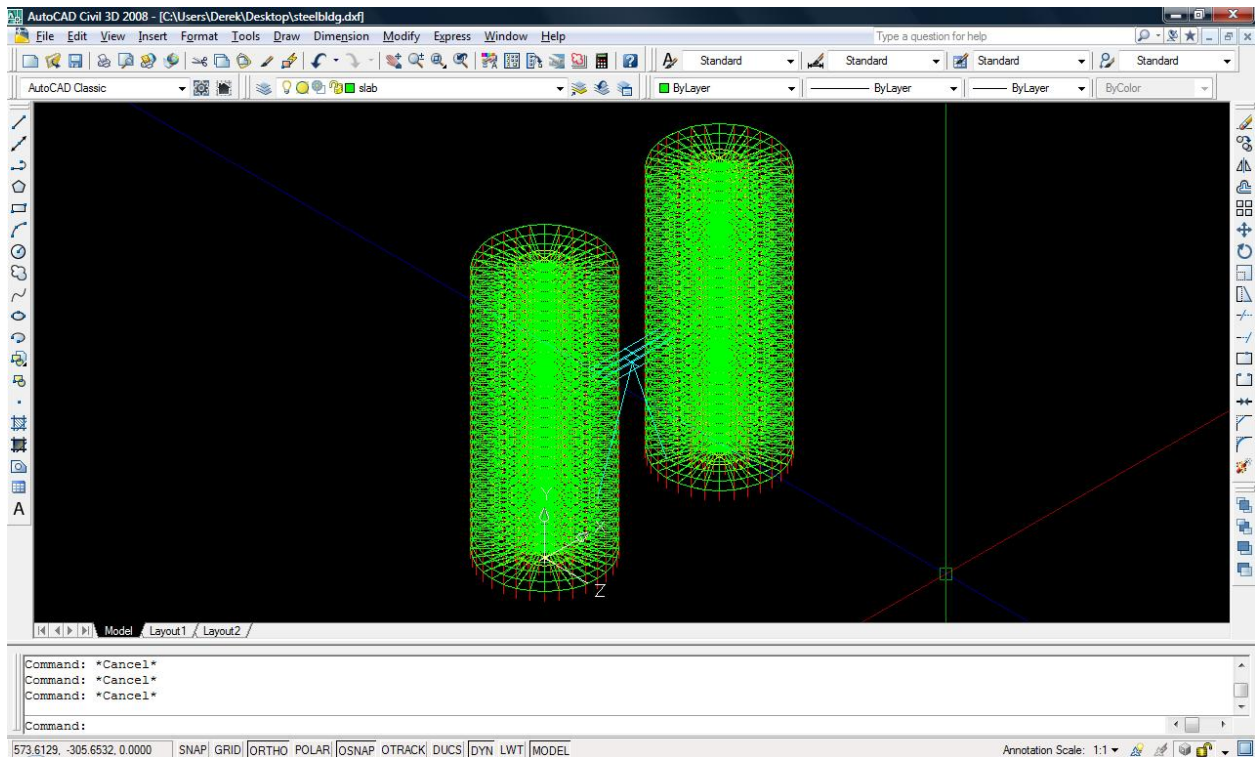


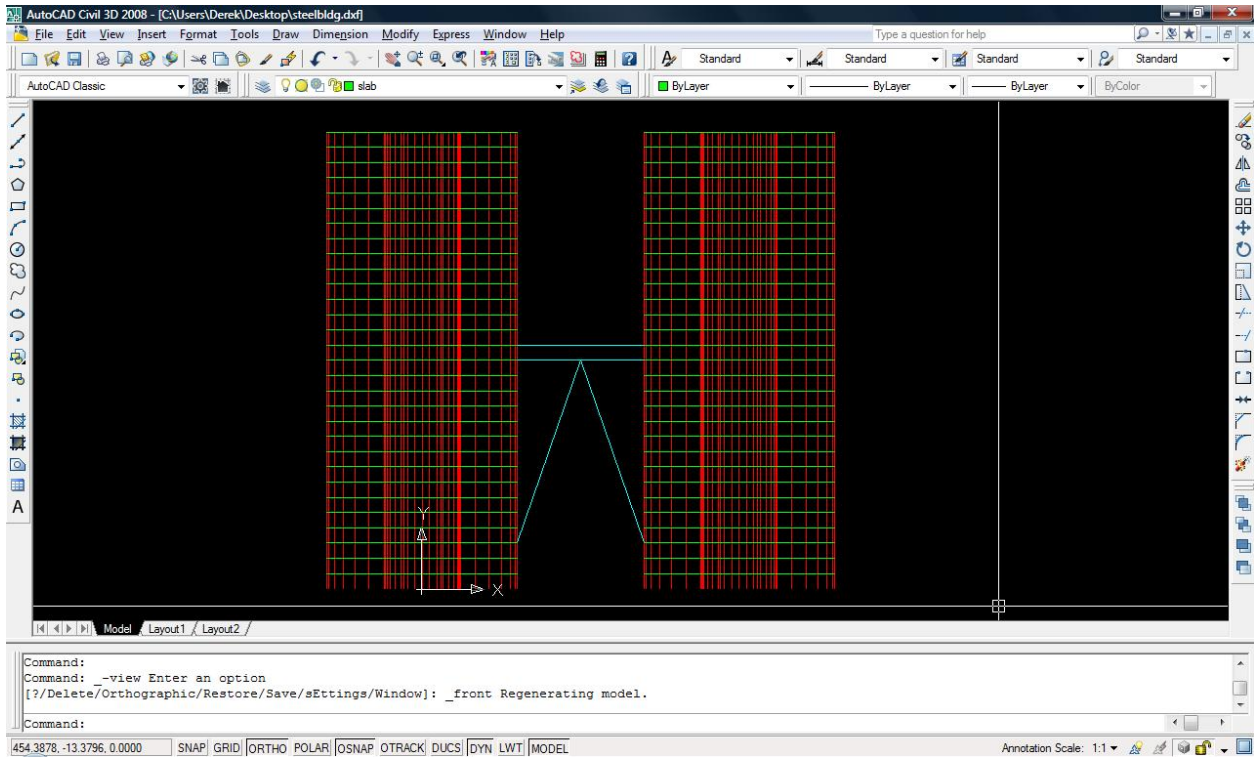
STEEL STRUCTURE DESIGN

The design of my steel structure was inspired by the Petronas Twin Towers in Kuala Lumpur, Malaysia. From 1998 to 2004, the Petronas Twin Towers held the distinction of being the world's tallest buildings. Unlike the Petronas Twin Towers, my structure is designed with steel sections, just as the Petronas Twin Towers were intended. Due to an incompetent construction workforce in the region, high strength concrete (11.6 ksi) was used in lieu of steel. The most notable similarity between my structure and its inspiration is the "Skybridge" which links the twin towers. Due to software limitations, my structure is a mere 30 stories compared to 88 in the original structures.

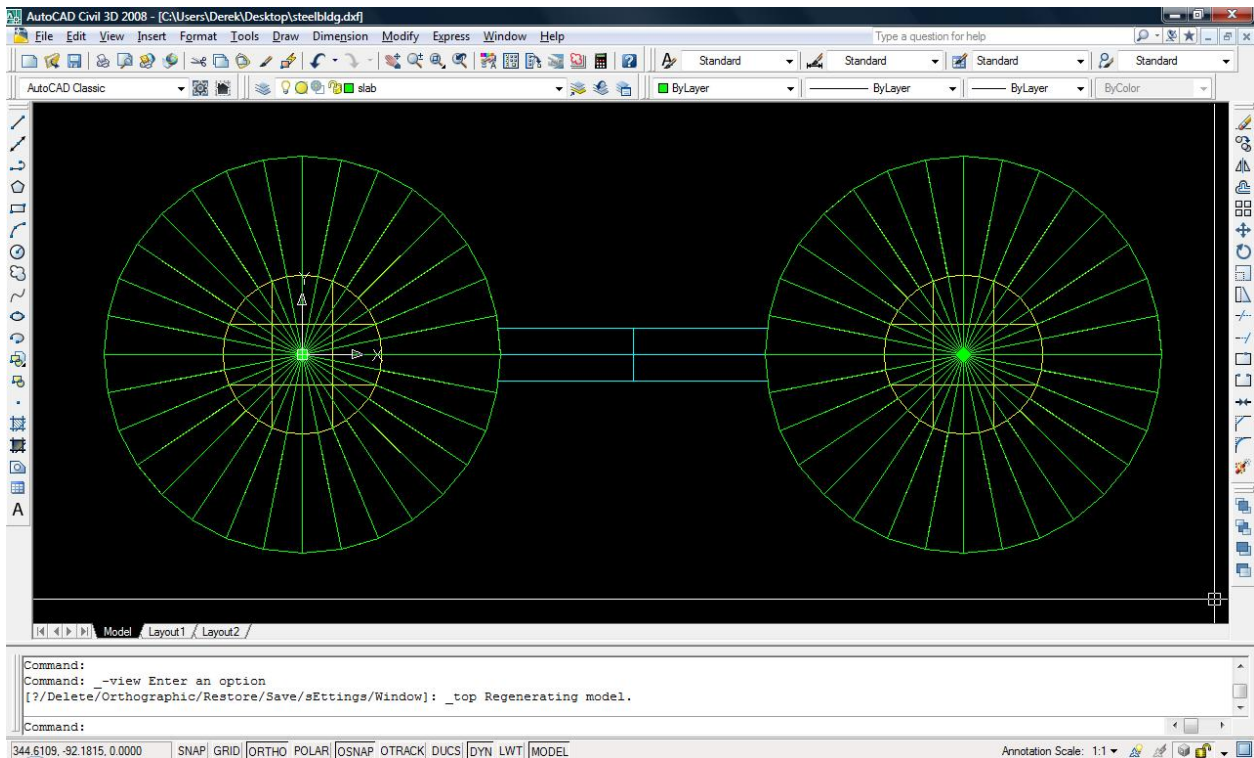
My building is supported by an external moment frame of 32 columns and an internal core of 32 columns. Loads are transmitted to the internal columns via beams. Each tower is separated by a distance of 100 feet. The diameter of each tower is 150 feet. W12X96 was selected for the beams while W18X35 was selected for the columns.



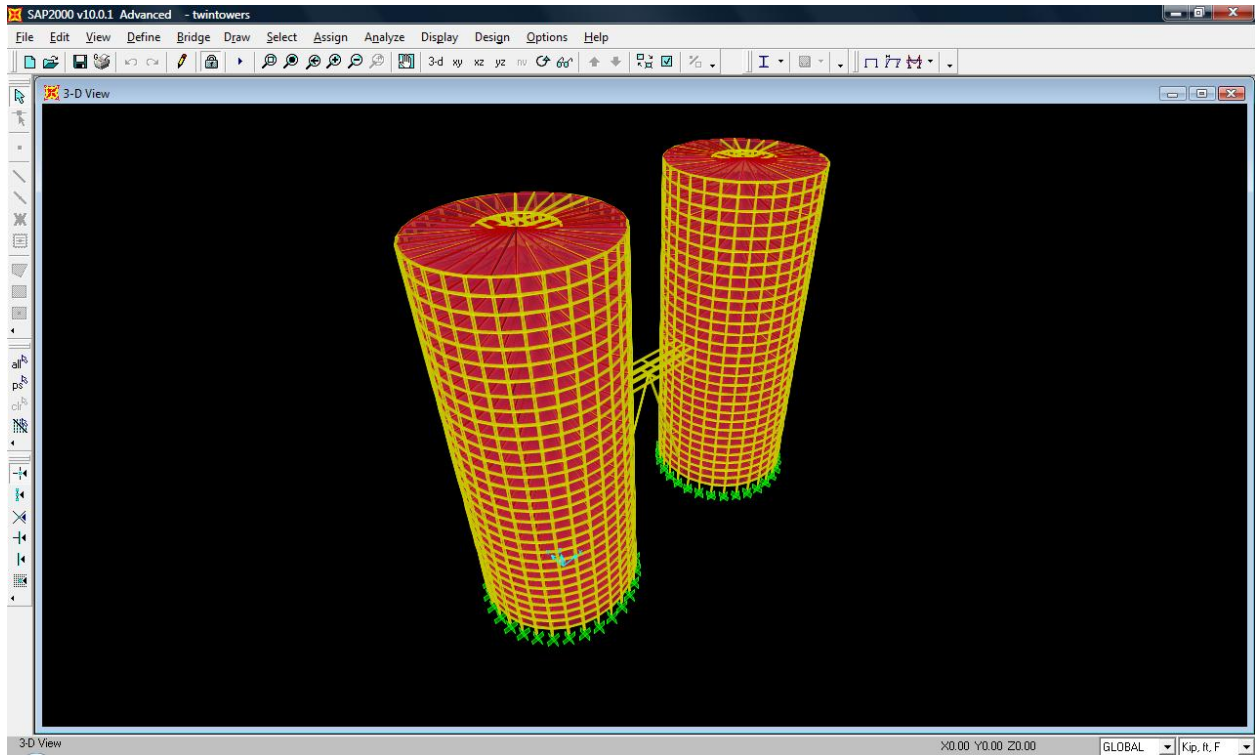
The Towers were first drafted in AutoCAD 2008 to take full advantage of its three-dimensional capabilities.



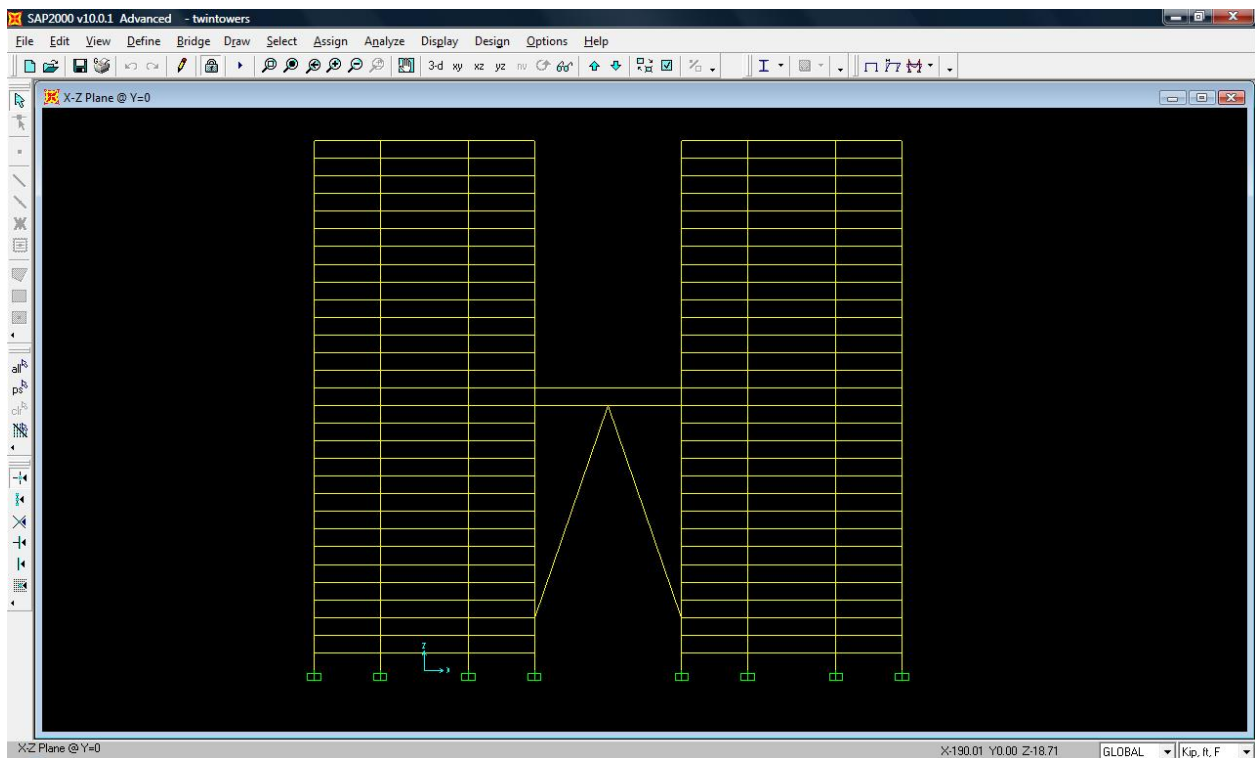
This is a front view of the structures in AutoCAD 2008. Note the Skybridge linking the 15th floors of each tower. The internal core is also visible.



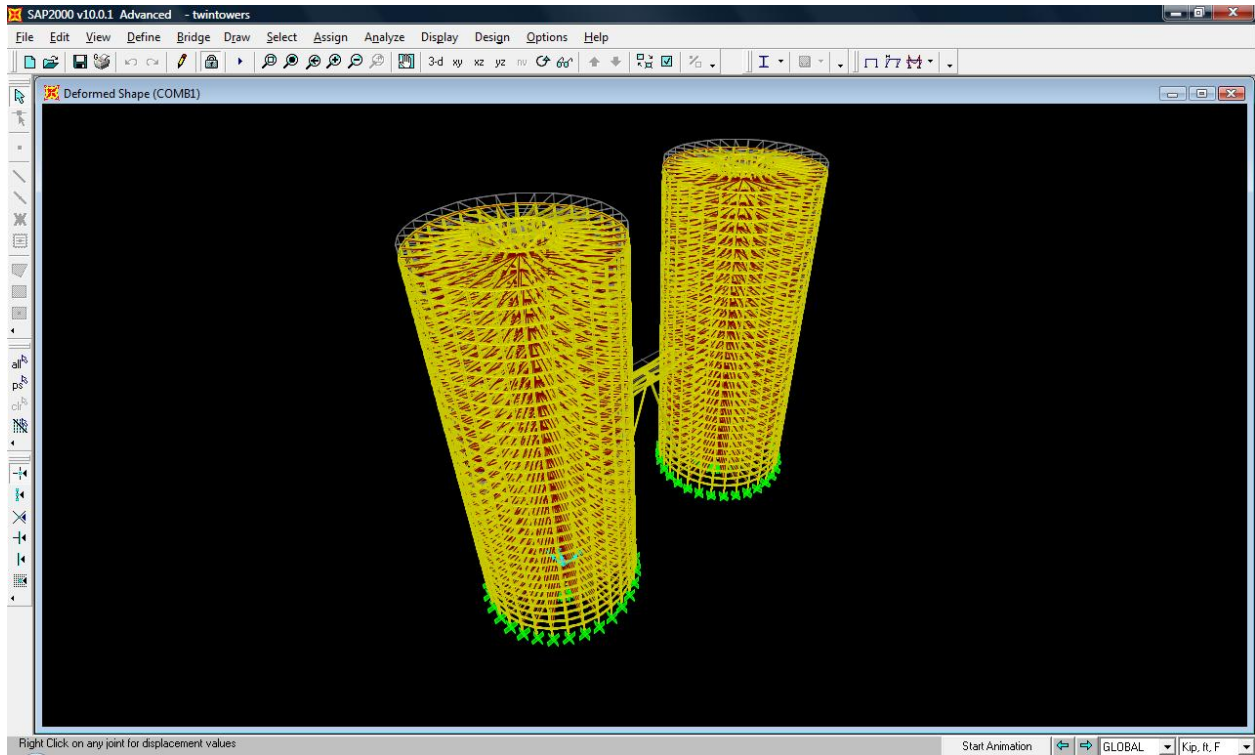
The plan view of the structures reveals the designed load path's beams as well as the surfaces created to absorb office floor loading.



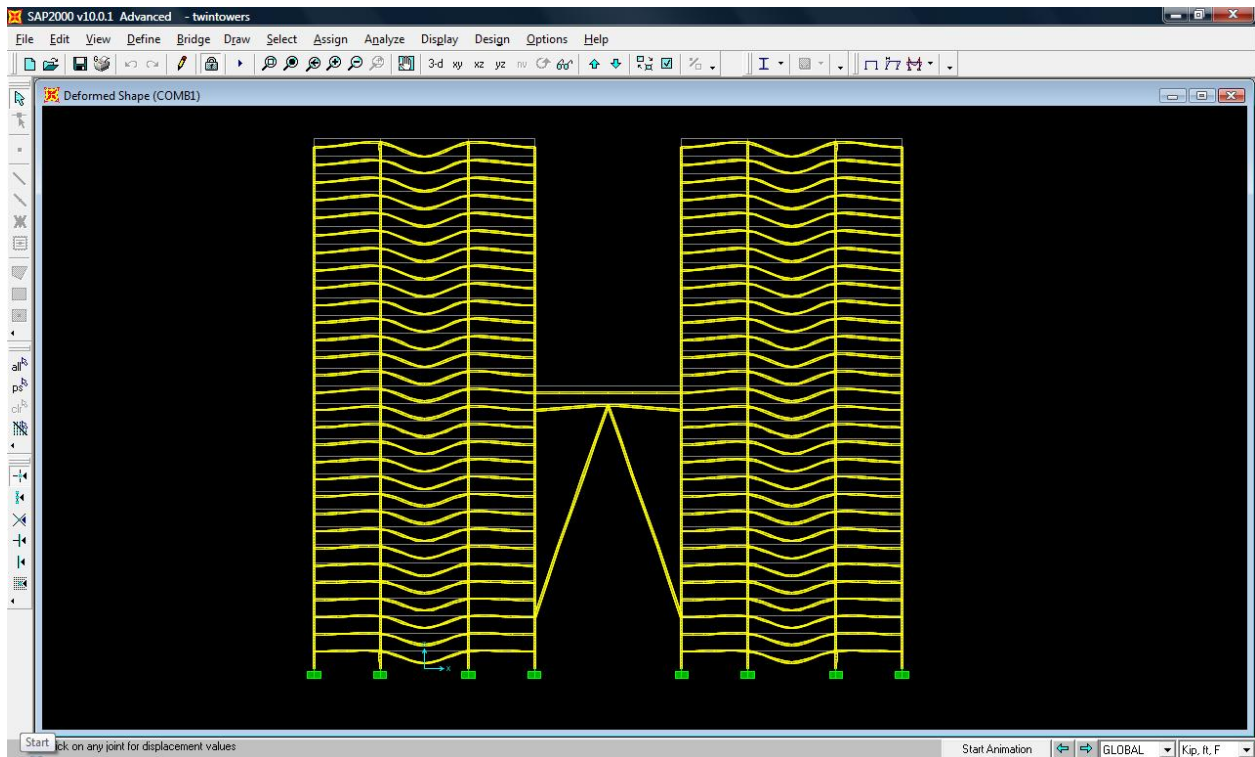
After creating the linework in AutoCAD, the drawing was imported into SAP2000 V10 via dxf file format.



In this frontal view of the towers, the fixed supports at the bottom are visible.



After assigning the frame sections and imposing dead and live loads on the structure, structural analysis was carried out. This screenshot depicts the exaggerated deformation of the structure.



As expected, there is sagging between beam spans. The wire shadow shows the undeformed shape of the structure.