

Research Title: A Study of the Shade and Shadow Projection Method of Stairs in Isometric Drawing.

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ABSTRACT

This was a study of the stair shade and shadow projection method in isometric drawing. Nowadays, there was only a basic study and there was less interesting in the differences of stairs. Researcher made the model of the stairs to study the shade and shadow projection method by setting up the position of the light from the sun and determine the scale of light ray box that was commonly used in shade and shadow drawing of the object in an isometric drawing with 1: 1 scale (angle 45 °) and increase light ray box 1:1.5 scale which is another method to find shade and shadow position. In this method, researcher used 5 stairs models by determining the light ray box scale in 2 models. The beginning of the experiment is the explanation the basis of finding shade and shadow position of stairs by using the models. Auto CAD program is used to explain in both 3D model and isometric drawing. Then allow the fundamentals of drawing students to draw shade and shadow positions in isometric drawing by using 3 light ray directions in the elevations of the light ray box; 1) Finding the shadow position by using the main light line (diagonal lines on a light ray box) in contrast with the light line (180°) on the top view(old method of 1:1 scale), 2) Finding where shadow using main light line, the intersection with the light line on the front view and 3) Finding the shadow point by using the main light line in contrast to the light line on the side view (1:1.5 scale). The results showed that the students were satisfied in the stairs' shadow drawings in isometric drawings by defining the scale of both the light ray boxes.

Problems found from the stairs formation in finding the stairs' shade and shadow position were curved stair railing that take time to draw with the old way of 1:1 scale but when it was changed to 1:1.5 scale and used the third method to find the shadow point by using the main light line in contrast to the light line on the side view. The result showed that the students can work faster and easily understand. In addition, this method can be applied with light ray box method 1:1.5 scale by using the light line on the side view to find shade and shadow position when there was a change in a shadow point. No matter what the characteristic or degree is, the method can easily help to reduce the complexity of the process of finding the shade position and save a lot of time.

Keywords: Stairs, shade and shadow, isometric drawing, light, light ray box, shadow point