# Higher/Int2/Int1
# Graphic Communication

## Knowledge & Interpretation

Page 1-5 Desk Top Publishing

Page 6-9 The Three 'P's

Page 10-11 Tolerances

Page 12-13 Drawing Abbreviations

Page 14-15 Computer Hardware

Page 16-18 CAD

Page 19-20 Gantt Charts

Page 21 3rd Angle Projection

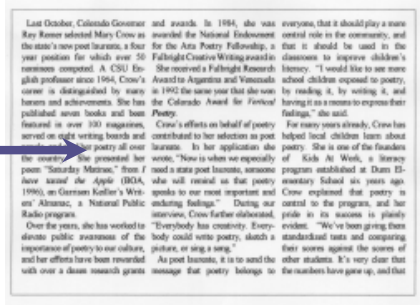
Page 22 Architectural Views

# DESK TOP PUBLISHING (DTP)

# THE A - Z OF DESK TOP PUBLISHING

**ALIGNMENT** – positions of text lines on a page or column e.g. aligned right, aligned left or fully justified.

JUSTIFIED



**BLEED** – this is to extend an artwork graphic beyond the trimmed edge of the page. The bleed is the extent to which it exceeds the page, commonly 3mm.

BLEED

**CAPTION** – this is the descriptive text which accompanies a graphic or illustration.

CAPTION

**DESK TOP PUBLISHING** – the creation of a whole publication on a computer and preparing it for printing using typical publishing processes.

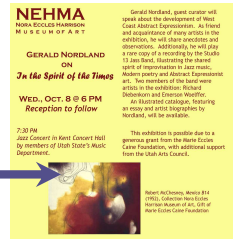
DTP

**FOOTER** – a line of text or page number placed at the bottom of the page which is repeated throughout the document.

FOOTER

**GRAPHIC** – an illustration prepared on a paint, draw, CAD package or captured by image scanner which is then imported into a DTP layout.

GRAPHIC



# THE A - Z OF DESK TOP PUBLISHING

**HEADLINE** – line of type set in a display (large) placed above accompanying text. Usually guides the reader on the content of the body text.

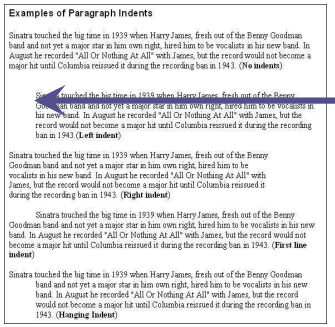
HEADLINE

The Willamette Chronicle

**The future is in our hands**

*Population explosion endangers quality of life across Willamette Valley*

**INDENT** – beginning a line of text further in from the left margin then the rest of the text.


Examples of Paragraph Indents

Sinatra touched the big time in 1939 when Harry James, fresh out of the Benny Goodman band and not yet a major star in him own right, hired him to be vocalists in his new band. In August he recorded "All Or Nothing At All" with James, but the record would not become a major hit until Columbia reissued it during the recording ban in 1943. (**No indents**)

Sinatra touched the big time in 1939 when Harry James, fresh out of the Benny Goodman band and not yet a major star in him own right, hired him to be vocalists in his new band. In August he recorded "All Or Nothing At All" with James, but the record would not become a major hit until Columbia reissued it during the recording ban in 1943. (**Left indent**)

Sinatra touched the big time in 1939 when Harry James, fresh out of the Benny Goodman band and not yet a major star in him own right, hired him to be vocalists in his new band. In August he recorded "All Or Nothing At All" with James, but the record would not become a major hit until Columbia reissued it during the recording ban in 1943. (**Right indent**)

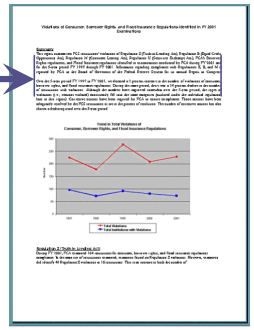
Sinatra touched the big time in 1939 when Harry James, fresh out of the Benny Goodman band and not yet a major star in him own right, hired him to be vocalists in his new band. In August he recorded "All Or Nothing At All" with James, but the record would not become a major hit until Columbia reissued it during the recording ban in 1943. (**First line indent**)

Sinatra touched the big time in 1939 when Harry James, fresh out of the Benny Goodman band and not yet a major star in him own right, hired him to be vocalists in his new band. In August he recorded "All Or Nothing At All" with James, but the record would not become a major hit until Columbia reissued it during the recording ban in 1943. (**Hanging Indent**)

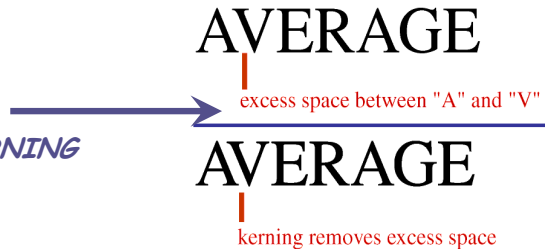
INDENT

**JUSTIFICATION** – setting of type lines in which the space between words is varied from line to line so that each line is of equal length.

JUSTIFIED



**KERNING**– a DTP function which is used to adjust the spacing between pairs of individual letters on a page. Used to eliminate unwanted white space.




KERNING

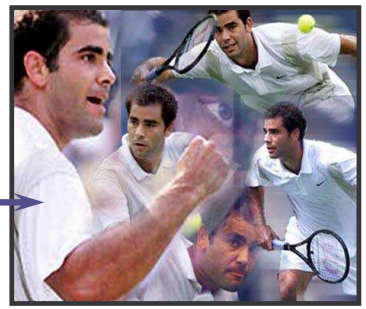
**LANDSCAPE** – a page layout function which arranges the page so that its widest side is horizontal

LANDSCAPE

(PORTRAIT)

**MONTAGE** – a combination of separate images combined to give a composite picture/image.

MONTAGE



# THE A - Z OF DESK TOP PUBLISHING

**OUTLINE** – a typeface which uses an outline effect.

OUTLINE →

**PORTRAIT** – a page layout function which arranges the page so that its widest side is vertical.

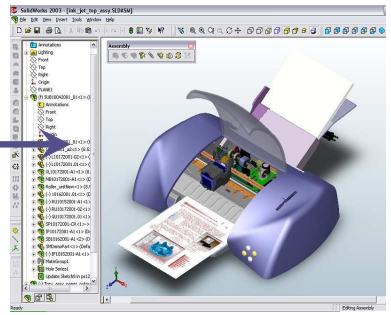
PORTRAIT ←

**QUOTES** – marks which indicate speech e.g, they can be 'single' or "double"

QUOTES ←

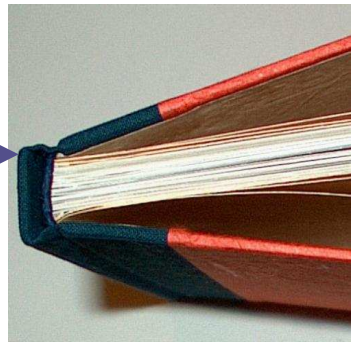
**RUN**– the number of copies of a publication to be printed.

PRINTER →



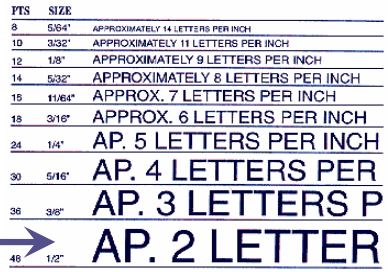
**SPINE** – the bound edge of a document/publication

SPINE →



**TYPE SIZES** – the standard point system to describe type sizes. This is based on 72 points to an inch where a 72 point piece of text would measure 1" tall when printed out.

TYPE SIZES →



| PTS | SIZE | |
|---|---|---|
| 8 | 5/64" | APPROXIMATELY 14 LETTERS PER INCH |
| 10 | 3/32" | APPROXIMATELY 11 LETTERS PER INCH |
| 12 | 1/8" | APPROXIMATELY 9 LETTERS PER INCH |
| 14 | 5/32" | APPROXIMATELY 8 LETTERS PER INCH |
| 15 | 11/64" | APPROX. 7 LETTERS PER INCH |
| 18 | 3/16" | APPROX. 6 LETTERS PER INCH |
| 24 | 1/4" | AP. 5 LETTERS PER INCH |
| 30 | 5/16" | AP. 4 LETTERS PER |
| 36 | 3/8" | AP. 3 LETTERS P |
| 48 | 1/2" | AP. 2 LETTER |

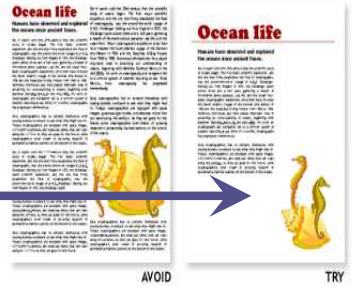
# THE A - Z OF DESK TOP PUBLISHING

**UNDERLINE** – a typeface which is underlined.

UNDERLINE → FALCON LAKES GOLF COURSE

**WHITE SPACE**– areas of empty space on a page. when used effectively it aids comprehension by complementing and setting off graphic images.

WHITE SPACE →




## ...EXAMPLE

# ACTIVITY.....

TASK – Look at the magazine pages shown. Using your DTP notes, annotate, explain and justify fully the layout in terms of DTP key words. Use the example on page 4 as a reference guide.

CREDIT THAT

Financial planning is close at hand as City Council backs plan to increase the role of credit unions

Success story

Newly refurbished launderette

NOW OPEN

ALLISON STREET CLEANERS

OPENING OFFERS!

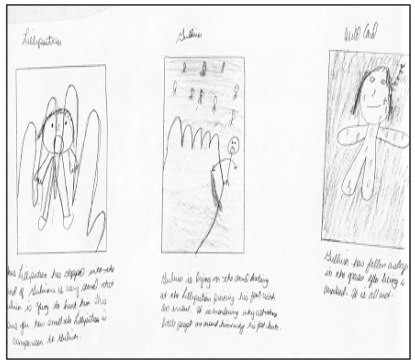
# THE 3 P'S

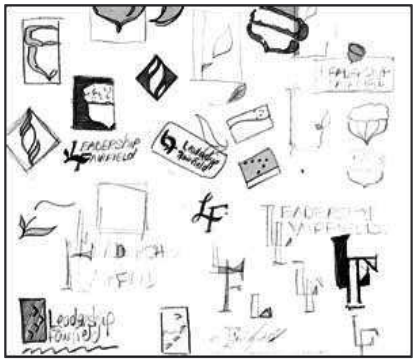
# PRELIMINARY GRAPHICS

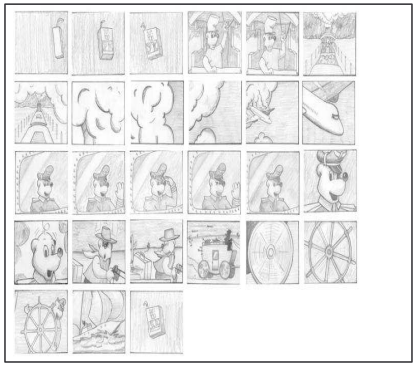
Graphic Communication uses what is collectively known as the 3P's – preliminary, production and promotional graphics. the first one we will look at is ***PRELIMINARY GRAPHICS.***

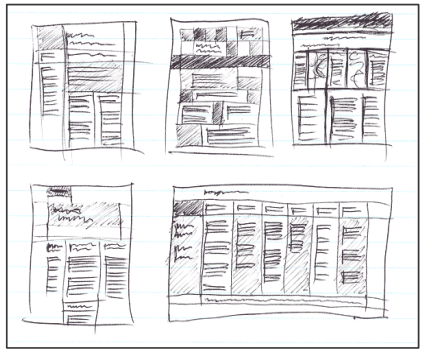
Preliminary graphics is concerned with the initial stages of graphic design, all your rough or introductory work. Preliminary graphics often take the form of 'thumbnail sketches' which are small rough sketches designed to give a quick representation of your designs.

These sketches are ideal at this stage of the design process as they do not take long and give you an immediate representation of your work. They also allow you to develop a whole range of ideas quickly which allows you to build on and expand your designs.









THUMBNAILS

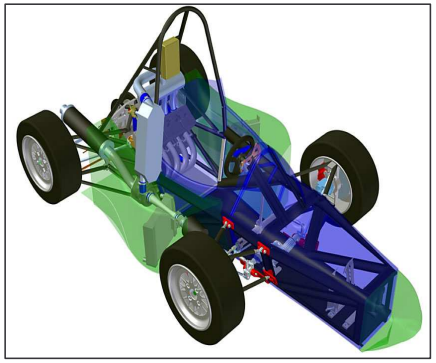
# PRODUCTION GRAPHICS

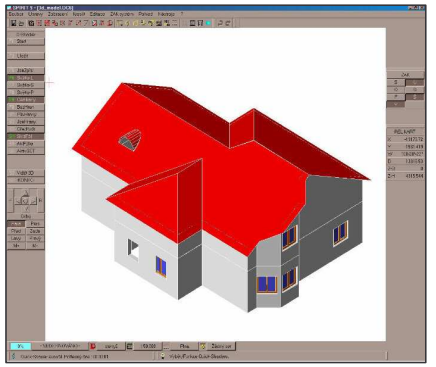
For a graphic image to be considered a 'production' graphic it must convey certain pieces of information which would be of use to someone like a technologist, engineer, architect etc.

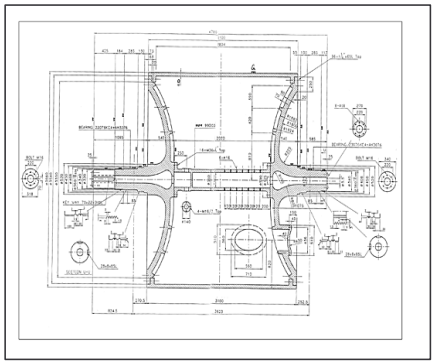
***Production Graphics*** are concerned with telling us as much information as possible about a product. For example, it would be of benefit to know things like dimensions, moving parts, cross sections, weight, material selection etc.

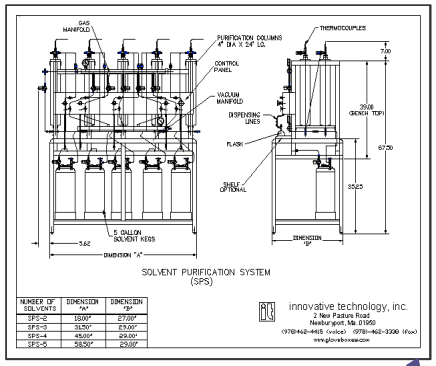
These drawing usually come in the form of Orthographic Drawings, Sectional Views, Exploded Views, Assembly Views, Perspective, Isometric, Sections, Stepped Sections, Cut Aways etc.

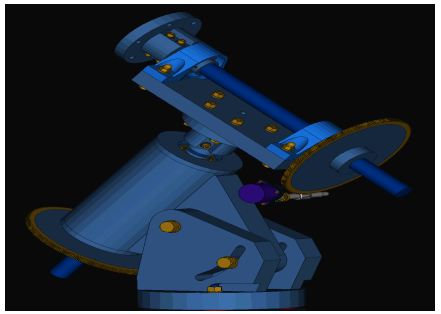
In order for the drawings to be clear and concise to the manufacturing sector, the drawings are usually produced on AutoCAD or other CAD packages in the form of working drawings or 3D models.









PRODUCTION



KNOWLEDGE & INTERPRETATION –3 'P's

# PROMOTIONAL GRAPHICS

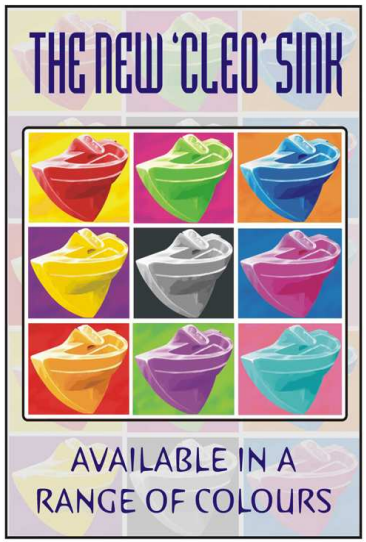
Promotional Graphics are extensively used by the sales and marketing departments of companies. This is where the product or design is displayed, advertised and put into the market place.

Promotional graphics come in the form of posters, advertisements, leaflets, flyers, displays etc.

In order for a piece of promotional work to be effective, it must attract the consumers attention and make them want to look at it.

Promotional Graphics are strongly linked with the A-Z of Desk Top Publishing, and a good promotional graphic will hit many of the criteria described in the document.

Promotional Graphics are usually created on software packages such as Corel Draw, Adobe Photoshop, Microsoft Publisher etc.




PROMOTION

# ACTIVITY.....

TASK – use your knowledge of 'thumbnail' sketching with regards to preliminary graphics and produce a series of drawings for a CD cover of your choice. You will have to design the front and back cover as well as the spine.

Once you have completed your thumbnails, complete and print out your final DTP design.

THUMBNAIL
S

CD COVER

# TOLERANCES

# TOLERANCES

### *WHAT IS A TOLERANCE ?*

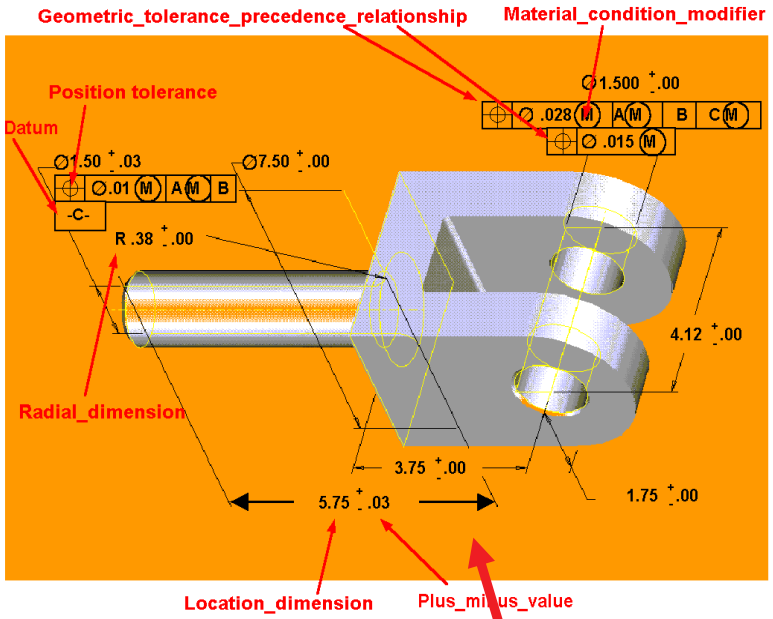
In terms of architectural and engineering drawing, applying a tolerance allows a drawing to be out (inaccurate) by a certain amount.

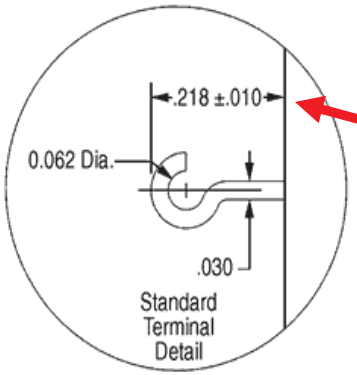
Depending on what the object is being used for, the tolerance may allow the sizes to be out by +/- 1mm, or even up to +/- 10mm.

Tolerances for geometrical dimensions describe the allowable deviation range and are characterised by plus and minus tolerances, dimension ranges and dimension limits. A tolerance size can be in the form of a radial dimension, angular, distance, curve etc.

### *Why have tolerances on a drawing?*

When building a house or large structure, it would be virtually impossible to get sizes exact, therefore a tolerance lets builders and engineers etc. know when close is close enough.




PLUS AND MINUS TOLERANCE

# ACTIVITY.....

**TASK – Explain the purpose of applying tolerances to working or engineering drawings**

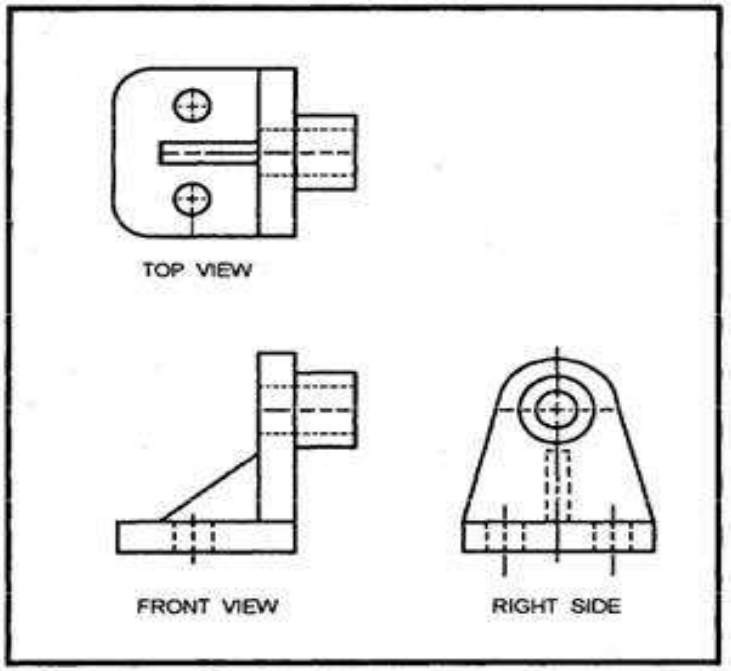
**TASK – tolerances can be applied to a drawing using two methods, what are these methods ?**

**TASK – using your knowledge of tolerances, apply the following tolerances to the drawing shown below.**

Angular dimension of 30mm applied to the web section, tolerance of plus or minus 0.10mm.

Diameter of hole on plan of 10mm, tolerance of plus or minus 0.05mm

Radius of large circle on right side of 20mm, tolerance of plus or minus 0.10mm.



# DRAWING ABBREVIATIONS

# DRAWING ABBREVIATIONS

**R** – **radius.** Distance from centre to the edge of an circle or arc.

**ANSI** – **American National Standards Institution.** Government organisation which ensures uniform procedures and practice in design, engineering and drafting.

**A/F** – **across the flats.** Unit of measurement on geometric shapes, referring to sizes across the parallel sides.

**ASSY** – **assembly.** This abbreviation refers to an assembly drawing, where all parts are placed together.

**NTS** – **not to scale.** Often shown on technical drawings highlighting that the drawing isn't drawn to a particular scale.

**CSK** – **countersunk.** Shows that a screw head has been countersunk and will appear flush with a surface.

**Ø** – **diameter.** Distance from the edge to edge of a circle through the centre.

**ISO** – **International Standards Organisation.** International organisation which ensures uniform procedures and practice in design, engineering and drafting.

**PCD** – **pitch circle diameter.** Description of the measurement between two circles. Dimension is usually given as the size between centre points of the two circles.

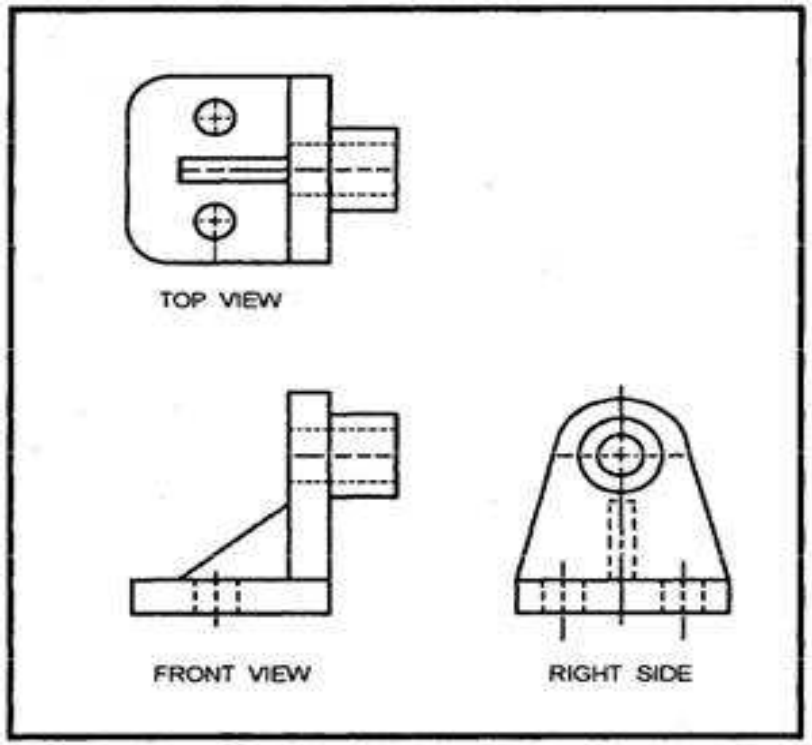
**DRG** – **drawing.** This abbreviation is the standard term for any type of technical drawing.

**TOL** – **tolerance.** Used to show if any tolerances have been applied to the technical drawing.

**CL** – **centre line.** Used to denote a centre line on a technical drawing.

# ACTIVITY.....

TASK – using the drawing abbreviations sheet, annotate, dimension and note the following drawing in terms of the correct BS convention. Note, there is no right or wrong answer to this question, it's simply intended as an exercise in applying drawing abbreviations.



# COMPUTER HARDWARE

Digital camera is often used in the architectural and engineering sectors to photograph parts of a product or structure to report back to the design department.

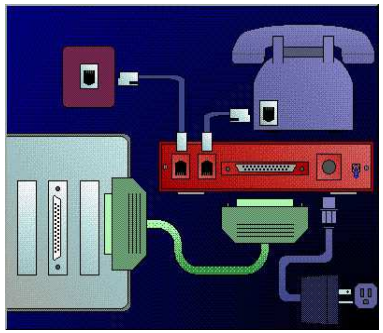
A flat bed scanner is often used to transfer existing manual drawings into a computers memory. A loss in quality often occurs during this process

A hand held scanner is used to manually scan an image. This requires you to move the scanner over your image. Due to changes in speed when moving it, the image is often distorted.

A printer is simply used to produce hard copies of a drawing or document. Printers don't usually go above A3 size. A laser printer produces excellent quality.

A plotter is usually used to produce A2 or A1 sized architectural drawings. It uses different coloured pens for coloured lines as opposed to a cartridge used by a printer.

A graphics tablet is like a digital pen – whatever you write or draw on the tablet appears on screen. Can be used to transfer CAD drawings onto computer memory.



A modem is used to transfer files via email to other computer stations over the world. This allows various companies to quickly see a drawing/object.

**Task – explain the advantage of using a digital camera opposed to a scanner to place drawings on a computer memory?**

**Task – explain the advantage of using a flatbed scanner to scan drawings as opposed to using a hand scanner?**

**Task – explain the difference between computer software and hardware?**

**Task – what kind of 'files' can pictures/images be stored as? Explain the difference between these?**

# COMPUTER AIDED DRAWING

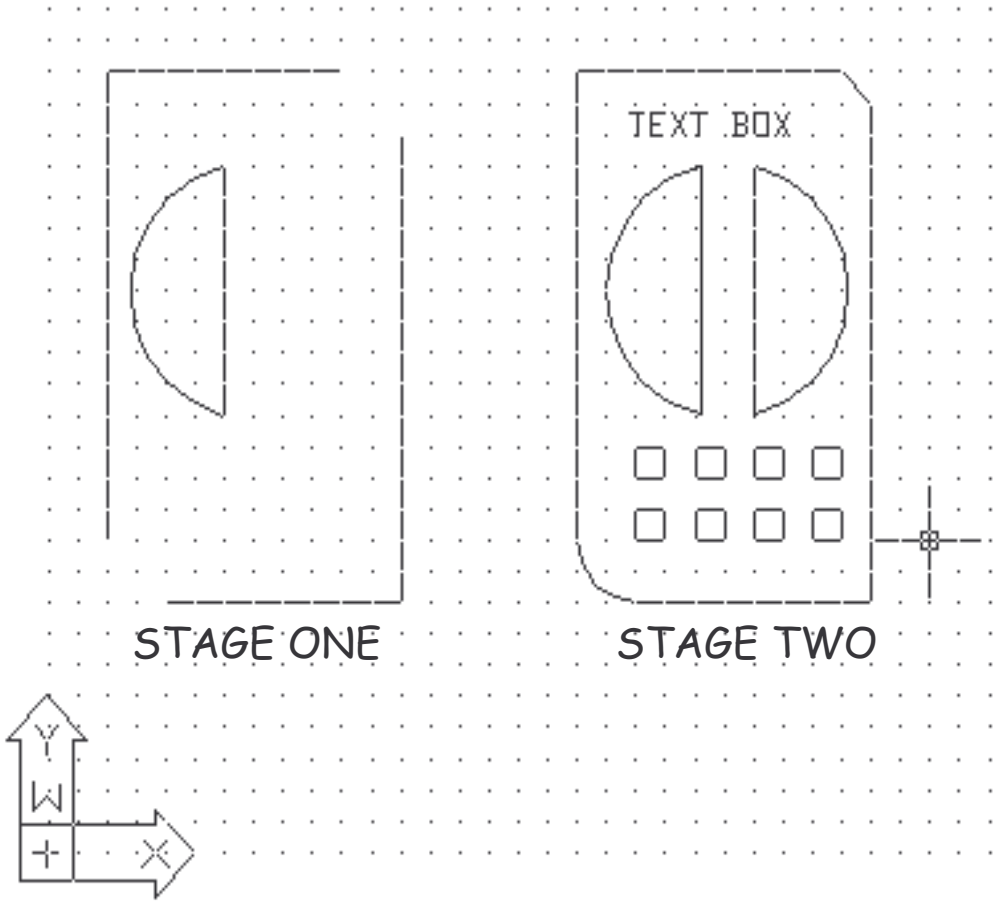
# COMPUTER AIDED DRAWING

Very often in the Higher Graphic Communication exam you will be given a Computer Aided Drawing scenario.

This will probably involve an incomplete CAD drawing followed by a complete CAD drawing. The task you will be faced with will be to explain how you can get from stage one to stage two.

Take a look at the drawing shown to the right and consider the most practical and efficient method of getting from stage one to stage two.

The examiners are looking for you to show an extensive knowledge of CAD – this is your opportunity to show everything you know about the package!

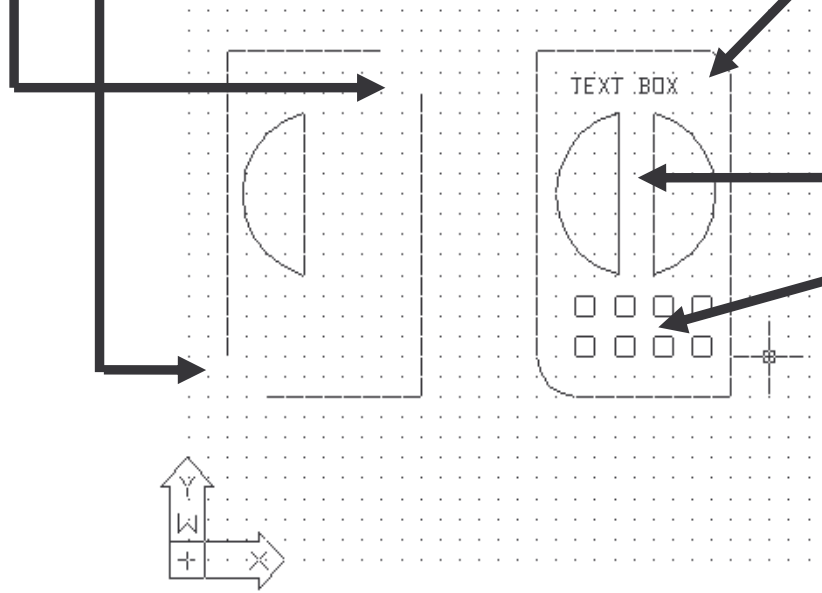


## FILLET

The bottom corner is drawn by using the fillet icon. This allows the corner to have a rounded edge. When you select the fillet icon you have the option to alter the 'fillet radius' which would allow you to increase or decrease the size of curve.

## CHAMFER

The top right hand corner of the drawing was drawn using the chamfer icon. This allows you to take a uniform cut out of the shape. As with the fillet, once you click on the icon you have the option to change the chamfer size.




## MIRROR

To save drawing the complex line and arc twice, this shape would be drawn using the mirror icon. This allows you to select a base point and create a 'mirror' image of a shape already drawn on CAD. This saves a lot of time and ensures maximum accuracy.

## TEXT BOX

The writing 'text box' was drawn using the text box icon. When using this you have the option to have single line text or multi line text, depending on the circumstances. You also have masses of further options with this icon, such as rotating text to particular angles or using it in isometric views with the oblique angle option.

## BOX ARRAY

The quickest and most efficient method of drawing these boxes is to use the box array function. This saves you having to draw the boxes individually or even copying and pasting them. The box array icon allows you to specify the amount of rows and columns you require to create your array of boxes.

# ACTIVITY.....

Explain as fully as possible what the following CAD commands do . . .

| | | |
|---|---|---|
| PAN | BREAK | POLYLINE |
| UCS | TRIM | SCALE |
| COPY WITH BASE POINT | EXTRUDE | PLOT |

# GANTT CHARTS

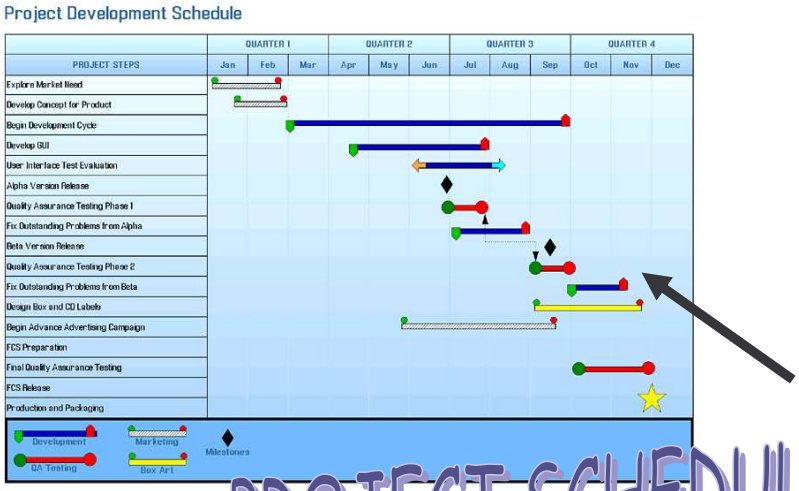
# GANTT CHARTS

## WHAT IS A GANTT CHART ?

A gantt chart is a graphical representation of the duration of tasks against the progression of time.

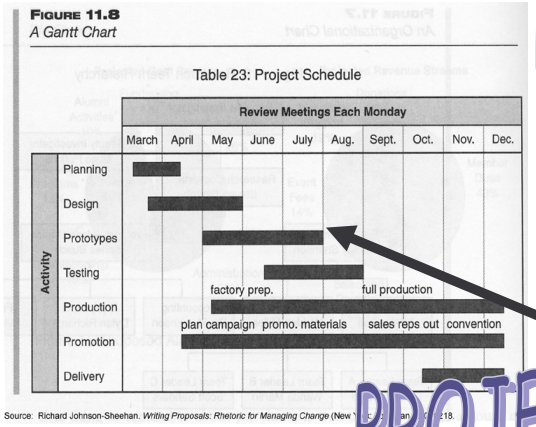
In simple terms, a gantt chart is a method of showing how a task is broken up, how many hours, resources and people are involved in these tasks, and quite often, how much the task is going to cost.

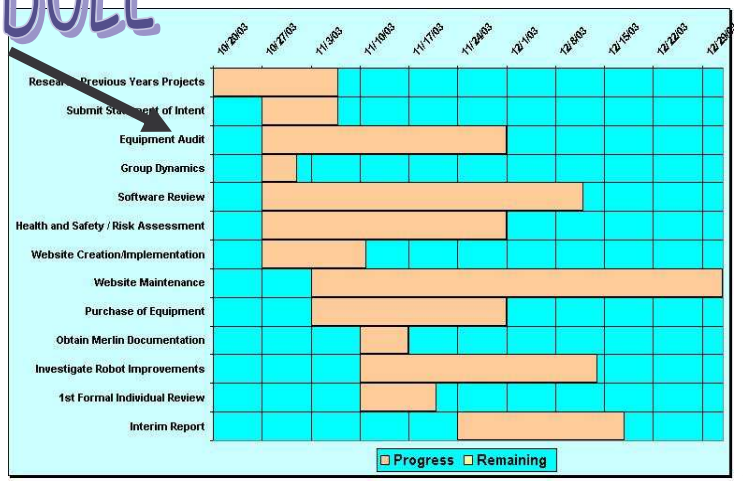
Shown here are various examples of gantt charts.




PROJECT SCHEDULE

PROJECT SCHEDULE




PROJECT SCHEDULE

# ACTIVITY.....

Complete the gantt chart shown below for the following sequence of operations.

A manufacturing process employs 6 workers. From the information given below, draw a gantt chart for the process.

Worker 1 requires 4 weeks; halfway through, he is joined by worker 2 who requires 2 weeks, followed by worker 3 who requires 2 weeks; worker 4 requires 2 weeks, the first immediately after worker 3, the second during the same week as worker 6; worker 5 requires 5 weeks, the first week overlapping the first week of worker 4. Worker 6 requires 1 week at the end of the process.

| | | WEEK 1 | WEEK 2 | WEEK 3 | WEEK 4 | WEEK 5 | WEEK 6 | WEEK 7 | WEEK 8 | WEEK 9 | WEEK 10 | WEEK 11 | WEEK 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| WORKER 1 | | | | | | | | | | | | | |
| WORKER 2 | | | | | | | | | | | | | |
| WORKER 3 | | | | | | | | | | | | | |
| WORKER 4 | | | | | | | | | | | | | |
| WORKER 5 | | | | | | | | | | | | | |
| WORKER 6 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

# 3rd ANGLE PROJECTION

# 3rd ANGLE PROJECTION

Shown at the right is the symbol for representing third angle orthographic projection.

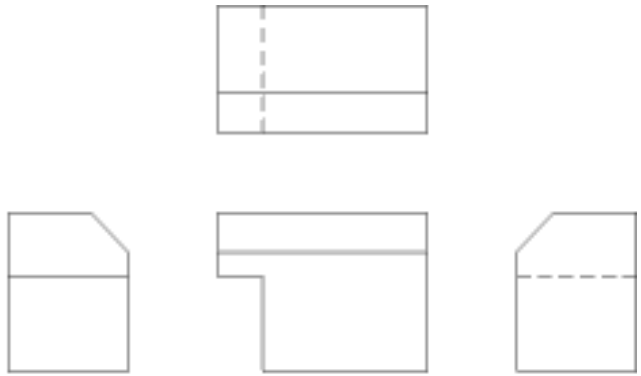
This symbol is a standard and essential piece of information which must be shown on all technical drawings.

What other things do you have to show on your drawings?

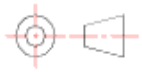
Something your teacher may very often ask you to put on your drawings is a name box.

What information do you usually show in your name box?

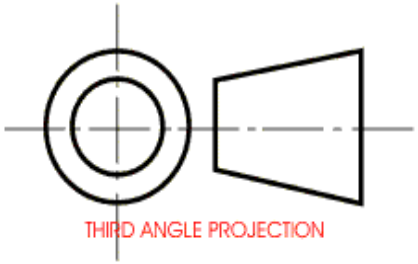
List 5 important pieces of information you have to put in your name box opposite.



THIRD ANGLE PROJECTION



SYMBOL




## THE NAME BOX!

1 Your name!

2

3

4

5

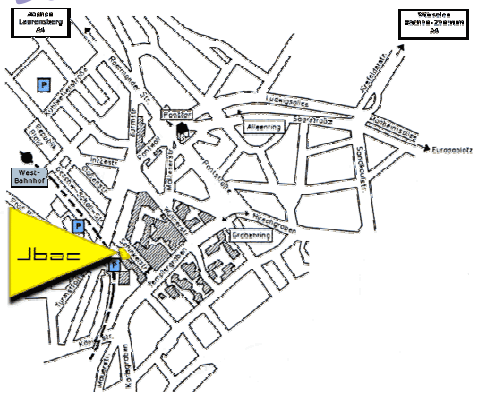
6

# ARCHITECTURAL VIEWS

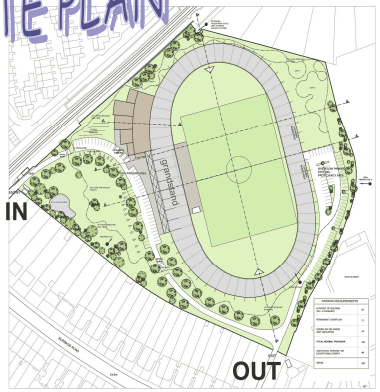
# ARCHITECTURAL VIEWS

Quite often in an exam you will be asked to identify various types of architectural views. Hopefully you will still be familiar with these from Standard Grade. The three most common types of views are ; Site Plan, Location View and Floor Plan and there are examples of each on this page.

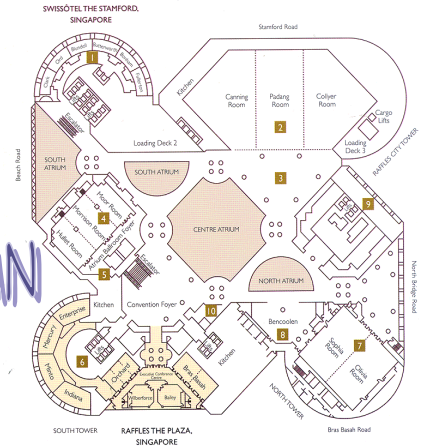
## LOCATION VIEW



## SITE PLAN




## FLOOR PLAN




## ACTIVITY...

You are very often given other pieces of information alongside these views. Write down as many other things you have seen on these architectural views and explain why they are there.