CHAPTER 5
CONCLUSION

5.1. Structure Planning

Structural planning refers to SNI 2847-2019 concerning structural concrete requirements for buildings, SNI 1726-2019 concerning procedures for planning earthquake resistance for building structures, and SNI 1727-2013 concerning loading regulations for building designs. In planning the construction of this building, the writers have determined the size of structural elements such as roofs, beams, columns, floor slabs, and stairs considering earthquake loads. In analyzing structural elements, the writers use applications such as ETABS and SAP-2000 to determine the forces and moments that occur due to loading. The following stage after the structural modeling is carried out, it is followed by data processing which will then be continued at the design stage. The design results can be seen in the Table 5.1.

Table 5.1. Roof Design Conclusion

Purlin Weight	9.27 kg/m
Main truss angle	30°
Purlin Spacing	1.4 m
Web Spacing	1.4 m
Main Truss Spacing	4 m
Steel Quality (Fy)	240 N/mm2
Celling Weight	5.1 kg/m2

5.1.1. Summary for Building Structure:

1. Stair Field Reinforcement

Main Reinforcement: D13 - 200

Shrinkage Reinforcement: D8 - 150

2. Stair Support Reinforcement

Main Reinforcement: D13 - 200

Shrinkage Reinforcement: D8 - 150

3. Bordes Field Reinforcement

Main Reinforcement: D13 - 400

Shrinkage Reinforcement: D8 - 150

4. Bordes Support Reinforcement

Main Reinforcement: D13 - 200

Shrinkage Reinforcement: D8 – 150

5.2. Geotechnical Planning

In geotechnical planning, soil data is obtained through direct soil investigation using the standard penetration testing method (SPT) in the form of BH-1 and BH-2, Bor Log. Based on the type of soil obtained from the SPT data, it refers to SNI 1726-2019 in table 5 where the site classification is medium soil (SD). The soil bearing capacity in geotechnical planning is obtained from the results of converting SPT data to sondir with the formula qc = 4 x N, then after getting the qc, the soil bearing capacity is determined with the formula qa = qc/40. Initially the SPT data was found at a depth of 2 meters, namely N = 9, then by converting the SPT data to sondir, the soil bearing capacity was found to be 176 kN/m2. With the soil bearing capacity data that has been obtained, we can determine the dimensions of the foundation. The type of foundation used in this building development plan is a footplate foundation with dimension 3500 x 3500. The results of the foundation design can be seen in the Table 5.2.

Table 5.2. Foundation Design Conclusion

Foundation Type	Dimensions	depth
Shallow Foundation	3.5 x 3.5 m	3.5 m

5.3. Construction Management Planning

In planning the construction of the West Papua People's Assembly Building (MRP) in terms of construction management, it was found that the MRP building required a cost of Rp15,001,290,000.00 with a selling price of Rp4,209,116.16/m2 and took 218 days. In calculating the BOQ for the MEP work, the calculations were not carried out in detail due to the limitations of the architectural drawings.

REFERENCES

Ameratunga, J., Sivakugan, N. and Das, B.M. (2016) Correlations of Soil and Rock Properties in Geotechnical Engineering. Available at: http://www.springer.com/series/13410.

Badan Standarisasi Nasional. (2013). *Beban Minimum Untuk Perancangan Bangunan Gedung Dan Struktur Lain* (SNI 1727:2013).

Badan Standarisasi Nasional. (2015). *Spesifikasi Untuk Bangunan Gedung Baja Struktural* (SNI 1729:2015).

Badan Standarisasi Nasional. (2019). *Persyaratan Beton Struktural Untuk Bangunan Gedung Dan Penjelasan* (SNI 2847:2019).

Badan Standarisasi Nasional. (2019). *Tata Cara Perencanaan Ketahanan Gempa Untuk Struktur Bangunan Gedung Dan Nongedung* (SNI 1726:2019).

Das, B.M. (2007) Principles of Foundation Engineering, Global Engineering: Christopher M. Shortt.

Indonesia, S.N. and *Nasional*, B.S. (2008) 'SNI 4153:2008 *Cara uji penetrasi lapangan dengan* SPT'.

Kementrian Pekerjaa Umum dan Perumahan Rakyat Direktorat Jendral Bina Marga, "*Kumpulan Korelasi Parameter Geoteknik dan Bina Marga*," 2019.

Kementerian PUPR. (2016). *Peraturan Menteri Pekerjaan Umum Dan Perumahan Rakyat Republik Indonesia Nomor* 28/Prt/M/2016 *Tentang Pedoman Analisis Harga Satuan Pekerjaan Bidang Pekerjaan Umum.*

Manokwari, West Papua Government. 2022. *Harga Rata-Rata Bahan Penting*. https://*bapokting.papuabaratprov*.go.id/*kab*_b_*penting*/*bahanpokok_kab*/2, 19 December 2022.

Martini. (2009). *Analisis Daya Dukung Tanah Pondasi Dangkal Dengan Beberapa Metode. Jurnal Mektek*. Volume 11, Number 2. May 2009.

Nasional, B.S. (2008) '*Tata Cara Perhitungan Harga Satuan Pekerjaan Plesteran untuk Konstruksi Bangunan Gedung dan Perumahan'*, *Sni*, 2837, p. 2008.