

Technical Assistance for the Design of the Nurul Ibad Mertak Wire Mosque, Barabali Village, Batukliang District, Central Lombok Regency

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Abstract

This PKM proposal discusses a Community Service (PKM) initiative conducted by a team of lecturers from the Faculty of Engineering at Universitas Islam Al-Azhar to assist in the renovation design of Masjid Nurul Ibad Mertak Wire, located in Barabali Village, Batukliang District, Central Lombok Regency. The mosque, which has stood since 1998, has deteriorated over time, and the mosque management aims to renovate it. The main challenges faced include the absence of a Detail Engineering Design (DED) and a Budget Plan (RAB), limited funds, and the aging condition of the building. Based on field analysis and interviews with the mosque management, it was found that a new construction is necessary to create a more comfortable and aesthetically pleasing mosque environment. To address this issue, the UNIZAR PKM Team collaborates with the Nurul Ibad Mosque Management to develop the Detail Engineering Design (DED) and the Budget Plan (RAB). The implementation method of this PKM activity consists of preparation, process, and output stages. The preparation stage includes activity planning, cost estimation, and identifying partners following LPPM UNIZAR requirements. Once a partner is found, the team of lecturers and students establishes cooperation with the Nurul Ibad Mosque Management to carry out the PKM activities. The process involves submitting a proposal to LPPM UNIZAR, preparing the necessary PKM documentation, and mobilizing architectural and structural experts. Upon completion, the team leader compiles a community service report to be submitted to LPPM UNIZAR and reports the implementation of the activities to the Nurul Ibad Mosque Management as part of the UNIZAR lecturers' Tridarma.

Keywords: Assistance, Design of Nurul Ibad Mosque, PKM Journal

INTRODUCTION

In November 2023, the head of the Mertak Wire hamlet, Barabali village, Batuliang sub-district, Central Lombok district, together with the administrators of the Nurul Ibad Mosque, Mertak Wire contacted the lecturer at the Faculty of Engineering, Al-Azhar Islamic University because of the presence of Unizar students taking a real work course (KKN) in August 2023. The head of the Mertak Wire hamlet together with the administrators of the Nurul Ibad Mosque asked for help in designing their mosque which would be renovated. This mosque was founded in 1998 and has experienced deterioration and the mosque management wants to renovate the mosque. Based on the agreement of the team of engineering faculty lecturers, they decided to help the administrators of the Nurul Ibad Mertak Wire Mosque through a community service program (PKM).

Barabali village is a tourist village area where there is a reservoir which is used as a tourist attraction by the local community

[1], [2], [3] Mertak Wire hamlet is included in Barabali village, which is an inland area far from other hamlets. The people in the hamlet, through the mosque takmir management, want to renovate their mosque.

As a result of field analysis and interviews with mosque administrators, there are several challenges faced by mosque administrators when starting to build a mosque. These challenges are: 1) detailed engineering design drawings are not available, 2) no cost budget plans (rab) are available, 3) due to limited funds, the mosque takmir is unable to invite planning experts to design, and 4) the mosque building which was built in 1998 is no longer suitable for construction due to its old age [4], [5], [6], al, [7].

As a place of worship, the comfort and beauty of the mosque must be maintained so that worship can be carried out solemnly and comfortably [8], [9], [10], [11], [12], [13] "Mosque financial management based on financial management sharia to the leadership of the Muhammadiyah branch, Batang Quiz," (2021). To fulfill this goal, the Nurul Ibad mosque

must need a new building to create a comfortable atmosphere and allow more worshippers. To increase the comfort of the mosque, it is necessary to build and carry out a detailed engineering design program that has not existed before.



Picture 1. Condition of Nurul Ibad Mertak Wire Mosque

The purpose of the development of the Nurul Ibad Mosque Mertak Wire is to invite academics and Muslims around the Nurul Ibad Mosque and all Muslims who care about the progress of Islamic teachings to participate in its development, so as to create:

- The mosque is a beautiful and comfortable place of worship,
- Building educational facilities that are realized in early education,
- True religious experience,
- Creating facilities for community religious activities.

IMPLEMENTATION METHOD

The methods used to carry out community service activities include time, location, tools used, and other helpful elements. In an effort to increase the role of universities in society, the Nurul Ibad Mosque Takmir Management and the Al-Azhar Islamic University (UNIZAR) PkM lecturer team provided a solution through mutually beneficial collaboration. This solution was created after assessing the situation and problems faced by work partners. The following image shows the process used to carry out Community Service activities:

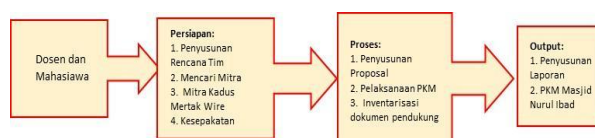


Figure 2. Method of Implementing Community Service (PKM)

The stages contained in the method flow for implementing PkM activities can be explained as follows:

- Preparation:** In the preparation stage, the lecturer and student team makes an activity plan by estimating funding sources and looking for partners that meet the requirements of LPPM Unizar. After finding suitable partners, the team leader becomes a mediator and works with partners to carry out PKM activities. In the initial stage, the lecturer team gives permission to the team head to carry out Community Service activities. To meet the needs of the mosque congregation

and enable the Takmir Management to be involved in the committee for building the Nurul Ibad mosque, a field survey and interviews were conducted with takmir members, the activities can be seen in Figure 3.



Figure 3. Survey Implementation

2. Process: After the preparation stage is complete, the team that made the proposal immediately submits the proposal to LPPM Al-Azhar Islamic University (UNIZAR) and prepares planning materials with partners. Other lecturer teammates and students are responsible for providing PKM equipment and providing expert architects and structural experts to ensure that PKM activities run smoothly.
3. Output: After the process of implementing community service activities is complete, the team leader is asked to make a community service report addressed to LPPM Unizar. The purpose of this PKM report is to report on the implementation of community service activities for the Takmir Management of the Nurul Ibad Mosque, which is one part of the Tridharma of Unizar lecturers.

RESULTS AND DISCUSSION

The Nurul Ibad Mosque in Mertak Wire, Barabali Village, has been standing since 1998 and has experienced a decline in condition due to the age of the building. Based on observations and interviews with takmir administrators, several main problems were found, such as damage to the building structure, leaking roofs, and less than optimal ventilation conditions. Apart from that, the limited capacity of mosques is no longer able to accommodate the increasing number of worshippers. The results of the analysis show that re-planning of the mosque design is needed to make it more functional and comfortable. The UNIZAR PkM team together with the mosque takmir management agreed on several important aspects in the design, namely:

- **Increased Prayer Room Capacity:** Expansion of the main area so that more pilgrims can be accommodated.
- **Natural Ventilation and Lighting System:** Improvement of the air circulation and lighting system to make it more energy efficient and provide comfort for the congregation.
- **Building Structure Repair:** Using stronger and more durable materials so that the mosque remains sturdy for a long period of time.
- **Addition of Supporting Facilities:** Such as more adequate ablution areas, parking areas, and multipurpose rooms for other religious activities.

The UNIZAR PkM team compiled **Detail Engineering Design (DED)** which includes architectural, structural and electrical technical drawings. This DED is the main guideline for mosque administrators in the renovation and construction process. Besides that, **Cost Budget Plan (RAB)** It is also prepared to provide a transparent and accurate picture of funding needs, so that it can be used as a basis for seeking funding or sponsorship. To provide a real picture of the design that has been designed, the PkM team also created **prototype 3D** from the mosque design. This model helps mosque administrators and the community understand the final visualization of the building to be built, which can be seen in Figure 4.

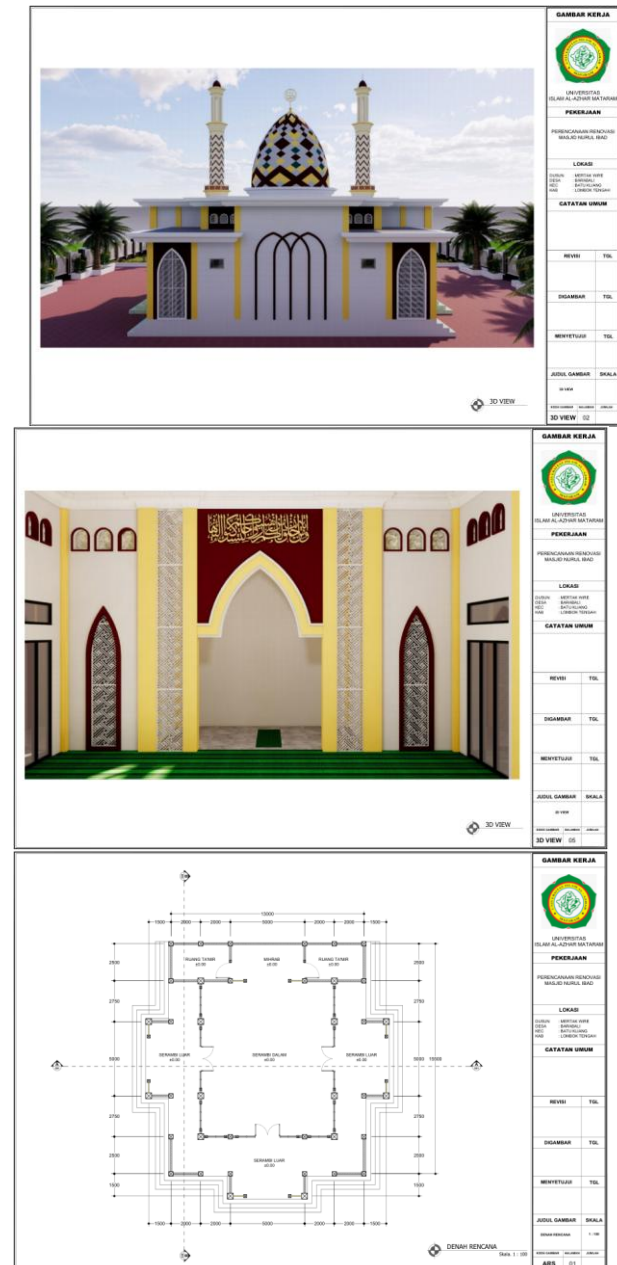


Figure 4. 3D Mosque Architecture

This technical assistance program provides significant benefits for mosque administrators and the surrounding community. With a planned and structured design, the renovation process can be carried out more effectively and efficiently. Apart from that, the results of this program also contribute to academic outcomes in the form of internal publications **Journal of Community Service**, which can be a reference for similar programs in the future.

CONCLUSION

The results of the technical assistance activities for the design of the Nurul Ibad

Mosque show that careful planning in terms of design and budget is very necessary to ensure the success of the renovation. Collaboration between the UNIZAR PkM team and mosque administrators has produced concrete and applicable solutions in planning the construction of a better, more comfortable and more durable mosque.

SUGGESTION

Considering limited funds, mosque renovations can be carried out in stages according to main priorities, such as repairing the main structure and roof first before expanding the mosque area. Mosque administrators can explore various sources of funding, such as assistance from local governments, donations from the community and congregation, as well as collaboration with social or philanthropic institutions. The local community needs to be more involved in the renovation process, either through mutual cooperation, material donations, or labor support to reduce construction costs.

ACKNOWLEDGEMENT

We would like to thank LPPM Al-Azhar Islamic University (UNIZAR) for providing support in implementing this Community Service (PkM) program. We also express our thanks to the Takmir Management of the Nurul Ibad Mosque who have collaborated and provided very valuable information and input in the process of designing the mosque renovation. We also appreciate the participation of the people of Barabali Village, Batukliang District, Central Lombok Regency, who also supported and contributed to various aspects of this activity. Not to forget, we give our deepest appreciation to the team of lecturers and students at the UNIZAR Faculty of Engineering who have worked hard in preparing the Detailed Engineering Design (DED), Budget Plan (RAB), and making 3D prototypes as part of the planning solution for the renovation of the Nurul Ibad Mosque. Hopefully the results of this program can be useful for society and become a reference for

similar activities in the future. We hope that this collaboration can continue in various forms of service that will have a positive impact on the community.

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