

Supervision of the River Stone Foundation Work of the Canggü G-17 Housing the Sanata Village PT. Yudistira Alfian Sanjaya

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Abstract

This paper examines the implementation of river stone foundation work on The Sanata Village housing development project located on Jalan Halim Perdana Kusuma, Cemorokandang Village, Kedungkandang District, Malang City. The report contains several work scopes observed during the Work Practice Internship (MPK). The scope includes the entire progress of work implementation in the project area such as foundation work activities, preparatory work, and column work. This internship aimed to apply student theory and expertise in civil engineering, serving as an observation process and experience to become part of the construction project team. Observations during the internship yielded results related to the foundation work process from planning stage to field implementation. Additional supporting elements include the project management system and Occupational Safety and Health (K3) controls for project activities. Project activities are operational tasks targeted according to the time schedule in control planning. Therefore, implementing a project management system is necessary to ensure a quality and efficient development project.

Keywords: Foundation Work, Project Management, K3

1. Introduction

A construction project is a series of activities that are only carried out once and generally have a short period of time. In this series of activities, there is a process that processes project resources into a result of activities in the form of buildings. In addition, construction projects have three characteristics, namely unique, requiring resources and requiring organization (Waluyo & Aditama, 2017). In the construction project there are five resources, namely materials, people, methods, machines and money (funds) or known as 5M (Waluyo & Aditama, 2017).

The development of the construction field is currently very rapid in which various kinds of large-scale projects have been built. The development projects that are carried out have a series of interrelated activity processes. The use of practical, precise, and safe implementation methods makes the completion of work easier for construction projects. Thus, the cost, time and quality targets that have been determined can be achieved (Sutanto et al., 2021). This is because from the implementation time, procedures and time duration arrangements are arranged in such a way that the project is completed according to the specified time.

In construction planning, there are several types, namely building construction planning, house construction planning, civil construction planning, and industrial construction planning. One of the current developments in construction projects is the construction of houses. In the Work Practice Internship in the 2-storey residential house construction project of PT. Yudhiatira Alfian Sanjaya has



an area of $\pm 29,536 \text{ m}^2$. A house or residence is a basic human need. As the population increases, the need for housing is increasing due to the growing population (Matasik, 2020). In the construction of a 2-storey house, it starts from preparatory work to finishing work. The majority of multi-storey building work in general is reinforced concrete structures (Talimbo et al., 2016).

Structural work encompasses the components that make up a building, such as foundations, sloofs, walls, columns, rings, easels, and roofs. Each part of the building structure has its own function and role. A sloof is a structural element located on top of the foundation that functions to distribute loads evenly across the foundation. Another function of the sloof is to secure the wall, preventing collapse if soil shifting occurs. This ensures the wall rests on a strong structure, preventing settlement and movement that could result in cracking or breakage. Columns are building structure components that support vertical axial loads, with a height that is at least 3 (three) times their smallest lateral dimension. Column structures are made of reinforcing steel and concrete, creating an effective combination of properties steel provides tensile strength, while concrete provides compressive strength.

2. Literature Review

Some construction projects often experience delays due to their own complexity. Time is one of the important aspects of project management in addition to cost and quality (Buya et al., 2022). A project must have a duration or time limit. The project must be completed according to the specified schedule. Therefore, from the results of direct observation of the housing development project of The Sanata Village, there is a possibility of delays that must be handled because it can affect several aspects such as labor, time, cost, and implementation methods. In this case, there are problems during the implementation of work in the construction project area.

3. Methods

In this study, data were collected from books, journals, scientific articles, and literature reviews that discuss relevant concepts and findings. The research employs a qualitative method with a descriptive approach to analyze the collected data (Sugiyono, 2016). The data were examined by reviewing related journals to identify the most relevant and sufficiently relevant research findings in terms of program implementation, program reporting, program dissemination, program planning, occupational health and safety, as well as operational management and program design.

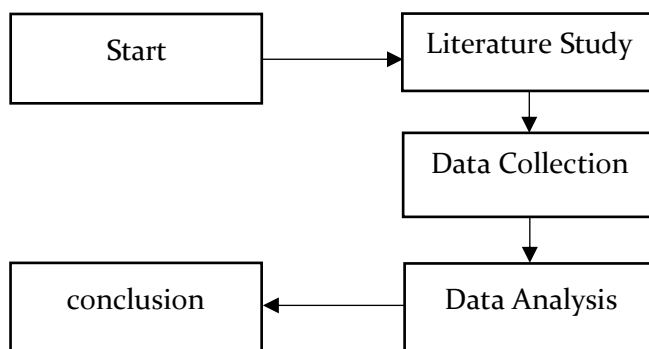


Figure 1. Research Flow Chart

4. Results and Discussion

The Sanata Village housing development project is a form of activity that lasts for a limited period of time and certain resources to achieve results in the form of buildings or infrastructure. However, the conditions in the field are now not in accordance with what has been planned so that it is estimated that there will be delays in construction projects which can then be defined as the missed deadline for project completion from the time that has been specified in the contract, or from the time agreed by the relevant parties in the completion of a project (Pratondo W. et al., 2024). The delay in the project caused cost overruns and increased the duration of the work (Khakimin et al., 2022).

4.1. Problems in the Field

Some construction projects often experience delays due to their own complexity. Time is one of the important aspects of project management in addition to cost and quality (Doloi, 2013). A project must have a duration or time limit. The project must be completed according to the specified schedule. Therefore, from the results of direct observation of the housing development project of The Sanata Village, there is a possibility of delays that must be handled because it can affect several aspects such as labor, time, cost, and implementation methods. In this case, there are problems during the implementation of work in the construction project area.

4.1.1. Impact of River Stone Foundation Work

A foundation can be defined as a building that is in the ground, which is the part adjacent to the lower part of the building. Meanwhile, to withstand the load that occurs so as to produce a stable construction. The foundation is an important element in a building. Because the strength or weakness of the building is very determined by the sturdiness of the foundation construction. The existence of the foundation as a foothold of the building above will give a stable position as a building, so the foundation should be static.



Figure 2. Impact of Jobs

4.1.2. Impact of Weather Influences

Weather is a natural condition that cannot be predicted accurately. Good or bad weather can occur at any time. However, the occurrence of bad weather during the implementation process can hinder the course of work. The problem that occurs when the weather is bad is that the construction time can be pushed back from the planned schedule if the rain continues to be unexpected, hindering the running of the project.



Figure 3. Weather Influence

4.2. MPK Discussion

4.2.1. MPK Program Planning

Before carrying out the industrial internship, students prepare the supporting documents needed for licensing. Industrial internship activities in construction companies. This supporting document includes a letter of introduction from the State University of Surabaya provided by the vocational faculty as the parent of the related study program. The document is then submitted to the company at the intended internship location.

4.2.2. MPK Occupational Safety

K3 is one of the efforts to create a safe, healthy, free workplace from environmental pollution, so that it can reduce and/or be free from work accidents and occupational diseases which can ultimately increase work efficiency and productivity.

The symbol or logo of occupational safety and health has the following meanings contained in it (Rawis et al., 2016):

1. Cross which means free from accidents and illnesses due to work
2. Gears have the meaning of working with physical and spiritual freshness
3. The white color used means clean, holy
4. The green color used has the meaning of safety, health and prosperity
5. While eleven gears are elements of chapter 11 in the Occupational Safety Law (Law/No.1/Yr.1970).



Figure 2. K3 Emblem

4.2.3. MPK Operational Management

Operational management is needed in a business to control production activities. A business needs supervision of several elements that support its activities. Such as finance, marketing, and also production that are included in operational activities.

This management is a planning that focuses on production activities. The task is to ensure that the production process is maintained and runs as it should. This management must also ensure that the production process is maintained and its development runs as planned.

4.2.4. MPK Program Design

Before the construction of the student housing unit was carried out, the internship was told by the leadership of PT. Yudistira Alfian Sanjaya to plan the detailed preparation of the stone foundation must be done carefully, before the drawing will be applied directly to the construction of the G-17 type house, the leader first checks whether the drawing that has been made is correct and meets the rules.

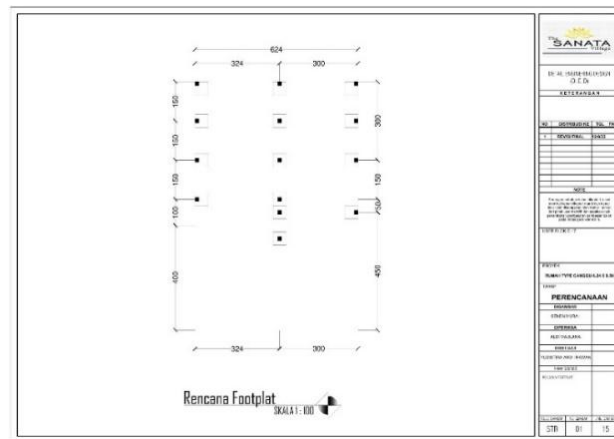


Figure 4. Footplate Plan Design

4.2.5. MPK Work Schedule

In the internship activities in the project, it is required to follow the rules and regulations that have been made by PT. Yudhistira Alfian Sanjaya included the schedule that was implemented, the use of personal protective equipment such as safety helmets and shoes while in the project environment.

Table 1. Work Schedule

No.	Day	Time	Activities
1.	Monday	07.55 - 16.00	Briefing Field Supervision Documentation
2.	Tuesday	07.55 - 16.00	Briefing Field Supervision Documentation
3.	Wednesday	07.55 - 16.00	Briefing Field Supervision Documentation
4.	Thursday	07.55 - 16.00	Briefing Field Supervision Documentation
5.	Friday	07.55 - 16.00	Briefing Field Supervision Documentation
6.	Saturday	07.55 - 13.00	Briefing Field Supervision Documentation

5. Conclusion

The foundation is a part and construction of the building that is in charge of supporting the entire load of the building and forwarding the load of the upper building to the ground base that is strong enough to support it. The method of implementing river stone foundation work is divided into two stages, namely profile drawing and installation of river stones. In construction work, especially river stone foundation work, you pay attention to the aspects of Safety and Occupational Health (K3) so that the netted process and the final result are in accordance with technical specifications.

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