



Contemporary Architecture in Typology of Car Workshop and Showroom Building

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ABSTRACT

In the era of the 2000s, revolutionary building typologies emerged, with mass forms of buildings that developed beyond the usual boundaries of existing building typologies. For example, the typology of hospital buildings at this time may follow the typology of hotel buildings, or the typology of traditional Lombok buildings, which was originally a typology of rice barns, changing its function to become a full-fledged residential building which is still in the typology of rice barns but has made adjustments to the details. shape, opening, and use. As well as building materials. Likewise, in the development of the building typology of showrooms and car repair shops, typology can change by adopting other building typologies that experience adjustments regarding the function of space and design details that can accommodate the needs of showrooms and car repair shops. So that in the era when the building was designed and built, the showroom and car repair shop would become a building with a contemporary architectural typology. This is because there is a desire to make showrooms and car repair shop buildings different from showrooms and car repair shops of the same type so that they will become icons and attractions for users and consumers as well as entrepreneurs who have an interest in car affairs. This study aims to analyze the application of contemporary architecture to exhibition buildings and car repair shops

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1. INTRODUCTION

Architecture is a science that studies people and buildings (Arthana, 2019; Machdi, 2019). Humans build a building or building or area that will later function for the benefit of the group or/and the public/general public. The definition of architecture itself is human work that is beneficial to humans themselves (Rahadian and Sulistiawan, 2019; Rustiandi et al., 2021). These benefits consist of benefits for the body and soul in humans in carrying out their life activities. In the development of an increasingly advanced world with a significantly increasing population, it is the creations of humans themselves that should be more useful or utilized by all parties by providing kindness to humans without exception. Because by nature, humans are created as creatures that need to socialize and be able to provide mutual benefits and help each other in carrying out their lives and typologies.

Contemporary architecture is a modern architectural style built on the principle of freedom in the choice of materials, shapes, and designs (Rachmabillah, 2020; Andadari, et al., 2021). This concept is designed to adapt to changing times and human needs (Nurrahman, et al., 2021; Azza & Natalia, 2019). Contemporary architecture reflects technological developments and innovation in building materials used in building construction (Vidiyanti et al., 2020) (Wulandari & Setyowati, 2020). Materials such as concrete, glass, and steel are often used in contemporary architecture, and modern technologies such as CAD (Computer-Aided Design) and 3D printing technology are used in building models (Prihutama, 2020; Rizki, et al., 2020).

The involvement of architects in contemporary architecture also often pays attention to elements of sustainability in their building designs (Permana, et al., 2020). This includes the use of renewable energy and environmentally friendly materials in construction (Rizqi and Ashadi, 2020). In addition, contemporary architecture also emphasizes the importance of maximizing the use of natural light and fresh air to reduce energy use for lighting and cooling (Permana, et al., 2021). It reflects a response to today's pressing global environmental issues.

Another characteristic of contemporary architecture is the focus on the function of the building. Contemporary architects (Fathona and Haristianti, 2020) strive to design buildings that meet the needs of their occupants. Interior design usually emphasizes ergonomics, flexibility, and space efficiency (Havidz and Ashadi, 2020). This concept ensures that the building can provide comfort, safety, and basic needs for its residents.

The importance of emphasizing the functioning and needs of occupants in contemporary architecture is also reflected in public architecture (Rais and Yosita, 2021). Public buildings such as museums, playgrounds, and airports are often designed to maximize the visitor experience. This includes user-friendly design, strategic placement, and good lighting. The aesthetic quality of the building is also considered to attract visitors.

In contemporary architecture, abstract and experimental elements are often used in building designs. This architectural style allows architects to show creativity and innovation in producing unique and attractive designs (Fathona and Haristianti, 2020). This concept includes the use of unconventional shapes, unusual placement of materials, and small attention-grabbing details (Vidiyanti, et al., 2020).

Advances in technology have also allowed the development of more complex and impactful buildings, such as skyscrapers, bridges, and dams. Contemporary architecture places a critical role in the safety and reliability of these complex buildings (Azza and Natalia, 2019). This includes the use of modern technology in building and designing, as well as strategic placement to ensure the safety and comfort of the occupants.

Architecture has a variety of styles that have resulted from a long journey in the history of the world of architecture. Contemporary Architecture, for example, was born in the 1920s with its rapid development after World War 2 around the 1940s (Rustiandi, et al., 2021). The contemporary architectural style has a fundamental difference from modern architecture. Contemporary architecture has characteristics that are not bound by an era or era, rules of the past, and are not limited to just one style (Rustiandi, et al., 2021). Contemporary architecture can be explained as a typology/architectural style that has characteristics of its era and becomes non-contemporary when the era passes (Permana and Wijaya, 2017). We can see the application of this concept in various

buildings scattered throughout the world. So that in practice, buildings can characterize a building typology with a new typology of changes or developments from the usual architectural typology, with inspiration from building typologies that have different functions. From the above background, to understand and explore more about the concept of Contemporary Architecture in Exhibition Buildings and Car Workshops, it is necessary to conduct an assessment of contemporary architectural concepts in showrooms and car repair shops which will become a new distinctive typology.

The purpose of the architectural and literature feature analysis is to provide an in-depth description and understanding of contemporary architecture as well as an understanding of its characteristics before conducting a case study analysis. Thus, researchers can have a path on the characteristics that are applied and not get out of the way set.

2. RESEARCH METHODS

The research method uses a qualitative descriptive method. This method is carried out by describing the aspects that are analyzed to clearly describe the characteristics of the shape of an object that is well-studied. Another purpose of this research method is to be able to express the circumstances and situations that exist in the case of study research in an informative way. In collecting case study data, it is done by collecting secondary data. Secondary data collection was carried out by conducting studies and collecting several journals, electronic sources, and similar research related to the purpose of being a reference in completing this research data. Data analysis in this study was carried out in the form of feature analysis and related literature on contemporary architecture. Analysis of architectural features and literature will be applied to case studies. First, the researcher conducts a study on the object of research by observing the architectural and literary characteristics that will be used in analyzing the data. The architectural and literary features obtained are sourced from scientific journals or electronic books.

3. RESULTS AND DISCUSSION

This discussion explains the meaning and characteristics of contemporary architecture, descriptions of case studies, and analysis of the characteristics or characteristics of contemporary architectural concepts in showroom buildings and car repair shops.

3.1 Definition of Contemporary Architecture

Contemporary architecture is a form of architectural work that is happening in the present, which characterizes the freedom of expression, and the desire to play a role in the world of fashion. displays something different, and is a new flow or a merger of several architectural streams. Contemporary architecture is heavily influenced by modern architecture. Contemporary architectural products represent the present in style, style, and globalization trends, such as eco-friendly architecture. Contemporary architecture can be said to be anti-vernacular architecture, by maximizing the use of new, non-local materials in aspirational, innovative, and high-risk ways (Desi, Mauliani, and Sari, 2018).

Contemporary architecture is the architecture of the 21st century. No single style is dominant; Contemporary architects work in several different styles, from postmodernism and high-tech architecture to highly conceptual and expressive forms and designs, resembling large-scale sculptures. Contemporary architecture is a form of architecture that embodies various design styles from various influences. Contemporary architecture broke away from modern architecture at the end of the 20th century by incorporating environmentally friendly elements and embracing all types of creativity (Ghozali and Zuhri, 2020).

Contemporary architecture has been recognized as an approach to designing internationally so many experts have expressed their opinions regarding the definition of contemporary architecture, including the following;

- a. Konnemann, World of Contemporary Architecture XX "Contemporary Architecture is an architectural style that aims to demonstrate a certain quality, especially in terms of technological progress and also freedom in expressing an architectural style, trying to create a real-separate situation from a non-uniform community."

- b. Y. Sumalyo, Late XIX and XX Century Modern Architecture (1996) "Contemporary are forms of architectural flow that cannot be grouped in an architectural style or vice versa, various architectures are included in it"
- c. L. Hilberseimer, Contemporary Architects 2 (1964) "Contemporary architecture is a style of architectural flow in its time which is characterized by freedom of expression, the desire to show something different, and is a new flow or a combination of several architectural schools. Contemporary architecture began to appear in 1789 but only developed in the 20th and 21st centuries after the world war."

3.2 Traits or Characteristics of Contemporary Architecture

According to Gunawan, E. an indication of architecture referred to as contemporary architecture includes 4 aspects, namely (Gunawan and Prijadi, 2011)

- a. The expression of the building is subjective
- b. Contrast with the surrounding environment
- c. The shape is simple and simple but has a strong impression
- d. Have a strong image, impression, image, and appreciation

The application of the characteristics and characteristics of contemporary architecture according to Egon Schimbeck, including (Pratama and Marlina, 2020)

- a. The building must be sturdy
- b. Expressive and dynamic compositions
- c. The concept of space seems open
- d. Harmonization of indoor & outdoor space
- e. There is a transparent façade
- f. Ultimate comfort
- g. Exploration of landscape elements

According to Surana, quoted from the Rethinking the Future page, there are 10 characteristics of contemporary architecture, including (Surana, 2022)

- a. Unconventional materials
- b. Having curved lines or straight lines
- c. Unique volume composition
- d. Large windows
- e. There are innovations in maintaining the sustainability of nature
- f. Imaginative building forms
- g. The feel of interior is bright and open
- h. Flat roof
- i. Simple geometric shapes
- j. One with nature

From these three sources, similarities and relationships are found in the characteristics of contemporary architecture. In this study, the characteristics of contemporary architecture are used, namely as follows:

- a. The building has an expressive, imaginative, and dynamic mass composition;
- b. Having a simple geometric shape;
- c. A building that contrasts with the surrounding environment;
- d. Have a harmonization of indoor and outdoor space;
- e. Has a transparent facade and large openings;
- f. Unconventional building materials

Through the characteristics of contemporary architecture as an architectural approach, it will support the creation of spaces that have an innovative, creative, and fun atmosphere. Contemporary architecture allows dynamic, flexible, and expressive spaces while still reflecting simplicity.

3.3 Case Study Description

The showroom and car repair shop building is a commercial building that is designed to have a new characteristic that is different from the existing showroom and workshop buildings. The building has a land area of 1,500m² with a building area of 360m². Before it became an exhibition and a car repair

shop, it was an empty lot. Then, the business owner is given the task of designing a building design for a car showroom and car repair shop that has characteristics and is different from the surrounding buildings.

The exterior of building showrooms and car repair shops in general has the appearance of the expression of the building structure which has the character of a structural module spanning column spacing that is wide and high and avoids having columns in the middle of the room. On the outside, a large transparent opening is designed to make it easier to provide access to see and be seen from the side of each party that requires viewing and viewing.



Figure 1. Today's showrooms and car repair shops have modern architecture
Source: Google



Figure 2. Today's showrooms and car repair shops have modern architecture
Source: Google



Figure 3. Today's showrooms and car repair shops have modern architecture
Source: Google



Figure 4. Today's showrooms and car repair shops have modern architecture
Source: Google

In its development, due to the need for wider space, exhibition halls, and car repair shops can be multilevel, this is due to increased space requirements and expensive land prices in commercial centers, which affects land investment and the existence of vertical transportation technology using car lifts so that land use is more efficient than using ramps.



Figure 5. Car showrooms and workshops are multilevel with contemporary/contemporary architecture
Source: Google



Figure 6. Car showrooms and workshops are multilevel with contemporary/contemporary architecture
Source: Google

3.4 Design Criteria for Showroom and Car Workshop Buildings with Contemporary Architecture

The showroom and workshop buildings in Auto Bird are designed to have simple, attractive, easy-to-implement building mass compositions and with a measurable budget that is efficient and effective without compromising the aesthetics of its architectural distinctiveness.

In Figure 7 it can be seen that the mass composition has a simple shape due to the use of simple structural modules on a wide stretch. The composition of the lines formed is the expression of the architect to create a building that has the typical contemporary architectural form for showrooms and car repair shops by carrying a message and meaning, namely a modern and friendly car showroom building inviting consumers to come without feeling worried about getting a price and quality of a car that exceeds the expectations of the ability of prospective buyers.

The shape of mass composition of the building has a different shape from other exhibition buildings and car repair shops by choosing the shape of the building from the initial form of a warehouse which was modified into a showroom building.



Figure 7. Building
Source: Google



Figure 8. Autobird Building Mass Composition
Source: Google

3.5 Has Simple Geometric Shapes and Attractive Colors

In Figure 8, it can be seen that there are simple geometric shapes that are applied to the building shape of the showroom and car repair shop. The shape of the square roof adapts to the character of the wide-span structure needed to get a column-free room in the middle area of the room. The triangular shape appearance is used to get an open impression and reach the height of the building that is expected to materialize. Meanwhile, red is the color of attraction to attract those who see it.

3.6 Buildings that Contrast with the Surrounding Environment

In Figure 9, the buildings around the showroom and car repair shop are buildings in a row that function as multi-purpose buildings/shops. There are shop buildings that have modern and classic modern buildings. The designed showroom and car repair shop buildings will have a contemporary architectural form that will have a different characteristic from the surrounding buildings.



Figure 9. View of the surrounding buildings
Source: Google

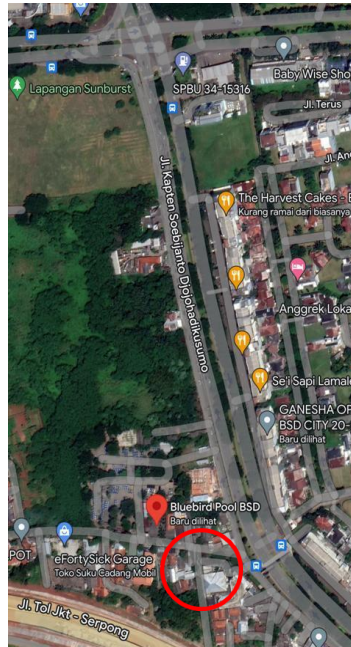


Figure 10. View of the surrounding buildings

Source: Google

3.7 Has a Transparent Facade and a Large Opening

In Figure 11, the showroom and car repair shop buildings are seen to apply this contemporary architectural feature. The building has a combined facade with window openings in the form of a rectangular grid and a steel-framed facade that can be seen from both sides from the inside and outside of the showroom and auto repair shop. The steel framework is shown and is part of the mass shape of the building, the outer side is made transparent so that an open and wide impression can be seen in the exhibition space which gives the impression that the viewer is invited to come and gives the impression that the building is large, majestic and elegant.



Figure 11. Autobird Facade

Source: Author's Analysis, 2022

3.8 Unconventional Building Materials

The main building material uses a steel construction structure with insulation walls between the inner and outer spaces using one type of material, namely Singalum material which is usually used only for building roofs, as shown in Figure 12. But in auto bird buildings, Singalum is also used as a building wall to reduce heat and If it is noisy, a Singalum is used which has developed into a sandwich panel, namely a hollow Singalum which is filled with styrofoam or poly styrofoam as shown in Figure 12. For the other walls, aluminum composite panels are used as a cover.



Figure 12. Autobird building
Source: Author's Analysis, 2022

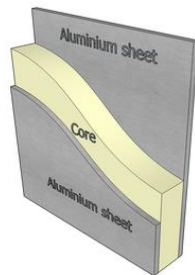


Figure 13. Sandwich panel material specifications
Source: Google



Figure 14. Sandwich panel wall/partition material
Source: Google



Figure 15. Structure and material of sandwich panel roof
Source: Google

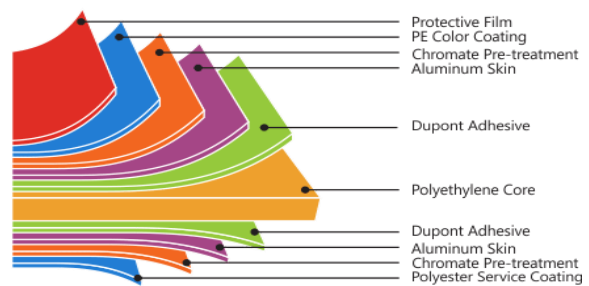


Figure 16. Specifications for aluminum composite panel (ACP) materials
Source: Google

3.9 Autobird Workshop and Exhibition Floor Plan

Autobird Workshop is a facility that focuses on the maintenance, repair, and modification of motorized vehicles. The main function of this repair shop is to provide a high-quality service for customers who want to maintain or improve the performance of their vehicles. Autobird workshops are equipped with the latest equipment and technology, as well as experienced experts in the automotive field. The mechanics at this workshop can perform various types of maintenance and repairs, from oil changes to engine modifications.

The floor plan for the Autobird Workshop exhibition was designed to show the latest versions of motorized vehicles and serve as a showcase. The exhibition is divided into several areas, such as sports vehicles, sedans, SUVs, and off-road areas. Each area is separated by footpaths and marked with the name and make of the vehicle. The exhibition space is designed with sufficient lighting to show the beauty of the vehicle and the modified features. Visitors can also take more information about a particular vehicle from the staff there.

The exhibition floor plan of the Autobird Workshop also features a lounge and office area. This lounge area is designed as a place for customers to wait for their vehicles to be repaired or modified.

This area is furnished with chairs, a television, and a coffee machine. The workshop office is also located near the lounge, enabling staff to easily monitor work on vehicles and communicate with customers. In addition, the customer's vehicle parking area is also available to provide convenience for customers who come to the workshop.

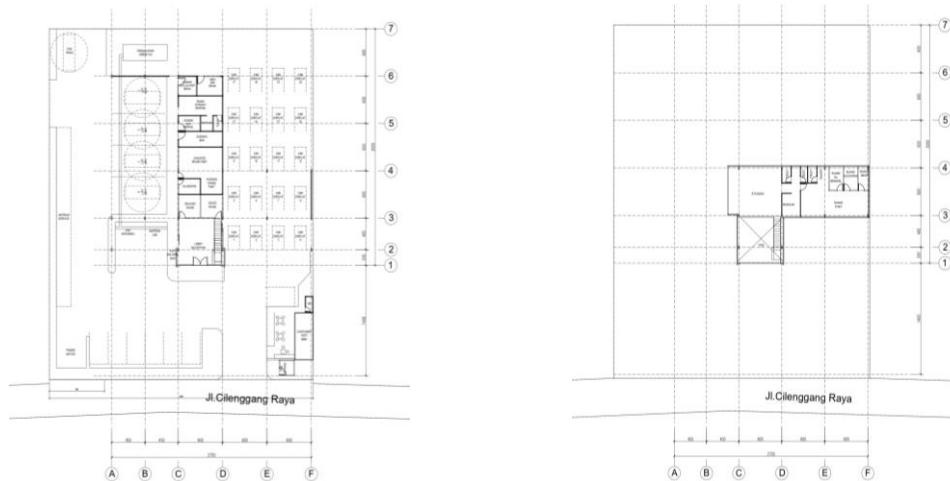


Figure 17. Autobird Building Plan
Source: Author's Analysis, 2022

4. CONCLUSION

From the results of the discussion of the analysis described above, the result is that the Autobird showroom and car repair shop building has a contemporary architectural form by adopting the form of a warehouse building in the past, and becomes a new distinctive building in the typology of showroom and car repair shop buildings which are buildings that are contrast compared to the building of showrooms and car repair shops in general. As well as in contrast to the surrounding buildings or the environment while continuing to carry out messages from building owners who want the building to be implemented, have uniqueness, be simple and attractive to look at, and be efficient and effective within the budget.

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