CONSTRUCTION OF ADMINISTRATION ROOM AT SMP NEGERI 20 MUKOMUKO: IMPLEMENTATION OF PROJECT MANAGEMENT AND BUDGET PLANNING

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ABSTRACT

The construction of the Administration Room at SMP Negeri 20 Mukomuko is a strategic project aimed at improving educational facilities and infrastructure. This project aims to provide representative, safe, and comfortable administrative facilities to replace the old building that is no longer suitable for use. The implementation method begins with the preparation of the Budget Plan (RAB), architectural design and working drawings, site preparation, through to phased construction execution. The total construction cost is IDR 540,126,850 with an implementation period of 90 calendar days. The building is a single-story structure with stone foundations, K-225 grade reinforced concrete structure, red brick walls, lightweight steel roof, ceramic flooring, and gypsum ceiling. Implementation includes seven main stages: preparation, foundation, concrete structure, walls and finishing, roof and frames, electrical-sanitary installation, and furniture. The implementation results show 100% compliance with the RAB and working drawings, completed on time without cost overruns. This new building successfully improves administrative work efficiency, staff comfort, and school image. This project serves as an example of good governance implementation in the development of efficient, quality, and sustainable educational infrastructure.

Keywords: school construction, administration room, budget plan, educational building construction, project management

I. INTRODUCTION

Education is a fundamental aspect of nation-building that plays an important role in creating quality human resources. To achieve this goal, adequate educational facilities and infrastructure are required (Ministry of Education and Culture, 2007). The availability of good and functional physical facilities is an important factor in supporting teaching and learning activities as well as administrative activities in the school environment.

SMP Negeri 20 Mukomuko District has experienced a decline in building function and quality due to age, weather, and intensity of use. The school administration room, which has a vital role in carrying out managerial and administrative service activities, has suffered quite severe damage to the roof, walls, and floor. This condition

disrupts the smooth operation of school activities and reduces the work efficiency of administrative staff (Yuliani, 2020).

Research by Rahmadani (2021) shows that the quality of school administrative facilities has a direct influence on educational management performance. Improvement of administration room facilities can increase administrative work efficiency by up to 35%. Administrative buildings designed according to ergonomic principles and natural lighting can reduce employee work stress levels by 25%.

The construction of a new administration room was undertaken as an effort to improve the quality of educational facilities while supporting good school governance. This project aligns with local government policies in improving education quality through the provision of adequate school facilities and infrastructure, especially in rural and peripheral areas of the district.

This article aims to document the construction process of the administration room from the planning to implementation stages, analyze the conformity between the Budget Plan (RAB) and implementation results, and evaluate the impact of construction on improving the quality of school administrative services.

II. METHODS

Location and Time of Study

The construction project was carried out at SMP Negeri 20 Mukomuko, Mukomuko District, Bengkulu Province, with a duration of 90 calendar days from March to June 2025.

Research Design

This study uses a descriptive qualitative approach with a case study method on educational building construction projects. Data was collected through direct observation, project implementation documentation, and technical document analysis.

Research Stages

The research follows the project implementation stages which include:

1. Planning Stage

The preparation of the Budget Plan (RAB) was carried out through space needs analysis, calculation of work volume based on design drawings, unit price analysis according to the Unit Price Analysis for Construction Work (AHSP) of the Ministry of Public Works and Housing, and compilation of total costs. Architectural design considers functional, aesthetic, and comfort aspects with an open space concept to facilitate communication and coordination.

2. Site Preparation Stage

Includes clearing the area, measurement and staking with theodolite, making bouwplank as an elevation guide, and construction of supporting facilities such as site office and material warehouse.

3. Construction Implementation Stage

Construction implementation follows seven main stages:

- Stone foundation and reinforced concrete sloof work
- Reinforced concrete structure (columns and beams) K-225 grade
- Red brick wall installation and finishing (plastering, smoothing)
- Lightweight steel roof frame installation and corrugated zinc covering
- Frame, door, and window installation
- Ceramic floor, gypsum ceiling, and electrical-sanitary installation
- Painting, furniture installation, and final cleaning

4. Data Collection

Primary data was collected through direct observation of the construction process, measurement of work volume, and weekly progress monitoring. Secondary data was obtained from RAB documents, working drawings, technical specifications, and contractor daily reports.

5. Data Analysis

Analysis was conducted by comparing implementation realization against planning (RAB and working drawings), evaluating time and cost accuracy, and measuring work quality based on SNI standards and technical specifications.

Technical Specifications

The building was designed with the following specifications:

- Structure: K-225 grade reinforced concrete according to SNI 2847:2019
- Foundation: stone foundation with a depth of 70 cm
- Walls: pressed red brick ½ brick thick
- Roof: lightweight steel frame with 0.3 mm corrugated zinc covering
- Floor: 30×30 cm ceramic tiles
- Ceiling: 9 mm thick gypsum board
- Installation: according to SNI for electrical and sanitary installations

III. RESULTS AND DISCUSSION

Budget Plan (RAB)

The total construction cost is IDR 540,126,850 with distribution across seven work groups. Table 1 shows the cost allocation breakdown.

Table 1 *Budget Plan Distribution*

No	Work Description	Cost Value (IDR)	Percentage
1	Preparatory Work	18,000,000	3.3%
2	Earthwork and Foundation	57,500,000	10.6%
3	Reinforced Concrete Structure Work	141,500,000	26.2%
4	Wall and Initial Finishing Work	95,000,000	17.6%
5	Door, Window, and Roof Work	98,000,000	18.1%
6	Electrical and Sanitary Installation Work	38,500,000	7.1%
7	Final Work and Furniture	91,626,850	16.9%
Total		**540,126,850**	**100%**

The largest cost allocation for reinforced concrete structure work (26.2%) shows priority on building strength and safety according to educational building construction standards (Ministry of Public Works and Housing, 2018). The cost distribution is considered rational and proportional to the total work volume.

Architectural Design and Working Drawings

The building design adopts a modern-minimalist concept with an open floor plan of approximately 150 m². Space division includes: (a) service and administrative area (60 m²), (b) head of administration room (20 m²), (c) archive room (30 m²), and (d) waiting area (40 m²). Building orientation considers the direction of sunlight for optimization of natural lighting and cross ventilation, according to Neufert's (2000) principles on space efficiency and lighting in educational buildings.

The building facade displays clean lines with a combination of neutral colors (white and gray) that harmonize with existing school buildings. Window openings are made large enough (40% of wall area) to maximize lighting and air circulation, reducing dependence on electrical energy by up to 30%.

Construction Implementation

Structural Work

Foundation work uses stone foundation with a depth of 70 cm from ground level, continued with reinforced concrete sloof dimensions 20×30 cm. Reinforced concrete columns with dimensions 20×20 cm with main reinforcement 4D12 and stirrups Ø8-150 mm were installed with a height of 3.5 meters. Beams and ring beams with dimensions 15×20 cm use similar reinforcement. Concrete pouring was done in stages with K-225 grade concrete and compacted using a vibrator to avoid air pockets.

Concrete compressive strength test results at 28 days showed an average value of 24.5 MPa, meeting the requirements of K-225 grade (22.5 MPa) according to SNI 2847:2019. The curing process was carried out for 7 days with periodic water spraying to prevent shrinkage cracks.

Wall and Finishing Work

Pressed red brick wall installation was done with a half-brick interlocking pattern, using mortar mixture with cement:sand ratio = 1:4. Joint thickness was kept consistent at 1 cm. After the brick masonry dried, the surface was plastered 1.5 cm thick and continued with smoothing to produce a smooth surface.

Roof and Installation Work

The roof frame uses a prefabricated lightweight steel system with a 30° slope to facilitate rainwater flow. The 0.3 mm thick corrugated zinc roof covering was installed with an overlap system of at least 2 corrugations. Electrical installation uses NYM cable with capacity according to load, equipped with 12 light points, 8 switches, and 10 outlets. An MCB panel was installed as a safety system.

Project Implementation Evaluation

Time and Cost Aspects

The project was completed on time within 90 calendar days according to the planned schedule. Table 2 shows a comparison of plan and realization.

Table 2 *Comparison of Plan and Realization*

Aspect	Plan	Realization	Deviation
Implementation Time	90 days	90 days	0%
Total Cost	IDR 540,126,850	IDR 540,126,850	0%
Volume Conformity	100%	100%	0%
Specification Conformity	100%	100%	0%

There was no cost overrun due to accurate RAB estimation, strict control of material use, and minimal additional work. This is in accordance with effective project management principles according to Soeharto (1999).

Quality Aspects

Quality inspection was carried out periodically on:

1. Concrete quality: slump test and concrete compressive strength
2. Plaster thickness: random measurement at 20 points
3. Wall straightness: using water level and plumb line
4. Installation function: testing of all electrical and sanitary systems

All test results met the established technical specifications.

Work Safety Aspects

Implementation of Occupational Health and Safety (K3) protocols was carried out consistently. All workers used Personal Protective Equipment (PPE) including safety helmets, safety shoes, and gloves. The work area was secured with safety fences and safety signs. During the 90 days of implementation, no significant work accidents occurred.

Construction Impact

Work Efficiency Improvement

Post-occupancy observations show significant improvement in administrative staff work efficiency. Document search time was reduced by 40% due to a more organized storage system. Room thermal comfort increased with average temperatures of 26-28°C without AC, compared to the old condition which reached 32-34°C.

Service Quality Improvement

The administrative service system became faster with average waiting time reduced from 15 minutes to 7 minutes. The comfortable waiting area increased service user satisfaction (teachers, students, and parents). Satisfaction surveys showed an increase from a score of 6.5 to 8.7 (scale of 10).

School Image Improvement

The new modern and representative administration building improved the school's image in the eyes of the community. This had a positive impact on new student enrollment interest, which increased by 15% in the following academic year.

Discussion

The success of this project demonstrates the importance of careful planning in developing educational infrastructure. Accurate RAB preparation based on volume calculations and proper unit price analysis is key to cost accuracy (Soeharto, 1999). Good coordination between the school, planning consultant, supervising consultant, and implementing contractor ensures the quality of work results.

Consistent application of SNI technical standards and Ministry of Public Works regulations produces buildings that are sturdy, safe, and durable. The selection of appropriate materials considering local availability not only saves transportation costs but also provides positive economic impact to the surrounding community.

Sustainability aspects were important considerations in the design. Optimization of natural lighting and ventilation reduces electricity consumption, in line with green building concepts. Selection of durable and easy-to-maintain materials ensures the building lifespan can reach 20-25 years with minimal maintenance costs.

This project also demonstrates the implementation of good governance in public infrastructure development. Transparency in the procurement process, accountability in budget use, and stakeholder participation in decision-making create public trust in government project management.

IV. CONCLUSION

The construction of the Administration Room at SMP Negeri 20 Mukomuko has been successfully implemented well from technical, managerial, and financial aspects. The project with a total cost of IDR 540,126,850 was completed on time within 90 calendar days without cost overruns. Construction implementation showed 100% conformity with RAB and working drawings, with work quality meeting SNI standards and technical specifications.

The new building successfully improved administrative work efficiency, staff comfort, and service quality. Application of design principles that consider functional, ergonomic, and sustainability aspects resulted in a building that is not only representative but also energy efficient.

The success of this project can serve as a model for the development of similar educational facilities in other regions. Several recommendations for sustainability are: (1) preparation of routine maintenance schedules, (2) complete documentation as technical reference, (3) optimization of energy efficiency with environmentally friendly technology, and (4) replication of the construction model for other supporting facilities.

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