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EARTHWORK DRAWING USING AUTOCAD

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ABSTRACT

AutoCAD (Computer Assisted Drawing) is a drawing software used by many companies, weather it is an engineering, architecture, or even surveyor, to produce a drawing of any type as long as it is withing the scope of work. The aim of this practical report is to produce an earthwork detail drawing using AutoCAD at Kuala Perlis, Perlis. Data was collected through observation, interviews, and document analysis. The findings show that the method was carried out using AutoCAD 2021. The command bar at the bottom of the program was used to reach the max amount of efficiency needed to produce a detail drawing in the quickest and most productive way. However, using hot keys are also helpful. Producing an earthwork drawing is a very long and tedious progress as it involves multiple parties. Among the problems that were encountered were unwilling higher-ups that prioritised bigger and more expensive projects and some technical problems with AutoCAD. The right mindset and techniques, communication with the engineer, surveyor, and officers can help in producing an earthwork drawing with the utmost efficiency and precision.

TABLE OF CONTENTS

Contents

CHAPTER 1:

INTRODUCTION

Visualization of the construction site is now a need for all projects in the modern construction age (Tanoli et al., 2018). Using the program AutoCAD, this visualisation is possible (Palm, 2020).

AutoCAD is data that is recorded in binary digital form in a CAD also knows as Computer-Aided Design file, which is then electronically stored version of the drawing (Palm, 2020). These digits indicate coordinate values for all of the drawing's endpoints, centre points, radius, vertices, and other objects, as well as additional code that identifies the object's types such as line, circle, arc, ellipse, and more. Knowing that a CAD system saves drawings by storing coordinate data might help you grasp the input necessary to construct objects and how to interpret screen prompts (Omura, 2012).

When sketching with pencil and paper, it is important to figure out a scale to use so that the picture is proportionate to the actual thing and fits on the sheet (Omura, 2012). However, there is no predetermined size drawing area when using a CAD system to create a sketch (Omura, 2012). The number of drawing units on the screen is changeable and is determined by the programme. The CAD drawing is not scaled until it is plotted or printed on a fixed size sheet of paper (Yarwood, 2009). The requirement for making CAD drawings is that they must be drawn according to scale and in real-world units (Kukiev, 2019). The user sets the units to be utilised whether it is an architectural or engineering and then the size of the drawing area required to create the required geometry in the X and Y values. The drawing area can be presented on the screen in its entirety or as a fraction of the drawing area, depending on the size selected (Kukiev, 2019).

A drawing is regarded as a virtual, full-sized object as long as it exists as a CAD file or is visible on the screen (Yarwood, 2009). The CAD drawing is only transformed which is typically reduced to a size that will fit on a page when it is transferred to paper by a plotter or printer (Palm, 2020). A CAD design can be automatically scaled to fit on a sheet regardless of sheet size; however, this process produces a plotted drawing that is not to an acceptable scale meaning it is not in proportion to the real thing.