



## Study Of Mass and Facade Change in Muara Baru Modern Fish Market, North Jakarta

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**Abstract.** This study is about the composition of mass and facade at the Muara Baru Modern Fish Market in North Jakarta, focusing on the application of modern architecture. This study aims to identify the composition of mass and facade at the Muara Baru Modern Fish Market building in North Jakarta by knowing the influence and development between the old and new buildings. The research method used is descriptive qualitative, with data collection through observation, documentation, and literature analysis. The results of the study show that the form of the Muara Baru Modern Fish Market mass composition adopts a functional and aesthetic design, with facade elements inspired by fish scales, creating a strong visual identity. The use of modern materials such as glass and metal gives a dynamic and fresh impression, supporting the theme of the sea and fisheries. This study is expected to provide new insights into the application of metaphorical architecture to commercial buildings, as well as being a reference for the development of modern fish market designs in Indonesia. Thus, the Muara Baru Modern Fish Market not only functions as a trading centre but also as an example of modern architectural innovation that can change people's views of traditional markets to be more attractive and environmentally friendly.

Keywords: modern fish market; façade; mass

### I. Introduction

North Jakarta is an administrative city in the northern part of the Special Capital Region of Jakarta, Indonesia. In North Jakarta, there are several ports, including Tanjung Priok Port and Sunda Kelapa Port [1]. One of the buildings that supports this is the Fish Market located in Muara Baru. Before being revitalised into a modern fish market, the Muara Baru Fish Market was known for its less-than-ideal physical form and conditions, like traditional fish markets in general. The characteristics depicted in the previous fish market had a physical condition that were dirty, muddy, smelly, and unhygienic. The market building tends to be simple and poorly maintained. The layout of this building is irregular; the traders' stalls are crowded and mixed. In addition, the facilities and sanitation in this building are not well-maintained.

Along with the development of the times, the Ministry of Maritime Affairs and Fisheries (KKP) is renovating and changing both the physical form and management of the Muara Baru Modern Fish Market to increase public awareness of the importance of cleanliness and product quality and the design of the traditional fish market [2]. In the design process, it is important to consider aspects such as circulation, ventilation, lighting, and layout that can support the smooth running of market activities. The three-storey building of 2 Ha, built on an area of around 4.15 Ha, is equipped with 896 stalls to sell fresh fish. In addition to fresh fish stalls, the Muara Fish Market (PIM) Baru is also equipped with 155 maritime kiosks, 8 food courts, 2 ice flake machines with a capacity of 10 tonnes, a retail marketing area, a laboratory, a chilling room with a capacity of 30 tonnes, an unloading area, packaging, ice and salt depots, and a Wastewater Treatment Plant (IPAL) [3].

## 2. Methods

In this study, the method used employs a descriptive-qualitative interpretative approach. Qualitative research is research that uses a naturalistic methodology to investigate and understand events in a specific environment [4]. Meanwhile, this interpretative method offers a framework or interpretation strategy that helps researchers thoroughly understand research findings, and consists of related theory methods, phenomenology, hermeneutics, and approaches [5]. The qualitative descriptive method is used to identify and explain the results of data obtained based on the factual conditions in the field through observation and documentation (primary data). Next, the data will be further examined based on theories derived from literature studies or previous research (secondary data).

## 3. Results and Discussion

Modern Fish Market Muara Baru is a new building that replaces the old Pasar Ikan Muara Baru, which has been standing since 1864. Pasar Ikan Modern Muara Baru is also the first fish market in Indonesia to prioritise hygiene and the "one-stop shopping" concept for a variety of fishery products. This fish market was inaugurated by President Joko Widodo on March 13, 2019, built on vacant land located south of the old fish market in the Muara Baru area, Penjaringan District, DKI Jakarta Province. PIM Muara Baru starts operating daily from 5:00 PM to 12:00 AM WIB, with peak transaction activities occurring between 5:00 PM and 10:00 PM WIB. However, activities within the market will continue until 3:00 AM WIB [6].

PIM Muara Baru implements sanitation and hygiene principles that promote cleanliness and health, making them a primary requirement for producing safe-to-consume products. The Modern Fish Market (PIM) is expected to become the centre of the marine and fisheries business in DKI Jakarta, supplying quality, safe-to-consume, and affordable fishery products. The existence of PIM can also boost the economy of the community, increase national fish consumption, so that the Indonesian people will become more intelligent and advanced, on par with developed countries. Equally important, PIM will become a tourist destination for the maritime and fisheries sector, as well as a means of promotion, education, and information for entrepreneurs and the community [7].

### 3.1. Orientation

Modern Fish Market is located in Muara Baru, Penjaringan, North Jakarta. This market was inaugurated by President Joko Widodo on March 13, 2019, and is often compared to the Tsukiji Fish Market in Japan due to its modern and hygienic concept. This market is an important centre for the wholesale and retail fish trade in Jakarta, and even in Indonesia [8].

The orientation of the fish market building is an important factor in designing sustainable and comfortable architecture. The correct orientation can affect natural lighting, ventilation, indoor temperature, and energy efficiency.



**Figure 1** Top View

### 3.2. Occupant Behavior

The mass of the Modern Fish Market has a basic shape resembling an elongated cube, forming a rectangular structure. This rectangular shape is then modified by adding or combining other cubes, creating corridor areas within the building [9].

In the mass form of the building, additive (shape changes with additions) and subtractive (shape changes with reductions) modifications occur to adjust the use of the facade as one of the responses to the building openings. The shape of the central mass of the fish market is rectangular, resulting from responding to the site.

The fish market also considers the concept of achieving good interior space quality, so considerations are needed that are formed through dividers, fillers, and space complements that include space size, space shape, environmental quality of the space, and space content [10]. This is evidenced by the interior layout of the building, which uses dividers and furniture to meet the needs of buying and selling.

Present the results and discuss the meaning of the findings in a comprehensive way. Explain the analysis methods that led to the findings. After discussing the results, the author should interpret the final findings, which can be the essence of the conclusion.

### 3.3. Façade

The concept of the New Modern Fish Market facade is designed to reflect an image of a modern, clean, and hygienic market, in stark contrast to the often shabby and smelly image of traditional fish markets. The market facade is dominated by clean lines and simple geometric shapes, creating a modern and minimalist impression [11]. There are not many intricate ornaments, but rather a focus on function and simple aesthetics. The materials used on the facade are generally modern materials such as glass, steel, and concrete. The dominant colours on the facade are usually bright and clean colours like white, grey, or other neutral colours. Although its design is minimalist, the market facade still has attractive visual accents, such as fish-shaped ornaments or other decorative elements related to fishing. These accents serve as the market's visual identity and make it easily recognisable.



**Figure 2** Interior Fish Market

Inside the fish market building, using the theory of rhythm or rhythm known in visual forms such as lines, interior volume, colour differences, light-dark differences, openings, columns, ect [12]. The rhythm on the facade of the New Modern Fish Market building in North Jakarta can be seen from repetitive patterns, texture play, or variations in geometric shapes. Based on the design, the rhythm on the facade can be found in several sections.

Modern architecture is a movement/style of architecture that developed after classical architecture. Modern architecture seeks to abandon decorations that are considered non-functional and emphasises function more, often referred to as functionalism [13].

### 3.3.1. Colours

The colour of a building is an important aspect of architectural design that affects its visual appearance, atmosphere, and even the psychology of its occupants. The right choice of colour can create the building's identity, blend with the environment, or even stand out among other buildings [14]. The dominant colours of the mass of this modern fish market building are light grey, blue, and white. These colours are basic and neutral, and they can give a modern design impression. The dominant colours of the mass of this modern fish market building are light grey, blue, and white. These colours are basic and neutral, and they can give a modern design impression.

### 3.3.2 Material

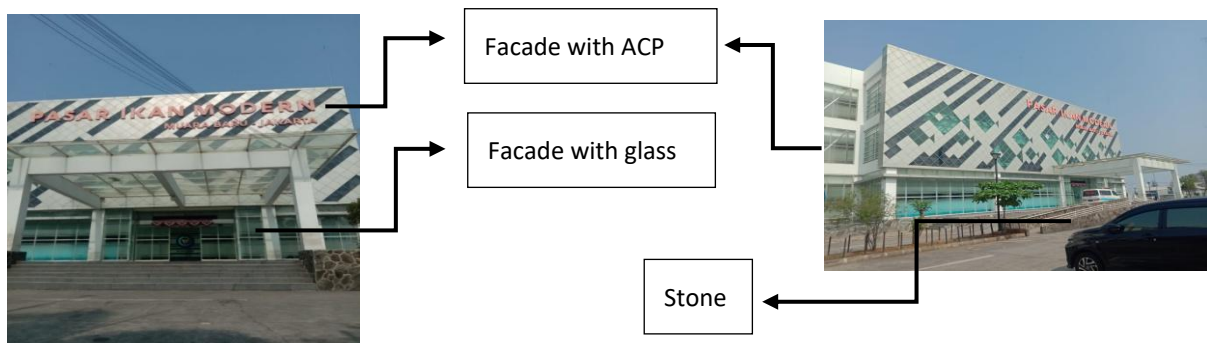
The use of materials in this art centre is done in an exposed manner, with the exposed materials including concrete, steel, and exposed metal panels used for the building's structure, and ACP used as additional exterior building materials.

The use of exposed glass on the facade or large windows allows natural light to enter the room. The selection of glass is specifically designed to block excessive heat and ultraviolet (UV) rays [15].



**Figure 3** Mass of Modern Fish Market

Thus, Figure 3 shows the use of materials in this Fish Market Centre building, which is designed using materials with a low environmental impact.



**Figure 4** Façade of Modern Fish Market

#### 4. Conclusions

Modern Fish Market successfully created a strong architectural identity through the application of designs inspired by natural elements, particularly fish scales. This design not only provides aesthetic value but also reflects the main function of the market as a centre for fish trading. The massing of the building is designed with a functional and efficient approach. With a basic rectangular shape and multi-level structure, this building is capable of accommodating various market activities, including fresh fish sales areas and other supporting facilities. This shows that architectural design can function optimally in meeting user needs. The application of modern architecture in facade design demonstrates how visual elements can be used to convey meaning and identity. A facade designed with modern materials such as glass and metal not only gives a clean and modern impression but also serves to enhance the comfort and experience of visitors.

This research also highlights the importance of modern market design in enhancing public perception of cleanliness and comfort. The New Modern Fish Market is expected to serve as an example for the development of other fish markets in Indonesia, which not only function as places for buying and selling but also as attractive culinary tourism destinations.



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