

“Analysis and Design of Proposed Girls Hostel in JIT Campus, Davanagere”

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Abstract - In today's world, from civil engineering point of view, it is very important that the structures are properly analyzed, evaluated and estimated before they are implemented in the field. The present study deals with analysis and design of G+3 hostel building. The study has been carried out for (G+3) building by considering gravity load. The analysis of building has been done by using finite element software such as ETABS.

The study involves planning of hostel building with a capacity of 200 students and area of the each room has been allotted according to the HMO standards. The building comprising of total 72 numbers of rooms. The model of building has been done in ETABS. The material properties of concrete and steel has assigned according to the standards. The analysis has been carried out in the software. The obtained results from the ETABS are taken separately. For the design, the spread sheets have been prepared according to the Bureau of Indian standard (IS 456-2000 and SP-16). The each structural element such as slabs, beams, columns and footings have been designed according to the code books. These results will also be compared with manual calculations of a sample beam and column of the same structure designed as per IS 456-2000 and SP16. According to the loads assigned from IS 875

1987(Part I and Part II) the structural members has found safe.

Key Words: Structural member, design, Analysis.

1. INTRODUCTION

Nowadays, due to the increase in population leads to the availability of horizontal coordination system (due to large area available per person) has been decreasing so that adoption of vertical co-ordination System (high-rise building due to deficiency of area) is needed.

ETABS can also handle the largest and most complex building models, including a wide range of nonlinear behaviors, making it the tool of choice for structural engineers in the building industry. ETABS can be effectively used in the analysis and design of building structures which might consists of structural members like beams, columns, slabs, shear walls etc., With ETABS you can easily apply various construction materials to your structural members like concrete, structural steel, Reinforced Concrete etc. ETABS automatically generates the self-weight and the resultant gravity and lateral loads.

Codes recommended are IS 456-2000, SP 16, IS 875-1987 (Part I), IS 875-1987 (Part II).

1.2 OBJECTIVES

- To provide a stay for students of Jain Institute of Technology and to help new arrivals to

