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Creating the Application of Green Architecture Principles in Hotel Buildings in Yogyakarta

Vieka Alana Leyla Siddiq[1], Sanchia Caroline Santonio[2], Anna Pudianti[3], B. Sumardiyanto[4]*

[1,2,3,4]Architecture Study Program -Faculty of Technical - Atma Jaya Yogyakarta University, Yogyakarta, Indonesia
*Correspondence: E-mail: viekasiddiq@gmail.com

ABSTRACT

Yogyakarta is a city that generates revenue, particularly from the tourism sector. The tourism sector requires accommodation in the form of lodging. This study discusses the application of green architecture principles in hotel buildings in Yogyakarta, specifically in Sleman Regency. Sleman Regency is the area experiencing the fastest urban development due to its location near the Keraton (the center of power). The study focuses on the green architecture principles applied in 3-star, 4-star, and 5-star hotels, including conserving energy, working with climate, respect for site, respect for user, limiting new resources, and holistic approaches. The objective of this study is to determine whether the implementation of green architecture principles affects the star ratings of hotels. The research uses a qualitative approach, referring to a comparative method of analyzing the application of green architecture principles in star-rated hotels. Comparisons are based on literature sources, and the analysis is directly illustrated through diagrams and visuals. The results include comparisons of star-rated hotel buildings that implement green architecture principles. The conclusion identifies the hotel with the most green architecture principles, making it more attractive to visitors. It alsoprovides recommendations to address deficiencies in the application of these principles for future improvements.

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1. INTRODUCTION

Yogyakarta is a rapidly developing tourist city, especially Sleman Regency whose economic turnover is centered on power (palace government). The development of the city is influenced by several sectors, one of which is the tourism sector. In order to make the form logging or hotels, the tourism sector needs the availability of accommodation services to be available. The construction of hotels is done a lot and the design results have an impact on the environment (Haykal & Lissimia, 2021). Thus, the application of green architecture in development is urgently needed.

Green architecture is an approach in the planning, design, construction, and management of buildings that aims to minimize negative impacts on the environment. The word "Green" refers to the principles of sustainable, earth friendly, and high performance building. "Architecture" refers to architectural design based on a green architecture approach. Approaching green Architect focuses on the efficiency of energy, water, and material use, as well as creating healthy and comfortable spaces for its residents.

The development of the city triggered the construction of Yogyakarta hotels that continue to operate, thus contributing to greenhouse gas emissions. Generation 5.0 develops a design with green architectural principles on the concept of biophilic, bioclimatic, and net-zero carbon. Thus, the principle of green architecture includes not only a design full of plants, but also based on the use of energy and materials (Lendra et al., 2022).

The average Energy Consumption Intensity (IKE) of hotels in Indonesia is 300 kWh/m2 per year. IKE is the amount of electrical energy use per square meter of building area in a given period (Hermawan et al., 2023). Energy saving and energy conservation efforts are needed to implement the design. Several hotels in Indonesia have implemented savings to reduce excessive energy consumption. For example, the use of eco-washers, LED lights and Light Sensors. Efforts to implement green architectural principles are also discussed to be applied to design by (Vale B. & Vale R., 1991).

Thus, the application of green architecture principles is actually to help the building design concept (before the building is built). However the principle of green architecture can be assessed in hotel buildings as a correction to the design and provide solutions that lead to sustainability (Kirana et al., 2020; Pebriyanti, 2017). The assessment of green architecture principles can use a commapararating study based on the level of a star hotel and produce which hotels meet the principles. To create improved green architecture's advantages for decreasing disadvantages of net zero design action, the guidelines should attract tourists. (Mauludi et al., 2020).

2. LITERATURE REVIEW

In the previous study, Lestari, K. (2021) researched the implementation of environmental conservation at the Ibis Yogyakarta Adisucipto Hotel based on the Global Sustainable Tourism Council (GSTC) indicator, found that environmental conservation could not be carried out optimally judging from the use of plastic packaging, the use of non-renewable energy and the procurement of environmentally friendly goods, as well as the lack of liquid waste management.

According to Abimanyu Takdir Alamsyah, in the context of architecture, green architecture as the theme of architectural design or the embodiment of architectural creations that are responsible for the environment, maintain nature preservation, support preservation or prioritize environmental preservation, strive for material efficiency and energy use locally and on a global scale, and are holistic both ecologically and

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anthropologically. Green architecture also refers to the theme of architectural design. Other aspects related to it (Mauludi et al., 2020). There are several principles of green architecture to analyze (Vale B. & Vale R., 1991):

1) **Conserving Energy**
   The main idea behind green architecture is that energy must be used correctly. Before and after construction, the energy consumption of the building must be considered. Instead of changing the conditions of the existing environment, the design of the building must be able to change with the weather and adapt to it.
2) **Working With Climate**
   Buildings follow green architectural methods in adapting to their environment, in this case by incorporating climate, natural conditions, and the surrounding environment into their design and operation in the following ways:
   a. Directiing The orientation of the building to sunlight.
   b. Applying of air pump system and cross ventilation system to distribute cool and clean air throughout the room.
   c. Utilizing plants and water as climate regulators.
   d. Utilize roofs and windows that can be opened and closed partially or completely to get air and light as needed.
3) **Respect for Site**
   The relationship between the building and its site is referred to as planning. To avoid hazards to the surrounding environment, the construction, design, and operation of buildings must all be maintained to the following standards:
   a. A design that follows the existing shape and condition of the site to maintain its condition.
   b. The building's base surface area is small, which is a factor in the design of vertical buildings.
   c. Materials that are local and do not damage the environment. Respect for user.
4) **Respect for user**
   The relationship between users and green architecture is very close. Users conditions established during the planning and operation of the green architecture must be considered.
5) **Limitting New Resources**
   Planning the building through consideration and trying to maximize the existing materials while minimizing the use of new materials. These materials can be used to create other architectural orders at the end of the building's life.
6) **Holistic**
   Integrate the five considerations mentioned above into the design approach for the building. The reason behind this approach because, they are interconnected, the principles of green architecture are inherently inseparable. It is certain applying these principles will be easier. Therefore, the existing green architecture can be utilized as much as possible and adjusted to the existing potential.

3. METHODS

This study used a qualitative approach. According to Groat & Wang (2013) a qualitative approach in the aspect of architecture is related to exploring and understanding certain phenomena in depth. The qualitative method focuses on phenomena that understand diverse experiences, contexts, and perspectives, especially in the field of architecture and environmental design (green architecture principles) (Ningrum & Hidayati, 2023). The hotel

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buildings chosen as the object of the research are located in the Tugu area, Jl. Solo, Klitren, and Jl. Jend. Sudirman. The location of the object has high mobility, is in the scope of the city center, and Jl. Solo is a Yogyakarta-Central Java provincial road where there are many opportunities for visitors to temporarily transit.

The study also uses a literature study on the principle of green buildings. Then it was analyzed using a comparative method based on theory (Vale B. & Vale R., 1991). The data obtained shows the application of green architecture principles in hotel buildings. The data that has been analyzed is then compared by showing the percentage value of green architecture principles applied by each hotel. The percentage value obtained shows the green architecture guidelines making it a star-rated hotel design and attracting tourists to come.

This study aims to find out the principles of green architecture applied to hotels with research limitations using hotel objects in Yogyakarta, so that the research process is as follows:

1. Data collection either through literature or in-depth observation of green architecture in hotel buildings.
2. The assessment of previous research related to the principles of green architecture. The results and discussion were in the form of Identification of Green Architecture principles in Hotel buildings.

Figure 1 Research Process
Source: Author, 2024

4. RESULTS AND DISCUSSION

Basically, the application of Green Architecture in buildings is a must that is done today. Green architecture is a response to environmental problems to reduce and anticipate carbon emissions and destructive impacts resulting from buildings (Tafidis et al., 2024). Green architecture provides opportunities for innovation and economic development. The increase in the number of tourists and the need for accommodation will make tourists selective in the choice of lodging accommodation. Green Architecture in hotel buildings creates a healthy physical environment for its residents and promotes awareness of environmental sustainability. Based on research conducted by eight hotels in Yogyakarta (table) and identification of the application of green architecture principles (Zakky et al., 2021).

1) Conserving Energy

The use of conventional electricity or state electricity is still the main choice for the hospitality sector. Electricity consumption and costs incurred do not affect hotel operating costs because hospitality is included in the industrial sector (Andres et al., 2023). According to (Vale B. & Vale R., 1991), energy consumption buildings must be able to change along with

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the weather and adapt to it. Through conventional Electricity energy sources, hotels have their own ways of reducing electricity consumption. The 101 Hotel Tugu Yogyakarta adapts the principle of passive design which uses natural ventilation to save the energy consumed by the building's lighting and cooling system. Overall it can reduce building operational costs.

Figure 2 Prinsip passive design The 101 Tugu Yogyakarta in maximizing the use of natural light
Source: google, 2024

The implementation of environmental conservation at the Ibis Yogyakarta Adisucipto Hotel based on Global Sustainable Tourism Council (GSTC) indicators found that environmental conservation cannot be carried out optimally judging from the use of plastic packaging, the use of non-renewable energy and the procurement of environmentally friendly goods, as well as the lack of liquid waste management. At the Ibis Yogyakarta Hotel, the main façade of the building uses a transverse cnc finish, such as a shawl and building envelope in the form of concrete and there are no shading device elements device (Lestari K., 2021). The use of glass materials in buildings is considered to be able to distribute sunlight into the room. The placement of rooms in hotels that are prioritized facing north and south makes diffuse light from the sky light not hot and does not increase the thermal of the building so that artificial ventilation can be reduced (Barbosa et al., 2015; Magdalena & Tondobala, 2016). The selection of building materials is determined by many factors (Allen, 1998), namely: the availability of the material in the market, the durability of the material, the purpose or function of the building, the technology and carpentry capabilities in its application, the efficiency and price of the material. It is undeniable that the choice of materials is also influenced by the character or image that is impressed by the material (Allard & Santamouris, 1998). Nowadays, the choice of materials is also influenced by the modern or contemporary impression of a material, for example the use of glass, steel, and ACP (Aluminum composite panel) materials in buildings, especially those with multiple floors (Jeong et al., 2024; Sebestyen et al., 2008).

Figure 3 Perspektif Material Hotel Royal Ambarukmo Yogyakarta
Source: Google, 2024

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The energy-saving principle of the Royal Ambarukmo hotel utilizes natural lighting with the use of glass materials in the main building and hotel rooms. The sun's heat is reduced by using secondary skin and arranging each hotel room with a shape that enters the building, so that the scorching sun does not directly enter the room. In addition, the privacy of space users is also better maintained. Natural lighting in this hotel is maximized by the use of neutral or natural colors on the exterior to the interior of the hotel building. Artificial lighting uses energy-efficient lamps with warm colors and not glare (Lestari K. 2021; Paramita, 2021).

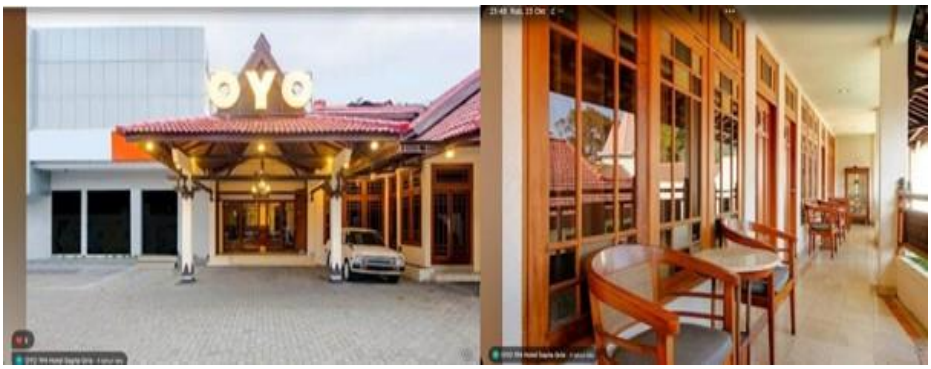

Figure 4 Hotel Sapta Griya Yogyakarta
Source: Google, 2024

Optimization of the lighting of the Sapta Griya Hotel through artificial lighting. Some parts of the room of this hotel are each fairly low with natural lighting. Artificial lighting is only in areas with low light intensity. In addition, the use of neutral colors is also one of the efforts to optimize lighting. The sun reducers on window are used for decreasing light intensity, as well as its energy heat which could enter the guests' room. For the roof of the building, use a typical Javanese sloping roof shape from top to bottom in the direction of the east-west wall or the direction of the sun.

Figure 5 Hotel Kimaya Sudirman By Harris Yogyakarta
Source: Google, 2024

Kimaya Sudirman by Harris is a hotel located in the center of Yogyakarta, precisely on Jalan Jenderal Sudirman. Kimaya applies energy-efficient LED lighting, low-power appliances, and an efficient water management system to reduce energy and water use. Hotel Kimaya uses durable and easy-to-maintain materials, such as high-quality concrete or strong local wood to extend the life of the building without the need for frequent renovations.

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Figure 6 Hotel Kimaya Sudirman By Harris Yogyakarta
Source: Google, 2024

Hotel Suites Bianti Yogyakarta is a 4-star hotel located in the center of Yogyakarta, precisely in a strategic area for tourists and business people. Hotel Bianti uses solar energy systems, air conditioning efficiency, and durable materials to reduce energy requirements and maintenance costs. Hotel Bianti uses energy-efficient glass material and LED lighting can help reduce energy consumption for lighting and cooling.

Table 1 Analysis of the Application of Energy Conservation in Hotel Buildings

Hotel	Identifying Energy Conservation Applications
The 101 Hotel Tugu Yogyakarta	● The principle of passive design by prioritizing openings in the north and south of the building Utilization of Diffuse Light of the Sun ● Utilization of Diffuse Light of the Sun
Hotel Ibis Yogyakarta Adisucipto	● Secondary skin to reduce sunlight entering buildings. ● Maximizing the opening of the building on the north and south parts
Royal Ambarukmo Hotel Yogyakarta	● Selection of neutral colored materials to reduce the thermal of the building ● Passive Design to Harness the Sun's Diffuse Light
Hotel Sapta Griya Yogyakarta	● The use of sun reducer in the form of tinted glass ● Structural engineering of the roof of the building in the direction of the sun
Hotel Kimaya Sudirman by Harris Yogyakarta	● Using an energy-efficient lighting system
ARTOTEL Suites Bianti	● Lighting systems using solar ● Efficiency of using artificial air conditioning

(Source: Author, 2024)

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2) Working with Climate

Based on observations on the façade of The 101 Hotel Tugu Yogyakarta building, it uses external shading elements and uses low e-coated windows that minimize ultraviolet rays and retain the sun's heat so that the room stays cool. In addition, the vertical garden system is also applied to the façade of the building facing East and West. Basically, the regulations in a 5-Star hotel building must use an energy-saving lighting system and a water efficiency system. The 101 Hotel Yogyakarta Tugu is also one of the ones that uses this system. The 101 Hotel Yogyakarta Tugu uses lighting control in each room, automatic water faucet, eco washer, and water efficient landscape system.

Figure 7 Vertical Garden The 101 Hotel Tugu Yogyakarta
Source: Google,2024

The façade of the Ibis Yogyakarta Hotel uses cnc cutting accented to resemble a scarf, as an aesthetic and minimizer of sunlight entering the building even though the main façade faces north. The principles of utilizing natural energy sources include natural ventilation, building orientation and minimizing the use of new resources. At the front of the building there is a garden that functions as a living fence, building boundaries and also meeting the needs of RTH on the site. Although the area of RTH has not reached the minimum amount, the addition of live plant decorations in each hotel room is an effort to improve aesthetics and meet the needs of green spaces.

The orientation of the Royal Ambarukmo hotel building faces south and west to maximize natural lighting and the utilization of wind direction. The hotel utilizes both natural and artificial ventilation. Natural ventilation by applying a cross ventilation system and additional artificial ventilation in the form of air conditioning. The use of openings that include wide windows and breezeblocks. The use of durable materials, such as selected woods, steel, concrete, marble, and natural rocks minimizes the use of new materials due to their durability.

Figure 8 Atmosphere of the Dining Room and Room of the Ibis Yogyakarta Hotel
Source: Google, 2024

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The orientation of the hotel building faces south, which is traditionally considered advantageous in terms of energy efficiency. For natural ventilation, this hotel applies a cross ventilation system with additional artificial air conditioning in the form of air conditioning. The use of openings includes windows and breezeblocks. The use of durable materials such as class 1 wood which dominates buildings, the use of bricks, and natural rocks minimize the use of new materials because the lifespan of these materials is quite long, especially if it is supported by good maintenance.

Figure 9 Gambaran Suasana Lobby dan Kamar Hotel Sapta Griya Yogyakarta
Source: Google, 2024

Figure 10 Suasana Area Kolam Hotel Sapta Griya Yogyakarta
Source: Google, 2024

Hotel Kimaya's design optimizes natural ventilation and sunlight by using large windows or building structures that utilize natural air circulation to reduce air loads. The use of materials Hotel Kimaya is designed by harmonizing materials that emphasize sustainability, from building materials to environmentally friendly facilities, ensuring a comfortable and sustainable experience for users. Hotel Kimaya implements a vertical garden next to the pool to meet environmental conservation standards with a minimum of 40% of the land area. Besides the pond also planted some local vegetation, such as local trees.

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Figure 11 Atmosphere of the Pool Area of Hotel Kimaya Sudirman by Harris Yogyakarta
Source: Google, 2024

Hotel Bianti applies shading or sun protection on the side of the building exposed to direct sunlight to reduce heat entering and using air conditioning. Then Hotel Bianti is designed with hollow walls or reflective roof materials that can help reduce heat absorption from the sun. Next to the pool and the front of the building is designed by planting local vegetation to reduce the greenhouse effect and carbon footprint of the glass material on the walls of the hotel. Actually, the hollow walls are not advantageous in each room, but more advantageous in the front façade of the building.

Figure 12 Pool Area Atmosphere of Hotel Suites Bianti Yogyakarta
Source: Google, 2024

Table 2 Analysis of the Application of Working with Climate in Hotel Buildings

Hotel	Identification of Working with Climate Implementation
The 101 Hotel Tugu Yogyakarta	• Vertical Garden System to accommodate RTH needs
Hotel Ibis Yogyakarta Adisucipto	• Garden at the front of the building to accommodate RTH needs • Decoration of living plants for aesthetics and maximizing the need for green space
Royal Ambarukmo Hotel Yogyakarta	• Use of durable natural materials
Hotel Sapta Griya Yogyakarta	• Use of class 1 wood material • Natural Stone Use

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Hotel	Identification of Working with Climate Implementation
Hotel Kimaya Sudirman by Harris Yogyakarta	● Vertical garden next to the pond to meet environmental conservation standards with a minimum of 40% of the land area.
ARTOTEL Suites Bianti	● Hollow walls ● Use of reflective roofing materials ● Local plant vegetation in an open space

(Source: Author, 2024)

3) Respect For Site

The 101 Yogyakarta Tugu is located on Jl. Margoutomo No 103 Yogyakarta located close to Tugu Jogja to Malioboro which is affordable by walking. Access to the hotel as well, as it is located on the main road. The shape of the building mass is rectangular and it follows the existing conditions and uses materials that do not damage the environment. The material used in this hotel building is a grid concrete structure system with a green roof.

Figure 13 Hotel Ibis Adisucipto Yogyakarta
(Source: Google, 2024)

Hotel Ibis Yogyakarta is located in an easy location if you want to explore the city, 25 minutes away from the famous tourist attractions in the center of Yogyakarta. Using a gride concrete structure with the placement of shearwall and the core of the building on the east and west so that it can reduce the amount of light and solar heat that enters the building. In overcoming user density, Hotel Ibis Yogyakarta overcomes it by procuring pockets in the form of gardens that are used as buffers between spaces. In terms of respect for site, both hotels are located in strategic areas for business development, and are in high-noise areas, so that the existence of buildings does not interfere with other buildings (tourist buildings or cultural heritage).

The application of water conservation in this hotel building includes the use of WWTP which functions to process liquid waste (dirty water) into water suitable for operational activities such as watering vegetation in green gardens to flushing toilets. The existence of water infiltration from the green garden around the hotel and rainwater reservoirs is also a form of water conservation in the Royal Ambarukmo hotel building.

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Figure 14 Landscape Atmosphere of Royal Ambarukmo Hotel Yogyakarta
Source: Google, 2024

The existence of water infiltration from the park around the hotel is a form of water conservation in the Sapta Griya Hotel building. In addition, the existence of a pond directly opposite the guest room is a rainwater *reservoir.*

Figure 15 Suasana Area Kolam Hotel Sapta Griya Yogyakarta
Source: Google, 2024

The Hotel Kimaya building utilizes local materials, which is reflecting the uniqueness of Yogyakarta and retain natural elements, such as trees or local parks. The design of Hotel Kimaya strives to minimize non-environmentally friendly materials and choose local materials that adapt to the geographical characteristics of Yogyakarta. Furthermore, the design of Hotel Bianti respects the environment by maintaining original vegetation or establishing a park. The maintenance shows local ecosystems so that the building seems to blend in with the landscape of Yogyakarta. Use of materials that are easy to decompose or natural materials that do not disturb the ecosystem around the hotel.

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Table 3 Analysis of the Application of Respect for Site in Hotel Buildings

Hotel	Identify the Implementation of Respect for Site
The 101 Hotel Tugu Yogyakarta	● The building mass follows the site and uses a grid concrete structure system ● It is located in an affordable area within walking distance to public facilities and recreational areas.
Hotel Ibis Yogyakarta Adisucipto	● Design engineering by laying shearwall and building cores on the east and west parts ● The location of the hotel is in the business and economic area, so that the hotel accommodates business users well
Royal Ambarukmo Hotel Yogyakarta	● The use of WWTP which functions to process liquid waste (dirty water) into water suitable for operational activities such as watering vegetation in green parks to flushing toilets.
Hotel Sapta Griya Yogyakarta	● Parks as water catchment areas ● The swimming pool is also a rainwater reservoir
Hotel Kimaya Sudirman by Harris Yogyakarta	● The use of local materials and natural elements in the form of local plants to improve local ecosystems ● The use of materials that are easy to decompose so as not to disturb the ecosystem
ARTOTEL Suites Bianti	● Waste management and maintaining the cleanliness of the hotel environment

(Source: Author, 2024)

4) Respect for User

In a hotel building as a tourist or business accommodation facility, certainly, it not only presents various types of rooms but also supporting facilities such as restaurants, spas & gyms, swimming pools and ballrooms or meeting rooms. Hospitality accommodation provides facilities for work or for tourism by presenting specific themes in each peak-season. In the same way as the 101 Yogyakarta Hotel, Tugu provides thematic rooms to accommodate guests who want a staycation atmosphere.

Figure 16 Suasana Ruang Hotel Ibis Yogyakarta
Sumber: Google, 2024

The building of Hotel Kimaya exerts health-friendly materials such as low VOC paints, natural air fresheners, and presents a soothing green area for guest relaxation. It operates

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materials that are low in VOCs (Volatile Organic Compounds) and safe for health, such as eco-friendly paints and formaldehyde-free wood. Furthermore, the interior design of Hotel Bianti prioritizes comfort with a friendly space for all users, good ventilation, and natural lighting so that the atmosphere inside the hotel is comfortable and healthy. The consumption of antibacterial materials on the surface of bathrooms or public places to create a more hygienic environment for users. Basically, a hotel building aims to provide lodging accommodation with various experiences offered from the facilities provided. Today, the presence of Thematic Hotel and Season at the hotel also offers an exciting staycation experience for guests. So, the need for respect for users is definitely the main thing in a hotel. From the various hotels above offer their own experiences for guests who stay.

Table 4 Analysis of the Application of Respect for Site in Hotel Buildings

Hotel	Identify the Implementation Respect for User
The 101 Hotel Tugu Yogyakarta (4-Stars)	● Sports and Fitness Center ● Communal rooms and meeting rooms
Hotel Ibis Yogyakarta Adisucipto (3-Stars)	● Business Room
Royal Ambarukmo Hotel Yogyakarta (5-Stars)	● Thematic Roon ● Sports Facilities and Fitness Centre ● Royal Garden and Biking track ● Shopping Arcade
Hotel Sapta Griya Yogyakarta (3-Stars)	● Buildings and Bedrooms with tropical and typical Javanese nuances
Hotel Kimaya Sudirman by Harris Yogyakarta (4-Stars)	● Outdoor Facility ● Sports activities and Fitness Center ● Recreation and Entertainment
ARTOTEL Suites Bianti (5-Stars)	● Waste management and maintaining the cleanliness of the hotel environment

(Source: Author, 2024)

5) Limitting New Resources

The 101 Hotel Yogyakarta Tugu uses autoclaved aerated concrete blocks on the exterior or interior walls and window frames using UPVC. Meanwhile, at the Ibis Adisucipto Hotel, the use of cnc as a façade sheath and window film can be considered less environmentally friendly and actually increases greenhouse gas emissions.

Hotel Kimaya can use furniture or decorations made from recycled or recyclable materials, as well as making use of old architectural elements that have been altered. Hotel Kimaya also consumes recycled materials or furniture from recycled materials that have been redesigned to match the hotel's aesthetic. At the same time, Hotel Bianti utilizes recycled materials for decorative elements or furniture, and uses sustainable materials such as

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bamboo or wood derived from renewable sources. Hotel Bianti applies materials derived from renewable sources or recycled materials for furniture or interior decoration.

6) Holistic

The 101 Hotel Tugu Yogyakarta integrates the whole principle well into its design. primarily, this hotel is the first hotel to be certified as a Green Architecture building (EDGE Certification) through the Green Buiding Council Indonesia with a result of 63% Energy Savings, 22% Water savings and 44% Less embodied Energy in Materials). In the mean time, Ibis Yogyakarta only applies basic written regulations for building standards.

The correlation between the procurement of accommodation and the existence of the environment can be well integrated. The 101 Hotel can be an example (precedent) in the planning of hotel building design in Indonesia. Recommendations on the other 7 hotels can carry out design and accommodation engineering to improve the quality of the building so that it can meet the principles of green buildings in the hotel building sector.

Hotel Kimaya combines all these principles in the design and operation of hotels, from energy use to material selection, to create an environmentally friendly and sustainable environment. Hotel Kimaya integrates all the principles of green architecture in the selection of materials and design to create an energy-efficient and environmentally friendly building. Meanwhile, Hotel Bianti has a sustainable design by implementing energy efficiency, environmentally friendly design, and creating a guest experience that supports a healthy environment. Hotel Bianti also aligns all materials with designs that emphasize sustainability, from building materials to eco-friendly facilities, ensuring a comfortable and sustainable experience for users.

5. CONCLUSION

Based on the results of the study, it shows that considerable capital is needed in the hotel sector in maximizing the contribution of holistic green buildings. But to get started, no large capital is required. Awareness is needed to integrate all aspects of a green building. A simple contribution can be made as a first step towards sustainable operational management.

So based on the results of the research, the hotel with the highest rating certainly applies the basic concept of green architecture well. However, the hotel with the lowest rating is the basic concept of green architecture at best. To achieve Holistic, it is necessary to integrate various parties and awareness of green application in buildings. So far, hotels have used design engineering to reduce energy use, only reduce operational costs and have not had an awareness of the importance of energy conservation for future needs.

This research is expected to provide basic information related to green architecture. The suggestion for the next research is that there needs to be a combination of quantitative research and qualitative research (mixed method) related to the application of green architecture principles. Quantitative research is very important to know the exact rejection of the law because it uses data and numbers whose truth cannot be doubted. Recommendations for further research to be more specific can discuss the amount of conservation carried out in case studies or assessments on green architecture points achieved using the right indicators.

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