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DESIGN OF A BUSINESS HOTEL IN GRAND BATANG CITY WITH A SUSTAINABLE ARCHITECTURE APPROACH

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Abstract. Grand Batang City is an integrated industrial area located in Batang Regency, Central Java. As this industrial zone develops, Batang Regency is positioning itself to become a business hub for investors who need long-term accommodation to manage their operations. This phenomenon has led to increased demand for accommodation and meeting venues to host business visits from investors, trade partners, and professionals, as well as to support industry conferences and a surge in demand for lodging and meeting venues to accommodate business visits from investors, trade partners, and professionals, as well as to support industry-related conferences. The current problem requires urgent attention because, according to current data, Batang Regency hotels do not have essential business facilities. The research provides an architectural design framework that establishes a sustainable business hotel design plan. This approach blends functional requirements, site context, and eco-friendly design strategies to support business activities efficiently and sustainably.

Keywords: *Industry, Business Hotel, Sustainable Architecture*

INTRODUCTION

Grand Batang City is an integrated industrial estate in Batang, Central Java, Indonesia, developed through a collaboration between PT Wijaya Karya Realty, PT PP Tbk, PTPN IX, and the Batang Regency Regional Government. The project spans approximately ±4,300 hectares (Grand Batang City, 2023). The area comprises three main clusters: Cluster I (Industrial: automotive, electronics, textiles, consumer goods), Cluster II (Logistics: logistics centers, technology development, warehousing, transportation services), and the Commercial and Residential Cluster.

Data from the Central Java Hotel and Accommodation Directorate indicates that Batang Regency currently has only 11 registered hotels. These include Hotel Yudhistira (1-star), Hotel Sendangsari (3-star), and non-classified establishments such as Hotel Rejo Agung Podomoro, Hotel Podomoro, Hotel Panorama Inn, Hotel Dewi Ratih, Hotel Arowana, Hotel Arjuna, Penginapan Anjani, Hotel Alazka, and Hotel Larasati. The available data shows that Batang Regency currently has insufficient hotel facilities which can accommodate business clients who require meeting spaces and executive lounges and business centers. The

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upcoming infrastructure upgrades become critical because foreign business professionals are expected to become future investors. Therefore, the development of a business hotel classified at a minimum of 4 stars is both critical and relevant to the growth of Grand Batang City.

The rapid industrial development of Grand Batang City has already attracted numerous investors, including companies such as Cosmos Ink, KCC Glass, Wavin Orbia, Window Shutters, Yih Quan, Jayamas Medica Industri, Interskala Medika, Rumah Keramik, Tawada Healthcare, and Unipack Plasindo. The presence of these companies underscores the area's appeal as a strategic and high-potential industrial center.

To mitigate the negative impacts often associated with industrial activity, the author proposes the "Design of a Business Hotel in Grand Batang City with a Sustainable Architecture Approach." The proposal intends to utilize industrial development opportunities while creating sustainable housing solutions through environmentally responsible architectural design methods.

METHODS

The research methodology involves field observation and literature review. Observations were conducted to identify the actual physical conditions and site context. Concurrently, the literature review was utilized to strengthen the theoretical foundation and conceptual framework for formulating the sustainable business hotel design.

CONCEPT

Business Hotel

A business hotel is an establishment providing accommodation, food, and beverage services specifically designed to support the professional activities of individuals on business trips.

Sustainable Architecture

Sustainable architecture which people also call green architecture represents an architectural design method which seeks to reduce harmful effects on both the environment and human beings. It is applied to fulfill social, economic, and ecological sustainability principles.

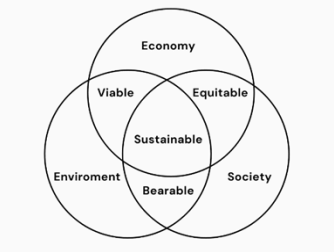

Figure 1. Sustainable Architecture Theory

Site Data

The site is located on Jalan Raya Subah-Batang, Tulis District, Batang Regency, Central Java.

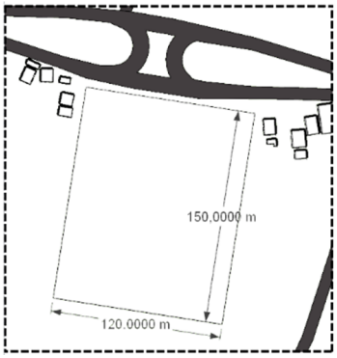

Figure 2. Site

Selected Site Data

1.	Land Use	: Commercial And Residential Cluster.
2.	Land Area	: ± 15.000 m2
3.	Road Type	: Primary Arterial Road
4.	KDB	: 70 %
5.	KLB	: 2,1
6.	GSB	: 10,75 meters
7.	Max Height	: 4 Floors

Site Climatology Analysis

The site is oriented to the north, with the sun rising on the east side and setting on the west. In response to these conditions, the building design incorporates openings on the eastern facade to optimize the use of morning sunlight for natural illumination.

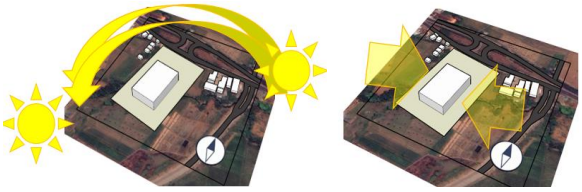

Figure 3. Climatology Analysis

Accessibility Analysis

The site is accessible from Jalan Raya Subah–Batang and Jalan Desa Beji. The main access point is located on the north side, connecting directly to the Pantura (North Coast) line, which optimizes vehicular circulation.

Figure 4. Accessibility Analysis

Noise Analysis

As a main arterial road, Jalan Raya Subah–Batang is a significant source of noise. To mitigate this, the design employs vegetation as a buffer element to reduce noise levels. Additionally, a double-skin facade is applied to the building, and soundproofing materials are used in spaces requiring acoustic tranquility, such as meeting rooms and conference halls.

Figure 5. Noise Analysis

User Analysis

1. Business Guests: Visitors staying for business activities requiring high privacy and comfort. Their needs include rooms, hotel facilities, meeting rooms, and business support services.
2. Leisure Guests Visitors staying to utilize hotel facilities with a relatively high need for privacy and comfort.
3. Facility Users: Visitors who do not stay overnight but utilize specific facilities (e.g., meeting rooms, restaurants) for a limited time.
4. Hotel Management: The hotel's managing and operational personnel who handle all aspects of hotel operations which include administration and security and engineering and human resources and marketing functions.
5. Service Staff: The operational units of a hotel provide essential support services through their front office and housekeeping and food and beverage and laundry and logistics and room attendant operations. The team maintains service excellence while creating comfortable environments for guests.

Hotel Capacity Approach

Based on observations, the room types are planned as follows:

Tabel 1. Number of Rooms

No	Room Name	Quantity	Description
1	Standar Type	50	Consistent with 4-Star Hotel Capacity
2	Deluxe Type	8	Consistent with 4-Star Hotel Capacity
3	Suite Type	4	Consistent with 4-Star Hotel Capacity

DESIGN RESULT

Business hotels require expansive building forms to support activities such as conventions and ballrooms. Therefore, a space frame roof structure is utilized, as it efficiently and stably spans broad areas.

Figure 6. Situatin Plan

Figure 7. Site Plan

The hotel is divided into several zones:

1. Public Zone
   Includes parking areas, cafeteria, lobby, garden restaurant, ballroom, and convention hall, accessible to the general public.
2. Semi-Public Zone
   Designated for specific internal activities, particularly for staff and management, including meeting rooms and restricted areas with special access.
3. Private Zone
   Dedicated to the personal needs of hotel guests, specifically the bedroom areas, which demand the highest level of privacy and comfort.

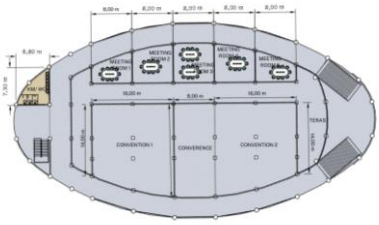

Figure 8. Multipurpose Building 1st Floor Plan

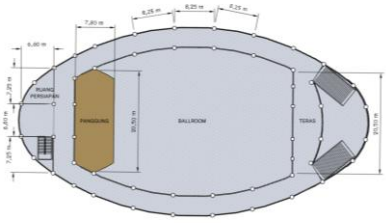

Figure 9. Multipurpose Building 2nd Floor Plan

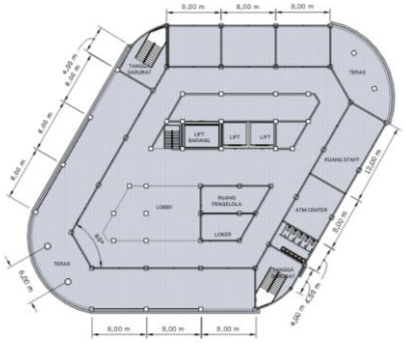

Figure 10. Hotel Building 1st Floor Plan

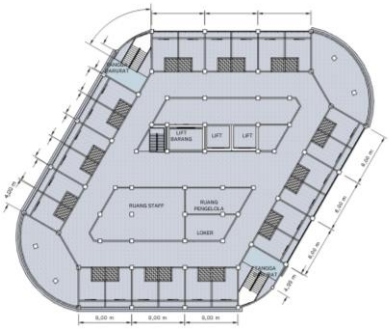

Figure 11. Hotel Building 2nd Floor Plan

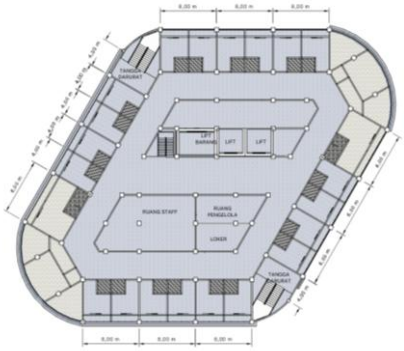

Figure 12. Hotel Building 3rd Floor Plan

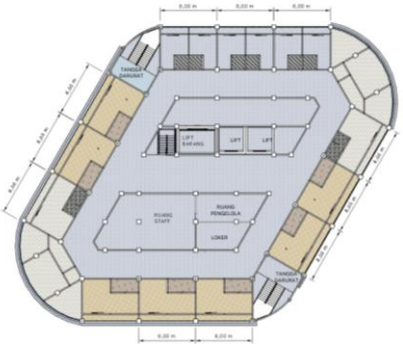

Figure 13. Hotel Building 4th Floor Plan

Figure 14. Room Details

The building's appearance is presented through four main elevations: Front, Back, Right, and Left views. Each represents the visual character and composition of the building's facade.

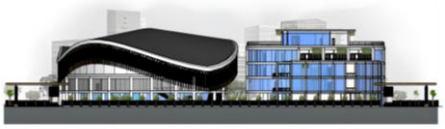

Figure 15. Front Elevation

Figure 16. Right Elevation

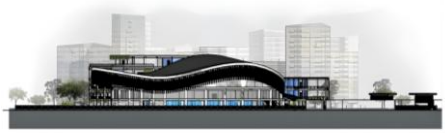

Figure 17. Left Elevation

Figure 18. Back Elevation

Building sections are presented in two directions: horizontal and vertical. The horizontal section displays the building's elevation from right to left, while the vertical section reveals the spatial conditions and building elements on the left side.

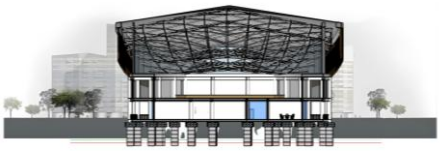

Figure 19. Multipurpose Building Section A-A

Figure 20. Multipurpose Building Section B-B

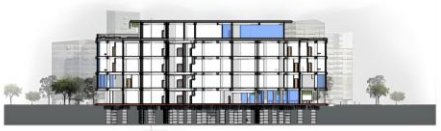

Figure 21. Hotel Section A-A

Figure 22. Hotel Section B-B

The building massing is arranged to facilitate smooth air circulation while creating a visually spacious impression. The sustainable architecture concept introduces green elements and eco-friendly features which include planned shading vegetation to achieve noise control. Furthermore, the hotel provides various supporting facilities for guests and visitors, including a swimming pool, private rooms, meeting rooms, and a ballroom.

Figure 23. Exterior Perspective

Figure 23. Exterior Perspective 2

Figure 23. Interior Room Perspective

Figure 23. Interior Perspective

CONCLUSION

The Grand Batang City development project which serves as an Integrated Industrial Estate through the National Strategic Project has generated increased industrial operations and business activities which require a business hotel to function as an essential operational support facility. The business hotel design for a 1.8-hectare site in Grand Batang City uses sustainable architectural methods to provide guest accommodations which will create less environmental harm to the surrounding industrial zone. The application of sustainable design principles serves as the foundation for constructing a building which will achieve three goals of environmental protection and efficient operation and adaptive capacity.

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