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Universiti Teknologi MARA Perak Branch
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A CLIMATE-BASED APPROACH TO THERMAL COMFORT ADAPTATION IN COLONIAL ARCHITECTURE: A CASE STUDY OF BIREUEN REGENT HALL, ACEH.

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Abstract :The purpose of this study is to determine how the tropical environment affects colonial building design's energy efficiency, comfort, and building shape. Descriptive and qualitative research methodology focusing on case studies was employed. Data were gathered through direct observation of the research subject, Pendopo Bireuen. Humid tropical architecture is characterized by wide roof forms that block sunshine and rainwater, adapting buildings to the local climate. The Indies Empire Style (18th–19th century), the Transitional Architectural Style (1890–1915), and the Modern Colonial Architectural Style (1915–1940) are the three periods of the evolution of Indonesia's colonial building typology. Colonial architecture in Indonesia has progressively adapted to the country's tropical environment which results in some modifications to building designses. It was found that several supporting elements of colonial buildings in Pendopo Bireuen in tropical climate areas have distinctive physical elements as adaptations to high temperatures and heavy rainfall. The climate-supporting elements are roof shapes, high openings, canopies/overhangs that protect from exposure to sunlight, and ventilation on the building walls as natural circulation in the room so that the room feels cooler.

Keywords**:** *Colonial Architecture, Tropical Climate Influence, Comfort, Qualitative Descriptive.*

INTRODUCTION

Colonial buildings represent a mixture of European architectural style with local adaptation processes including the climate in Indonesia (Bu'ulolo et al., 2020). Humid tropical architecture is dominated by wide roof shapes that serve as barriers against rainwater and

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sunlight which facilitate building adaptation to the local climate (Hardiman & Sukawi, 2013). This study aims to identify the influence of the tropical climate on building forms, particularly, colonial buildings. This study is significant for improving comfort and energy savings in buildings influenced by the tropical climate on colonial building designs. The typology of colonial buildings in Indonesia is divided into periods, namely the Indies Empire Style (18th-19th century), the Transitional Architectural Style, and the Modern Colonial Architectural Style (Tamimi et al., 2020).

1. Empire Style of the Indies (18th-19th Century)
   During his tenure as Governor-General of the Dutch East Indies, Herman Willen Daendels(1808-1811) (developed this architectural style, (Hardinoto, 2008). The Indische Empire Style, which was also known as the Imperial style, emerged during the mid-18th century and developed until the late 19th century. Beginning in the suburbs of Batavia (Jakarta), this architectural style was a result of Dutch culture blending with Indonesian and some Chinese elements. The architecture of the Indische Empire is characterized by:
   a. The main bedroom and additional bedrooms are arranged in a central space with a completely symmetrical floor design. The front and rear terraces (voor galerij and achter galerij) are directly connected to this central space.
   b. The layout is fully symmetrical, with a central room in the middle consisting of the master bedroom and other bedrooms. This central room is directly connected to the front terrace and the back terrace. (voor galerij dan acher gakerij).
   c. The terrace is usually very spacious , there is a row of Greek style columns at its ends including Doric, Ionic, and Corinthian designs.
   d. The kitchen, bathroom/WC, storage, and other service areas are separate from the main building.
   e. Next to the main building, there is a pavilion used as a guest bedroom.

   A pavilion that serves as a guest bedroom is located next to the main building. The traits of architecture in the Indische Empire Style (18th–19th Century) are described by Purnomo et al. (2017). Handinoto (2006) states that this style of architecture is characterized by a shield roof construction with a tiled roof covering, bricks for the walls and columns, the use of wood, especially for the rafters, frames, and doors, and the use of glass materials, which were not yet common during that period.

2. The Style of Transitional Architecture (1890-1915)
   Handinoto (2012) claims that Indonesia's transitional architecture was only in place from 1890 to 1915, corresponding to the late 19th and early 20th centuries. The Dutch East's shift was from the 19th to the 20th century. It was influenced by numerous social transformations as a result of colonial administration political policies, technological advancements, and industrialization. Handinoto (2012) lists several attributes of transitional architecture, including:

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a. The design still adheres to the 'Indische Empire' style, such as complete symmetry and surrounding terrace, and Greek-type columns were eventually removed.
b. Influences from Calvinist churches in the Netherlands, such as gables along the riverfront return, an attempt is made to develop a romantic impression on facades, and tower is constructed at the main entrance.
c. The gable and hip roof shapes with tile coverings are still widely used, and there was an effort to incorporate roof ventilation (dormer).

CHARACTERISTICS OF TRANSITIONAL ARCHITECTURE (1890-1915) (PURNOMO ET AL., 2017)

According to Handinoto (2006), the characteristics of transitional architecture include gable and hip roof constructions, tile roof coverings, the use of ventilation on the roof (dormer), high roof shapes with a large slope between 45-60 degrees, the use of curved shapes, Greek order columns are starting to be abandoned, columns are now made of wood and concrete, load-bearing walls, the main building materials are brick and wood, and the use of glass (especially on windows) is still very limited.

3. The Style of Modern Colonial Architecture (1915–1940) (Tamimi et al., , 2020) After 1900, Dutch architects began to reject the Empire Style with modern architecture, according to Handinoto (1993). When academically trained Dutch architects arrived the Dutch East Indies, they found themselves facing a very unfamiliar architectural style because the Empire Style, which originated in France, was not well accepted in the Netherlands. The following traits define modern colonial architecture:
   a. There is greater variety in floor plans, which reflects the creativity of contemporary architecture.
   b. Avoidance of surrounding terraces and symmetrical design with common use of light-blocking components.
   c. The appearance of buildings reflects Form Follow Function or Clean Design.
   d. Roof shapes are still dominated by gable or hipped roofs, with covering materials like tiles or shingles.
   e. The use of concrete construction, using flat concrete roofs which were not seen in previous eras.

The characteristics of Modern Colonial Architecture (1915-1940) as described by Purnomo et al. (2017), and Handinoto (2006), include the use of flat roofs made of concrete, horizontal facades, and the beginning of cast iron , the increasing use of glass in large quantities, the dominant use of white color, walls serving merely as coverings.

Gradually, colonial architecture was adapted to Indonesia's tropical temperature. These changes resulted in buildings that retained Dutch architectural features but still incorporating features to withstand high heat and heavy rainfall. The roof's design, large openings, sun-blocking canopies and overhangs, and ventilation on the building walls all contribute to the environment by allowing natural circulation and a cooler interior temperature. Despite the

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adaptations, not all Dutch colonial buildings in Indonesia has sun shading to protect the facades from the harsh country's temperature.(Hidayat Nur, 2021).

In tropical climate regions, natural conditions may influence building design significantly. Therefore, the consideration of these conditions cannot be separated from architectural building design. The main characteristics of a tropical climate include:

1. High temperatures with an annual average not below 20℃; another prominent feature is
2. High humidity (80%)
3. High rainfall
4. Global horizontal solar radiation
5. The sky is generally always cloudy, with sky illumination reaching 15,000 candela/m2.
6. Relatively low wind speed throughout the year (not below 20)

Tropical architecture is generally characterized by wide roof shapes that withstand heavy rainfall and block the scorching sun. The tropical climate plays a significant role in shaping buildings, particularly colonial buildings. Climate conditions such as air temperature, solar radiation, wind, humidity, and rainfall have a great impact on the design of colonial buildings. (Bu'ulolo et al., 2020).

1.1 Goals and Objectives

The purpose of this study is to determine how the tropical weather affects architectural design, with a specific focus on colonial architecture. This research is significant to address issues concerning comfort and energy efficiency in buildings affected by tropical climate of colonial architectural styles.

METHODS

A descriptive qualitative methodology in a case study is employed as part of its analytical approach in this research. Direct observation of research objects concerning building orientation, roof design, eaves, and internal architectural features including walls, floors, openings for ventilation, and spatial layout was used to gather the data about how buildings are adapted to tropical climates.

CASE STUDY: BIREUEN REGENT HALL

Constructed in 1934, the Bireuen Pendopo is a structure of colonial heritage that served as a pendopo, or house, meeting hall, and office (Fithri et al., 2022). Colonial architecture is an architectural style that blends European and Indonesian cultural influences. Europeans created the colonial style, which is known as Dutch Colonial to replicate buildings from their native regions while adapting to the environment and customs of Indonesian society. This adaptation involved external and internal architectural forms of colonial buildings. The elements include adjustments to building orientation, roof design, eaves, spatial arrangement, apertures and ventilation, walls, and floors to suit the environment of tropical climate.

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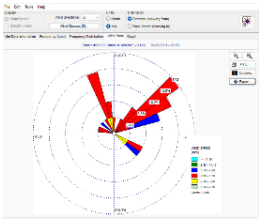
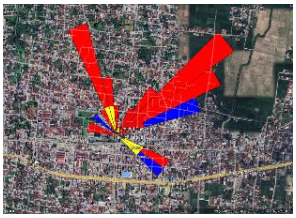
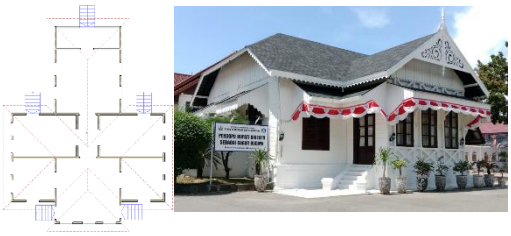
ANALYSIS & DISCUSSION

External and internal appearance of the building:

No.	Elements of the Outside & Inside of a Building	Data	Information
Elements of the External Form Buildings			
1	Building Orientation	Gambar 1. Analisa Angin dengan WRPlot  	The building experiences a very high wind potential of 3.6 to 5.70 m/s due to its north-south orientation. In order to promote comfort within the building and help it adapt to the local environment, wind from the north is directed into the building through ventilation and openings around the building for appropriate air refreshment and to facilitate air exchange within the space (Zuraihan, Munandar, Muliani, & Aris, 2023).
2	Roof Design		Climate Adaptation -Colonial buildings are designed le to function effectively and adapt well to the local climate. (Nur Hidayat, 2021) The roof structures of the building consists of three types; a combination of shield or pyramid roof constructions, flat roofs on terraces, and sloping roof that surrounds the porch. (Firzal, 2011). The roof adaptation at Pendopo Bireuen is a combination of a gable roof and a shield roof design.

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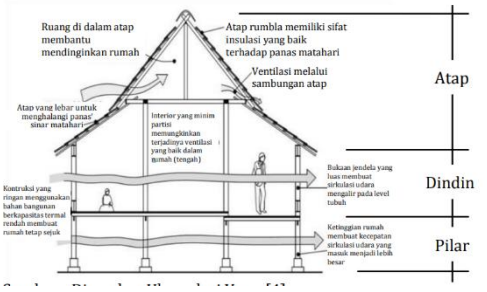
No.	Elements of the Outside & Inside of a Building	Data	Information
3	Tympanon (Wind Sign)		Functions as a wind direction indicator: a. The tree of life, horse head, sun wheel and Christian symbol. b. The symbol is a cross, a heart, an anchor, a Roman Catholic symbol c. Miskelk and hostie
4	Eaves		The drip at the front of the building functions as a retainer to prevent rainwater from flowing into the house and the drip is an area located at the top of the window in the form of a protruding surface from the building wall or at the edge of the roof. The function of eaves varies, including as a shade, a protecting element against weather conditions, especially rainfall and hot sun. (Supriyadi, 2007).
5	Underground/stage	 	The pit/stage design is an adaptation of traditional architecture which reflects people's adaptation to the natural environment. It helps to manage water tides, avoid flooding and promote the flow of air around the building. Several factors that influence air flow patterns and wind speed, such as configuration, orientation, height, eaves, shape of the area below the house. The space beneath the house plays a role in air distribution and ensures

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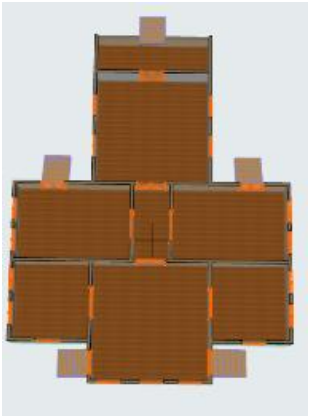
No.	Elements of the Outside & Inside of a Building	Data	Information
			thermal comfort. Wind speed under the house will increase if the underside of the house is lower and the wind distribution pattern around a house that has openings is more effective compared to a house without. (Latif et al., 2016).
6	Back Porch		The veranda is an open part of the house both on the front and back, such as a terrace or porch that connects directly to the atmosphere outside the house.
Tangible Elements in Buildings			
1	Internal Spatial Planning		The spatial layout in a building consists of one or more rooms which can be arranged in groups, side by side or in a row lengthwise or in a linear (Samsudi et al., 2020). The longitudinal spatial arrangement allows the entire space to have direct contact with the environment. Besides, the establishment of openings in the walls of the building's exterior functions for air circulation and natural lighting.

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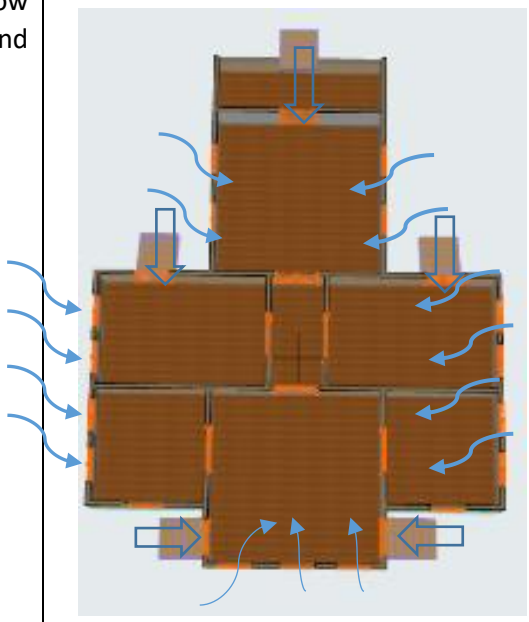
No.	Elements of the Outside & Inside of a Building	Data	Information
2	Door and Window Openings and ventilation	 	Opening windows, doors, and ventilation holes affects the flow of natural light and air into and out of a building. A window with numerous holes is used to allow wind to enter the structure. Because the doors and windows are oriented to face one another, cross ventilation—a natural    and effortless way for air to enter and exit a room—is made possible. opening type (Siti Belinda Amri, 2020). Ventilation and Door Types  Window Types
2	Wall		The building walls use wooden walls as thermal adaptation strategy by using materials with low conductivity, (Vazri Muharom & Rifky, 2022)

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No.	Elements of the Outside & Inside of a Building	Data	Information
5	Floor		The floor concept uses wood as a material and has a bottom that functions as an air flow from the building floor to increase thermal comfort in the building.

CONCLUSION

Colonial architecture is defined as an architectural style that combines European cultural elements with those of the archipelago. Tropical climate adaptation in colonial buildings is a modification of building designs to suit the local climate, creating designs similar to those in their regions of origin. The adaptation of the exterior and interior forms of colonial buildings to the tropical climate includes building orientation, roof design, eaves, spatial layout, openings and ventilation, walls, and floors.

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REFERENCES

Bu'ulolo, F. F., Silitonga, S., & Yulianti. (2020). Identifikasi Adaptasi Arsitektur Tropis Pada Bangunan Kolonial Studi Kasus: Museum Perkebunan Indonesia. Jurnal Arsitektur Alur, 3(1).

Hardiman, G., & Sukawi, S. (2013). Adaptasi Tampilan Bangunan Kolonial Pada Iklim Tropis Lembab (Studi Kasus Bangunan Kantor Pt Kai Semarang). Modul, 13(1).

Nur Hidayat, A. Wahyu. (2021). Adaptasi Atap Dan Bukaan Pada Bangunan Kolonial. Agora:Jurnal Penelitian Dan Karya Ilmiah Arsitektur Usakti, 19(2).

eISSN 3030-5543

Https://Doi.Org/10.25105/Agora.V19i2.8890

Purnomo, H., Waani, J. O., & Wuisang, C. E. V. (2017). Gaya & Karakter Visual Arsitektur Kolonial Belanda Di Kawasan Benteng Oranje Ternate. Jurnal Media Matrasain, 14(1).

Tamimi, N., Fatimah, I. S., & Hadi, A. A. (2020). Tipologi Arsitektur Kolonial Di Indonesia. Vitruvian Jurnal Arsitektur Bangunan Dan Lingkungan, 10(1). Https://Doi.Org/10.22441/Vitruvian.2020.V10i1.006

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	Associate Professor Dr. Mohamad Sabrizaa Abdul Rashid is a distinguished academic at Universiti Teknologi MARA (UiTM) in Perak, Malaysia, specializing in architectural design, heritage conservation, and sustainable urban development. He has contributed significantly to research on architectural heritage and community engagement, emphasizing the integration of local culture and sustainability in architecture. As the director of the Centre for Knowledge and Understanding of Tropical Architecture and Interior (KUTAI), he leads initiatives in tropical architecture studies, research, and various notable publications. Dr. Sabrizaa is also active in academic conferences, sharing his insights with peers and students globally.
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	Associates Professor Sr Dr. Yuhainis Abdul Talib is an Associates Professor at the Department of Quantity Surveying, Department of Built Environment Studies and Technology, College of Built Environment, Universiti Teknologi MARA (UiTM Perak). She has served UiTM for 23 years. Her higher education background started with a Degree in Quantity Surveying from The Robert Gordon University, United Kingdom in 1997. In 2005, she received Master in Project Management from Universiti Sains Malaysia. She was awarded a Doctor of Philosophy (PhD) in Architecture (Facilities Management) from Deakin University, Australia in 2013. She has a a professional membership from The Royal Institute of Surveyor Malaysia (RISM) and Board of Quantity Surveying (BQSM) since 2017. She has been active in three research grants FRGS She is involved in both undergraduate and postgraduate teaching and supervision research. She has graduates 5 postgraduates students.

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	Nurrajwani Binti Abdul Halim brings over 21 years of experience as a senior academic in the Department of Interior Design Technology at the College of Built Environment, Universiti Teknologi MARA (UiTM), Perak Branch, located in Seri Iskandar, Perak, Malaysia. Her expertise spans Interior Finishes and Materials, Building Construction, Consumer Behaviour, Interior Landscaping, among other areas. Through her research, she aims to contribute meaningfully to the academic body of knowledge and provide valuable insights for the researchers, students, professional bodies, professional construction members including manufacturers, interior designers, architects, suppliers, and other industry professionals in assisting them in to promote sustainable living environments
	Marisa Hajrina, S.T., M.T., a lecturer with an architectural and urban background, currently teaches at the Architecture Study Program, Faculty of Engineering, Almuslim University. He obtained his Bachelor of Engineering degree in Architectural Engineering at Maulana Malik Ibrahim State Islamic University Malang in 2011 and continued his Masters studies at the University of North Sumatra, obtaining a Master of Engineering degree in the Architectural Engineering study program with a specialization in Urban Development Management in 2018.
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