

**EEEN 210**

**COMPUTER GRAPHICS**

# Mausoleum of Halicarnassus in 3D

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**1. INTRODUCTION**

I want to share a quick information from Wikipedia about the Mausoleum. Then, I will start to explain what I have gone through, when I have done the project.

The Mausoleum at Halicarnassus or Tomb of Mausolus (Turkish: Halikarnas Mozolesi) was a tomb built between 353 and 350 BC at Halicarnassus (present Bodrum, Turkey) for Mausolus, a satrap in the Persian Empire, and his sister-wife Artemisia II of Caria. The structure was designed by the Greek architects Satyros and Pythius of Priene. Its elevated tomb structure is derived from the tombs of neighbouring Lycia, such as the Nereid Monument.

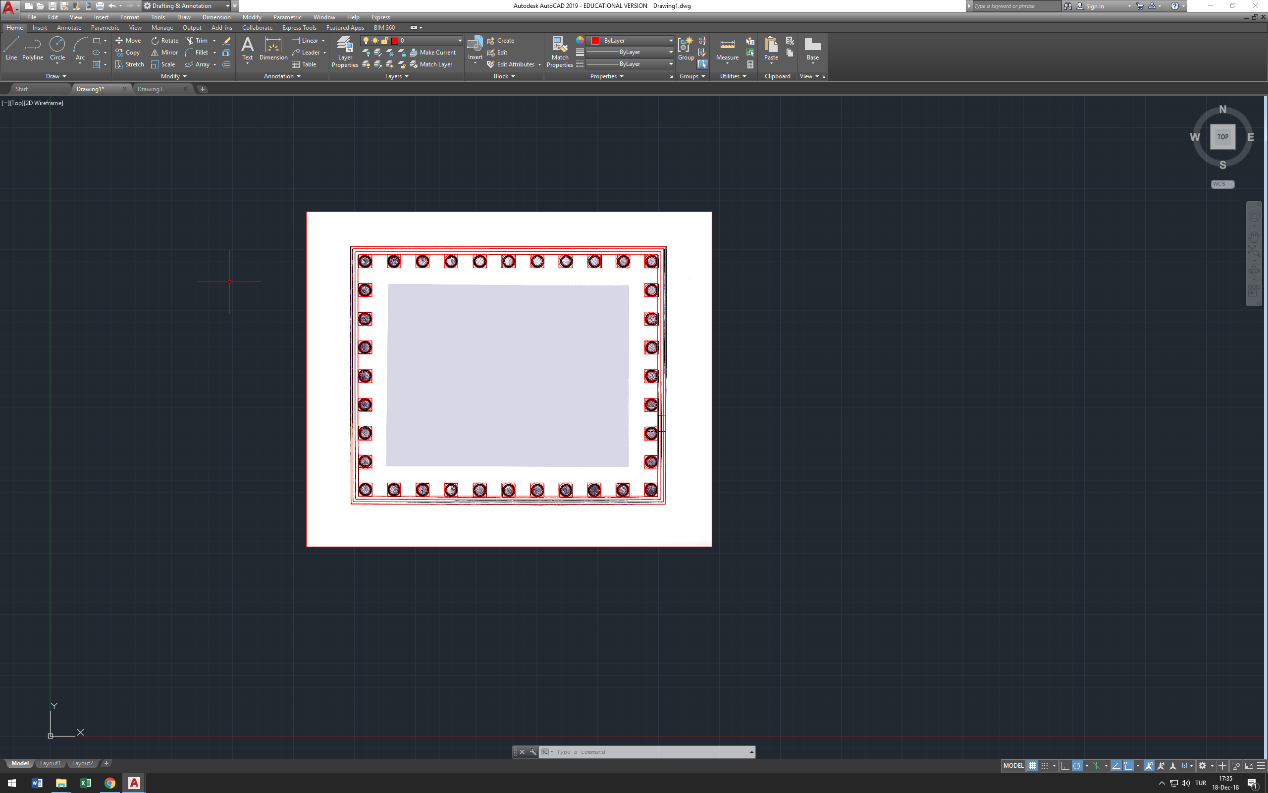
The Mausoleum was approximately 45 m (148 ft) in height, and the four sides were adorned with sculptural reliefs, each created by one of four Greek sculptors—Leochares, Bryaxis, Scopas of Paros and Timotheus. The finished structure of the mausoleum was considered to be such an aesthetic triumph that Antipater of Sidon identified it as one of his Seven Wonders of the Ancient World. It was destroyed by successive earthquakes from the 12th to the 15th century, the last surviving of the six destroyed wonders.

The word mausoleum has now come to be used generically for an above-ground tomb.

In this report, I will cover all the details, when I have experienced doing final project which is drawing Mausoleum of Halicarnassus in 3D. Before doing that, I will want to share what I use, when I have done the project. I used west and south sides of Halicarnassus in 2D that we have done in midterm project. Also, I draw in Autocad application. Comparing to midterm, I used 3D modelling instead of drafting & annotation mode.

**2. BOTTOM**

At the beginning. I tried to understand the concept of Halicarnassus in 3D, then I figured out where I should start. Firstly, I need to append west and south parts that I have done in midterm project. In detail files, I draw the bottom as 2D to extrude. As you seen figure 1 at below.



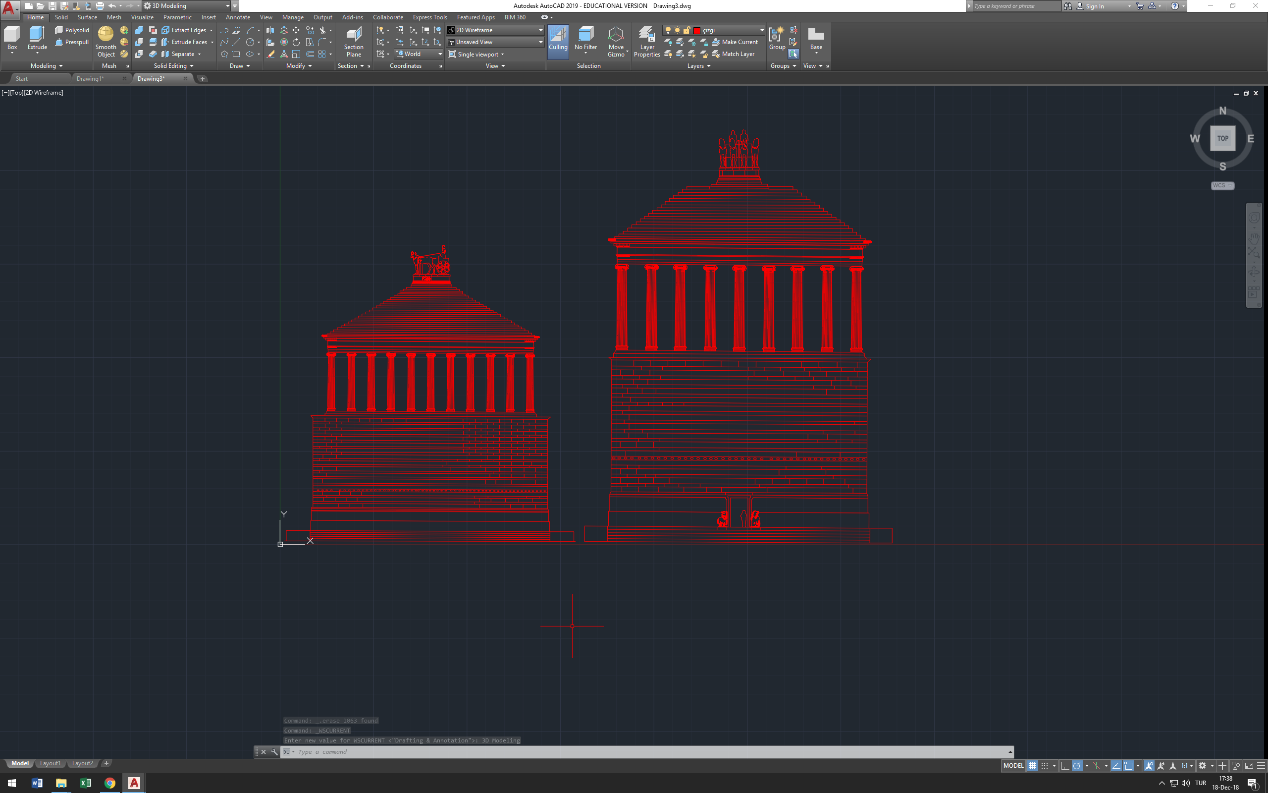
**.** Figure 1 : Bottom 2D

When I finish this work, I am going to start with new draft to continue initial part. This project will be my final project. It is going to cover everything else end of the project.

**3. BEFORE STARTING 3D**

Secondly, I take west and south. Creates a new draft. Copy and place them as 90 degrees in 3D. Also, I choose 3D Model to continue work. Now, I need to put the bottom between them, then start to extrude walls. For doing that, my basement is going to be completed. In the same way, I record the every distances to my notes because I could need them end of the project, when I want to change something about basement.

Also, I measure circle which I put the column. Then, I started to draw columns which using my 2D column. In this time, I though that I need to turn of 2D shapes, when I need it. Thus, I realized it, I put all the shapes just one layer. I change them for west to the west red layer, also others the same. For doing that, I can continue work and also I can turn them off. Therefore, I can increase my computer performance and my work. I reference one of the side. Then, continue to work Halicarnassus. Also, I haven’t done the middle wall because of columns. When I finished to do columns, I put them on to the basement, then I made the main wall with referencing column height.

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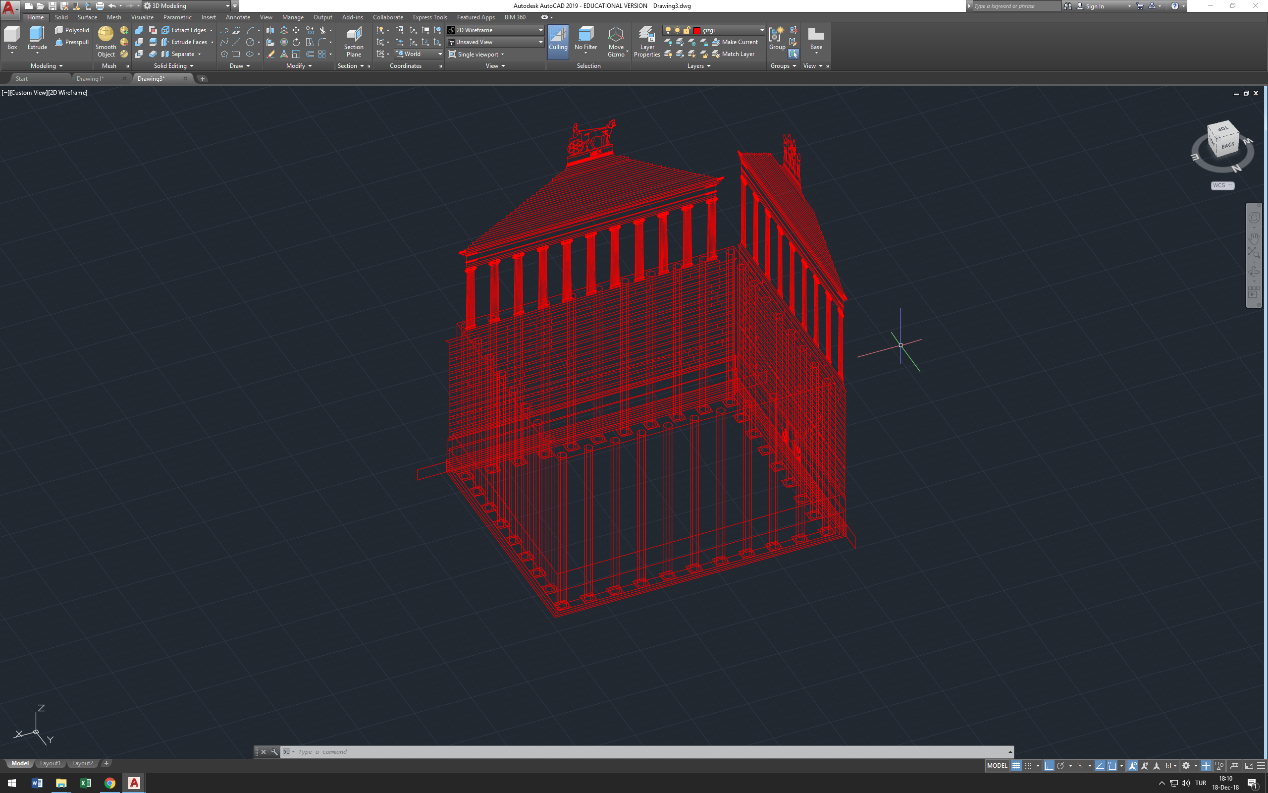
**.** Figure 2 : South and West Sides

In the next page, you can see finish work from here.

**4. BEFORE COLUMNS**

As you can see below figure, I finished to extrude basement walls. Then, I started doing columns with using my 2D column. I extrude the column, then I tried to make similar with the detail column photo. For that reason, I realized that, at the beginning, I need to make a good bottom shape which is not just a circle. I draw a good shape bottom for that. Also I need to increase height. Before doing that, I made a reference bigger than my circle. Thus, I copied to what I draw. Put into the upside. Then, append them with using lines. At the end, I had the column basement. Now, I need to do the upper part. I took my reference 2D, then extrude it. Put it on to the column. My column is ready.

I count to how many columns I need. Then, copy them as the number of my counter. Starting to put them on to the basement that I did in the third section.

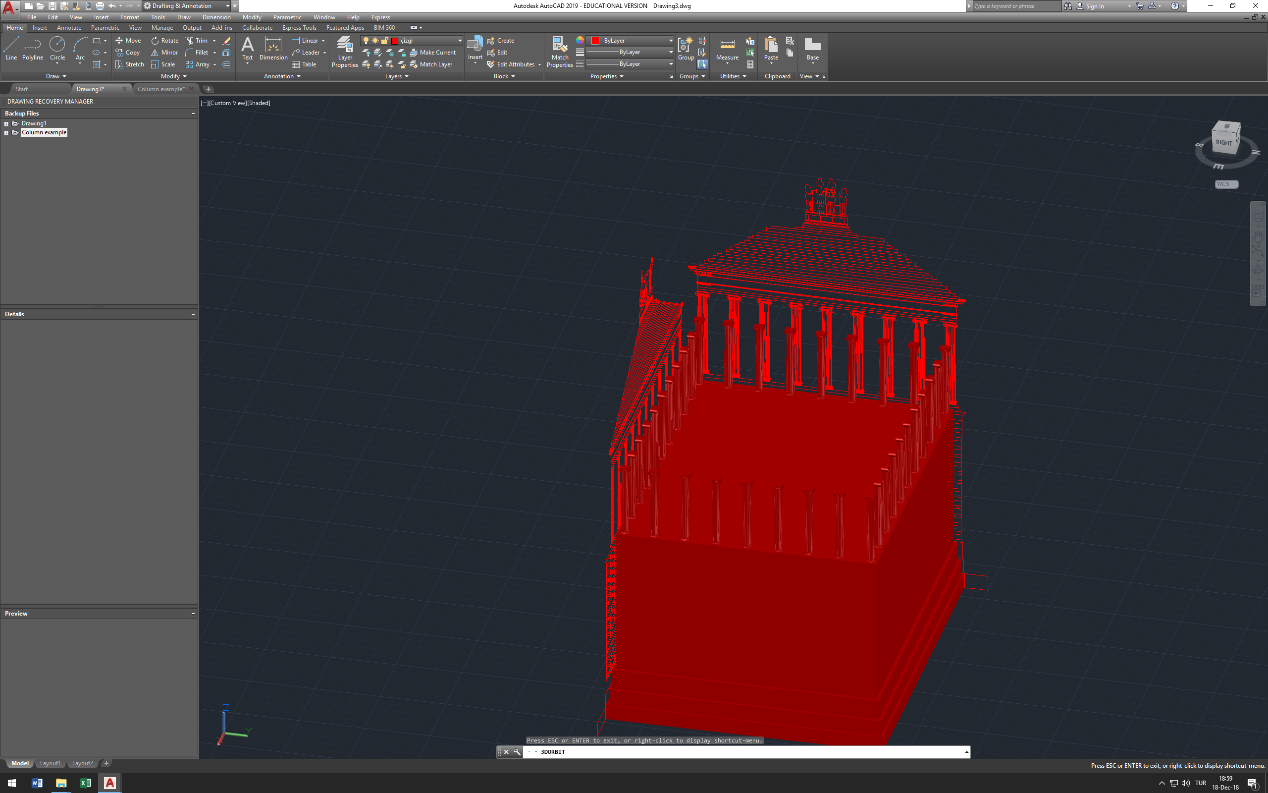
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**.** Figure 3 : Basement

In the next page, you can see finish work.

**5. BEFORE STARTING ROOF**

I put the columns to the basement. Now, I need to extrude the main wall to the end of the column. Thus, I used to distance that I took before I draw the column. I have done the main wall. For me, hardest part is going to be start. Because it is really hard to put rectangular 3D shape up to the column and main wall. I tried a lot but not succeed. Because it is really hard to see which point I need to put. In that situation, I found out that I look up project with different sides in terms of back, front, west and east. Therefore, I can set my rectangular object exactly up to the these columns and main object. I continue work as like that.

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**.** Figure 4 : Columns

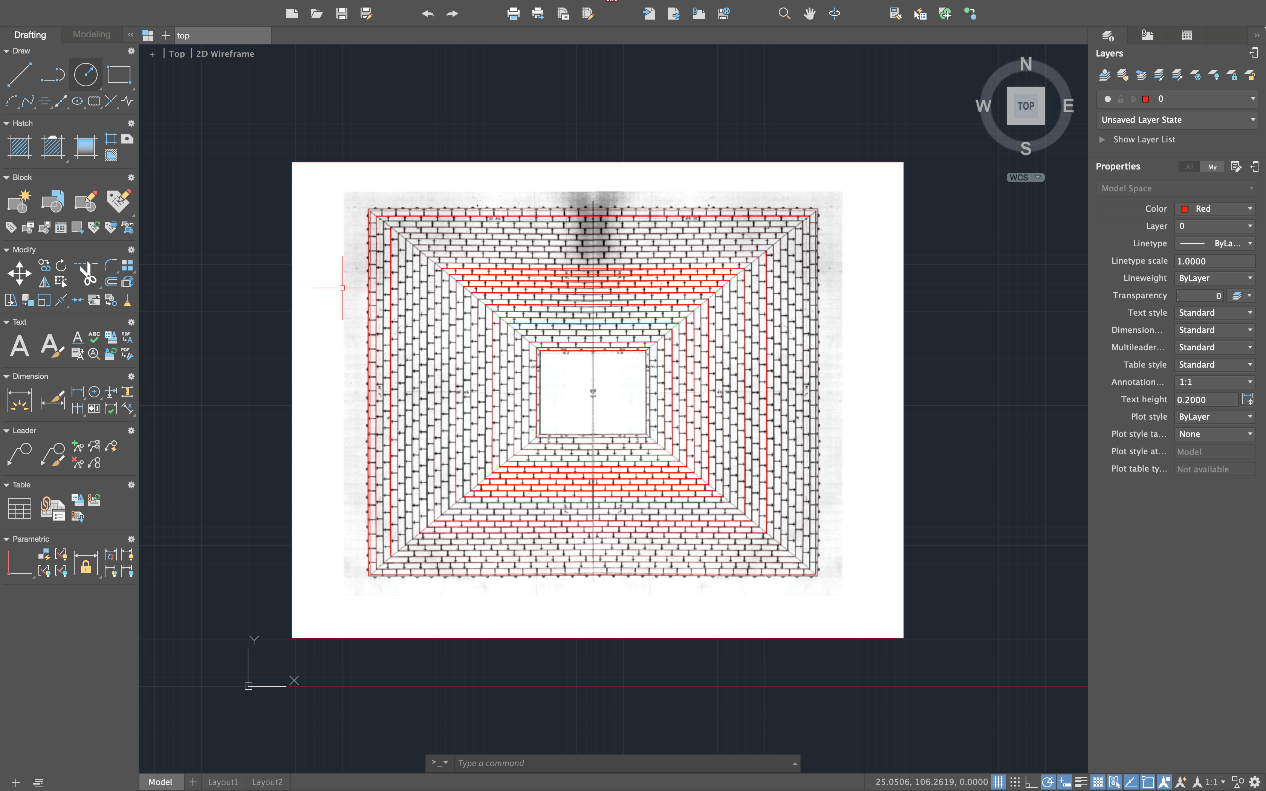
In the next page, you can see finish work.

**6. ROOF**

In this part, I am going to do roof basement. Also in this part, I will use my reference distances that I took. Also, I haven’t taken exactly roof details files because it is not convenient comparing my references. That’s why, I used for the first outer rectangular with using my reference, then I decrease the distance stage by stage. By doing that, I will have a good top shape of my building.

**6.1. Starting Roof**

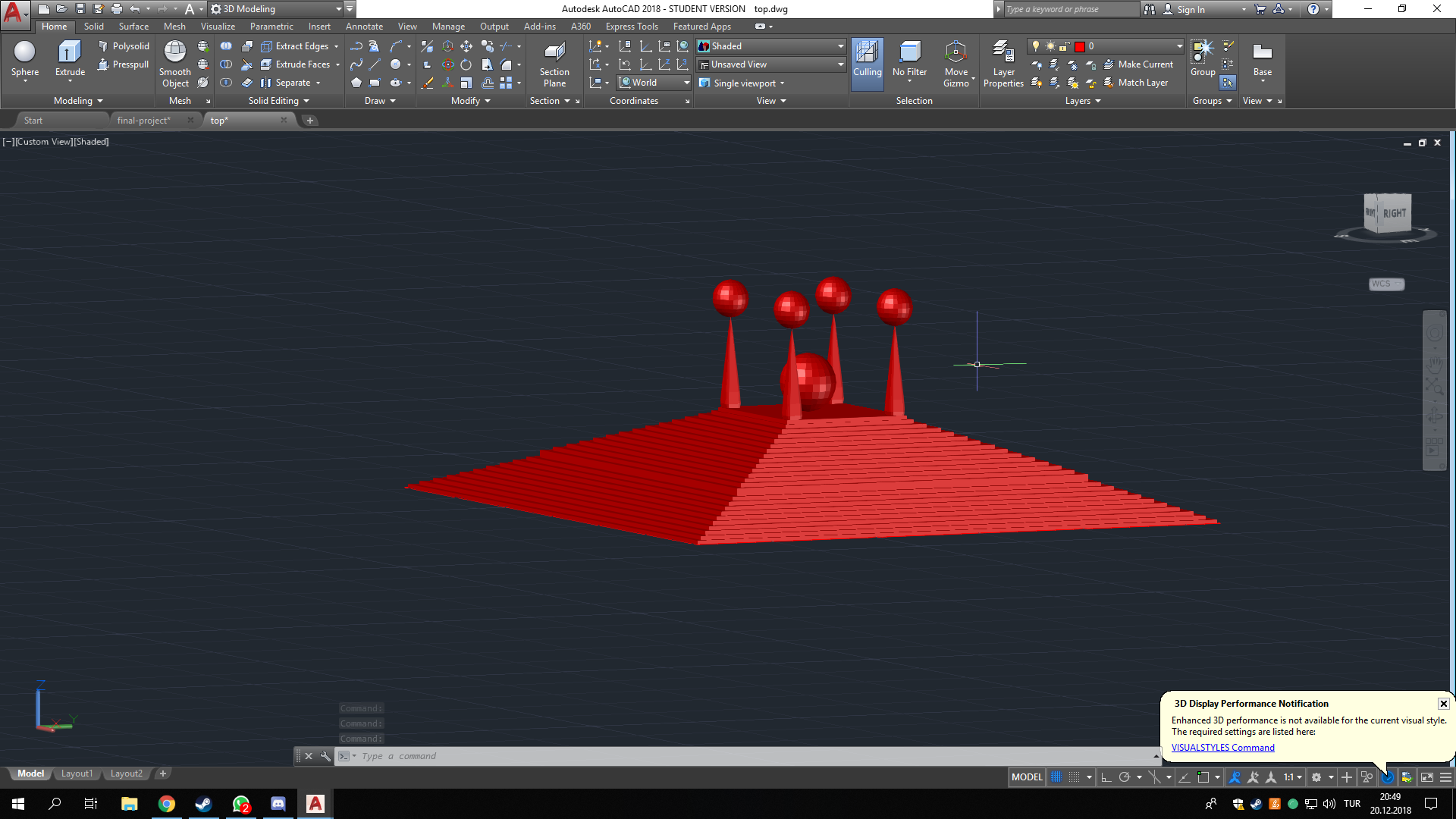
There are two figures in this part. First one is going to show the basement of the roof. (Figure 5) As you seen next page, It is created by using my references. Also, it looks like detail roof file references.

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**.** Figure 5 : Roof 2D

**6.2. Finish Work for Roof**

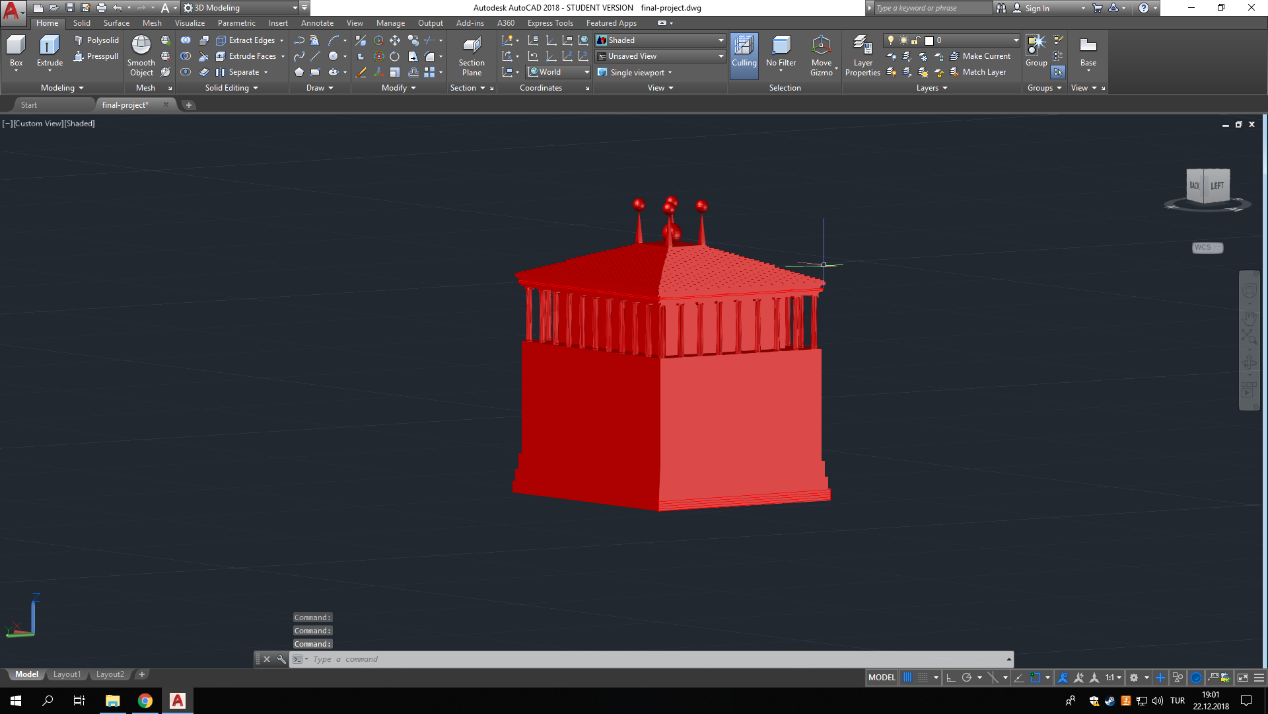
In this section, as you seen below, I finished to do roof. Then, I try to improve myself to do some shapes with using in Autocad 3D shapes. And I want it to show you because it looks awesome from my perspective. But, end of the project, I will change them as to the real one that looks like a horse on to the roof.

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**.** Figure 6 : Roof 3D

**7. APPEND BASEMENT AND ROOF**

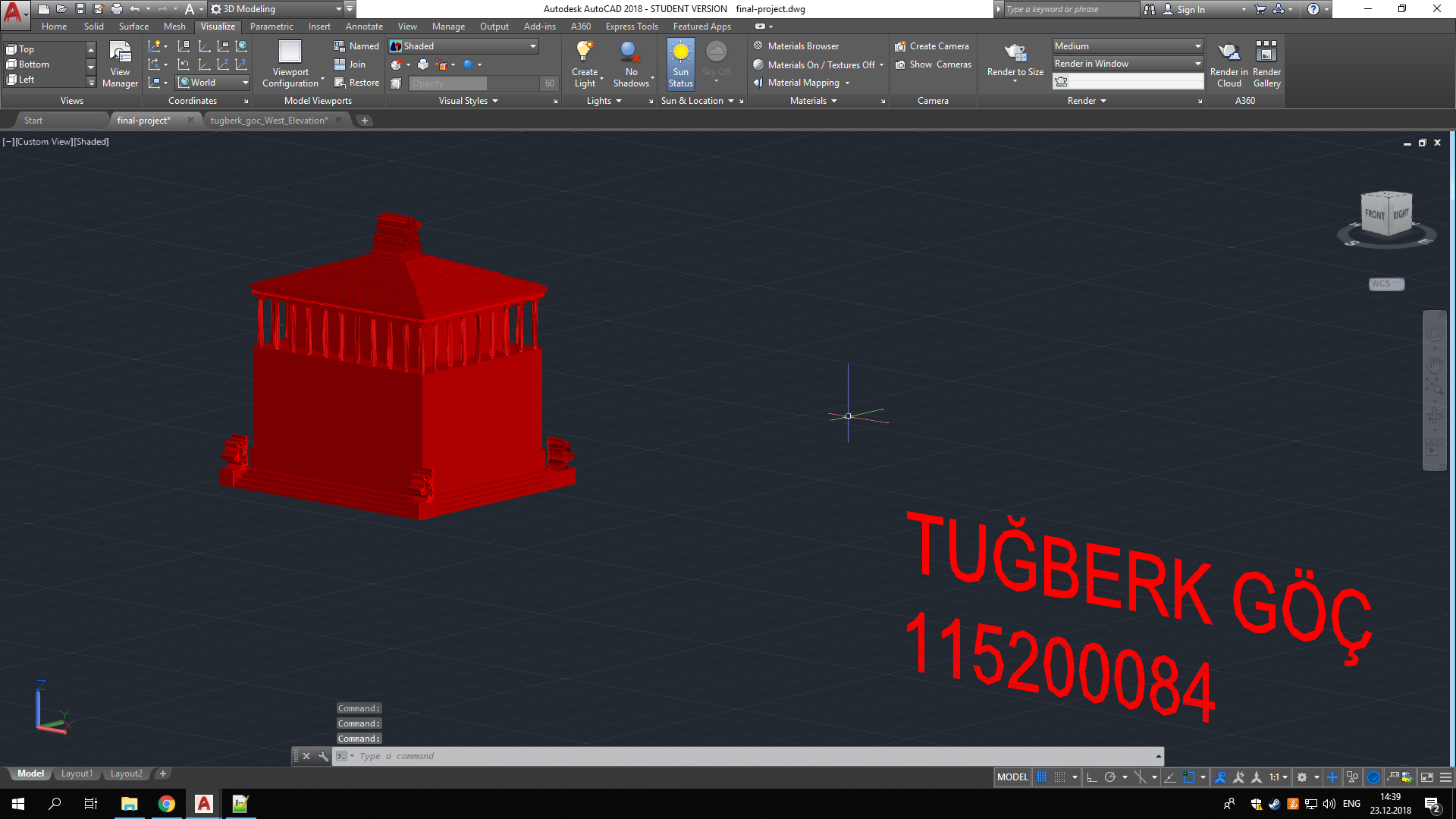
In this section, I will put the roof on to the basement. Before that, I need to do extra work between columns and roof. Thus, I work on that with using my west side reference. I take a look at it, then I decide to put how many walls I need. Also, I measure distance from reference. And starting to create walls. This part is really tough from my side because I need to look at every perspective such as front, west, north and so on. For doing that, I append them properly. Hardest part is the performance of the autocad in 3D because every side, It is not working properly. It sometimes can be stopped. I have to wait for that. Besides from them, I finish it as you seen below, now it needs some details, also shadow and background.



**.** Figure 7 : Project without details

**8. ADD DETAILS**

In this section, I am going to do shadow, background and details. First, I started to draw details which are horses. One on them is going to be on the top of roof. I will take the south reference horse for that. I though, it would be good for mixture of both sides. Then, extrude it to look 3D. Secondly, I take one of the horse below the Halicarnassus. Also, extrude it to do 3D. Then, I started to copy and rotate it as its original. When it is finished, I started to do stairs. I have done some rectangular pieces in 2D, then extrude them to look like stairs in 3D. End of the these processes, I started to find photo for background, also for bottom. When I found them, I add them to the materials sections, and applied to necessary places. As you seen below, It is shown that before process in this section. End of these things are covered in figure 9.



**.** Figure 8 : Project with details

**9. CONCLUSION**

In this section, I want to share the render photo with you. It includes lots of part. For instance, As you seen in next page, shadows are seen behind columns and bottom of the column, also horses at the basement. Other shadow is going to be behind of the Halicarnassus because of the sun degree. Then, I put the background as you seen in the next page. In addition to that, I put the title where next to the Halicarnassus. It has been really enjoyable, when I have been doing this project. I want you to thank you.



**.** Figure 9 : Render

**10. REFERENCES**

* https://en.wikipedia.org/wiki/Mausoleum\_at\_Halicarnassus