

CHAPTER SIX

CONCLUSION AND RECOMENDATIONS

6.1 Conclusion:

From this research and the results obtained it can be concluded that:

- The central core in the structural model has additional advantage in resisting lateral forces as well as gravity loads. It is very effective as bracing members because of the greatly increased in flexural stiffness.
 - Moment distribution methods for gravity loads analysis is the more accurate than the cantilever method for lateral load analysis.
 - The accuracy decreases as the number of stories increases, significant difference was 34% at the 38th story level and minimum difference was 0.3% at the 6th story level.
 - From the manual analysis of model, direct shear calculations show how the loads are distributed between the frames and core. It can conclude that the distribution of horizontal forces, corresponding to the stiffness, that the core resist about 24% of horizontal load while frames resisting about 76%, so the common design assumption that all horizontal load are carried by shear walls is not strictly correct.
- The force magnitude of internal frame elements is increasing compare to the external frame.
- Story drift values were taken directly from ETABS and compared to allowable values outlined in ASCE 7-05. The maximum story drift that the lateral frame induced was 0.003745m as a result of wind loads as shown in Appendix B. This is much less than the allowable 0.048m.
 - The overturning moment produced by lateral loads were controlled lateral forces. These forces create a moment of 77656kNm. To resist this moment, the

self weight of the frame 1 is multiplied by half of its width producing a moment of 279885kNm, Therefore, the frame has the capacity to withstand the overturning moment caused by wind forces.

6.2 Recommendations:

From this study it can be recommended that:

- 1- Apply the approximate methods for preliminary design of structure.
- 2- Use two dimensional models for intermediate design of structure.
- 3- Use three dimensional models for the accurate and final design of structure.

6.3 Suggestion for Future Researches:

- 1- Using same data but taking seismic force under consideration and even going further to foundation design.
- 2- Use braced tube system in the next studies which considering high-rise buildings.
- 3- Application of framed tube buildings in Sudan.
- 4- Taking into account the wind loads for all building higher than ten stories.