CHAPTER I
INTRODUCTION

1.1. Background

Wreda Nursing Homeis planned to be built in Gunungkidul Regency, Special Region of Yogyakarta. The main building of the Nursing Home has a total of 3 (three) floors with an area of 2275 m² and a height of 16 m. This building has 16 (sixteen) rooms on each floor with a total of 48 rooms. This building also has two open gardens on the right and left because this garden does not use a roof covering. There are also corridors in front and beside the rooms which are used as road access for residents. Apart from residential buildings, there are also various supporting buildings such as visitor buildings, management, support and services. In this design, the author designs the main building or residential building.

There are gaps in the structure due to an open garden space. The decision to design this building was made because it offers a variety of exciting topics for discussion. One of these is the issue of diaphragm stiffness, which is marginally alleviated by an opening in the middle of the structure created by an open garden on the first floor, where floor Slab s are not needed

Wreda Nursing Home design consists of structural, geotechnical, cost and time management components. We will go through the structural system and the reinforcement calculations in the chapter on structures. The Geotechnical chapter examines the issue of soil and rock strength and how it relates to the capacity to support the weight of structures standing on it, as well as potential remedies. Work packages are also covered in the Cost and Time Management Chapter along with their project budgets and work schedules.

1.2. Design Objectives

The purpose of designing this building is to build a strong building that can whist and from the lateral forces and other potential that caused failures of the building,ding so the lifetime of using can be longer to reduce costs.

1.3. Project Overview

The main building of Wreda Nursing Home has a total of three floors with an area of 2275 m² and a height of 16 m. This building has 16 rooms on each floor and a total of 48 rooms.

This building also has two open gardens on the right and left because this garden does not use a roof covering. There are 2 (two) roof truss structures used, namely the joglo frame for the living room and the pyramid frame for the bedrooms. In this roof frame used double angled steel profiles 50x50x5.

The roof covering used PVC and uses curtain rods, namely C profile. Some of the rooms that are not covered by a roof use concrete Slab s with a thickness of 12 cm. The structure of this building uses reinforced concrete material with a concrete quality of 25 MPa and steel quality of 420 MPa. The Slab s used in this building are two-way Slab s and one-way Slab s. The main beam used in this building measures 30x60 cm, and the columns are 60x60 cm

1.4. Final Project Systematics

Systematics in this Final Project consists of three chapters: Structure, Geotechnical, and Cost and Time Management. The Structure Chapter will discuss the structural system and reinforcement calculations. The Geotechnical Chapter discusses the problem of soil and rock strength and its relationship to the ability to withstand the weight of buildings standing on it, along with solutions that can be given to these problems. The Cost and Time Management Chapter discusses work packages, budget plans, and project work schedules.