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Technical Assistance for "Maju" Communal Space Design at Graha Mandiri Residence, Patemon, Semarang City

Ardiyan Adhi Wibowo*, RM. Bambang Setyohadi Kuswarna Putra, Agung Budiwirawan, Sherley Ika Christanti, Adi Kuntoro, Muhammad Harits Al Rasyid, Janae Christie Nemorai Embongduma, Syira Riskiyani Sinambela

Architectural Engineering, Faculty of Engineering, Universitas Negeri Semarang, Semarang, Indonesia

*Corresponding Author: ardiyanadhi@mail.unnes.ac.id

Abstract
Communal space is an important facility in residential areas to support social interaction and shared community activities. Graha Mandiri Residence, particularly RT 05/RW 07 in Patemon, Gunungpati, Semarang, requires a space for community activities, while available land is limited and residents face challenges in preparing a technical design. This community service program aims to provide technical assistance in planning and designing a communal space based on residents' needs. The methods include coordination, site survey and measurement, user-needs identification, design discussions, preliminary design development, presentation, and preparation of planning documents. The resulting preliminary design, named Communal Space "Maju," applies a modern tropical approach with a homey atmosphere. The design accommodates a flexible meeting area, neighborhood asset storage, CCTV monitoring, sound-system control, and motorcycle parking. Design strategies include natural ventilation and lighting, roof overhangs for weather protection, and functional zoning. The design documents are expected to guide residents in proceedings to the construction stage.

Keywords: *communal space; design; Graha Mandiri Residence*

INTRODUCTION

Residential environmental facilities play a role in supporting the social, cultural, and economic life of the community (Republik Indonesia, 2011; Sasongko, 2023). One facility that can meet these needs is communal space, which is a space for residents to gather, interact, exchange information, and carry out activities together. The existence of communal space can also strengthen social relationships and a sense of togetherness in the residential environment (Pinandita et al., 2023; Sabtalistia et al; 2023; Purwanto & Wijayanti, 2012). Graha Mandiri Residence (GMR), located in Patemon Village, Gunungpati District, Semarang City, specifically neighborhood unit (RT) 05/RW 07, requires facilities to accommodate community social activities. Based on the activity proposal, the neighborhood lacks adequate communal space. Residents require a place for neighborhood unit (RT) meetings, religious activities, communal entertainment, informal discussions, and other communal activities. Limited land presents a challenge, requiring the space to be designed to effectively accommodate a variety of activities. Citizens need support technical to plan space and create a design that suits the site conditions. Therefore, the Community Service team of Semarang State University carried out the activity "Technical Assistance for the Design of Communal Spaces at Graha Mandiri Residence, Patemon, Gunungpati, Semarang City". This activity aims to produce a communal space design that is functional, comfortable, and appropriate to the needs of residents, while also serving as a basis for planning for the next development phase.

METHOD

This community service activity uses an exploratory descriptive approach, involving residents as partners in identifying problems and developing designs. activity covering survey and measurement site, coordination, identification of user needs, preparation and discussion of pre-design, and preparation of planning documents.mSurvey and measurement footprint. The team conducted direct observations and measurements of the land to obtain information on dimensions, existing conditions, and circulation, sized approximately 5.4 × 13 meters.

Coordination and preparation. The team coordinated with the RT administrators to understand the problems, initial site conditions, and residents' expectations regarding the facilities to be designed. Identification need user. The team identified the activities to be accommodated and the space requirements, including flexible meeting rooms, RT asset warehouses, CCTV monitoring rooms, sound system control rooms, and two-wheeled vehicle parking areas.

Preparation and discussion pre-design. Site data and user needs were processed into several design alternatives. The pre-design results were then presented to neighborhood association (RT) officials and community representatives for feedback and refinement. 5. Compilation document planning. After receiving input, the team develops a design document to guide further planning. The completeness of the final document should reflect the materials actually submitted by the team.

RESULTS AND DISCUSSION

Preparation and Identification of Needs



Figure 1. Survey and Measurement Direct



Figure 2. Presentation of Analysis Results Initial Footprint

The initial stage was carried out through coordination between the community service team and the management of RT 05/RW 07 Graha Mandiri Residence. Survey and measurement Field surveys provided information on land conditions. The site measures approximately 5.4 x 13 meters, making circulation and utilization of each space crucial considerations in the design process. User identification revealed that communal spaces need to accommodate diverse groups and activities. Adult residents require space for neighborhood association meetings, religious activities, communal entertainment, and informal discussions. Furthermore, supporting space is needed to store neighborhood assets and operate neighborhood facilities. The identification results form the basis for developing a space program so that the design can support both shared activities and the operational needs of residents.



Figure 3. Discussion Direct with RT Administrators on the Communal Space Theme

In initial discussions, residents and the team agreed on the name "Ruang Komunal Maju." The name, an acronym for RT 05/RW 07, reads "Maju," and embodies the hope that the neighborhood and social life of the residents will continue to thrive. This name also aligns with existing community facilities, such as the Maju Sports Field and the Toga Maju Park. The pre-design of the “Maju” Communal Space carries modern tropical approach with atmosphere *homey* or feel familiar and comfortable. A modern tropical approach used for adapt building with the climate of Semarang City, while the *homey atmosphere* is expected to make the space feel warm and not stiff so that residents feel comfortable carrying out activities together (Junita et al., 2025; Lodhita & Darmayanti, 2024). The formulated design strategies include:

Natural ventilation. The gaps in the pyramid-shaped roof are designed as *ventilated gaps* to help circulate hot air out of the building. Natural lighting. *Clerestory openings* in the roof and facade windows are designed to bring natural light into the space. Weather protection. Wide eaves and a concrete roof at the front are designed to provide shade and reduce rain splash onto the terrace and parking area.

Material selection. The design combines modern elements and textured materials, such as roster walls, concrete trim, *paving blocks*, and natural stone on the main pillars. Zoning. The front area is used for motorcycle access and parking, the middle area serves as the main gathering and meeting space, and the rear area is used for service functions, such as the sound system, storage, and CCTV room. This division aims to clarify functions and support more organized use of the space.

Presentation and Refinement Pre-design



Figure 28. Presentation Design Results Pre-design



Figure 29. Discussion Design Results Pre-design

PERMANENT COMMUNAL SPACE

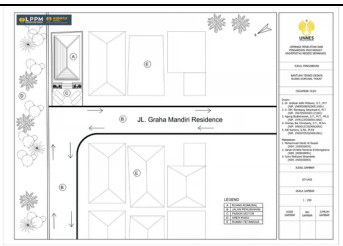


Figure 4. Situation

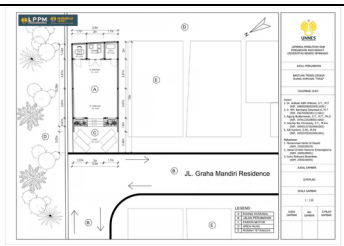


Figure 5. Site plan

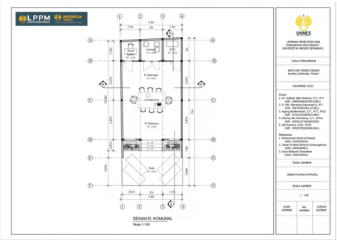


Figure 6. Floor plan

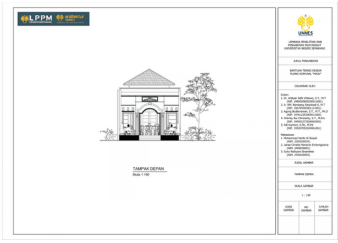


Figure 7. Appearance Front

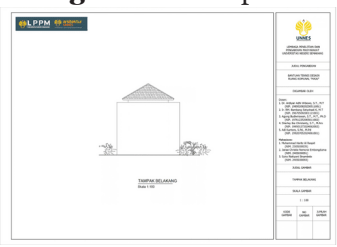


Figure 8. Appearance Behind

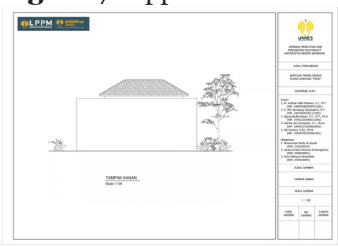


Figure 9. Right View

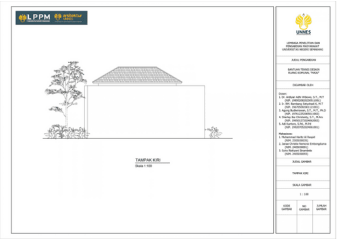


Figure 10. Left View

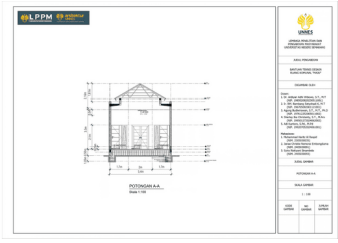


Figure 11. Section AA

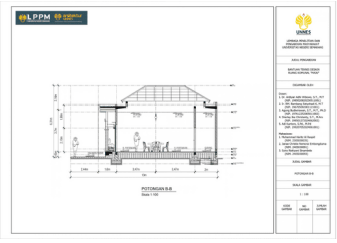


Figure 12. BB section



Figure 13. Atmosphere Meeting



Figure 14. Atmosphere moment relax



Figure 15. Exterior

NON-PERMANENT COMMUNAL SPACE

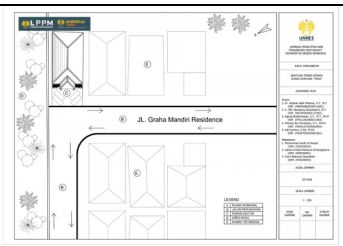


Figure 16. Situation

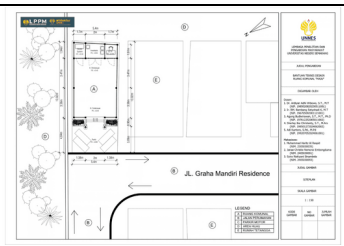


Figure 17. Site plan

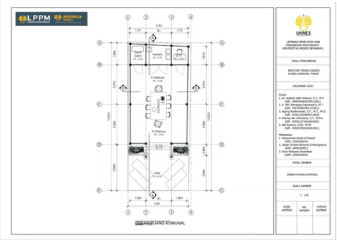


Figure 18. Floor plan

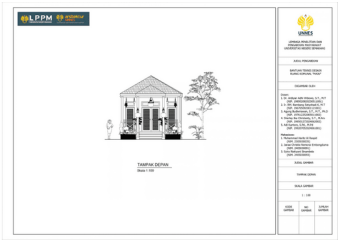


Figure 19. Appearance Front

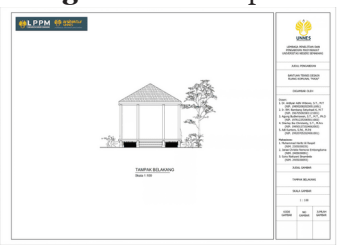


Figure 20. Appearance Behind

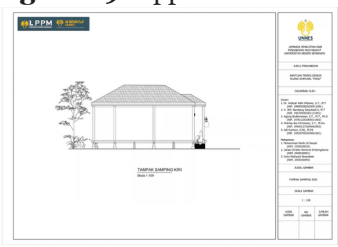


Figure 21. Right View

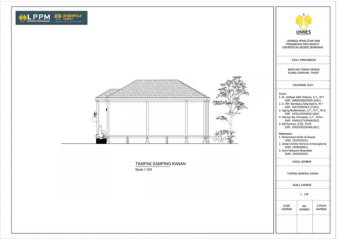


Figure 22. Left View

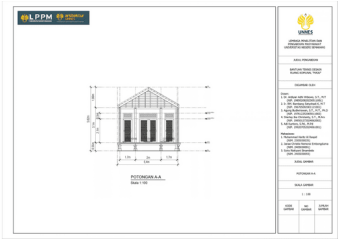


Figure 23. Section AA

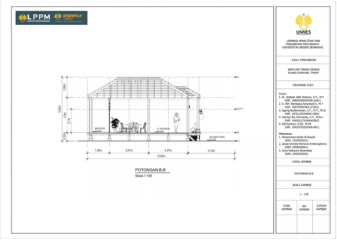


Figure 24. BB section



Figure 25. Exterior



Figure 26. Atmosphere moment meeting



Figure 27. Atmosphere moment relax

The pre-design was presented to neighborhood association (RT) officials and community representatives through three-dimensional visualizations to facilitate understanding of the building's shape, layout, and potential uses. Presentations and discussions were used to verify the design's

suitability to community needs and to gather input before planning proceeded. Based on the available activity materials, the primary outcome of the community service is the initial design for the "Maju" Communal Space, along with planning documents as a reference for the next phase. This activity cannot yet be declared a completed physical development; construction is expected to begin once readiness and funding requirements are met.

CONCLUSION

Community Service Activities "Technical Assistance for the Design of Communal Spaces at Graha Mandiri Residence, Patemon, Gunungpati, Semarang City" resulted in “Maju” Communal Space pre-design based on survey footprint, identification needs, and discussion with residents. Approach modern tropical and atmosphere *homey* implemented through natural ventilation and lighting strategies, weather protection, material selection, and zoning. The design is aimed at accommodating social activities and the operational needs of the neighborhood association (RT) on limited land. As a follow-up, planning documents should be used as a reference for developing technical drawings, calculating costs, and preparing construction phases according to field conditions and community capabilities. Periodic evaluations with residents are also necessary to ensure the design remains relevant to needs and can be maintained sustainably.

DECLARATION OF GENERATIVE AI

The authors declare that no generative AI or AI-assisted technologies were used in the writing process of this manuscript.

CONFLICTING INTEREST STATEMENT

The authors state that there is no conflict of interest in the publication of this article.

FUNDING INFORMATION STATEMENT

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