Analysis of Architectural Design in the Sarijadi Bandung Contemporary Market Building

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Abstract. Economic activity in Indonesia is one of the driving forces for people's lives in general. A traditional market building is one of the places where economic activity occurs, making it important to pay attention to its quality in terms of architecture and building management. However, the existence of traditional markets in Indonesia is synonymous with unmanaged and uncomfortable conditions. It can be found in almost all existing traditional markets. As a result, the government moved to repair traditional markets. It is the same as the Bandung City government, which revitalized the Sarijadi Bandung Traditional Market into a contemporary-style market, which the Governor of West Java, Ridwan Kamil, then used as a model for markets in Bandung City. The purpose of this study is to investigate and determine what is meant by contemporary meaning in the Sarijadi Contemporary Market building. The goal of this study was to add literature, references, and insights about architectural design in a contemporary-style market building, specifically the Sarijadi Contemporary Market in Bandung.

Keywords: architectural, building standards, contemporary, market

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1 Introduction

Economic activity in Indonesia is one of the driving forces in people's lives, one of the places where economic activity takes place is in a traditional market building, so it is important to pay attention to its quality both in terms of architecture and building management. However, the existence of traditional markets in Indonesia is synonymous with unmanaged and uncomfortable conditions, this can be found in almost all existing traditional markets. The slum and uncomfortable conditions undoubtedly necessitate government efforts to improve traditional market management. According to the Regulation of the Minister of Home Affairs of the Republic of Indonesia No. 20 of 2012 on the Management and Empowerment of Traditional
Markets, the management of traditional markets aims to create orderly, regular, safe, clean, and healthy traditional markets, improve community services, make traditional markets a driving force for the regional economy, and create competitive traditional markets with modern shopping facilities [1]. The condition of traditional markets in Bandung is also not much different from the conditions of traditional markets in general. One of the Bandung City government's plans in managing traditional markets is to revitalize buildings and market management systems. Since 2013 the Bandung City Government has planned to revitalize six traditional markets into thematic markets, namely, Sarjadi Market (vegetable market), Simple Market (handicraft market), Cihaurgeulis market (clothing market), Kosambi Market (Batik and souvenir market in Bandung), Wastukencana Market (flower market), and Palasari Market (book market).

Sarjadi Market is a traditional market that is included in the Bandung City government program to be revitalized into a thematic market, Sarjadi Market, is devoted to a vegetable market. The Sarjadi Traditional Market was revitalized in 2017 and changed its name to Sarjadi Contemporary Market because this building carries a contemporary architectural style which will then be used as a pilot market by the Governor of West Java, Ridwan Kamil for markets in the city of Bandung, this study would analyze and find out what is meant by contemporary meaning in the Sarjadi Contemporary Market building.

The purpose of this study was to add literature, references, and insights about architectural design related to patterns, types, and architectural systems in a contemporary-style market building, especially the Sarjadi Contemporary Market, Bandung.

2 Literature Review

2.1 Market

According to regulation No. 70/ M-DAG /PER/12/2013 of the Minister of Trade of the Republic of Indonesia, a market is an area where more than one item is bought and sold, also known as Shopping Centers, Traditional Markets, Shops, Malls, Trade Centers, or other names [2]. Meanwhile, in economic terms, the market is a situation in which one or more buyers (consumers) and sellers (producers and traders) conduct transactions after both parties have agreed on the price of a number (quantity) of goods of a certain quality that are the subject of the transaction.

The market is an important building as one of the places where economic activity occurs. Therefore, market buildings must meet health requirements both in terms of sanitation and construction. Referring to the Decree of the Minister of Health of the Republic of Indonesia Number 519/MENKES/SK/VI/2008 concerning Guidelines for the Implementation of Healthy Markets, it written 3 important things regarding location, building, and sanitation [3]. The
requirements for the location of a market to be established include, among other things, that the location must be in line with the local RDTR, not located in a disaster-prone and accident-prone area, not located in a former landfill site or former mining site, and have clear boundaries between the market and its environment.

Buildings that must be designed in line with applicable laws and regulations must include, among other things, the division of areas according to commodity type, clear zoning division, determining dimensions and distances between stalls, and the placement of special areas for types of pesticides, hazardous materials, toxic (B3) and other hazardous materials. Not only is it necessary to zone the planning area, but it is also necessary to discuss building construction requirements such as roofs, walls, floors, stairs, ventilation, lighting, and door placement. Sanitation is also an important consideration in the design of market structures. The conditions written in the decision include requirements for clean water, bathrooms, and toilets, waste management, drainage, hand washing areas, disease-transmitting animals (vectors), and quality of food and ingredients. Food, and market disinfection.

2.1.1 Traditional Market

Based on the Minister of Home Affairs Regulation number 70/M-DEG/PER/12/2013, traditional markets are markets built by the Government, Regional Government, Private, State-Owned Enterprises, and Regional-Owned Enterprises including cooperation with the private sector, with a place of business such as shops, kiosks, stalls, and tents owned or managed by small, medium-sized traders, non-governmental organizations or cooperatives with small-scale businesses, small capital, and with the process of buying and selling merchandise through bargaining [2].

2.1.2 Modern Market

Based on the Minister of Home Affairs Regulation number 70/M-DEG/PER/12/2013, modern markets or modern stores are shops with a self-service system, selling various types of goods in retail in the form of Minimarkets, Supermarkets, Department Stores, Hypermarkets, or wholesalers in the form of wholesale[2].

2.2 Architectural Design

2.2.1 Architectural Pattern

Patterns are models, examples, guidelines (designs), and the foundation of work. In general, the pattern has similarities that result in identical elements, a basic form, a repetition of unified rules, and a series arrangement that will be packaged into a concept. In architecture, there are two types of building layout patterns [4]:
1. Natural/ Organic pattern
It is known as an unplanned form because it is formed spontaneously, has an irregular and non-geometric pattern, and there is an interdependence between the physical environment and the social environment.

2. Artificial pattern/ Geometry
It is a planned form and has several types of shape patterns, such as: (a) Centered shape pattern; (b) Linear shape pattern; (c) Radial shape pattern; (d) Cluster shape pattern; (e) Grid shape pattern

2.2.2 Architectural Type

Typology is the study of everything about types. In the field of architecture, there are several different understandings of typology [5], namely according:

A. Raphael Moneo
   A concept that describes (describes) a group of objects based on similarity of basic properties. It can even be boxed that typology means the act of thinking in terms of grouping [6].

B. Anthony Vidler
   The study or investigation of the combination of elements that makes it possible to achieve or arrive at a classification of architectural organisms by type [7].

C. Carlo Aymonino
   The science that studies the possibility of combining elements with types to obtain a classification of architectural organisms [8].

According to all perspectives on typology, architectural typology is an activity of classifying or grouping architectural objects with similar characteristics that are created by the community with constant characteristics. These similarities include the basic form of the object, the nature of the object, the function of the object, and the origin of the object's background.

2.2.3 Architectural System

Unity is made up of components or elements that are linked together to facilitate the flow of information, material, or energy toward a common goal. The term is frequently used to describe a collection of interacting entities for which a mathematical model can frequently be developed. Types of systems in architecture include building systems, structural systems, enveloping systems, and mechanical systems.
2.3 Contemporary Architecture

Contemporary architecture is part of the architectural style that in recent years has been very much favored by several architects as part of the style of their works. Konnemann, in the book (World of Contemporary Architecture) XX, said that "Contemporary Architecture is an architectural style that aims to provide an example of a certain quality, especially in terms of technological progress and also freedom in expressing an architectural style."[9] Meanwhile, L. Hilberseimer in the book Contemporary Architects 2 (1964) said that contemporary architecture is a style of a certain architectural flow in its era that reflects the freedom of work so that it displays something different, and is a new flow or a combination of several other architectural styles [10].

The architectural critic Charles Jencks (1981) listed the characteristics of contemporary architecture among other things, ideology, style, and the design idea. Ideology is a concept that provides direction, purpose, and intent so that the understanding of contemporary architecture can be more planned and systematic. Style is a style in contemporary architecture to provide an understanding of the understanding of forms, ways, appearances, and so on specifically regarding contemporary architecture, and the design idea is the initial idea in designing work. The definition of design ideas in Contemporary Architecture is a design idea that underlies or becomes the starting point for the characteristics of Contemporary Architecture [11].

Although it focuses on technological progress and freedom of work as the principles of modern architecture expressed by Le Corbusier in the article "Les Cinq Points d'une Architecture Nouvelle" contemporary architecture has several differences from modern architecture, including: (1) Judging from the history of its development, contemporary architecture refers to the building style that is developing today and in the future, while modern architecture developed in the 1920-1950s era; (2) he contemporary architectural style tends to develop from time to time so that it is dynamic, while the modern architectural style marks only certain eras so that the design is more static; (3) Its nature that follows the times makes contemporary architectural styles tend not to be bound by the rules of the past, always adapting to the conditions of their time, while modern architecture is bound by the old rules of its time; (4) Contemporary architecture can be a combination of elements of style and era into a single unit, while modern architectural style cannot be separated from the traditional architectural revolution style [12].

2.4 Market Building Standard

According to Clinical Practice Guidelines, 1990, a standard is an ideal condition or the highest and perfect level of achievement that is used as a minimum acceptance limit, as well as architectural standards that should be applied to buildings so that users can feel comfortable in ideal conditions when inside [13]. In this study, market standards were based on dimensional
standards from the Ministry of Trade of the Republic of Indonesia, Neufert Architect Data [14], and Time Saver Standards for Architectural Design Data [15], which covered zoning between spaces, and market space dimensions, corridor dimensions, and vertical transportation system standards.

3 Methodology

This research refers to the Sarijadi Contemporary Market building. The research method used was a descriptive qualitative method with a case study approach. The qualitative descriptive method was a method that presents descriptions in the form of writing or narration as well as pictures supporting the narrative [16]. The stages carried out for this research included 5 stages, namely: (1) Conducted a study of architectural standards, especially market buildings. At this stage, a review of the architectural standards that exist in design standard books such as the Regulation of the Minister of Trade of the Republic of Indonesia was carried out, Neufert Architect Data and Time Saver Standards for Architectural Design Data; (2) Identified and analyzed architectural designs related to patterns, types, and systems in case study objects; (3) Analyzed and compared the patterns, types, and systems of traditional markets and modern markets as objects of precedent study; (4) Synthesized data between building facts and study of applicable building standards; (5) Formulated conclusions and research suggestions.

4 Results and Discussion

4.1 Analysis

The Sarijadi Contemporary Market, located on Sariasih Sarijadi Street from Sukasari Bandung City, was chosen as the research case study. It is one of the revitalization projects of traditional markets into thematic markets initiated by Ridwan Kamil while serving as Mayor of Bandung, West Java. The Sarijadi contemporary market was completely renovated and reopened in March 2017. It sits on 3500 m2 of land and has a building area of 5200 m2. This market is made up of four (four) market floors that can hold 169 kiosks and six (six) residential floors at the back of the market function. The first floor of the market is used as a wet market area for meat, vegetables, and fruit, the second and third floors are used for handicrafts, necessities, and fashion traders, while the fourth floor is for the food court and co-working space. This building is designed with a disabled-friendly approach, so for vertical circulation, the building is designed using a ramp so that people with disabilities can easily go to the upper floors. The form of the Sarijadi Market before the revitalization was carried out consisted of single, one-story buildings having a typical shape (Figure 1).
The first precedent study was the BSD Modern Market (Figure 2), the market is a traditional market building that is well packaged and organized. This building was chosen to analyze the type pattern and system in traditional market buildings. BSD Modern Market stands on an area of 3.2Ha, located at BSD City Sector 1-1, Letnan Sutopo Street, Serpong Districts, South Tangerang City, Banten.

The second precedent study was the Thanopoulos Supermarket Kifisia (Figure 3)[17], Athens. It was chosen as the object of the modern market or modern shop in this study. Thanopoulos Supermarket Kifisia was designed by Klab architecture and established in 2017 on an area of 1600m².

4.2 Analysis of Market Activities Actors

In general, market activity participants, both the Sarijadi Contemporary Market and the BSD Modern Market, can be said to be similar because they only involve traders, buyers, distributors, and managers. There are no employees because the buying and selling process is direct between
traders and buyers. In contrast to Thanopoulos Supermarket Kifisia, which has more complex activities than just traders, buyers, and goods distribution actors as well as traditional markets, the perpetrators of this supermarket activity include visitors or buyers, president directors, secretaries, operational directors, finance directors, marketing managers, personnel manager, supermarket department, food, and beverage department, building technician, head of security, and security, so that the space requirements needed by modern markets are even more complex than traditional markets.

4.3 Analysis of Market Space

The zoning of space placement at the Sarijadi Contemporary Market can be said to be good (Figure 4). The designer classifies wet foodstuffs, dry foodstuffs, ready-to-eat foods, non-foods, and live poultry slaughterhouses. The designer places a wet area on the front of the 1st floor of the building, aiming to create a building that is free from puddles caused by wet food, if the buyer only wants to buy wet food, there is no need to go up to the 2nd, 3rd or 4th floor and go back down which will cause the market floor becomes wet and dirty, the water flow directly leads to the city area easily. Not only is there a wet food area, but other supporting facilities on the 1st floor are also service areas such as toilets, parking areas, prayer rooms, and management rooms, as well as an attractive courtyard. The location of courtyard is in the middle of the market as a free area that can be used at any time if there will be events such as counseling and so on. The dry market area for dry food and clothing occupies the 2nd and 3rd floors. Then the 4th floor is filled with a food court area that can directly see the beautiful mountain views. Sarijadi Market has also been equipped with signage to make it easier for visitors to carry out activities and find items they want to buy.

![Figure 4 Zoning at the Sarijadi Contemporary Market](image)
In contrast to the placement of space in the Sarijadi Contemporary Market, the BSD Modern Market only consists of one floor so the arrangement of the trading space is done horizontally with a grid pattern (Figure 5)[18]. The BSD Modern Market has a capacity of ±4000 people with a total of 330 kiosks located inside the market building, selling clothes, medicines, food, cosmetics, 330 vendor stands selling meat, fish, vegetables, fruit, and 100 units of 2-storey shop houses facing the outside. the market is around the building.

![Figure 5 Zoning at BSD Modern Market](image)

Thanopoulos Supermarket Kifisia is a supermarket that has 2 floors (Figure 6) [17]. It consists of a ground floor and a basement, and its vertical access only uses stairs and lifts. It can be seen in Figure 6 that the ground floor is used as a sales area for baby equipment, children's toys, home and office supplies, canned goods, dry goods, cleaning products, household supplies, pet supplies, paper products, and health and beauty products, while the ground floor focuses on wet merchandise, food, and management rooms, such as the fresh meat counter area, fresh fish counter, frozen food, delicatessen, wines, cold storage chamber, toilet, management room, and reception area [17].

![Figure 6 Zoning at Thanopoulos Supermarket Kifisia](image)

### 4.4 Analysis of Building Circulation Pattern

The circulation design of the building is perhaps the most striking thing about the Sarijadi Contemporary Market, this market was designed with disabled people in mind. Therefore,
vertical circulation in the building was designed using a ramp. The ramp was designed with a very comfortable slope with a width of 5 meters, but problems arose when the designer chose to create different ramp positions on each floor, making the ramp position closed by the presence of stalls that tend to be covered by merchandise, making it a little difficult to find the vertical circulation path. The Sarijadi Contemporary Market building has an open market concept with no walls in most of the buildings so that access to the building can be done from various sides (Figure 7), but the main entry point into the area for both pedestrians and vehicle users is only 1 leading to the main road, namely Sariasih Sarijadi Street. The parking area for 2-wheeled and 4-wheeled vehicles is only at the back of the building and access for loading goods also uses the same entrance.

Figure 7 Circulation Pattern at the Sarijadi Contemporary Market

The amount of circulation to enter the area only has a width of 5 meters, so that the circulation of incoming vehicles is not 2-way for 4-wheeled vehicles. Meanwhile, the main circulation in the market building according to the literature is 3-4 meters and the secondary circulation has a magnitude of 1.5-2 meters. The stalls for the market are 10-15 meters long and the stalls are 20-30 meters long, but there are some parts of the corridor at the Sarijadi Contemporary Market which are only 1.2 meters wide, such as the stall area on the 2nd floor (Figure 8).

Figure 8 Circulation Between Stalls at the Sarijadi Contemporary Market
Circulation in the BSD Modern Market is different from the Sarijadi Contemporary Market which adapts to the linear shape of the building so that it focuses on the vertical circulation system because the BSD Modern Market only has 1 floor with the typology of traditional market buildings in general, namely square and has 4 entrances to the inside the market building, from the north, east, south, and west sides so that the circulation pattern of the building uses a grid pattern (Figure 9). This pattern also makes it easier for visitors to find the goods they are looking for, plus the kiosks and stands in this market have been arranged according to the category of merchandise. In Figure 9 the red line is the circulation pattern that occurs in the building, while the blue dotted line represents the circulation that occurs on the outside of the building, the outside of the building is a 2-storey shophouse and directly faces the parking area. Unlike the Sarijadi Contemporary Market which places its parking area at one point only, the BSD Modern Market parking area is designed around the market building. The dimensions of the circulation of the market parking area are quite wide, namely 15 meters, 5 meters for parking 4-wheeled vehicles right in front of the shop houses around the building, 5 meters for vehicle circulation but can only be passed by 1 car with a looping system, and 5 meters on the outer side of the area for the wheel parking area. 4, 2 wheels, public toilets, utility rooms, and vegetation. While the circulation in this market building itself is quite good, namely 2 meters between stands selling wet ingredients and vegetables, 4 meters between kiosks and kiosks inside the building, and 5 meters for the building entrance corridor.

![Figure 9 Circulation Pattern at BSD Modern Market](image)

In the arrangement of the merchandise stand, Thanopoulos Supermarket Kifisia has similarities with the Sarijadi Contemporary Market and the BSD Modern Market, namely the arrangement is quite good according to the category of merchandise, but the circulation created is slightly different. Although the shape of the supermarket building has a typology that is not much different from the market. traditional i.e. square, this supermarket is on the corner of the street. This hook building only uses 2 sides of the building as an entrance. The entrance of the building
is on the west and north sides facing directly the parking area. As seen in Figure 10, the blue dotted line represents the circulation that occurs outside the Thanopoulos Supermarket Kifisia building, while the red line shows the circulation pattern that occurs within the building. The circulation pattern in this supermarket building uses a grid pattern but can still feel dynamic because the dimensions of the corridor are quite wide, namely 3-5 meters (Figure 10).

![Figure 10  Circulation Pattern at Thanopoulos Supermarket Kifisia](image)

4.5 Analysis of Building Shape Type

With a front facade that was designed without a row of shophouses, Sarijadi Market displays a minimalist and modern image with a large shape and no banners to cover the program and the space requirements in it (Figure 11). To create a humane scale, the designer chose to fill the facade of the building with horizontal elements in the form of wall railings and left it open at the top for air circulation. Behind the horizontality that is presented to suppress the gigantic impression, the presence of a large-scale building and continuously from front to back seems to still create a scale that dominates the site and displays the impression of being expensive and like a shopping center. This also affects the opinion of the public who have a prejudice that the goods sold in it are more expensive than the market in general.

![Figure 11  Facade of Sarijadi Contemporary Market](image)
The look of the BSD Modern Market building, which has a height of two floors, displays repeated elements that functioned as shop houses around the building, as if creating separate ownership, resulting in the appearance of the facade being divided into small segments so that the big impression disappeared and became more human. Shopkeepers whose stores are located outside of the market can place shop signage on the first floor to attract customers. Each shophouse leads to a different section of the parking lot (Figure 12).

The facade of the Thanopoulos Supermarket Kifisia building was designed in a modern and minimalist manner, with the use of materials that are not too excessive, namely only wood and white aluminum composite panels as secondary skin and still paying attention to balanced horizontal and vertical elements making the building feel humane even though there are not so many ornaments. As seen from the outside, the building looks closed because no other rooms are facing the outside of the building, only the entrance (Figure 13).

4.6 Analysis of Market Buying System

The Sarijadi Contemporary Market and the BSD Modern Market still used a direct buying and selling system between the seller and the buyer, and there was still a bargaining process; payment was also made in cash and could not be made using a cashless system such as using a card or scanning a QR Code. Buyers pay directly at the main cashier in the Thanopoulos Supermarket Kifisia buying and selling system, and payments can be made non-cash.
5 Conclusion

5.1 Conclusion

After analyzing the architectural design of the Sarijadi Contemporary Market building, the following conclusions can be drawn: (1) The Sarijadi Contemporary Market management system had similarities to the management system that occurs in traditional markets; (2) The spatial layout of the Sarijadi Contemporary Market had similarities with traditional markets and modern markets. It is because the placement of kiosks and stands has been categorized according to the type of goods sold, the arrangement can make it easier for buyers to shop, but what is different was that the Sarijadi Contemporary Market places them vertically. From this concept, it can be seen that a contemporary style was not fixed by a certain standard or what is common; (3) Based on market circulation, the contemporary market is a linear building that focuses on the vertical arrangement, while traditional markets and modern markets often use a grid system in their buildings. This showed that the Sarijadi Contemporary Market had a contemporary style and was not bound by a certain standard; (4) Judging from the type of facial expression of the Sarijadi Contemporary Market Building, which is different from most existing traditional markets or modern markets, the facade design was not related to a certain standard; (5) Based on the buying and selling system that occurs in the Sarijadi Contemporary Market, it is still the same as traditional markets in general, with direct transactions between traders and buyers which sometimes occur in a bargaining process.

5.2 Suggestion

The Sarijadi Contemporary Market is the result of traditional market revitalization and will serve as a model for markets in Bandung. Creating social facilities in a new style is a good step forward, but it is important to consider the applicable building standards. In terms of pattern, type, and building system, Sarijadi Contemporary Market is similar to traditional market buildings. Because of its contemporary design, this building is not bound by certain design provisions.

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