Significant Historical Buildings in Vernacular Settlements: Changing Characteristics of Achmad Noe'man's Mosques in Indonesia

Abdul Mannan[1], Afifah Harisah[2], Ria Wikantari[3] & Moh. Mocshen Sir[4]
Department of Architecture Engineering, Hasanuddin University,
Makassar, Indonesia
Email: abdmannanunhas24@gmail.com

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Abstract

Mosque is the center of Muslim life and the center of Islamic culture. It is more than what people usually think of as a place of prostration and is more so in the vernacular settlements. In fact, the mosque is a source of many activities. However, each mosque building has its own characteristics according to the ideas of the designer. There are many such different mosques in Indonesia and the characteristics of the Achmad Noe'man mosque in the period 1964-2010 are thus unique. This research examines these mosques in order to classify the types of mosques according to Achmad Noeman and to identify the similarities in characteristics as well as consistency and diversity. It unearths the factors related to changes in these characteristics.

This research uses descriptive and exploratory methods to reveal the characteristics of the mosque.

The findings show that the mosque buildings are undergoing changes with the shape of the dome roof, the main room or prayer room being free of columns/poles, the use of basic geometric shapes such as cubes, blocks, the use of stained-glass elements and openwork rosters as decorative ornaments on the walls and openings of the building walls. The building is dominated by a square shape to maximize space efficiency, formed from a composition of massive planes and transparent walls.

Keywords: Characteristics, Mosque, Ahmad Noe'man's mosques, Indonesia

Introduction

Generally, a theory is used in architecture to find out what has to be achieved in a building and a good way to design. Architectural design is mostly a formulating activity rather than a description activity. Moreover, architecture does not separate parts, but integrates and various ingredients in new ways and new conditions so that the overall outcome is novel and cannot be predicted. Similarly, in mosque architecture, theories in mosque architecture are hypotheses, hopes, and conjectures about what will happen if all the elements that make up a building are put together in a certain way, in a certain place, and at a certain time.

Studying the characteristics of Architects' works which have characteristics in each work and design is one of the efforts to increase knowledge and understanding in the field of Architecture. Building characteristics in an architectural context are closely related to tracing through the elements, the forming system of a building to produce architecture. These elements are small organisms of architectural systems that are interrelated to form a composition and are

used to identify through theory. Compositions are formed from these elements by means of merging, subtracting, stylizing forms, and so on. In the development of art and architecture, elements undergo many morphological/form changes frontally. This condition is related to the creative power of human art and technological developments.

An architect is a person who is expected to be able to produce works which in addition to fulfilling their functions, must also be aesthetic, and have a spiritual and physical impact on the progress of human life. To get there, the considerations, other aspects, such as the pathological aspects, are clear for the requirements. In the case of the mosque, the sociological aspect determines its community (jama'ah); the economic perspective aligns with the community's ability to shoulder the financing; in terms of material resources and technology, it determines; and the technology used explores the aesthetic appreciation of the environment (Sadali, 1981).

As an architectural object, mosque is part of Islamic Civilization. In the architectural context, mosque is declared a Muslim monument that has a long history, starting from the formation of Muslim human groups in the 7th century AD to the present (Sumalyo, 2006).

Talking about mosques as an aspect of Indonesian architecture means alluding to various factors that are closely related to their appearance and development over time. One of the most important factors is character because, without the role of an architect, these buildings cannot stand by themselves (Rochym Abdul, 1983). In this context, One of the important figures in mosque architecture in Indonesia is the figure of Achmad Norman. While many architects from Garut have played a very important role in the architecture of mosques in Indonesia, his role in building the mosques received accolades from everyone with the nickname "Architect of a Thousand Mosques".

Applying modern architectural ideology without eliminating the Islamic law, Achmad Noe'man succeeded in building what we may call contemporary mosques. The simplicity was deliberately created to support the Islamic activities, by his thinking that "silence" (manifested by "quiet" ornaments) will present the Substance of the Almighty (Utami, 2014).

According to Achmad Noe'man, the spirit of an Islamic building does not lie in the materials, technical aspects, or theoretical aspects, but rather in what and to what extent a design and its implementation are capable of reflecting devotion, surrender, and piety to Allah and the natural law (Destiarmand, 2009). Thus, the design of an Achmad Noe'man mosque has its character different from the architectural works of other mosques in Indonesia.

The focus of this research is to provide an overview of the characteristics of Achmad Noe'man's mosque in the period 1964-2010 as an architect who has a major role in giving color to the scope of architecture and its environment. It examines how the involvement of a mosque building designer: the Architect Achmad Noe'man was able to influence the style and direction of architectural development.

Fig. 1: Location Achmad Noe'man's Mosque
Source: Author

This research aims to reveal the characteristics of the mosque as emanating from the values and culture that existed in the vernacular settlements at that time. Its objectives are as follows:

1. To identify the classification and types of mosques according to Achmad Noeman.
2. To reveal similarities in characteristics/consistency and diversity.
3. To Explain the factors related to changes in these characteristics thoroughly.

Theoretical Framework

Architectural typology

Architectural typology according to Sukada (1989) in Wahid (2013:67) is a classification of a type based on tracing the origins of the formation of architectural objects by determining their basic form (formal structure); determining its basic properties (properties); and study the process of forming the development of form. Sukada (1989) further states that in architecture, typology produces a belief in the role of geometric forms in every architectural design as a representation of various ideas behind physical and visual manifestations. In this way, typology is a complete substance, not divided into other study sub-materials. On the other hand, a broader application of typology shows a selection into three substantial elements, namely: Archetype (ideal type), Prototype (earliest type), and Stereotype (most popular type).

Architectural elements

The architectural elements as stated by Ching (2000) and Krier (2001) are floor elements, wall elements, column/support elements, door elements, window elements, ventilation elements, ceiling/ceiling elements, and roof elements. Based on the problem formulation, these elements are some of the variables in this research which are categorized as structural elements.

Architectural Character

The definition of characteristics explains that it comes from the word character which means psychological traits, morals, or manners that distinguish one person from another; character; character. So the characteristic is having a characteristic according to a certain stature. (KBBI, 1988:389). Characteristics are unique, which is found in the object. Characteristics are inseparable from culture, culture as a collection of values and norms is formed and mutually agreed upon by the community so that it becomes a characteristic (Romadhona, 2013: 7).

Literature of Review

This issue has been researched by few and only some literature exists. The first amng them is the study of contemporary concepts in mosque buildings (Ridwan, 2020). He uses descriptive and qualitative methods in managing data and shows that the model and concept of mosque buildings through architectural tactics include mass composition, exterior, interior, spatial layout, circulation, facade, appearance, and structure.

Similarly, Ardiansyah (2017) examines the expression of nation-building and the character-building spirit as national identity in the Istiqlal mosque's Architecture. He uses descriptive and qualitative methods and reveals the model and dimensions of the Istiqlal mosque. He shows that through architectural studies some models and dimensions give birth to national, personal and subnational identities. These dimensions are achieved through the formation of visual compositions (dominance, repetition, and continuity). According to him, the Istiqlal mosque is one of the architectural products in the past political history which has critically sharpened the thinking about the identity of the Indonesian nation.

Adinda Septian (2022) examines the characteristics of mosque architectural elements in Wonosobo. He looks at the elements of mosque buildings in Wonosobo, using qualitative descriptive research. He shows that there are mosques that implement Islamic architecture and there are mosques that use Islamic and Indonesian architectural styles.

These studies above are highly related to the issue raised by this research. They have similarities with the research objects, while the research approaches and the outcomes have different characteristics according to the purpose of the research carried out.

Research Method

This research is explorative and employs qualitative descriptive research methods. To obtain qualitative data, a literature study and observation of the architecture of the mosque by Achmad Noe'man were carried out. Data collection involved empirical observations in the field, taking photos or drawings, as well as conducting in-depth interviews with an emphasis on gathering information, especially about the physical aspects of the mosque building and its accompanying aspects such as the ornaments.

As a locus of study, this research is directed at Achmad Noe'man's mosques which are spread throughout Indonesia. The primary data was derived from these mosques. Identification and data analysis are prioritized on the most prominent parts or architectural aspects, both roofs, building shapes, and other aspects. A number of objects are compared to establish the generalization of morphology and typology of mosque architecture. Secondary data was collected from various relevant literature references. The data analysis technique uses the analytical descriptive method, for mosque buildings. The results of field observations in the form of empirical observations along with the results of interviews are integrated as explanatory material.

Findings and the Discussion

Characteristics of Achmad Noe'man's Mosque

The building specially made for prayer is called a mosque, which means a place to prostrate. However, wherever one prays, that place is a mosque. It is also stated that the word mosque comes from the word *sajada* which means being obedient and submissive with respect and reverence. Prostration in the Shari'a, namely kneeling, placing the forehead, and both hands on the ground is the real form of the meaning of the word mentioned above. Furthermore, Shihab also says that based on its roots, mosque means submission and obedience. Thus, the essence of the mosque is a place to carry out all the activities related to obedience to Allah alone (Sumalyo,2000).

Rahim (2007:188) explains that "the mosque of the center for Islamic worship and culture" contains thoughts/reinterpretations of Islamic issues related to the mosque. He further states: "The word mosque comes from Arabic which means a place of prostration, a place of worship, a place to give recognition and the testimony of the tongue which is shared by all parts of the human body in the form of outward movement as a connection to the inner movement that is believed in faith." The word mosque is seen from a literal perspective, a mosque is not a prayer. The principal word is prostration, *fi'il madinya sajada* (he has prostrated). *Fi'il Canada* is given the prefix ma so that this *item* happens to give the additional form of the prayer becomes *masjid*, mosque.

In the beginning, the mosque did not have to be a special building or a particular architectural work. A mosque, which means a place of prostration, can mean just a rock or a stretch of savanna grass, or a desert field surrounded by a portico like the "field mosque" that was first founded by the Prophet Muhammad. For example, basically, a hadith narrated by Muslim states, that: "To Jabir bin Abdullah Al-Ansary, the Prophet explained that this earth for me is holy and clean and may be used as a place for prayer, so wherever a person is he may pray when the time come". Likewise, the hadith narrated by Bukhari states that: "When the Prophet Muhammad said: the whole universe has been made for me as a mosque (place of prostration) (Syaom,2008).

Based on the observations of Achmad Noe'man's mosque, the architectural characteristics of Achmad Noe'man's mosque can be identified. The characteristics of the mosque are generally seen in terms of shape, color, and texture. These characteristics can be seen in the roof, room, structure, and color of the mosque building. In the following, data is presented about the characteristics of Achmad Noe'man's mosque: Characteristics in the shape

of the roof. During the early days of work, one characteristic of Achmad Noe'man's mosque was the flat roof made of solid concrete structure.

Achmad Noe'man's architectural works, especially in the early period around 1950–1980, produced design canons that demonstrated idealism and basic principles for his mosque architectural works. These demonstrated principles of simplicity, the use of form geometric, and the use of monochromatic colors. This simplicity is manifest in the use of minimal ornamentation, the honesty of natural materials such as stone, and wood, and the honesty of the structure. In early works of mosque architecture, such as the Rawamangun mosque (1958) and the Salman mosque (1964), this simplicity appears through the processing of geometric elements that form a total unity in a single mass. The Salman Mosque, ITB, is a crystallization of the exploration of idealism and the basic principles he seeks. This mosque does not take the character of a traditional mosque or a dome-roofed mosque has been synonymous with Islam, but refers to modern architectural concepts (Utami, 2014).

The characteristic variables used for analysis in this study consist of three indicators based on the major works of Achmad Noe'man and based on the periodization of his mosque works. These are: mosques that do not have domes, mosques with domes, and mosques with prayer rooms/space main column-free, in addition, another indicator to be examined is the shape and material of the walls, floors, and ceilings.

Table 1: Characteristics of Mosque Buildings by Architect Achmad Noe'man Period 1960-1970s
Source: Author

Object Analysis	Year of Work	Character		
		Roof	**Room**	**Structure**
Asy-Syifa Mosque, Faculty of Medicine, Padjadjaran University, Bandung  *Ika-fkunpad.org*  *Ika-fkunpad.org*	1963	Not domed, flat roof	Square shape, Prayer room/space main column free	• Reinforced concrete • Concrete columns and beams function as the main structure
		Wall	**Floor**	**Ceiling**
		• Lattice perforated concrete, • Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle.	• Flat • Basic shape facets four • Prayer room/space main column free • Floor elevation building from the front flat ground	The shape of the ceiling follows the roof
		Roof	**Room**	**Structure**
Salman Mosque ITB Bandung	1964	Not domed, the roof is upside down like praying hands	Square shape, Prayer room/space main column free	Reinforced concrete

 *Source: (YPM) Salman ITB*  *Source: author*  Source: author		**Wall** • Lattice perforated concrete, • Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle, • Concrete columns and beams function as the main structure of the building	**Floor** • Flat • Basic shape facets four • Prayer room/space main column free • Floor elevation building from the front flat ground	**Ceiling** flat ceiling
UPI Bandung Al-Furqan Mosque  Source: id.wikipedia.org  Source: ganaislamika.com  Source: author	1968	**Roof** Not domed, pyramid-shaped roof **Wall** • Lattice perforated concrete, • Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle, • Concrete columns and beams function as the main structure of the building	**Room** Square shape, Prayer room/space main column free **Floor** • Flat • Basic shape facets four • Prayer room/space main column free • Floor elevation building from the front flat ground	**Structure** Reinforced concrete **Ceiling** The shape of the ceiling follows the roof

<table>
<tr>
<td rowspan="2">Nur Jatiluhur Mosque, Purwakarta
 
Source: Dhani Mutiari
 
Source: Dhani Mutiari</td>
<td rowspan="2">1971</td>
<td>Roof</td>
<td>Room</td>
<td>Structure</td>
</tr>
<tr>
<td>Not domed, pyramid-shaped roof</td>
<td>Square shape, Prayer room/space main column free</td>
<td>Profile steel</td>
</tr>
<tr>
<td></td>
<td>Wall</td>
<td>Floor</td>
<td>Ceiling</td>
</tr>
<tr>
<td></td>
<td>• Lattice perforated concrete,
• Ornaments are composed of vertical and horizontal geometric and beams with ends forming a semicircle,</td>
<td>• Flat
• Basic shape facets four
• Prayer room/space main column free
• Floor elevation building from the front flat ground</td>
<td>The shape of the ceiling follows the roof</td>
</tr>
<tr>
<td rowspan="2">Pati Grand Mosque
 
Source: Qoobah
 
Source: Qoobah</td>
<td rowspan="2">1979</td>
<td>Roof</td>
<td>Room</td>
<td>Structure</td>
</tr>
<tr>
<td>Not domed, pyramid-shaped roof</td>
<td>Square shape, Prayer room/space main column free</td>
<td>Reinforced concrete</td>
</tr>
<tr>
<td></td>
<td>Wall</td>
<td>Floor</td>
<td>Ceiling</td>
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<tr>
<td></td>
<td>• Lattice perforated concrete,
• Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle,</td>
<td>• Flat
• Basic shape facets four
• Prayer room/space main column free
• Floor elevation building from the front flat ground</td>
<td>The shape of the ceiling follows the roof</td>
</tr>
<tr>
<td rowspan="2">Al-Hikmah Mosque State University of Malang (UM)
 
Source:Brisik.id</td>
<td rowspan="2">1976</td>
<td>Roof</td>
<td>Room</td>
<td>Structure</td>
</tr>
<tr>
<td>Not domed, pyramid-shaped roof</td>
<td>Square shape, Prayer room/space main column free</td>
<td>Reinforced concrete</td>
</tr>
</table>

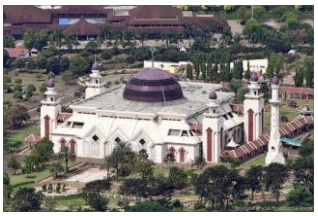
 Source: Brisik.id		**Wall** • Lattice perforated concrete, • Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle,	**Floor** • Flat • Basic shape facets four • Prayer room/space main column free • Floor elevation building from the front flat ground	**ceiling** flat ceiling
Taman Ismail Marzuki Mosque, Jakarta  Source:Brisik.id  Source:Brisik.id	1977	**Roof** Not domed, pyramid-shaped roof **Wall** • Lattice perforated concrete, • Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle,	**Room** Square shape, Prayer room/space main column free **Floor** • Flat • Basic shape facets four • Prayer room/space main column free • Floor elevation building from the front flat ground	**Structure** Reinforced concrete **ceiling** The shape of the ceiling follows the roof
Al-Ghifari Mosque, Bogor Agricultural University  Source: Facebook.com  Source: Facebook.com	1979	**Roof** Not domed, flat roof **Wall** • Lattice perforated concrete, • Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle. • Concrete columns are the structure of the building	**Room** Square shape, Prayer room/space main column free **Floor** • Flat • Basic shape facets four • Prayer room/space main column free • Floor elevation building from the front flat ground	**Structure** Reinforced concrete **Ceiling** The shape of the ceiling follows the roof

Many analyses of identification studies that have been carried out on several mosques by Architect Achmad Noe'man. They are the Puspitek Serpong Mosque, PT Pupuk Kujang Cikampek Mosque, The Lambung Mangkurat Mosque Banjarmasin, Al Muhajirin Mosque, and the Karang Layung Bandung. The characteristics of mosque buildings designed by Achmad Noe'man are as follows.

- Since the 1980-1990s, the shape of the roof is not domed with a square plan without a column in the middle.
- They are made of reinforced concrete.
- The use of basic geometric shapes such as cubes, beams, and pyramids has been modified to create a new, structured shape and become a neat composition on the roof of the building. The main room or prayer room is column/pole free.
- There have been stained glass elements and filigree rosters as decorative ornaments on walls and openings, as well as functioning for ventilation, ventilation, and lighting of the building.
- The walls of the building are predominantly square to maximize space efficiency, formed from a composition of massive planes, openings, and transparent walls made of glass elements and filigree rosters.
- The dominant building floor materials use marble and granite in white-beige and gray colors, the others use wood parquet.
- Reinforced concrete is the main element of the building which functions as a structural support and building ornament.
- The domination of the composition of strong geometric lines on the facade of the building gives the impression of being sturdy, noble, and has character.

Table 3: Characteristics of Mosque Buildings by Architect Achmad Noe'man (1990-2000)
Source: Authors

Object Analysis	Year of Work	Character		
		Roof	**Room**	**Structure**
Al-Markaz al-Islami Mosque, Makassar  *Source: arsy.co.id*  Source: simas.kemenag.go.id  *Source: author*	1994	Not domed, pyramid-shaped roof	Square shape, Prayer room/space main column free	Reinforced concrete
		Wall	**Floor**	**ceiling**
		• Lattice perforated concrete, • Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle, • Concrete columns and beams function as the main structure of the building	• Flat • Basic shape facets four • Prayer room/space main column free • Floor elevation building from the front flat ground	The shape of the ceiling follows the roof

<table>
<tr><td rowspan="2">Istiqlal Mosque (Muhammad Suharto) in Sarajevo Bosnia
 
Source: fiqhislam.com
 
Source:Islamic center.or.id</td><td rowspan="2">1995</td><td>Roof</td><td>Room</td><td>Structure</td></tr>
<tr><td>Vaulted Roof, It has a hemispherical shape and has fissures on its surface</td><td>Square shape, Prayer room/space main column free</td><td>Reinforced concrete</td></tr>
<tr><td></td><td>Wall</td><td>Floor</td><td>Ceiling</td></tr>
<tr><td></td><td>• Lattice perforated concrete,
• Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle,
• Concrete columns and beams function as the main structure of the building</td><td>• Flat
• Basic shape facets four
• Prayer room/space main column free
• Floor elevation building from the front flat ground</td><td>The shape of the ceiling follows the roof</td></tr>
<tr><td rowspan="2">At-Tin Grand Mosque, Jakarta
 
Cendananews.com
 
Cendananews.com</td><td rowspan="2">1997</td><td>Roof</td><td>Room</td><td>Structure</td></tr>
<tr><td>Vaulted Roof, It has a hemispherical shape and has fissures on its surface</td><td>Square shape, Prayer room/space main column free</td><td>Reinforced concrete</td></tr>
<tr><td></td><td>Wall</td><td>Floor</td><td>Ceiling</td></tr>
<tr><td></td><td>• Lattice perforated concrete,
• Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle,
• Concrete columns and beams function as the main structure of the building.</td><td>• Flat
• Basic shape facets four
• Prayer room/space main column free
• Floor elevation building from the front flat ground</td><td>The shape of the ceiling follows the roof</td></tr>
</table>

<table>
<tr>
<td rowspan="2">Al-Hurriyyah Mosque IPB Bogor
 
Source: ipb.ac.Id.
 
Source: radarbogor.id
 
Source: id.top10place.com</td>
<td rowspan="2">1998</td>
<td>Roof</td>
<td>Room</td>
<td>Structure</td>
</tr>
<tr>
<td>Not domed, flat roof</td>
<td>Square shape, Prayer room/space main column free</td>
<td>Pipe steel and Reinforced concrete</td>
</tr>
<tr>
<td></td>
<td>Wall</td>
<td>Floor</td>
<td>ceiling</td>
</tr>
<tr>
<td></td>
<td>• Lattice perforated concrete,
• Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle,
• Concrete columns and beams function as the main structure</td>
<td>• Flat
• Basic shape facets four
• Prayer room/space main column free
• Floor elevation building from the front flat ground</td>
<td>The shape of the ceiling follows the roof</td>
</tr>
<tr>
<td rowspan="2">Batam Grand Mosque
 
Source: gowest.Id
 
Source: republika.co.id
 
Source: Sahrul hadi nasution</td>
<td rowspan="2">1999</td>
<td>Roof</td>
<td>Room</td>
<td>Structure</td>
</tr>
<tr>
<td>Not domed, pyramid-shaped roof</td>
<td>Square shape, Prayer room/space main column free</td>
<td>Reinforced concrete</td>
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<td></td>
<td>Wall</td>
<td>Floor</td>
<td>Ceiling</td>
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<td>The shape of the ceiling follows the roof</td>
</tr>
</table>

Great Mosque of Al-Kasiah Karawang, West Java  Source:Bujanglanangblogspot.com  Source: Bujanglanangblogspot.com	1998	Roof	Room	Structure
		Not domed, pyramid-shaped roof	Square shape, Prayer room/space main column free	Profile steel
		Wall	Floor	ceiling
		• Lattice perforated concrete, • Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle,	• Flat • Basic shape facets four • Prayer room/space main column free • Floor elevation building from the front flat ground	The shape of the ceiling follows the roof
Sheikh Yusuf Mosque in Cape Town, South Africa.  *Source: m.jpnn.com*  *suara.com/Madinah*	2002	**Roof**	**Room**	**Structure**
		Vaulted Roof	Square shape, Prayer room/space main column free	Reinforced concrete
		Wall	**Floor**	**Ceiling**
		• Lattice perforated concrete, • Ornaments are composed of vertical and horizontal geometric concrete columns and beams with ends forming a semicircle, • Concrete columns and beams function as the main structure.	• Flat • Basic shape facets four • Prayer room/space main column free • Floor elevation building from the front flat ground	The shape of the ceiling follows the roof
Jakarta Islamic Center Mosque  Source: Duniamasjid.org	2002	**Roof**	**Room**	**Structure**
		Vaulted Roof	Square shape, Prayer room/space main column free	Reinforced concrete
		Wall	**Floor**	**Ceiling**
		• Lattice perforated concrete, • Ornaments are composed of vertical and	• Flat • Basic shape facets four • Prayer room/space	The shape of the ceiling follows the roof

 Source:simas.kemenag.go.id  jakarta.poskota.co.id		horizontal geometric concrete columns and beams with ends forming a semicircle, • Concrete columns and beams function as the main structure of the building	main column free • Floor elevation building from the front flat ground	

In contrast, analysis and identifications have been carried out on several mosques by Architect Achmad Noe'man as follows too. They are:

- Al-Markaz al-Islami Mosque Makassar,
- Istiqlal Mosque in Sarajevo Bosnia,
- At-Tin Grand Mosque Jakarta,
- Al-Hurriyyah Bogor IPB Mosque,
- Batam Grand Mosque,
- Great Mosque of Al-Kasiah Karawang West Java,
- Great Mosque of Al-Akbar Surabaya,
- Sheikh Yusuf Mosque in Cape Town South Africa and
- Jakarta Islamic Center Mosque,

The characteristics identified of Achmad Noe mosque buildings during the 1991-2010 period show that the mosque buildings began to change with the following.

- Shape of the domed roof,
- The main room or prayer room free of columns/poles,
- The use of basic geometric shapes such as cubes, beams, pyramids and spheres which were modified so as to give birth to a new structured form and become a neat composition on the roof of the building,
- The use of stained glass elements and filigree rosters as decorative ornaments on the walls and openings, as well as functioning for ventilation, ventilation and lighting of the building,
- The walls of the building are predominantly square in shape to maximize space efficiency, formed from a composition of planes massive, openings and transparent walls made of glass elements and rosters of kerrawang.
- The dominant floor material uses marble and granite in white-beige-gray colors; Reinforced concrete is the main element of the building which functions as a structural support and building ornament.

Conclusion

This paper concludes that the mosques designed by Architect Achmad Noe'man have had the following characteristics.

- Since the 1960-1970s the shape of the roof is not domed with a square plan without a column in the middle, and the material is mades of reinforced concrete (2).
- Since 1980 to 1990 the shape of the roof is not domed with a square plan without a column in the middle, and the material is mades of reinforced concrete.

- From 1991 to 2010s period, the mosque building has begun to change with the shape of a domed roof, a square plan without a column in the middle, and materials were reinforced concrete. Reinforced concrete is the main material as a structural support and building ornament.

Through Achmad Noe'man's understanding of the basics of thinking about Muslim worship buildings, he has established that a dome is a form of structure, not the identity of a mosque. That is what society has not understood. In addition, the concept of the perfection of the prayer line, which has always been the main consideration is translated into the design of a mosque without pillars inside. Achmad Noe'man denies his identity as an anti-dome mosque architect through his other mosque works, such as the Jakarta Islamic Center Mosque, Istiqlal Mosque in Sarajevo Bosnia, and At-Tin Grand Mosque Jakarta.

References

Abdullah Adnan Haneen & Al-Shamari Hussein Abdul Haitham. (2023) Paradigmatic Characteristic Changes of Heritage due to Zeitgeist: Insight from Iraq. ISVS e-Journal 10 (9), 1-3.

Atabani, A. E., Badruddin, I. A., Masjuki, H. H., Chong, W. T. & Lee, K. T. (2015) Pangium edule Reinw: A Promising Non-edible Oil Feedstock for Biodiesel Production. *Arabian Journal for Science and Engineering*, 40(2), 583–594. Available at: https://doi.org/10.1007/s13369-014-1452-5

Ayuningsih, S. F. (2018) Pelestarian Rawon Nguling sebagai Nilai Tambah pada Pengembangan Wisata Kuliner Tradisional Indonesia. *Majalah Ilmiah Bijak*, 14(1), 108–126. Available at: https://doi.org/10.31334/bijak.v14i1.64

Baranov, P., Slyvna, O. & Matyushkina, O. (2018) Eco-aesthetic features of mineral deposits. *Journal of Geology, Geography and Geoecology*, *27*(1), 20–29. Available at: https://doi.org/10.15421/111826

Buening, R., Maeda, T., Liew, K. & Aramaki, E. (2022) Between Fact and Fabrication: How Visual Art Might Nurture Environmental Consciousness. *Frontiers in Psychology*, 13(925843). Available at: https://doi.org/10.3389/fpsyg.2022.925843

Carlson, A. (2018) Environmental Aesthetics, Ethics, and Ecoaesthetics. *The Journal of Aesthetics and Art Criticism*, *76*(4), 399–410. Available at: https://doi.org/10.1111/jaac.12586

Darmawan, C. A., Rosyidi, D. & Evanuarini, H. (2021) Chemical Characteristics of Beef Rawon in Malang City. *Jurnal Ilmu Dan Teknologi Hasil Ternak*, 16(1), 42–53. Available at: https://doi.org/10.21776/ub.jitek.2021.016.01.5

Devi, I.A.R., Vijayalaxmi, J., & Srikonda, R. (2023) The Diversity of Street Trees: Density, Composition and Shade in the Urban Residential Areas of Visakhapatnam, India. *ISVS e-journal,* 10(3), 146-162.

Hendriani Septi Ahamad, Hermawan, Kurniawan eko, Prinanda & Arriziq Nabila Annisa. (2022) Jurnal Ilmiah Arsitektur, Vol 12(2), 88-93.

Iqbal Ardiansyah & Sudianto, (2017) *The Expression of Nation-Building and The Character-Building Spirit as National Identity in The Istiqlal Mosque Architecture*. Jurnal Risa Vol. 01(11), 34-56 .

Mahmood Basim Yusur & Al-Alwan S. A. Hoda. (2023) *Tectonics and Sustainable Architecture: The Notion of Classical and Digital Sustainable Tectonics in Architecture*. ISVS e-journal 10 (8), 1-2.

Ridwan Muhammad & Afgani Jundullah. (2020) Kajian Konsep Kontemporer pada Bangunan Masjid. Jurnal UMJ.

Rukaya, S. R., Giovano, F A., Juwono. S. & Abdullah, M. (2023) Stilt Style Architecture Surrounding the Old Demak Swamp of Indonesia, ISVS e-journal, 10(1), 28-38

Umar, Harisah Afifah, Sir Mochsen Muh, & Radja Mufti Abdul. (2023) Application of the Concept Payango in Suwawa Ethnic Traditional House in Bone Bolango District, Indonesia. ISVS e-Journal, 10 (9), 2-14.