

## Chapter Five

### Conclusion & Recommendations

#### *5.1 Conclusion*

This research presents a method for the design of high elevated flat slab formwork. The method defines the primary stages of the design process, determines the detailed procedure within each stage, and identifies the basic data needed for exercising the design.

The proposed method is aimed at producing design solutions that meet both quality and economy criteria. This thesis based on designed software program by Microsoft excels to tested flat slab elements in construction building as case study using (ACI-347) Code.

Through design results obtained in the study concluded in this thesis, but the following:

- Design by Excel program faster and more accurate than manual design.
- Resulting from manual design values by a slight difference of values resulting from the design program Excel, and this difference is due to rounding to the nearest decimal place in manual design.
- Found that there is variation in the sizes sheathing, joist, stringers & shore which confirms that followed in the design of this study is safe and economically.
- Found that the distances between joist less than stringers, because the loads in joist located greater than the loads located on stringers.



***This program features***

- ❖ This method provide us with the following benefits for flat slab
  - Safe design formwork
  - quick method
  - performed and ideal formwork
- ❖ Easy method for input and output result
- ❖ Flexibility to perform each element of the concrete products
- ❖ Easy for erection and removable
- ❖ Decreasing the segregation and very good for curing
- ❖ Insuring about the durability for concrete elements

***5.2 Recommendations***

Through the study done in this research, we recommended by the following points:

- Using formwork methodology in infrastructure projects
- Formwork and Safety engineers is significant in the project

For the future work, we recommended by the following:

Continued this research to cover other concrete elements such as foundation, column, beam, wall and case satire.