



THE PRESENCE OF CRITICAL REGIONALISM IN CONTEMPORARY MOSQUES IN INDONESIA

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ARTICLE INFO

Volume: 8

Issue: 1

Page: 224-233

Received: October 10th, 2022

Accepted: October 10th, 2023

Available Online: June 20th, 2024

DOI:

<http://dx.doi.org/10.18860/jia.v8i1.17848>

ABSTRACT

In the last few decades, contemporary mosque architecture in Indonesia has separated itself from mosques' traditional language and symbols. Contemporary mosques tend to produce experiences of space and articulation of unprecedented mosques. However, the novelty is inseparable from an understanding of the regional context. This study examines the presence of critical regionalism in Indonesia's contemporary mosque design phenomenon. This study uses six samples to assess how the application of critical regionalism is present in contemporary mosques in Indonesia. This thinking has become an attitude associated with the abstraction of Islamic symbols within creativity in creating places. The use of local materials is the primary articulation in the application of critical regionalism. Thus, in this articulation, a spatial and aesthetic experience is formed that is not sentimental towards history, processing local materials in the context of modern construction, responding to local and climatic conditions and becoming an emphasis on tactile.

Keywords:

Critical Regionalism, Mosque, Contemporary Architecture, Locality

1. INTRODUCTION

Critical regionalism has existed since 1981 in the writings of Alexander Tzonis and Liane Lefavre, "The Grid and The Pathway: An Introduction to the Work of Dimitris and Susanna Antonakis" [1]. Then, Kenneth Frampton [2] popularized the thinking of critical regionalism in his writing "Toward a Critical Regionalism: Six Points for an Architecture of Resistance." In their writings, Tzonis, Lefavre, and Frampton formulate this concept based on the questions in an essay put forward by Paul Ricoeur [3], namely: how to be modern without leaving their identity, how society becomes the subject of modernity, and how architects can criticize the issue of modernization. Then, this critical regionalism becomes a design strategy that compromises modern technology and the creation of places based on locality and genius loci.

In Frampton's writings, several points become the main idea of critical regionalism. He emphasized how to present modernization quality in the concentration of placemaking by several points. Responding to the location's topography; optimizing natural lighting; taking advantage of the relevant technology; designing, which focuses not only on visual stimuli but also optimizes tactile stimuli; processing local elements that are not limited to the context of folklore, traditionality, or vernacular [2], [4], [5]. He illustrates that human's multi-sensory feel regional experiences. Frampton does not even focus on using the term culture. It emphasizes the architect's sensitivity and interpretation of what constitutes a regional character.

This thinking is growing with recontextualization and critical thinking about identity and locality. Frampton appreciates architects like Ken Yeang, who develops architectural themes such as contextual and bioclimatic designs [6]. The presence of critical regionalism in Indonesia has become an interesting phenomenon. In Bali, regionalism has evolved into a political movement encouraging establishment forms using regional dialect and a societal concept that took the root despite the need for more vertical buildings [7]. With critical thinking, spatial experiences and forms of architecture become more diverse and developed to show their identity.

In the last few decades, architects' creativity has delivered ideas that separate traditional dialectics in applying the typology of religious buildings. With their creative processes, Indonesian architects construct themes responsive to local contexts and embody critical regionalism thinking. Therefore, architectural works can escape from the shackles of placelessness. The concept of the architectural design of mosques in Indonesia, in principle, is rich of Islamic thought as a source of ideas [8]. Nevertheless, the embodiment often stagnates in traditional symbolism. The use of generic mosque symbols such as the dome, aesthetics in Islamic calligraphy, Arabic ornamentation, or static symmetry of form is a symbol that is not critical of the times. Traditional romantic mosque design thinking began to shift in the last few decades. New ideas that did not only explore Islamic thought, but also synthesized the idea of locality and the embodiment of a more flexible form began to emerge. The mosque that represents modernization existed from around 1950 to 1980. Achmad Noe-man with the Rawamangun Mosque, Jakarta (1958), the Salman Mosque, Bandung (1964), and the Kujang Fertilizer Mosque, Cikampek (1980) have portrayed unprecedented functionalism in Indonesia [9], [10]. The Istiqlal Mosque has been planned since 1950 to combine traditional elements of the dome, minarets, and inner court with modern Brise-soleil. Not only in Indonesia, but numerous mosques worldwide that are published in architectural digital media also compete to express differentiation, one of which is regional expressions. This investigation aims to find a combination of applying critical regionalism in contemporary mosques in Indonesia. Bani and M.O. et al. have conducted similar studies studying residences in Khartoum, Sudan, and Abdullah, Y. also studied orphanages in Gombe [11].



Figure 1. Masjid Al-irsyad [12]



Figure 2. Masjid DU [13]



Figure 3. Masjid AT [14]



Figure 4. Masjid BS [15]



Figure 5. Masjid AH [16]



Figure 6. Masjid Al Ikhlas [17]

2. METHODS

In his book, Frampton [6] summarizes seven main points in performing critical regionalism. Agreed with Bani, MO et al. [4] and Yusuf, A. [7] summarized Frampton's ideas into five points to be used as the essential criteria for analysis in the case study in the research. These criteria are (1) Dialogue between modern technology and regional identity; (2) Architectural engagement with the environment; (3) The tectonic aesthetic extends beyond the Scenographic Episode or Historical romance; (4) Response to local and climatic conditions; (5) Emphasis on being tactile. These five criteria have also summarized the initial ideas in Frampton's six and ten points.

Table 1 The Application of critical regionalism in case studies

Critical Regionalism criteria	Masjid AIR (Air)	Masjid At-Taufik (At)	Masjid Al-Huda (Ah)	Masjid DU (Du)	Masjid Al-Ikhlash (Aik)	Masjid BS (Bs)	
1 Dialogue between modern technology and regional identity	Construction system	The main construction structure uses steel, with the facade surface using a roster. Roof structure uses steel with metal roof covering	The concrete body and steel roof construction form a gable roof, while the aesthetic elements use ACP, GRC cutting, and brass.	Main concrete structure. The details combine the main structure of steel and iron with decorative elements of wood, stone, and iron plate.	The main construction of concrete buildings around roster facades, concrete roofs with planters, and skylights in several locations. The roof and the body of the building are not directly connected.	The main structure uses concrete, with the main facade cladding elements combined with hexagon and terracotta roster.	The main structure uses concrete material.
	Style and form	The mass represents the modern form of the box, an interpretation of the basic form of the Kaaba. Substantial vertical scale space proportion	The building uses a typical triangular roof of Batak Toba Bolon houses with sharp angles. Vertical space proportion	The use of a shield roof with three layers, like a traditional Indonesian mosque with a horizontal building scale	A combination of several stacked mass boxes. The roster material covers the box; Vertical building proportion.	The building responds to the site's shape, maximizing non-orthogonal spaces with curved and aesthetic elements; Horizontal space proportion	The building responds to the site's shape, maximizing non-orthogonal spaces with curved and aesthetic elements; Horizontal space proportion
2 Architectural engagement with the environment	Landscaping and gardening	Placing the mosque mass at the highest level and making the open landscape the primary orientation of the Qibla.	Flat contoured location. The building also follows the shape of the tread even though the Qibla orientation is slightly tilted.	There are a terrace and stairs leading to the main prayer room.	Include a garden on the inside of the building. The land is relatively flat, so they engineered soil into a sound barrier.	Maximizing building to the west of the site so that the eastern area of the site can be used as a widening prayer area; Prayer space as a public area that is directly related to the road.	The building is located in the middle of the lake. The lake reflects the simplicity of the mosque.
	Vernacular elements	-	The adjustment of the roof shape of the Karo Batak house	Tripartite roof shape abstraction	There is no representation of the shape of the vernacular element.	Make a mass of pilotoc roofs such as joglo roofs and stilt buildings.	The traditional Lampung letters are inscribed on the front facade of the mosque, in the form of Kaganga letters.
	Building material	The use of a local roster that uses Islamic font on it	The use of elements of natural stone, wood, and local brass decoration	The use of exposed brick, red gravel, exposed brick, natural wood, and glass blocks	Use of local materials in terracotta and concrete roster.	Use of local honeycomb and terracotta roster materials	Use of exposed concrete material

3 The tectonic aesthetics extends beyond the stenographic Episode or Historicism romance.	Form composition	The mass of a modern box building with extraction on two wings of the building, which is also in the form of a box, is expressed using local materials and the color of the organic material.	Building mass adapt form of Bolon house of Batak Toba.	A combination of box shapes with a three-layer sloping roof. Vital field elements compartmentalize space.	The building consists of multi-layered volumetric-geometric elements. Do not use the dome; the bowl-like roof	Trapezoidal shape and non-rectangular corners in some rooms; The rectangular main room	Consists of 2 masses, a tower, and a podium in the middle of the lake.
	Design aesthetics and ornaments	The roster facade pattern is an aesthetic representation of the material. The pond is a reflection of nature on the Qjbla/pulpit. The lighting is relatively dim and focused on the point of interest.	Ornaments using ACP Islamic fractal designs on the facade and prayer room; Asmaul Husna ornaments on the facade are combined with traditional ornaments	Using exposed brick material, weeds, and other landscaping. The use of the pool as a reflection on the pulpit	Contrast the exterior and the interior. The exterior uses a strong roster material, while the interior uses soft and curved elements. The combination of natural lighting from roster holes and skylights, as well as natural stone features on the pulpit.	Honeycomb aesthetics on the facade and pulpit; Natural stone material on the perimeter of the prayer room and the word "Allah" on the pulpit and tower.	Exposed concrete material represents the concept of aesthetic emptiness. The building is shaped as an aesthetics and the light seeps in, from the light tower and space gap. The building is located in the middle of the lake is a sculpture.
4 Response to local and climatic conditions	Natural lighting	The roster maximizes natural lighting and optimizes openings on three sides of the main building, massifying skylights in the middle.	Large windows at the back of the building; the space maximizes the reflection of materials and bright interior colors.	The main prayer room lacks wall elements, so light can penetrate and complete the skylights at several circulation locations.	The use of skylights and light gaps on the façade; a little gap of light from the roster	Light leaks from the honeycomb roster holes and spaces between the facade, roof, and skylights. The finish is made in a light reflective color.	Underexposed. The skylights show direct light and the gap between the building facade and the floor.
	Natural ventilation	The roster maximizes the cross-circulation of the incoming air from all four sides of the building. Placing the pond on the West side of the building will encourage the movement of cooler air.	The prayer room maximizes cross circulation from the West and East of the mosque. In the supporting area (LT1), maximizing the use of the laser cut GRC can cause outside air enter the perimeter.	Main prayer room is built without using wall elements so that light and air can seep in while considering the rainfall.	Using a roster around the building allows air penetrate into the surroundings, in the inner court inside the central prayer room.	Ventilation created by the honeycomb holes and the space between the facade and the roof; Maximizing the stack effect and cooling the outdoor area using shade trees	A building without walls in the middle of the lake utilizes the stack effect to move air up to the tower in the middle

	Orientation	The mass of the building is centered with the orientation facing the Qibla (West)	The building maximizes the shape of the tread and extends West-East	The main building faces the Qibla and extends from North to South.	The building has a non-orthogonal geometric footprint, so the site boundary is processed into the back of the worship orientation. The central mass extends from West to East, with the supporting mass in the South expanding to the South.	The building extends West to East, with several inner courts and terraces.	The square-shaped building faces the Qibla.	
	Landscaping	The garden surrounds the building and acts as a buffer between the main building, supporting building and parking areas.	The perimeter of the tread, using shade plants, reduces pollution from outside the densely packed vehicle.	With a stepped tread, the building is placed at the highest elevation reached by stairs.	Relatively flat tread.	The tread is relatively flat. The site's perimeter using shade plants reduces pollution from outside the crowded site of vehicles.	Semi-outdoor space is built without wall barriers so that air and light can penetrate freely.	
5	Emphasis on tactile	Material texture	The rough texture of the roster and loose rock on the inner perimeter of the room are in contrast with the main floor that uses a smooth and comfortable carpet.	The design emphasizes decorative elements with various materials such as GRC finish, <i>Duco</i> , stone, smooth and rough HT, and wood, depending on fine textures in wet areas, touched elements, and critical spaces. Meanwhile, rough natural materials in outdoor and circulation areas ornaments are in use.	The use of rough textures on the facade roster. The use of stone material on the pulpit walls and smooth tiled floors. The combination of contrasting textures between the wall and ceiling elements and floors.	The use of rough textures on the facade roster. The use of stone material on the pulpit walls and smooth tiled floors. The combination of contrasting textures between the wall and ceiling elements and floors.	The use of fine-textured materials for railings and prayer room floors. A rough texture on the facade uses a roster, with a combination of loose stone on the interior perimeter of the facade. Rough texture in the ablution area as well as semi-outdoor and outdoor prayer rooms	Emphasize the rough texture of exposed concrete on wall elements and building facades. At the same time, the floor uses rough wood, most of the ceilings export concrete, and the central area uses laser cutting with the letters spelling Asmaul Husna.
	Color	The concrete evokes a cold color and contrasts the green landscape in interior and facade spaces.	The facade contrasts the colors of wood, brass, and the bright ornamentation of the inscription of the name of Allah on the stone material in the terraces and on cold floors. Meanwhile, the main room features warm colors with beige and white nuanced materials.	Lighting (dark/light) on the circulation of the building, natural colors from natural materials, and contrast with non-natural elements	The interior is dominated by color materials on the floor and the ceiling, grey and silver on the wall/column elements, and yellow stone accents on the pulpit.	Light colors on floors, walls, and ceilings. Contrast with dark colors on the shaft, railing, and stairs as a marker.	Use of original material colors, expression of shady space.	

This study examines the mosques built after 2000 in different locations and published in digital architectural media, such as Archdaily. This digital media closely curates architectural works in the world. This study discussed six cases, namely Al-Irsyad Mosque (AIR) designed by PT. Urbane (Figure 1), At-Taufik Mosque (AT), designed by Joso (Figure 3), Al-Huda Mosque (A.H.), designed by JxA studio (Figure 5), Darul Ulum Mosque (D.U.) designed by Rad+ar (Figure 2), Al-Ikhlâs (AIK) designed by Andryrahman Architect (Figure 6), and Baitus Mosque Shobur (B.S.) designed by Andra Matin Architect (Figure 4).

The first stage analyzes the qualitative description involving the five criteria for critical regionalism in the six selected mosques. The five criteria are broken down into several additional detailed sub-points. Based on the researcher's interpretation, these points were examined on a scale of 1-4 with inappropriate (1), less appropriate (2), appropriate (3), and very appropriate (4) to assess the appropriateness of the application of critical regionalism thinking to mosques in Indonesia

Table 2 Assessment of Critical Regionalism Elements in Case Studies

Critical Regionalism criteria		(Air)	(At)	(Ah)	(Du)	(Aik)	(Bs)	Avg.	
1	Dialogue between modern technology and regional identity	Construction system	3	4	4	3	4	3	3,50
		Style and form	2	4	4	3	2	2	2,83
2	Architectural engagement with the environment	Landscaping and gardening	4	4	4	3	3	3	3,50
		Vernacular elements	2	4	4	1	4	3	3,00
		Building material	3	4	4	3	4	2	3,33
3	The tectonic aesthetics extends beyond the stenographic Episode or Historicism-romance	Form composition	4	3	4	4	4	2	3,50
		Design aesthetics and ornaments	3	4	4	3	3	4	3,50
4	Response to local and climatic conditions	Natural lighting	3	3	4	4	4	3	3,50
		Natural ventilation	4	2	3	4	4	4	3,50
		Orientation	3	4	2	4	4	3	3,33
5	Emphasis on being tactile	Landscaping	4	3	4	3	3	3	3,50
		Material texture	4	4	4	4	4	4	4,00
		Color	4	2	4	2	3	4	3,17

3. RESULT AND DISCUSSION

A. POINT 1. DIALOGUE BETWEEN MODERN TECHNOLOGY AND REGIONAL IDENTITY

At this first point, critical regionalism is very close to the value of 3.50 for the construction approach; when it is based on the form and style, it gets a value of 2.83. The case study's construction system combines local materials with universal construction methods. Regardless, it does not adapt to the local construction system or details. The six case studies selected efficient and practical construction systems such as steel and concrete and combined them with local materials such as roster, stone, exposed brick, or brass. The case study does not present the use of local style, while the use of local style is applied through the recontextualization of dialectical national style.

Although each architect uses various styles and approaches, each case represents an attempt to respond to a regional style. The AT, AH, and AIK mosques present a strong effort by adapting and abstracting the values of traditional Indonesian buildings. The AT mosque's roof adapts the shape of a Batak Karo house with a modern construction system. AH Mosque abstracts the tripartite roof of a traditional mosque with more modern construction. AIK Mosque abstracts the stage concept by cantilevering the 2nd floor and the umbrella roof concept to form a modern pilotism articulation.

Meanwhile, the AIR mosque presents the concept of adapting the Kaaba as a box extracted from the entrance area. The BS Mosque composes the shape of the tower and the podium in one building mass as an unprecedented composition. Meanwhile, the NU mosque approaches volumetric mass composition for energy efficiency in extreme heat at the site.

B. POINT 2. ARCHITECTURAL ENGAGEMENT WITH THE ENVIRONMENT

In the second point, landscaping and gardening tend to be very consistent with the value of 3.5, the use of vernacular elements tends to match the value of 3.00, and the use of local materials tends to be very appropriate with the value of 3.33. Reflecting these results, the case study binds the building and the environment, not merely adapting its vernacular or cultural elements but consciously adapting the landscape and composing local materials. The case study displays ingenious materials exploration and brings a microclimate into the building as a way for the building to bond with its environment. The reduction of the window element is an example of the loss of the definition of exterior and interior space.

There are various concepts to connect architecture to its surroundings. Using roster materials such as those in AIR, NU, and AIK expresses local dialect and promotes cross ventilation as natural air in binding buildings. The design decision is made not to completely cover the building's facade and maintains spatial-visual-tactile connectivity as in BS, AH, and AIR. This concept ensures the movement of outside air into the building. NU and AIK even incorporated pocket garden elements into the building. AIK, AIR, and AT, located on the edge of the environmental road, and BS, located in the middle of the lake, make the landscape a buffer from noise and building pollution. BS and AIK even make the mass of the building the final sculpture in a long achievement.

Consciously, these six case studies present a distinctive mosque shape, regardless of the patron's shape, such as the Islamic aesthetic dome. AIR, BS, and DU present creative contemporary forms regardless of the location aspect. AIR and BS Mosques prefer to present Islamic symbols in their buildings. While AT presents an adaptation of the contemporary form of the Batak Karo house, AH rethinks about the tripartite roof shape of Javanese mosques before 1900, and AIR abstracts the shape of the house on stilts and the concept of an umbrella roof.

C. POINT 3. THE TECTONIC AESTHETIC EXTENDS BEYOND THE SCENOGRAPHY EPISODE OR HISTORICISM ROMANCE

On the third point, the composition of building forms and aesthetics of design & ornaments are very close to the value of 3.50. These six works reflect an engaging spatial experience with authentic design aesthetics and ornamentation composition. The architect seems consciously designed it to build a distinctive aesthetics that dialogues a solemn and regionally balanced experience of space.

The formed atmosphere presents a regional impression and builds solemnity in worship. AIR, AH, and BS Mosques present a shady space with little lighting. The game of light sources responds to the beauty of the surrounding landscape and positions Islamic symbols in the details of skylights and artificial lighting. AH, AT, and DU Mosques build an interesting visual series from the arrival to prayer activities. All cases build a solid local impression from the facade of the building using materials that blend with the environment and local materials, so the expectation of local expression is built from the starting point. Meanwhile, the praying room in the main room presents a diverse impression through variations in the details of the pulpit design to strengthen the solemnity and focus of worship or appreciation of the environment.

The tectonic design processing reflects the local impression with local materials as shown by AIR, AH, DU, or AIK mosques with the play of patterns, colors, and roster compositions. The AH and AT mosques reflect the diversity of local materials in various details that are abundant in texture. At the same time, AT mosque composed Islamic symbols and local tribal aesthetics on the facade. Meanwhile, the AH mosque delivers a variety of Islamic symbols by processing natural wood materials in various fields combined with a spatial experience richness in variations of natural lighting and landscape processing.

D. POINT 4. RESPONSE TO LOCAL AND CLIMATIC CONDITIONS

At the fourth point, responding to lighting, air conditioning, and landscape processing followed the value of 3.50, while responding to the orientation of the building was under the value of 3.33. With their creativity, architects treat materials, processing forms, and spaces well in response to local conditions and climate.

The architect chose a suitable design solution to produce a stack effect, cross ventilation, or space cooling with vegetation and water elements around the site. The AIR, AT, DU, and AIK mosques use a roster, and the BS mosque creates an open-plan space without windows and doors to allow cross ventilation. The stack effect system is also applied to the BS and DU mosques so that the air can move freely upwards. Likewise, in responding to the surrounding circumstances, architects use the space around the structure to refrigerate the air penetrating the building. AIR stands in the middle of the landscape, BS is in the middle of the lake, and the AIK, DU, AT, and AH mosques maximize minimal space to put vegetation features and pockets of open space.

The architects also determined the suitable design solution for the typology of mosque buildings, which are generally bulky, by utilizing skylights in several areas, such as the AT, AH, DU, or BS. In addition, roster material allows sunlight to enter the cracks of the facade, such as the AIR, AT, DU, and AIK Mosques. AIK and BS mosques play gaps between building elements into light gaps, thereby minimizing the use of windows.

AIR Mosque displays the attitude toward grasping the landscape by occupying the building mass at the highest level of the site as a manifestation of the highest hierarchy, presents a buffer between the prominent mass and the supporting masses and the parking area, and appreciates the beauty of the surrounding environment as the pulpit's background. BS occupies the epicenter of the lake so that it forms a reflection, making the mosque an attractive sculpture. Meanwhile, the AH mosque places the remaining non-orthogonal spaces into pockets of open space to form good connectivity between exterior and interior space. DU Mosque engineered the landscape by making a mounding and inner court. Meanwhile, the AT and AIK mosques place immense trees around the site to provide shade and buffer the building against the roadway.

Like supporting mosque research on a similar topic in Malaysia, injecting regional elements into a building also encourages architecture that is more responsive to the environment. Conditions where the building uses natural ventilation and lighting and understands the surrounding environment can support several activities [18].

E. POINT 5. EMPHASIS ON TACTILE

In the last point, the value of 4.00 defines the appropriate processing of the material's texture, while the value of 3.17 displays the processing of color. This illustrates that the architect consciously plays a role in the material tectonic exploration so that we can sense the richness of the material texture. The exploration of roster materials reflects a fascinating tactile phenomenon. The roster from the functional side presents natural lighting and air sources; from a spatial experience, it presents a firm, rough, natural, geometric, and dynamic texture. It also symbolizes a wealth of local ideas. Using the roster at AIR, DU, and AIK Mosques provides an exponential visual-tactile experience. Users enjoy great ideas from the farthest point of view; in AIR, there is a creed symbol on the coloring pattern; in DU, it represents creative layers of mass; in AIK, it delivers a rich honeycomb gradation pattern. The air between them flows between human skin, presenting a solid local climate sensation. More experienced up close, the combination of textures, colors, and the presence of air and light leads to a nostalgic experience equivalent to woven bamboo in a traditional house.

All cases place a smooth surface on elements in direct contact with human skin, such as smooth and shiny granite floors and carpets, finely finished metal and wood railings, or wood-covered chairs. Meanwhile, coarse material is only used in a wet ablution area to reduce the risk of slipping. Rough textured materials, such as those displayed in the facade, do not aim to be touched. We can see the use of stone or gravel in the spatial transition between wall and floor elements, such as in AIR and AIK Mosques. At DU, the use of rough textures is a design choice to touch with its geometric language, and this helps to enrich the spatial experience as well.

F. THE INTEGRATION OF ISLAMIC SYMBOLS

Each architect embodies their ideas with a variety of themes. The AIR case extracts Islamic symbols in the shape and details of the building, while BS presents the essence of worship and Islamic symbols in the use of materials and constructions. AIK elaborates on concepts in the Quran and abstractions of architectural treasures of the archipelago. DU uses bioclimatic keywords. AH combines abstractions of architectural formations, traditional Nusantara mosque, and the wealth of material exploration. AT adapts the formations of the Nusantara architecture combined with fractal ornamentation and Islamic symbols. It sometimes presents a combination of critical regionalism and Islamic symbolism. This thought does not stand alone; it even integrates with the concept of Islamic identity.

The mosque usually presents a religious atmosphere for its users as a typology of worship functions. This religiosity is often interpreted as the necessity of a generic mosque symbol, such as the dome, arch, or calligraphy. In contrast, users can experience the presence of religious symbols in a more abstract and profound form. In these six cases, architects build meaning in ornamentation that is more abstract and relevant to the location, including the situation of processing local materials, understanding the environment, visual-tactile experience, or the integration between outer space and inner space. In line with the goal of critical regionalism thinking, which seeks to create meaning in a location, this abstract symbol embodied with local insight to help to create the religious meaning that the location needs.

The mosque is a function with a specific mass orientation, namely worship activities facing the Qibla, which means that the context of the location is not the primary constraint in determining the orientation of the building mass. This constraint is a problem or potential in the design of the mosque. Non-orthogonal pockets of space may arise on limited land, as in the DU, AIK, and AH mosques. So, the concept of integration of indoor and outdoor spaces emerged. DU and AIK made the inner court, and AT made the outer space a source of light and view.

Meanwhile, the design variations are becoming more diverse in reasonably large areas with environmental potentials, such as AIR and BS. In both cases, the architect chose to also integrate these environmental elements into the user experience. So, when viewed from its embodiment, design solutions always respect the context of the surrounding environment.

Whether critical regionalism thinking exists consciously or not, applied directly or not, a little or a lot, this is a part of the big concept of architectural creativity. In this case study, the creation of meaning and atmosphere comes from integrating big concepts and critical regionalism thinking. Awareness of the response to climate, building a distinctive atmosphere, and integrating with the surrounding environment have become an inevitable part of the design language indirectly articulated in creating ideas.

This study also found that a form no longer belongs to a particular region but has become a global library that can be used in the broader region. Architects can use a local formation, value, or insight into other areas with similar natural features. In line with Prijotomo's thinking [19], there is always a connection between the Nusantara architecture with one, so it is difficult to conclude the ownership of a form to the location.

Like the roof of the Batak Karo house used in AT in Jakarta, the tripartite division of the roof often found in Javanese mosques is present in AH in Sumedang, an abstraction of a house on stilts at AIK in East Java. This case illustrates that articulating the Nusantara thinking can be recontextualized in other locations by accommodating the context [20].

4. CONCLUSION

Critical regionalism cannot be seen in the physical character of a building but is perceived as a bodily visual-tactile experience. This research strengthens Frampton's argument that critical regionalism is an attitude to create a place through experience that is more than historical sentiment. In some cases, it shows that contemporary forms exist to break away from historical sentiments and choose eclecticism or cultural recontextualization to create places.

This research also strengthens the idea that a work can integrate modernity and tradition without sacrificing identity [21]. Reinforcing Fox's conclusion in his research, critical regionalism is a negotiable and flexible attitude towards regional conditions and concepts. Regional narratives are not only built from cultural contexts but also start from awareness of local conditions and materials.

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