

INTERNSHIP REPORT

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QUANTITY SURVEYING STUDY PROGRAM

FACULTY OF CIVIL ENGINEERING AND PLANNING

UNIVERSITAS BUNG HATTA

2025

VERIFICATION SHEET

INTERNSHIP REPORT

AT:

PKT QUANTITY SURVEYING CONSULTANT Sdn Bhd

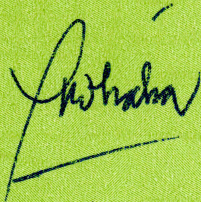
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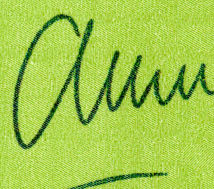
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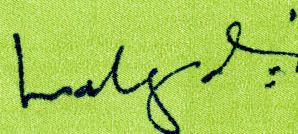
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ANALYSIS OF THE CALCULATION OF ELECTRICAL AND ELECTRONIC WORK COSTS IN THE ALIX RESIDENCE BLOCK A CONSTRUCTION PROJECT

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ABSTRACT

This report summarizes internship activities conducted at PKT Quantity Surveying Consultant Sdn. Bhd., Kuala Lumpur, over 95 days (28 April - 31 July 2025), focusing on the quantification and administration of construction costs. The scope of work included: measurement of structural quantities for the BPNT4 Shop Office project (staircase rebar, coping, ground beam/slab excavation, RC plinth tank, and TNB CSS upstand beam), preparation of tender documents (Pre-Qualification, Appendix D List of Drawings), BIM-based modeling and takeoff (CostX, Glodon TAS/TRB/TBQ), and contract administration tasks (Interim Valuation, Variation Order, and RFVA). In addition, Chapter IV presents a case study analyzing the electrical and electronic works of Alix Residence Block A, encompassing Levels 1 to 11, located at Jalan Dutamas Raya, Segambut, Federal Territory of Kuala Lumpur (WPKL). The methodology involved quantity measurement from AutoCAD shop drawings and unit rate analysis, producing a Bill of Quantities (BQ) amounting to RM 1.382.679,57. The largest cost components were Lighting Small Power (64,27%) and Cable Routing (25,85%), which were subsequently integrated into a time schedule based on percentage of cost and duration. The internship enhanced accuracy in cost estimation, strengthened the technical administrative connection, improved audit readiness of cost documents, and reinforced the application of BIM 5D in Quantity Surveying practice.

Keywords: Internship, Quantity Surveying, BIM 5D, cost analysis, electrical works, Alix Residence

PREFACE

All praise and gratitude are extended to God Almighty, whose grace and blessing have enabled the successful completion of this internship report. The report serves as one of the requirements for graduation in the Diploma in Quantity Surveying Program at Universitas Bung Hatta.

This report is prepared based on internship activities undertaken at PKT Quantity Surveying Consultant Sdn. Bhd. The internship was conducted over a period of 95 days, from April 28, 2025, to July 31, 2025.

The completion of this report was made possible through the guidance, support, and encouragement of many parties. Deepest appreciation is hereby extended to:

1. Parents and siblings, for their prayers, affection, and moral as well as material support;
2. Dr. Putranesia, S.T., M.T., as the supervisor, for guidance and assistance throughout the preparation of this report;
3. Dr. Wahyudi P. Utama, BQS, M.T., as Head of the Quantity Surveying Study Program;
4. Sesmiwati, A.Md., BQS, M.T., as Coordinator of the Internship Program in the Quantity Surveying Study Program;
5. Vivi Ariani, S.Pd., M.T., as Coordinator of the Final Project in the Quantity Surveying Study Program;
6. Lecturers of the Quantity Surveying Study Program;
7. Colleagues and friends who provided support in various forms.

This report is recognized as still having limitations and is far from perfect. Therefore, constructive criticism and suggestions are highly welcomed for its improvement.

It is expected that this report will be beneficial to all readers and serve as a useful reference for future research.

Padang, April 22, 2025

A handwritten signature in black ink, appearing to read 'Dava Maulana', with a stylized flourish at the end.

Dava Maulana

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CHAPTER I

INTRODUCTION

1.1 Background

Internships are an integral part of the curriculum at the Diploma Quantity Surveying Program at Hatta University. The program is designed to provide practical experience in the real world of work, particularly in the construction sector. With the Internship, you can understand and apply the knowledge that has been learned during lectures into real situations in the field (Syaidaturrahmah et al., 2025). The importance of Internships lies not only in its practical aspects, but also in the improvement of technical and managerial skills. Internships help recognize the dynamics and challenges that exist in the field, such as accuracy in building quantity calculations, cost analysis, and accuracy in document preparation and examination.

Working in a professional environment such as at PKT Quantity Surveying Consultant Sdn. Bhd, provides in-depth insight into how a construction project is managed from a quantitative and administrative perspective. One of the main challenges faced is to ensure that every building quantity calculation is done with precision, avoiding discrepancies that can have an impact on cost estimates and the smooth running of the project. In addition, the use of software such as Glodon and CostX requires a strong technical understanding in order to optimize cost analysis accurately.

In addition to the technical aspects, challenges also arise in the preparation and verification of project documents. Errors or incompleteness of documents can significantly interfere with the evaluation and execution of the project. For example, a study in Ambon shows that inaccurate documentation and design are the dominant factors that cause rework that swells project costs and time, so that thoroughness and understanding of regulations are crucial aspects of a Quantity Surveyor's duties (Patimah et al., 2023) .

By facing these challenges, interns not only hone technical skills but also learn how to systematically manage work, work in teams, and understand the standards and best practices in the construction industry.

1.2 Internship Objectives

The purpose of this internship is to improve understanding and skills in the field of construction. The objectives of this internship are:

1. Application of Theoretical Science to Field Practice: Apply the concepts of quantity calculation, cost analysis, and project administration acquired during lectures to real-world situations in the field.
2. Technical capability development: Hone technical skills in project calculation and analysis. These goals include increasing accuracy and efficiency in data processing as well as cost estimation.
3. Improvement of Project Administration Skills: Understand and carry out the preparation of project documents, such as document verification processes, interim valuations, variation orders, and other documents.
4. Improved communication and collaboration skills: Learn to interact and collaborate with various parties in the work environment. These skills enable effective teamwork, problem-solving, and project management.

1.3 Scope of Internship

The scope of the internship encompasses a range of activities designed to foster the development of professional competencies in line with the field of expertise. The activities carried out include:

1. Calculation of Rebar Quantity on the Staircase of the Bukit Puchong New Town 4 Shop Office Project (BPNT4)
2. Calculation of Rebar Quantity on RC Coving Bukit Puchong New Town 4 Shop Office Project (BPNT4)
3. Calculation of Excavation Quantity in the Bukit Puchong New Town 4 Shop Office Project (BPNT4)
4. Calculation of Quantity of Concrete, Formwork, and Steel BRC A8 RC PLINTH TANK in the Bukit Puchong New Town 4 Shop Office Project (BPNT4)

5. Calculation of the Rebar Quantity of TNB Concrete Compact Substation (Upstand Beam) in the Bukit Puchong New Town 4 Shop Office Project (BPNT4)
6. Making a Pre-Qualification of Contractor for Tender on the BPNT 4 Shop Office project
7. Create an Appendix-D document list of drawings for the BPNT4 shop office project
8. CostX Software Usage
9. Glodon Software Usage
10. Meetings with teams and stakeholders
11. Assist in Creating, Checking, and Drafting IV, VO, and RFVA Documents on Alix Residence Projects