

3D Design Software Use In Architecture Firm

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Abstract- Revit, En-scape, V-ray, Lumion, Twin-motion, and SketchUp are all effective tools for architectural design and visualisation. As the subject of architecture grows more digital, competency in these programmes is becoming a need for every successful professional in the sector. In the next part, we will go over each programme in further detail, outlining its unique characteristics and how they can be used to improve the design process.

Keywords- 3D- Modelling, Rendering, visualization, MEP (Mechanical, Electrical and Plumbing)

I. INTRODUCTION

The first 3D software arrived in the 1960s, but the breakthrough came in the 1990s, when computer technology became widespread and affordable to the general public. The implementation of 3D modelling software opened up a wide range of possibilities for creating models with complex forms, simplified the design and planning process, and provided an opportunity to identify and eliminate errors at the design stage, allowing society to advance and elevate the design and production process to a new level.

The process of creating a three-dimensional model of an object in order to build, change, analyses, or optimize the design of the item using specific software is known as 3D modelling in engineering. 3D modelling software is used to generate a virtual model of an item that takes into account its dimensions, materials, tolerances, and stresses. This design results in higher product quality after production, increased productivity, and design quality improvements.

Objective

- To Improves the design process.
- To obtain information about the target which cannot be easily observed or measured.
- To know the rough idea about problem in 3D design.
- To understand difference features of 3D design software.
- Understand the types of 3D design software.

Literature Study

In this connection the following literature study has been done in 3D software.

INFORMATION OF 3D SOFTWARE USE IN ARCHITECTURE FIRM

REVIT

For structural engineers, mechanical, electrical, and plumbing (MEP) engineers, designers, and contractors, Autodesk Revit is a tool for building information modelling. Charles River programmed, a 1997 startup that changed its name to Revit Technology Corporation and was later bought by Autodesk in 2002, was the company that created the initial programmed. The programmed enables users to create a building and all of its parts in 3D, add 2D drawing elements to the model, and retrieve building data from the building model's database. Revit is a 4D building information modelling programmed equipped with features to plan and keep track of various building lifecycle stages, from idea to construction and later maintenance and deconstruction.

SKETCH UP

Users of the 3D modelling application Sketchup may easily build and edit 3D models. Owner of Sketchup is Trimble Inc. Due to its user-friendly design and extensive feature set, Sketchup has grown in popularity since its introduction.

One of the most widely used 3D modelling software packages nowadays is SketchUp. It is frequently used by designers, engineers, and architects to make accurate models of furniture, buildings, and other items. Users may quickly turn their ideas into 3D drawings using SketchUp's user-friendly interface and robust tools. Whether you're a first-time user of the programmed or a seasoned master, SketchUp will provide you the tools you need to advance your projects.

V-RAY IN REVIT AND SKETCH UP

V-ray for Revit is a potent plugin that easily adds advanced lighting and rendering capabilities to the Revit platform. Its user-friendly interface and adaptable settings enable architects and designers to swiftly produce precise

visualizations of their building plans. Users of Revit may get more done and save time by utilizing V-ray. Any design expert may benefit from V-ray for Revit's broad range of materials, textures, and lighting choices.

Users of Revit may easily produce amazing realistic graphics and top-notch animations with V-ray. Rendering may also be done in real time using V-ray.

ENSCAPE IN REVIT AND SKETCH UP

Escape for Revit is an effective solution that enables architects and designers to produce realistic renderings and walkthroughs of their projects in real time. Escape makes visualization simple with its user-friendly interface and seamless Revit connection, freeing designers to concentrate on making appealing and useful ideas. Escape can assist you in bringing your concept to life with incredible depth and precision whether you are working on a big commercial project or a modest domestic design. Therefore, Escape for Revit is certainly something to think about if you're searching for a strong visualization tool to aid in the creation of attractive and useful ideas.

LUMION IN REVIT AND SKETCH UP

Lumion is a powerful rendering software that has taken the architecture and design world by storm. It is a priceless tool for architects and designers wishing to bring their concepts to life due to its perfect integration with Revit. Designers may produce incredible visualizations that faithfully depict their concepts by using Lumion's wide library of textures, 3D models, and landscape components. Lumion for Revit is a crucial tool to have in your toolbox, regardless of your level of experience or where you are in your professional life.

TWINMOTION IN REVIT AND SKETCH UP

Epic Games created the real-time 3D immersion programmed called Twin-motion. It is a potent tool because it was created using Unreal Engine technology.

It enables real-time rendering and visualization tools made by designers like landscape architects, urban planners, and architects. Twin motion for Revit uses real-time rendering technology to render photorealistic pictures quickly, enabling architects to produce more accurate designs and make better decisions based on real-time information.

Scope of work

The purpose of the research is to assess and understand the needs of software specialize in.

Need

- When creating a sketch or drawing in two dimensions, it can be challenging to visualize the ultimate shape of the thing in three dimensions, particularly if the geometry is intricate.
- Before building a prototype, designers may use the ability to model and depict an object more realistically as a great tool for design evaluation.
- improved communication amongst design team members.

Benefits of Floating structure

- Improved visualization for the finished building or product.
- The ability to check for errors which may have occurred during the design and drawing process.
- The optimum use of building or creation materials.
- Lowering costs of the finished project.
- Virtual tours and walk through.
- Super-efficient promotional and marketing tools for the finished product.
- Minimize the numbers of errors and revisions needed in the design.

A. Demerit of floating structure.

- IN V RAY we cannot make walkthrough its only use in rendering work.
- In V RAY we have to create material again after creating material in Revit to get better visualisation/ effect.
- In escape We have limited option to use inbuild atmosphere as we can load preferred atmosphere.
- Lighting effect not much good as compared to V ray.
- Lumion required high configuration.
- We can not create 4D simulation walkthrough in Lumion.

II. CONCLUSIONS

By As per my research, we cannot compare any 3D design software which is best. Every software is good depending on the requirement because every software has its own unique feature.

In v-ray realistic picture are very good its also give better lighting effect then enscape. here we get more option at atmosphere background.

In Enscape we don't have to create material again in enscape as we have to create material in v-ray to get better output. Here walks throw can be made very easily.

Twin-motion and Lumion software widely used for live walk throw means [here we can show human, car moving]. here we can change season as per our requirement and also, we can change wind direction. in twin-motion we can also make 4d simulation walk throw.

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