

DESIGN OF A PASSENGER LIFT OF A

MULTI - STOREY BUILDING

BY

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DEDICATION

*This project is dedicated to my parents for their
encouragement and help.*

Project Report

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SUMMARY

The objective of this project is to design a passenger lift, which lift should be of a capacity of 6 persons, speed of 1m/sec and is to be used for a multi-storey building.

Also, to present design calculations, to make separate detail drawings to a large scale for small components and to present manufactures catalogues and selection procedures for the machine components to be used to meet the terms and conditions specified above.

The whole project has been divided into 9 chapters.

Chapter 1, deals with the car control system, the different types of drive and some general notes for the doors.

Chapter 2, deals with the traffic analysis and some calculations are made in order to find the round trip time of the lift.

Chapter 3, deals with the design of the hoist with some relevant calculations in estimating the diameter and the tensile strength of the wire rope.

In Chapter 4, a description and the importance of the counterweight is made. Also the design of the counterweight too.

Chapter 5, deals with the selection of guides and the evaluation of forces and stresses on guide rails during normal and safety gear operation. Then the design of the fishplate and the guide's brackets are taken place.

Chapter 6, deals with the power transmission, with the relevant calculations in designing the sheave, diverting pulley, the staff securing it and keys and keyways.

Chapter 7, deals with the safety features that someone must have in mind in a case of being trapped in the car. Also, the selection and design of spring buffer was taken place.

Suitable instructions and maintenance procedures are included in chapter 8.

Finally, the cost analysis of this lift is taken place.

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