

## Chapter Six

### Conclusion and Recommendations

#### 6.1 Conclusion:

Finite element analysis has been use extensively in the study. Linear analysis has been done to determine the results. Loading standard being used is BD 37/ 01. Analysis result is automatically obtained using SAFE-12.2 .Two models were employed in the study which was beam and shell model and 3D solid model.

It was shown that the maximum value of slab moment is obtained from beam - shell model, and minimum moment beam - shell gives a lower value than 3D solid model.

3D solid model provide a lower values of major beam moment, also for reaction forces beam and shell provide a higher value. So the analysis for 3D solid model is more suitable for design.

SAFE-12.2 software has shortened the time of analysis the bridge deck, the critical node can be found out to know which node has a critical value. Because of the sophisticated SAFE, it can analysis almost every type of structure with different geometry, data properties and different material.

## 6.2 Recommendations:

Research on bridge deck analysis is very wide in term of prospect, and the variety of analysis regarding bridge can be done.

Recommendations needed by other researcher when analyzing the bridge were summarized as follows:-

- 1- Non linear analysis is carried out.
- 2- Different types of bridge decks must be considered such as cellular deck and box deck.
- 3- Model the bridge deck using only structural elements to gain for analysis value, instead of using 2D or 3D solid element.
- 4- According to B.S 5400, it is recommended to take the effect of temperature in consideration, especially in Sudan because of considerable fluctuations of temperature.

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