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Comparative Analysis of the RAB for the Kampi Sunter Hotel Development Project Structural Work Package between AHSP 2024 and AHSP 2025

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Abstract: The development of unit prices for construction work in Indonesia changes every year along with the dynamics of the building materials market and labor costs. Therefore, a constantly updated reference is needed to ensure accurate and efficient project cost estimates. One such reference is the Work Unit Price Analysis (AHSP) which is released by the government periodically. This study aims to analyze and compare the Cost Budget Plan (RAB) value for structural work on the Kampi Sunter Hotel construction project based on the Work Unit Price Analysis (AHSP) versions 2024 and 2025. The method used is a quantitative approach through cost estimation calculations using both versions of the AHSP. The results show that the total cost of structural work based on the 2024 AHSP is Rp15,384,577,550, while based on the 2025 AHSP it is Rp13,830,592,539. There is a difference of Rp1,553,985,011 or a decrease of approximately 10.1% in the 2025 AHSP. This decrease is caused by changes in the unit price of materials, one of which is the price of Ready Mix Concrete K300 which decreased from Rp1,048,722.00 (2024) to Rp931,683.00 (2025). Therefore, it is important for project planners to always update the AHSP reference used to match the applicable year to be more relevant.

Keywords: RAB, AHSP 2024, AHSP 2025, cost estimates, construction projects, budget efficiency

INTRODUCTION

Development is crucial for developing countries like Indonesia, which involve various transformation processes, including the implementation and planning of construction projects. A construction project can be defined as a project involving specific resources and timeframes with the goal of producing a product or outcome that meets the plan.

The Cost Budget Plan (RAB) is crucial in the construction industry. Inaccurate estimates can negatively impact the entire construction process and all parties involved. The Cost Budget Plan (RAB), based on specifications and working drawings prepared by the owner, must ensure that the work will be executed correctly and that the contractor receives a reasonable profit. The Cost Budget Plan (RAB) is prepared before physical construction begins and requires detailed analysis and compilation of tender documents and other documents. The Cost Budget Plan (RAB) impacts the success of the project and

the company in general. The accuracy of cost estimates depends on the estimator's skill and thoroughness in following the entire work process and adhering to the latest information (Aditya Permadi, 2018).

The most widely adopted method for preparing a Cost Budget Plan (Rencana Anggaran Biaya or RAB) in Indonesian construction projects is the Work Unit Price Analysis (Analisis Harga Satuan Pekerjaan or AHSP). This methodology ensures consistency and standardization in cost estimation across various infrastructure and public works projects. The latest version of AHSP for 2025 is regulated under Minister of Public Works and Public Housing Regulation Number 8 of 2023, which outlines official procedures and technical frameworks for estimating construction costs in the Public Works and Public Enterprises Sector. These guidelines are specifically designed to increase transparency, accuracy, and accountability in state-funded construction activities.

This research is conducted with the objective of comparing cost estimates produced using two different AHSP versions—the 2024 AHSP and the updated 2025 AHSP. The case study focuses on the structural work package of the Kampi Sunter Hotel construction project, serving as a representative project to assess the practical implications of regulatory changes. By comparing both cost estimation approaches, the study seeks to examine variations in unit price components, labor productivity coefficients, material price assumptions, and equipment usage rates between the two versions.

Through this comparative analysis, the study is expected to provide insights into how cost planning has evolved in alignment with the latest national regulation, specifically Regulation Number 8 of 2023. This includes identifying key updates in the pricing framework, adjustments in cost structures, and potential financial implications for project planning and budgeting in the construction sector. The findings may also serve as a practical reference for project consultants, government agencies, and contractors in adopting the most appropriate and up-to-date method for preparing accurate and regulation-compliant RAB documents.

RESEARCH METHOD

Type of Research

This research uses a quantitative approach with a case study. The objective is to calculate the Cost Budget Plan (RAB) for the structural work packages for the Kampi

Sunter Hotel construction project using two comparative methods: AHSP 2024 and AHSP 2025. B. Population and Sample

The population and sample were drawn from the Kampi Hotel development project located on Jl. Danau Sunter Utara, North Jakarta. The study was conducted from May to August 2024, with the primary data source being a quantity surveyor consulting firm associated with the project.

Instrument

The research instrument consists of documentation data covering work volume, unit wage prices, materials, and coefficient indexes listed in AHSP 2024 and 2025. Data collection was conducted through literature studies and field studies, including project observations and informal interviews with workers.

Data Collection Methods

Data was collected through: Documentation study: project archives, official data from quantity surveyor consultants. Literature study: literature, journals, and online references related to project cost calculation theory. Field study: direct observation and questions to project implementers.

Data Analysis

The analysis was conducted through: Evaluation of Bill of Quantities data, Understanding the project's RKS requirements, Comparison of the 2024 vs. 2025 AHSP indexes, Cost estimation calculations using the formula: Cost Estimate = ∑(Work Volume) × Work Unit Price. This calculation resulted in a RAB estimate using two approaches, which were later compared to determine the cost-effectiveness of each method.

RESULT AND DISCUSSION

Research Profil

The project subject of this research is the construction of the Kampi Sunter Hotel, located on Jl. Danau Sunter Utara. This project, owned by PT Aneka Gemilang Propertindo, involves the construction of an eight-story hotel, including a basement and a rooftop. The total construction area covered in this research is 3,729 m².

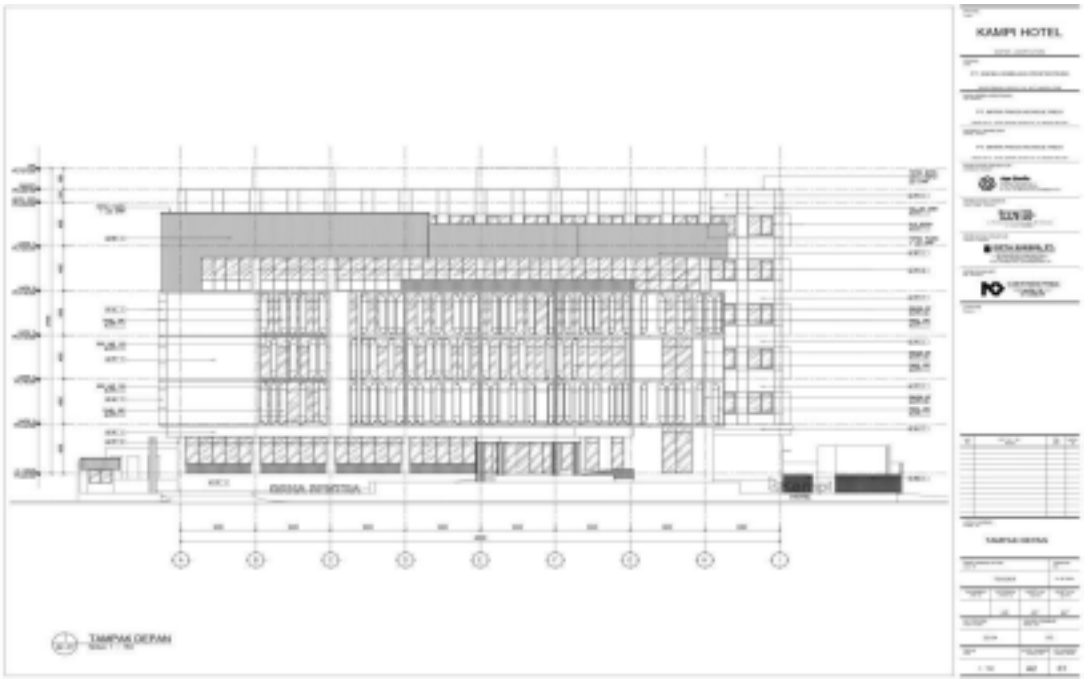

Figure 1. Front Look

Table 1. Project Technical Data

No	Work Specification	Description
1	Structural Concrete	• f'c = 35 MPa (columns)• f'c = 30 MPa (beams, plates, pile caps, stairs)• Slump = 12 ± 2• W/C Ratio (GWT, STP Roof) = max 0.4• W/C Ratio (Typical) = max 0.5• FA 20% = Raft foundation Floor 1• FA 10% = Floor 2 – Rooftop Floor
2	Reinforcing Steel	• Deformed Reinforcement Steel (fy = 420 MPa ≥ 10 mm) – columns, beams• Deformed Reinforcement Steel (fy = 520 MPa ≥ 10 mm) – plates, pile caps, stairs• Plain Reinforcement Steel (fy = 280 MPa ≤ 10 mm)
3	Wiremesh	• U50 Threaded Wiremesh Reinforcement
4	Formwork	• Supporting pillars, supports, and shoring use factory-produced steel scaffolding tested for strength and load-bearing capacity, accompanied by manufacturer data.• Upper structure concrete molds use plywood (≥ 12 mm thick) with phenolic film coating.• Substructure concrete molds use plywood (≥ 12 mm thick) or permanent formwork made from brick/lightweight concrete.
5	Earthfill	• Minimal compaction with a vibrator-type compactor every 15 cm.

The work on this project includes the Structure, Architecture, and Plumbing packages. However, in this study, the focus of the discussion is only on the Structure work. The details of the structural work analyzed are as follows: Earth Excavation, Retaining Wall, Earth Dumping, Pit Lift, Sand Fill, Columns, Work Floor, Beams, Floor Plates, Stairs, Pile Caps, Concrete Cantilever, Grease Trap, Roof Tank Foundation, Tie Beam

Volume of Work

Calculating the work volume for the Kampi Sunter Hotel construction project is a crucial initial step that forms the basis for preparing the overall budget. The work volume is calculated by a Quantity Surveyor Consultant based on technical drawings and field specifications, covering substructure and superstructure work. Substructure work items include excavation and removal of excavated soil for elements such as floor slabs, pile caps, grease traps, tie beams, and pit lifts, each with significant volumes of 1,109 m^3 for floor slab excavation and 356 m^3 for pile caps. Land preparation work, including backfill and work floors, totals 122 m^3 and 63 m^3, respectively. Furthermore, in the Ready Mix structural concrete work of fc' 30 MPa quality, there are items such as floor slabs (188 m^3), pile caps (319 m^3), to pit lifts (43 m^3), as well as fc' 35 MPa quality concrete work for upper structural elements such as columns (373.07 m^3), beams (365.66 m^3), and stairs (30.22 m^3). The reinforcement work using BJTS includes large volumes, such as columns of 137,842 kg and beams of 117,545.68 kg, plus the use of M8 wiremesh on floor slabs reaching 59,942.40 kg. Formwork work is also listed with significant surface area volumes, such as 6,303 m^2 for floor slabs and 2,717 m^2 for beams. This overall recapitulation serves as the main basis for the cost analysis between the 2024 and 2025 AHSP methods, providing a quantitative overview of the scope of work and the efficiency of the technical approach used in this project.

Budget Cost Analysis

The construction project cost budget is a crucial aspect determining the efficiency and success of a project. In this study, the estimated cost of structural work on the Kampi Sunter Hotel construction project was analyzed using two different approaches: AHSP 2024 and AHSP 2025. Both are official government standards that cover unit prices for labor, materials, and equipment based on current market conditions and technical policies. However, there are differences in price updates and efficiency coefficients between the two, which impact the overall cost estimate results.

In implementing AHSP 2024, cost estimates are based on the unit prices of components stipulated in government regulations of that year, such as DKI Jakarta Gubernatorial Regulation No. 7 of 2024 and Circular Letter of the Director General of Construction Development No. 68 of 2024. The unit prices for various types of work are calculated in detail, including preliminary work (excavation, earth removal, sand filling),

structural concrete work with a quality of fc' 30 MPa and fc' 35 MPa, reinforcement work using BJTS and wire mesh, and formwork for foundations, columns, beams, floor slabs, concrete walls, and stairs. For example, the unit price for fc' 30 MPa concrete is Rp1,285,331.32/m^3 and for fc' 35 MPa concrete, Rp1,195,159.55/m^3.

Meanwhile, the AHSP 2025 approach offers adjustments to the latest price dynamics and more realistic labor productivity efficiencies based on project conditions in the field. AHSP 2025 uses regulatory references such as DKI Jakarta Gubernatorial Regulation No. 24 of 2024 and the Director General of Construction Development Circular Letter No. 30 of 2025. The unit prices for construction work are prepared using a nearly identical method, but using updated price data and new coefficients. Several examples of calculation results show significant differences, such as the price of BJTS slab reinforcement at Rp20,577.87/kg, wire mesh reinforcement at Rp16,068.48/kg, and column formwork at Rp330,948.42/m^2.

Comparing the two methods, it was found that the 2025 AHSP tends to produce lower cost estimates than the 2024 AHSP. This cost difference indicates potential efficiencies of over 10% if the 2025 AHSP is used as a reference in project budgeting. These differences stem from updated material prices, adjustments to labor productivity, and more efficient equipment usage. Therefore, using the latest version of the AHSP can provide more adaptive and accurate cost estimates, while supporting more rational decision-making in construction project planning.

Budget Plan

The Cost Budget Plan (RAB) for the Kampi Sunter Hotel construction project was prepared as a result of cost estimation based on unit price analysis and work volume, with the main objective as a financial reference and construction cost control. This study compared two RAB preparation methods, namely based on AHSP 2024 and AHSP 2025, to evaluate budget efficiency and accuracy. AHSP 2024 produced a total cost of Rp15,384,577,550.18, consisting of Rp3,439,565,595.87 for the lower structure and Rp11,945,011,954.31 for the upper structure. This calculation refers to the unit price, wages, and tools applicable at that time, with work details including excavation, soil removal, backfill sand, work floor, concrete, reinforcement, and formwork. Meanwhile, AHSP 2025 updates the unit price data based on the latest market conditions, resulting in a total RAB of Rp13,830,592,539.20, consisting of Rp3,071,613,726.53 for the

substructure and Rp10,758,978,812.67 for the superstructure. Using the same format and work volume, this comparison shows that the price and productivity updates in AHSP 2025 provide higher cost efficiency than the previous version. Both methods contain identical work details, such as ready-mix concrete for the superstructure and substructure, BJTS and wire mesh reinforcement, and formwork work, but produce different total budgets due to variations in unit prices per work item.

AHSP 2024 Analysis Results

At this stage, the estimated budget calculation for the structural work costs was carried out using the 2024 Work Unit Price Analysis (AHSP). The data used refers to the applicable unit prices of materials and labor wages in accordance with the Regulation of the Governor of DKI Jakarta No. 7 of 2024. After processing the work volume and unit price based on the 2024 AHSP, the total value of the Cost Budget Plan (RAB) shows the total value of the structural work of IDR 15,384,577,550. This value consists of lower structural work of IDR 3,439,565,595 and upper structural work of IDR 11,945,011,954.

AHSP 2025 Analysis Results

Next, the estimated budget calculation was carried out using AHSP 2025. In this version, there are several changes to the unit price of materials. This calculation refers to official data from DKI Jakarta Governor Regulation No. 24 of 2024. Based on the calculation results using AHSP 2025, the total RAB value was obtained at Rp. 13,830,592,539. With details of the lower structure work of Rp. 3,071,613,726 and the upper structure work of Rp. 10,758,978,812. This value shows a change when compared to the calculation results of the AHSP 2024 version.

Comparison of RAB Results

After analyzing the estimated budget using two versions of the AHSP (Authorized Work Plan) AHSP 2024 and AHSP 2025 the results showed differences in the total cost of the structural work. Although the volume of work and the implementation methods analyzed remained the same, there was a significant difference in the total costs generated by each version. This difference was primarily influenced by fluctuations in the unit prices of materials used as the main components in the construction cost calculation. The 2024 version of the RAB showed a total cost of Rp15,384,577,550, while the 2025 version

resulted in a total cost of Rp13,830,592,539. Thus, there was a difference of Rp1,553,985,011, or approximately 10.1% lower than the 2025 version. To provide a clearer picture of these differences, the following table presents a comparison of RAB values based on the substructure and superstructure work groups.

Table 2. Comparison of RAB Values for Lower and Upper Structures

No	Type of Work	RAB 2024 (Rp)	RAB 2025 (Rp)	Difference (Rp)
1	Excavation	26,308,480	26,308,480	0
2	Soil Removal	91,233,120	91,233,120	0
3	Sand Filling	47,052,960	47,915,500	862,540
4	Floor Construction	63,863,730	70,750,260	6,886,530
5	Ready-Mix Concrete	2,372,366,520	2,129,875,087	-242,491,433
6	Ready-Mix Concrete (Fc' 30 MPa)	454,239,226	452,844,374	-1,394,852
7	Reinforcement Work	10,587,797,800	9,191,874,850	-1,395,922,950
8	Ready-Mix Concrete (Fc' 35 MPa)	1,741,715,714	1,819,790,869	78,075,154
—	**Total**	**15,384,577,550**	**13,830,592,539**	**-1,553,985,011**
—	**Percentage Difference**			**-10.10%**

Table 2 presents a comparison of the Budget Plan (RAB) values between 2024 and 2025 for all structural work, both substructure and superstructure, consisting of excavation, soil removal, sand filling, work floors, ready-mix concrete (Fc' 30 Mpa and Fc' 35 Mpa), reinforcement, and formwork. Based on the calculation results, the total structural cost of the 2024 AHSP version is Rp 15,384,577,550, while in the 2025 AHSP it decreases to Rp 13,830,592,539. There is a difference in savings of Rp 1,553,985,011 or approximately 10.10% cost efficiency of the total value of the structural work. This decrease is largely due to differences in material prices in each AHSP version (Work Unit Price Analysis). The following is a detailed explanation:Pekerjaan Galian Tanah dan Buang Tanah tidak mengalami perubahan nilai, menandakan bahwa tidak terdapat perubahan harga satuan atau analisa pekerjaan dalam kedua versi AHSP.

- Sand Filling and Floor Work experienced a slight increase in value of Rp 862,540 and Rp 6,886,530, respectively, which could be due to increases in material prices such as sand and cement in the 2025 AHSP.
- Ready Mix Concrete Work at Fc' 30 MPa recorded a significant decrease of Rp 242,491,433, indicating an adjustment in the concrete unit price.
- Ready Mix Concrete Work at Fc' 35 MPa also experienced a slight decrease of Rp 1,394,852.

- Reinforcement Work was the most significant component, with a decrease of Rp 1,395,922,950. This decrease was largely due to a decrease in the unit price of reinforcing steel (BJTS and Wiremesh).
- Formwork Work actually experienced an increase in value of Rp 78,075,154. This increase was influenced by the increase in unit prices of materials such as plywood and dolken wood.

Overall, these data indicate that AHSP 2025 tends to be more cost-efficient than AHSP 2024 in terms of structural work execution. The greatest efficiency occurs in the reinforcement work item, which is the largest component in reinforced concrete building structures. To clarify the resulting cost differences between the AHSP 2024 and AHSP 2025 methods, the following bar graph shows comparing the RAB values for each type of structural work. This graph provides a clearer visualization of which jobs experienced significant budget increases or decreases from 2024 to 2025.

Table 3. **Material Price Comparison**

No	Material List	AHSP 2024 (Rp)	AHSP 2025 (Rp)	Difference (Rp)
1	Backfill Sand	245,854.00	251,213.00	5,359.00
2	Ready-Mix Concrete K350	968,405.00	965,127.00	-3,278.00
3	Ready-Mix Concrete K300	1,048,772.00	931,683.00	-117,089.00
4	Fin Reinforcing Steel (BJTS)	15,175.00	11,645.00	-3,530.00
5	Concrete Wire Rope	28,718.00	24,990.00	-3,728.00
6	M8 Wire Mesh	13,200.85	13,613.50	412.65
7	Nails	45,115.00	46,533.00	1,418.00
8	12mm Plywood	188,986.00	195,783.00	6,797.00
9	Dolken Wood	41,021.00	51,935.00	10,914.00
10	Portland Cement	1,455.00	1,824.00	369.00
11	Concrete Sand	228.46	236.46	8.00
12	Gravel	153.42	172.95	19.53
13	Formwork Oil	85,000.00	85,000.00	-
14	Class II Wooden Beams	6,500,000.00	6,500,000.00	-
15	Class III Wooden Planks	3,392,000.00	3,392,000.00	-
16	Water	41.60	41.60	-
17	Concrete Steel Cutter	116,666.67	116,666.67	-
18	Concrete Steel Bender	116,666.67	116,666.67	-
19	Formwork Spacer	20,000.00	20,000.00	-

Table 3 shows a comparison of the unit prices of several key materials used in structural work between the 2024 and 2025 AHSPs. The purpose of this table is to identify which materials experienced price changes, either increases or decreases, and to determine the extent of the price differences that could impact the total project budget. The following is a brief analysis based on the table's contents:

Several materials experienced unit price increases, meaning that prices in the 2025 AHSP were higher than in the previous year. These materials include:

1. Filling sand increased by Rp 5,359.00
2. M8 wire mesh increased by Rp 412.65
3. Nails increased by Rp 1,418.00
4. 12mm plywood increased by Rp 6,797.00
5. Dolken wood increased significantly by Rp 10,914.00
6. Portland cement increased by Rp 369.00
7. Concrete sand by Rp 8.00
8. Gravel by Rp 19.53
9. Materials experiencing price decreases in AHSP 2025

Several materials experienced price decreases, indicating efficiency or lower price updates compared to the previous year:

1. Ready-mix concrete K350 decreased by Rp 3,278.00
2. Ready-mix concrete K300 decreased significantly by Rp 117,089.00
3. Fin reinforcement steel (BJTS) decreased by Rp 3,530.00
4. Concrete wire rope decreased by Rp 3,728.00

Several materials remained unchanged in price, including:

1. Formwork oil
2. Class II wooden beams
3. Class III wooden planks
4. Water
5. Concrete steel cutter
6. Concrete steel bender
7. Formwork spacers

CONCLUSION

Based on the results of the study on the comparison of the Cost Budget Plan (RAB) for the Kampi Sunter Hotel construction project using the Work Unit Price Analysis (AHSP) method in 2024 and 2025, it was obtained that the total structural cost based on AHSP 2024 was Rp15,384,577,550, while based on AHSP 2025 it was Rp13,830,592,539. The calculation was carried out by referring to the work volume from the plan drawings and the unit prices of

wages, materials, and tools in each AHSP version. There was a difference of Rp1,553,985,011 or a decrease of approximately 10.1% in the cost estimate when using AHSP 2025, which indicates budget efficiency in the latest version. Therefore, it is recommended that project planners periodically evaluate AHSP updates and use historical data and the latest material price information system to improve the accuracy of cost estimates.

REFERENCES

Aditya Permadi, R. W. (2018). Construction cost estimation analysis using unit price analysis for 2013 and 2016. Jurnal Teknik Sipil, 2(1), 1–12.

An-Nur.ac.id. (2024). Project budget: A complete guide from planning, preparation, management, to effective tips & tricks. Yogyakarta: Andi.

Bambang Pilutomo, H. R. (2020). Comparison of cost budget estimation between methods. JUTEKS Scientific Journal, 5(1), 55–66.

Brando Munaiseche, T. T. (2022). Comparative analysis of the budget plan and the implementation budget for the North Sulawesi High Prosecutor's Office apartment development project. TEKNO, 20(82), 927–935.

Ervianto, W. (2023). Construction project management (Latest ed.). Yogyakarta: Andi.

Grenfiki, Y., & Nugraha, L. L. (2023). Comparative analysis of building bill of quantities (RAB) with AHSP 2016 and AHSP 2022. Musamus Journal of Civil Engineering, 57–60.

Hanafiah, K. (2020). Construction management. Jakarta: Kencana.

Jakarta Provincial Government. (2024). Regulation of the Governor of the Special Capital Region of Jakarta Province Number 7 of 2024: Unit price standards for 2024 (pp. 1–826).

Jakarta Provincial Government. (2025). Regulation of the Governor of the Special Capital Region of Jakarta Province Number 24 of 2024: Unit price standards for 2025 (pp. 1–1450).

Directorate General of Construction Development. (2024). Circular Letter No. 68/SE/Dk/2024: Procedures for compiling cost estimates for construction work in the public works and public housing sector (pp. 1–1054).

Directorate General of Construction Development. (2025). Circular Letter No. 30/SE/Dk/2025: Procedures for compiling cost estimates for construction work in the public works and public housing sector (pp. 1–1317).

Nugroho, A. (2024). Construction project management: Project case-based learning. Yogyakarta: UGM Press.

Pranata, A. (2011). Construction project cost estimation. Yogyakarta: Andi.

Soeharto, I. (2019). Project management: From conceptual to operational (Rev. ed.). Jakarta: Erlangga.

Soemardi, B. (2018). Cost estimation and unit price of construction work. Jakarta: Erlangga.

Triyanto, R. (2021). Project management and construction cost estimation. Yogyakarta: Deepublish.

Wa Ode Sumartini, F. S. (2022). Comparative analysis of cost budget plan. UNPAL Civil Engineering Journal, 12(2), 83–91.

Wibowo, A. (2024). Project construction RAB. Semarang: Prima Agus Teknik Foundation.