

***Clarity of
Terms***

*Compiled by
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*for
Higher / Int 2
Graphic
Communications*

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Colour Usage - continued

Monotone A drawing which is produced using only one colour, or shades of one colour.
eg. Black, White and Greys.

Natural Colours that can be seen within a natural environment such as green and brown.

Pantone International numeric system for selecting a colour.
Each colour has its own individual number.

Primary The three main colours that can't be made by mixing.
These are: Red, Yellow and Blue.

Receding Colours that give the impression that the surface they are painted on, is further away from your eye than it really is.
Receding colours are also cool colours.

Reflection A part of the surrounding area reflected on the surface of a drawing.
Hard to create but very effective if successful.

Secondary A mix of two primary colours to give a third colour.
Red + Yellow = Orange
Blue + Yellow = Green
Blue + Red = Purple.

Shade Adding black to a colour to make it slightly darker.
This process can be completed many times to give a range of different shades.

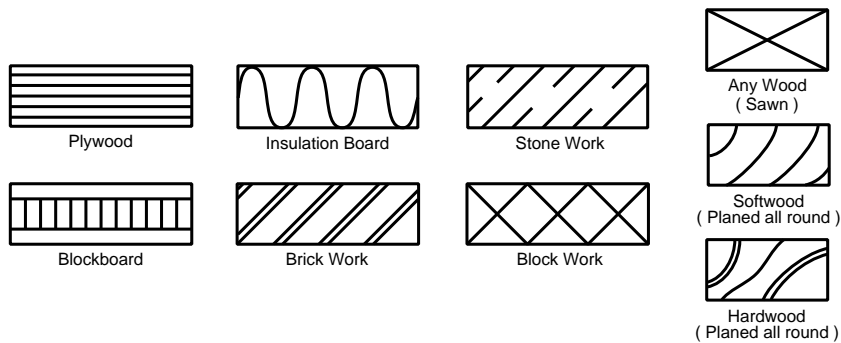
Shadow The dark shape cast on a surface when something stands between a light and the surface.

Common Symbols

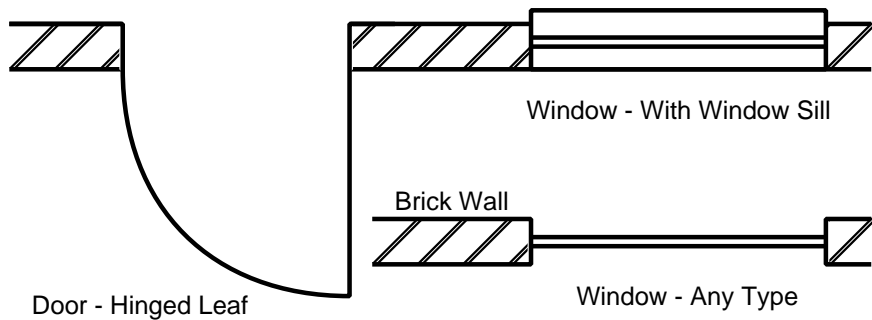
Electrical



Construction Materials



Wall Openings



Company Parts

Administration Deals with ordering, company wages/expenses general paperwork and invoicing.
Will mainly use the word-processor, spreadsheet and database.

Design Working on future new products.
Evaluating and improving current models.
Mainly use modelling packages.

Distribution Deals with moving the product from the factory to the different sales outlets.
Mainly uses databases.

Manufacturing Constructing the product from scratch or from a bank of component parts.
Mainly use CAD packages.

Marketing Preparing for selling.
Main user of promotional graphics.
Spreadsheets, DTP and CAG packages.

Personnel Looks after the workers of the company providing help, training, encouragement and pay.

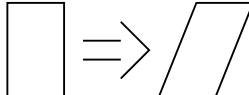
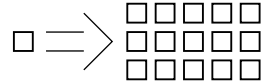
Research Evaluating existing products on the general public.
Look to see what is needed, what could sell in the future or for changes in the market place.

Sales Involved in the actual selling of the product to the end customer or to the shop buyers so that they can sell on to the customer.
Will mainly use spreadsheets and databases.

Shape / Form

- Circle** A shape made from an endless curved line which is always equally spaced from a centre point.
- Cone** A 3D form which is round at the bottom and comes to a point.
- Cube** A 3D form which is made from six square surfaces of equal size.
- Cuboid** A 3D form similar to a cube but where two or more sides are made from rectangles.
- Cylinder** A 3D form similar to a prism but where the end surfaces are circles.
- Form** Any 3D object which can actually be picked up. Requires a minimum of one pictorial or two orthographic views to be represented.
- Freehand** A shape which is drawn using no tools apart from the pencil or pen - no straight edge is used at all.
- Geometric** A shape which is drawn formally using drawing tools and specific skills.
- Hemisphere** 3D form like a ball cut across one centre.
- Hexagon** A six sided shape which can be easily drawn using a pair of compasses if regular.
- Irregular** A shape where all the sides are of different length.
- Octagon** An eight sided shape.
- Parallelogram** .. . A shape where opposite sides are equal in length and the corners are not right angled.

Computer — CAD - continued

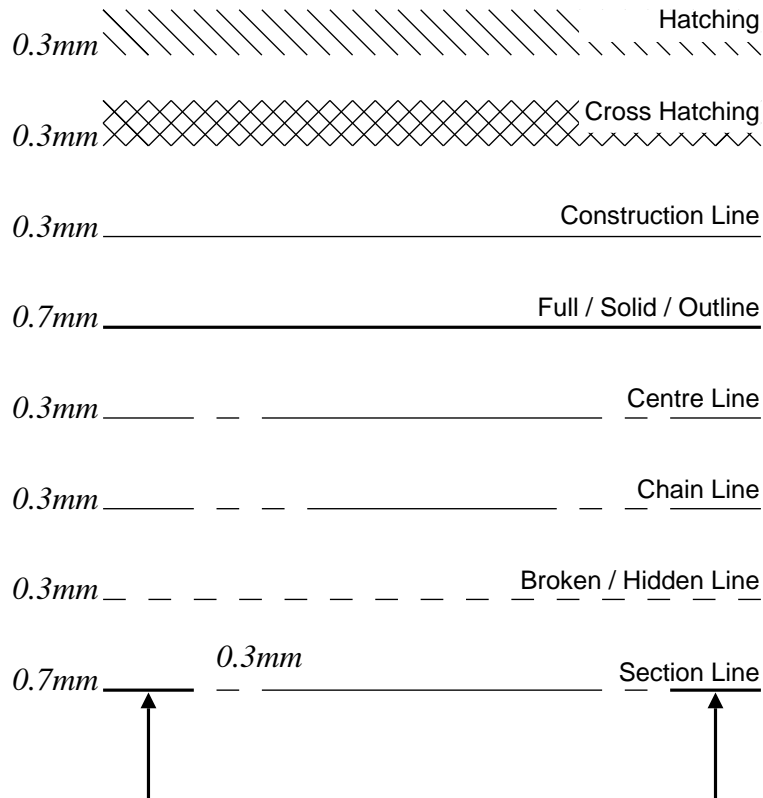
- Distort** To take a section of a drawing and change its overall shape by squeezing or stretching it. 
- Duplicate** Another term for copy although the copy and paste functions are completed at the same time. Sometimes used to produce a row of copied parts.
- **Array** To duplicate a drawing part many times using a matrix of points to position each copy. Can be used to copy and rotate around a point. 
- Flip** Another term for Mirror.
- Grid** A background effect which forces the drawing tool to snap to certain points within a geometric pattern.
- **Isometric** The pattern is made from equally sized equilateral triangles forcing the drawing into lines at 30°, 90° and 150°. The sizes of these triangles can be easily changed to suit the drawing.
 - **Orthographic** The pattern is made from equally sized squares. The sizes of these squares can be easily changed to suit the drawing.
- Group** A number of drawing elements held together as one. Very powerful editing tool.
- Handles** A number of small squares which allow you to edit a drawing element.

Line Types - continued

Parallel Line .. Lines that are drawn in the same direction but do not converge.

Radial Curves .. Curved lines that are drawn using a pair of compasses.

Vertical Line .. Lines that are drawn up the page parallel to the edge of the paper.



Computer — CAD - continued

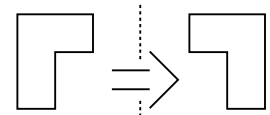
Library Storage of suitable, frequently used clip art items ready for use within particular documents. Suitably formatted for ease of use in all programs accessing the library.

Line Type Style and thickness of line. eg. Solid or Broken — Thick or Thin.

Lock to Grid .. The cursor is forced to jump to the nearest grid point improving accuracy greatly.

Manipulate To change the overall shape of a part by different methods of transformation. To move and adapt a drawing's position.

Mirror Copies and flips selected drawing part about a specified line.



Modelling Produces a 3D graphic when 2D information is input. Allows the manipulation of the 3D image in real time with the mouse.

Move To change the position of one part of a drawing to a different position on that same drawing.

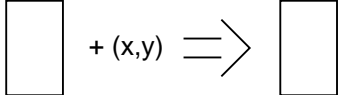
Paste To transfer a part of a drawing, from the clipboard, to the main page. Paste process can be repeated as many times as required.

Pattern Used to produce a row or 2D series of copied parts. See "Duplicated Array"

Line Types

- Angled Line** Lines drawn at a different angle to the edges of the paper.
Usually drawn using a set-square.
- Arrow** Pointer line that connects a piece of textual information to a part of a drawing.
- Broken** A line made from short dashes which shows an edge, or the sides of a hole, that can't be seen from the view point.
- Centre Line** A line made from long and short dashes which show the centre of a circular piece.
When showing the centre of a circle they must cross on a long dash.
- Chain Line** A line made from a series of long and short dashes.
One type is a centre line but other variations of design give different information.
- Construction** .. Very light lines that are used to build up a complex drawing but are not required when it is complete.
Not removed at the end of the drawing.
- Dimension** A line, with an arrow at both ends and a size above, which shows the exact size of a part of a drawing.
Many other styles of line are used when showing the sizes of circles, curves or angles.
- Folding** Lines that are slightly lighter than outlines which show folds within a surface development.
- Freehand Curves** Curved lines that are drawn without the use of any tool except the pen or pencil.

Computer — CAD - continued

- Snap** Locks cursor or move to a grid or a specific part of a drawing, eg. corner, centre, end or intersection.
- Step** Copy selection a number of times.
Each is moved a specified distance from the previous copy in the sequence.
- Symbol** A single part from a library.
Often a simple drawing of a complex part which is used over and over again.
- Tool Bar** Selection of icons grouped logically which allow the speedy access to parts of the graphics program.
- Transform** To take a part of a drawing and distort it mathematically by changing its vertical and horizontal scales together with a possible rotation.
Similar to "Distort".
- Translate** Move a selection of a drawing across a page by a certain amount.
Uses (x,y) coordinates to give new position.
- 
- Undo** One of the most important drawing tools allowing you to retreat one stage in your work if you have made a mistake.
- Ungroup** Breaking a group of items into separate single parts to allow the editing of each section.

Drawing Tools - continued

- Protractor** A semi-circular plastic tool used to measure angles from 0° to 180°. Protractors that will measure 360° are also available.
- Radial Curves** .. Plastic template used for drawing part curves quickly. Not so accurate as a circle template. Bent into the shape of the curve required.
- Rubber** A small, hand-held tool used to erase any unwanted sections of work. Used with pencil, chalk, charcoal and pastels. Can be used, for effect, to show highlights.
- Ruler** A tool used for measurement. Marked with the different measuring scales. eg. millimetres or centimetres.
- Scale Ruler** A ruler with special dimensions on it suitable for drawing in scale. eg. 1:25 or 1:100 or 2:1 depending what the subject of the drawing is.
- Set Square** Triangular piece of plastic used for the accurate drawing of certain angles. Includes 30°/60° and 45°.
- Tee Square** A plastic, or wooden, tool which allows the accurate drawing of horizontal lines across a drawing board. Held in place with the non pencil holding hand. Parallel motion tee-squares are fixed to the board and provide more accurate horizontal lines.

Computer — DTP - continued

- Camera Ready Copy** .. Fully prepared page(s) ready for photographing for reproduction by a conventional printing process.
- Caption** The descriptive text accompanying an illustration.
- Centre Spread** .. Pair of pages at the centre of a folded section. Also referred as a centre fold.
- Collage** Making a large graphic by using smaller drawings pieced together in an interesting or effective manner.
- Column** A vertical area of the page usually filled with text. Pages can have a number of them such as a newspaper which may have 7 or nine per page. Used as a grid to formalise the pages of a publication. Graphics can also use columns to fix their positions.
- **Guides** Non-printing guides showing margins and columns.
 - **Rules** Lines inserted between columns of text.
 - **Spacing** White space between two different columns.
 - **Width** The horizontal size, or width, of a column.
- Composition** .. Designing the layout of a page by moving the text and graphics until you are happy with the result.
- Copy** Any matter (words or illustrations) such as handwritten text, typescript, photographs and artwork which are to be reproduced by printing.
- Crop** Cutting a picture, electronically, to allow it to fit into a particular space. The graphic can normally be re-cropped at a later date if done in a DTP application.

Drawing Tools

- Adjustable** A set square that allows you to set any angle accurately and is used just like a normal set square.
- Airbrush** A small, hand-held, tool that sprays a thin layer of paint or ink onto the drawing.
Requires a compressor to produce the air that is used to propel the ink.
- Compasses (Pair)** A hinged instrument for drawing circles where a pencil or pen is moved round in an arc.
- Dividers** A pair of compasses with two pointed arms, used for measuring or dividing lines.
- Drawing Board** Flat, hard surface with right-angled edges which allows the accurate drawing using the different tools - set-squares and tee squares.
- Eraser Mask** .. Thin sheet of metal with slim holes which is used to protect parts of a drawing when a rubber is used.
- Fixative** A thin spray varnish which is used to stop drawings from smudging when complete.
- Flexi Curves** .. Pliable ruler which can be bent into a freehand curve enabling the outlining of a drawing.
Difficult to achieve or duplicate the curve required.
- French Curves** Plastic drawing tools which are used to construct complex curves.
Time has to be spent making sure that the curves drawn lines up correctly.

Computer — DTP - continued

- Footer** A space at the bottom of a page to hold the page number and other minor details.
On a document with many pages the footer details are automatically copied onto each page.
- Footnote** Text placed at the bottom of a page prefixed with a symbol or number which is cross-referenced by the same character in the text.
Used to provide additional information.
Usually shown with a superscript number³.
- Format** The arrangement of text on a page defined by the alignment and text style
- Frame** Box that holds a text story or a graphic allowing easy manipulation.
- Graphic** Any type of drawing dropped onto the page or drawn using specialist tools within the layout package.
- Grey Scale** Graphic made from different shades of grey dots.
Gives good quality output.
- Grid** Non-printing pattern which is used to structure the page design.
- Guide** Non-printing lines on the screen page which mark grid lines, columns and margins.
Used to assist the placement of text and graphics on the page.
- Gutter** Spacing between columns and the extra white space at the centre of facing pages to allow for folding and binding.

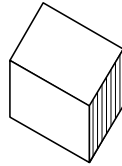
Drawing Styles - continued

Planometric 2½D View.

Angles used for base must add to 90°.

Heights sometimes 1/3 off.

Used to show simple interiors.



Presentation Visuals High quality drawings, using markers, inks or similar, which are used to show a client a series of possible designs.

The effects that are used are to make the drawing come to life - to look real.

Reflection An effect similar to that seen from a mirror.

Rendering Realistic shading and colouring of a drawing.

Scale Changing the size of a drawing of a real object so that it will fit on a sheet of paper.

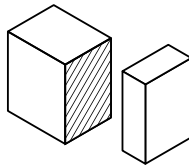
10:1 = Drawing is 10 times larger than object.

1:2 = Drawing half the size of Object.

Section A view, within a larger drawing.

Shows what can be seen if a form is cut in two.

Can be 2D, 2½D or 3D

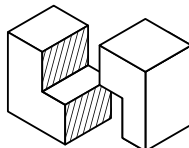


Sketch Freehand drawing skill without a straight edge.

Produces drawings quickly.

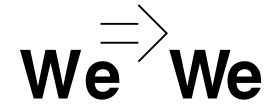
Stepped Section Sectional drawing where the cutting plane is stepped to allow a better view of the shape.

Used to give more information about an internal part.



Computer — DTP - continued

Kerning Horizontal spacing between pairs of letters to neaten the effect of the word.



Leading Vertical spacing between lines of text.

Lettering Text which is specially designed to be used as headings and is produced differently from normally typed text.

Logo An emblem, or symbol, printed in a particular fashion as a trademark.



Make-Up The operation of assembling all the elements - text and illustrations - onto a series of pages. The main advantage of using a DTP package to do the make-up is that any mistakes can be easily fixed.

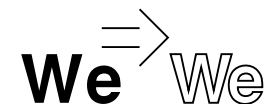
Margin Space between the edge of the printed paper and the text or drawings on it.

Montage A combination of separate images combined to give a composite picture.

Mount A suitable background to emphasise either a part of or the whole of a presentation page.

Original Any drawing, photograph or piece of artwork provided as copy for reproduction.

Outline A typeface or an effect which uses an outline effect.



Drawing Styles - continued

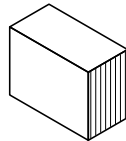
Freehand Drawing completed using only a pencil or pen.

Graph An easily read chart which is used to graphically demonstrate data.

- **Bar** The chart must have an X and a Y axis. The data is shown in the form of rectangular bars either vertically or horizontally.
- **Line** Chart has an X and a Y axis and the data is shown in the form of points joined by lines.
- **Pictograph** .. Chart has an X and a Y axis and the data is shown, graphically, in the form of pictures.
- **Scatter** Chart has an X and a Y axis and the data is shown in the form of points which are not joined in any way.

Interpenetration Drawing showing how two objects connect together. eg. Two pipes.

Isometric 2½D View.
All curves have to be constructed.
Angles used — 30° 90° 150°



Logo A company emblem or similar device which is displayed on all items from that company.

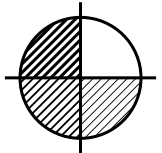
Manufacturing Drawing required by a manufacturing company detailing exact sizes, materials, and other important information.
Often drawn to a particular scale.

Media Materials used for the production of drawings. eg. paint, pencil, ink, pastel, airbrush.

Computer — DTP - continued

Quotes Speech marks. eg. “Hello”

Register Marks A cross-hair target symbol providing a rough guide for the commercial printer when printing in multi-colours. Placed outside the page area and cut off when the page is trimmed to size.



Retouching Manual, or computer-aided, adjustment to an illustration or photograph.

Reversing White text on a black background.

River Uneven lines, or patches, of white space running through a page of text.

Ruler Vertical or horizontal ruler to help with the exact positioning of frames within a document.

Run The number of copies of a publication to be printed.

Run On The extra copies printed at the same time.

San Serif A typeface which has no small lines at the end of the letters. eg. Homerton.

Serif A typeface which has small lines at the end of the letters. eg Times Roman

Shadow A typeface which has a built-in shadow.

Spine The bound edge of a publication.

Style Named and grouped effects given to a piece of text. Speeds up the formatting of long pieces of text with subheadings, lists and other layout formats.



Drawing Styles - continued

Chart Diagram, using numerical data, to show specific change over a period of time.

- **Gantt** A special chart used in businesses to manage the effective use of the workforce's and machinery's time. Works out the most efficient use of time together with a completion time for the job in question. Y-Axis holds the tasks or workers. X-Axis hold the units of time. Minimizes possible time-wasting especially in the construction industry.

- **Pie** An easily read chart which is drawn in the shape of a solid cylinder split into different sections each of which shows connected data.

- **Pie Exploded** Similar to a normal pie chart but one or more of the sections are drawn free from the rest of the pie to emphasise the relevant data.

Component One single part of an assembly or larger drawing.

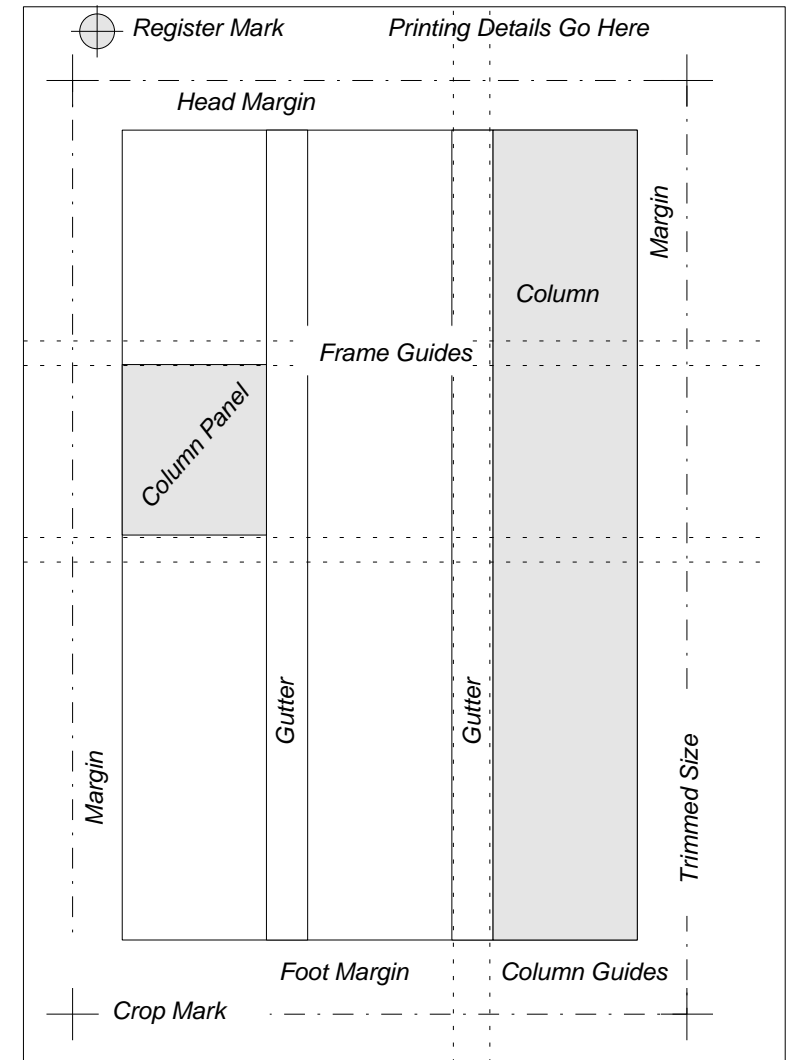
Conventions .. The rules of drawing.
Method of showing particular parts of a drawing.

Corporate Identity .. A certain style of logo, page layout and use of colour that is specific to a particular company

Cross Section .. A view, within a larger drawing, which shows what could be seen if the form was cut in half.

Detail View An insert drawing showing a small part of a whole drawing, often at a different scale, allowing more information.

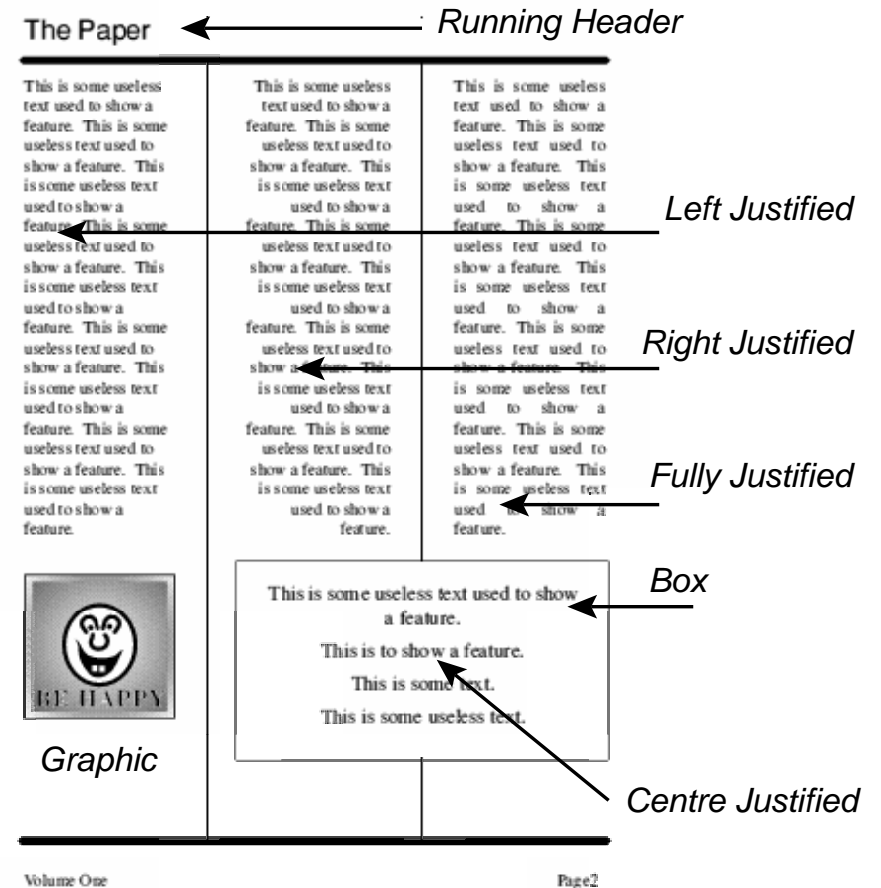
Computer — DTP - continued



Drawing Styles

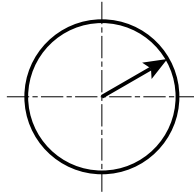
- 2D** *Object is shown as a flat view.
Two styles - Third Angle or First Angle.
We are using Third Angle.*
- 2½D** *Three surfaces of the object are shown at once.
Isometric or Oblique are two types.*
- 3D** *Complete object is shown on a computer screen,
usually in colour, and is able to be easily
manipulated to see any view.
eg. Computer Model.*
- Annotate** *To add written notes to a drawing to make a section
clearer to understand.*
- Assembly** *A drawing made up of many parts brought together to
give a final more complex result.
This can be 2D, 2½D or 3D.*
- Auxiliary** *Extra view looking from a different location than the
Front, End or Plan views.
Used to help make a part of the main drawing more
understandable by looking at it differently.
eg. True Shape, Auxiliary Plan and Elevations.*
- British Standards** *A series of rules used all over the World which
allows others to read and understand your drawings.
Common rules make it easier to eliminate mistakes.*
- BS PP-7308** *The rule book which shows the symbols and
conventions used within the British Standards for all
formal drawings.*

Computer — DTP - continued



Drawing Parts - continued

Radius The length of the straight line from the centre of a circle or arc to the outside or circumference.
eg: R15



Scale Drawing size compared with the size of the object.
Used to fit a large object onto a set size of paper or to show a high level of detail on a small object.
5:1 = Drawing is 5 times larger than the real object.
1:10 = Drawing is 10 times smaller than the object.

Symbol Small drawing which tells the reader a great deal of information about the drawing for example the projection symbol.

Title Block Rectangular box on a sheet where full details of the drawing are placed.
Details included could be: name, product, scale, date, version, location, tolerance and company logo.

Tolerance Max. and min. sizes of a part.
Used to ensure correct fit.
Upper and lower values shown as small numbers. = (Ø 59.98 to Ø 60.05)



Web A thin section of material used to strengthen two perpendicular parts without adding much weight.
When sectioned the web is:
• cut and hatched when being made shorter.
• not cut, nor hatched when being made thinner.

Computer — Inputs - continued

Joy Stick A simple input which directs the mouse cursor.
Nearly always used to control characters in computer games but can be used in many other applications.

Keyboard The most common input used to transfer text and numerical data by hand to the computer package.

Microphone Digital input which converts sound and the voice to a signal that the computer can use with special software where speech is changed into typed text.
Now often used instead of the keyboard as the software types what is actually said.

Modem An interface which converts the signal from the computer to one suitable to the telephone system.
The signal is then transferred and at the other end a second modem converts the signal back.

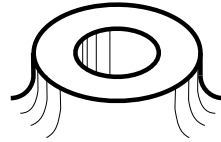
Mouse Digital input.
Moves cursor around screen allowing menu selection.
Easiest and quickest input for most graphics.

Peripheral The name given to any part of an office computer system which is not within the main computer box.
Examples: Printer or Scanner.

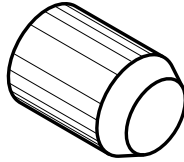
Roller Ball Similar to an upside down mouse where the ball is moved using the fingers.
Biggest advantage is that it needs less desktop space.

Drawing Parts

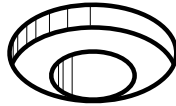
Boss A small extension piece to a machine part to allow a nut, bolt or washer to be fitted more easily.



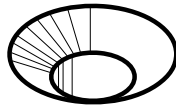
Chamfer An edge taken off a corner to make the corner less sharp. Usually drawn at 45° and dimensioned as 5×45°.



Counterbore .. A flat bottomed hole larger than the main hole which allows the head of a bolt or screw to drop under the surface.



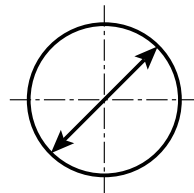
Countersink .. Larger hole, with sloping sides, which allows the head of a machine screw to be hidden within the material of the larger part giving a smooth finish.



Cutting Plane .. A flat surface that cuts, or sections, through an orthographic view.

Datum A specific point or line that is used to measure from. Used to increase the accuracy of a drawing.

Diameter The length of a straight line going through the centre of a circle from one point on the circumference to a second on the opposite side. Shown by the symbol \varnothing . eg. $\varnothing 25$



Computer — Internal

Co-processor .. Secondary processing chip designed to take over mathematical tasks leaving the main CPU to run the computer.

Speeds up CAD and Modelling programs.
Also called Maths Chip.

CPU Central Processing Unit.

Another name for the processor.
At the time of writing this could be an Intel chip.
Continually being upgraded to speed up the computer.

Graphic Card .. An internal adapter to increase the resolution and refresh rate of a monitor.

Speeds up the screen redraw.

Graphic's Processor .. Special and additional processing unit.

Deals only with graphics and video.
Used to speed up CAD, CAG and Modelling packages.

Hard Disc Spinning disc used to store information of all types within the computer.

Holds all the applications, data and operating system.
Data can be written to and read from the disc quickly.
Holds huge amounts of data which is stored safely.

Memory The part of the computer that holds the applications and data that are actually live.

Large amounts of memory (RAM) will make the computer more efficient.
Many different names SRAM, DRAM, etc.
But only two main types: RAM and ROM

Computer — Software - continued

Save Save document or drawing file onto disc with a useful name.

Save As Save a document or drawing file onto disc with another name allowing a second copy to be saved quickly.
Sometimes used to save a file in a different format from standard.

Scrolling Moving around a document or drawing in a vertical direction without moving the cursor.

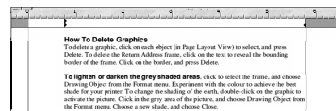
Software Programs required by the computer.

Spreadsheet Designed to manipulate numerical data.
Works mathematically with the data saving time when these numbers are often changed.

	A	B	C	D	E	F
1	Item	Calories	Protein	Chydrate	Fat	Fibre
2	All Bean	270	14.0%	46.0%	3.0%	24.0%
3	Apple	47	0.4%	11.8%	0.1%	2.0%
4	Baked beans	74	5.0%	12.7%	0.5%	6.0%
5	Baked potato	136	3.9%	31.7%	0.2%	2.7%
6	Bread	215	9.2%	41.6%	2.5%	7.4%
7	Canned tomato	12	1.1%	20.0%	0.0%	0.0%
8	Carrot	30	0.7%	6.0%	0.5%	2.4%

Tracing Copying a pixel based graphic into a vector drawing containing only filled shapes.

Word Processor Design to simply prepare a page of text sometimes with simple graphics.
Not designed for anything but the simplest page layout.



Computer — Outputs

CAD/CAM Output from a computer can be sent directly to a computerised machine such as a lathe or a milling machine where a 3D object is accurately produced.

Fax An electronic system for sending copies of documents by telephone or to receive and convert them at the other end.

Modem An interface which converts the signal from the computer to one suitable to the telephone system. The signal is then transferred and at the other end a second modem converts the signal back.

Monitor The video screen where the drawings are created. Many different sizes, types and qualities are available. You pay for the resolution, refresh rate and the size.

- **Pixel** Picture element.
The tiny dots which make up the picture on the screen. These are arranged in grids on the screen and can be manipulated to give different densities (resolution).
- **Refresh Rate** The number of times the monitor screen redraws itself each second.
The faster the redraw rate the less flicker you get when you are using the screen which, in turn, makes your eyes less tired.
- **Resolution** The number of Pixels within a one inch square. The more dots within the area the better the quality the monitor screen should give.
Also given as the size of a pixel. (ie. 0.26mm)

Computer — Software - continued

- Graphics** Any drawing used or formed on the computer.
Many different styles.
- **Modelling** .. Produces a 3D graphic when 2D information is input.
Allows the manipulation of the 3D image in real time with the mouse.
 - **Pixel** Painting packages used to produce drawing using tools such as airbrush, paint brush and pencil.
Allows effect to be added to drawings easily and the manipulations of scanned input.
 - **Vector Based** CAD/CAG packages used to produce drawings made from lines and standard shapes.
Colour can be added as fills and effects.
Drawing produced can be enlarged or shrunk without quality problems.
 - **X-Y** 2D or 2½D drawings, usually vector, made from simple shapes bound together.
Corners are given position using (x,y) coordinates.
Given as: (Length , Height)
 - **X-Y-Z** 3D models, made from simple forms bound together.
Corners are given position using (x,y,z) coordinates.
Given as: (Length , Height , Depth)
- Hard Copy** Print or Plot onto paper or film.
A printout.
- Icon** Small picture on the computer screen.
When pressed with the cursor some action will occur.
eg. loading a program or centring some text.

Computer — Outputs - continued

- Printer** An output than transfers ink from a storage cartridge to the paper while copying what is on the current document or drawing.
Can be used for all types of output - drawing or textual.
- **Bubble Jet** .. High quality at reasonable cost.
Advantage — Low cost colour.
Very quiet.
 - **Dot Matrix** .. Reasonable quality at low cost. Advantage — Any size paper — Low cost. Disadvantage — Noisy to run.
 - **Ink Jet** Good quality print at reasonable price.
Advantage — Low cost colour.
Very quiet.
 - **Laser** High quality but more expensive.
Advantage — High quality hardcopy.
Disadvantage — A3 very expensive!
Colour quality is superb but very expensive for general use.
- Robot** Any machine which is directly operated by a computer system even when a human operator is in attendance.
Has the advantage of never getting tired or ill.
- Speakers** Converts a signal from the computer to sounds suitable for the user to hear.

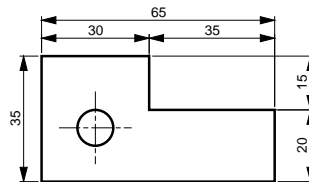
Computer — Software

Animation Moving picture sequence used to describe how an item works.

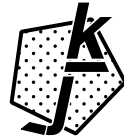
Application Another name for a computer program.

Backup Second copy of an important file, stored on different media as a substitute incase the main file is damaged.

CAD Computer Aided Drawing or Draughting.
Drawing, using the computer as a tool, to neaten and store your work.



CAG Computer Aided Graphics.
Using the computer to aid in the construction of design type drawing.
Less formal than CAD.



Clip Art Library of drawings of various styles easily accessed for your own documents.

Clipboard Electronic store designed to help edit file.
Work is lost when the computer is switched off.

Clone Exact copy of an item, including position, immediately added to a document.

Copy Lift a selected graphic or area of text and store it in the clipboard.

Cursor The exact position the mouse points to, or the text is being input to, on the screen.

Computer — Modelling - continued

Mate Two parts of a model which touch together.

Mesh A form which is made from a number of flat surfaces joined at common vertices.
Moving one vertex will edit all the attached surfaces.
Example: A football is made from a number of polygons joined to make a spherical shape.

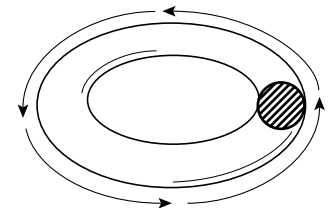
Offset Two parts of a model, which either align or mate, but leave a pre-set space between them.

Ray Trace Very high quality rendering of the final model used to visualise the object with the correct materials, reflections and shadows.

Real Time Animating a drawing using true time scales.
Also used when the view on the screen updates as the mouse is moved with no time lag.

Rendering The style of screen redraw used to output the model.
Can be anything from Wireframe to Raytraced.

Revolve To rotate a 2D shape around a centre line to make a 3D form.
eg. a circle would give a ring form.



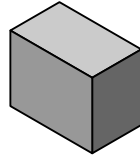
Shell Hollowing out a box from a 3D form.

Simulation Testing out a real life situation within the safe environment of the computer.
Showing what the interior of a building would look like before it is built.

Computer — Modelling - continued

Solid Model Model with solid internal material.
If sectioned - will show filled.

Surface A single side of a part or a form.
Is the only part of a model that can
be drawn on a sheet of paper.



Surface Model .. Model which is hollow internally.
If sectioned - will show empty.

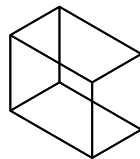
Sweep Spinning a shaped surface, about a central axis, to
create a solid 3D image. See “Revolve”.

Texture Added to make model more realistic.
eg. wood, metal or plastic surfaces.

Texture Mapping Replacing the surface details of a computer
model with realistic surface detailing showing
material types, text and cut-outs.

Vertex A single point making up one corner of a surface.
Can be manipulated to change the shapes of each
connecting surface.

Wire Frame Model showing all the edges, even
the hidden ones.
Advantage — fast redraw.
Disadvantage — difficult to follow
complex drawing.



Workplane The two dimensional surface that a shape is drawn on
before being manipulated into a 3D form by
extrusion, revolution or other modelling method.

Computer — Storage

Card Program or data is stored inside the card on
microchip.
Very fast access but not large storage.
Mainly used for camera storage.

Cartridge Program or data is stored inside the cartridge on a
microchip.
Very fast access but not large storage.

Disc Many different methods of holding computer files but
all use the same basic idea of a revolving disc -
floppy or hard.

- **CD ROM** Read Only disc which is read on a special CD player.
Holds large amount of data.
Usually used for clip art or large applications.

- **Floppy** Holds up to 1600Kb of data.
Holds very small files only.
Easy to transfer between machines.

- **Hard** Holds vast amounts of data.
Usually built into computer.

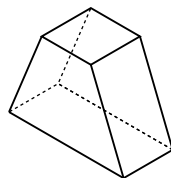
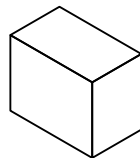
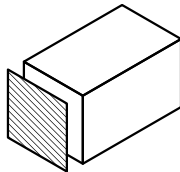
- **Zip** A removable disc system which works in a similar
fashion to a floppy disc but holds many more files.
100 Mbyte is the smallest capacity.

Flash Card Similar to Cartridge but designed specifically to fit
inside a small computer.

Memory Stick .. Different styles which are no bigger than a matchbox.
Very fast access and memory size is getting bigger.

Computer — Modelling

- Align** To line up two parts of a model.
- Animation** To make a movie of the movement of an object.
Used to show how an object will move or to walk a viewer within a larger environment like a building.
- Attribute** The line type, fill colour and material type given to a shape or form.
- Boolean** Creating a bigger part by adding or subtracting smaller and simpler parts.
- Component** A single part brought into a more complex model made from many parts.
- Extrusion** A closed surface pulled along a path to give it volume.
A square extrudes to a cuboid.
- Facet** One single surface within a more complex form.
Usually a triangle or quadrilateral.
- Form** A computer drawn part which is made of more than one surface such as a cube.
- Hidden Line Removal** Erasing lines, which would be hidden from the viewer, from a completed model to give a more realistic view of a 3D form.
- Loft** A special extrusion which smoothly transforms from one shape to a completely different shape.
A square to a rectangle.



Computer — Software - continued

- Cut** Deletes a selected graphic or area of text and stores it in the clipboard.
- Data** File of pure information which can be converted into a drawing or a list of useful information.
- Database** A store of information that can be easily handled by a computer speeding up sorting and searching processes.
- Draft** Quick, low quality hardcopy.
Used to proof read document before editing.
- DTP** Designing a page, or series of pages, to be printed.
Requires the positioning, electronically, of all text and graphics in an interesting fashion.
- Duplicate** Second copy of an item immediate document positioned slightly different.
- Export** Saving document in a format suitable for another program or computer system.
eg. A Jpeg from modelling program ready for DTP.
- File** A collection of data.
This could be text, drawing info or raw data.
Saved to Hard-disc, or other storage.



Computer — Outputs - continued

Network The joining of many computers together to make one large system.
Allows the users to access programs or data from any part of the network.

Plotter An output that moves a pen, or series of pens, across the paper producing a copy of a drawing on the screen.
No use for text.

- **Drum** Very high accuracy.
Large paper size.
Paper and pen move.
High initial cost.

- **Flat Bed** Reasonable quality.
Limited paper size.
Paper static.
Pen moves.
Reasonable cost.

- **Multi Pen** .. Plotter changes pen type automatically when required.
Speeds up output.

- **Roller Bed** .. Similar to Drum plotter but cheaper to buy initially.
Paper and pen move.

- **Single Pen** .. Plotter needs human operator for all pen changes slowing down output considerably.

Computer — Software - continued

Import Load data from another program.
In DTP - the bringing in of a text or graphic file from a second program or from a storage medium.

Landscape Page orientation.
Longer edge to top.
Used more often for larger drawings.



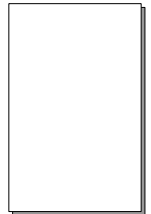
Modelling Produces a 3D graphic when 2D information is input.
Allows the manipulation of the 3D image in real time with the mouse.

OCR Optical Character Recognition.
Converts scans of text to normal text saving the re-typing of the same document.

Paint A package which is designed to paint a resulting drawing using small dots of colour called pixels.

Pan Looking at a document or drawing, from left to right, without moving the cursor position.

Paste Adds the contents of the clipboard to the page at the selected area.



Portrait Page orientation.
Longer edge to side.

Resolution Quality of the monitor.
The higher the number of pixels on the screen (resolution) - the better the screen quality.
Also quality of scanned or digitised image. eg. 300dpi.

Computer — Internal - continued

Operating System *The background computer language that is used to run all the programs on.*

The most popular is “Windows” although there are other more specialist operating systems.

Processor *The microchip that runs the computer.*
Also called the CPU.

RAM *Random Access Memory.*
Computer memory that can be changed at any time.
After computer shutdown all data is lost.
The operating system will often use as much of this as it can to try and speed up your computer.
A large RAM will speed up your machine and any program running on it.

ROM *Read Only Memory.*
Memory that can only be read - not changed.
Often has important parts of the Operating System in it to increase the speed of the computer and to stop these parts from being corrupted.

Design Sequence

3Ps *The general term of the three different, but overlapping, sections of a graphical design process.*

Preliminary *The first section of work where ideas are produced quickly.*
Sketches are the most often used media although specialist software is now available.

Production *Drawings which are prepared ready for the manufacture of the product.*
CAD is most often used to insure accuracy and to minimize editing time.

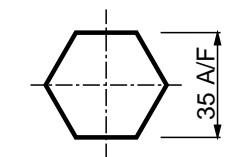
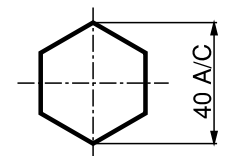
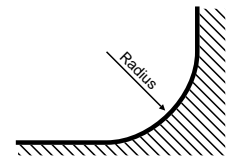
Promotional .. *High quality graphics used to market the product.*
DTP and CAG work is mostly used to insure the quality and to help in their printing and publication.

Computer — Inputs - continued

- Scanner** An external computer tool which electronically photocopies a picture and converts it into a picture ready for use in a secondary program - usually a paint package.
- **Flat Bed** A scanner, about the size of a large book, which can read a whole piece of paper in one go. Accurate, high quality and quick.
 - **Hand** A small hand held copier which has the advantage of being able to scan non-flat surfaces or smaller items. Not nearly as accurate as a flat-bed.
 - **Slide** Device specially designed to capture, at a very high resolution, slide pictures.
- Touch Pad** A replacement for the mouse where a finger, moving across the pad, will move the cursor. The touch pad will also accept clicks in a similar manner to mouse clicks.
- Touch Screen** .. A monitor which, when touched by hand, will interface with the computer. Often used in public places where the computer needs to be locked away.
- Video Digitizer** Scans moving film from a video camera or recorder. Stored as separate frames allowing selection of individual frames.
- WWW** World Wide Web. The international on-line information system.

Drawing Parts - continued

- Dims** An often used abbreviation for dimensions.
- **Chain** Sizes are added on one after the other, in a line.
 - **Coordinate** .. A series of X and Y coordinates, similar to those used in Maths, are used to position the part or hole. Often presented as a table.
 - **Datum** All lengths are measured from the same line allowing for more accuracy over a larger area.
 - **Parallel** Sizes overlap each other minimizing reading errors.
- Elevation** A 2D view of an object looking from the side or front.
- Eye Line** The height of the eyes when constructing an object using any of the perspective drawing styles.
- Fillet** A small curved extension added, to give strength, to the junction between two surfaces. Usually drawn freehand or given a specific radius.
- Hexagon** Six sided shape.
- **A / C** The dimensioning details given when measuring across the corners of a hexagon or octagon.
 - **A / F** The dimensioning details given when measuring across opposite flat surfaces of a hexagon or octagon.



Computer — Inputs

Camera Hand-held device which captures real life onto film or digital media.

- **Digital** Saves selected photographs in digital form.
Easily transferred to computer for further enhancement or manipulation.
Used like a normal still camera.

- **Video** Digital input giving moving pictures - any of which can be captured as a still.

Digitiser A single digital picture grabbed electronically from a TV, video or camcorder ready for further manipulation within a paint package.

Digitising Tablet Very high quality mouse system.
Works on an electronic table which constantly updates the position of the puck (mouse) or stylus (pen) giving pinpoint accuracy.
Puck used for tracing line drawings.
Stylus used as a brush within painting packages.

Fax Modem Similar to a modem but can also change the signal to suit general purpose Fax machines.

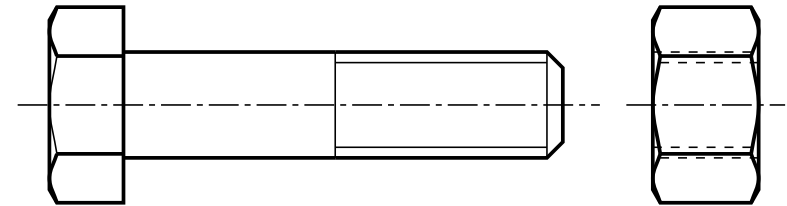
Graphic's Tablet Another name for the digitising tablet.

GamePad A specialist style of joystick.

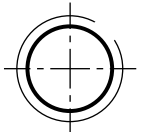
Internet Used to transfer information between different organizations anywhere in the World.
Massive collection of information and graphics.
Another name is the World Wide Web - WWW.

Drawing Parts - continued

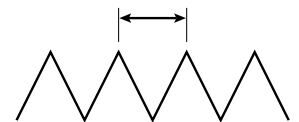
Threading The specially cut grooves found in either a nut or bolt that pull the two parts together when either is turned.
Sizes are given as a metric diameter followed by the pitch of the thread. eg: M10×1.5



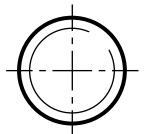
- **Hole** Symbol used to show a hole which is threaded.
The outer circle is cut.
The inner circle is not cut.
The diameter of the threaded hole is shown by the outer circle.
The pitch given by the spacing between the circles.



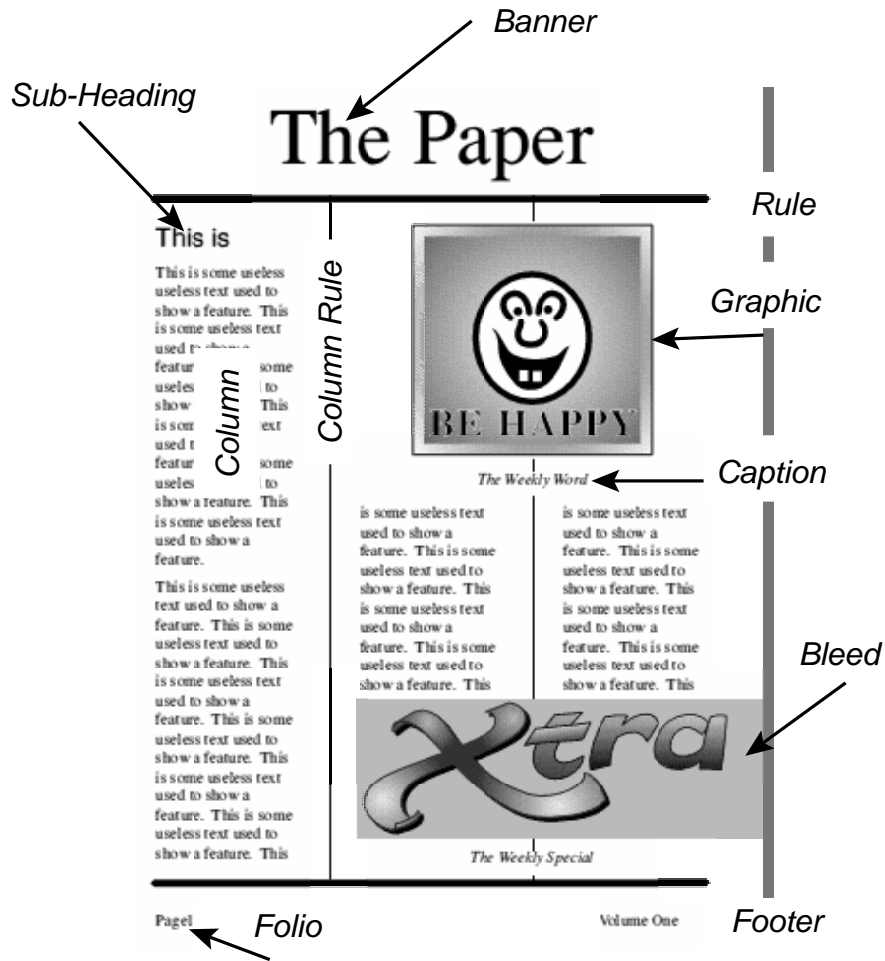
- **Pitch** Spacing between the top of one thread and the next one.
The amount the threaded part will move after one full turn.



- **Rod** Symbol used to show a rod or shaft which is threaded.
The outer circle is not cut.
The inner circle is cut.
The diameter of the threaded rod is shown by the outer circle.
The thread pitch gives the spacing between the two circles.



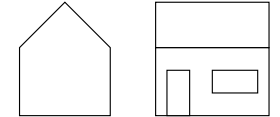
Computer — DTP - continued



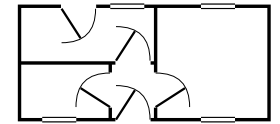
Drawing Styles - continued

Building Plans Drawings which are specifically used by the building trade, architects and planners.

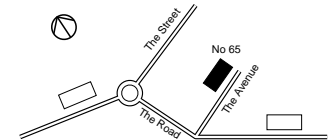
• **Block** Details a series of different elevations of the building on the same sheet.
eg. Elevation, End and Plan.



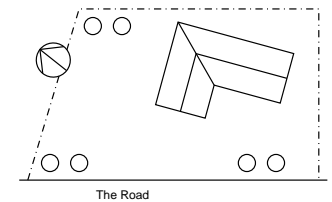
• **Floor** Details the interior of the building including the layout of walls, doors, windows, electrics, plumbing, etc.



• **Location** Details building position within surrounding area. Shows a larger area than the site plan with less detail. More of a diagram than a quality drawing.



• **Site** Details building position within surrounding area. Shows roads, trees, etc.



• **Survey** Detail of existing structures within a site. This would show contours, trees and water features.

CE Euro Codes - from the European Commission. Similar, and taking over from, British Standards. Shown as a "CE" on a product.

Computer — DTP - continued

- Sub-Heading** .. A heading appearing within the text body.
- Subscript₁** A small number or letter which is half height and is positioned at the bottom of the printed line. pt₁
- Superscript¹** A small number or letter which is half height and is positioned at the top of the printed line. pt¹
- Template** Common used, pre-prepared, master page.
Used to keep a similar feel or style to all of a company's documents.
Saves time spent setting a new page.
- Underline** A typeface which has a line running under each letter.
- Visual** A dummy master page made up from the many parts to demonstrate the final look of the page.
- White Space** .. Section of a printed page which has no ink on it.
- Window** A rectangular box that can be used to define a space around an object, page or file.
A frame drawn around a selected part of the screen to isolate the area within the 'window'.
- Wizard** An interactive help program which guides a user through a process in a predefined way.
Modern DTP packages use wizards as a method of teaching a user how to use templates for setting up publications or to save them time.
- WYSIWYG** What You See Is What You Get.
The document on the screen is exactly the same as you would get when you print it.

Drawing Styles - continued

- Diagram** A drawing, or series of drawings, to explain some process to an less-skilled reader.
Often uses symbols to help with the understanding.
- **Flow** A diagram that shows a logical, step by step, process.
It uses many common symbols and can be read through easily using simple yes / no questions.
 - **Instruction** .. Simple drawing series which shows how to complete a logical process with no possible side paths.
 - **Schematic** .. Drawing showing the logical path of a process.
Uses simplified drawings to help the reader.
eg. Instruction booklet for self-build furniture.
 - **Sequence** Series of drawings, with corresponding notes, showing a process from the beginning to the end.
The first drawing will show the beginning - the last one the result.
- Dimensioning** .. Adding sizes to a production type drawing.
Uses British Standard conventions to allow the drawing to be more readable by all users.
- EuroCodes** European (EU) system of drawing standardization.
See CE.
- Exploded View** Splitting an assembly into its many parts.
Often used in instruction manuals to explain how machines work.
- First Angle** An alternative set of drawing rules.
Used in many other parts of the World, but not so wide-spread now.

Often used for headlines.

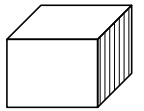
Computer — DTP - continued

- Overlay** The printing of the colours which make up a full page onto separate pages - one for each colour. These are then used by the commercial printers to produce separate printing plates for each colour.
- Page** One single side of paper in a booklet.
- **Facing** Left and right pair of pages.
 - **Master** Page with text, and drawings, that will appear on every page within a document.
 - **Single** Output printed on one single piece of paper.
- Photomontage** .. A completed painting made up from many different photographs blended together using a powerful graphic/painting package. Used in tabloid newspapers to change the emphasis of a photograph by removing or adding a part.
- Point (Size)** .. Common unit of lettering, and line, size. 72 points = 1 inch = 25mm.
- PostScript** .. Cross platform industry standard for the highest quality hardcopy. Used by majority of printing companies.
- Presentation** .. A high quality drawing of an object which can be shown to a client to explain the design and action.
- Proof** Draft hardcopy to check layout, spelling. Also a printed master given to the printer with attached notes to explain printing details.

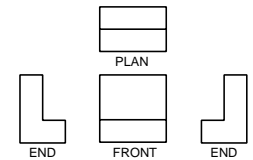
Drawing Styles - continued

Net Another term for Surface Development.

Oblique 2½D View.
Angles used — 45° 90°.
Sizes halved when measured into page.



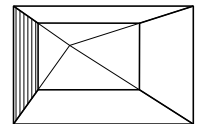
Orthographic .. Formal drawing style using the 3rd or 1st Angle rules. Front, End and Plan views are the most common.



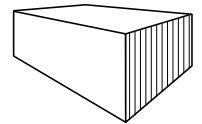
Outline A line which is added to the outside of a 2½D drawing to make it stand out more.

Perspective .. Style of drawing where what is presented on the paper is more like what we actually see in true life.

• **One Point** .. 2½D View.
Used usually to show room interiors.
Not so realistic as 2 point.



• **Two Point** .. 2½D View.
Looks more realistic.
Used to show building exteriors.
Sizes further away are smaller.



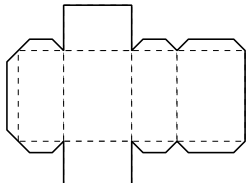
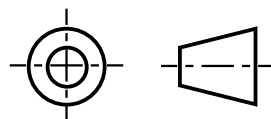
Pictorial Any view which has enough information to fully understand a particular form. Examples of pictorial drawings are those using Isometric or perspective styles.

Plan A view of an object from above. Usually projected from an elevation.

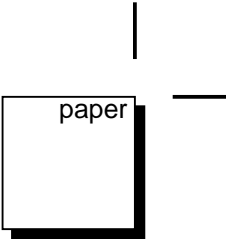
Computer — DTP - continued

- Half Tone** Graphic made only from black dots with the spacing between them creating the tones.
- Header** Space at the page top ready to hold the title of a page. If a document has many pages then the header is copied automatically onto every page. Usually used to chapter details.
- Headline** Line(s) of larger sized text placed above the accompanying text to guide the reader to the main story.
- Hyphenation** .. The insertion of a hyphen in a word which does not fit on the end of a line. Can be automatic or manual.
- Indent** Beginning a line of text further in from the left margin than the rest of the text. This paragraph is an example.
- Italic Type** A typeface where the letters lean to the right and is used to emphasise text.
- Justification** .. Setting of type lines in which the space between words is varied from line to line so that the text lines up with one or more column guides.
- **Centre** Text formatted to be central within the column.
 - **Full** Text formatted with neat left and right edges.
 - **Left** Text formatted with neat left edge / rough right edge.
 - **Right** Text formatted with neat right edge / rough left edge.

Drawing Styles - continued

- Supplementary View** An extra view which makes part of the drawing easier to follow. This could be an Auxiliary view or a True Shape.
- Surface Development** 2D drawing showing the shape of material required to build a hollow model of an object. Uses different line types to show bends and smooth curved surfaces.
- 
- Tangency** Accurate drawing style which constructs how a curve will connect smoothly with a second curve or a line.
- Third Angle** Modern rules of drawing used in most parts of the World. Most popular style.
- 
- Thumb Nail** Very small, hand drawn, graphic which is used to explain an idea quickly. Often added at the edge of a planning sheet.
- True Shape** Drawing which shows the exact shape of a single surface.
- Working Roughs** Sketch drawings of the final output but still in a very rough format. Colour is used to highlight important parts and full annotation is used through-out.

Computer — DTP - continued

- Crop Marks** Intersecting lines that page layout packages print at the corners of a page to show where the paper is to be cut to size when complete.
- Cut Off Rule** .. A horizontal line printed across text separate different text items. Usually seen in magazines or papers.
- Descender** The lower portion of lower-case letters which drop below x-height. Eg. g, j, p.
- Display Type** .. Larger type sizes used for headings.
- Document** The whole DTP file being working on including embedded graphics.
- Double Spread** Drawing and text which is designed to be printed over two facing pages.
- DPI** Dots Per Inch. The bigger the number the better the quality of the hardcopy.
- DTP** Desk Top Publishing.
Preparing a page for printing by laying out text and graphics in an interesting and readable fashion.
All text and graphics can be easily manipulated.
- Facing Pages** .. Two pages which face each other, when the publication is open, in a double sided publication.
- Folio** Page number.
- Font** Shape of the lettering used.
- Foot** The margin at the bottom of the page.
- 
- The diagram shows a rectangular box labeled 'paper'. A vertical line extends upwards from the top-right corner, and a horizontal line extends to the right from the bottom-right corner. A thick horizontal line is drawn across the bottom edge of the box, representing a cut-off rule.

Drawing Tools - continued

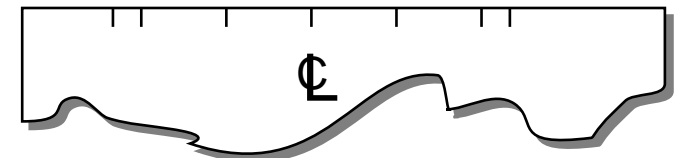
- Marker** A thick pointed drawing tool designed to get a large amount of colour onto the paper quickly. Can be water or alcohol based.
- Mask** A plastic or paper shape which hides part of a drawing which you don't want to waste when colouring another part of the same drawing.
- Masking Tape** .. A low-tack tape used to hide, temporarily, a part of a drawing so that some type of colour wash can be applied without the chance of it overlapping the wrong parts.
- Media** Various materials used for the drawing and colouring of drawings.
eg. paint, pencil, ink, pastel, airbrush.
- Pastel** A coloured crayon, made from chalk, used for drawing.
Requires to be fixed when complete otherwise it will smudge.
- Pen** Any type of drawing tool where ink runs from the point.
They are available in many line thicknesses from 0.1mm to 2.5mm.
- Pencil** A series of drawing tools with different lead types.
Need to be kept sharp or accuracy will suffer.
9H - Very hard and light pencil.
HB - General purpose soft pencil.
6B - Very soft and dark pencil.

Computer — DTP

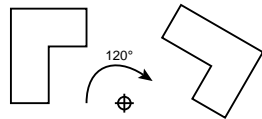
- Alignment** Another term for justification.
- Artwork** Any black and white, or colour, original graphic of any type prepared for publication.
- Banner** In newspaper work, a main headline running across the top of the page.
Usually gives the title of the publication.
- Baseline** In type, the line on which both capitals and lower-case letters stand.
- Binding** The method of fixing printed pages together.
Space has often to be left for the binding method chosen.
- Bleed** A graphic which extends off the cut edge of the paper.
The bleed is the amount that the graphic extends beyond the cut edge- commonly 3mm.
- Bold** A heavier, blacker version of a typeface.
Used to emphasise a word or statement.
- Border** A boundary line - solid or not - which goes around a graphic or piece of text on a page.
- Box** Text which is surrounded by a rule on all four sides giving a box.
- Brochure** A small booklet designed to pass as much information about a product to the reader quickly.
- Bullet** A symbol which is used to emphasise key points in a section of text.
Often used to highlight lists within a block of text.

Drawing Tools - continued

- Template** Thin plastic tools with different shaped holes which allow the quick and accurate drawing of these, sometimes complex, shapes.
- **Circle** Allows the quick and accurate drawing of smaller diameter circles which might be difficult to complete neatly when using a pair of compasses.
 - **Design** The holes are shaped to suit the design of different environments.
Holes can be in the form of kitchen parts or diagram symbols to speed up their deployment.
 - **Ellipse** The holes are in the shape of different ellipses allowing the quick and accurate drawing of complex shapes.
Special templates will give isometric ellipses.
 - **Nut / Bolt** .. Helps draw, accurately, the symbols for nuts and bolts.
Available in various sizes.
- Trammel** A simple piece of paper, with a straight edge, which is used to transfer sizes from one part of a drawing to another.
Provides one of the quickest methods of drawing
Isometric curves or ellipses.



Computer — CAD - continued

- Precision** The accuracy of the dimensioning.
Software will adjust all sizes to suit set precision.
- Reference** An exact position on a drawing sheet from another exact position.
- **Absolute** Next point of a drawing positioned using measurements always referenced from a common origin - usually the bottom left of the page (0,0).
 - **Polar** Next line in a drawing positioned using measurements always referenced by the length and angle of the required line. eg. (100mm, 60°)
 - **Relative** Next point in a drawing positioned using measurements always referenced from the previous point in a drawing.
- Reflect** See “Mirror”.
- Repeat** Copy selection a number of times.
Each is copy is moved or rotated a specified amount from the previous copy in the sequence.
- Rotate** Turn a selected part through a defined angle with respect to a certain point.
- 
- Rubber Banding** A light construction line which follows the cursor while drawing to allow for easier alignment.
- Ruler** Additional tool which allows the accurate measuring and positioning of items on the page.

Line Types - continued

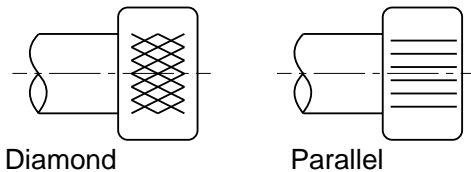
- Hatch** Lines drawn, equally spaced to highlight a particular part of a drawing.
- **Cross** Pairs of lines, crossing at 90° to each other, to make up a fill effect.
Lines are usually at 45°.
 - **Diamond** Similar style to cross hatching but the lines are not at 90° to each other.
Angle used is often 60° each way.
 - **Line** Lines drawn, equally spaced and usually at 45°, to show, within a sectioned view, which surface has actually been cut.
- Horizontal Line** Lines that go across the drawing surface parallel to the edge of the paper.
- Leader Line** Light line that joins an edge, or corner, to its corresponding dimension details to show the link.
- Line Thickness** Quality drawing have to be completed to an exact thickness of line.
These vary between 0.7mm for outlines to 0.3mm for centre and broken lines.
- Lines of Symmetry** .. If asked only to draw a symmetrical half of a part then this symbol is used at both ends of the centre line of symmetry to show where the second half would go.
- Outline** A finished solid line which shows the edges, that can be seen, of a drawn object.

Computer — CAD - continued

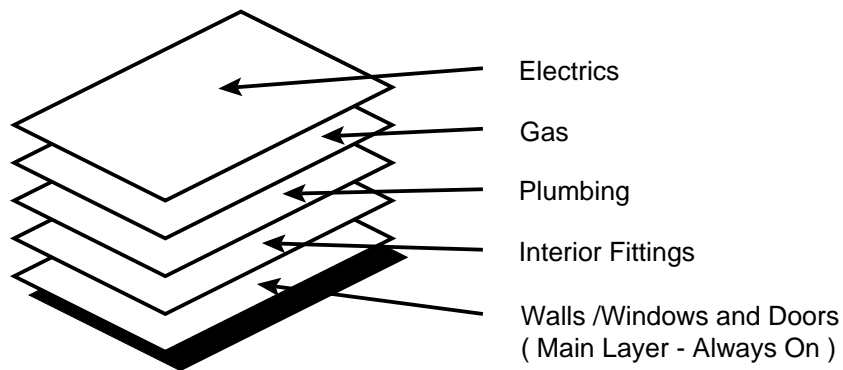
Invert To turn upside down.
Same as producing a mirror across the X axis.
Can also be changing the black parts of a drawing to white and vice-versa.

Knurling A roughening effect, produced on a lathe, on round sections of metal to give a better grip.


- **Diamond** Style which leaves a diamond pattern.
- **Parallel** Style which leaves a series of parallel lines.





Layers Allows logical drawing separation.
Different elements are drawn on separate levels.
Used to isolate parts of a complex drawing - viewing only the parts that are required.




Machining Terms


Angular Min and max values of the angle between two surfaces or angle of a hole to be drilled. 


Concentricity .. Accuracy of rounded surfaces and holes using same centre line. Maximum offset allowed. 


Cylindricity Minimum and maximum diameters of the exterior of a cylinder. 


Datum Face .. Surface that all measuring is taken from.


Flatness Quality of surface.
Maximum depth of any depressions, or height of any bump, on a machined surface. 


Machining Surfaces which must be machined.
Accuracy required also noted. 


Parallelism Accuracy between two, or more, parallel surfaces or lines. 


Position Accuracy of exact datum points.
Used to position separate parts. 

Roundness Maximum and minimum deviations from a circular path. 

Squareness Limit of deviation from right angle. 

Straightness Maximum and minimum deviations from straight line. 

Symmetry The accuracy of a line of symmetry. 

Tolerance Giving details of max. and min. dimensions. 

Computer — CAD

- Alignment** Position drawing parts with reference to each other.
Left, Centre or Right.
Top, Centre or Bottom.
- Break** To cut a line at a particular point such as an intersection with a second line.
- CAD** Computer Aided Draughting, Drawing & Design program dedicated to drawing.
- CAG** Computer Aided Graphics.
Producing drawings with colour, text and other visuals as the main features.
- CAM** Computer Aided Manufacture. (CAD/CAM)
Product is drawn on the screen and then sent to be manufactured using digitally controlled machines.
- Clipboard** A temporary storage area in memory where a part can be pasted from.
- Clone** An exact copy, in the same place.
- Copy** To duplicate a part of a drawing.
Often requires “Paste” before the 2nd copy appears.
- Cut** To remove, to the clipboard, a part of a drawing.
This cut section can now be placed elsewhere.
- Dimensioning** .. Item sizes are automatically measured by the program and the correct BS format is used to format result.
Dimensions should always be drawn on a new layer.
Software will measure and position the sizes correctly.
If scales are used these will be followed completely.

Shape / Form - continued

- Pattern** An arrangement of repeated parts or decorative designs used to render a part of a drawing.
- Pentagon** A five sided shape.
- Polygon** A surface made from a number of non-crossing straight lines joined together.
- Prism** 3D form with parallel sides and ends that are the same size and shape.
- Pyramid** 3D form having flat sides which come to a point at the top.
- Rectangle** A shape where opposite sides are of equal length and the corners are right angles.
- Regular** A shape where all the sides are the same length.
- Shape** Any object which has no thickness.
Can be completely drawn on a piece of paper.
- Sphere** 3D form like a ball.
- Square** Four sided shape with right angled corners and sides of equal length.
- Tessellation** A grid made from a single complex shape which link together perfectly leaving no spaces.
- Triangle** Three sided shape with straight edges.

Colour Usage - continued

Tertiary A mixture of one primary colour and one secondary colour to give a third colour.

Yellow + Orange = Yellowy-Orange

Red + Orange = Redy-Orange

Blue + Purple = Bluey-Purple

Red + Purple = Redy-Purple

Yellow + Green = Yellowy-Green

Blue + Green = Bluey-Green.

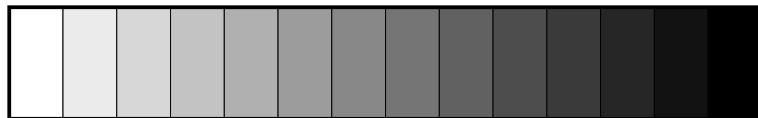
Texture Using colour to give the effect of material (metal, wood or other) to a surface of a drawing.

Tint White with a little dash of colour to make a second colour that is slightly off white.

Often seen when painting house interiors.

Tonal Range .. A range of colours, using one colour as the base, going from very light to very dark.

Example: Sky Blue - Navy Blue.



Tone A list of colours with the same base colour but with each one being slightly darker than the one before.
eg. Moving from Light Blue to Navy blue.

Warm These are colours that feel warm to the eye such as the reds, oranges and the yellows.

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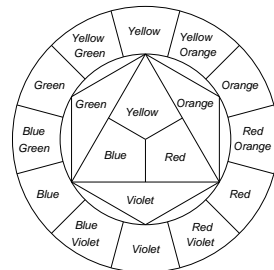
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Colour Usage

Advancing Colours that give the impression that the surface they are painted on, is closer to your eye.
Advancing colours are also warm colours.

Colour Gradient A fill ranging from one colour to a second in even intermediate stages.

Colour Wheel .. A graphic which allows you to pick a colour for a particular job.
Simplistic form is shown.



Contrasting Two colours that are opposites to each other.
They can be found directly opposite on the colour wheel. Used to great effect to emphasise something.

Cool Colours that look cold to the eye such as the blues.

Grey Scale A graphic coloured only by dots that are black.
Varying the spacing between the black dots gives a different grey tone.

Harmony Two colours that are neighbours on the colour wheel and that go together well.
eg. Red and Orange.

Highlights Parts of a rendered drawing that show where the light actually strikes the object being drawn.
Much lighter than the rest of the rendering.

Hue The exact colour, with no highlights, of an object.

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