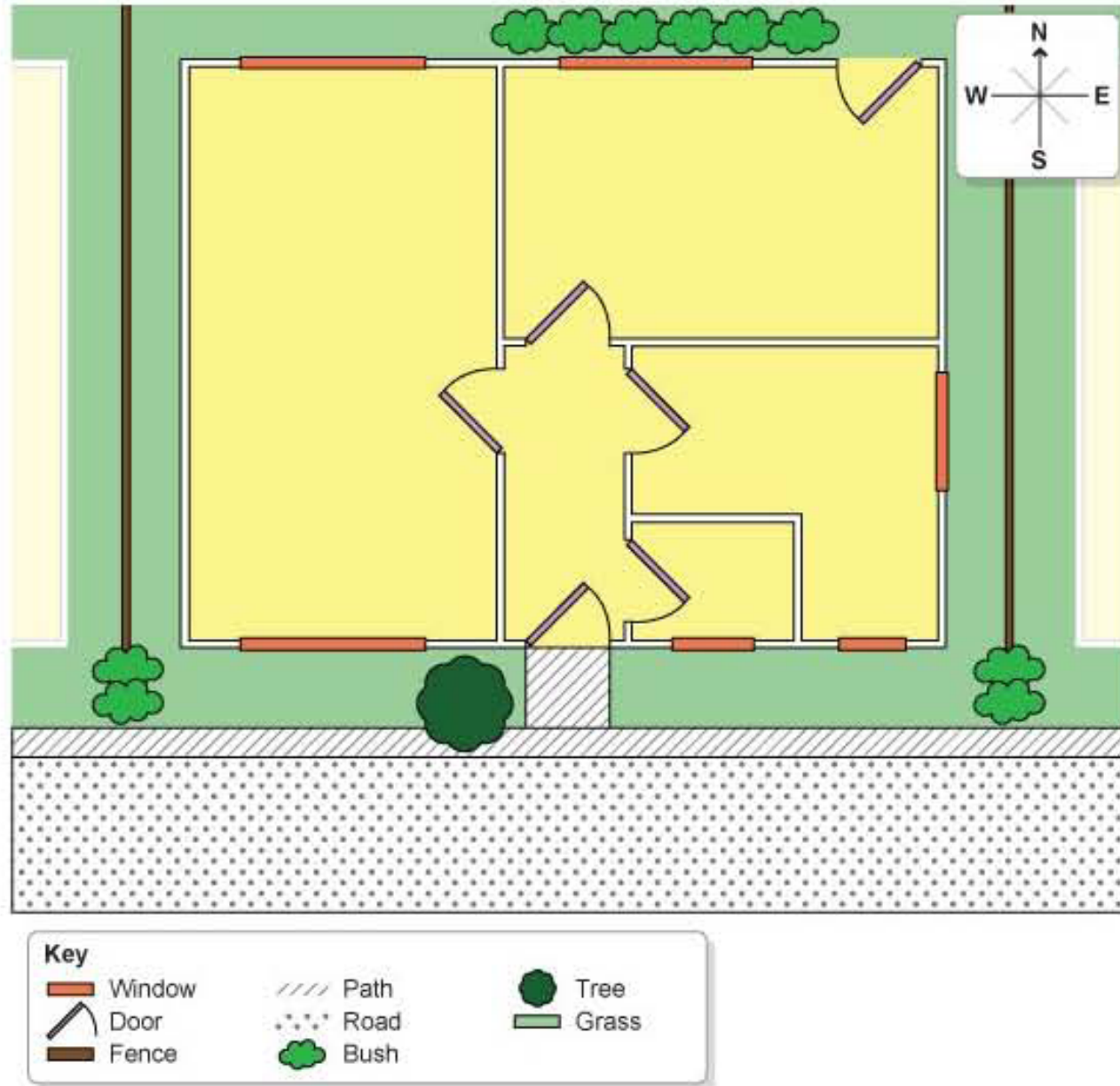


ARCHITECTURAL DRAWING TECHNIQUES 01

Plan drawings

Plan drawings show a view from above, looking down. They are used for room plans, site plans and maps. They often use symbols and a key to represent parts of the plan such as trees, furniture or buildings.

North, south, east and west should also be shown.



Perspective drawing

Perspective drawings make objects appear more realistic, as they appear to recede as they get further away. If the receding lines are extended they will meet at points that are called **vanishing points**.

Making a perspective drawing

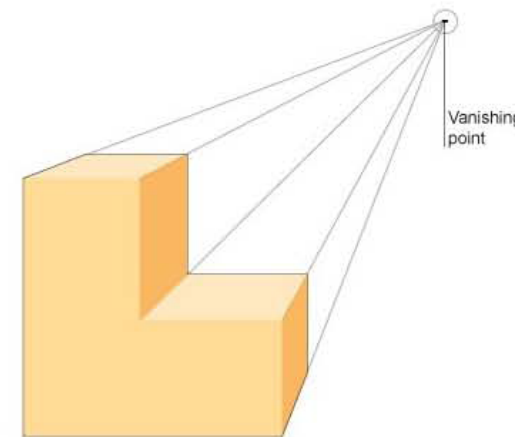
To make a perspective drawing:

1. Draw the forward face or edge of the object
2. Mark the vanishing point
3. Draw guidelines from each corner of the shape to the vanishing point
4. Draw the verticals and horizontals between the guide lines
5. Use the guidelines to draw the rest of the shape

Perspective drawing can use multiple vanishing points.

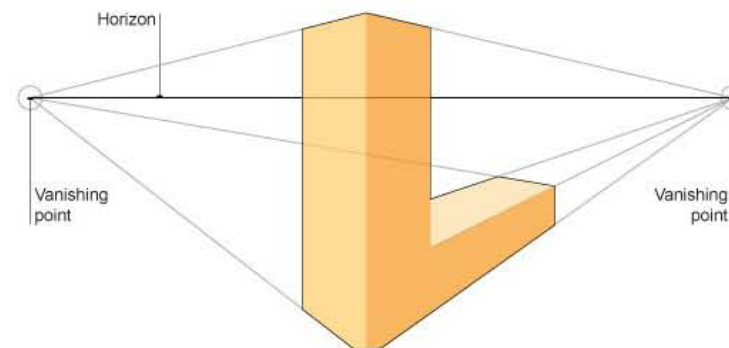
One-point perspective

One-point perspective uses one vanishing point, and is used to draw room interiors.



Two-point perspective

Two-point perspective uses two vanishing points, connected by a horizontal line. Two-point perspective is useful when developing ideas in 3D.

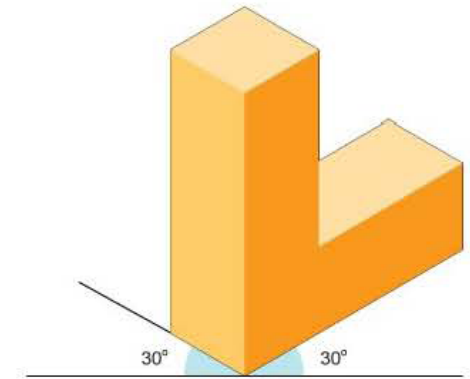


Formal and working drawings give information about structure, dimensions, materials and assembly instructions for a product. The main types of formal drawing are isometric projection and perspective drawing. The main types of working drawing are orthographic projection, section drawings, assembly drawings and plan drawings. Formal and working drawings must be presented clearly.

Isometric projection

A representation of a 3D solid on a 2D surface is called a **projection**.

Isometric projection uses vertical lines and lines drawn at 30° to horizontal.



A 30° set square is used to ensure accuracy.

Dimensions are shown accurately and in the correct proportion. This makes it easy to draw the projection to *scale* from a *plan* view.

Isometric projection distorts shapes to keep all upright lines vertical.

Presenting your drawings

Formal drawings are working documents, so they need to be looked after and presented in such a way that anyone can read them.

Mounting work

Mounting drawings on paper or card makes them more durable and easier to handle.

Surface mounting is where the drawing is fixed directly to another piece of paper or card.

Double mounting uses two different colours of backing material.

Window mounting is where a hole is cut into a piece of card and the drawing is mounted behind the card so it shows through the window (like a picture frame).

Laminating or **heat-sealing** is where the artwork is placed in a transparent plastic pocket and fed into a machine with heated rollers that seal the plastic over the artwork.

Sprays, rubber-based adhesives and double-sided tape can be used on card, but avoid using liquid glues on card. Adhesive sticks are useful for small pieces of work.

Coloured backgrounds

A pale coloured background may help with the presentation of a drawing. This can be done using coloured paper or card, a colourwash, pastels, or computer graphics software.

A representation of a three-dimensional solid on a two-dimensional surface.

plan

Scale drawing showing an object as seen from directly above.

drawing board

Provides a smooth, flat surface for drawing, and can hold the paper in place. Some have a groove for the T-square.

parallel motion

A mechanical linkage used to draw horizontal and parallel lines. May be built into the drawing board.

t_square

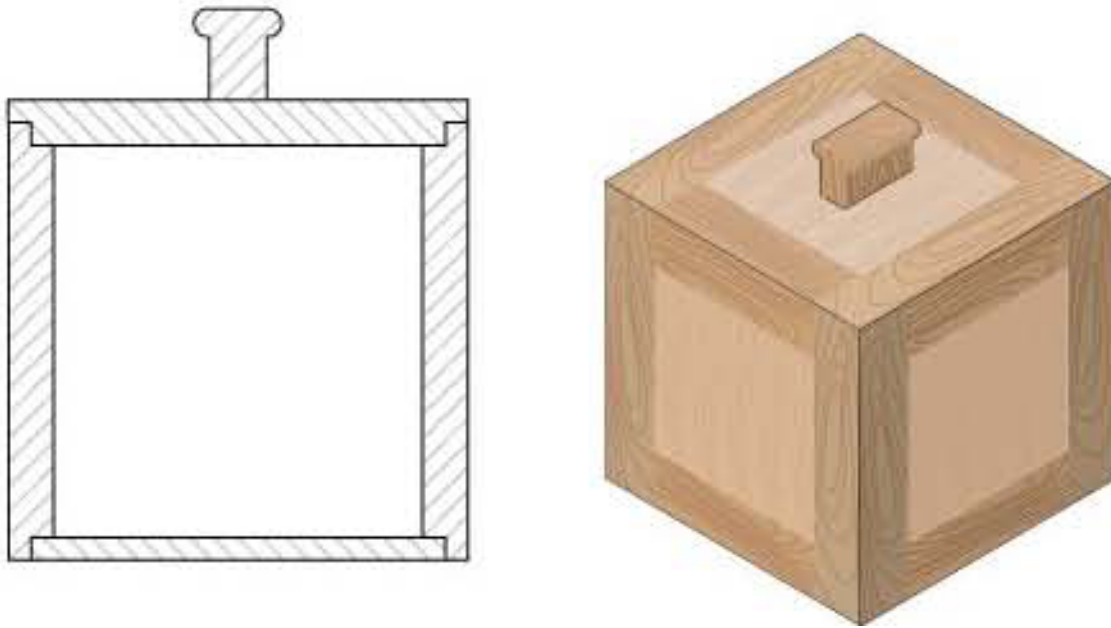
Used to draw horizontal and parallel lines.

ARCHITECTURAL DRAWING TECHNIQUES 02

Section drawings

Section or cross section drawings show a product as if it has been sliced in half. The imaginary cut is called a **section plane** which is sometimes represented by a line consisting of long and short dashes.

A section drawing shows how a product is constructed. Parts of the object that are cut through are shaded by **cross-hatching**. The cross-hatching lines must be at 45° and spaced 4mm apart. If two parts touch, then the cross-hatching goes in opposite direction. Parts such as nuts and bolts and axles are not normally sectioned.



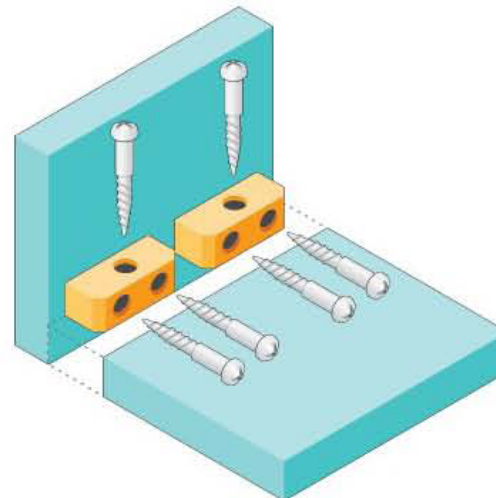
Assembly drawings

An assembly drawing shows how parts of a product fit together. They are often used to show how to assemble parts of model kits and flat-pack furniture.

There are two types:

A **fitted assembly drawing** shows the parts put together, and can be drawn in 2D or 3D.

An **exploded drawing** shows the parts separated, but in the correct relationship for fitting together. Exploded views are usually drawn in 3D, as illustrated.



An exploded assembly drawing

Working drawings

Working drawings contain the information needed to make an object, including:

- dimensions
- components
- materials
- assembly instructions

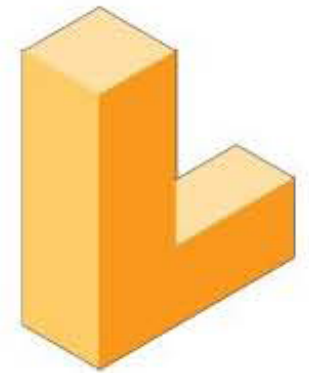
Working drawings normally use **orthographic projection**.

Some products may need a **section drawing** to give extra structural information, or an **assembly drawing** to show how parts fit together.

Orthographic projection

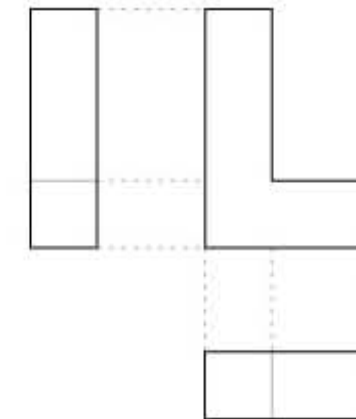
Orthographic *projection* uses a 2D drawing of each side of an object. Orthographic drawings usually consist of a **front view**, a **side view** and a **plan view**. A *drawing board* and *parallel motion* or *T-square* is used to project one view from another.

Orthographic drawing may be done using **first angle projection** or **third angle projection**.



An orthographic projection of this shape is shown below

First angle projection



Third angle projection

