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Community-Based Assistance in Planning and Rehabilitation of Early Childhood Education Facilities at TK ABA 25 Sumbersari, Malang

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Abstract

Introduction: TK ABA 25 Sumbersari in Malang City faces several infrastructure-related problems, including leaking classroom roofs, damaged ceilings, cracked partition walls, and potholes along the school access road. These conditions disrupt the learning process and pose potential safety risks to students and teachers. **Objective**: This community service activity aimed to assist the school in developing a systematic and measurable plan for infrastructure rehabilitation. **Methods**: The activity employed a participatory approach combined with technical planning through several stages: initial coordination, site surveys and damage assessment, technical measurements, preparation of two-dimensional working drawings and three-dimensional visualizations, and development of a Bill of Quantities (BoQ) and cost estimate. **Results**: The activity resulted in a set of rehabilitation planning documents, including technical drawings, roof rehabilitation material requirements, a BoQ, and a detailed cost estimate. These documents provide a technical basis for the school to prepare funding proposals and seek rehabilitation support from relevant stakeholders. **Conclusion**: The activity strengthened the school's capacity to plan the rehabilitation of its educational infrastructure in a systematic and sustainable manner. Continued support during the construction and supervision phases is recommended to ensure that the rehabilitation plan is effectively implemented and that the resulting improvements meet safety and functional standards.

Keywords: early childhood education, infrastructure planning, school rehabilitation, technical assistance

Abstrak

Pendahuluan: TK ABA 25 Sumbersari, Kota Malang, menghadapi sejumlah permasalahan terkait sarana dan prasarana, antara lain kebocoran atap ruang kelas, kerusakan plafon, keretakan pada dinding penyekat, serta kondisi jalan akses sekolah yang berlubang. Kondisi tersebut mengganggu proses pembelajaran dan berpotensi menimbulkan risiko keselamatan bagi siswa dan guru. **Tujuan**: Kegiatan pengabdian kepada masyarakat ini bertujuan membantu pihak sekolah dalam menyusun perencanaan rehabilitasi sarana dan prasarana secara sistematis dan terukur. **Metode**: Kegiatan dilaksanakan menggunakan pendekatan partisipatif yang dipadukan dengan perencanaan teknis melalui beberapa tahapan, yaitu koordinasi awal, survei dan identifikasi kerusakan, pengukuran teknis, penyusunan gambar kerja dua dimensi dan visualisasi tiga dimensi, serta penyusunan *Bill of Quantities* (BoQ) dan estimasi biaya rehabilitasi. **Hasil**: Kegiatan menghasilkan dokumen perencanaan rehabilitasi yang meliputi gambar teknis, kebutuhan material rehabilitasi atap, *Bill of Quantities* (BoQ), dan estimasi biaya secara terperinci. Dokumen tersebut menjadi dasar teknis bagi pihak sekolah dalam menyusun proposal pengajuan bantuan dan memperoleh dukungan rehabilitasi dari berbagai pemangku kepentingan terkait. **Kesimpulan**: Kegiatan ini meningkatkan kapasitas sekolah dalam merencanakan rehabilitasi sarana dan prasarana pendidikan secara sistematis dan berkelanjutan. Dukungan lanjutan pada tahap pelaksanaan konstruksi dan pengawasan pekerjaan rehabilitasi diperlukan untuk memastikan rencana rehabilitasi dapat diimplementasikan secara efektif serta memenuhi aspek keselamatan dan fungsi bangunan.

Kata kunci: pendidikan anak usia dini, perencanaan prasarana, rehabilitasi sekolah, pendampingan teknis

INTRODUCTION

Early childhood education (ECE) plays a fundamental role in supporting children's cognitive, physical, emotional, and social development. During this period, children undergo rapid developmental changes, making the quality of their learning experiences particularly important for establishing foundations for subsequent growth and learning. Although the quality of ECE is commonly associated with curriculum, teacher competence, and pedagogical practices, the physical environment in which learning takes place is equally important. The quality of educational services cannot be adequately considered without attention to the built environment, including the safety, functionality, comfort, and suitability of school facilities and infrastructure [1]. A well-maintained physical environment can support effective teaching and learning, whereas unsafe or inadequate facilities may expose children and teachers to safety risks and interfere with educational activities.

In Indonesia, a substantial proportion of ECE institutions are managed by community-based organizations and social or religious foundations. One prominent example is *Taman Kanak-kanak Aisyiyah Bustanul Athfal* (TK ABA), an ECE network established under the Aisyiyah organization. Since its establishment in 1919, TK ABA has contributed to the provision of ECE services in Indonesia and has developed across numerous regions. The sustainability of such community-based educational institutions depends not only on the continuity of educational services but also on their ability to maintain an adequate and safe learning environment. Consequently, the management of school infrastructure represents an important component of efforts to sustain the quality of ECE services.

A persistent challenge for many community-based and privately managed ECE institutions is the limited capacity to maintain and rehabilitate their physical infrastructure. School buildings that have been used for extended periods may experience deterioration as a result of building age, exposure to weather conditions, intensive use, and inadequate preventive maintenance. These challenges can be compounded by limited financial resources and insufficient technical expertise among school administrators.

Consequently, relatively minor defects may remain unresolved and progressively develop into more substantial structural or functional problems. When rehabilitation is undertaken only after damage becomes severe, the intervention may require greater financial resources and may cause greater disruption to educational activities. More importantly, inadequate planning can result in rehabilitation activities that do not effectively address priority problems or provide sustainable improvements to the learning environment.

TK ABA 25 Sumbersari, located in Malang City, East Java, represents a practical example of these challenges. The school operates in a densely populated urban setting and serves children from diverse socioeconomic backgrounds. Preliminary field observations and discussions with school administrators identified several infrastructure problems affecting the school environment. These included deterioration of the classroom roof, cracks in exterior walls, and damage to the access road leading to the school. Roof deterioration was particularly concerning because it allowed rainwater to enter the area between classrooms, potentially disrupting learning activities and accelerating further deterioration of building components. At the same time, the damaged access road presented additional concerns regarding the safety and accessibility of the school environment. Despite these conditions, the school had limited financial and technical capacity to undertake comprehensive rehabilitation independently.

The infrastructure problems were further complicated by the absence of adequate technical planning documents. Prior to the intervention, the school did not have a comprehensive set of working drawings, a *Bill of Quantities* (BoQ), or a detailed cost estimate that could serve as a technical basis for rehabilitation. The absence of such documentation makes it difficult to establish rehabilitation priorities, estimate material requirements, determine realistic costs, and communicate the scope of proposed improvements to potential funding sources. For community-based schools with limited financial resources, technically sound planning documents are particularly important because they can provide a transparent and accountable basis for seeking support from organizational bodies, government institutions, donors, and other stakeholders.

This situation illustrates a broader capacity gap in community-based educational institutions: the need for infrastructure rehabilitation may be substantial, while the technical capacity required to translate identified problems into systematic rehabilitation plans remains limited. In practice, building repairs may therefore be implemented reactively in response to urgent damage rather than through a structured process based on condition assessment, technical design, prioritization, and cost estimation. Such an approach may reduce the effectiveness and efficiency of rehabilitation expenditure and may fail to address the underlying infrastructure needs comprehensively. Strengthening the planning capacity of school administrators is therefore an important component of sustainable infrastructure management.

Universities can play an important role in addressing this capacity gap through community engagement and technical assistance. Academic institutions possess technical knowledge, professional expertise, and human resources that can be mobilized to address practical

infrastructure problems in communities. More importantly, university–community partnerships can move beyond one-way knowledge transfer by involving community partners directly in problem identification, decision-making, and the development of context-specific solutions. A participatory approach can strengthen local ownership while simultaneously improving the ability of community organizations to manage similar challenges in the future.

Against this background, a technical assistance program was developed for TK ABA 25 Sumbersari to strengthen its capacity to plan school infrastructure rehabilitation. Rather than focusing solely on physical repair, the intervention emphasized the development of a systematic rehabilitation planning process involving field assessment, technical measurements, identification and prioritization of damage, participatory consultation, technical design, and cost estimation. The participatory process was intended to ensure that rehabilitation priorities reflected actual conditions and the needs identified by school administrators, while technical planning provided a more objective basis for determining the scope and estimated cost of the proposed interventions. The resulting planning package was designed to be actionable and suitable for use in subsequent funding and implementation processes.

The approach is also aligned with broader efforts to promote safe, inclusive, and sustainable educational environments. Improving the physical conditions of schools contributes directly to the broader objective of ensuring access to quality education, particularly Sustainable Development Goal (SDG) 4 on quality education. It also has relevance to SDG 11, which emphasizes inclusive, safe, resilient, and sustainable human settlements. Within the Indonesian higher education context, the activity further provides an opportunity for students and academic staff to engage in experiential learning through the application of technical knowledge to real-world community problems. Such engagement strengthens the reciprocal relationship between higher education institutions and the communities they serve.

Therefore, this community service activity aimed to strengthen the capacity of TK ABA 25 Sumbersari to plan the rehabilitation of its physical infrastructure in a systematic, technically sound, and measurable manner. The assistance focused on the rehabilitation of the classroom roof, boundary walls, and school access infrastructure. The intervention comprised field surveys and technical measurements, participatory discussions with school representatives, development of two-dimensional technical drawings and three-dimensional visualizations, preparation of a *Bill of Quantities* (BoQ), and development of a site-specific cost estimate. By providing both technical documentation and participatory planning experience, the program was expected to improve the school's readiness to implement rehabilitation progressively through organizational support and collaboration with external stakeholders. Ultimately, the intervention seeks to contribute to the development of a safer, more functional, and more supportive learning environment for young children while demonstrating a potentially replicable model of university-based technical assistance for infrastructure management in community-based ECE institutions.

METHODS

This community service project was place in the TK ABA 25 Sumbersari, Lowokwaru District, Malang, East Java. The school is located in a crowded urban area with limited infrastructure facilities. The main school building, especially the top of the classroom, the walls that separate the rooms, and the road that leads to the school were all things that were used in the activity. The activities were place throughout October – December 2025, which included planning, field surveys, technical planning help, and preparing and submitting rehabilitation paperwork. The whole series of activities happened in phases and with the school's help in order to not disrupt early childhood learning activities.

The method used in this community service activity was a participatory assistance approach combined with a technical approach to simple building design. This approach was chosen because the partners' problems were not only physical, but also related to their limited capacity to develop systematic and measurable rehabilitation plans. Participatory assistance places partners as active subjects in every stage of the activity.

The school was directly involved in the process of identifying damage, discussing rehabilitation priorities, and understanding the technical documents that were prepared. Partners are also involved in evaluating activities to assess their success and the achievement of their objectives [2]. Thus, this activity not only produced planning documents, but also encouraged knowledge transfer and capacity building for partners.

Educational facility management involves a cycle of planning, use, maintenance, and evaluation [3]. Therefore, the method in this program was arranged as a structured assistance process rather than a one-time repair activity. The community service activities are carried out through five main stages that are systematically arranged to produce applicable and sustainable outcomes.

Initial Socialization and Coordination

The initial stage begins with socialization and coordination activities between the community service team and the school. This activity aims to align understanding regarding the objectives and scope of community service activities, and the methods and stages

of implementation. At this stage, initial discussions are held regarding the building problems most felt by the school, as well as agreeing on a schedule of activities so that they are in line with learning activities.

Field Survey and Damage Identification

The second stage involves collecting primary data through a field survey. The survey is conducted using visual inspection and documentation of the building's condition. Activities at this stage are identifying the type and level of damage to the classroom roof, cracks and the structural condition of the partition walls, damage to the school access road, and documenting the existing condition using photos and field notes. Damage is classified simply into minor, moderate, and severe categories to facilitate the determination of rehabilitation priorities.

Technical Assessments and Geometric Data Acquisition

Following the identification of the damage, geometric measurements of the elements to be rehabilitated are conducted. Measurements consist of area and measurements of compromised roofing; dimensions, height, and thickness of partition walls; extent and severity of devastation to access roads. This measurement data serves as the primary foundation for the development of technical designs and the calculation of work quantities. At this stage, partners are involved to understand the process of measurement and recording of technical data. Based on the results of the survey and measurements, the team prepared technical designs for the rehabilitation of the building. The design is compiled in the form of 2D working drawings, which contain floor plans, elevations, and simple details. Effective facility management depends on organized and accountable planning [4]. The 3D visualizations were also made to make it easier for partners to understand the final form of the rehabilitation results

Compilation of the BoQ and Budgetary Plan

The next phase is the assembly of quantitative papers, namely a BoQ and a budget plan. This task includes assessment of work volume based on measurement data; evaluation of suitable material types and their characteristics; and formulation of cost estimates based on local unit pricing in Malang City. The BoQ and budget plan documents are carefully crafted to function as direct reference resources for the school in executing rehabilitation initiatives and as supplementary documentation for funding assistance requests.

Assistance in Document Utilization and Evaluation

The final stage involves providing assistance in the efficient use of the planning materials that have been developed. Clarification regarding the content and purpose of the design documents, BoQ, and budget plan for the partners. These documents are then used as a reference in determining priorities for improvements, estimating material needs and costs, and preparing grant proposals to submit to potential supporters of the rehabilitation efforts. Facility and infrastructure management should support the operational continuity of educational institutions [5]. The evaluation is conducted by comparing the initial conditions with the final conditions following the mentoring activities. The initial conditions are assessed based on the physical condition of the building, the availability of rehabilitation planning documents, and the school administrators' understanding of the damage and repair needs. These conditions were then compared with the situation at the end of the activity, including the availability of technical drawings, the BoQ, and the budget estimate; the use of these documents as part of the funding proposal; the implementation of repairs on prioritized building sections; and the school's understanding of the stages of rehabilitation and building maintenance.

The evaluation then continued by comparing the activity plan with its actual implementation. The assessment covered the execution of each planned stage, ranging from coordination with partners, surveys and damage identification, technical measurements, drawing preparation, BoQ and Budget Plan calculations, guidance on the use of documents, to the implementation of physical repairs. The success of the activities was assessed based on the achievement of planned outcomes, the partners' utilization of the documents, and the implementation of follow-up repairs on priority building sections. In this way, the evaluation not only demonstrated the completion of activity stages but also illustrated the changes achieved by the partners and the alignment between the initial plan and on-site implementation.

RESULTS AND DISCUSSION

The community service project started with an evaluation of the condition of the building of TK ABA 25 Sumbersari, Malang. The assessment was conducted in cooperation with the school officials, and was based on field observations, documentation and measurements of the damaged parts of the building.

Figure 1. The roof between classrooms at TK ABA 25 is damaged, causing flooding when it rains.

The assessment findings showed that the issues were not limited to the physical condition of the building but also the absence of technical documents which the school could use to define the scope of work and the cost of rehabilitation. The damage requiring attention was primarily found on the roof connecting the classrooms. Leaks at several points caused rainwater to enter the classrooms and gradually damage the ceiling. Measurements showed that the area of the roof requiring repair was approximately 33 m^2. In addition, cracks were found in the partition walls, as well as damage to the surface of the access road leading to the school. Prior to the technical assistance, the school was aware of this damage, but it had not been documented in the form of a condition survey, technical drawings, material requirement calculations, or cost estimates. The assessment results were then used to determine the necessary repairs and prepare the rehabilitation documentation.

Table 1. Comparison of conditions before and after mentoring

Aspects Evaluated	Conditions prior to the assistance program	Conditions following the assistance
Roof	Leaks have occurred in several sections of the roof, causing water to enter the classrooms (Figure 2a, 2c.)	The areas requiring repair have been identified and measured at approximately 33 m^2 and are a priority for rehabilitation
Ceiling	Some sections of the ceiling have been damaged due to a roof leak (Figure 3)	The damaged sections have been identified, and repairs are being carried out in stages according to priority
Partition wall	Cracks were found that could potentially spread and pose a risk to users (Figure 2b)	The extent of the damage has been documented and included in the remediation plan
School Road Access	The surface of the access road is damaged and potholed (Figure 2d)	The damage has been identified and included as part of the rehabilitation plan
Building Condition	The damage is generally known but has not yet been technically documented	The damage has been documented through survey results, measurements, and field documentation
Technical Drawing Plans	The plan for the rehabilitation is not yet available	2D working drawings and 3D visualizations are available as references for the rehabilitation
Material Requirements	Material requirement calculations based on measurement results are not yet available	Material requirements have been compiled based on the area and type of planned work
Cost planning	BoQ and budget plan not yet available to serve as a basis for rehabilitation	BoQ and budget plan compiled based on measurement results and work requirements (Figure 4)
Funding application support	The school does not yet have adequate technical documents to support the rehabilitation proposal	Technical drawings, BoQ, and Budget Plan have been used as supporting documents for grant applications to PCA, PCM, and potential donors
Management understanding	Damage identification and maintenance planning are still carried out in a rudimentary manner	Management has gained an understanding of damage identification, priority of repairs, and periodic maintenance

Figure 2. (a) The polycarbonate roof has holes and is leaking; (b) The school fence wall is cracked; (c) The roof over the walkway has holes and leaks; (d) The school access road is full of potholes and severely damaged

The results of the community service activity show that the technical assistance not only led to physical improvements to the buildings but, enhanced the schools' technical readiness to plan rehabilitation projects. Prior to the activity, the extent of building damage was generally known, but there was insufficient technical data to calculate the scope of work, material requirements, and cost estimates. The information was successfully translated into a damage assessment map, planning drawings, BoQ and a more quantifiable budget plan following assessment.

For example, for a roof area of approximately 33 m², material requirements could be calculated in detail, and more accurate, which relied solely on visual observation. The assessment results were also supported by documentation of the existing conditions and translated into 2D working drawings, 3D visualizations, BoQ, and budget plan documents. Overall, this initiative enhanced the school's planning capacity, while the implementation of physical repairs is still being carried out in phases according to the availability of funds.

Figure 3. (a) The damaged ceiling at TK ABA25, covered with a banner due to a leaky roof; (b) Inspection and repair of sporadically damaged ceilings

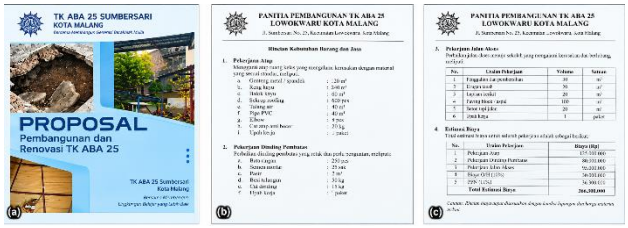

Figure 4. (a) Cover page for the proposal for the construction and renovation; (b) Details of the materials needed for the renovation; (c) Budget plan for the renovation.

Technical Assistance to Strengthen School Building Maintenance Management

Damage to educational buildings, compounded by limited funding, often receives attention only after teaching and learning activities have been disrupted. This situation indicates that maintenance is still viewed as a corrective measure and has not yet been considered part of a sustainably planned asset management system. The effectiveness of school building maintenance will be optimized if it is based on the actual condition of the building and clear prioritization of repairs [6]. The guidance provided at TK ABA Kindergarten represents an initial effort to establish a more systematic approach to facility management. Data on the building's condition is not merely used to identify damage but is analyzed to serve as the basis for determining the priority of repair work. This is intended so that school officials no longer rely solely on visual inspections to address damage but instead have a more structured framework for assessing the urgency and impact of each instance of damage.

Planning, utilization, maintenance, and supervision are interrelated components of educational facility management [7]. The availability of adequate facilities will not yield optimal results without the support of a structured management system [8]. Thus, the benefits of this guidance are not limited to providing solutions for existing damage but also foster an understanding that the condition of buildings needs to be monitored, documented, prioritized, and maintained on an ongoing basis.

Infrastructure Rehabilitation as a Prerequisite for a Safe and Conducive Learning Environment

The suitability of school buildings is directly related to the quality of the learning environment. In early childhood education, this relationship becomes even more important because learning activities largely take place through movement, play, exploration, and interaction with the space. The physical environment of early childhood education centers must provide a sense of safety while supporting children's developmental needs [9]. Therefore, learning spaces cannot be treated merely as venues for activities but must be considered an integral part of the educational process. Safety, the quality of spaces, and the condition of the physical environment are critical elements in the delivery of early childhood education [10]. Furthermore, the quality of a child's learning environment must be viewed through the interconnection between physical design, activities, and the developmental needs of the users [1]. Consequently, the rehabilitation of school facilities takes on a broader significance than merely restoring the functionality of building components.

The relationship between the quality of space and the learning process is also evident at broader levels of education. Classroom characteristics can have a measurable impact on students' learning development [11]. Environmental factors such as comfort, lighting, air quality, spatial flexibility, and the space's ability to support learning activities work together to shape the user experience. There is a correlation between facility quality, school climate, and student achievement [12]. This indicates that interventions at TK ABA 25 should be viewed as part of efforts to improve the quality of educational services. Safety is indeed the primary consideration, but the benefits of rehabilitation extend beyond risk reduction. Well-maintained spaces provide teachers with certainty regarding space usage, reduce

disruptions during learning activities, and create a more suitable environment for children. Therefore, investment in the maintenance of educational facilities is, in essence, also an investment in the quality of the educational process.

BoQ and Budget Plan as Decision Making Tools and Means of Accessing Funding

In the assistance process, another important aspect is the transformation of technical information into a basis for decision-making. The condition of the building is translated into a scope of work that can be quantified and understood by other parties. Thus, technical drawings, the BoQ, and the budget plan serve as communication tools between the school, technical staff, managing organizations, potential donors, and contractors.

Technical planning provides a clearer basis for schools to determine rehabilitation needs and prepare for their implementation [13]. Furthermore, assessments of educational buildings also highlight the importance of translating the condition of a building into technical information before decisions regarding development or repairs are made [14]. The function of these documents becomes even more strategic because the implementation of rehabilitation heavily depends on an institution's ability to secure support from other parties.

This also demonstrates that the contribution of civil engineering expertise in community service activities need not be limited to physical construction. Expertise in assessment, measurement, planning, and cost estimation can be used to strengthen the capacity of community institutions to make informed decisions. This type of mentoring is particularly relevant for schools that have rehabilitation needs but lack access to professional technical personnel.

Partner Participation and Knowledge Transfer in Empowerment-Based Community Service

The sustainability of community service activities is greatly influenced by the partners' role during the mentoring process. Participation in these activities should be understood solely as involvement in the decision-making process. School administrators have knowledge regarding the day-to-day use of spaces, the history of building damage, learning needs, and the institution's capabilities. The technical team possesses the expertise to assess these conditions from a structural perspective. It is the convergence of these two forms of knowledge that ensures rehabilitation recommendations better align with the school's actual needs. The management of educational facilities requires the involvement of school stakeholders to ensure that decisions regarding facilities align with user needs [15]. This principle is also consistent with educational facility management that positions users as an integral part of the planning and maintenance process. This involvement is crucial because the school is the entity that will continue managing the facilities after the community service program concludes.

Sustainability must also be viewed in terms of the partners' ability to use the outcomes of the mentoring for subsequent actions. At this stage, the program's success is not measured solely by the amount of physical work completed within a single period. The school's ability to set priorities, understand cost requirements, utilize planning documents, and secure funding support represents a form of capacity-building that yields longer-lasting impacts. This approach distinguishes the mentoring activities from short-term construction assistance. Physical rehabilitation remains necessary, but the development of management capacity enables the school to respond to future maintenance needs more independently. This model also opens opportunities for replication at other community-based educational institutions facing a similar combination of challenges: deteriorating facility conditions, limited funding, and a lack of internal technical capacity.

The mentoring activities at ABA 25 Preschool demonstrate the relationship between three aspects: the physical condition of the building, facility management capacity, and the sustainability of educational services. Physical repairs address short-term safety needs. Technical planning provides a basis for decision-making. And partner involvement creates opportunities for sustainability after the program ends. Within this framework, community service activities based on civil engineering expertise not only result in building interventions but also help strengthen the educational institution's ability to gradually maintain the quality of its learning environment.

CONCLUSION

The community service program was successfully implemented and achieved its primary objective of strengthening the capacity of TK ABA 25 Sumbersari to plan and initiate school infrastructure rehabilitation. The program produced more complete and technically informed rehabilitation planning documents, including field assessment results, technical measurements, a *Bill of Quantities* (BoQ), and a cost estimate, which can serve as a basis for determining rehabilitation priorities and preparing funding proposals. The program also supported the implementation of priority repairs to damaged roof and ceiling components, contributing to a safer and more comfortable learning environment. In addition, teachers and school administrators gained a better understanding of building conditions, damage identification, rehabilitation priorities, and basic technical planning. These outcomes demonstrate that the intervention generated technical and managerial benefits while contributing to improvements in the school environment. However, rehabilitation remains incomplete, and

continued technical, financial, and supervisory support is required to ensure the implementation of remaining rehabilitation works. The participatory planning approach developed through this program may provide a practical and potentially replicable model for strengthening infrastructure management capacity in other community-based early childhood education institutions.

RECOMMENDATION

TK ABA 25 Sumbersari is recommended to implement infrastructure rehabilitation progressively, prioritizing interventions according to the severity of damage and associated safety risks. Roof and ceiling repairs should receive the highest priority because of their direct implications for student safety, learning comfort, and the continuity of educational activities, particularly during the rainy season. Subsequent rehabilitation should address damaged perimeter walls and school access roads to improve the overall safety, functionality, and accessibility of the school environment. The rehabilitation planning documents developed through this program should be used as a technical basis for seeking financial support from relevant stakeholders, including PCA, PCM, local government, donors, and corporate social responsibility (CSR) programs. To sustain the benefits of the intervention, the school should establish a routine facility maintenance system involving regular inspections, condition documentation, and systematic recording of building damage. Early identification and timely response to emerging defects can help prevent minor deterioration from developing into more costly and extensive damage. The long-term sustainability of the rehabilitation program will depend on the school's commitment to systematic facility management and its continued collaboration with relevant stakeholders.

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