

RELOCATION OF REMBANG PEOPLE'S MARKET WITH A GREEN ARCHITECTURE APPROACH IN REMBANG DISTRICT

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Abstract: The relocation of the Rembang City Market is a strategic response to increasing economic demands and the need for a more organized, environmentally responsive public facility. Located in Sumberjo Village, Rembang Regency, the existing market currently reflects traditional Central Javanese architectural elements through its Joglo roof but lacks holistic spatial and environmental identity. This study aims to design a new market facility using a green architecture approach, emphasizing sustainability, energy efficiency, and user comfort. The methodology applied includes site analysis, literature review, and environmental design strategies focusing on the integration of eco-friendly materials, passive energy systems, and spatial optimization. Key aspects such as natural ventilation, solar energy utilization, and green materials are embedded in the planning and design process. The results suggest that implementing green architectural principles can significantly enhance the market's functionality and aesthetic value. These improvements not only promote ecological awareness but also support economic activity by increasing public interest and comfort. In conclusion, the relocation and redesign of the Rembang City Market with a green architecture approach present an opportunity to create a sustainable, adaptive, and community-oriented urban space that aligns with both traditional values and modern environmental standards.

Keywords: Market, Rembang, Green Architecture

1. INTRODUCTION

Relocation of Rembang Traditional Market with a green architecture approach in Rembang Regency. In terms of language, relocation is defined as moving a location. Meanwhile, according to the term, relocation is moving a location from one place to another in order to be able to provide something more productive. The market is a place where the contract between the seller and the buyer occurs as an economic activity so that it is mutually beneficial for both parties.

Green Architecture has another name, namely ecological architecture or environmental architecture. Green architecture emphasizes ecological principles and environmental conservation. This is intended as a problem solver in dealing with the increasingly deteriorating environmental order and development products that are only oriented towards economic aspects.

Relocation of the Rembang City market with a green architecture approach is an activity of designing the relocation of a building by building from scratch and changing the facade. The current design application emphasizes the art of the joglo house. This can be seen from the joglo roof of the building. Green architecture is

applied to the design of the Rembang city market. Ecological aspects and environmental conservation will be the main guidelines in spatial planning. In addition, the green architectural design will reflect the beauty of the city. Rembang is one of the regencies located in Central Java province. More precisely, it is located on the north side of Java Island which is adjacent to East Java province. The area of Rembang Regency is 1036 km² with most of the area being lowlands. Rembang Regency is divided into 14 sub-districts, 287 villages, and 7 urban villages. With the large number of residents divided into these areas, a market is needed to mediate the economic needs of the community.

Green architecture has another term, namely ecological architecture or environmentally friendly architecture. This definition emphasizes development that refers to environmental conservation with the aim of producing energy-efficient and environmentally friendly buildings. In its construction, the building uses environmentally friendly materials and recycled materials that do not damage the surrounding environment. The positive impact obtained from the green architecture concept is the use of energy to be more efficient. In addition, green architecture is designed to be able to adapt to the environment. In addition, green architecture is identical to the use of light and solar energy, the use of openings such as windows to maximize natural air. Therefore, the relocation of the Rembang city market with a green architecture approach can increase public interest. In addition, a clean, organized, and comfortable market can make the Rembang city market competitive with modern markets.

The problem that must be solved is how to plan the Rembang City market that still prioritizes ecology and building conservation. The market is usually identical to puddles, piled up garbage, and scattered waste. Relocation of the Rembang City market with a green architecture concept can be a solution to this problem. As well as utilizing the hot sunlight which Rembang City, which is located on the north coast of Java Island has a high intensity of sunlight, can be utilized with technology that is now developing, namely by using solar panels, sunlight can be used as a backup power source for the building. The green architecture approach applied to the market building is a means of comfort for sellers and buyers. Placement of openings, gardens, use of openings such as windows and doors must pay attention to nature in order to obtain the most comfortable circulation point. In addition, clean water and dirty water networks need to be considered so that they are not dirty. The relocation of the Rembang City market with a green architecture approach aims to obtain a building that is appropriate for use according to the green architecture concept. Good management of waste, dirty water, and clean water. Proper use of light and air. As well as a facade that emphasizes natural beauty to create a comfortable impression just by looking at the market building. The objectives of the relocation of the Rembang city market with a green architecture approach are as follows: Designing a site for the relocation of the Rembang City market, Showing natural beauty as a form of manifestation of green architecture in the relocation of the Rembang city market, Obtaining effective, efficient, and aesthetic structures and materials. The limitations in the relocation of the Rembang City market are as follows: The discussion is limited to the scope of the architectural discipline, The relocation was carried out at the Rembang City market located in Sumberjo Village, Rembang Regency, The concept of relocation is green architecture with a natural impression as its manifestation, Planning includes the needs of actors in the Rembang city market.

2. METHOD

The discussion is conducted using a descriptive analysis method, namely by collecting, presenting, analyzing, and concluding data so that a planning and design program approach is obtained and using a documentary method, namely by documenting the required data. This stage is divided into 3 stages as follows: Data collection stage, Literature study, Field survey, Interview, Comparative study. Data processing stage Data obtained qualitatively and quantitatively are analyzed, grouped and arranged with approaches, into interrelated conclusions and become references for planning and design. Planning program stage Approaches as related materials in the planning and design reference framework produce output in the form of results from the data processing process which will later be used as a design reference. This stage is divided into two stages, namely: Planning stage Transforming the basic concept obtained in the synthesis stage towards a solution to problems that arise in connection with the planning and design of the Rembang city market with a green architecture concept. Design stage Realizing the transformation into a design that is actually in accordance with the conceptual basis.

3. RESULT AND DISCUSSION

Rembang Regency is one of the regencies in Central Java which is flanked by the Java Sea to the north and the Kendeng Utara Mountains to the south with an area of 1,014.08 m². Rembang Regency is an area that has beaches, lowlands, highlands and mountains with soil types that contain grumusol, alluvial, mediterial, regasal and andosal.

Rembang Regency directly borders East Java Province, geographically with a latitude position at 111°00' - 111°30' East Longitude and 6°30' - 7°6' South Latitude. Administratively, Rembang Regency borders other regencies such as to the south it borders Blora Regency, to the west it borders Pati Regency, then to the north there is the Java Sea, and to the east it borders Tuban Regency which is included in the East Java Province. And has a distance of 111 km from the Capital City of Central Java Province and 594 km from the National Capital (Jakarta). In determining the location of the relocation planning for the Rembang Regency City Market, there are many aspects that need to be considered, starting from the function of the building, namely as a public facility and infrastructure that plays an active role in increasing the economic value of the community, a means of fulfilling basic needs in everyday life, as a means of distribution, besides that it also functions as a social and cultural facility where the community can interact both informally and formally. In addition, it also considers the ease of users in reaching the location, the fulfillment of facilities, and so on. So with these considerations, the right location for the reconstruction/relocation of the Rembang Regency traditional market is in the city center, which is expected to have easy access for the community. As a building that is general in nature and meets the needs of the community, the Rembang city market needs to be in a location that is easily accessible to the community and public transportation. The location must consider the ease of access both from within and outside the city. This is related to the quality of the road, safety factors against accidents and the flow of vehicle circulation with an achievement that does not interfere with the site. The location needs to have facilities that can support buildings that are of a buying and selling nature. The location must have complete city infrastructure, namely clean water networks, electricity and wastewater disposal to support building activities. Because this building is a place for buying and selling basic necessities targeting visitors from all levels of society, a comfortable and attractive place is needed so that people are interested in coming. a comfortable and attractive place is needed so that people are interested in coming. Judging from the criteria above, the most suitable site is the former Pasar Kambing area for the Rembang City Market, Rembang Regency. The location of the selected site is easy to reach and is on the national route. The site is also located close to the Rembang Police, thus ensuring market security. In addition, another advantage obtained is that the site is passed by public transportation. In accordance with its function, the site is suitable to be used as a Rembang City market area. The relocation planning for the Rembang city market must consider functional aspects, in this case the analysis of users and their activities, space requirements and needs, and space structures will be discussed as follows:

Trader Facilities

- Shophouses
- Kiosks
 - o Dry Snacks
 - o Groceries
 - o Plastics
 - o Crackers
 - o Clothing and Textiles
 - o Toys
 - o Household Appliances
- Dry Trader Stalls
 - o Grains
 - o Spices
 - o Eggs
- Wet Trader Stalls
 - o Meat
 - o Poultry
 - o Fish
- Semi-Wet Traders
 - o Vegetables
 - o Fruits
 - o Coconuts
- Food Court Stalls + Snack Sellers + Street Vendors
- Loading and Unloading Area (Loading Dock)
- ❖ Buyer and Supporting Facilities
- Car Parking

- Motorcycle Parking
- Food Court
- Automated Teller Machine (ATM) Area
- Nursing Room
- Prayer Room
- Multipurpose Plaza
- Toilet

❖ Management and Service Facilities

- Market Manager
- Generator Room
- Pump Room
- Panel Room (ME)
- Temporary Disposal Area
- Trader Preparation and Rest Room

The building size regulation uses a basic building coefficient (KDB) of 60%, the building floor coefficient is set at a maximum of 2x KDB with a maximum building peak height of 20m from the ground floor, a minimum green base coefficient of 20%, and the dimensions and building boundaries are as follows:

- Front GSB (road width 5-7 meters) - ½ road width
- Side GSB for buildings with more than 2 floors is 3 meters

The site location is on Jl. Nasional Blora - Rembang, Ngotet Kidul, Ngotet, Kec. Rembang, Rembang Regency, Central Java. The location of the selected site is easy to reach and is on the national route. The site is also located close to the Rembang Police, thus ensuring market security. In addition, another advantage obtained is that the site is passed by public transportation. In accordance with its function, the site is suitable to be used as a market area in Rembang City.

The selected site area is 30,000 m². The condition of the site is a rice field which is assumed to have become dry land with a flat land contour. The following are the site boundaries:

- North: South Ring Road, Rembang City
- East: Blora-Rembang National Road
- South: Shops
- West: Rice fields

Based on the above space size regulations, the building intensity provisions are as follows:

- Site Area: 30,000 m²
- KDB: 60% x 30,000 m² = 18,000m²
- KLB: 2 x KDB = 36,000 m²
- KDH: 40% x 30,000 m² = 12,000 m²

Based on the calculations above, the selected site with a building area of 35,184.1 m² has a maximum floor with circulation on the lower floor of 12,000 m².

Site achievement can be considered with three points, namely convenience, security, and comfort. Convenience can be measured by placing the main entrance in a location that is easily accessible and visible to everyone. Security can be seen from the position of the entrance direction with the intersection of roads around the site. While comfort can be weighed by the ease of access. In addition, in order to obtain a more ideal site achievement, a physical analysis of the building is required as follows:

- Main Entrance The main entrance faces east on the southern part of the site with the Blora-Rembang national road as its access. The national road access is wider than the southern ring road access located north of the site.
- Service Entrance The service entrance is located on the north side with the building facing east. This area can be used for loading and unloading goods and a temporary stopping place for traders.

The basic shape of the building mass is square and triangular. Squares provide flexible properties, easy-to-work structures. While triangles have easy structures with moderate aesthetic value. Both forms are used to facilitate market user access.

The mass form approach is carried out in the activity zone. The following is an analysis of the activity zone:

Trade Zone

The trade zone requires the most easily accessible form for the convenience of transactions. The mass form used is a square.

Management Zone



The management zone requires a form that is easily accessible but requires aesthetics in its planning. The mass forms used are square and triangular.

Service Zone

The service zone requires the most easily accessible form for the ease of access to equipment. The mass form used is a square.

The design emphasis that is to be realized in the design of the Rembang city market is the concept of green architecture. The design concept provides information to the public that nature must be protected. In addition, the concept of green architecture illustrates the sustainability of life. However, in this case, the facade tends to imitate polygons. The design emphasis will consider the following:

- The presence of a hexagonal geometric shape as a double skin as a form of a honeycomb, the function of this shape is to act as a barrier to hot air but still flow wind into the space in the building,
- Planting large trees as an additional oxygen supply from the site so that the cottage area feels fresher and cooler.
- Arrangement of activity spaces that are dominated by many openings in order to obtain maximum natural lighting and ventilation.

The following are the basic concepts that will be the basic reference in the design process of the Rembang city market with a green architecture approach:

- The Rembang City Market must be able to meet the needs of trade and other activities that support it. The principles of convenience, security, and comfort must be considered in order to obtain ideal results.
- Rembang City Market as the city's trade center has a nuance that is familiar to the community and attractive so that all groups are interested in accessing the building.
- Rembang City Market is designed with a solid structural calculation so as to provide security in using the building.

4. CONCLUSION

Rembang is one of the regencies located in Central Java province. More precisely, it is located on the north side of Java Island, adjacent to East Java province. The area of Rembang Regency is 1036 km² with most of the area being lowlands. Rembang Regency is divided into 14 sub-districts, 287 villages, and 7 urban villages. With the large number of residents divided into these areas, a market is needed to mediate the economic needs of the community. Rembang city market is located in Sumberjo Village, Rembang District, Rembang Regency. The design of the market reflects the traditional Central Javanese house, namely Joglo. This can be seen from the Joglo roof of the building. Although it displays regional diversity, the Rembang city market has not fully highlighted its design identity and spatial layout other than the Joglo roof. Therefore, it is necessary to carry out the relocation of the Rembang city market as well as a new building to further highlight diversity and spark people's purchasing power by increasing people's interest in the market. Green architecture has another term, namely ecological architecture or environmentally friendly architecture. This definition emphasizes development that refers to environmental conservation with the aim of producing energy-efficient and environmentally friendly buildings. In its construction, the building utilizes environmentally friendly materials and recycled materials that do not damage the surrounding environment. The positive impact obtained from the green architecture concept is the use of energy to be more efficient. In addition, green architecture is designed to be able to adapt to the environment. In addition, green architecture is identical to the use of light and solar energy, the use of openings such as windows to maximize natural air. Therefore, the relocation of the Rembang city market with a green architecture approach can increase public interest. In addition, a clean, organized, and comfortable market can make the Rembang city market competitive with modern markets.

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