

# TOPIC: PERSPECTIVE DRAWING

**PERSPECTIVE** is from a **Latin** word called “**Perspicere**” which mean “**To See Through**”.

**PERSPECTIVE DRAWING**: is a system of representing the way that objects appear to get smaller and closer together the farther away they are from the viewer.

However, the two most characteristic feature of perspective are that objects appear smaller as their distance from the observer and objects dimension along the line of sight appear shorter than it dimensions across the line of sight.

## **USES OF PERSPECTIVE**

Perspective drawing are used for images of;

- Road
- Rail way tracks
- Hall way
- Building etc.

## TYPES OF PERSPECTIVE DRAWING

- 1. One – Point Perspective Drawing:** is a kind of drawing that contain **One Vanishing point**.
- 2. Two – Point Perspective drawing:** is a kind of drawing that contain **Two Vanishing point**.
- 3. Three – Point Perspective Drawing:** is kind of drawing that contain **Three Vanishing point**.
- 4. Four – Point Perspective Drawing:** is kind of drawing that contain **Four Vanishing Point**.
- 5. Five – Point Perspective Drawing:** is kind of drawing that contain **Five Vanishing Point**.
- 6. Six – Point Perspective Drawing:** is kind of drawing that contain **Six Vanishing Point** etc.

# TERMS IN PERSPECTIVE DRAWING

1. Horizon Line (**HL**)
2. Station Point
3. Vanishing Point (**VP**)
4. Planes
5. Ground Level (**G**)
6. Parallel Lines
7. Receding
8. Orthogonal
9. Diminishing Point

**HORIZON LINE (HL)**: also known as “**Eye Level**”. It is a line drawn across the page and represents the eye level of the viewers.

**VANISHING POINT (VP)**: is the imaginary point on the horizon line in either 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> point perspective. Receding line converge to these point.

**DIMINISHING FORM**: refers to the apparent size of object and how they become smaller when the distance between the object move further away from the view.

**STATIONARY POINT**: is the point at which the viewer stood to view the images

**ORTHOGONAL LINE**: are imaginary or lightly drawn guidelines in a perspective drawing. They are usually the parallel lines that converge on the horizon line.

**PARALLEL LINE**: are two lines that are the same distance from one another.

**GROUND LINE OR PLANE (G)**: is the bottom of the picture plane or line.

**PLANE**: is any two dimensional shape.

# TOPIC: AUXILIARY VIEWS

**AN AUXILIARY VIEW:** is an orthographic view taken in such a manner that the lines of sight are not parallel to the principal projection planes (frontal, horizontal, or profile). There are an infinite number of possible auxiliary views of any given object. **Any view obtained by a projection on a plane other than the horizontal, frontal, and profile projection planes is an auxiliary view.**

Despite the fact that auxiliary views are projected onto planes which are inclined to the principal projection planes, they are still classified as orthographic views. The lines of sight are still parallel to each other and perpendicular to the plane of projection. Therefore, when reading lines on the object in an auxiliary view adjacent to a principal view, the same rules apply to reading lines in adjacent principal views.

## USES OF AUXILIARY VIEW

Auxiliary views are often used to produce views that show the following:

- 1.True length of line (TL)
- 2.Point view of line (PV)
- 3.Edge view of plane (EV)
- 4.True size of plane (TS)
- 5.True size of angle between a line and a plane or a plane and a plane.

Generally, auxiliary views are used to show the true shape or true angle of features that appear distorted in the regular views.

## TYPES OF AUXILIARY VIEW

1. Primary Auxiliary View
2. Secondary Auxiliary View
3. Tertiary Auxiliary View

**A PRIMARY AUXILIARY:** is the view projected onto a plane that is perpendicular to one of the principal planes of projection and is inclined to the other two.

**A SECONDARY AUXILIARY VIEW:** is projected from a primary auxiliary view onto a plane that is inclined to all three principal projection planes.

**A TERTIARY AUXILIARY VIEW:** is a single view projected from a secondary or another tertiary auxiliary view.



# TOPIC: COMPUTER-AIDED DESIGN (CAD)

COMPUTER-AIDED DESIGN (CAD): is the use of [computers](#) (or [workstations](#)) to aid in the creation, modification, analysis, or optimization of a [design](#).

## USES OF COMPUTER AIDED DESIGN

Computer aided design CAD software is used for the following:

- It used to increase the productivity of the designer
- It used to improve the quality of design
- It used to improve communications through documentation
- It used to create a database for manufacturing.

# TOPIC: TRACES OF A POINT AND LINE IN SPACE

**THE TRACE OF LINE or POINT:** is a point at which the given line if produce, meets or intersects a plane.

However, note:

When a line meets **HP**, the point at which the line meets or intersect the horizontal plane is called horizontal traces (**HT**) of the line and denoted by letter **H**.

When a line meets **VP**, the point at which the line meets or intersect the vertical plane is called vertical trace (**VT**) of the line and denoted by letter **V**

**LINE:** is a narrow part made between two point on a surface. A line can appear in numerous ways depending on the relative position of the viewer. if the line is viewed such that the line of sight is perpendicular to the given line, the line will appear in it true length (TI)

### **TYPES OF LINE IN SPACE**

Line in space can be classified according to the relationship to the principle projection planes. however, there are three (3) different types of line

- A normal line
- An inclined line
- An oblique line

- **A NORMAL LINE:** is a line that is parallel to two of the principle planes and perpendicular to the third. Therefore, given three principle view (**H.F.P**), the line must appear **TL** in two of the views. In the remaining view it appears as a point.
- **AN INCLINED LINE:** is a line in space that is parallel to one of the third principle views. It is neither parallel nor perpendicular to the other two views. The line will appear **TL** in one view since it is parallel to one of the projection plane. It will appear foreshortened in the remaining two view
- **AN OBLIQUE LINE:** is a line in space that is neither parallel nor perpendicular to any of the principle planes. it will appear foreshortened in all principle view.

# TOPIC: TRUE LENGTH AND ANGLES OF A LINE IN SPACE

**SPACE:** is any 100 meters distance away from the surface of the earth.

**TRUE LENGTH:** in geometry is any distance between points that is not foreshortened by the view type. However, In a three-dimensional Euclidean space, lines with true length are parallel to the projection plane. For example, in a top view of a pyramid, which is an orthographic projection, the base edges (which are parallel to the projection plane) have true length, whereas the remaining edges in this view are not true lengths.