CHAPTER 1
PRELIMINARY

1.1. BACKGROUND

Structural planning is an important element in the construction of a building in order to produce a strong, safe and economical building. Overall the structure of the building consists of two parts, namely the upper structure in the form of floors, beams, columns, walls and roof while the lower structure is in the form of foundations and sloof beams.

As the times develop, the increasing public awareness of the importance of continuing education to a higher level. The need for education in modern times can be classified as a primary need for adult humans. With the high need for education for humans today, the need for buildings that can facilitate in gaining knowledge is increasingly needed. (Reinard Sutanto, 2018)

Along with the officially inaugurated West Java International Airport located in Kertajati Subdistrict, Majalengka Regency. There will be the possibility of Majalengka arrival by foreign nationals. Majalengka International School applies to all people not only foreign nationals, but Majalengka communities and surrounding areas can get the same education. Therefore, the development of Majalengka International School is expected to facilitate the community to gain knowledge and get a good education. In its development, the construction of this building is very important to create a comfortable and conducive educational atmosphere, as well as the identity of an educational institution. In its construction there are several aspects that need to be considered, namely in terms of aristektural, structural and building utilization. Building structure planning should be planned in accordance with standard guidelines, Building structure planning includes upper structures and building structures. The upper structure, includes roof planning (horses) and reinforced concrete

(floor plates, stairs, beams and columns), while the lower structure includes a foundation structure.

Structural planning aims to produce a structure that is stable, strong enough, able to withstand burdens, and meet other goals such as economic and ease of implementation. A structure is called stable if it is not easily toppled, tilted or displaced during the life of the planned building. To achieve the purpose of planning, structural planning must follow the regulations set by the government in the form of Indonesian National Standards (SNI).

1.2. PROBLEM FOCUS

This research is focused on Analysis and Design Building of the Majalengka International School with using the latest regulation such as SNI 2847;2019, SNI 1726;2019, SNI 1727;2020 .

1.3. PROBLEM FORMULATION AND PROBLEM IDENTIFICATION

1.3.1 Problem Formulation

1. How to Plan the Structure of Majalengka International School Project in accordance with SNI provisions.
2. How to analyze the structure with the ETABS Program.
3. How to calculating RAB in Majalengka International School Project.
4. How to plan management construction in Majalengka International School Project.

1.3.2 Problem Identification

Identification in this problem is focused on analysis and design structure of the school building accordance with SNI 2847:2019 reinforced concrete, PPIURG 1987 and SNI 1727:2020 for loading, as well as calculating earthquake force according to SNI 1726:2019, analysis stucture with the ETABS Program. Calculation Cost Budget Plan in Majalengka International School Project. Plan the management construction in Majalengka International School Project.

1.4 LIMITATIONS OF THE PROBLEM

Research entitled **"ANALYSIS AND DESIGN BUILDING OF THE MAJALENGKA INTERNATIONAL SCHOOL"** will explain the problems in the problem formulation, so that a solution is sought on the problem. Therefore, there needs to be a writing limitation that aims for the preparation of thesis, the limitations of the problem raised, as follows:

1. Plan of the main structure : foundation, sloof, columns, beams, slab and stairs.
2. Did not analyze its supporting structure.
3. Analyze earthquake loads.
4. Calculating the structure of the Cost Budget Plan (RAB)
5. Do not design Retaining walls, shear wall, ME and plumbing.
6. Plan management construction.

1.5 PURPOSE AND OBJECTVE

1.5.1 Purpose

The thesis entitled "ANALYSIS AND DESIGN BUILDING OF THE MAJALENGKA INTERNATIONAL SCHOOL." will explain building planning with reinforced concrete structures using ETABS program and compare with manual calculation, analysis earthquake load, calculation cost budget plan, plan the management construction.

1.5.2 Objective

The aims of writing this research are :

1. To design a new school builing using concrete structure.
2. To know the details of the dimensions, slab, beam, column and foundation accordingly.
3. To know the school building safe or not with analysis earthquake load
4. To know of cost budget plan the school building.
5. To know of plan management construction development the school building

1.6 BENEFIT OF RESEARCH

The benefits obtained from this research are as follows.

1. Used as a reference for structural planning in a building.
2. Used as a reference for analysis structure with ETABS program.
3. Used as a reference for manual calculation of structure component
4. Used as a reference for analysis earthquake load.
5. Used as a reference for calculation cost budget plan.
6. Used as a reference for plan management construction.
7. As a reference for reading materials or library references to conduct further research.

1.7 RESEARCH USED

1.7.1 Theoretical Aspects

This research is expected to be an input of academic studies in studying, observing, and understanding problems related to civil engineering, especially in building construction.

1.7.2 Practical Aspects

This is an input for the builder or the government whose results can be a reference for the government that builds in accordance with SNI regulations, hopefully the problem can be solved properly.

1.8 RESEARCH LOCATION

The location for the construction of Majalengka International School is located on Jatiwangi-Majalengka Highway, Cigasong, Majalengka, West Java, Indonesia.

Figure 1.1 Majalengka International School Project Location

1.9 COMPOSITION SYSTEMATICS

CHAPTER 1 PRELIMINARY

In this chapter will be explained about the background, problem focus, problem formulation, research objectives, problem limitations, research location and systematic thesis writing.

CHAPTER 2 THEORETICAL BASIS

Contains the basis of the theory derived from books, journals and electronic media information (internet).

CHAPTER 3 METHODOLOGY

Contains research objects, research methods, explaination flowcart, types and data sources, data collection methods and research locations.

CHAPTER 4 ANALYSIS STRUCTURE

Contains the analysis component as follow stair, lif, slab, beam, column, foundations, earthquake load, cost budget plan and managemen construction.

CHAPTER 5 CONCLUSION

Will describe the results of the research that has been done with direct observation and will discuss the solutions that will be done in this study.