

INDUSTRIAL FIELD EXPERIENCE REPORT

IN CV. SHINAMO JAYA

**WORK OF THE DEVELOPMENT OF
EDUCATION AUTHORITIES, SATPOL PP AND
BPBD OFFICE BUILDINGS, PAYAKUMBUH CITY**



AUTHOR:

MUTIARA ASFY PUTRI

NIM: 17061100/2017

DEPARTMENT OF CIVIL ENGINEERING

BUILDING CONSTRUCTION VOCATIONAL EDUCATION (BCVE)

FACULTY OF ENGINEERING

UNIVERSITAS NEGERI PADANG

2020

FACULTY APPROVAL

*This Report Is Submitted to Fulfill Part of the Industrial Field Experience
(PLI) Completion Requirements Faculty of Engineering, State University of
Padang Semester July-December 2020*

Author:

Mutiara Asfy Putri

NIM: 17061100/2017

Department of Civil Engineering

Building Construction Vocational Education (BCVE)

Checked and Authorized By:

Supervisor

Totoh Andayono, S.T., M.T.

NIP: 19730727 200501 1 003

On behalf of the Dean of the Faculty of Engineering
Head of Industrial Relations Unit

Ali Basrah Pulungan, S.T., M.T.

NIP. 19741212 200312 1 002

INDUSTRY / COMPANY APPROVAL

*This Report Is Submitted to Fulfill Part of the Requirements
for Industrial Field Experience Completion (PLI),
Faculty of Engineering, Padang State University
Semester July-December 2020*

Author:
Mutiara Asfy Putri
NIM: 17061100/2017
Department of Civil Engineering
Building Construction Vocational Education (BCVE)

Checked and Authorized By:
Field Advisor / Project Manager

Haryadi Putra A.Md

Approved,
Director
CV. SHINAMO JAYA

MAIRIYOL FIRTONI

Curriculum Vitae

Personal data

Full Name : Mutiara Asfy Putri
Place/ Date of birth : Payakumbuh / 23 November 1999
Gender : Perempuan
Religion : Islam
Number of siblings : 3
Address : Jl. Gajah Mada no.36, Kel. Gn. Pangilun,
Kec. Padang Utara, Kota Padang

Education Data

Primary school : SD Negeri 28 Batang Anai
Junior high school : SMP Negeri 2 Payakumbuh
Senior High School : SMA Negeri 3 Payakumbuh
University : Department of Civil Engineering,
Faculty of Engineering
Universitas Negeri Padang

Industry Experience

Job Training Name : Pembangunan Gedung Kantor Dinas Pendidikan,
Satpol PP & BPBD Kota Payakumbuh
Location : Kota Payakumbuh
Date : 10 Agustus – 2 Oktober 2020

Padang , November 2020

Mutiara Asfy Putri
2017 /17061100

FOREWORD

Praise the author, convey to the presence of Allah SWT, who has bestowed His grace, gifts and guidance so that the author can complete the Industrial Field Experience (PLI) report, which was carried out at CV. SHINAMO JAYA in the Payakumbuh Education Office Building Construction Project, Satpol PP & BPBD Payakumbuh.

This report was prepared to meet the PLI course assignments' requirements in the Civil Engineering Department, Faculty of Engineering, Padang State University. This PLI report aims to report all activities carried out during the PLI activities in CV. SHINAMO JAYA. The preparation of this PLI report cannot be separated from the direction and guidance of various parties. For that, the author would like to thank:

1. Bapak Totoh Andayono, S.T., M.T., as the PLI Guide who has given time for guidance, direction, direction and advice in completing this PLI report,
2. Bapak Fitra Rifwan, S.Pd., M.T, as Academic Advisor,
3. Bapak Drs. Revian Bodi, MSA., as the Head of the Building Construction Vocational Education (BCVE) of Building Engineering, Faculty of Engineering, Padang State University,
4. Bapak Faisal Ashar, Ph.D., as the Head of Building Engineering, Faculty of Engineering, Padang State University,
5. Ibu Dr. Eng. Prima Yane Putri, S.T., M.T., as the Secretary of Building Engineering, Faculty of Engineering, Padang State University,
6. Ibu Risma Apdeni, S.T., M.T., as the UHI Coordinator of the Civil Engineering Department who has given time for guidance, directions, direction and advice in completing this PLI report,
7. Lecturers and staff of the Civil Engineering Department, Faculty of Engineering, Padang State University.
8. Mr. Haryadi Putra A.Md., as the project manager as well as the supervisor during his time in the field who has provided knowledge and information related to work for writing this report,

9. Nanda Darlis, S.T. and Ismail, S.Pd., as a field supervisor who has shared knowledge and skills, especially related to civil engineering, during the author's implementation of PLI,
10. All staff at CV. Shinamo Jaya and PT. Agoesindo Jaya Mahesa who is responsible for the Project for the Construction of the Office of the Education Office, Satpol PP and BPBD Payakumbuh City.

This report is far from perfect, but hopefully it will benefit its readers.

Padang, November 2020

Author

TABLE OF CONTENTS

BIODATA

FOREWORD

TABLE OF CONTENTS

LIST OF TABLES

PIG

PRELIMINARY

A. Project Description

1. Project Background

3. Project Benefits

4. Project Costs

5. Project Description

6. Project Location

7. Project Manager Work Relationships

8. Contractor Field Organization Structure

B. Writing Systematics

CHAPTER II

FIELD ACTIVITIES REPORT

A. Field Orientation by Supervisor

B. Implementation of Field Activities

C. Interesting Findings

CHAPTER III

CLOSING

A. Conclusion

B. Suggestions

BIBLIOGRAPHY

LIST OF PICTURE

- Figure 1. Project Location
- Figure 2. Employment Relationships of Project Managers
- Figure 3. Contractor Field Organization Structure
- Figure 4. Inclined *Scaffolding* Installation
- Figure 5. The cable is submerged in water
- Figure 6. Anti-Earthquake Rubber (*joint filler*)
- Figure 7. Installation of Light Steel Truss
- Figure 8. Reinforcement of Canopy Plates
- Figure 9. Installation of Handrail Brick
- Figure 10. Installation of Electrical Installations
- Figure 11. Installation of brick cuttings
- Figure 12. Installation of Ceiling and Ceiling Frames
- Figure 13. Installation of Non-Bonding Brick Walls
- Figure 14. Plastering work
- Figure 15. Acian Work
- Figure 16. Excavation Work of Septic Tank Hole
- Figure 17. Pactic Column Work
- Figure 18. Fin Column
- Figure 19. Ceramics Examination
- Figure 20. Installation of Kuzen and Windows
- Figure 21. Fabrication of Multiplex Partition Frames
- Figure 22. Installation of Partition Wall Frames
- Figure 23. Anti-Earthquake Rubber (*joint filler*)
- Figure 24. Fabrication of Steel Easel Frame

LIST OF TABLES

Table 1. Beam Dimension Table

Table 2. Column Dimension Table

CHAPTER 1

PRELIMINARY

A. Project Description

1. Project Background

The construction project of the Education Service Building, Satpol PP & BPBD of Payakumbuh City, is a project owned by the PUPR Office. This building will be used as an office occupied by the Education Officer on the 2nd Floor of the building, the BPBD & Satpol PP Office on the 1st Floor of the building. The Payakumbuh Education Service, Satpol PP & BPBD building construction project was established in a location adjacent to the Payakumbuh North Sub-District Office and opposite the Rendang City Payakumbuh Small Medium Industry Center (IKM) Office. On the left side of the building is the Payakumbuh New Market, a place for people to buy and sell transactions in the Payakumbuh economic cycle.

The Payakumbuh Education Office Building's construction phase, Satpol PP & BPBD project is running according to the agreed initial planning. Based on the Work Contract Agreement (Contract) Number: 05 / SPK-CK / PUPR-PYK / 2020, the task of implementing the work is given to CV. Shinamo Jaya with an offering value of Rp. 6,837,316,398, - with the Field Supervision Consultant by PT. Agoesindo Jaya Mahesa.

The procurement process is carried out using the Direct Selection e-Auction method. Each contractor company is allowed to bid for the amount of the project implementation budget. Through fair competition among contractors who are truly capable and meet the administrative, technical and financial requirements to carry out the project. The evaluation method used is the knockout system, while the type of contract is the unit price contract. The development of this project is sourced from APBD funds for the 2020 fiscal year. Then a public auction was held, followed by several partnerships, and this auction was won by cv. Shinamo Jaya with an offering value of Rp. 6,837,316,398, -.

2. Project Objectives

The project for the construction of the Education Service Office Building, *Satpol* PP and BPBD is intended as an infrastructure that will support government agencies such as the Education Office, *Satpol* PP and BPBD. Apart from being the infrastructure for government agencies, the purpose of building 3 (three) government agency offices in 1 (one) same building is to make it easier for the community to reach public services by only visiting 1 (one) location..

3. Project Benefits

The benefits of this project for the construction of the Education Service Office Building, *Satpol* PP and BPBD are

- a. Government agency infrastructure
- b. Public service infrastructure
- c. Make it easier for people to access public services
- d. Improve the economy of local communities who work as traders, given the project location, which is in a market area.

4. Project Costs

Overall, the Education Office Building Construction Project, *Satpol* PP and BPBD cost Rp. 6,837,316,398, -. The Project for Construction of the Office of the Education Office, *Satpol* PP & BPBD is carried out by CV. Shinamo Jaya with the 2020 APBD funding source.

5. Project Description

Adapun data proyek dari pembangunan Gedung Kantor Dinas Pendidikan, *Satpol* PP & BPBD adalah sebagai berikut:

a. General Information:

Name of Project : Construction of Education Service Office Building, *Satpol* PP & BPBD.

Location of Project : Pasar Padang Kaduduak Area, Kel. Tigo Koto Diate, Kec. Payakumbuh Utara, Kota Payakumbuh

Owner : PUPR

Planning consultant : CV. Grayasa Cipta Paramuda

Supervising consultants : PT. Agoesindo Jaya Mahesa

Contractor : CV. Shinamo Jaya

Source of funds : APBD 2020

Contract value : Rp. 6.837.316.398,-

Building area : 1.052,4 m²

Implementation time : 270 Calendar Days

b. Contractor Information

Name of Project : Construction of Education Service Office Building, *Satpol* PP & BPBD.

Location of Project : Pasar Padang Kaduduak Area, Kel. Tigo Koto Diate, Kec. Payakumbuh Utara, Kota Payakumbuh

Contractor : CV. Shinamo Jaya

Source of Funds : APBD 2020

Number of Contract : 05/SPK-CK/PUPR-PYK/2020

Implementaion time : 270 Calendar Days

Contract Value : Rp. 6.837.316.398,-

Scope of work : 1) Preparatory work
2) Foundation work
3) Concrete Works
4) Wall and Partition Work
5) Ladder Work
6) Kuzen, Doors and Windows Work
7) Water and Electrical Installation Work
8) Horses and Roof Work
9) Ceiling Work
10) Floor Work
11) Paint Job

c. Technical Information

Structure Type	:	1) Reinforced concrete 2) Light Steel
Foundation Type	:	1) Bor Pile 2) Local Plate 3) River Stone
Concrete Quality	:	1) K-225 for Floor Plate 1 and Beams Floor 1 (Ready Mix) 2) K-225 for foundations, structural columns, Main Beams Lt. 2 (Site Mix) 3) K-175 for Practical Column. 4) K-100 Cast Concrete for work floors.
Steel Grade	:	1) BJTD 40 Threaded Steel 2) 2) BJTP Plain Steel 24
Steel Profile	:	1) U TYPE 1,45 TCT 2) CT. 75.75 3) Hollow 40.40
Sloof measure	:	S.1 (25 × 40 cm) S.2 (15 × 20 cm)
Block Size	:	B.1 (30 × 60 cm) B.2 (30 × 45 cm) BA.1 (20 × 30 cm) BA.2 (25 × 40 cm) BA.3 (15 × 25 cm) BA.4 (15 × 25 cm) RB.1 (13 × 15 cm) RB.2 (20 × 30 cm) BP (13 × 15 cm) BK (13 × 15 cm) BK' (13 × 20 cm)
Column Size	:	K.1 (40 × 50 cm) K.2 (40 × 40 cm) K.3 (25 × 25 cm) KS (40 × 9 cm) K.1' (30 × 40 cm) K.2' (30 × 30 cm) K.3' (30 × 30 cm)

	K.P (13 × 13 cm)
Plate Size	: Pelat Lantai (12 cm) Pelat Kanopi (8 cm)
Building area	: 1.052,4 m ²

6. Project Location

The Project for the Construction of the Education Office Building, Satpol PP & BPBD is located in the Padang Kaduduak Market Area, Kel. Tigo Koto Diate, Kec. Payakumbuh Utara, Payakumbuh City.

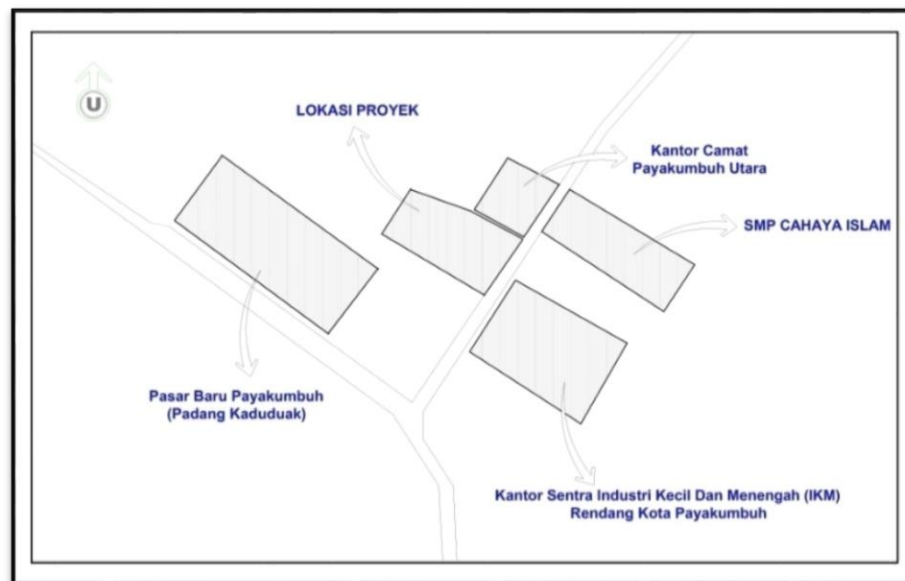


Figure 1. Project Location

Source : Google Earth

7. Project Manager Work Relationships

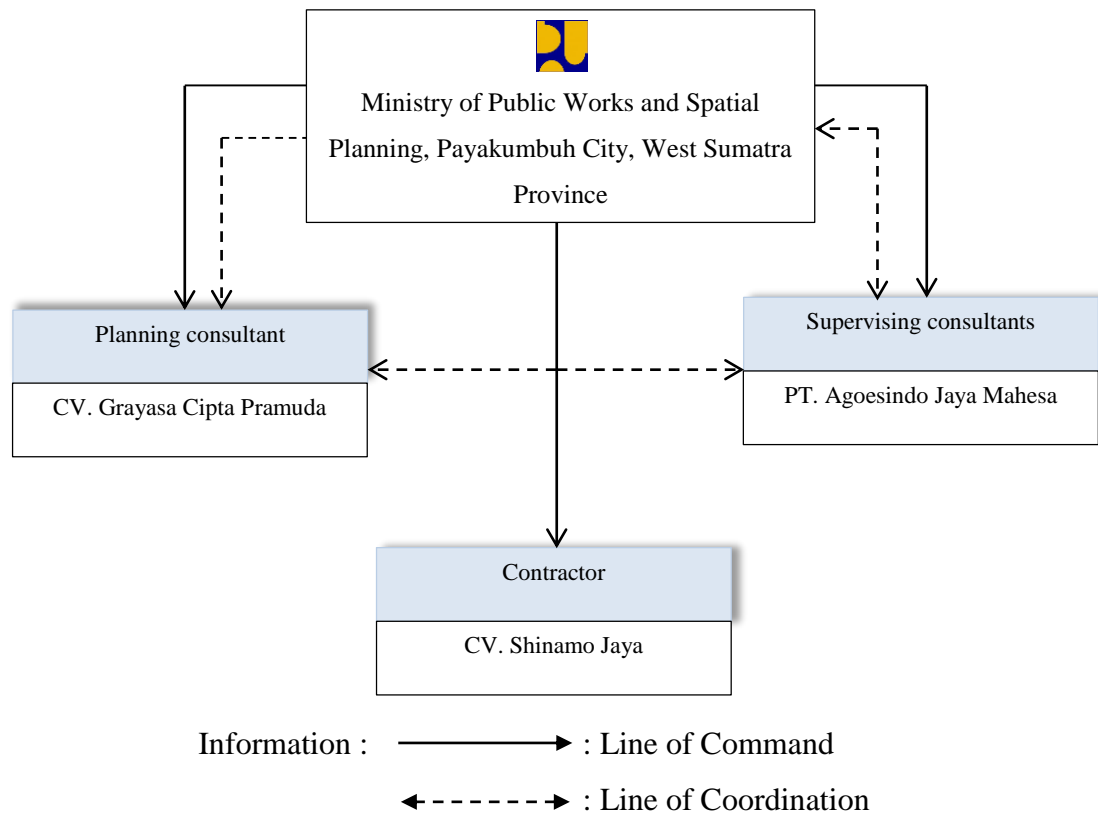


Figure 2. Project Manager Work Relationships

Source: Project Contract Document

Based on the picture of the project manager's work relationship above, the duties and responsibilities of each project element can be described, including:

The Public Works and Spatial Planning Office of Payakumbuh as the owner of this project, has the authority to appoint a Supervisory Consultant and Contractor service provider, request periodic reports on the implementation of project work to the Supervisory Consultant, provide and then pay to service providers, participate in supervising implementation work and receive and validate work that has been completed by the service provider. In this project, PT. Agoesindo Jaya Mahesa was appointed as the Supervisory Consultant and CV. Shinamo Jaya was selected as the managing contractor.

CV. Grayasa Cipta Paramuda is the selected Planning Consultant who is responsible for planning and building design according to the wishes of the project owner. The Planning Consultant has the task of making a complete plan (drawing plans, work plans and requirements, calculating the structure and cost budget plan), explaining to the contractor about things that are deemed unclear in planning and making revised drawings in the field.

PT. Agoesindo Jaya Mahesa is the Supervisory consultant in this project. The responsibility of the Supervisory Consultant for the implementation of field work is to supervise the implementation of work within a predetermined time, conduct periodic supervision, and compile daily, weekly and monthly progress reports.

CV. Shinamo Jaya is a Implementing Contractor whose job is to carry out work according to the plan drawings and conditions that have been submitted by the owner, make implementation drawings, make reports on work results (daily, weekly and monthly) to the Supervisory Consultant, provide work safety equipment (K3), understand design drawings, concepts and specifications as a reference for project implementation, make daily work programs, lead and control the construction implementation and work implementation schedule with site engineering and structural engineering, and make evaluations and reports on the results of work in the field.

8. Field Organization Structure of the Contractor

The organizational structure is an arrangement of various components or work units in an organization. In the construction project of the Education Office Building, Satpol PP & BPBD. CV. Shinamo Jaya has established an organizational structure, including:

ORGANIZATIONAL STRUCTURE (FIELD)

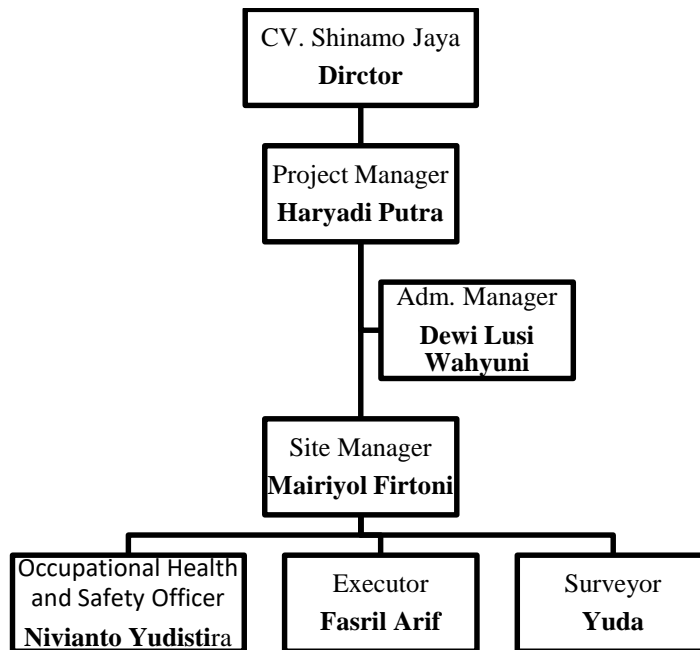


Figure 3. Field Organization Structure of the Contractor

Source: Project Document

The following is a description of the duties and responsibilities of each person, which are described as follows: The highest organizational structure in the field lies with the Director, where the Director serves as a coordinator, communicator, decision-maker, manager, the person in charge and the prominent leader in the implementation of this project. The project manager is the person appointed to move the project organization and lead it in field implementation; besides that, it is tasked with making project implementation plans, attending coordination meetings, showing the performance and control of project implementation, evaluating the results of work implementation activities, being accountable for profit-loss calculations. Project and make reports (work progress, staffing, finance, equipment, material supplies, accountability reports to the project owner and the leader (Director). The administration manager is responsible for providing all administrative equipment needs and office equipment to support the smooth running of construction projects, assisting the chief executive of the project and coordinating and overseeing project

administration. The site manager is the project manager's assistant who has tasks in technical and material planning, including providing all shop drawings, making the necessary construction calculations, determining the technical data specifications for materials and work volume and making the method of implementation and work time required. K3 Construction officers are tasked with coordinating and directing occupational health and safety activities, preparing the tools needed to support occupational health and safety in the project, coordinating with the project manager regarding K3 (Occupational Health and Safety) and being responsible for the health and safety of workers. Work on the project. The executor has the duty and obligation to understand the responsibilities and implementation contract documents, make work implementation plans, study shop drawings, organize, monitor, evaluate the implementation of work operations, check the performance results in their fields and create reports on the results of implementation periodically. The surveyor has the task of measuring and mapping the situation, measuring the details of the case and calculating the coordinates and height of horizontal and vertical benchmarks..

B. Writing Systematics

In the preparation of this Industrial Field Practice Report, it consists of three Chapters which in outline contain the following:

TITLE PAGE

FACULTY APPROVAL PAGE

INDUSTRIAL APPROVAL PAGE

BIODATA

FOREWORD

TABLE OF CONTENTS

LIST OF PICTURE

LIST OF TABLES

APPENDIX LIST

CHAPTER I INTRODUCTION

A. Project Description

1. Project Background
2. Project Objectives
3. Project Benefits
4. Project Costs
5. Project Description
6. Project Location
7. Project Manager Work Relationships
8. Contractor Field Organization Structure

B. Writing Systematics

CHAPTER II REPORT ON FIELD ACTIVITIES

- A. Field Orientation by Supervisor
- B. Implementation of Field Activities
- C. Interesting Findings

CHAPTER III. CLOSING

- A. Conclusion
- B. Suggestions

BIBLIOGRAPHY

ATTACHMENT

CHAPTER II FIELD ACTIVITIES REPORT

A. Field Orientation by Supervisor

Environmental orientation was carried out starting from the introduction with the staff of CV. Shinamo Jaya and PT. Agoesindo Jaya Mahesa and see first hand the location where the project is implemented. After that, an explanation of various things related to the technical rules in the project is carried out by the supervisor in the field.

The supervisor also introduces ongoing activities in the area and explains the various types of work and the stages of implementation of the work. Authors are also allowed to ask questions if there is something that is not yet known. The author finds various types of work in the field that workers are doing; the work is carried out based on specifications and contract letters that have been approved so that the work is following predetermined procedures.

1. Introduction of K3 Project environment

Office Building, Satpol PP & BPBD of Payakumbuh City, the provisions of Occupational Health and Safety (K3) management are not paid much attention safety is only controlled at the beginning of project implementation.

The scaffolding used by the workers is not installed correctly (tilted), which can create a risk of work accidents. When the lightweight steel roof truss assembly process, the workers ignore the electric current connecting cables connected to the tool; this can cause work accidents. Workers are required to be careful in doing their work. In the event of a work accident, the company has registered all of the workers in an occupational health care facility (BPJS Kesehatan) so that workers who experience work accidents can be handled properly.



Figure 4. Inclined Scaffolding Installation
Source: Personal Documentation



Figure 5. Submerged cable
Source: Personal Documentation

2. Understanding of the Bidding Process

During the implementation of the Industrial Field Practice, the author understood the auction process for a project tender, namely through the website: lpse.payakumbuhkota.go.id. The qualification data for the implementing contractor will be uploaded via the website; then, the tender participants will upload the qualification data needed on the website and wait for the announcement of the tender winner on the website. All auction processes are carried out online after the tender winner is announced.

Furthermore, there will be another selection for the supervisory consultant. In the Project for the Construction of the Office of the Education Office, Satpol PP and BPBD of Payakumbuh City, the

announcement of the auction is made in general, namely announced through the official website of the Ministry of Finance's Electronic Goods and Services Procurement Agency (LPSE), online via the website: lpse.payakumbuhkota.go.id TED en Before implementing the project, the owner (Public Works and Spatial Planning Office) prepares the auction, which will be participated by several contractors. The purpose of this stage is to show the contractor as an executor or some contractors as sub-contractors who carry out construction in the field. Here are the steps of the bidding:

a. Announcement of Prequalification

Prequalification is the process of assessing business competence and capability and meet company requirements before submission of bid documents. In an auction using the prequalification method, participants who have registered for the auction must first send (upload) qualification data on the website: <https://eproc.pu.go.id>. Participants who pass their qualification data will continue at the next stage.

b. Registration and Retrieval of Procurement Documents

Procurement documents are the primary reference for auction participants in preparing and submitting bid documents and being the direct reference for the auction committee in evaluating and evaluating all bids it receives from each bidder. Therefore, as a manifestation of the principle of transparency in procuring goods and services, the procurement document must be given to all prospective tender participants to serve as a guide in preparing the bid document, and its contents must be explained in a document explanation event (Aanwijzing).

c. Giving an explanation (Aanwijzing)

Aanwijzing is an initial explanation before work or a tender that will be carried out regarding the work's technical details, such as RKS (Work Plan and Conditions), Work drawings, RAB (Budget Plan) and others. Aanwijzing is a question and answer stage between the contractor and the assignor/project owner and planning consultant regarding the requirements needed and the specifications used and used as a reference in making bids.

d. Submission or submission of Bid Documents

Bid submission or submission of bids by auction participants to the auction committee can be carried out starting one working day after the date of explaining (Aanwijzing). Acceptance of the bid documents is closed no later than seven working days after the date of explaining (Aanwijzing).

e. Opening of Bid Documents

The opening of bid documents is an essential stage of procurement. At this stage, all providers of goods and services who submit their bids are present to witness the opening one by one of the bid documents that have been submitted and seen by all participants present.

f. Evaluation of Bidding Documents

Bid document evaluation examines and evaluates all bid documents submitted by prospective contractor service providers. The most widely used bidding document evaluation system is the weight/scoring system. From this weight/scoring system that will be assessed are:

1) Arithmetic Correction

Arithmetic Corrections are corrections to the volume of work in the bid document, as stated in the tender documents.

2) Administrative Evaluation

Administrative Evaluation is carried out on bids that meet the requirements at the opening of the proposals and evaluated for the completeness and validity of administrative requirements.

3) Technical Evaluation

Technical Evaluation is carried out on bids that pass administration. The evaluated factors must comply with the criteria set out in the procurement document.

4) Price Evaluation

Price evaluation is carried out only for bids that have passed/fulfilled administrative and technical requirements; the auction committee shall list the order of bids starting from the lowest bid price and propose the lowest bid as a potential winner.

g. winner announcement

After all stages of the tender have been carried out, a winner will be obtained from the tender, who will later work on the project.

3. Understanding Related to the Terms in the Work Contract

In the work contract, many technical terms are not familiar to the general public. The author then understands relevant technical terms like environment that is rarely known as residence or campus environment.

4. Understanding the Supervisory Consultant's Duties

The task of the supervisory consultant is hazardous if it is not given to people who do not understand the duties and responsibilities of a supervisory consultant; this is because the supervisory consultant must be careful in paying attention to every work item that the implementing contractor has carried out.

The implementing consultant must also pay attention to the specifications of the materials used in the implementation must be following the specifications of the materials that have been agreed upon in

the contract. If there is a mismatch between the work in the field and the initial planning, the implementing consultant has the right to instruct the demolition solution so that there is no structural failure.

B. Implementation of Field Activities

whether the project in question is suitable to be used as a place of practice or not. If the project data is following the conditions determined, then proceed with submitting proposals to the faculty and arranging a letter of approval from the company where the PLI is implemented. After the processing of the letters is complete, the author can carry out PLI activities according to the predetermined time. This industrial field practice is carried out starting from August 10, 2020, to October 2, 2020.

The process of implementing field activities is relatively short, namely with a time of 8 (eight) weeks, so the process of implementing field activities in the Education Office Building Construction project, Satpol PP & BPBD Payakumbuh City, can the authors explain, among others:

1. Studying Working Drawing

The implementation of field activities or the Industrial Field Experience (PLI) aims to add insight and apply the knowledge gained during lecture activities. PLI activities help optimize new experiences gained while in the field. Before practising in the area, the author first participates in training (coaching) to understand and study the requirements for implementing field practice, which the faculty and department carry out.

After passing the coaching, it is followed by making observations on the development project that is being implemented. These observations aim to obtain project data needed to carry out PLI activities, and Working drawings help provide information about the shape, structure and details of the building being built. Through bestek pictures, the author first learns about planning drawings, then studies the specifications of the materials and materials used. If there are things that are not known, the author is also

allowed to ask questions and consult with engineering, drafter and supervisors regarding shop drawing

2. Understanding of Hanging Beams, Mother Beams and Child Beams

A hanging beam is a beam structure work that does not use a pair of walls underneath to support the load. The main shaft is a building structure that rests on the structural column, while the joist is a building structure that rests on the main beam.

The author understands how to analyze the planning of the main beam and the joist for the 2nd-floor structure. If the owner wants the post not to be used for the 2nd floor, a re-planning will be carried out on the floor plate. Reinforce the floor slabs by changing the reinforcement and thickness of the floor slabs. The following are the beam sizes used in the implementation of this project:

Table 1 . Beam Dimension Table

No.	Elevation	Block Name	Beam Type	Dimension (mm)
1.	-0.50	S1	Sloof	250 × 450
		S2	Sloof	250 × 450
2.	+1.65	BP	Waist Block	130 × 150
3.	+2.20	BK	Console Beams	130 × 150
4.	+2.50 and +2.73	BK	Console Beams	130 × 150
5.	+2.78	BK '	Console Beams	130 × 200
6.	+2.93	BK '	Console Beams	130 × 200
7.	+3.20	BA.1	Children's Block	200 × 300
8.	+3.53	BK '	Console Beams	130 × 200
9.	+4.09	B.1	Main beam	300 × 600
		B.2	Main beam	300 × 450
		BA.1	Children's Block	200 × 300
		BA.2	Children's Block	250 × 400
10.	+4.77	RB.1	Block battens	130 × 150
11.	+6.06	BP	beams Waist	130 × 150
12.	+6.34	BK	Console Beams	130 × 150
13.	+6.87	BK	Console Beams	130 × 150
14.	+6.92	BK '	Console Beams	130 × 200
15.	+7.39	BA.1	Children's Block	200 × 300
		BA.3	Children's Block	250 × 400

		BA.4	Children's Block	150 × 250
		BP	beams Waist	130 × 150
16	+8.14	RB.1	Block battens	130 × 150
		RB. 2	Block battens	200 × 300

Source: Project Data

3. Anti Earthquake Rubber (join filler / dilatation)

Seismic rubber (joint filler/dilatation) is designed to absorb expansion and contraction caused by heat from adjoining building structures. This dilating rubber serves to absorb vibrations in certain parts due to ground movement or earthquakes..



Figure 6 . Rubber Anti Earthquake (dilatasi / joint filler)

Source: Personal Documentation

4. Installation of Light Steel Truss

In the installation of roof truss, the type of mild steel used is Truss. C.100 size 100 × 35 × 0.65 mm, Truss. C.75 75 × 35 × 0.65 mm, TCT Reng size 58 × 30 × 20 × 0.5 mm grooved and Elbow (L) Plate size 100 × 80 × 50 × 1.6 mm with the trademark Taso. In the light steel truss section, two layers of armor are installed, this is due to withstand the load of the roof structure with a very large span without the support of the columns or beams underneath.

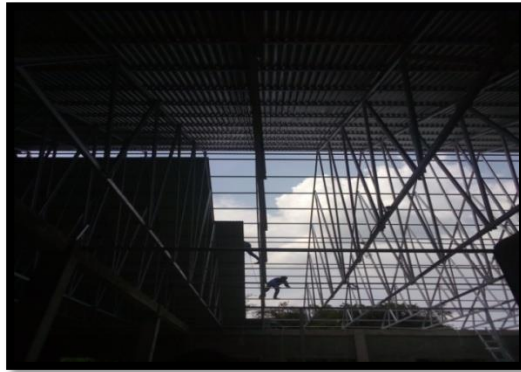


Figure 7 . Installation of Light Steel Truss

Source: Personal Documentation

5. Canopy Plate Reinforcement Works

In the canopy plate reinforcement, the work carried out is very much in accordance with the planning drawing (shop drawing), both from the type of reinforcement used, the distance between the reinforcement and the bending of the canopy plate reinforcement hooks with the consul beams are made very according to the initial plan.



Figure 8 . Canopy Plate Reinforcement

Source: Personal Documentation

6. Handrail Stairs

The stair handrail in this project uses masonry. Before bricklaying work, handrail reinforcement was first carried out which functions to withstand shear forces and then a brick profile was installed as a benchmark for brick laying.

There was an error that occurred in the implementation of this handrail masonry work, the worker laid bricks with a descending groove in the direction of descending the stairs, while the correct implementation was to install flat in accordance with the provisions of the masonry masonry. If this is left unchecked it can result in construction failure caused by the bricks not bonding together. The best solution to anticipate failure of this structure, is to re-demolish and install masonry according to the provisions that should be implemented

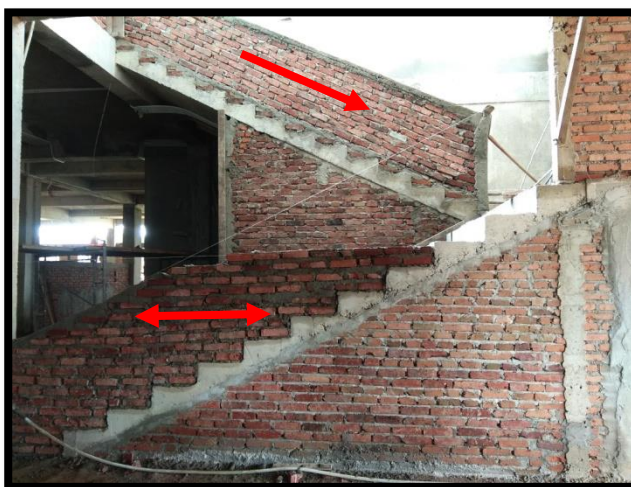


Figure 9 . Handrail Brick Installation

Source: Personal Documentation

7. Electrical Installation

Electrical installation work is a building utility work used to transmit electricity from a power source to equipment that requires electricity. After the structural work is complete, it can be continued with the installation of electrical installations. The structure of electrical installations is an

essential work item in supporting indoor lighting and electricity distribution for jobs that use electricity.



Figure 10 . Electrical Installation

Source: Project Documentation

8. Installation of Brick Cuttings

In the installation of the column, the structure is given reinforcement by using reinforcement (anchors) which functions as a reinforcement of the relationship between the column and the brick wall. Brick cuttings (anchor) are generally installed every 1 m height of the wall.

In the construction project of the Office Building, the columns of the structure are formed in a small basin according to the size of the brick. This is also done to reinforce the walls so that they are more binding on the columns during installation.



Figure 11 . Installation of Brick Cuttings

Source: Personal Documentation

9. Installation of Ceiling and Ceiling Frames

A ceiling or ceiling is a part of the building located above the floor and has a certain distance from the floor. For multi-storey facilities, the ceiling is located under the floor structure above it. Ceiling or ceiling function:

- a. Aesthetics, to cover the space next to the floor (non-storey building) so that the roof construction (roof frame), including beams, is not visible.
- b. As a divider for the upper room.
- c. Technically, to put electrical installations (electric cables), water installations (water pipes) or other installations (for multi-storey buildings, there are piping for sprinklers and air conditioning), hang the light bulbs.
- d. Acoustics will function as sound absorbers, both sound from outside the building or sound from inside the building/room, to reduce the sound of rainwater falling from the roof (especially metal roofs).

The ceiling construction consists of two parts, namely:

Ceiling frame construction, which includes a frame and hanger.

Ceiling cover.

In this project, the ceiling frame uses mild steel material type Hollow 40.40, and this ceiling frame is attached to the floor plate using a ramset.

Ramset is a piece of prayer equipment used to perforate hard surfaces such as concrete surfaces. The installation of the ceiling frame is adjusted to the existing plan in the shop drawing is with a size of 60x40 cm.

After the ceiling frame installation is complete, the next step is to install the ceiling cover. The covering material used is a Gypsum Panel with a size of 1.2x2.4 m and a thickness of 9 mm..



Figure 12 . Installation of Ceiling and Ceiling Frames

Source: Personal Documentation

10. Brick Wall Installation

Wall works in the Education Office Building, Satpol PP, and BPBD of Payakumbuh City use red brick walls, which are commonly used in wall work. Brick-wall installation work is the same as bricklaying in general. Still, at the intersection of brick walls (without columns), cross-brick installation must be carried out so that the brick walls bond together and as reinforcement to minimize structural failure.

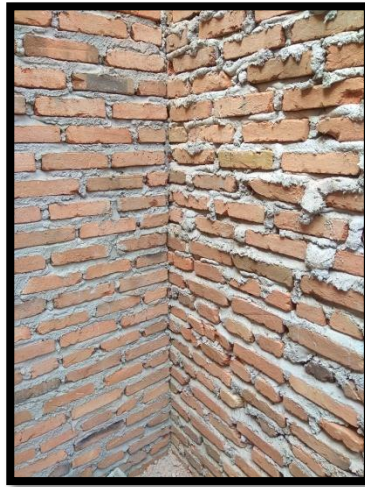


Figure 13 . Non-Bonding Brick Wall Installation

Source: Personal Documentation

11. Plastering Work

Wall works in the Education Office Building, Satpol PP, and BPBD of Payakumbuh City use red brick walls, which are commonly used in wall work. Brick-wall installation work is the same as bricklaying in general. Still, at the intersection of brick walls (without columns), cross-brick installation must be carried out so that the brick walls bond together and as reinforcement to minimize structural failure.



Figure 14 . Plastering work
Source: Project Documentation



Figure 15 . Refinement work

Source: Project Documentation

12. *Septic Tank Work*

Septic Tank is a pool or tub that is partitioned so that it is divided into several spaces, usually underground. The septic tank is a disposal place that is made of watertight material so that the water in the septic tank cannot seep into the ground. The initial work of the septic tank work is to do the excavation in advance according to the plan on the shop drawing ..



Figure 16 . Septic Tank Excavation Works

Source: Personal Documentation

13. Practical Column and Fin Column Work

A practical Column Is a column that serves to help the central column and as a wall fastener to stabilise the wall. Practical column work is installed together with the masonry, namely in every 9 - 12 m². Besides, applicable columns are also

installed at the meeting of masonry (corners), door and window openings, and other needs. Practical column dimensions 15/15 with 4d10 concrete reinforcement.

In practical column installation, it should bind with the beam structure above it. Still, the author found a field phenomenon where the column is practically not linked to the beam structure above it. This is because the fabrication of column reinforcement is almost carried out not in conjunction with the support of other systems.

The fin column is a column that stands out from the building structure, generally used as a building aesthetic. Here are the column sizes used in this project:

Table 2. Column Dimension Table

No.	Floor	Column Name	Dimension (mm)
1	Ground floor	K. 1	400 × 500
		K. 2	400 × 400
		K. 3	250 × 250
		KP	130 × 130
2	2nd floor	K. 1	400 × 500
		K. 2	400 × 400
		K. 3	250 × 250
		KP	130 × 130
		KS	400 × 90

Source: Project Data

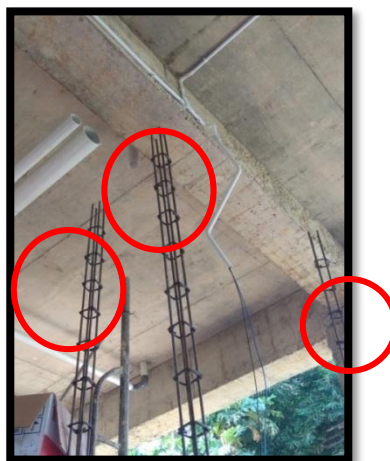


Figure 17 . Practic Column Work

Source: Personal Documentation



Figure 18 . Fin Column

Source: Personal Documentation

14. Floor and Wall Ceramic Work

The floor is the basic part of a room, which has an important role in strengthening the existence of objects in space. The function of the floor in general is: supporting activities in space and forming the character of the space.

At the time of the implementation of the industrial field practice, the writer got the task to check the floor and wall ceramic work . This check is carried out to find out whether there is a wrong installation of the ceramic or not filled with cement mortar (paste). If the ceramic is not filled with paste, it will not stick to walls or floors. Ceramics that are not filled with cement paste can be checked by tapping the ceramic that has been installed, if it sounds loud, it can be ascertained that the ceramic is not evenly filled with the paste .



Figure 19 . Ceramic Inspection

Source: Personal Documentation

15. Installation of Kuzen and Window Glass

Kuzen is a part of building construction that functions to form a relationship, either between a masonry wall, concrete or wood with a window door. In the construction project of the Office of Education, Satpol PP and BPBD of Payakumbuh Kuzen, the windows used are made of aluminum which is in accordance with SII extrusion 0695-82.



Figure 20 . Kuzen and Window Installation

Source: Personal Documentation

16. Natural Stone Installation

To get the aesthetics of the building, natural stone was installed on the columns that protrude on the outside of the building.

17. Partition Wall Work

Partition wall work is a room dividing work, in the construction project of the Office of Education, Satpol PP & BPBD of Payakumbuh City

the partition space uses multiplex building materials with a thickness of 12 mm and a plywood material partition covering with a thickness of 9 mm. This partition wall work consists of 3 jobs, namely: partition frame fabrication, partition frame installation and partition cover installation.



Figure 21 . Multiplex Partition Frame Fabrication

Source: Personal Documentation



Figure 22 . Partition Wall Frame Installation

Source: Personal Documentation

C. Temuan Menarik

C. Interesting Findings

When doing field practice in the construction project of the Office of Education Building, Satpol PP & BPBD of Payakumbuh City, the author found things that were considered interesting, including the following:

1. Anti Earthquake Rubber (*Joint Filler / Dilation*)

Seismic rubber (*joint filler / dilatation*) is designed to absorb expansion and contraction caused by heat from adjoining building structures. This dilating rubber serves to absorb vibrations in certain parts, due to ground movement or earthquakes.

This Dinas Office project consists of 2 buildings at the meeting point of the building fitted with dilated rubber. This dilation rubber is used for minimalisir adverse effects if one day the earthquake and kem u ngkinan worst there was the failure of the structure, then this dilatation dsisasati with rubber so that no direct meeting tertabrakan concrete.



Figure 23 . Rubber Anti Earthquake (*dilatasi / joint f Iller*)

Source: Personal Documentation

2. Fabrication of 2 layers of lightweight steel roof truss

In the construction project of the Office of Education, Satpol PP & BPBD of Payakumbuh City, the type of mild steel used for roof truss is Truss. C.75 75 × 35 × 0.65 mm, TCT Reng size 58 × 30 × 20 × 0.5 mm grooved and Elbow (L) Plate size 100 × 80 × 50 × 1.6 mm with the trademark Taso.

When conducting field observations of the project the author was interested in the installation of lightweight steel trusses that were not supported by beams or columns on the 1 / 2L section of the truss where the planned truss span was quite large. After memplajari image perencan a late

and in consultation with the Project Manager, Planning fabricated mild steel easel is made of two layers to add steel reinforcement to 2 times greater than the burden of the load that could be supported.



Figure 24 . Steel Easel Frame Fabrication

Source: Personal Documentation

CHAPTER III

CLOSING

A. Conclusion

After following, implementing and observing the work in the field while participating in PLI (Industrial Field Experience) activities in the construction project of the Payakumbuh Education Service Office Building, Satpol PP & BPBD Payakumbuh City, and based on the previous discussion, the authors can conclude the following:

1. The process of pre-project implementation is generally made up , feasibility studies, the explanation phase, design phase and the tender process.
2. The implementation stage aims to realize the work that has been detailed or is in the contract. This stage generally begins with the work of pen gukuran by surveyors, Work Preparation , Job Piling , Concrete Work , Works Walls and Partitions , Work Ladder , Employment Kuzen, Doors and Windows , Installation Works Water and Electricity , Work Horses and Atas, Ceiling Work , Floor Work , Paint Work .
3. The supervision stage is an important stage related to quality control and the duration of work by checking / seeing the field every day whether it is in accordance with the plan or not.
4. During the PLI activities in the construction project of the Office of Education Building, Satpol PP & BPBD of Payakumbuh City, the author noticed that there were several implementations that were not in accordance with the work drawing (shop drawing), which should be avoided because it could lead to work accidents or structural failure.

B. Suggestion

The suggestions that the author can convey after carrying out Industrial Field Practice (PLI) activities include:

1. Students who will carry out Industrial Field Practices must be able to socialize and adapt in carrying out PLI activities. Discuss and consult with all parties in the project.
2. The experiences that students get during the lecture process are sometimes different from those obtained during the PLI time, for that students should pay attention to the work carried out in the field and then compare it with what has been determined and studied

during the lecture process. This aims to make students serious and not feel bored during the PLI time.

3. In carrying out Industrial Field Practices in a project, students are expected to be able to pay attention to and apply Occupational Health and Safety (K3) regulations on the project, to protect themselves and minimize accidents. Before carrying out work, it is necessary to emphasize land acquisition.

4. Increasing K3 on the project is needed because the project is the Office of Education, Satpol PP & BPBD Payakumbuh City , resulting in the risk of falling materials or objects that will fall on the workers.

BIBLIOGRAPHY

- Amin, Mawardi, & Agus Susanto. (2015). " *Study the quantity surveyor at the pre-contract and post-contract stages* ". Civil Engineering Journal (Volume IV No.1, February 2015).
- CV. Shinamo Jaya. (2020). *Contract Documents for the Project for the Construction of the Office of the Education Office, Satpol PP & BPBD Payakumbuh City*. Payakumbuh: CV. Shinamo Jaya
- Ervianto, IW 2005. *Revised edition of Construction Project Management* . Yogyakarta: Andi
- Rani, Hafnidar A. *Construction Project Management* . Yogyakarta: Soeharto's deep publishing, faith. 1999. Project Management. Jakarta: Erlangga Publisher

1

A.