
Evaluation Of Budget Planning And Identification Of Dominant Work In The Building C Construction Project Of Husada Health College, Jombang

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Abstract

Budget planning is one of the important stages in the implementation of a construction project because it is related to cost control and the feasibility of project implementation. The availability of adequate educational facilities and infrastructure is an important factor in supporting an effective and quality learning process. Along with the increasing number of students at STIKES Husada Jombang, the need for study space and supporting facilities is also increasing. Therefore, Building C STIKES Husada Jombang, which originally consisted of one floor, is planned to be renovated into two floors to meet the increasing need for space. This study aims to determine the amount of the Budget Plan (RAB) for the construction of Building C STIKES Husada Jombang and to determine the type of work that has the largest cost in the project. The method used in this study is the 2024 Work Unit Price Analysis (AHSP) published by the Ministry of Public Works and Public Housing (PUPR). The data used are in the form of working drawings which are then calculated using unit price analysis to obtain the total cost of the construction work. Based on the results of the analysis of the calculation of the volume of work and the analysis of the unit price of work, the total Budget Plan (RAB) for the construction of Building C of STIKES Husada Jombang was obtained at Rp 1,305,078,971.12. The results of the analysis show that the work on frames, doors, and windows is the work with the largest cost, namely Rp 283,155,850.00, followed by structural work of Rp 281,668,931.12.

Keywords: Cost Budget Plan, Ahsp 2024, Construction Project, Cost Estimate

INTRODUCTION

In terms of mastery and development of technology, the use of educational resources, which can be described as educational technology, in the learning process can facilitate learners' direct interaction with the world of technology, facilitating their understanding and avoiding verbalism and educational media alone. Education also requires educational resources that indirectly support the implementation of classroom learning and teaching activities, such as land, buildings or spaces, as well as management equipment and furniture. The need for these supporting facilities is necessary to provide optimal service for the ongoing quality education process.(Yustika, 2017).

In line with the importance of providing adequate educational facilities, as previously described, educational institutions are required to adjust their facility capacity to the growing number of students. As the number of students increases annually, the need for study spaces and educational support facilities also increases. This situation requires educational institutions to develop and increase building capacity so that all academic activities can take place effectively and comfortably. STIKES Husada Jombang, as a higher education institution in the health sector, is experiencing a significant increase in the number of students, necessitating efforts to improve educational facilities and infrastructure. As part of the campus facility development, Building C of STIKES Husada Jombang, which originally consisted of one floor, is planned to be renovated into two floors to meet the increasing need for space. Adequate educational facilities and infrastructure are crucial because they are the main supporting factors in supporting an effective, efficient, and high-quality learning process. Without adequate facilities and infrastructure, educational goals are difficult to achieve optimally. Therefore, providing them must be a top priority in school management and educational policies.(Putra *et al.*, 2025).

In the initial stages of construction, preparing a Cost Budget Plan (RAB) is a crucial part of determining project feasibility. The Cost Budget Plan (RAB) is an estimate of the costs required to complete construction work, including calculations of work volume, materials, labor, and unit prices

for each job according to technical specifications. Mistakes in reading working drawings or calculating work volume can directly impact cost discrepancies and implementation in the field.(Muyassaroh, 2025).

Budget management in construction projects must be designed and structured based on structured estimation concepts to produce accurate results. A project is considered successful if costs are spent efficiently, the project is completed on time, and the product quality is good. In the construction industry, cost is a key consideration due to the large investment involved and the inherent risk of failure.(Syafuddin *et al.*, 2026).

Based on this, the research entitled "Budget Planning for the Construction Project of Building C of STIKES Husada Jombang Based on AHSP" this was done. The aim of this study was to find out The large Budget Plan (RAB) for the construction of Building C of Husada Jombang Health College and find out which job descriptions have the highest costs. In calculating the RAB, the 2024 Work Unit Price Analysis (AHSP) published by Ministry of Public Works and Public Housing (PUPR).

RESEARCH METHODS

Research Location

The location of this research is JL Veteran, Mancar Peterongan, Mancarmalang, Mancar, Jombang District, Jombang Regency, East Java



Figure 1 Research Location

Source: Google Map (2026)

Method of collecting data

The data collection methods in this study consist of two types, namely primary data and secondary data. Primary data was obtained directly from the field through observations to determine the condition of the project site, interviews with related parties such as contractors and consultants, and surveys of material prices and equipment rentals at building stores and local vendors. Meanwhile, secondary data was obtained from indirect sources including technical drawings from planning consultants and the 2024 Work Unit Price Analysis Standard (AHSP) published by the Ministry of Public Works and Public Housing (PUPR). The data collection methods in this study consist of two types, namely:

Data Analysis Methods

The data analysis used in this study was a quantitative descriptive method using the 2024 Work Unit Price Analysis (AHSP) approach published by the Ministry of Public Works and Public Housing (PUPR). The analysis was conducted using Microsoft Excel software to:

1. Calculating Work Volume
2. Calculating the Cost Budget Plan (RAB)

3. Analyzing the total cost of building construction
4. Identifying the jobs with the highest costs

Research Procedures

The research procedure in this study was carried out through several systematic stages. The first stage is a literature study that aims to strengthen the theoretical basis based on previous research. The next stage is the collection of primary data through observation, interviews, and field surveys, as well as the collection of secondary data in the form of technical drawings and the 2024 Work Unit Price Analysis (AHSP) standard. After all the data is obtained, the data processing stage is carried out which includes the breakdown of the type of work based on the technical drawings, then continued with the calculation of the work volume obtained from the interpretation of technical drawings such as floor plans, sections, and structural details according to the listed dimensions. Next, an analysis of the work unit price is carried out using AHSP 2024, then the calculation of the Cost Budget Plan (RAB) by multiplying the work volume and the unit price. After that, a cost recapitulation is carried out to obtain the total construction cost. The final stage is the preparation of the results and the overall research report.

RESULTS AND DISCUSSION

Job description

In preparing the Cost Budget Plan (RAB) for the Construction of Building C of STIKES Husada Jombang, the first step taken was to identify all work items included in the project. Work items were arranged based on the construction implementation stages and referring to the working drawings and technical specifications of the project. Each work item has a different function in the construction process, from preparatory work to finishing work. This grouping of work items aims to simplify the process of calculating work volumes and analyzing work unit prices. Based on the identification results from the project working drawings, one of the work items in this construction project is masonry and plastering work. A description of the masonry and plastering work can be seen in Table 1.

Table 1 Description of Masonry and Plastering Work

No.	JOB DESCRIPTION
III	PACKAGE AND PLASTERING
1	Red brick wall fitting
2	Plastering 1 Pc : 6 Ps
3	Wall plaster
4	Thread

Source: Analysis Results, 2026

The process of identifying and breaking down the work was also carried out in the same way for all other work items in the construction of Building C of STIKES Husada Jombang.

Volume Calculation

The work volume for Building C of STIKES Husada Jombang was calculated based on the working drawings. The volume calculation was carried out to determine the amount of work required for each work item. The work volume value was obtained using a calculation formula according to the type of work, such as length, area, or volume. The volume of each work item was calculated based on the dimensions in the plan drawings, such as length, width, height, or thickness of building elements. The following is an example of a volume calculation for wall masonry and plastering work.

$$\begin{aligned}
 V \text{ wall pair} &= p \times l \\
 &= 134 \text{ m} \times 4.8 \text{ m}
 \end{aligned}$$

$$= 585.68 \text{ m}^2$$

$$\begin{aligned} \text{V plaster 1PC : 6 PS} &= \text{Vwall pair} \times 2 \\ &= 585.68 \text{ m}^2 \times 2 \\ &= 1,171.36 \text{ m}^2 \end{aligned}$$

The results of this volume calculation are then used as a basis for determining the cost of the work through a unit price analysis. The results of the masonry and plastering volume calculations are then presented in Table 2.

Table 2 Volume of Masonry and Plastering Work

No.	JOB DESCRIPTION	VOLUME	SAT
III PACKAGE AND PLASTERING			
1	Fitting. Red Brick Wall	585.68	m2
2	Plastering 1 PC : 6 PS	1,171.36	m2
3	Wall Plaster	1,314.25	m2
4	Thread	277.25	m2

(Source: Analysis Results, 2026)

The volume calculation process is also carried out in the same way for all other work items in the construction of Building C of STIKES Husada Jombang.

Job Unit Price Analysis

In this study, the unit price analysis of work used is AHSP 2024. In each job, it is analyzed based on the coefficient of labor, material, and equipment requirements that have been set in the standard. The process of analyzing the unit price of work is carried out by multiplying the coefficient of labor, material, and tool requirements by the unit price of each component that has been obtained from the results of the field survey. The following is the calculation of the unit price analysis of wages for the installation of red brick walls for every 1 m² as follows:

$$\begin{aligned} \text{Carpenter} &= \text{Unit Price} \times \text{Labor Coefficient} \\ &= \text{Rp. } 95,000.00 \times 0.1 \\ &= \text{Rp. } 9,500.00 \end{aligned}$$

$$\begin{aligned} \text{Foreman} &= \text{Unit Price} \times \text{Labor Coefficient} \\ &= \text{Rp. } 100,000.00 \times 0.01 \\ &= \text{Rp. } 1,000.00 \end{aligned}$$

$$\begin{aligned} \text{Worker} &= \text{Unit Price} \times \text{Labor Coefficient} \\ &= \text{Rp. } 75,000.00 \times 0.3 \\ &= \text{Rp. } 22,500.00 \end{aligned}$$

$$\begin{aligned} \text{Foreman} &= \text{Unit Price} \times \text{Labor Coefficient} \\ &= \text{Rp. } 100,000.00 \times 0.015 \\ &= \text{Rp. } 1,500.00 \end{aligned}$$

Furthermore, the unit price of materials for the installation of red brick walls for every 1 m² was also analyzed.

$$\begin{aligned} \text{Red Brick} &= \text{Unit Price} \times \text{Material Coefficient} \\ &= \text{Rp. } 750 \times 70 \\ &= \text{Rp. } 52,500.00 \end{aligned}$$

$$\begin{aligned} \text{PC Cement} &= \text{Unit Price} \times \text{Material Coefficient} \\ &= \text{Rp. } 1,350.00 \times 70 \\ &= \text{Rp. } 11,232.00 \\ \text{Concrete Sand} &= \text{Unit Price} \times \text{Material Coefficient} \\ &= \text{Rp. } 250,000.00 \times 70 \\ &= \text{Rp. } 12,250.00 \end{aligned}$$

The results of these calculations are then added together to obtain the unit price for each work item. The results are then presented in Table 3 for easier understanding.

Table 3. Unit Price Analysis for Red Brick Wall Installation Work

No	Description	Coef	Sat	Price		Total price		Amount (Rp.)
				Unit	Wages	Material		
				(Rp.)	(Rp.)	(Rp.)		
1	1 M2 PAS. RED BRICK CAMP. 1 Pc: 6 Psr							
POWER								
1	Carpenter	0.100	Oh	95,000.00	9,500.00			
2	Foreman	0.010	Oh	100,000.00	1,000.00			
3	Worker	0.300	Oh	75,000.00	22,500.00			
4	Foreman	0.015	Oh	100,000.00	1,500.00			
MATERIAL								
1	Red Brick	70.00	Bra	750.00		52,500.00		
2	PC Cement	8.32	Kg	1,350.00		11,232.00		
3	Concrete Sand	0.049	M3	250,000.00		12,250.00		
				Amount	34,500.00	75,982.00		110,482.00

(Source: Analysis Results, 2026)

The unit price analysis process for other work is carried out in the same way for all other work items in the construction of Building C, STIKES Husada Jombang.

Budget plan

The preparation of the RAB is carried out based on the results of the calculation of the work volume and the analysis of the work unit prices that have been obtained previously. The RAB calculation is carried out using formula 2.7, namely by multiplying the work volume by the work unit price for each work item. The following is the calculation of the Cost Budget Plan for the work. The results of these calculations are then added up to obtain the total cost of the work on the construction project of Building C STIKES Husada Jombang. The calculation of the Cost Budget Plan for masonry and plastering work can be seen in Table 4 below:

Table 4 Budget Plan for Masonry and Plastering Work

No.	JOB DESCRIPTION	VOL	SAT	PRICE	AMOUNT
1	2	3	4	5	6
III PACKAGE AND PLASTERING					
1	Fitting. Red Brick Wall	585.68	m2	Rp. 110,482.00	Rp. 64,706,987.28
2	Plastering 1 PC : 6 PS	1,171.36	m2	Rp. 42,873.40	Rp. 50,220,100.08
3	Wall Plaster	1,314.25	m2	Rp. 15,000.00	Rp. 19,713,675.00
4	Thread	277.52	m2	Rp. 15,000.00	Rp. 4,162,800.00

Subtotal III Rp138,803,562.36

(Source: Analysis Results, 2026)

Recapitulation of Budget Plan

The budget recapitulation data is obtained from the previously calculated Cost Budget Plan (RAB) for each work item. Each work group is summed to obtain the total cost for each type of work. The recapitulation results are then added together to obtain the total cost of the entire construction project. The budget recapitulation for the construction project of Building C, STIKES Husada Jombang can be seen in Table 5 below:

Table 5 Budget Cost Recapitulation

NO	JOB DESCRIPTION	AMOUNT
I	Preparation Pack	Rp. 1,686,000.00
II	Demolition Work	Rp. 1,020,000.00
III	Masonry and Plastering Work	Rp. 138,803,562.36
IV	Reinforced Concrete Work	Rp. 281,668,931.12
V	Frame, Door and Window Work	Rp. 283,155,850.00
VI	Ceiling Covering Work	Rp. 103,784,000.00
VII	Floor Coating Work	Rp. 85,291,244.63
VIII	Painting Job	Rp. 82,231,623.57
IX	Electrical Work	Rp. 25,875,000.00
X	Sanitation Work	Rp. 10,870,000.00
XI	Roof Covering Work	Rp. 236,304,500.00
XII	Other Jobs	Rp. 54,388,259.45
Total number		Rp 1,305,078,971.12

Source: Analysis Results, 2026

Based on the results of the calculations that have been carried out, starting from the calculation of the volume of work, analysis of the unit price of work, to the preparation of the Budget Plan (RAB), the results of the research were obtained regarding the cost requirements for the construction of Building C STIKES Husada Jombang. The results of the calculation of the volume of work and the unit price of the work, then a Budget Plan was prepared for each work item contained in the project. The results of the calculations show that the total cost of construction of Building C STIKES Husada Jombang reached Rp 1,305,078,971.12 based on the analysis conducted in this study. However, during project implementation, the budget was adjusted through negotiations between the project owner and the contractor. These adjustments were made to accommodate available budgetary capabilities, resulting in a lower final contract value compared to the initial budget (RAB) calculations.

CONCLUSION

Based on the results of the analysis of the calculation of the volume of work, analysis of the unit price of work, and the preparation of the Budget Plan (RAB) for the construction of Building C of STIKES Husada Jombang, it was obtained that the total RAB calculated using the 2024 Work Unit Price Analysis (AHSP) method was Rp1,305,078,971.12. In addition, from the results of the work cost analysis, it was found that the work of frames, doors, and windows was the component with the largest cost, which was Rp283,155,850.00, followed by structural work of Rp281,668,931.12. The

large costs for the work of frames, doors, and windows were due to the use of materials in large quantities and the price of materials that were relatively higher compared to several other types of work.

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