

**DROP WEIGHT TEST SYSTEM : DESIGN AND ANALYSIS OF DROP  
TOWER STRUCTURE**

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requirements for the award of Advanced Diploma in Mechanical Engineering of  
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## *ABSTRACT*

In performing some experimental studies of the properties of materials under impact loading, many techniques and devices had been used. The ideal impact test would be one which all energy of a blow is transmitted to the test specimen. One method of delivering impact blow is through dropping weight.

This project concern on the designing of a drop weight test system where a vertical weight is to fall freely onto the specimen. The essential parameters for such test would be the mass of weight and height of fall. A 10.2 meter drop tower is therefore designed. This report will cover the design and analysis of the drop tower steel structure base on given loading parameter.

The code of practice referred in the design is BS 5950 : Part 1 : 1990. The analysis of the behaviour of the structure is performed through computer software (ANSYS) where mode of analysis is base on finite element method. Upon completing, a layout of drop tower structure is presented and results obtained from the analysis shows that the members selected are adequate and acceptable.

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