Modern Moroccan Design

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Abstract and Acknowledgements

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Experimental Procedure and Set Up
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Introduction and Conclusion

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References
Abstract

The purpose of this research project is to design a modern home based on Moroccan Riads. Moroccan Riads are traditional Moroccan house or palace with an indoor garden or courtyard. In order to create this design, we incorporated essential Moroccan details into our home including arches, pillars, open space and a skylight. Our goal for this project is to use AutoCAD to design a home based on Moroccan Riad designs. Some obstacles that we faced included having to learn how to properly use AutoCAD software. We overcame these obstacles by using the “AutoCAD 2011 Tutorial Second Level: 3D Modeling” by Randy Shi book [1]. As a result, we invented a modern Moroccan design that incorporates Moroccan details like arches and open space. We learned how to design our own home and created an original home like no one else’s.

Introduction

Our objective for this project is to design a home based on the Moroccan Riad theme using AutoCAD design software and online references. To complete this project we have created our floor plan in Autodesk AutoCAD. Autodesk's AutoCAD is the most popular CAD software in U.S. It has advanced graphics rendering, and powerful editing capabilities. AutoCAD can draw any 2D or 3D graphics; compared to the traditional hand drawings, AutoCAD is faster, more accurate, and more user friendly.

Moroccan Riads have originated in the 11th century and remain to be popular home themes to present day. Similar to Indo-Asian design, archways, open space, fountains, and large doorways are ubiquitous in Moroccan Riads. The beauty of Moroccan themed house is the lush, tropical atmosphere created by exotic plants and flowers, which bring the outside indoors. Terra cotta tiles are also a typical decorative material. In Morocco, these tiles are used on floors throughout the home, and sometimes on kitchen or bathroom walls.

Working in metric units, we created a house that has 4 bedrooms (each with an en-suite bathroom). The huge opened space in living room, main entrance, and gardens create a calm and relaxed atmosphere. But at the same time, the entrance to the house will exalt the feeling of awe in visitors’ minds, who would have felt themselves welcomed into the arms of the owners. The structure and shape of the house enabled everyone indoor to see the gardens, pool, and fountains outside, which enhance the connection and unity of the entire estate.

Experimental Procedure and Set Up

1. Drawing the 2D Floor Plan of the Moroccan Riad
   a. Set your units to meters.
   b. Set the linear and angular units that you want to use in your new drawing.
   c. Calculate the dimensions in meters, 24 meters by 29 meters, a total of 696 meters².
   d. Choose the 2D Drafting & Annotation Workspace.
e. Create layers before drawing anything. You can change an objects layer by selecting it and then choosing the desired new layer name from the Layer dropdown list. You can color-coordinate each layer for organization.

f. Draw the walls of the whole space including the doorway.

![Figure 1: Walls and Entrance](image)

h. Draw the details of each room and area. (I.e. furniture, bathtub, trees, etc.) This also includes Moroccan details as shown in Figures 3-6.

![Figure 3: Example of pool inside the Moroccan Riad](image)

![Figure 4: Example of entrance to Moroccan Riad and columns.](image)

g. Distribute and draw the rooms and areas inside the Moroccan Riad. This includes the kitchen, living room, stairs, bedrooms, bathrooms, fountain, and pool.

![Figure 2: First Floor, including details.](image)
We successfully used some basic commands of AutoCAD to construct a Moroccan Riad. It includes features of Moroccan Riads such as a fountain, a pool, plants, pillars, and arches.

**Advantages to using AutoCAD**

1. Once you’ve drawn something, you shouldn’t have to draw it again. If you manually drew a house plan, you would have to draw a front elevation, side elevations, and possibly a perspective view. With one 3D AutoCAD model, you can generate views from any angle either inside or outside the house and animations.
2. Creating lines, circles and other shapes of the exact dimensions is easier with AutoCAD than with pencils.
3. Drawing is much easier to modify on the computer than on paper. AutoCAD modifications are much cleaner.
4. Creating many kinds of drawings is faster with AutoCAD—especially with drawings that involve repetition, such as floor plans in a multistory building.

**Disadvantages to using AutoCAD**

1. Loading files in AutoCAD can be very slow, it may take more than a minute to load a file with complicated drawings. Clearly, we need a relatively strong computer system to use AutoCAD.
2. Demos done on AutoCAD are simply not clear enough; we watched

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### Table 1: Dimensions of rooms in the house.

<table>
<thead>
<tr>
<th>Room Type</th>
<th>Length (Meters)</th>
<th>Width (Meters)</th>
<th>Areas (Meters²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Guest Room</td>
<td>8</td>
<td>4.4</td>
<td>35.2</td>
</tr>
<tr>
<td>Bathroom #1</td>
<td>4.1884</td>
<td>4.4</td>
<td>18.42896</td>
</tr>
<tr>
<td>Master Bedroom</td>
<td>12.3958</td>
<td>4.7112</td>
<td>58.399</td>
</tr>
<tr>
<td>Master Bathroom</td>
<td>4.1207</td>
<td>1.9325</td>
<td>7.963</td>
</tr>
<tr>
<td>Master Closet</td>
<td>1.7504</td>
<td>2.5</td>
<td>4.376</td>
</tr>
<tr>
<td>Bedroom #1</td>
<td>3.9499</td>
<td>6.5992</td>
<td>26.066</td>
</tr>
<tr>
<td>Bedroom #2</td>
<td>3.9499</td>
<td>5.3522</td>
<td>21.14</td>
</tr>
</tbody>
</table>
them many times and still couldn’t grasp the concept.

3. Changing workspaces sometimes gets errors. You have to reopen the program several times.

Conclusion

Within 4 weeks, we have successfully completed our vision of a modern Moroccan riad. After working through several ideas of what we wanted to create, our team was capable of using the skills acquired in AutoCAD to professionally design the floor plan and have it in a presentable form. Our vision was to create a home with both authentic Moroccan elements in its architecture and to give it our own inspirations as well. What was important was to make it a home that we would desire to live in. Giving the home our feedback and design choices is what truly makes it unique. AutoCAD has proven to be an incredible piece of software that allowed us to design every aspect of this home. Despite any limitations or setbacks we faced during the design process, we are proud to have worked our best to achieve a beautiful Moroccan riad.

Acknowledgements

Our design wouldn’t be as wonderful as it is now without the help of our mentor Abdel Nelkharraz and his research assistant Michelot Neptune. Without Michelot’s help with learning the basics in AutoCAD, we wouldn’t have been able to actually design our home. We would like to thank Abdel Nelkharraz for being there for us when we needed help. He made sure to have everything available in order to get our project done. Without both our mentor, and his research assistant’s help, we wouldn’t have been able to complete this project on our own. They not only taught us how to use the AutoCAD program, but they also taught us how to work together as a team to get the job done. We also like to thank Suraj Singh. Without his input in choosing each one of us for the program, we wouldn’t be here right now. He is the one who advocated for getting us free food and access to this program. Without him, this project wouldn’t have been done. Lastly, we would like to thank our MAT 115 Professor, Peter Phan for teaching us important algebra and trigonometry concepts.

References