

FIVE-STOREY CONCRETE STRUCTURE

This designed building is a five-storey concrete office structure in Los Angeles, California. The dimension of the proposed office is 100 ft in diameter and 60 ft high. Each storey height is 12 ft.

Designed Loads:

Distributed Live Loads:	Office	50 psf
	Lobbies	100 psf
	Corridors, above first floor	80 psf
Concentrated Floor Live Load:	Office floors	2000 lb.

Designed Members:

Interior Column:	3 ft x 3 ft concrete with reinforcement (6 bars in each direction)
Exterior Columns:	3 ft-diameter concrete column with reinforcement (12 bars)
Beams:	1.5 ft x 1.0 ft concrete beam with reinforcement (5 bars in each direction)
Concrete Slabs:	0.5 ft

Figure 1: The Designed 5-Storey Office

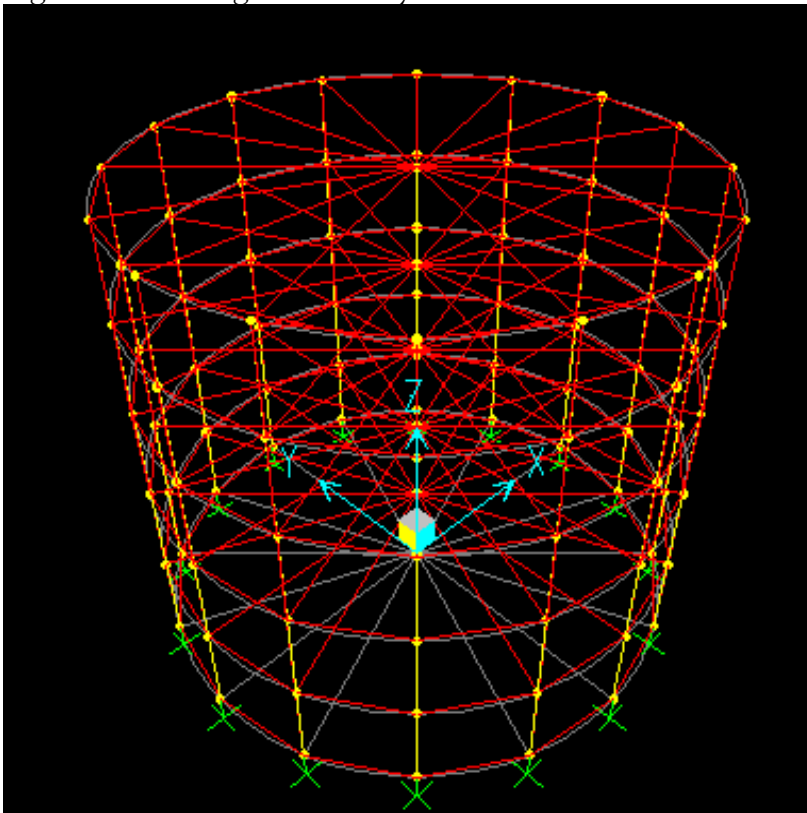


Figure 2: Deformed Shape of the Proposed Office

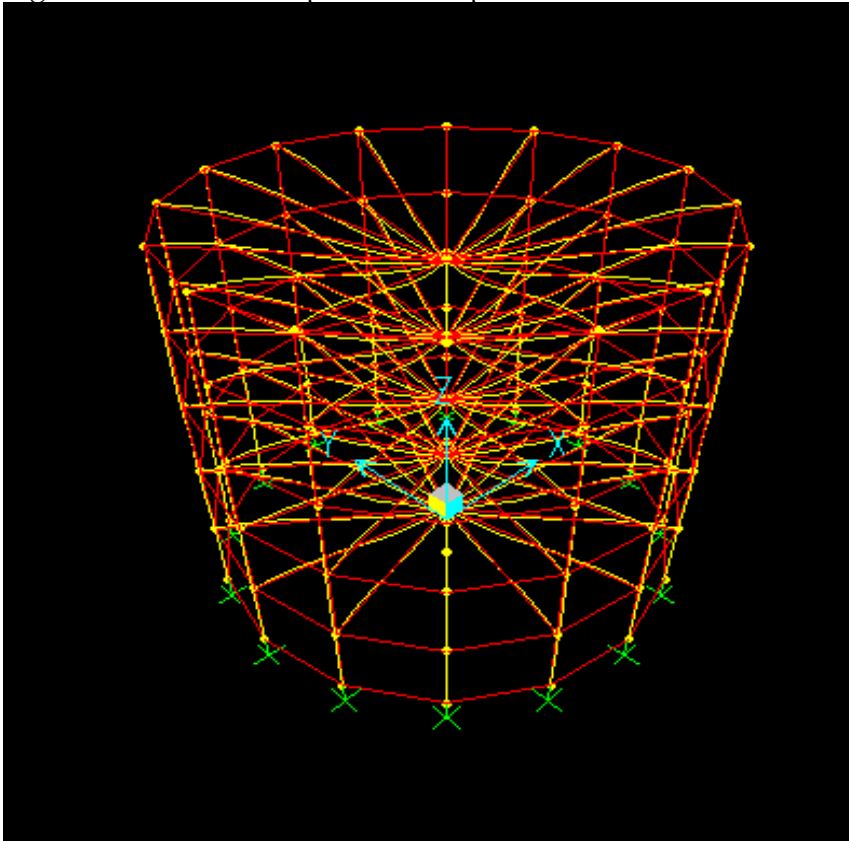


Figure 3: The Energy Diagram after Applied Loads

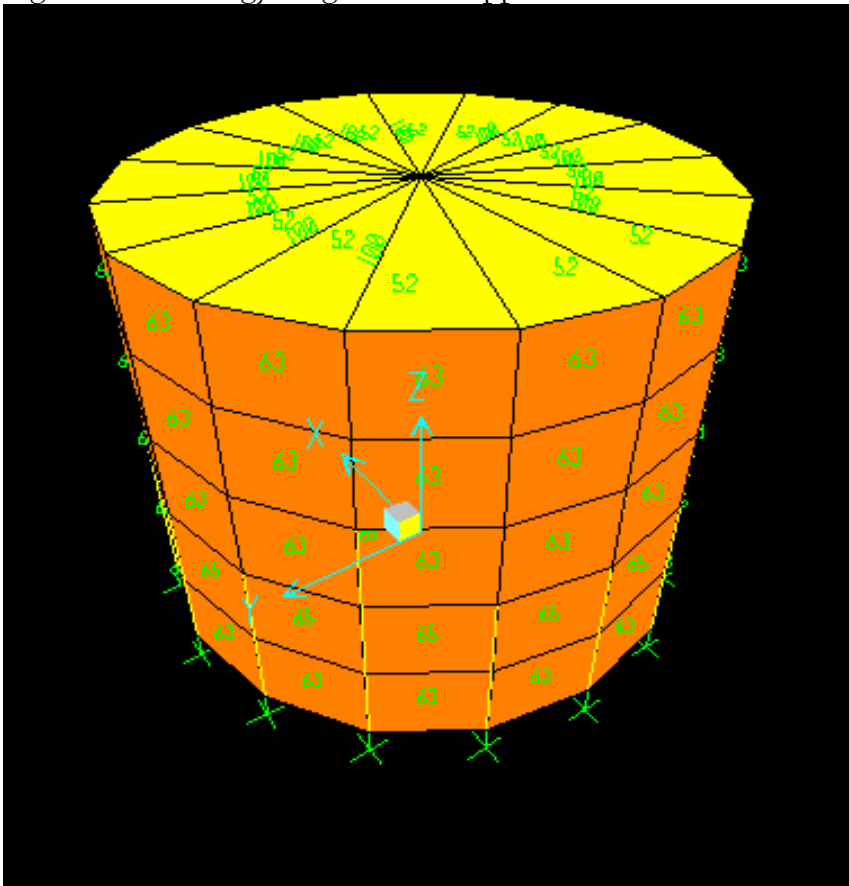
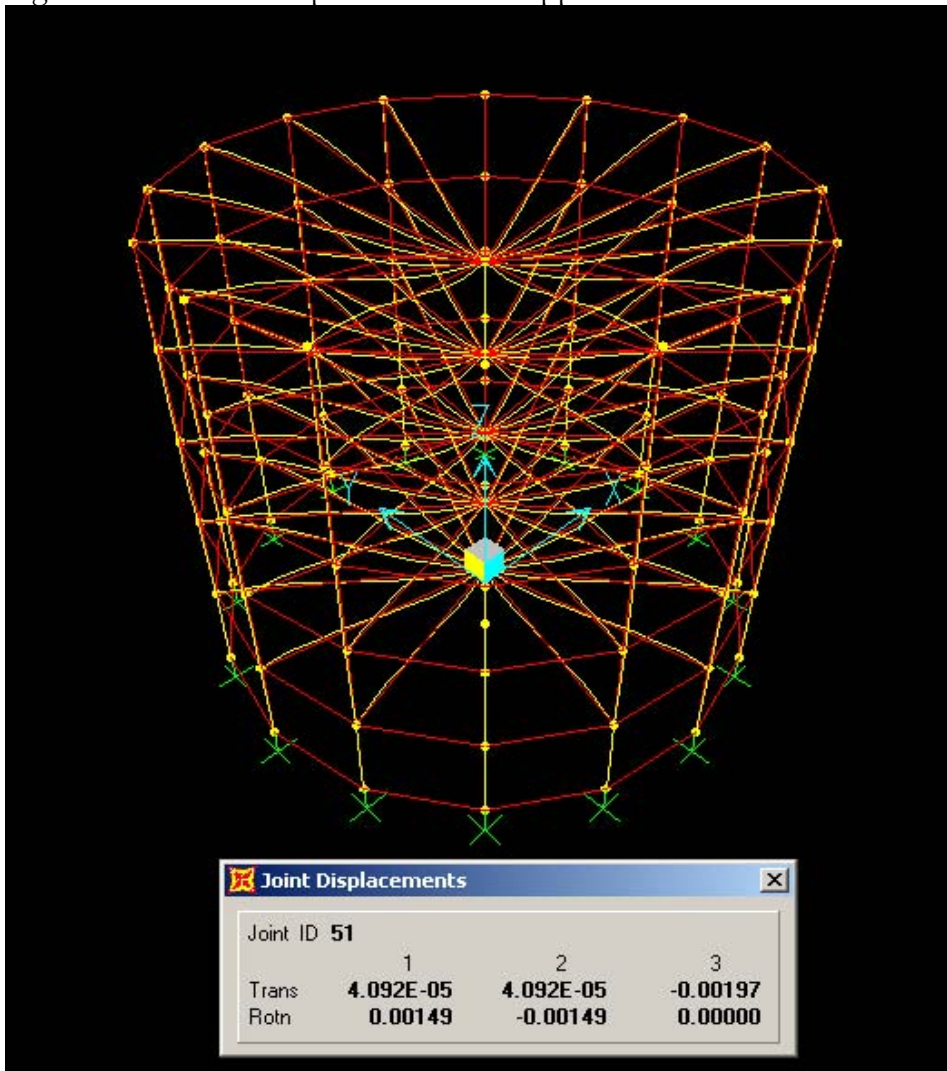


Figure 3: Maximum Displacement after Applied Loads



Since actual deflection is less than the allowable deflection, the structure is said to be safe.