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Interior Design of Gubeng Train Station in Surabaya With Colonial Style Future Station Concept

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ABSTRACT

Interior Design of Gubeng Train Station in Surabaya with a Concept Future Station and Colonial-Style aims to design a train station that can keep up with future Indonesian railways and maintain the identity of the Gubeng station itself, this is because the train station has an important role in all activities of railway which is one of the main transportation options in Indonesia and one of the Heritage buildings of a city. The development of rail transportation also has an impact on the activity needs of Train Station users, which are still not fulfilled by Train Stations in Indonesia, especially in user orientation and sustainable design. This is a reason for inconvenience and can impact on the decrease in rail transport users.

The design made is expected to covers all the activities of station users and still maintain the identity of the building as a visitor attraction. Supporting all activities for station users can be achieved by paying attention to 3 important things, is accessibility, mobility and sustainability, which are the main concepts in this design, apart from the functional factors, this building will be designed in a colonial style as the identity of the previous Gubeng Station which is also a Heritage building in Surabaya.

KEYWORDS

Station
Accessibility
Mobility
Sustainability
Colonial
Design
Interior

1. Introduction

Rail transportation is one of the oldest transportations in Indonesia, this transportation was built during the Dutch colonial period which was used as a distributor of plantation products in various regions and began to be taken over by Indonesia after independence as public transportation to travel which we know today as PT. KAI (Nurwahyuni 2019). At the beginning of its development, the train and station operational systems were still not well organized, such as the lack of cleanliness in the station area or train carriages and too free of merchant activities so that it interfered with train passenger access. In 2009 PT. Kereta Api Indonesia (KAI) carried out a major overhaul of the operation and structure of the Railway (Initiative, n.d.), . So that the train has become a popular form of transportation for Indonesians from all walks of life in recent years. The overhaul has an impact on the affordability of costs and the complete facilities in the train carriages and makes the train the main choice of transportation for some people.

As one of the main choices of public transportation for the community, the role of the station is important in facilitating this transportation access. The train station functions as a place where trains depart or stop to serve up and down passengers, loading, and unloading of goods and the needs of train operations. The increasing number of users of train services has pushed train stations in several big cities to expand their areas to accommodate more and more prospective train passengers. The role of public facilities is very important in rail transportation. With services under the standards of PT. KAI, it is necessary to improve the quality of service to facilitate the activities and needs of rail service users. Under the standards of PT. KAI annually improves service quality in accordance with the vision and mission of PT. KAI focuses on service, safety, customer comfort (*standarisasi PT.KAI 2012*).

As is the case in the case of Surabaya Gubeng Station as one of the major stations that provide services for passengers ranging from economy, business, and executive class. So this station must

provide sufficient space to accommodate a large number of passengers, which has been done by adding a new station to the east opposite the old station. Known as Gubeng old for old buildings and Gubeng Brau for new buildings. The old station is reserved for economy class passengers and the new station is for business and executive class.

This expansion still does not provide comfort to station users, because it is poorly designed and does not pay attention to good circulation. It can be seen from the complex organization of station space and the undifferentiated flow of passengers and employees. The old Gubeng Station has colonial-style architecture and has historical traces making this building a Heritage building in the City of Surabaya that must be preserved in its integrity.

Judging from the importance of the station's role in organizing rail transportation, a design is needed that can support all aspects of comfort, safety, and aesthetics. So that at the Gubeng station the interior design will improve the space distribution system, circulation flow, and increase digitization of facilities at the station to make it easier for station users. The new Gubeng Station will be designed in a colonial style to maintain the identity of the existing station. This design is expected to have a good impact on the comfort, safety, and enjoyment of its users.

2. Method

2.1. Design Method

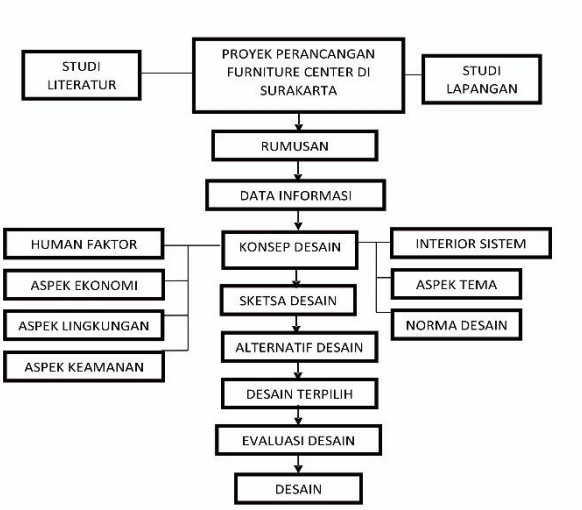

Fig. 1. Schematic of Design Methods.

Physical and non-physical data as well as the problems contained in the case will be found in the space design concept and refer to literature (library sources), interview results, and parameters in the form of photo images as references and comparisons with other train stations. Problems that will be solved through analysis will produce ideas or alternative designs. And the result is a design that will be realized.

2.2. Design Solving Approach

After the designer can formulate a design problem with research, the next step is to formulate a design solution approach. The design of the Gubeng Railway Station is expected to meet user needs both functionally and aesthetically. Where users will feel safe, comfortable, and happy when entering to exiting the station. So that in the approach to solving the design, the designer must understand the flow of activities of the station users, the needs in the station, and the atmosphere to be built. Design problems are complex problems and in the realization of interior design work, disciplines are needed that cannot be ignored when expecting maximum results. The following is the design approach used in this design:

2.2.1. Functional Approach

Gubeng Train Station is a public facility that functions as an intermediary for users of rail transportation.

2.2.2. Ergonomic Approach

In the design of the Interior Design, the ergonomics approach is very important to see that the Railway Station building is aimed at humans as the main target. Ergonomics is one of the requirements to achieve a qualified, certified, and customer-need design (Wardani 2003). Related to the formation of comfort and safety of all activities carried out. Adjustment to the needs of the dimensions/size of the human body (such as habits, behavior, and human culture of sitting, standing, picking up things, and moving) is considered to regulate circulation, seating facilities, and other supporting facilities at the station (Dutta and Rathore 2020). So that this design must be able to be used by all groups from young to old, even people with disabilities will feel comfortable and safe when doing activities inside the train station.

2.2.3. Theme/Style Approach

The style used in the design of this Railway Station is Colonial, the selection of the Colonial Style is based on the Gubeng station building, precisely the old Gubeng which is the Heritage building of the City of Surabaya, to create an atmosphere and characteristic that already exists, the use of Colonial is deemed appropriate for the Interior Design of the New Gubeng Station. to maintain their identity. In addition, the colonial-style is a design style that is quite popular in the Netherlands. This design style arose from the desire and effort of Europeans to create colonies like their home countries, modified according to the climate and materials available in their colonies. Colonial style is divided into 3, namely Indische Empire style (18-19 centuries); Transitional Architecture (1890-1915) and Modern Colonial Architecture (1915-1940) (Thohir et al. 2021). Visual characters in Dutch colonial buildings in Indonesia have different visual characters, judging by the architectural style of the building. The design of the Gubeng Railway Station, visually, uses more modern Colonial Architecture, has more varied floor plans, avoids many forms of symmetry, uses terraces around the building that are no longer used, instead, light retaining elements are often used. Trying to get rid of the impression of an "Indische Empire" architectural style (looks no longer symmetrical), the building looks more reflective of "Form Follow Function" or "Clean Design". Some of the buildings with concrete construction use a flat roof made of concrete that has never existed before.

2.3. Design Ideas

Using the Future Station concept, which emphasizes the development of the station's function itself to support all activities in it, Future here refers to how all activities at the station are supported by adequate facilities, prioritizing user comfort and being more concerned with nature. The future Station concept is divided into 2 main things, namely user-oriented and sustainable. User-oriented future stations concentrate on improving accessibility and mobility. Accessibility is achieved by improving services in the form of information services, counters, customer service, waiting rooms, places of worship, disability and security facilities. In addition, the accessibility aspect is supported by the use of a digitization system to facilitate and realize good and appropriate accessibility. While the mobility aspect is more emphasized on improving circulation in the form of passenger and employee flows in the station. Mobility within the station is intended so that station access can be easily achieved by users, both employees and station passengers, namely departure and arrival passengers. The sustainability aspect of the future station concept is manifested in the design and materials. In the design of the Surabaya Gubeng Station, more attention is paid to the use of natural resources, such as the use of sunlight, wind, and good air circulation. Saving energy in buildings is also considered, such as the use of escalators that automatically turn off, the use of automatic faucets, and minimizing the use of artificial air circulation and artificial lighting. The selection of building materials is also considered by choosing environmentally friendly materials.

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3. Results and Discussion

3.1. Project location

Fig. 2. Assumed location of Gubeng station in Surabaya *(Source: google.earth.com)*

General local design considerations in determining the location of the station which is located on Jl. Gubeng Masjid 1, Pacarkeling, Surabaya. Careful consideration is needed with supporting factors, including. It is an area located in the middle point of Surabaya. Consideration of the shape of the building, as well as the lighting of the sun from the west and east, also makes the consideration of the direction of the building facing south so that the intensity of light entering the building is not too much which can cause the temperature in the room to be hot. Is a business and shopping area.

3.2. Concept Implementation

The application of the Future Station Concept to the Station can be seen in the following aspects.

3.2.1. User-Oriented

- Accessibility.

  Implemented by increasing the number of manual counter services and online ticket purchases that are easier and more efficient. The increase in digitization at stations is implemented in the use of service machines, namely registration machines, online ticket purchase machines, independent ticket printing machines, and self-check-in. Digitalization is also used in the use of signage and wayfinding as well as digital screen advertising in stations to facilitate the delivery of information to station users. Information is also provided about other transportation that visitors want to use to continue their journey, information about lodging, and all information that can be accessed by visitors on digital screens provided at several points. The station can also be accessed by all groups, including children, adults, the elderly, and people with disabilities so that the ergonomics of the seats are adjusted to all groups, guiding blocks and warning blocks are provided to make it easier for the blind to access the facilities independently. There is a ramp on the floor leveling to make it easier for wheelchair users and passengers with luggage.

- Mobility.

  More emphasis is placed on the circulation of the user flow by preparing the floor plan layout with the fastest circulation, for example, using 2 circulation options for users who will go to the waiting area and check-in using escalators/manual stairs and can use an elevator, this can solve the problem of visitor density, respectively. -each room/area on the station is grouped into public, semi-public, and private areas to be organized based on user activity.

3.2.2. Sustainable

The concept of sustainability at the station is demonstrated by the design and use of environmentally friendly materials (Papanek 1995; Rashdan and Ashour 2017). The use of plants in several areas to provide freshness and as a filter in the room. The use of sunlight and air is also prioritized in the design, applied by the use of glass windows on the skylight walls that can be automatically closed and opened, the use of high ceilings to provide good air circulation.

3.2.3. Colonial Style

The use of colonial-style is based on the previous Gubeng Station building which was in colonial style so that it was used as a Heritage building for the city of Surabaya, to maintain the identity of the building, colonial elements were used in the building. The use of colonial design also gives the atmosphere of the city of Surabaya, which is a city full of history. Colonial elements are applied with the use of large mirrors, the use of many curved shapes, the use of motif tiles, and some ornaments on the pillars inside the station (Samsudi et al. 2020), . Modern colonialism can be seen in the asymmetrical floor plan, this building also uses more modern materials (Purnomo, Waani, and Wuisang 2017).

Fig. 3. Plans & layouts.

Colonial buildings are identical with the use of columns, in the station design the columns used are box-shaped with box-shaped ornaments protruding in the middle.

Fig. 4. Window shape.

The window ornaments of the Gubeng Station building take on the Spanish Moorish architectural style with a square shape at the top and an arch at the top. The shape of the windows in this station building has geometric and symmetrical shapes, of course, the shape and type of windows in this building are influenced by the art deco style (Dobrydneva 2020). The windows are designed wide and almost fill the wall to reduce the use of artificial light sources during the day.

3.2.4. Space Forming Elements

- Floor.

Fig. 5. Types of tile and epoxy floors.

The floor used is mostly motif tile, this floor is mostly used in colonial-style buildings, besides that the use of this floor is considered suitable for use in this station building because it is very cold, seems reassuring, presents a classic and artistic feel. In addition, the use of epoxy floors is also widely used in several areas such as the lobby, the epoxy material is very suitable because it is anti-slip and not slippery to support the activities of visitors who are mostly related to wheels such as suitcases, goods trolleys, or for disabled visitors who use wheelchairs. Epoxy flooring is a Quartz epoxy finished concrete made by combining an epoxy polymer resin with colored quartz grains. The result has a slightly rough surface that prevents slippery or anti-slip surfaces.

- Wall.
  The wall material uses concrete and brick walls with granite texture paint, wall tiles, marble, and acian.

Fig. 6. Granito texture finishing.

- Ceiling.
  Ceiling uses more gypsum material because it is environmentally friendly, Lambers are often used in some areas. There are also skylights like in the lobby area.

- Color Scheme.
  The station is a public building that is visited by many people all the time, so the use of neutral and clean colors is more used in this building to give the impression of being clean and orderly besides making it easier for people to read the signs scattered on the walls and floors (Uluçay 2019). So I will use white, cream, gray, or black colors as accents.

Fig. 7. Color scheme.

- Interior System.
  Lighting – this station building uses more sunlight by using glass material on the ceiling and walls so that it can save energy, while artificial lighting is needed only at night such as the use of several types of lamps. Ventilation – using natural ventilation obtained in several openings, for artificial ventilation using air conditioning or fans and also using exhaust so that air can change (Demirpolat 2019).
- Security Syste.
  At the train station using a sophisticated security system such as sprinkler, smoke detector, fire extinguisher, CCTV.

3.2.5. Gubeng Station Facilities

Lobby, this area is the meeting point for circulation paths from various areas and is the largest area in the station. Activities carried out in this area apart from being a liaison between various areas, there are also seating facilities at several points and several digital information facilities for visitors.

Fig. 8. Lobby Are.

Counter Area, it is an area for buying and selling train tickets served by the counter staff, this area also provides automatic ticket buying machines that make it easier for station visitors. There are also adequate seating facilities for visitors waiting in line.

Fig. 9. Counter area.

Cafetaria, a relaxing area for visitors who want to buy food or drinks, this area has a variety of seating facilities designs that visitors can choose from, such as a built-in sofa or stool.

Fig. 10. Cafeteria.

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Waiting Area, located on the 2nd floor which is an area for passengers waiting for the arrival of the train, as well as for pick-ups. To reduce congestion when crowded with visitors, this area can be passed through 2 routes, namely elevators and escalators.

Fig. 11. Waiting area.

Musholla, this prayer room is equipped with luggage storage facilities, a waiting area, and shoe storage. Has a wooden window accented wall on the side facing the lobby.

Fig. 12. Mushola.

Staff office, this area can only be entered by Gubeng Station staff, it is on the left side of the building. There are administrative offices, the offices of the Head and Deputy Stationmaster, Area Staff and Janitor. *Hallway* Area, hallway as a liaison to the toilet, prayer room, ATM center, and staff area. In this area, there are seating facilities and digital information screens for visitors. See on figure 17.

Fig. 13. *Hall way.*

Customer service, it is an information center regarding station and train operations located next to the counter area. See on figure 19. (a). *Toilet*, here are men's and women's toilets, the women's toilet has a nursery room that can be used for breastfeeding mothers and other children's needs.

Fig. 14. Customer service and.

4. Conclusion.

The Interior Design of Gubeng Station in Surabaya is designed to be able to follow the development of the railway in the future, so it is very important to think about the layout process to produce good accessibility, mobility, and sustainability in its design. It can be seen in the accessibility of the use of digitization in the process of visitor activities as well as an effort to realize a station that is more advanced and comfortable to use. It is hoped that when visitors come to the station, they don't have to worry about information such as the availability of information about the city of Surabaya, transportation, lodging, etc., and is available on screens spread across the station. Mobility is achieved by regulating the movement of station users, with the use of a broad station lobby, which is expected to overcome the density of station visitors. In addition, the division of space is also very important for public, semi-public, and private areas. Sustainable is applied by utilizing the sun and air sources properly to reduce the use of artificial light sources and artificial air, the use of electricity is also suppressed as much as possible with automatic escalators with automatic faucets. The colonial style is used in the visual appearance of the interior design of this station, with the use of geometric shapes in the building which is a characteristic of colonial-style architecture, the use of ornaments on patterned poles and

flooring, the use of colonial-style is expected to maintain the identity of the gubeng station itself which is a heritage building.

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