Personal CAD Project

One World Trade Center

This CAD project is a reproduction of the One World Trade Center located in New York, New York. The massive and soon to be tallest skyscraper in all of Manhattan is currently in the vertical construction phase of the skyscraper, and is currently constructed at about 2/3 of its designed height (not including the spiral tower). Below is the picture I used as a reference to make the project in CAD.

Figure 1: Above is the reference photo used for the Personal CAD Project.

Source: http://en.wikipedia.org/wiki/File:1_WTC_rendering.jpg

I picked One World Trade Center because I am intrigued by the design of skyscrapers and also how the tower represents the pride and freedom of our country after the events of 9/11. It shows the world that our country responds to the events by building a bigger skyscraper. The most difficult part about this project was making the lofted curves on the side of the building and matching it perfectly to the tower in real life. Over time, I was able to figure out how to loft cut each side by making three triangular drawings and the top and two adjacent sides of the tower.

This project relates to me because of my interest in skyscrapers. Last year, I went to Manhattan and I was able to see the tower in construction. Although not fully completely, I was left in awe by its sheer size and how its stood tall over all other structures. The architecture is also something I really find interest, not just in the One World Trade Center, but all skyscrapers.

After completing this project, I was able to learn how to loft cut. It was definitely a challenge I have not faced in CAD before and I was able to overcome it. This project was fun because I made separate parts of the tower and put it all together in one assembly at the end. Seeing it all come together at the end was fun because I was able to see how much my CAD model looked like the actual building.

Spending a semester in CAD and after completing this CAD Project, I was able to realize how accurate CAD is. I realized anyone could virtually make anything because CAD allows anyone to perform any task. It was fun and rewarding learning CAD this semester, and gave me skills that I know I will use in my near future. Below are pictures of the One World Trade Center constructed in CAD.

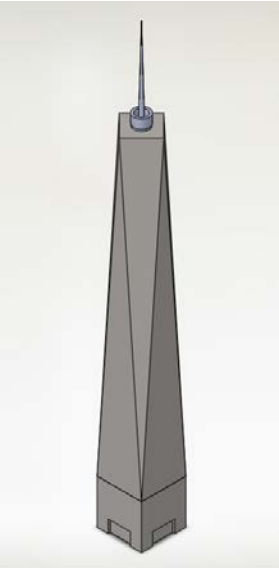

Figure 2: An isometric view of the One World Trade Center captures the front, top, and right side view all in one image, looking for an aerial view.

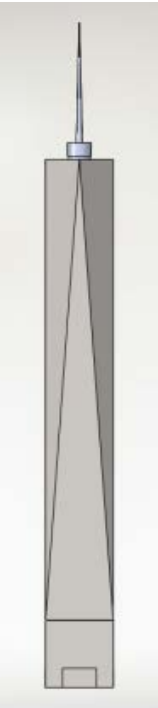

Figure 3: A side view of the One World Trade Center shows what the tower would look like looking from just one side.

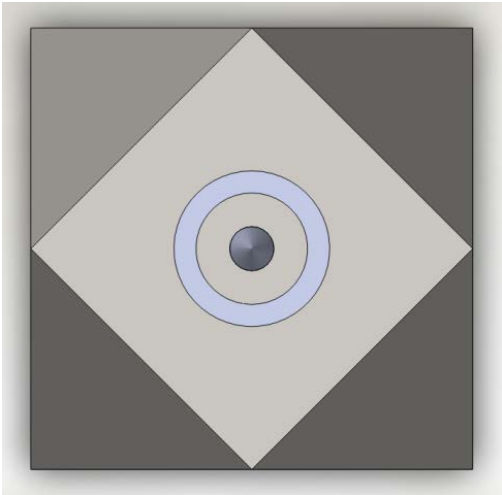

Figure 4: A top view of the One World Trade Center reveals how the lofted cuts meet at the top, as well as the orientation of the observation deck and needle.

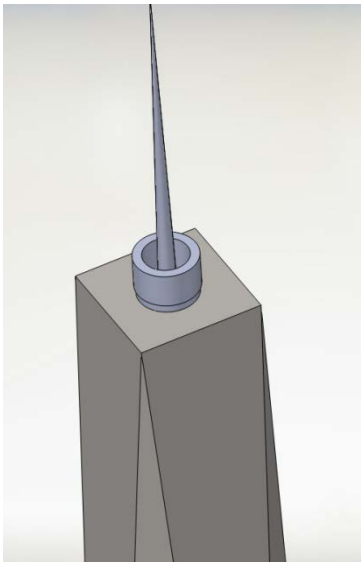

Figure 5: An isometric view of the top of the One World Trade Center shows off the detail of the observation deck wrapping around the tower.

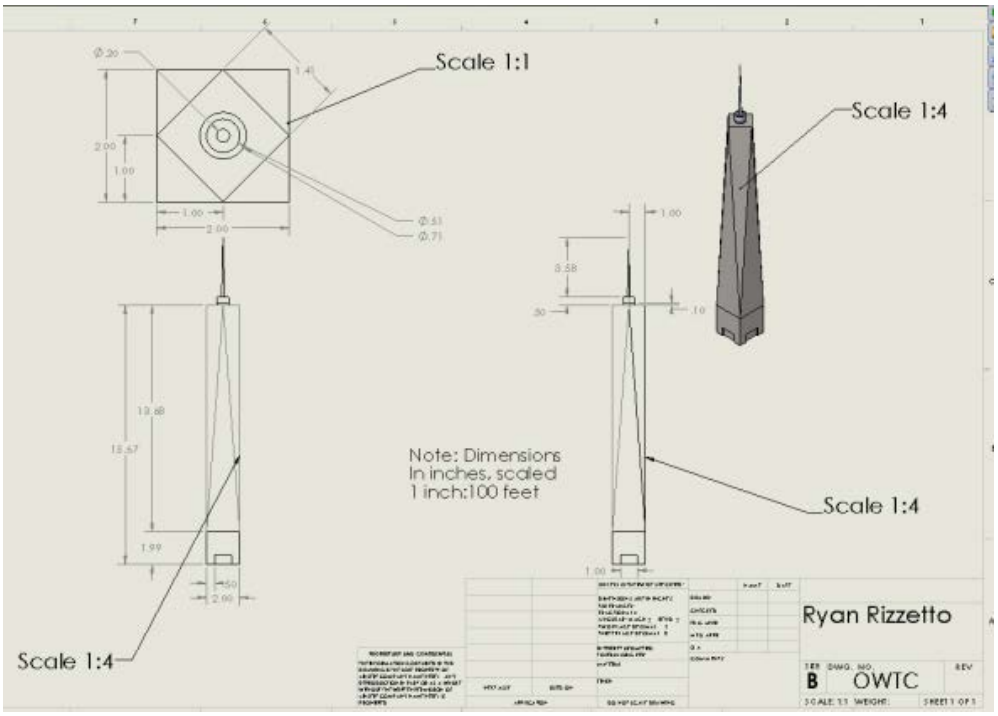

Figure 6: A drawing of the One World Trade Center shows the top, front, right, and isometric views of the tower as well as detailed measurement and unit scaling. For the project, the tower was scaled 1 inch for every 100 real feet of the tower.