Technical Drawing in Technology

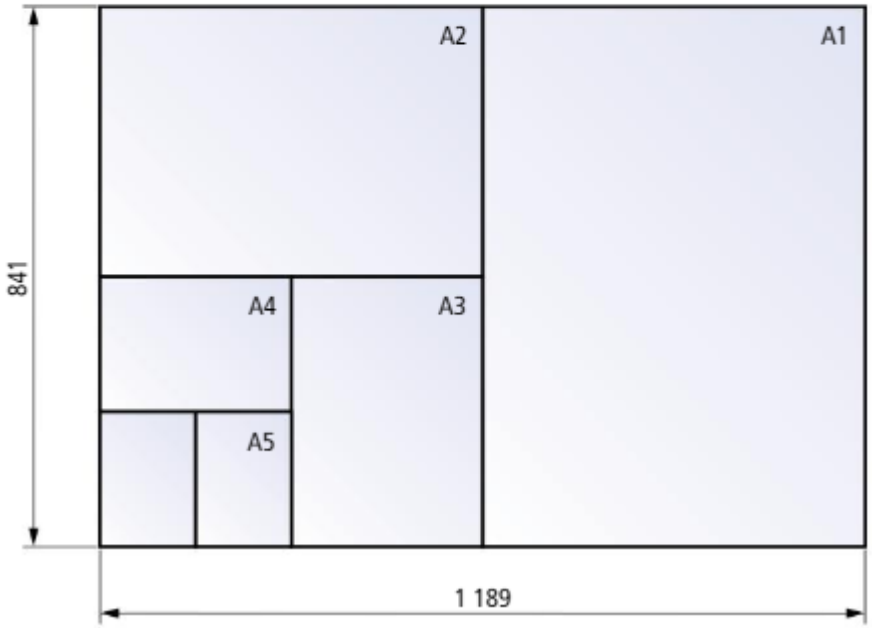
DRAWING MATERIALS

PENCIL

- HARD: Letter H
- SOFT: Letter B (black)
- Medium: HB

PAPER SHEETS

- Each size has the same proportions (ratio) and results by folding half the previous size, thus it has half the área.
  The biggest size, A0, is exactly $1m^2$

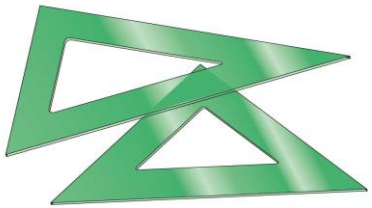


Cada formato puede obtenerse doblando por la mitad el formato superior.

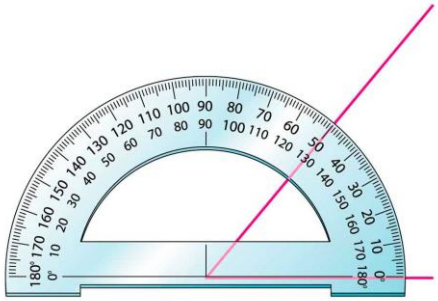
Drawing tools

Measure
Scale Ruler

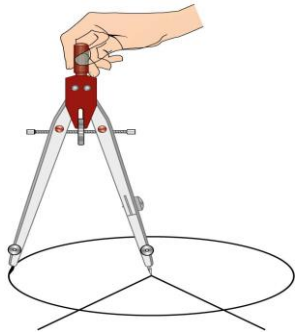
Drawing
Square /triangle rulers



Protractor
Or Goniometer



Compass



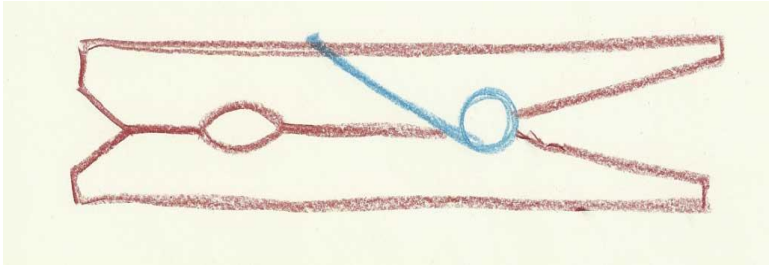
SKETCHES AND DRAWINGS

(BOCETOS, CROQUIS Y PLANOS)

SKETCH (BOCETO)

Is a first aproximation to the idea, drawn freehand

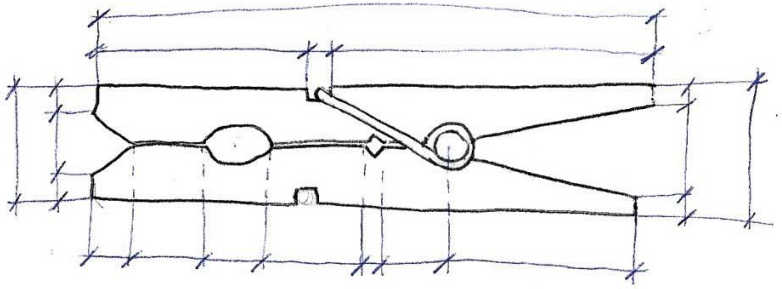
Una primera aproximación a la idea, dibujada a mano alzada



SKETCH WITH DIMENSIONS (CROQUIS)

It has all the information about the proyect, altough is still drawn freehand

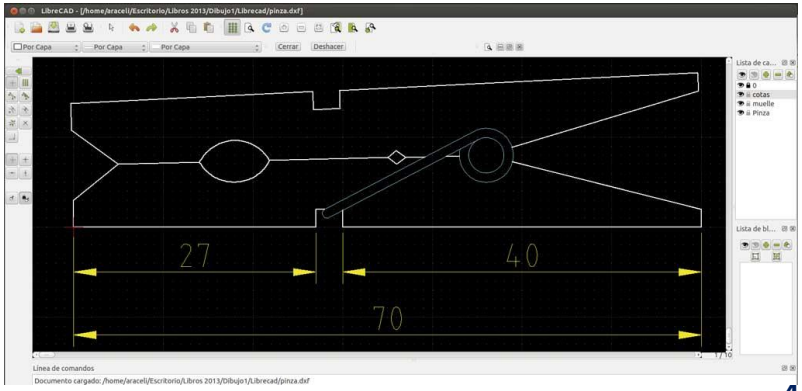
Contiene ya toda la información del proyecto



TECHNICAL DRAWING (PLANO)

Is traced with tools or by computer, to precise scale, and with dimensions

Está delineado y a escala, con medidas



Views of an object

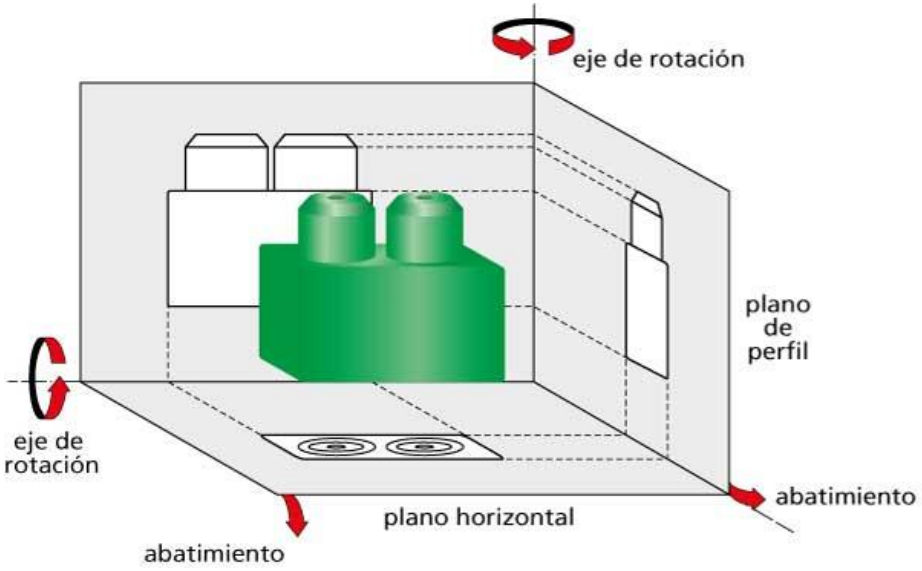
Front view
(Alzado)

Side View
(Perfil)

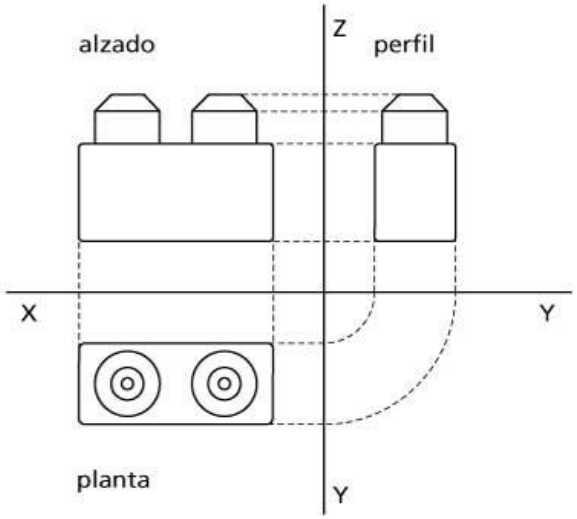
Top view
(Planta)

Oblique projection

1. Projection



2. Unfold (Abatimiento)



Dihedral system is based on the orthogonal views (projections) of the piece.

El sistema diédrico se basa en las proyecciones ortogonales de la pieza.

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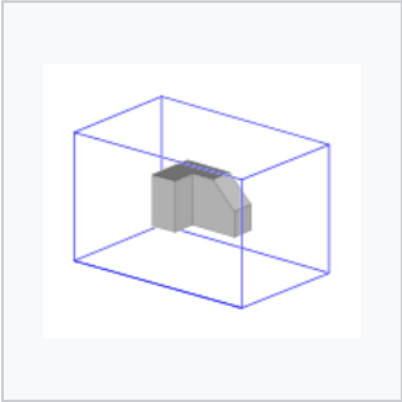
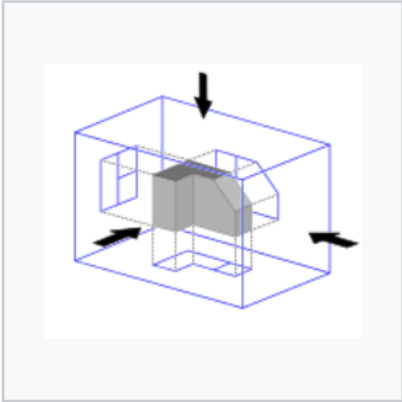
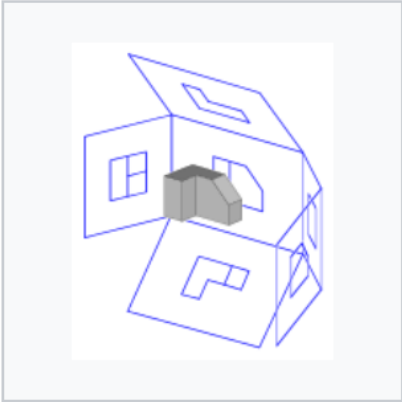


An image of an object in a box.



The same image, with views of the object projected in the direction of sight onto walls using first-angle projection.



Similar image showing the box unfolding from around the object.

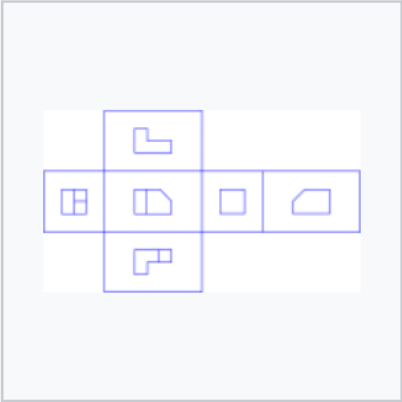
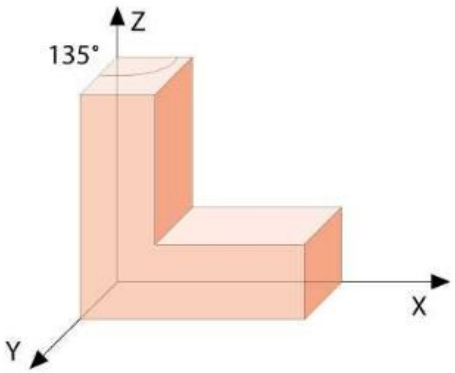


Image showing orthographic views located relative to each other in accordance with first-angle projection.

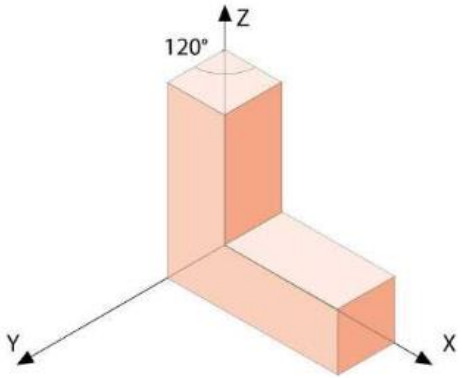
Perspectives appear as a result of projecting the image (or shadow) of an object over a plane with a certain angle

The different tipes of perspective depend of the angle of those projection planes

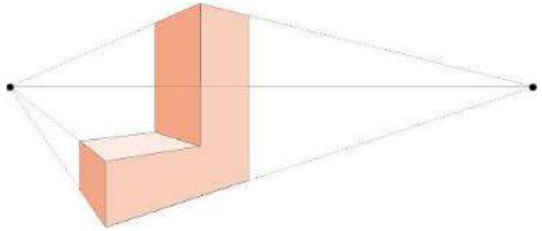
Oblique (cavalier) projection



Isometric projection



Two-point perspective



SCALES

They indicate relation beetween the drawing and reality

- Natural

Same Size 1:1

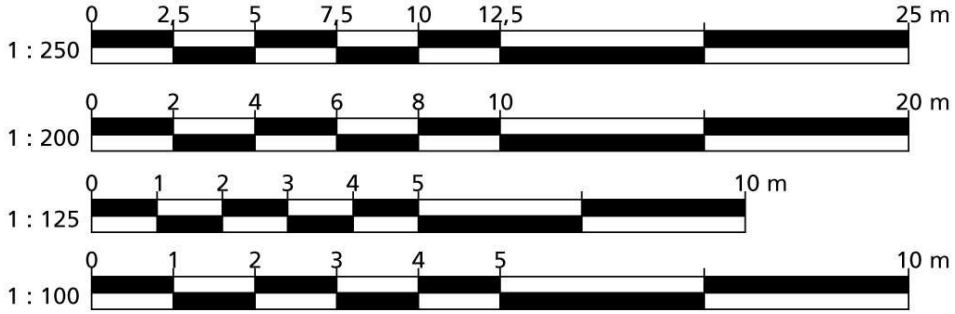
- Reduction

Drawing is smaller than reality
(as in maps of builings, cities or countries)
1:2, 1:5, 1:100, 1:500000

- Amplification

Drawing is bigger tan reality (as in clock gears and electronic components)
2:1 5:1 200:1

Graphical scales



Scale ruler

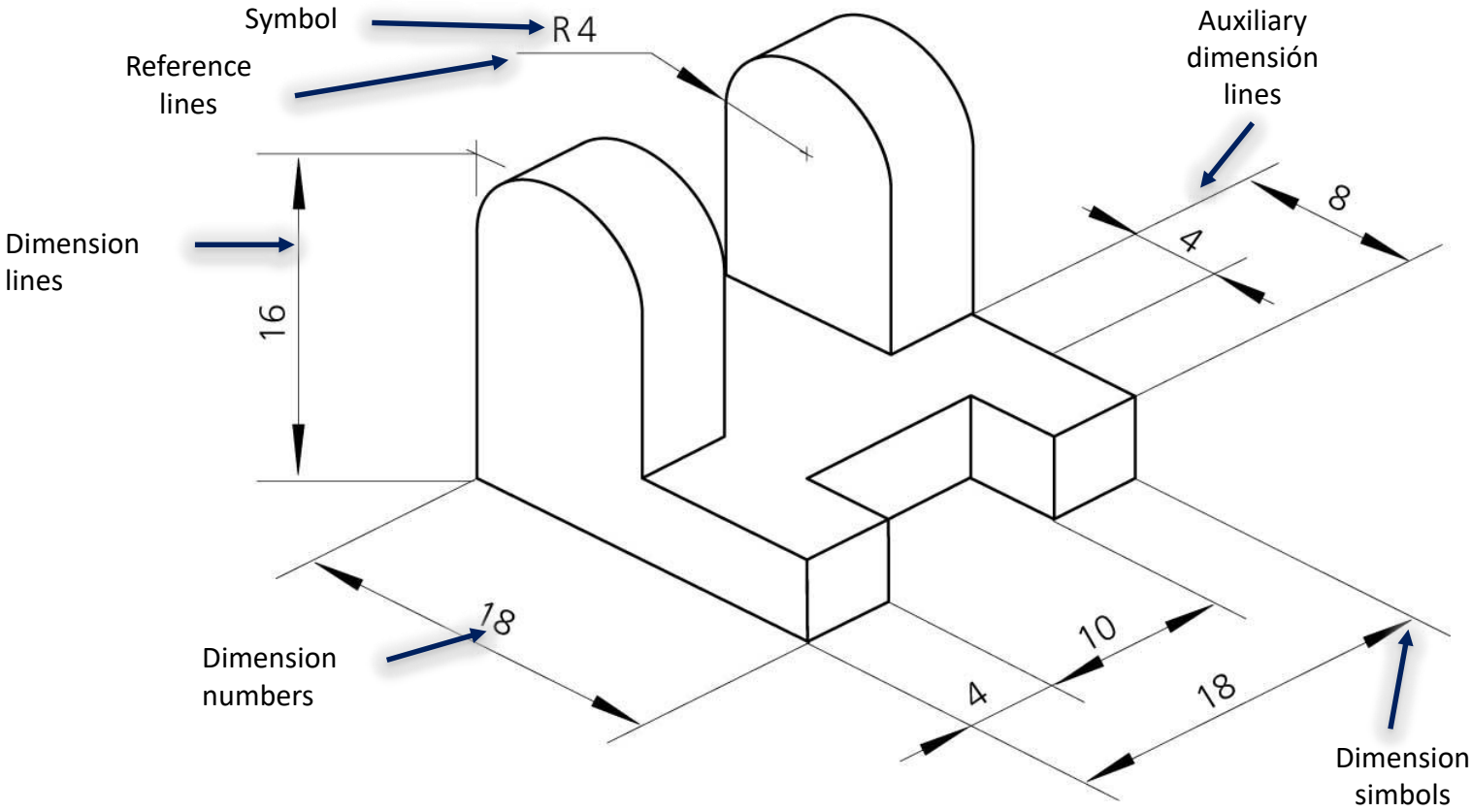
STANDARIZATION

Size and appearance of lines is standarized in technical drawing.
El tamaño y apariencia de las líneas en dibujo técnico están normalizados (regulados)

Name	Style	Use
Line		Shows a separation beetween planes
Hidden line		Shows a line that is not visible in the view we are using
Section		Shows a cut line
Axis		Shows a circle or a simmetry axis
Cutaway part		Shows the hidden Surface of a cutaway piece

Dimensioning

Dimensioning is the representation of real distances and dimensions in the drawing



Presentation of technical drawing

Technical papers must contain ALL the information about the project