

THE DESIGN OF THE WEST PAPUA PEOPLE'S ASSEMBLY BUILDING

Final Project Report

As one of the requirements for obtaining a Bachelor's degree from
University of Atma Jaya Yogyakarta



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ABSTRACT

Recently, infrastructure developments in Indonesia have been increasingly massive, fast, and advancing. To support infrastructure development in Indonesia, civil engineers who are well-equipped with knowledge are needed. Therefore, in supporting the fulfillment of civil engineering needs, the University of Atma Jaya Yogyakarta designed a Final Project in the form of infrastructure design, which in this case, the designed The West Papua People's Assembly Building in Manokwari, West Papua. This building was used to support the government in making the decision in Manokwari related to the constitution.

The design of The West Papua People's Assembly Building is carried out by calculating structural requirements, which include the upper structure (superstructure), and lower structure (substructure), then proceeding with calculating the construction management plan. Software like SAP2000, ETABS, and SPColumn is used in the superstructure design. Utilizing ETABS software and Microsoft Excel, the substructure was developed. Meanwhile, Microsoft Project is used to plan the construction management planning. The superstructure's roof, beam, column, floor slab, and staircase designs are all included. The substructure consists of interpretation of soil planning data, soil bearing capacity analysis, liquefaction zone analysis, settlement analysis, and footplate foundation planning. Last, Project Management includes Work Breakdown Structure (WBS), Volume, Work Unit Price Analysis (AHSP), Bill of Quantities (BOQ), Work Duration, Gantt Charts, Resource Sheet, Network Diagram and S-curve.

The design includes several aspects. The first aspect is the roof structure that uses light steel. Then the dimensions of the columns in the building are calculated to meet the required conditions. In the geotechnical aspect, the design starts with classifying the soil site obtained from the given soil data. Then calculate the bearing capacity of the soil, after that determine the type of foundation and the dimensions of the foundation needed. Based on the series of calculations, the cost and duration of the work are obtained.

The structural design results obtained in this final project are steel profile dimensions for truss, curtain rods, staircase dimensions, structural dimensions of plates, beams, columns, shallow foundations or footplate foundations. The roof frame uses double angles 50 x 50 x 5. The main beam dimensions are used 400 x 600, and the secondary beams are used with dimensions 350 x 400. The columns used in the West Papua People's Assembly Building use dimensions 600 x 600. The dimensions of the floor plates used are the thickness 15 cm with two-way plate type. In the lower structure footplate foundation is used with dimensions of 35 x 35 with a depth of 3.5 m. In project management planning, it took 218 days with a total cost of Rp15,001,290,000.00.

Keywords: The West Papua People's Assembly Building, Infrastructure, Estimation, Structure, Geotechnical, Construction Management, Foundation, Roof, Beam, Column, Slab, ETABS, SAP2000, Microsoft Project.

STATEMENT

We, the undersigned,

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The Design of The West Papua People's Assembly Building is an original work and is not the result of plagiarism from the work of others. We, the undersigned, contribute to this Final Project in the same proportion. Thus, we make this statement as a complement to this Final Project document.

Yogyakarta, 20 December 2022



William Nicholas



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VALIDATION

Final Project Report

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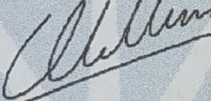
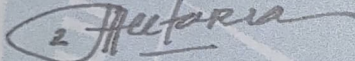
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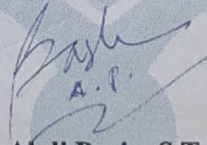
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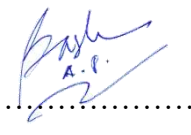
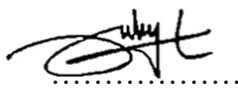
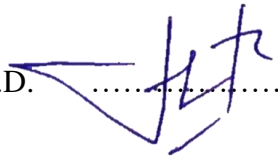


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FOREWORD

Our gratitude goes to God Almighty because of his blessings and gifts we were able to complete the Final Infrastructure Design II report entitled “The Design of The West Papua People’s Assembly Building” to completion without any significant obstacles. The preparation of this final project aims to add insight to the team of writers and readers in the fields of structure, geotechnical and construction management. On this occasion, the writing team would like to thank:

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If there are deficiencies or errors in the preparation of this final report, the writing team apologizes profusely. The writing team also warmly accepts constructive criticism and suggestions from all parties for future improvement. Finally, with all humility the writing team would like to thank all parties involved.

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Group 6

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