

REDESIGN OF THE AGRIBUSINESS MARKET AREA IN NGABLAK DISTRICT, MAGELANG REGENCY WITH A BEHAVIORAL ARCHITECTURE APPROACH

Muhammad Syahrul Rifki^{1*}, Majora Nuansa Al-Ghin², Andi Purnomo³
^{1,2,3} Architecture Engineering, Faculty of Engineering, Universitas Negeri Semarang

*Corresponding author: syahrulrifki1015@students.unnes.ac.id

Abstract. Indonesia is an archipelagic country with abundant natural resources both in terms of biological and non-biological, one of the dominant wealth of Indonesia is the agricultural sector, this is supported by the land in Indonesia which is dominated by loose soil with high fertility levels. Therefore, agriculture has been very closely associated with the indigenous people of Indonesia, even if seen from History, agriculture has become a way of life or lifestyle for the community. Ngablak District in Magelang Regency is one of the areas in question, with its geographical location on three mountain slopes namely Mount Andong, Mount Telomoyo, and Mount Merbabu, making the land in the Ngablak area very fertile, this is what makes the community very dependent on the agricultural sector. Therefore, the need for a space that is able to act as an intermediary for agricultural actors in trading and what has developed in Indonesia is the Agribusiness Market. The Agribusiness Market is a market related to the agricultural business or other fields that support it, the Planning of the Agribusiness Market in Ngablak District, Magelang Regency aims to create facilities for the community as an agricultural trade space and the like. With a behavioral architecture approach, this building is designed to respond to the habits of the community or users.

Keywords: *Redesign, Agribusiness Market, Ngablak District, Behavioral Architecture*

INTRODUCTION

Agribusiness markets play a strategic role as the main hub of agricultural-based economic activity, particularly in rural areas where the agricultural sector is crucial for their livelihoods. Ngablak District, Magelang Regency, is known as a leading producer of horticultural commodities, with high levels of distribution and trade activity.

The presence of agribusiness markets in this region is vital for supporting supply chains, social interaction, and local economic sustainability.

However, with increasing activity volume and changing user behavior patterns, the physical condition and layout of the agribusiness market in Ngablak District have not been able to optimally

accommodate the needs of traders, buyers, and distributors. Issues such as irregular circulation, lack of comfort, minimal cleanliness, and a weak link between space and user behavior are key challenges impacting the market's effectiveness and attractiveness.

Therefore, the redesign of the Ngablak Agribusiness Market area is an innovative step to transform the traditional market into a more functional, environmentally friendly space that is responsive to the needs of the wider community. Through planning that focuses on aspects of orderliness, spatial efficiency, and the integration of supporting facilities such as service areas, communal spaces, and supporting infrastructure, this redesign is expected to revitalize the market's vitality as a strategic location for local economic growth. Furthermore, this new design also seeks to present a more modern market image without eliminating the cultural character and local wisdom that are the identity of the Ngablak community.

METHODS

The Architectural Planning and Development Program (LP3A) uses a descriptive method, presenting, explaining, and outlining the design requirements and conditions in the redesign of the agribusiness market area in Ngablak District, Magelang Regency, using a behavioral architecture approach. Data collection was conducted through observation, interviews, and literature studies from written sources such as books, journals, and proceedings.

CONCEPT

Approach in re-planning the agribusiness market area in Ngablak sub-district, Magelang regency with behavioral architecture, Behavioral Architecture is an architecture whose application always includes behavioral considerations in the design (Sherly, 2018).

SITE DATA

The location of the redesign of the agribusiness market area is at:

Location: Jl. Ngablak - Grabag market, Ngablak, Ngablak District, Magelang Regency, Central Java 56194

Area : 9.468 m²

North : Ngablak Village Road

East : Magelang – Kopeng Road

South : Ngablak – Grabag Road

West : Ngablak Village Office

Building Base Coefficient : Max 60%

Building Floor Coefficient : 1,2

Green Base Coefficient : Minimum 40%

Building Border Lines.: 7 m



Figure 1. Site location

CONTEXTUAL ASPECT APPROACH

a. Climatological Analysis (Sunpath and Wind)

On the site, the direction of the sun's orbit looks like the one in the picture, the sun shines on the side in the afternoon because in the morning the site is covered by the community's private kiosk area.

The wind direction on the site is from the south, so there is potential to maximize openings, and also the wind gusts are quite high because the site is in a highland area with an average temperature of 17-20 degrees Celsius.



Figure 2. Sunpath Analysis

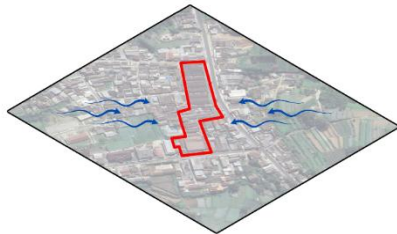


Figure 3. Wind Analysis

b. Sensory Analysis (View and Noise)

The site location borders residential areas and also serves as access to provincial roads, but there are views of several mountains and natural beauty if a well-organized Agribusiness Market area is built.

To obtain optimal views for building occupants, view analysis or visual perception can be used. The best locations for views are to the east, west, and south of the building, because there are mountains and plantations with abundant trees in those areas.

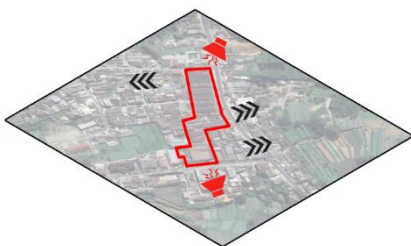


Figure 4. Sensory Analysis

c. Vegetation Analysis

On the site there are only a few vegetations because it is in a highland area, so in the existing conditions the green area outside the site is maximized, and in the site area there are only a few

glodokan tiang and Ketapang kencana plants.



Figure 5. Existing Vegetation Data

The site is located in the highlands between Mount Merbabu, Telomoyo, and Andong. Therefore, the vegetation requires tropical plants such as Glodokan Tiang, Ketapang Kencana, mahogany, and others.

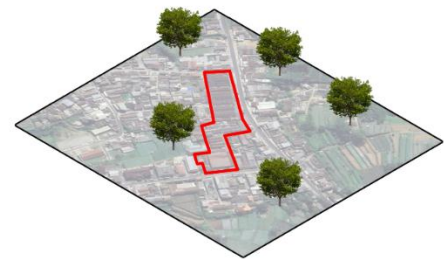


Figure 6. Vegetation Analysis

d. Existing Site Zoning Analysis

The existing zoning topology of a market is a landscape that serves as a boundary or dividing area, so that the spatial zoning is spread out and separated without being gathered within a single building. As already existing zoning, among others: general market zoning, management zoning, agribusiness STA zoning, general zoning, and parking and service zoning.



Figure 7. Existing Zoning Data

In an effort to separate user activities, the existing site separates private, semi-public, and public zones. Ngablak Market serves as the community's primary means of buying and selling agricultural products and general goods and services.



Figure 8. Analysis of Zoning

ARCHITECTURAL ASPECT APPROACH

The theme chosen by the author in the design of "Redesign of the agribusiness market area in Ngablak sub-district is a behavioral architecture approach that aims to emphasize aspects and respond to issues that have become habits or behaviors of market users which until now are still a very big homework. Behavior Architecture (Behavioral Architecture) in its application uses relationship techniques between designs that are able to influence the human

psyche in behaving or using a space both in maintaining and caring for.

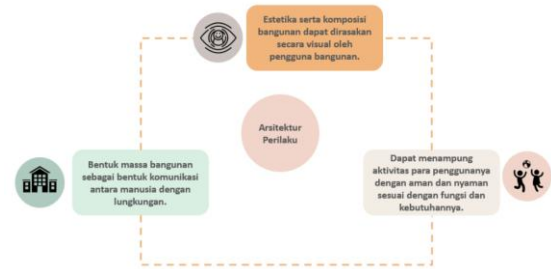


Figure 9. Elaboration of Behavioral Architecture Implementation

Behavioral architecture is architecture that applies behavioral considerations in design. Behavioral architecture examines the relationship between human behavior and its environment. This, of course, is inseparable from psychological discussions, which are generally defined as the science that studies human behavior in relation to its environment.

In its application, behavioral architecture can transform human psychology through several elements, including the form of a space or building, visualization or aesthetics, and also the safety and comfort of the building. These factors are influenced by spatial elements such as shape and size, color, properties, and environmental aspects.

PRE-DESIGN RESULTS

The following is a pre-design result for the agribusiness market area in Ngablak District, Magelang Regency:

a. Situation

The main building has an elongated mass, distinct from the other buildings, giving it a distinctive appeal. The building's harmonious gabled roof divides it into several building zones.



Figure 10. Situation Draw



Figure 13. A-A Area Section

b. Siteplan

The building mass is divided into several zones with their respective functions, making it easier to operate and maximizing the function of the land.



Figure 11. Siteplan



Figure 14. B-B Area Section

d. Floor Plan

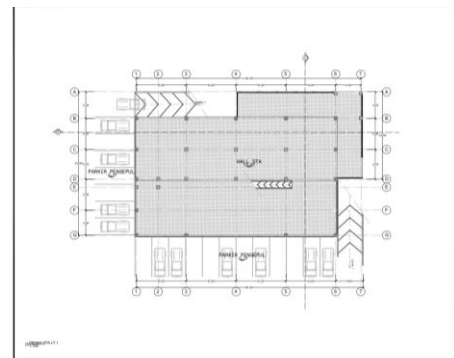


Figure 15. STA Floor Plan 1

c. Area View



Figure 12. Area View

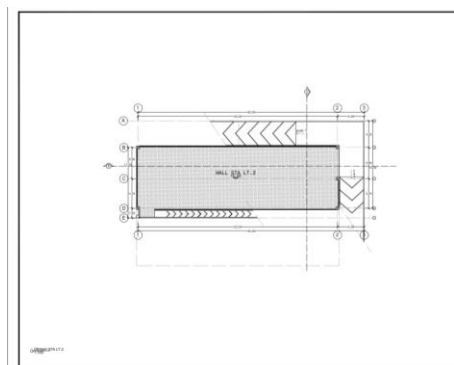


Figure 16. STA Floor Plan 2

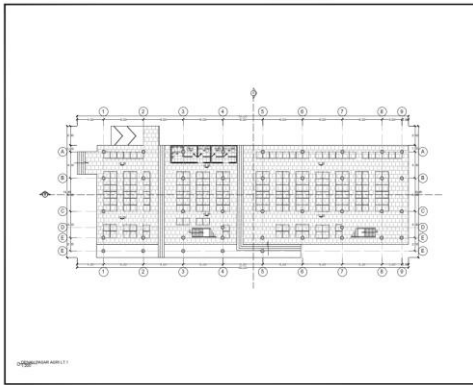


Figure 17. Agri Market Floor Plan 1

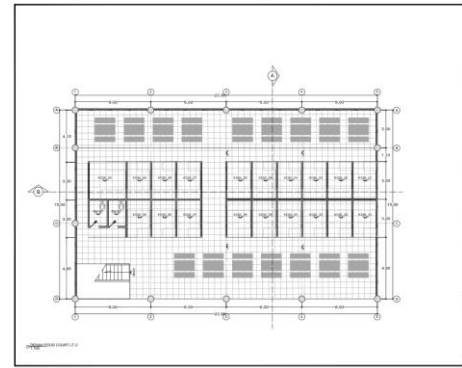


Figure 21. Food Court Floor Plan 2

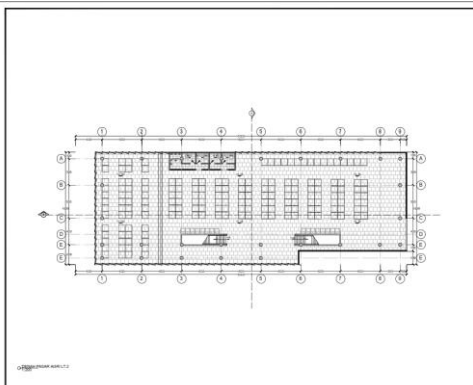


Figure 18. Agri Market Floor Plan 2



Figure 22. Floor Plan of the Public Market 1

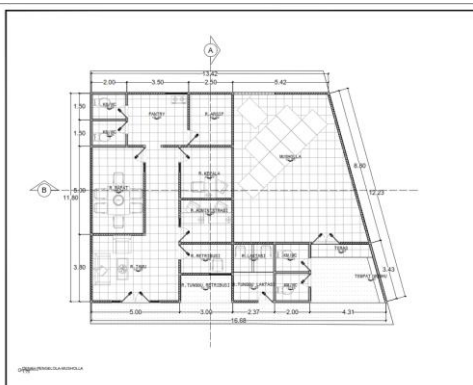


Figure 19. Management Layout - Prayer Room

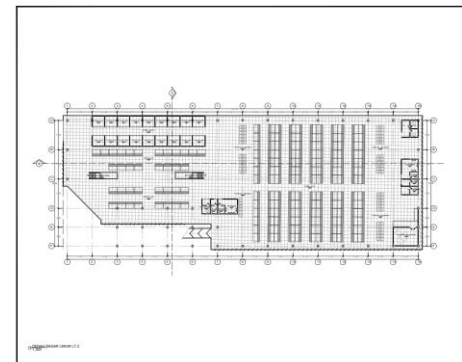


Figure 23. Floor Plan of the Public Market 2

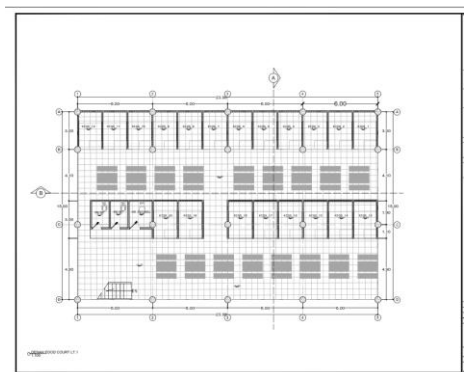


Figure 20. Food Court Floor Plan 1

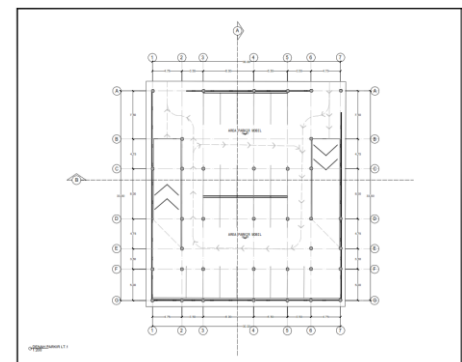


Figure 24. Public Parking Floor Plan 1

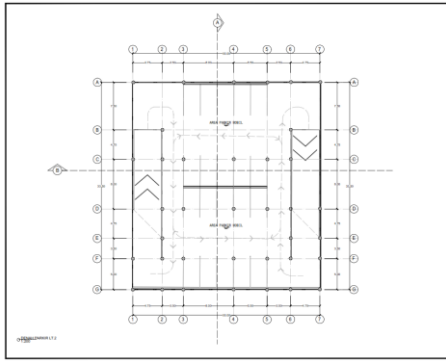


Figure 25. Public Parking Floor Plan 2

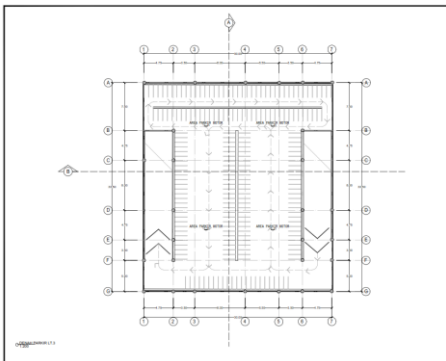


Figure 26. Public Parking Floor Plan 3

e. Exterior Prespektive



Figure 27. Bird's Eye Perspective



Figure 28. Vocal Facade Area



Figure 29. Market Entrance



Figure 30. Agribusiness Sub Terminal



Figure 31. Management Office - Agri Market

f. Interior Prespektive



Figure 32. Interior of the 2nd floor of the Public Market



Figure 33. Interior of the Public Market, 1st floor



Figure 34. Food Court Interior, 1st Floor



Figure 35. Interior of the Food Court, 2nd floor



Figure 36. Interior of the prayer room

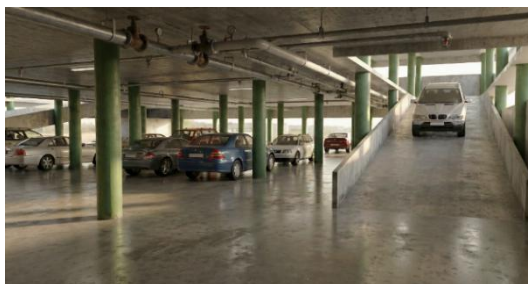


Figure 37. Public Car Parking



Figure 38. Public Motorcycle Parking

CONCLUSION

The design of an agribusiness market area as a space for the community and consumers to trade, especially agricultural products, in Ngablak District, Magelang Regency. With adequate facilities and appropriate spatial planning.

The planned redesign of the agribusiness market area in Ngablak District, Magelang Regency, covers an area of 9,468 m².

REFERENCE

- Ainur Rofiq, A. R. P., & Farida Murti. (2024). Penerapan Arsitektur Ecotech pada Redesain Gor Ken Arok Kota Malang. *SARGA: Journal of Architecture and Urbanism*, 18(1), 1–11.
- Dalip, Almiritia, et al. "Terminal Penumpang Angkutan Laut Di Tahuna (Arsitektur Perilaku)." *Daseng: Jurnal Arsitektur*, vol. 5, no. 1, May. 2016, pp. 125-131.
- Marlina, H., & Ariska, D. (2021). Arsitektur Perilaku. *Rumoh: Journal of Architecture*, 9(18), 47–49.
- Yusuf, R. D. H., & Mutalib, W. A. (2021). Redesain Pembangunan Gedung Perpustakaan Pusat Universitas Muhammadiyah Maluku Utara. *DINTEK: Jurnal Teknik*, 14(1), 72–78.