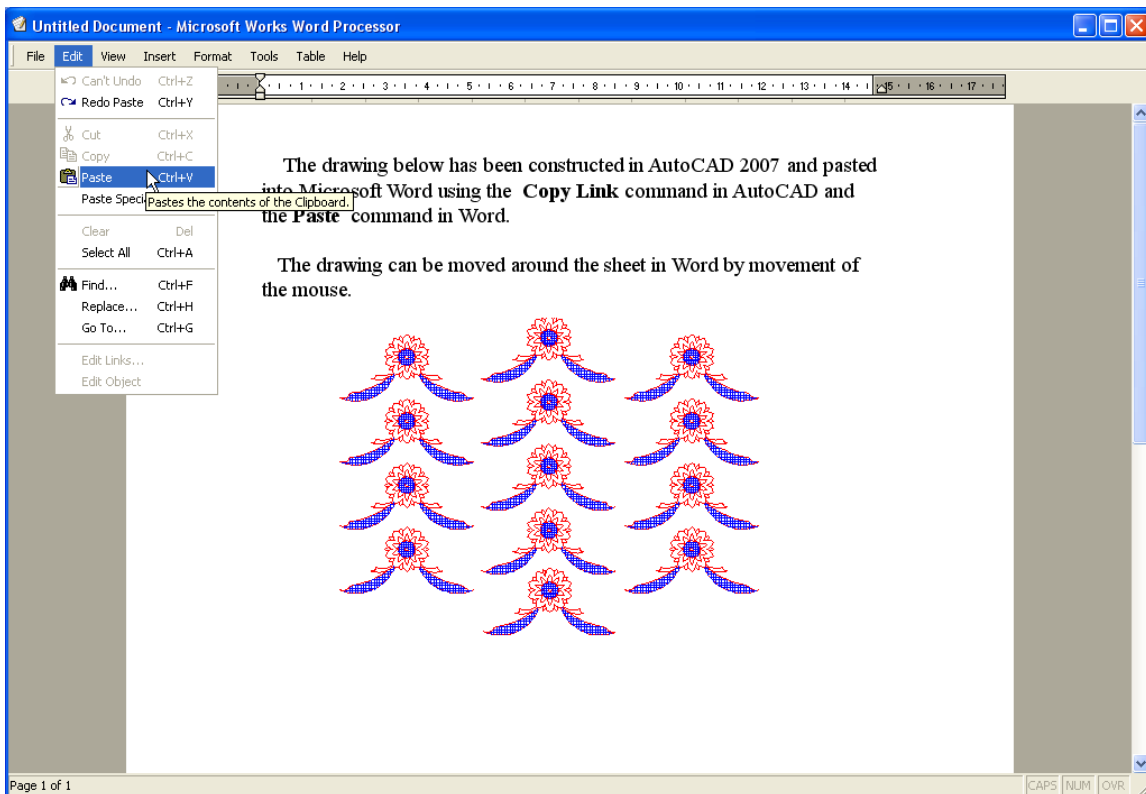


## Chapter 10 Exercise 4

1. Open **AutoCAD 2010** with a *double-click* on its shortcut icon in the Windows desktop.
2. Open the first drawing of the array constructed when answering Exercise 1.
3. *Left-click* the **Copy Clip** icon in the **Home/Clipboard** panel.
4. Open **Microsoft Word** with a *double-click* on its shortcut icon in the Windows desktop.
5. *Left-click* **Edit** in the **Word** menu bar, followed by another *left-click* on **Paste** in the drop-down menu. The drawing from **AutoCAD 2010** is pasted into the **Microsoft Word** document.
6. Add some appropriate text as shown in Fig. 10.32.



7. Save the **Microsoft Word** document with the file name **10\_Exercise04.dwg** to your floppy disk.
8. *Left-click* the **Close** button of the drawing window.

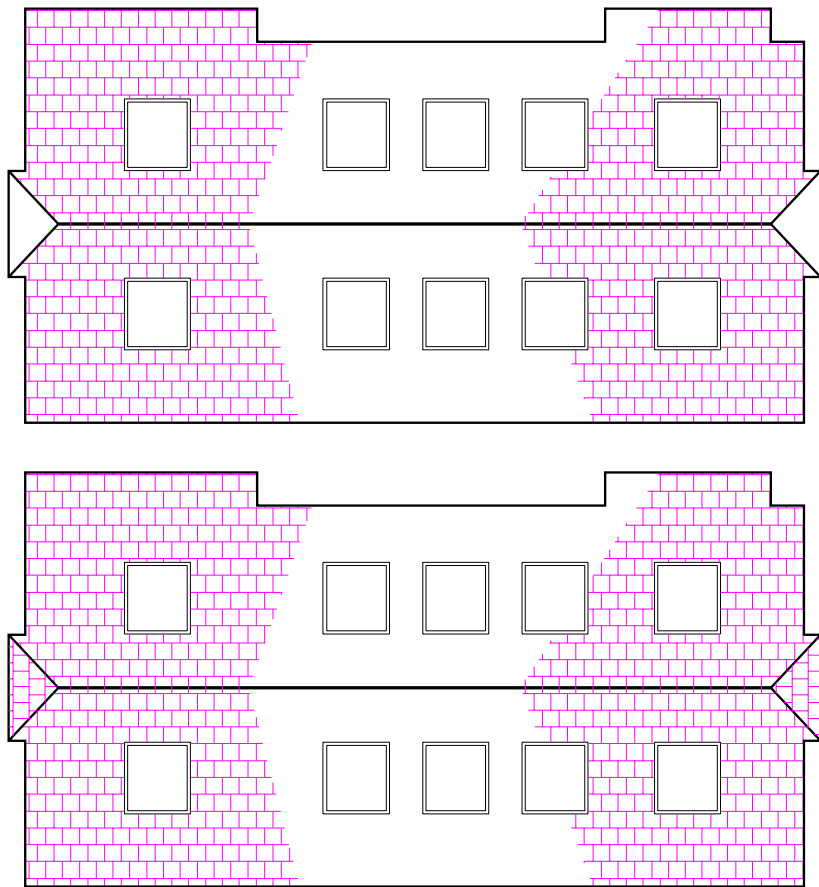


## Chapter 10 Exercise 5

1. Examine the drawings of Figs 10.1, 10.2 and 10.3.

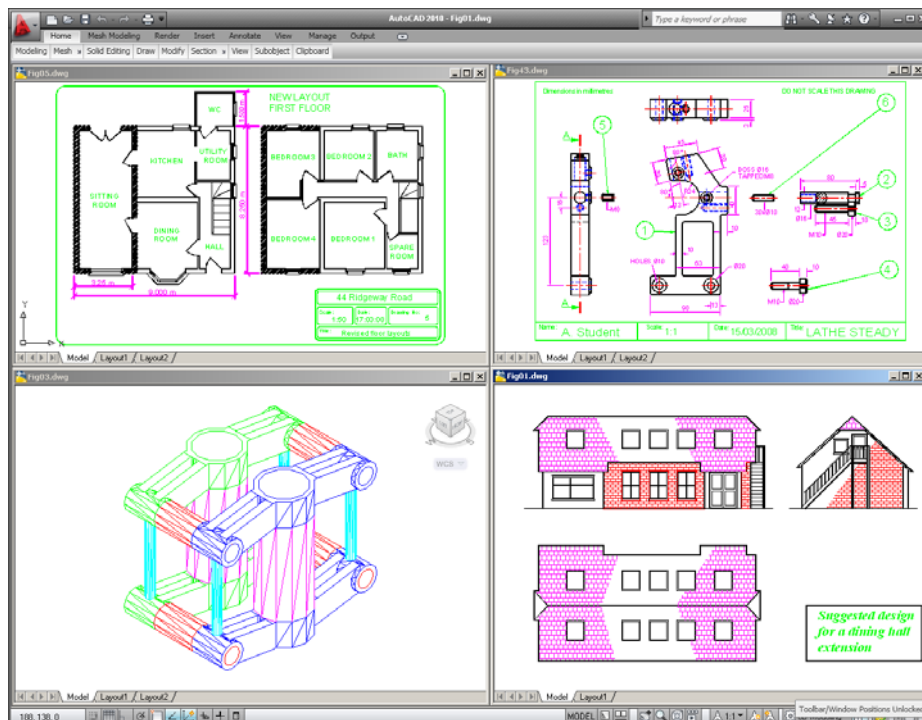
2. The upper drawing to the right shows the plan view of these two illustrations.

3. The lower drawing shows the correct plan view with the two sloping ends of the roof hatched.



## Additional exercises

1. Open four drawings which have been saved to file and using the **Multiple Design Environment** (open the drawings and press **Ctrl+A**) and arrange the four drawings in the manner shown in the illustration below.

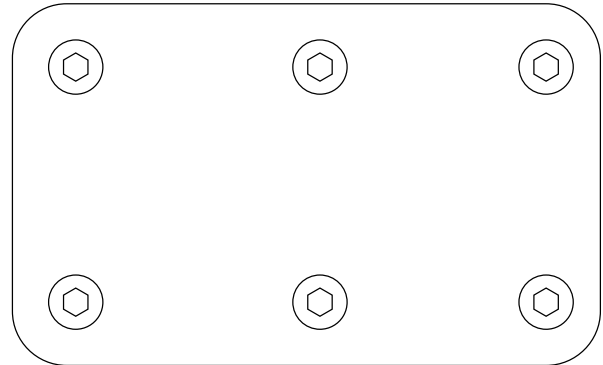
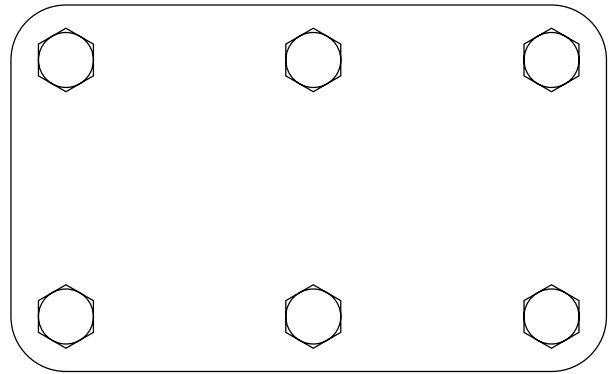


1. When copying a drawing constructed in AutoCAD 2010 using the **Copy Link** tool from the **Home/Clipboard** panel, the drawing can be pasted into documents being worked in other applications. The method of copying and pasting makes use of:

- (a) A DXF file
- (b) An EPS file
- (c) Any item in any application can be automatically copied into another application
- (d) The drawing is transferred via the **Clipboard**.

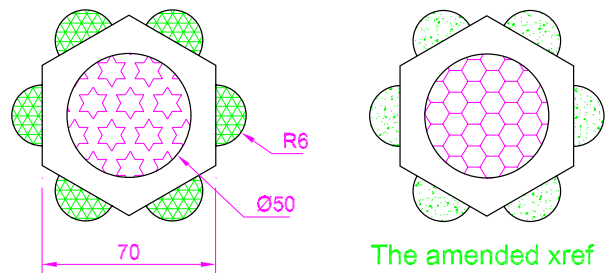
2. When a drawing is saved as an EPS file and the EPS file is inserted into a document being worked in another application:

- (a) Changes made in the AutoCAD drawing will be automatically updated in the drawing in the other application
- (b) Changes made in the AutoCAD drawing are not reflected in the document into which the drawing has been inserted
- (c) Changes made in the AutoCAD drawing are only changed in the inserted drawing after both the drawing and the document have been saved to file
- (d) It does not matter whether the drawing is changed or not, no changes will be reflected in the other document.



3. The reason for saving an AutoCAD drawing as a DXF file is:

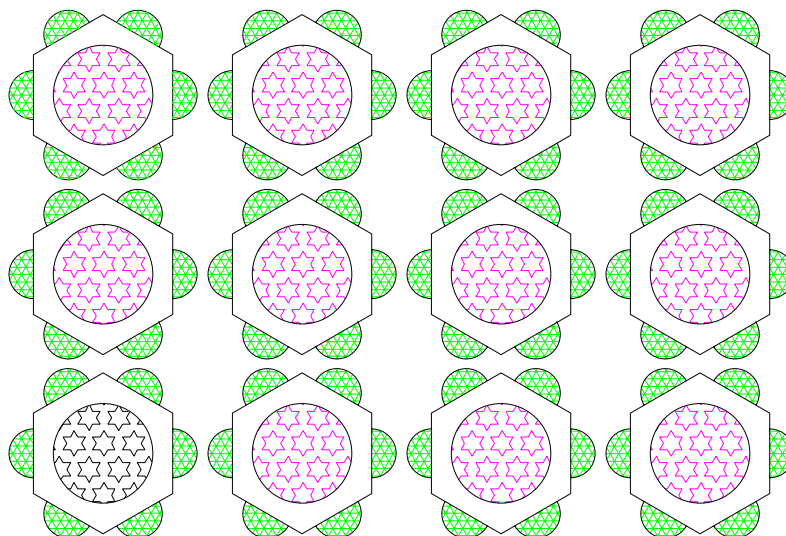
- (a) The DXF file can be opened in any other Computer Aided Design (CAD) application
- (b) DXF files take up less space on a file than the AutoCAD DWG file
- (c) DXF files can be opened in a Microsoft Word document
- (d) DXF files can be opened in earlier releases of AutoCAD.



The amended xref

4. External references (xrefs) can be described as:

- (a) They are the same as blocks and are saved within the drawing file in which they were constructed, but

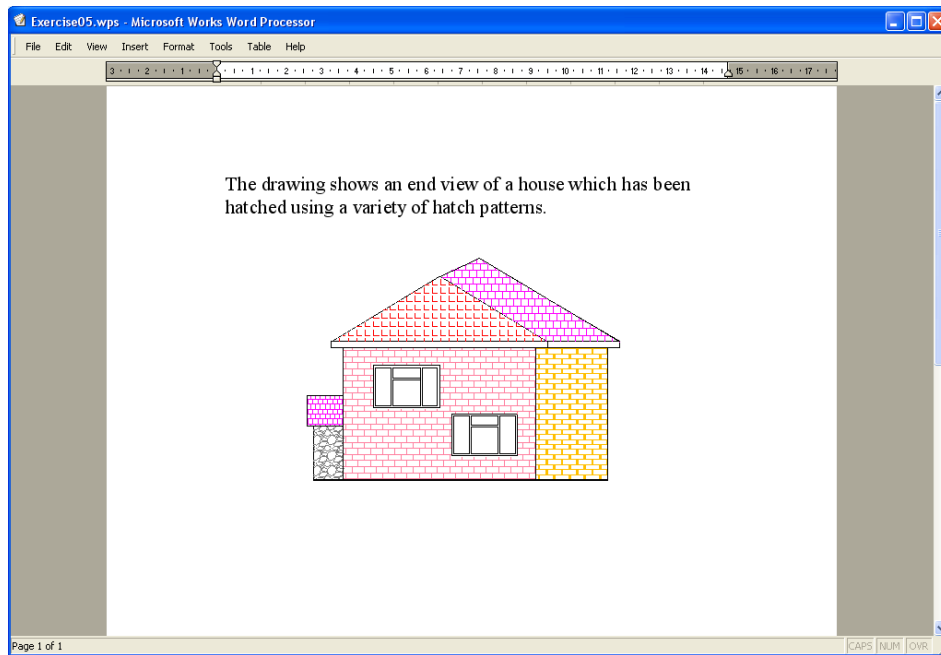


can be inserted into other drawings

- (b) They are different to blocks in that changes in an original external reference are reflected in the drawing in which the xref is inserted



- (c) They are blocks which are saved to file names in their own right
- (d) They are files which refer to parts within a drawing.



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5. Which files with the following file name extensions are “raster” files?

- (a) \*.bmp
- (b) \*.dwg
- (c) \*.tif
- (d) \*.dxf
- (e) \*.jpg
- (f) \*.eps
- (g) \*.pcx.

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