

## **ABSTRACT**

This research focuses on the possible methods of preventing structural failures. Structural failures a catastrophic activity that should be prevented as early as during the design period. For failure to occur in a given structure, there are various factors that come into play as will be seen in the chapters below. One of these factors are the materials with which its members are made; the material first undergoes some stress that is applied to its upper strength limit. This leads to the rupture or extreme deformation of the material. The materials that make up a structure have an ultimate strength, which is the load bearing capacity limit. When this limit is reached, the materials cannot carry any more loads, and any further increase of loads can lead to the damage of the structure. The designer should therefore, design the structure properly so that in any case a local collapse happens, the whole building does not collapse suddenly. The designer should carefully consider the construction materials' ultimate failure strength. This is necessary to prevent failure in the structure. Material is just one of the factors that affect structural stability. The other factors that will be discussed in the chapters below should also be considered.