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# Modelling and Layout of Bank using AutoCAD and 3D's Max Software

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**ABSTRACT:** To achieve a realistic and high-quality finish, advanced texturing and materials techniques were used in 3ds Max. The software's lighting tools were also utilised to create a range of lighting scenarios, from natural daylight to dramatic nighttime effects. Additionally, a short animation was created to showcase the design and its key features, providing a comprehensive and immersive experience.

The "Modern Banking Hub" project demonstrates the potential of 3ds Max in creating stunning and futuristic designs. By leveraging the software's advanced features and tools, designers and architects can bring their visions to life and create immersive experiences that showcase their designs in the best possible light.

**KEYWORDS:** 3d's Max, 3D visualization, architectural details

## I. INTRODUCTION

"In the rapidly evolving world of finance, banks are no longer just repositories of wealth, but vibrant hubs of innovation and customer experience. As technology continues to reshape the banking landscape, there is a growing need for physical spaces that reflect this shift. This project aims to reimagine the traditional bank design, leveraging the power of 3ds Max to create a futuristic and immersive environment that embodies the values of security, sustainability, and customer-centricity. By pushing the boundaries of architectural design and visualization, we seek to create a bold and inspiring vision for the bank of the future."3ds Max Interface Overview

The 3ds Max Interface Comprises Controls, Status Information, And Viewports, Where You Work And View Your Scene.

One Of The Most Important Aspect Of Using 3ds Max Is Its Versatility. Many Program Functions Are Available From Multiple Interface Elements. For Example, You Can Open Track View For Animation Control From The Main Toolbar As Well As The Graph Editors Menu, But The Easiest Way To Get To A Specific Object's Track In Track View Is To Right-Click The Object And Then Choose Track View Selected From The Quad Menu.

You Can Customize The User Interface In A Variety Of Ways: By Adding Keyboard Shortcuts, Moving Toolbars And Command Panels Around, Creating New Toolbars And Buttons, And Even Recording Scripts Into Toolbar Buttons. The User Interface Is High DPI Aware, And Ensures That You Have The Optimal Experience With Your Display Hardware.

Note: Some Images Of The User Interface (Icons, Toolbars, Etc.) Found Within 3ds Max Help May Be Of Older Versions Of The Software.

1. User Account Menu
2. Workspace Selector
3. Menu Bar
4. Main Toolbar
5. Ribbon
6. Scene Explorer
7. Viewport Layouts
8. Command Panel

9. Viewports
10. Max script Mini Listener
11. Status Line And Prompt Line
12. Isolate Selection Toggle and Selection Lock Toggle
13. Coordinate Display
14. Animation And Time Controls
15. Viewport Navigation Controls
16. Projects Toolbar
17. Topics In This Section

### **Workspaces**

The Workspaces Feature Lets You Switch Quickly Among Any Number Of Different Interface Setups. It Can Restore Custom Arrangements Of Toolbars, Menus, Viewport Layout Presets, And So On.

1. Floating And Docking

You Can Easily Customize Your Workspace By Floating And Docking Part Of The Interface, Such As Panels, Windows, Menu, Toolbars, And The Time Slider.

2. Special Controls

3ds Max Uses Some Special User Interface Controls, Which Are Described In This Topic.

3. Additional Keyboard Commands

This Topic Describes Some Commands That Are Provided Only As Customizable Actions. You Can Assign Them To A Keyboard Shortcut, A Menu, Or A Button By Using The Customize User Interface Dialog.

4. Toggling Dialogs

In Most Cases, You Can Close A Dialog With The Same Command Used To Open It. This Applies To Any Combination Of Input Methods, Including Menu, Toolbar Button, And Keyboard Shortcuts. For Example, You Can Open The Render Setup Dialog By Choosing Rendering Render Setup, And Then Close It By Pressing F10 (Default Keyboard Shortcut). If A Dialog Is Available From A Menu, A Check Mark Appears Next To The Respective Command While It's Open.

1. To Start 3ds Max From The Command Line
2. Search 3ds Max Commands
3. Lets You Search For Actions By Name.

## **II. LITERATURE SURVEY**

1. Importance of Bank Design

Research highlights that a bank's design significantly influences customer trust and satisfaction. Studies indicate that open layouts can enhance transparency and accessibility, while private areas for consultations can ensure confidentiality (Parker, 2018).

2. 3ds Max in Architectural Visualization

3ds Max is widely recognised for its powerful modeling and rendering capabilities. It allows architects to create detailed and realistic representations of banking spaces. According to Liu (2020), 3ds Max's robust toolset, including parametric modeling and advanced lighting techniques, facilitates the exploration of design variations effectively

3. Layout Design Principles

Layout design in banks often balances functionality and aesthetics. The literature suggests using zoning principles to create distinct areas within a bank, such as teller zones, waiting areas, and private offices (Smith & Jones, 2019). This zoning can be effectively modeled in 3ds Max, allowing designers to visualise spatial relationships and flow.

#### 4. Case Studies

Several case studies illustrate successful implementations of 3ds Max in bank design: A study by Williams (2022) on a modern bank branch showcased the use of 3ds Max to create an open-plan layout that promotes customer interaction while maintaining functional workspaces for staff.

### III. METHODOLOGY

Gathering client requirements, site analysis, and initial layout sketching are the first steps in designing Bank with AutoCAD and 3ds Max. Create 2D floor design ground floor using AutoCAD, making sure that all sections and elevations meet to local construction rules and specifications for dimensions and operation. After everything is finished, Import the designs to 3ds Max in order to create walls, floors, and roofs can be extruded and architectural features like stairs and home furnishings can be added to the 3D model. Use V-Ray to apply realistic materials and textures, adjust lighting and surroundings, and generate excellent graphics. Present the design for remarks and finalise 2D drawings and 3D visuals for construction and presentation.

Analysing site specifics, architectural preferences, and any other design guidelines that affect the finished product are also included in this phase. AutoCAD, which is perfect for producing accurate 2D architecture drawings, is used to draft the layout in the following stage. These blueprints make sure every component is precisely dimensioned and include wall, door, window, staircase, and room layouts. To improve clarity, annotations like labels and measurements are added, and layers are utilised to arrange the drawing's various elements. For usage in the 3D modelling stage, the finished layout is subsequently saved as a.DWG file.

The 2D layout is imported into 3ds Max for 3D modelling after it is complete. The proper scale and orientation are carefully maintained while importing the DWG file into the software. Layer-based organisation of imported data makes processing easier. Making walls and defining structural components like floors, ceilings, and staircases are the next steps in establishing the Bank base geometry. Boolean operations are used to incorporate door and window openings, and architectural elements like columns and modelling are added to improve the Bank appearance. Texturing and the application of materials are done after the 3D structure has been model. Using 3ds Max's Material Editor, realistic materials are applied to different villa components, and UV mapping is applied to ensure textures appear seamless. Because it adds depth and realism, lighting is a crucial component of this stage. Both artificial and natural lighting configurations are used, and sophisticated renderers like V-Ray or Arnold are frequently used to produce photorealistic results.

Rendering and visualization come next after the model and textures are ready. Key views of the bank exterior and inside are captured by strategically placed cameras. The produced photos clearly display the bank's intricate design, and the render parameters are adjusted to guarantee high-quality output. To give a live view of the area, walkthroughs or animations can also be made if necessary Software such as Photoshop is used to post-process output photos. To improve the visual quality, brightness, contrast, and colour balance must be adjusted. Other effects like vegetation, sky, and ambient elements may be added to make the scene more lifelike.

Lastly, the results are checked against the original requirements. After rendered images and walkthroughs are reviewed and shared with stake holders for advice. To make sure the finished design reflects the client's vision, any necessary changes are made in response to their feedback. High-resolution photos, animations, and 3D model files that are prepared for presentation or additional work are usually included in the deliverables. This thorough process ensures a precise and eye-catching representation of the Bank design.

#### IV. EXPERIMENTAL RESULTS

Figures shows the result of the layout of Bank work outed in AutoCAD Software.

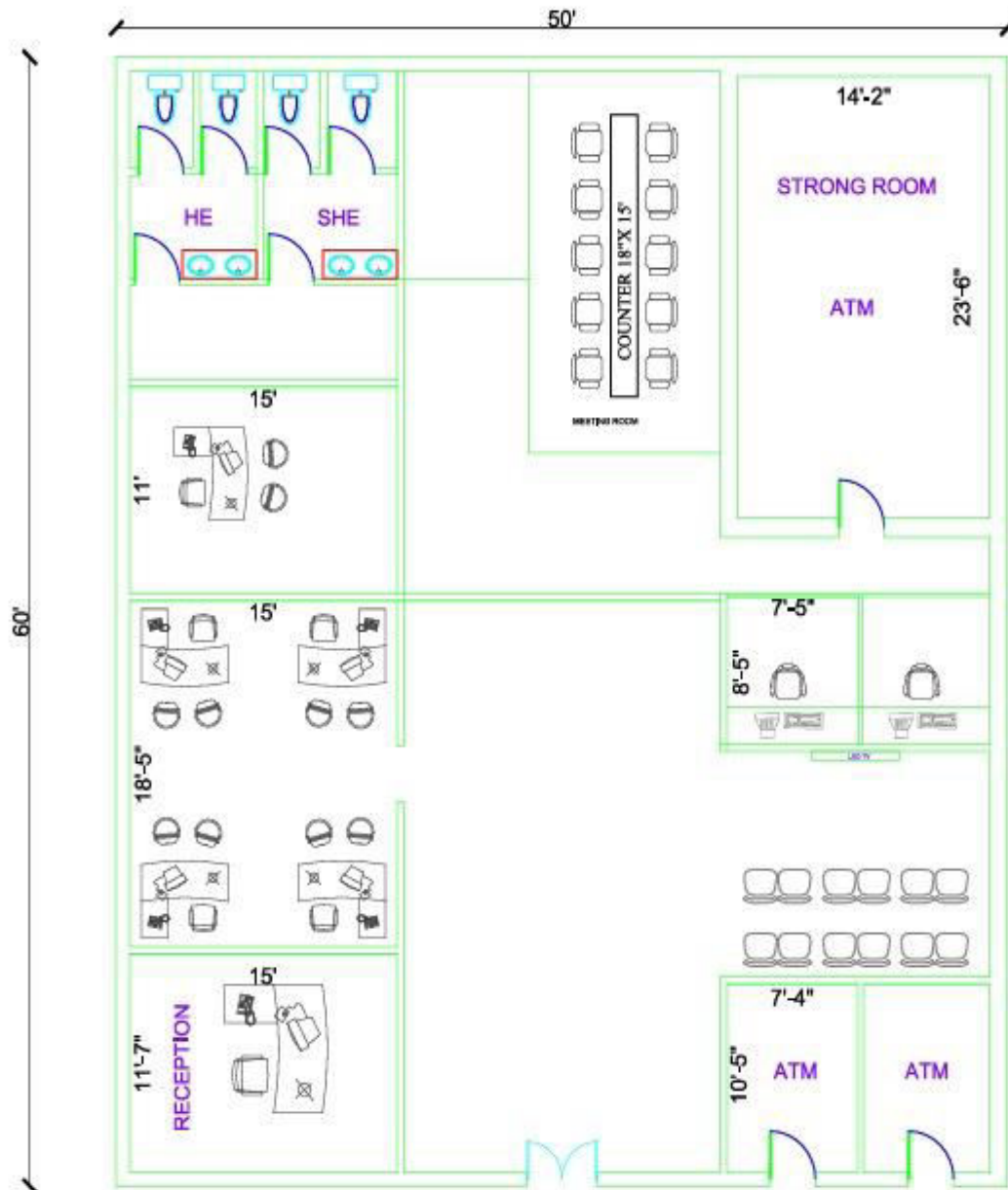
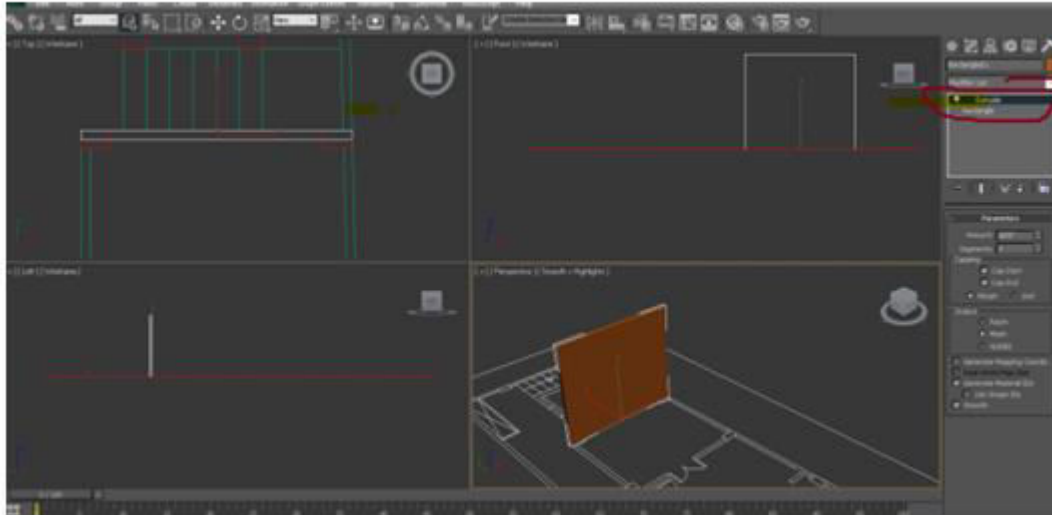
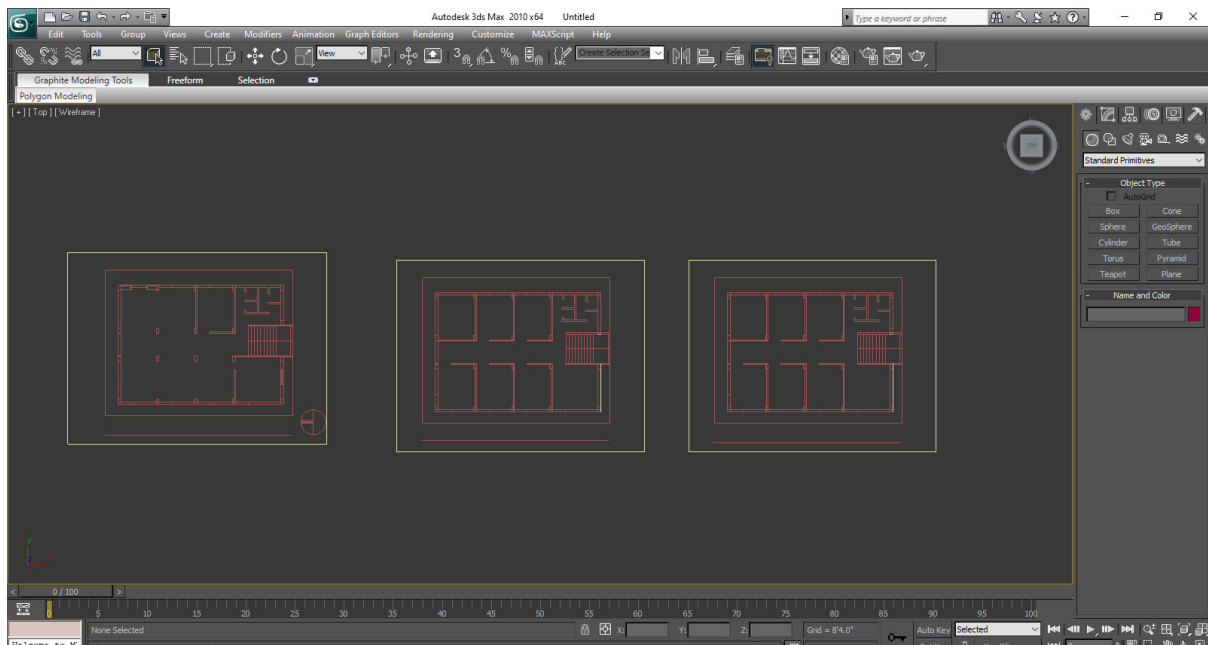


Fig. Shows the interface of the 3Ds Max software after importing the AutoCAD layouts



Fig, Show the interior sample designs of the our project



Final Fig. Shows the exterior elevation of the Bank





## V. CONCLUSION

The process of designing and visualising using AutoCAD and 3ds Max combines precision, efficiency, and creativity. AutoCAD plays a critical role in ensuring accurate 2D layouts, which serve as the foundation for the Bank design. On the other hand, 3ds Max brings the design to life with realistic 3D modelling, texturing, and rendering.

This workflow not only delivers precise and visually compelling results but also enhances communication with clients and stakeholders through high-quality visuals and walkthroughs. The flexibility to make iterative changes ensures the final output aligns with the client's vision. Together, AutoCAD and 3ds Max provide a powerful platform to create designs that are both functional and aesthetically impressive.



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