ATMOSPHERE AND MATERIALITY RESPOND TO RURAL AREA DEVELOPMENT

CASE STUDY: OIKUMENE CHURCH, SAJAU, NORTH KALIMANTAN

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Abstract
A wood-dominated architecture has a distinct meaning once humans recognize it. This study seeks to reveal the materiality of wood as one of the primary contemporary materials in the development of Indonesian architecture. The study was conducted in the Sajau Ecumenical Church, made primarily of wood and situated in a rural area of North Borneo. Understanding the concept of wood provides benefits beyond just using it as a building material. It also helps to comprehend how its existence is valued and expressed. This character stimulates human sensitivity. In addition, the wood material tactically creates a particular ambiance for those engaging with it.

Keywords: wood; phenomenology; materiality; sensibility; contemporary Indonesian architecture

INTRODUCTION
Each construction material has its meaning for its occupants. On the other hand, architecture can be experienced as an objective and existential presence in the human mind that is influenced by experiences, values, and imagination (Hanifati et al., 2020). The discourse on materiality and sensibility connects humans with architectural space and how to perceive human existence (Sofian, 2021). Wood is a common building material. However, due to its scarcity, wood is starting to be rarely used as the primary material for building construction. It is being replaced by other less expensive materials that are easier to source. Nonetheless, wood remains appealing in this modern era. Wooden structures are increasingly valued because they are exotic, opulent, and unique. On the other hand, sorting wood materials is done as a human step to relive memories, such as feeling the sense of traditional buildings as we live in them (Sofian, 2021). Therefore, humans must understand the extent to which the architect may shape the material and the extent to which the composition’s form has significance for its occupants. Merleau-Ponty (2002) argues that the five senses are also vital for the existence of humans and that using the ratio alone is insufficient. Additionally, touch gives reassurance...
and solidity because mere sight can only be seen from a distance. On the other hand, architectural experiences relating to material quality, space, and scale are based on all interacting sensory systems supporting one another and perceiving the building process as an extension of material attributes and the human body (Pallasmaa, 2012). The interaction between buildings and the senses will build a human sensibility. So that it will be able to become a gate of understanding to get material meaning. Therefore, the architect’s selection of the building’s materials and how it was shaped allows it to convey various meanings to its inhabitants, particularly in rural areas. The gesture is because rural areas have their impression of using building materials from users. Practically, the architect must serve as a material processor, not only a form giver. According to Rayner Banham (1996), what constitutes architecture is not what has been done but how the architectural work is done, which is more of a process. The rural areas’ natural environment and social settings support the architectural structures that use wood as their primary building material. The rural environment of North Borneo supports buildings with a predominance of wood, which has a distinct meaning once humans recognize it. The church building in Sajau, North Borneo, is a Christian worship facility that uses wood materials inspired by traditional Kalimantan architecture. Wooden buildings may provide a comfortable environment for visitors and the surrounding environment. Everyone who visits the Ecumenical Church’s wooden building has a rich tale and significance to the wooden building itself. This study seeks to comprehend how wood materiality, as one of the primary construction materials, develops sensitivity for visitors in rural Indonesian settings, as manifested through a complete multisensory experience.

THEORETICAL OVERVIEW

Materiality and Sensibility

We initially try to relate to and comprehend space by identifying it with specific items or signs in the environment that we have constructed. We perceive items in space and comprehend them by linking them with sensations of nearness and distance from other objects. This spatial connection model is used implicitly by perceptual and conceptual systems. The presence of humans in the surroundings, consciously or unconsciously, constantly orients the body towards other items such as furniture, rooms, and buildings. This orientation is based on the body’s coordinate center, and it moves about the body and its relationship to other objects by calculating their location in space. This perception is done by directing the eyes to obtain the visual sensation of viewing the object and intensifying the senses through touch. However, with the help of current technologies such as the internet and computer design software, the visual sensory system is firmly entrenched in the modern world. Due to the lack of recognition of other senses in many living contexts, visual dominance also affects architectural design. In modern media, our eyesight shifts from experiencing architecture as a viewer to passively being “witnesses of the picture presented on the retinal surface” (Holl, 2006). Humans will not always see architectural beauty seen on the surface but can come from various aspects connected to their feelings. Geoffrey Scott advised architects to “not accept standards of architectural beauty based solely
on aesthetic factors” (Bloomer, 1977:32). The architectural challenge is to offer the functionality required to provide users with meaningful perceptual experiences in response to certain places and conditions. According to Juhani Pallasmaa, the architectural experience, encompassing substance, space, and scale, is founded on all sensory systems that interact and support one another. He cited Merleau-Ponty, who asserts that things’ speed, softness, and hardness emerge through the depths of our sight. (Holl, 2006: 30, Malnar, 2004: 159). Pallasmaa (2009:19) demonstrates how all sensory systems interact and support one another to create the architectural experience, which includes the quality of substance, space, and scale. Additionally, the tectonic language of the building serves as the basis for the reality of the architectural experience, which extends from the act of creation to the senses (Holl, 2006:35). He said, “Only architecture can simultaneously summon all senses, all perceptual complexity.” (Holl, 2006:41; Malnar, 2004:25). Furthermore, ambiance serves as the foundation for human perception, allowing people to sense their location based on their dispositions. According to Böhme (2017), the atmosphere shapes one’s existence in the world through connections with the environment, other people, objects, and works of art.

According to architect Peter Zumthor, the most significant part of the design is how people feel in and around the building (Böhme, 2017). In this case, human sensitivity to certain materials is not only the result of sight but also the stimulation of other senses. Since Aristotle, the senses have been defined as sight, hearing, smell, taste, and touch. Besides that, According to Böhme (2017), how a person feels in the environment as a result of certain ephemeral qualities is what matters most in the concept of atmosphere. An environment where a person may perceive the attributes of the surroundings through feelings. When designing a physical environment, we must emphasize the importance of considering the sensory senses. Moustakas’ (1994) phenomenological method aids in understanding the essence of a phenomenon by referring to individual experiences of “what” has been experienced by individuals who inhabit buildings made of wood materials and “how” they experience it through the stimulus of human sensory sensibility. Honest materiality emerges as a result of contact, not the other way around.

**Context and Methodologies**

This study employed a phenomenological approach to understand better and describe sensory sensations impacted by the materiality of wood in construction. Phenomenology is, literally, a “science of the phenomenon,” but not a “phenomenon” in the usual sense of a brief, dazzling coruscation (Lewis & Staehler., 2010; Sparrow, 2016). In its context, the A phenomenological approach to architecture may deepen the study of architecture. It is not just a study of buildings, professions, or technology but also a study of the human aspect. In phenomenology, reality is built on an ideal-material duality in which every experience has both a material and an ideal component (Cilesiz, 2010: 496). Although ideas and materials are separate, they are interconnected, and their meaning is generated through interaction.
Figure 1 depicts how experience is centered on the duality of ideas and materials. The duality is conveyed through two connected aspects: noesis and noema. Noesis is a reflection of the experience and the conditions, memories, and feelings that influence the meaning of the phenomenon (Bello, 2015; Lewis & Staehler, 2010; Moustakas, 1994). Noesis refers to the action of an experience, such as feeling, remembering, or evaluating. Meanwhile, The qualities of the object will vary depending on the visualization of the entity and the emotionality of the perceiving individual (Lewis & Staehler, 2010; Moustakas, 1994). It means noema refers to the object of the action of an experience, such as perceptions, sensations, ideas, and judgments.

This noesis and noema function as the subject's and object's consciousness. Furthermore, texture, which refers to apparent form, and structure, which refers to the system that functions beneath an appearance, are merging in experience. Every experience is a manifestation of an essence. The object of this study is the Ecumenical Church, which is located in Tanjung Palas Timur, North Borneo. Data is gathered from people who have witnessed the phenomena. In phenomenological
research, data is collected through in-depth and multiple interviews with participants. The number of participants was 12 people who had experience interacting with the wooden structures of church buildings. Phenomenological research involves a series of steps, from data collection to analysis. The phenomenological analysis techniques used in this study are drawn from works by Moustakas (1994), Collaizi (1978), and Yüksel et al. (2015). The following processes were employed in this phenomenological study:

![Figure 2 Steps of Phenomenological Analysis. (Source: Adopted from Moustakas, 1994)](image)

The methods used by Moustakas (1994) are modified in this phenomenological investigation to discover the essence of using brick as a meaningful housing material for its residents. Research and analysis must be carried out in stages since the research location is an ecumenical church building that uses wood materials. The first stage is horizontalizing the process by documenting all relevant expressions relating to wooden building materials.

The experience is then reduced to invariant elements. The author first creates theme groups by thematically grouping around core themes and comparing various data sources to validate invariant constituents. Next, using phenomenological reduction, the author creates textural descriptions of the material and a composite textural description of the wooden building itself. A description of wooden buildings’ structural materials and structural composites is also produced by creating structural descriptions of materials and composite structural descriptions. Combining textural and structural elements will ultimately result in an expression that generates an essence.
Sajau Ecumenical Church

The Sajau Ecumenical Church is located in the highlands of oil palm and rubber plantations in Sajau, North Borneo. Regarding public transportation, there are only available transportation, namely minibuses and horse vehicles, with a trip duration of around 2 hours. This church is located on the highest ground level in the hills, and the project was entrusted to TSDS interior architects as part of the Kayan Makmur Foundation’s corporate social responsibility (CSR) program to build a worship facility for Christians, particularly plantation employees, and residents. This church has a total construction area of 277 m², with a sloping roof and walls inspired by the Betang house, the traditional housing of the neighboring village. Churches are mostly made of industrial waste wood.

This decision was taken in response to initiatives on environmental empowerment efforts. The bengkirai wood on the church’s facade and the meranti wood on the interior blend harmoniously with the Sajau hamlet’s tropical setting. Structuring the wooden planks is then supplemented by natural and artificial lighting, which gives a dramatic impression on the facade and interior.
Description of Wood Materiality
There are textural and structural descriptions of wood’s materiality. Textural
descriptions that narrate “what” is sensed from the physical qualities of wood
materials demonstrate that wood is a substance with a life cycle and is physically
distinct. Furthermore, a structural description that describes “how” the phenomena
are observed by participants and the imaginative character of interactions with
wood materials demonstrates that wood is a material with vital natural elements
that remind humans of traditional and natural values. Participants thought wood
had a more specific description compared to other materials. Wood may remind
humans of their existence with other organisms on our planet. Biologically, the
idea of wood’s materiality is in harmony with the human life cycle. Wood, like the
human life cycle, deteriorates with time. Human interactions with wood materials
at the Ecumenical Church seem enjoyable since people can see, touch, and utilize wood daily. Wood material requires special attention to avoid being devoured by termites and blending in with nature rapidly. The Ecumenical Church’s wood materials require periodic maintenance. Physically, coming into contact with a wood substance gives one a familiar tactile sensation. Because both wood and people are living things that follow the natural life cycle on Earth, they appear to comprehend and communicate with one another.

The meaning is derived from the social aspect associated with the wood. The church building, located in the center of the Sajau rural region, is made of wood, giving it a distinctive, sturdy, and magnificent appearance. In essence, the simplicity of the Ecumenical Church’s wooden building refers to the interdependence of humanity and nature, conjuring the invigorating scent of nature and the building’s adherence to ancient values.

Additionally, the wooden building’s harmonious relationship with the rustling of nearby grass and leaves adds tranquility and serenity to the worship performed by churchgoers. Then, the breeze and sunlight peeking through the wooden latticework in the corridor next to the chapel connect humans and nature. Churchgoers are motivated by natural stimuli before being stimulated by human spiritual sentiments when praying to God. When establishing direct touch with the materials, this sensation provides a kinesthetic sense in every movement. Wood may evoke the impression that it is one of nature’s most potent elements. As a result, wooden buildings might generate a longing for nature associated with God’s blessings.

**Architectural Materiality and Sensibility of Wooden Buildings**

There are two main halls in the Ecumenical Church. The primary place of worship is located in the first chamber. Meanwhile, the second chamber attempts to reduce heat by employing convection logic, in which cool air descends and hot air rises. A roof system that stores heat above the roof while the cooling system stays below results in an excellent cross-ventilation system.

Furthermore, the church’s design incorporates optimum air circulation and the utilization of sunlight to decrease electrical energy usage. On the other hand, Churchgoers have a peaceful and pleasant sensation due to the shadows and light that affect the ambiance. The sensation of sunlight passing through the network of crosses on the church walls will create a unique spiritual ambiance for the worshippers. Wooden surfaces will feel warm or at a regular temperature when stepped on, either during the day or night. Along with enhancing material value, this building model aims to lower the church’s energy usage. In light of this, neither a hot nor a cold environment is produced by wooden buildings because wood always has a consistent temperature. Wooden buildings may adapt to the environment in which they are built.
Over time, wood material develops into a strong material. The warm temperature has a quality that is welcoming to anybody who touches it. Wood is not a magnificent material despite its solid appearance. The harmonic component of wood material intensifies the life cycle. The wood from the many plants that grow surrounding the Ecumenical Church is exceptionally well known to churchgoers. The description demonstrates that wooden church buildings are precious as construction materials due to their ability to blend in with nature.
The Ecumenical Church’s wood material has a distinct appearance since it has a fibrous texture and can be molded into various shapes. The golden-brown color of the sun’s reflection with the low illumination of the wooden building suggests an elegant impression. When combined with church lights in rural regions, the church seems harmonious and pleasant to the eye at night. The interaction of churchgoers...
with wooden buildings will generate pride inside a unique wooden building. The Ecumenical Church’s wooden buildings appear solid and elegant owing to their vast and magnificent size. Participants who witness the massive wooden building will be both amazed and satisfied. People’s moods improve when they are in a wooden building and can see the exquisite scenery outside.

The Ecumenical Church’s wooden construction serves as a reminder of traditional and natural values. The open atmosphere of the wooden building gives the idea that people may glimpse the outside of the building from within. This sensation
is bolstered by the invigorating scent of rainfall that soaks the wooden building materials and fills the space with the aroma of the garden outside. On the other hand, different wood scents, like air fresheners, are calming for worship, leaving a particular impression on the worshippers.

**Meaning of Ecumenical Church Materiality**

Human sensibility reacts differently to wood as it has a unique quality of materiality. However, there are differences in the way that people and materials interact. Visitors to the Ecumenical Church sees a distinctively constructed building and is captivated by its appearance, ambiance, and vibe. Visitors to the church had a variety of reactions to the wooden material of the building, including dread or worry that the wood was too strong and would break when stomped on because it made a springy sound and a rattling noise. Visitors begin to recognize the characteristics of the material and how to treat it throughout the adjustment process. Visitors learn about the nature of wood and the significance of its architectural materiality through exploration and observation, drawing on their own and other people’s experiences. Subsequently comes the ambiance, which is created with a rustic ambiance and complements the materiality of wood. On the other hand, creating prospective wood construction components requires excellent craftsmanship.

The natural wood resources utilized will significantly impact the quality and quantity of human resources, labor duration, and carpentry tools required. The wood used as the Ecumenical Church's primary building material is the product of a combination of material qualities, local wisdom, modern knowledge, and traditional Kalimantan craft techniques. The church’s room without partitions promotes effective communication between humans and God, humans and other humans, and humans and their natural surroundings. Open spaces foster a sense of connectedness to nature and the setting of the rural area. The material may amplify sound, making it easier for humans to communicate with one another. The textured material invites churchgoers to touch it.

Furthermore, there is a reciprocal interaction between the materiality of building materials and the sensibility of visitors. The uniqueness of the material character affects the level of interactivity of churchgoers with their surroundings and generates a sense of place and belonging. When people enter a church, they feel at home because of its material character, building condition, and the inner connection between humans and their surroundings. However, when they leave, they experience intense desire. People who live in harmony with their surroundings experience inner calm, moral responsibility for other people and living creatures, and a sense of closeness to their creator.

**Spatial Experience Generated by Architectural Sensibility**

The wooden material of the Ecumenical Church emits a unique sound when stepped on, causing visitors to relax their feet out of concern that the building may collapse. After a period, they may become accustomed to performing activities in the building and begin to recognize the characteristics of the building materials. As a result, visitors gain an understanding of the impacts of these elements. They enjoy placing their feet on the material, which may be therapeutic. Architecture in buildings with wood materials primarily delivers a tactile sensation of textured...
surfaces, light sensations, shadows, odors, space, scale, and proportion sounds that induce activity adjustment while engaging in it (Malnar, 2004; Holl, 2006).

As a result, when people are conscious of the variety of materials, their interactions with them are more meaningful and pleasurable. Human perception is always surrounded by the atmosphere of a location. Humans experience the atmosphere of the place throughout their bodies (Pallasmaa, 2012).

Sensitivity, then, is a personal reaction brought on by the presence of materiality through sensory sensibility and can ignite people’s desire to create pleasant environments that make them feel at home in the building. However, the materials used in architecture have specific associations, meanings, and values. Wood is essential in creating aesthetic architectural works, craft processes, and material scarcity. When applying human design to construction, one must first understand the nature and significance of the atmosphere produced using materials like wood. The natural airflow in the countryside and the daytime and nighttime lighting effects of the sun and moon are all examples of how nature is used in this situation. In general, wood needs to be handled carefully and following its character until the image of the building emerges.

The use of materials fosters a sense of interconnection with other people. People are intrigued by the unusual use of wood resources and express their interest admiration for the structure. The interaction between humans in a building is influenced by its material design. Buildings can deprive people of their social status, which can impede communication.

As a result, a building may be a location rich in tales shared by people from many cultural origins. The meaning of a building may elicit a profound spiritual response. The architectural experience is essential because being in a building that incorporates materials from a rural area creates a traditional impression and connects people to nature.

The Ecumenical Church has a positive energy that might draw people closer to God. The congregation sat in silence, looked around, contemplated, and prayed. Because no physical barrier prevents human prayer, it directly connects with the creator. The vastness of space makes people aware of their arrogance in the world that they do not have a higher status than other creatures, causing them to become more grounded.

**Essence of Materiality and Sensibility**

In essence, every human being needs shelter. People collect natural source materials and refine them using their craftsmanship to meet this need. Materiality and sensitivity are essential for transcending space and architectural phenomena, not just for creating a sense of return to nature. After the shelters are finished, people begin the adjustment process that makes up the shelter. Throughout this process, the sense of dwelling is established through specific ambiances. The architect launched the green atmosphere by constructing the Ecumenical Church as a low-energy construction utilizing local wood resources. Materiality creates new inspiration and knowledge as soon as the ambiance is produced.
As the connection between humans and the environment is restored, materiality will bring up the potential to communicate between social and diverse spiritual values. The natural bond between man and wood is bound together in a symbol of friendship and coexistence in this world by the materiality integrated into the Ecumenical Church. Overall, we will feel more at ease in a wood-paneled space. When churchgoers touch the wood material in the building, various perceptions of specific locations emerge. The natural scent and the greenery's essence remind visitors of an object’s traditional values. Artificial fragrances will not take the place of the particular smell of buildings.

Various important buildings in traditional folk architecture also use wood because of its availability in the past. The material’s resemblance serves as a reminder that the material of the past will remain with visitors to this day. In the Ecumenical Church, the element of materiality and human sensitivity in wood explains how humans may truly feel near to nature while they are within buildings. The materiality of wood in church buildings helps people comprehend that they may finally live following the rotation of the universe. Like churchgoers who recognize their insignificance in comparison to the universe and God, materiality encourages people to constantly reflect and try to become better individuals in the future. The essence of wood’s materiality is found in more than just the building’s structure or function. More than that, the harmonious refinement of the material and the material’s concept constitute the essence of wood’s materiality. Both are constantly interacting and present in various contexts of human existence. Human senses, combined with experience and understanding, generate the essence of materials.

CONCLUSION

According to the findings of the study as mentioned earlier, the architecture of the Ecumenical Church illustrates that wood is more than just a building material; it also has significant value and provides comfort that cannot be quantified. Using a material expresses the human desire for a better home due to their reflection on other buildings. Architects sort wood materials to appeal to people’s senses and make them feel at home in the building. Humans can be encouraged by their appreciation of wood, one of the decisive elements generated by the natural environment. When participants inhabit the wooden buildings, they relive the sense of traditional buildings. This feature is unique since most buildings today employ contemporary materials such as concrete. The wood material has a natural character, simplicity, and originality.

The wood’s tactility creates an atmosphere in which humans may engage. The identification of the wood material results in interactions between humans. The introduction and interpretation of the new environment generate new knowledge for humans. This study demonstrates that material sorting may raise human awareness by considering more than only the technical factors of utility, aesthetics, or visual characteristics. This material sorting makes them aware of a meaningful spatial experience. By understanding the connection between materiality and sensibility in architectural design through the Ecumenical Church, architects do not simply focus on building design. Alternatively, architects may create a significant and far-reaching architectural experience.
Using a suitable wood material may inspire human sensibility, which can then radiate materiality, a non-physical quality tied to a specific material due to imagination, experience, hope, and all other types of human transcendence. In the end, human interaction with architectural works rediscovers something significant. The experience is the result of a dialogical interplay between materiality and sensibility. Finally, the atmosphere is the sum of interior environmental qualities that simultaneously activate the human perceptual system. The understanding is neither material nor immaterial; it is felt by the aura, scent, kinesthetic, and visual senses. The more human experience embraces the ambiance, the more complicated it is for people to convey it in words.

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