

CHAPTER I

INTRODUCTION

1.1. General Background

Structural design is the most important factor to gain the strong, safety and economically building. This result will lead the people who lives in it feel safety. Structural design will mostly affected by loads that act on it. Of course, it also will affect the dimension of the structure. The bigger the load that affect the building, the bigger the dimension that is needed by the building.

Designing a multistories building will need more attention than the single story building. The calculation become more complex and sophisticated. The purpose is to restrain the natural disaster like wind load and earthquake load. The earthquake factor must be taken into account, especially in the earthquake region like in Indonesia. Indonesia is a meeting point of two earthquake line. Those are Pacific earthquake line and Asia earthquake line.

Building structures in Indonesia have been traditionally designed to resist lateral force with dynamic analysis. Irregularity building structures have a certain behavior as 3D structure. By doing 3D dynamic analysis the behavior of building can be predicted. In this thesis SNI 03 – 1726 – 2002 and SNI 03 – 2847 – 2002 will be used as a guideline to redesign and evaluate the irregularity building structure of “ASURANSI ASTRA” building and also use ETABS program to calculate forces that will be occurred in “ASURANSI ASTRA” structures. “ASURANSI ASTRA” building located at kav 15 TB Simatupang

Street, Cilandak Barat, Jakarta 12430 . The building construction uses reinforce concrete construction.

1.2. Problem Statement

According to the general background which is described previously, the problem in this final project is to analyze the seismic dynamic response in the irregularity building, and design structural elements of the building.

1.3. Problem Limitations

To simplify the problems, some limitations are taken as follows:

1. Evaluation and design of irregularity building structure in accordance to SNI 03 – 1726 -2002, SNI 03 – 2847 – 2002 and SNI 03 - 1729 - 2002.
2. Internal forces of irregularity building will be analyzed by using software Extended Three Dimension Analysis of Building System (ETABS).
3. The data of structure is based on the construction drawing of “ASURANSI ASTRA Building”, which was designed by “ARKONIN” Architecture consultant.
4. The Building type of “ASURANSI ASTRA” is Dual System.
5. ASURANSI ASTRA Building is in the earthquake zone 3 with soft soil.
6. The building will be designed as Dual System.
7. Dynamic analysis of building structure is using Spectrum Response Analysis.

1.4. Objective

The objectives of this final project are:

1. To understand the behavior of irregularity building structure.
2. To understand how to obtain dimensions and reinforcement of beam, column, slab, stair, and structural wall.

