

Abstract

Structural designing and analysis are the major parts of civil engineering. Analysis of building's members being performed to ensure their stability under the loads and specify grades of materials using different building codes and standards. With passage of time structural software are being programmed which help designers design and analyze structures in less time and more accurately. In this project, a concrete reinforced structure building located at Link Road named as ZUFESTM, Campus of Ziauddin University Karachi is considered to be analysed and design using Etabs. It is G+2 building (upper floors are under construction) Some of the beams, walls, shear walls and other of its components is cracked and see page is showing in various parts of building. this building will be re-design to check that the structure is safe and ensure that the structure built meet all the safety requirements. Structural design will give all the vital information regarding foundations, floors, walls, beams, roof types and the quality of materials used in this building to know where is the mistake which cause cracks in the building. We have chosen this project to investigate and re-evaluate the building to know the mistakes and error which cause cracks and seepage in the building, also to be able to design a building and explore structure engineering and its application in construction industry. This paper describes the salient features of ETABS and its various applications in civil engineering. In this software the designer will be able to generate the geometry, define the boundary conditions, assign material properties, specify the loads and perform the analysis all conveniently and quickly. It helps in understanding the overall behaviour of the structure in terms of resulting bending moment, shear forces and deformations which can be viewed or plotted. Etabs stands for Extended Three-dimensional Analysis of Building Systems. This research also shows the modeling of RCC building in etabs, application of literal and seismic loads, and different analysis methods use to analyze a structure. Etabs is programmed with various building codes and standards such as ACI, IS2000, BS, ASCE etc. which can be used for designing and analyzing steel frames, concrete frames, concrete slabs, concrete shear walls, composite beams, composite columns and steel joists can be performed. Etabs provides different grades of material and all kinds of shapes for cross-section to design a model and run for their required grade of strength and dimensions.