

# CHAPTER I

## INTRODUCTION

### 1.1. Background

Construction work is all work that includes planning, construction, operation, maintenance, and demolition of a building. One of the most important construction work processes is the planning process because without a planning process, the next process cannot be carried out and if there is an error in the planning that might make the building collapse or have a shorter service life than expected.

Yogyakarta is one of the iconic places of Indonesia. Yogyakarta itself is known as the city of students by how many students that from all over of Indonesia go to Yogyakarta to study. The Public Library in Yogyakarta with Approach Humanist Architecture is a project that was made by architectural student from Atma Jaya Yogyakarta. This building contain three parts which are the public library, co-working space, and the bridge to connect both library and co-working space. This project is planned in Yogyakarta, especially in Jl. Jendral Sudirman, Gondokusuman district. This project has two way in and two way out.

The location of the project is near the White Monument that is the icon of Yogyakarta. The project is specifically for increase the literature of Indonesia since it is recorded by UNESCO that the literature in Indonesia is 0.001% therefore our percentage is the second lowest in all country. This also supported by the co-working space which one of the most used by students especially for working, assignment, etc. By this method the students that need some books could go to the library.

In this report, the author will plan the superstructure plan which consists of roof plan, ladder plan, beam plan, floor slab plan, and building column plan; substructure planning consisting of liquefaction potential calculations, foundation planning, and foundation reinforcement planning; and cost and time planning consisting of volume, schedule, number of workers, s-curve, and bar chart.

## **1.2. Project Overview**

The contents of this report contain a brief description of the method, review, data analysis, data processing to become the core output in the form of understanding concepts, work methods, and scientific learning resources that can be tested for the validity of the theories and concepts. This report will contain an initial description until the expected output is achieved, which includes the application of theory and concepts in designing and analysing buildings using SNI guidelines and other references that can assist in planning work.

## **1.3. Project Methodology**

There are several planning methods used in the completion of the Infrastructure Final Project, which are as follows.

- The Lectures in superstructure design work which includes Earthquake Resistant Concrete Structures, Steel Structures, Prestressed and Pre-cast Concrete, and Software Applications in Civil Engineering.
- The Lectures in the design work on substructures which include Software Applications in Civil Engineering, Soil Mechanics, and Foundation Engineering.
- Indonesian Standard : *SNI 1729:2002, SNI 8460:2017, SNI 2052:2017, SNI 1726:2019, SNI 2847:2019, SNI 1727:2020, and SNI 1729:2020.*

## **1.4. Final Project Systematics**

Infrastructure Planning Final Project will be prepared by following the following systematics.

1. The report begins with an initial containing the cover, cover page for the final project, abstract, statement, confirmation sheet, preface, table of contents, list of attachments, list of pictures, and list of tables.
2. It is then followed by an introductory section which is the first chapter which contains a description of the topic of study and background, an overview of the project, the problem being studied, the objectives and scope of the problem, the approach and research methods used, and the systematics of the assignment.
3. Followed again with the chapters of the main content of the final project which will discuss the planning of the superstructure, planning of the substructure, and planning of costs and time.

4. Followed again with the AutoCAD attachment section which consists of site plans, building floor plans, architectural pieces, architectural views, column plans, beam and sloof plans, floor slab plans, roof plans, foundation plans, column details, beam and sloof details, slab details, foundation details, stair plans, and stair pieces.

### 1.5. District Regulations

Based on Yogyakarta, Gondokusuman District Regulation

- Area of site = 6182.86 m<sup>2</sup>
- Building Base Coefficient (KDB) = 70% \* 6182.86  
= 4.769 m<sup>2</sup>
- Building Floor Coefficient (KLB) =  $\frac{4}{4.769} * 6182.86$   
= 5
- Green Base Coefficient (KDH) = 20% \* 6182.86  
= 1236.5 m<sup>2</sup>
- Building Boundary Line (GSB) = 13 m
- Detailed Spatial Plan (RDTR) = Trade and Service

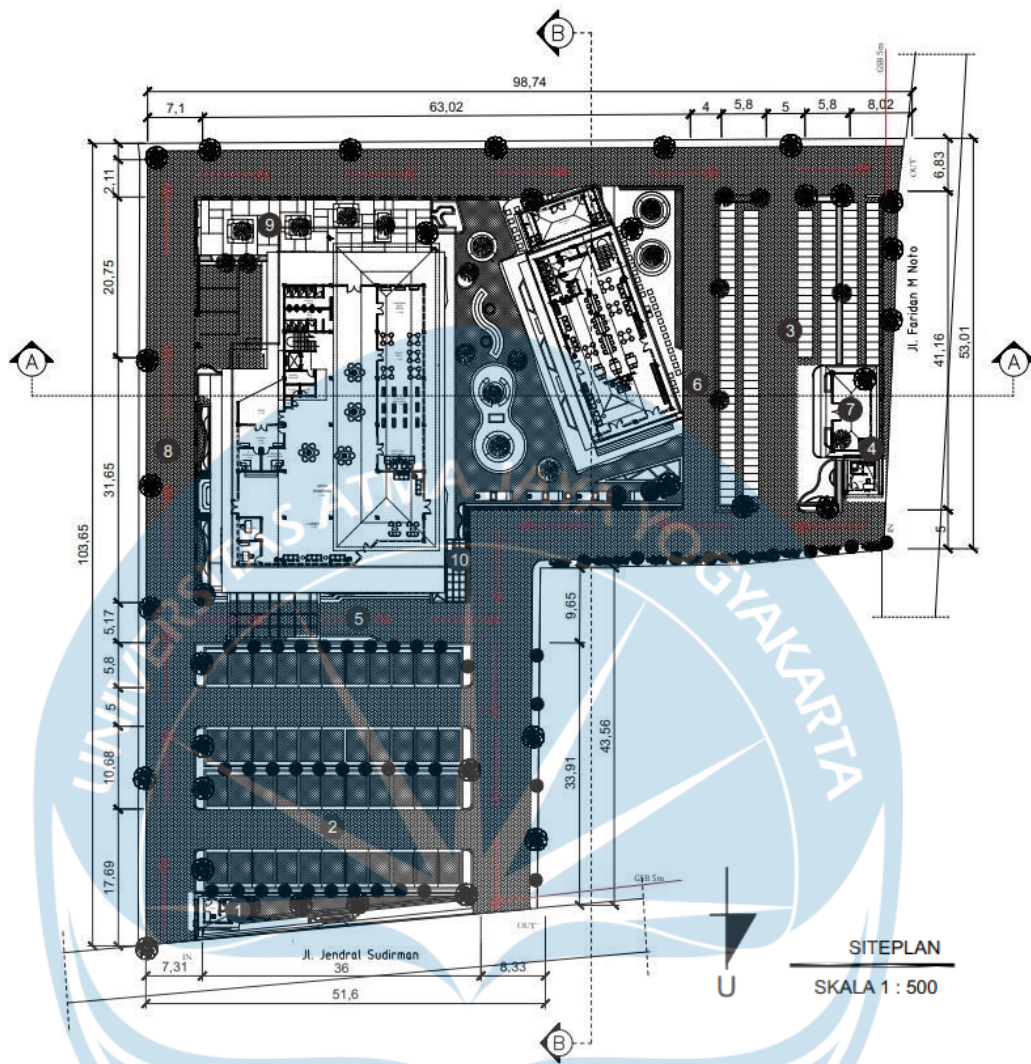


Figure 1. Site Plan