

CHAPTER I INTRODUCTION

A. Background

Surakarta (Solo) is the city which develop the tourism in Indonesia. The Surakarta has tourism palace, traditionally food, and traditional market. First tourism palace build by Pakoe Boewono II in 1745 Masehi. District of palace in kartasura, that the distance less than 12 km Surakarta west. In the palace Surakarta has Art Gallery that have most historic piece where it has artistic and high historical. Example kereta kencana, wayang kulit and historical goods. Second Batik Solo is the next traditionally clothing. Third Solo has traditionally foods which it is delicious foods. Among other things is Serabi Notosuman, Dawet Ayu, etc.

Because demand of tourist from local or international tourist to come to Surakarta, so need facility to support tourist or tourism come to Surakarta, the one need is hotels to place tourist to stay in Surakarta. With build the hotel in Surakarta can give facility that need to increase the demand of tourism and investor to invest in Surakarta.

There are many of special frame resisting moment. From of all the choose system in design building is Special Moment Frame (SMF). It is because the system can develop plastic hinge to resist seismic load and the connection reduction beam section are choose in system because the connection reduction beam can develop the plastic hinge away from column face and the reduction beam section is preferred connection in Special moment frame. Because of all the writer in final project choose topic "Design of AFA Hotel 8 Stories with Steel Construction in Surakarta" with building plan shown in appendix.

B. Problem Formulations

Based background above, the problem the final project is:

- 1) How to design hotel with steel construction which can resist seismic load?
- 2) How to analysis the structure of building with SMF?

C. Purpose and Planning Advantage

1. Purpose

The purpose of planning the building hotel AFA 8 stories with steel construction in Surakarta is to get design result of building can resist seismic load using American Standard Codes.

2. Planning Advantage

The advantage to be had from this planning is to increase the knowledge in the planning of structure, especially in the calculation of steel moment frame and is expected to be used as a reference to the system of calculation of earthquake resistant structures in a building.

D. Limitation Problem

Problem limitation in this final project is:

1. The building is hotel 8 stories with steel construction and 1 basement in Surakarta.
2. The calculation for steel (deck composite, column, beam, connection and stairs) and for concrete structure (driven pile and pile cap).
3. This final project only calculation the main structure not include sheet pile and slab on the ground.
4. High of column 1st – 8th story is 4 m.
5. Floor use deck composite with reinforced concrete.
6. Driven pile use in the design with use soil properties in site.
7. No review in terms of economic analysis, architectural, and construction management.
8. Reviewing the implementation of the method is only related to the calculation of structures only.
9. Standard use in the design in this final project as follows :
 - 8a) Minimum Design Loads for Buildings and Other Structures (ASCE 7-10).
 - 8b) American Concrete Institute (ACI 318-11).
 - 8c) American Institute of Steel Construction (AISC):
 - Specification for Structural Steel Buildings (AISC 360-10).
 - Seismic Provisions for Structural Steel Buildings (AISC 341-10).
 - Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Applications (AISC 358-10 or AISC 358s1-11).
10. Structural Analysis for building use software ETABS 2015.