

## GLOSSARY.

ANGLE.—The point or line on the inner or outer side, where two lines or surfaces meet. In a strict mathematical sense it signifies that relation of lines which is measured by the amount of rotation necessary to make one coincide with the other. This amount is usually expressed in degrees.

ARC.—A part of a circle.

AXIS.—One of the principal lines through the center of a figure or solid, especially the longest or shortest, or a line as to which the figure or solid is symmetrical.

AXES.—Plural of Axis.

BISECT.—To divide into two equal parts.

CENTER.—The middle point of a closed curve or surface; properly a point such that any straight line drawn through it will meet the curve or surface at equal distances on each side of the point.

CHORD.—A straight line connecting the extremities of an arc.

CIRCLE.—A plane figure bounded by a curved line called the circumference, everywhere equally distant from a point within called the center.

CIRCUMFERENCE.—The boundary line of a circle, also of any plane figure that is bounded by a curved line. The boundary line of any space.

CONCEPTION.—The act or process of forming the

idea or a notion of a thing, or the idea or notion formed.

**CONE.**—The cone is an object which tapers uniformly from a circular base to a point. If the point lies in the perpendicular from the center of the base the cone is a right cone, otherwise an oblique or a scalene cone.

**CONICAL.**—Shaped like a cone; conic.

**CONVERGE.**—To trend toward one point; to incline and approach nearer together; direct toward a common focus.

**CONVERGENT.**—Tending to one point; approaching each other as they extend; said of lines.

**CROSS-SECTION.**—The section of a body at right angles to its length; as the cross-section of a gas pipe.

**CUBE.**—A solid bounded by six equal squares and having all its angles right angles.

**CURVE.**—Having a different direction at every point.

**CURVILINEAR.**—Formed by curved lines.

**CYLINDER.**—A solid whose curved bounding surface is generated by the motion of a straight line, remaining parallel to itself, around two equal circles in parallel planes, the circle forming the rest of the boundary; called right when the line is at right angles to the planes, oblique when it is not; in the higher geometry, any curved surface generated by the motion of a straight line remaining parallel to itself and constantly intersecting a curve.

**DEGREE.**—A unit of angular measure, the ninetieth part of a right angle.

DESCRIPTIVE GEOMETRY.—That application of geometry in which the relation of lines and figures are studied on planes.

DESIGNATE.—To cause to be known or recognizable by some mark or sign.

DEVELOP.—To change the form of a surface by bending or unbending without changing its smallest part.

DIAGONAL.—Extending obliquely from corner to corner, a straight line or plane passing from one angle or corner to any angle or corner not adjacent to it.

DIAGRAM.—A figure drawn to aid in demonstrating a geometrical proposition or to illustrate geometrical relations. A mechanical plan or outline.

DIAMETER.—A line through a plane figure or solid, terminated at the boundary thereof; the length of such a line. The term is applied mostly to circular and spherical figures.

DIMENSION.—Any measurable extent or magnitude, as of a line, surface, or solid.

DUPLICATE.—To make an exact copy of; reproduce exactly.

ELEMENT.—A component or essential part, especially a simple part of anything complex.

ELLIPSE.—A plane curve such that the sum of the distances from any point of the curve to two fixed points (called the foci) is a constant.

ELLIPTICAL.—Shaped like an ellipse.

FOCUS.—The point of meeting. The central point.

FRUSTUM.—That which is left of a solid, usually a cone or pyramid, after cutting off the upper part.

GEOMETRY.—The branch of pure mathematics that treats of space and its relation; the science of the mutual relations of points, lines, angles, surfaces, and solids, considered as having no properties but those arising from extension and difference of situation.

GEOMETRICAL.—Of or pertaining to geometry; according to the rules or principles of geometry.

HELICAL.—Pertaining to, shaped like, or following the course of a helix or spiral.

HELICOID.—A surface resembling that of a screw; especially one generated by a straight line, one end of which moves along an axis while the other describes a spiral about it.

HELIX.—A line, wire, or the like, curved into shape such as it would assume if wound in a single layer around a cylinder.

HORIZONTAL.—In the direction or parallel to the horizon; or on a level.

HYPOTHENUSE.—The side of a right angled triangle opposite the right angle.

INTERSECTION.—A place of crossing; the point where two lines or the line in which two surfaces cross each other.

ISOSCELES TRIANGLE.—See Triangle.

LINE.—A line is that which has only one dimension: length, a straight or right line is the shortest length between two points; a broken line is a line composed of different successive straight lines. A curved line is a

line no portion of which is straight. The intersection of two lines is a point.

MITER.—The junction of two bodies at an equally divided angle, a piece cut at an angle for mitering, or pieces so cut and joined.

OBLIQUE.—Deviating from the perpendicular or from a direct line by any angle except a right angle; not parallel nor at right angles; neither perpendicular nor horizontal.

OBLIQUE CONE.—See Cone.

OCTAGON.—A plane figure with eight sides and eight angles.

ORTHOGRAPHIC.—Of or pertaining to right lines or angles; drawn or projected by right lines. See Projection.

PARALLEL.—Lying in a plane and not meeting no matter how far produced; said of equidistant straight lines. Lines or surfaces lying in the same direction.

PARALLELOGRAM.—A four-sided plane figure whose opposite sides are parallel.

PERPENDICULAR.—Being at right angles to the plane of the horizon; straight up and down. Meeting a given line or surface at right angles.

PERSPECTIVE.—Delineation of objects as they appear to the eye. Specifically, in mathematics, a branch of projective geometry.

PLAN.—A drawing showing the parts in their proportion as well as relation, as of a building or machine.

PLANE.—A surface such that a straight line joining

any two of its points lies wholly in the surface; more precisely a surface which, when turned over, is congruous with itself, however applied. Hence, in common use, any flat or uncurved surface extending uniformly in some one direction.

POINT.—That which has location, but not magnitude.

POLYGON.—A closed figure bounded by straight lines, especially more than four; a figure having many angles.

PROJECTION.—The foot of the perpendicular let fall from a given point to a line or plane, or the straight line forming the feet of perpendiculars thus let fall from the extremities of a straight line, more widely the figure on a fixed plane called the plane of projection. In Orthographic Projection the projecting rays are parallel to each other.

PROJECTOR.—That which projects.

PYRAMID.—A solid bounded by a polygonal plane for its base, and by triangular planes meeting in a point called the vertex.

QUADRILATERAL.—Formed or bounded by four lines; four sided.

RADIATE.—Extending or passing outward from a common focus.

RADII.—Plural of radius.

RADIUS.—A straight line from the center of a circle or sphere to its circumference or surface.

RECTANGLE.—A plane quadrilateral figure having all its angles right angles.

RECTANGULAR.—Having one right angle, or more, being a rectangle.

RECTILINEAR.—Consisting of right lines.

RIGHT ANGLED TRIANGLE.—See Triangle.

ROTATION.—Order of sequence.

SCALENE CONE.—See Cone.

SCENOGRAPHIC.—The art of making drawings in perspective.

SECTION.—A representation, or drawing, showing something, as a building or machine, as it would appear if it were cut by an intersecting plane, and the portion between the observer and the cutting plane removed.

SECTOR.—A part of a circle bounded by two radii and the arc subtended by them.

SPIRAL.—Winding continually as on the surface of a cylinder, or as the thread of a screw; helical.

SQUARE.—A rectangle having equal sides.

TANGENT.—Meeting a line or surface at a point and then leaving without intersection.

TEMPLET.—A pattern usually flat, for shaping something.

TRANSFORM.—To give a different form to; alter in shape.

TRANSITION.—Change from one condition to another.

TRANSITIONAL.—Of or pertaining to transition.

TRIANGLE.—A figure, especially a plane figure bounded by three lines, called sides, and having conse-

quently three angles. Triangles are equilateral and equiangular when all the sides and angles are equal; isosceles when two sides are equal and scalene when no two sides are equal. They are right angled when one of the angles is a right angle, but otherwise oblique angled.

VERTEX.—The extreme point of a figure in a certain direction; especially in a triangle, the point of intersection of its sides. Of a cone or pyramid, the point of intersection of the generating lines or bounding planes respectively.

VERTICAL.—Perpendicular to the plane of the horizon, plumb, upright.