

5- STORY HOTEL CONCRETE STRUCTURE

The proposed building is a 5-story concrete hotel structure. I would like to design this hotel because of the Luxor hotel in Las Vegas, which I first saw when I and my friends had a trip there 3 years ago. The hotel in Las Vegas was so nice that I really want to put it into the project. However, mine is much simpler than that; I would try to improve the designed hotel much more in the future!

Building Dimension:

5-story hotel

Top Width: 80 ft

Top Length: 120 ft

Bottom Width: 120 ft

Bottom Length: 180 ft

Designed Load:

Distributed Live Load:	Guest Room	40 psf
	Public	100 psf
	Corridors serving public room	100 psf
	Corridors	80 psf
Concentrated Floor Live Load:	Office Floors	2000 lb

Designed Member:

Beams: 2 ft x 1.5 ft concrete beam with reinforcement (5 bars in each direction)

Cross: 4 ft x 4 ft concrete with reinforcement (6 bars in each direction)

Column: 3 ft x 3 ft concrete with reinforcement (6 bars in each direction)

Concrete Slab: 0.75 ft

Figure 1: The propose 5-story Concrete Hotel

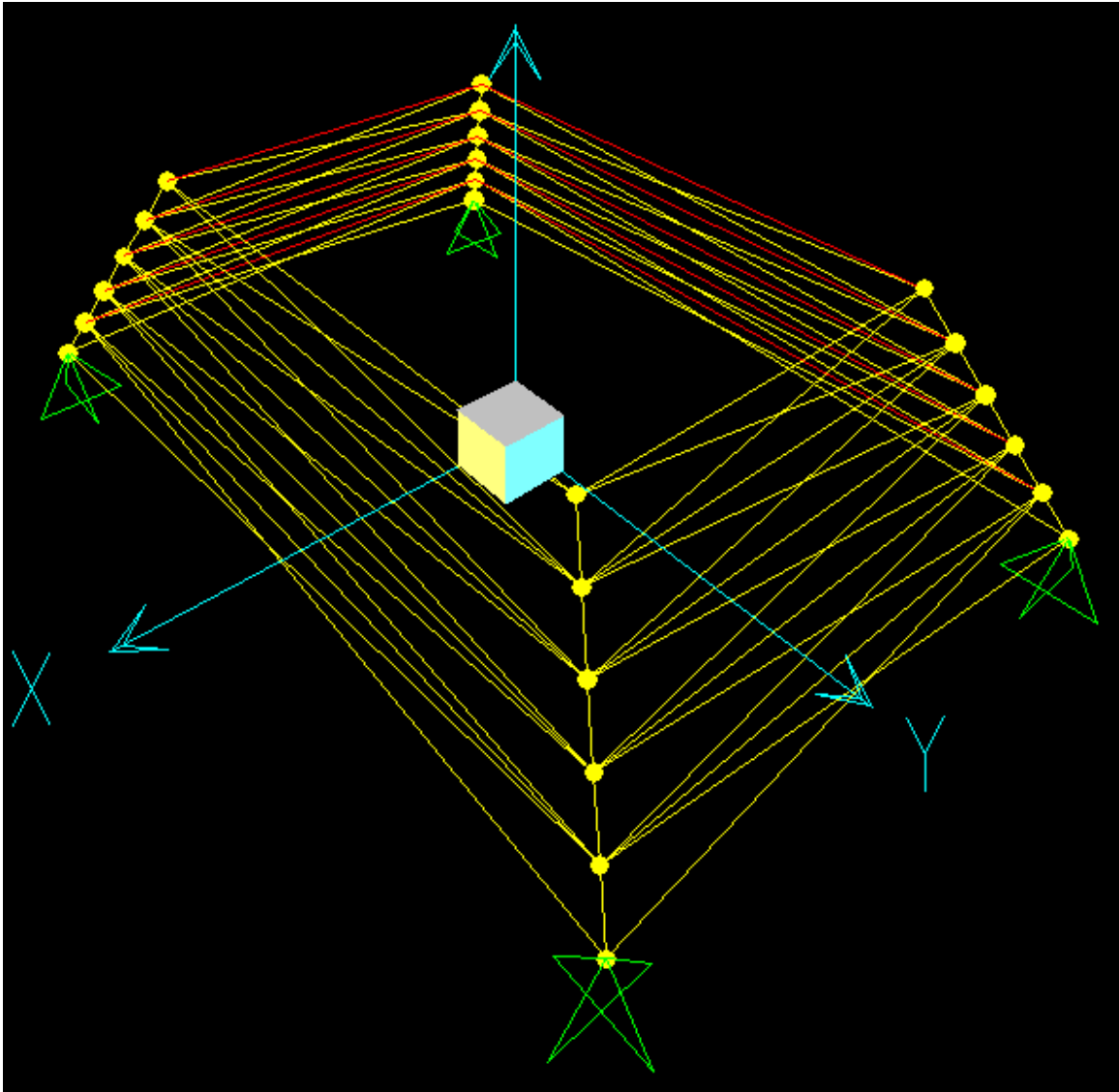


Figure 2: The deformed shape of the proposed hotel

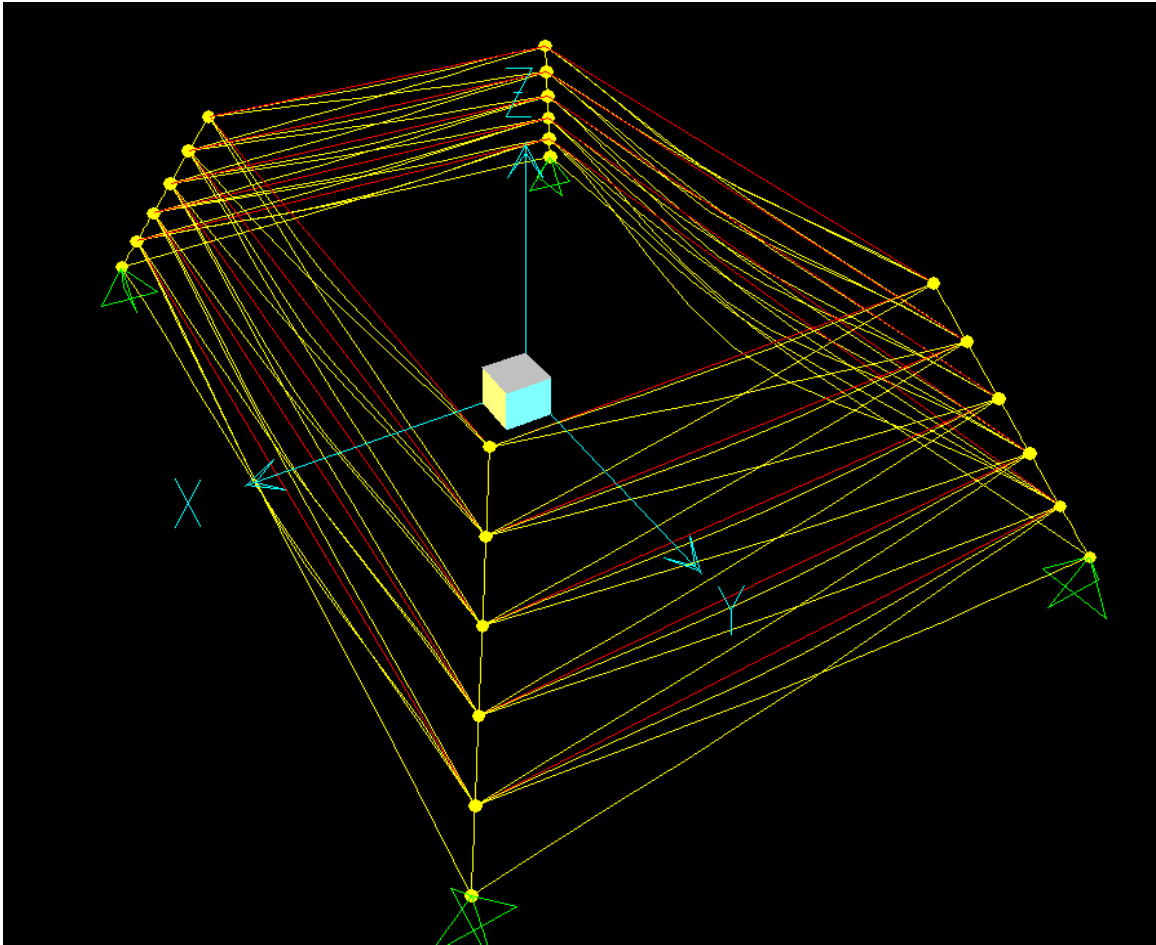
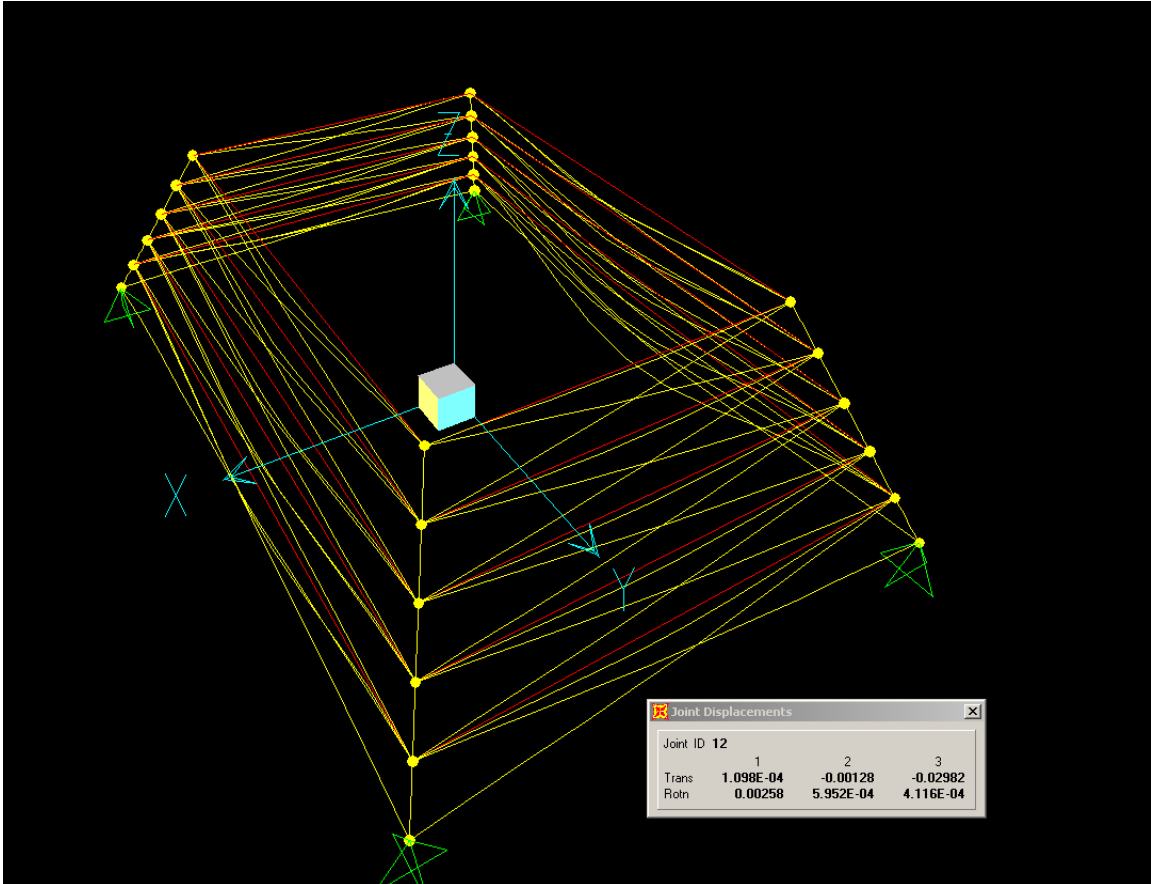


Figure 3: The maximum displacement after applied Loads



Since the allowable displacement is greater than the maximum displacement, the proposed hotel should be in a good shape!