Beyond Symbolic Representation: A Relational Model of Double Coding in Contemporary Sacred Architecture

Dina FATIMAH[1]
Imam SANTOSA[2]
Achmad Haldani DESTIARMAND[3]
Deddy WAHJUDI[4]
Ganieva Nasiba Shukhrat KIZY[5]

Abstract
The traditional 'reading' of sacred architecture is based on religious symbols and building typologies that are more or less fixed. In contrast, contemporary mosque design tends to regard sacred spaces as cultural texts that can be negotiated in terms of visual, religious, and regional codes. This essay examines the form and ornament of the roof of the Syekh Ahmad Khatib Al-Minangkabawi Grand Mosque in West Sumatra, Indonesia, as a visual system for developing Charles Jencks' concept of double coding into a relational framework for deciphering the meaning of sacred architecture. Using a qualitative-interpretive approach based on architectural reading, visual analysis, and symbolic interpretation, the research identifies four dynamics of meaning production: coexistence, contestation, negotiation, and re-semantisation. The results suggest that the mosque's roofing and ornamentation are not just markers of local identity or aesthetic features, but also active mediators of Minangkabau visual memory, Islamic religious references and contemporary architectural expressions. The paper contributes to the study of sacred architecture by presenting a relational paradigm for understanding the production, stabilisation, challenge and reinterpretation of the cultural meanings of contemporary religious buildings.

Keywords: *Contemporary Mosque, Cultural Identity, Double Coding, Mosque Ornament, Sacred Space*

Introduction

Sacred space in architectural discourse is often understood through relatively fixed religious symbols and established building typologies. Eliade explained that sacred space differs from profane space because it is a meeting point between humans and

[1] Doctoral Program in Visual Arts and Design, Faculty of Art and Design, Bandung Institute of Technology, Bandung, Indonesia, 37024005@mahasiswa.itb.ac.id

[2] Faculty of Design, Universitas Komputer Indonesia, Bandung, Indonesia

[3] Craft and Tradition Research Group, Bandung Institute of Technology, Bandung, Indonesia, ahaldani@itb.ac.id

[4] Human and Industrial Products Research Group, Bandung Institute of Technology, Bandung, Indonesia, deddy@itb.ac.id

[5] Chirchik State Pedagogical University, Chirchik, Uzbekistan

the divine order (Eliade, 1987). However, the meaning of sacred space is shaped not only by religious symbols but also by the practices, locations, and social relations that constitute religious experience in space (Lefebvre, 1991; Knott, 2005).

In mosque architecture, this understanding often appears in the emphasis on formal elements such as domes, towers, mihrabs, calligraphy, ornaments, and certain roof shapes perceived as markers of Islamic identity (Nasr, 1987; Frishman and Khan, 2002).

In many traditional Indonesian mosques, the multi-storey roof is often interpreted as a vertical symbol related to spiritual ascension and sacred hierarchy. This kind of understanding tends to treat sacred architecture as a stable form, as if religious meaning could be fully represented by a particular architectural element. In an increasingly complex and pluralistic contemporary society, such approaches no longer adequately explain the dynamic relationships between architecture, culture, religion, and identity. In the development of cultural and architectural studies, space is no longer understood only as a passive physical container, but as a medium through which various social and cultural meanings are produced, negotiated, and reinterpreted (Lefebvre, 1991; Hall, 1992). Architecture can be read as a system of signs that communicates values, identities, and cultural structures through forms, materials, symbols, and spatial arrangements (Rapoport, 1990). In this perspective, sacred architecture can be understood as a cultural text, that is, a space that contains various layers of meaning formed through symbols, social practices, visual memory, and spatial experience. Sacred architecture serves not only as a place for religious rituals, but also as an arena where cultural identity, collective memory, and social values are constantly shaped and reinterpreted.

Sacred architectural symbols are not treated in this article as fixed representations with a specific meaning. Rather, this essay views them as a relational system of signs in which different architectural, theological, and cultural codes interact, contest, negotiate, and are reinterpreted. Jencks explains double coding as an architectural strategy that lets a building communicate with multiple audiences simultaneously, either through easily recognisable popular codes or through more complex architectural codes for readers with specific cultural, historical, or professional references (Jencks, 2005). This idea is in line with the postmodern critique of singular meaning in architecture, as seen in Venturi's thinking on the complexity, contradiction, and ambiguity of architectural forms (Venturi, 1966).

This study focuses on contemporary mosque architecture in Indonesia, particularly how religious buildings negotiate religious allusions, local visual memory, and contemporary architectural expression through roofing and ornamental elements. In recent decades, many Indonesian mosques have moved beyond domes, minarets, and Middle Eastern visual idioms as the only emblems of Islamic holiness. Rather, local visual codes are increasingly infused into mosque construction through the roof forms, ornamental patterns, façade planes, building envelopes, decorative elements and visual compositions that constitute today's Islamic architectural identity. This phenomenon suggests that Islamic architecture

is not monolithic but evolves through adaptation to many social, cultural, geographical, and historical contexts (Frishman & Khan, 2002; Utaberta & Rasdi, 2012).

The Grand Mosque of Syekh Ahmad Khatib Al-Minangkabawi in West Sumatra offers a case study of this phenomenon (Fig. 1). The mosque's visual distinctiveness comes from its robust roof configuration and ornamental elements that reinforce the relationship between regional identity, Islamic references, and contemporary architectural expression. In this article, roofs and ornaments are not merely visual forms, decorative elements, or aesthetic additions, but architectural sign systems with visual codes and layers of meaning that bridge Minangkabau cultural memory and the visual language of contemporary mosques. Therefore, the roof and ornaments in this mosque can be read as a visual system that actively produces sacred architectural meanings.



Figure 1: Grand Mosque of Syekh Ahmad Khatib Al-Minangkabawi
Source: Instagram/@ayodolan, 2018

In a broader sense, the integration of regional visual codes into modern architecture is an issue of cultural sustainability. Cultural preservation in the built environment involves artistically reinterpreting local identities and protecting historic forms so they remain relevant in the modern world. This approach is consistent with critical regionalism, which highlights the relevance of the interaction between modernism, location, climate, materials and the experience of place in architecture (Frampton, 1983). However, this article does not view cultural sustainability as simply inserting local symbols into modern buildings. Instead, it examines how cultural meanings are organised, negotiated, and re-semantised when regional visual codes appear in the symbolic system of contemporary mosque architecture.

Several previous studies have addressed mosque architecture, sacred symbolism, regional identity, and the incorporation of vernacular forms into contemporary Islamic buildings. However, many such studies still tend to identify what architectural symbols represent, rather than explaining how various symbolic codes work and interact with each other in a particular visual system. Studies of Islamic ornamentation have shown that patterns, geometry, and visual systems in Islamic architecture have an important role in shaping aesthetic and symbolic experiences (Grabar, 2024). Meanwhile, the study of regional architecture confirms that local identity in contemporary architecture cannot be understood as a static form, but rather as the result of negotiations between tradition, modernity, and

cultural context (Frampton, 1983). The mechanisms by which regional, religious, and contemporary codes coexist, contest, negotiate, and produce new meanings through the visual elements of sacred architecture remain relatively underexplored.

This article fills this gap by developing a relational model for reading double coding in contemporary sacred architecture. The roof and ornamental elements of the Syekh Ahmad Khatib Al-Minangkabawi Grand Mosque serve as key cases for examining how regional visual codes, sacred references to Islam, and contemporary architectural expressions interact within a single architectural visual system. This analysis proposes four interrelated dynamics, namely coexistence, contestation, negotiation, and re-semantisation, as a framework for understanding how architectural meanings are produced relationally in sacred spaces.

Sacred Space in Religious Architecture

The study of sacred space in religious architecture initially relied heavily on phenomenological and symbolic understanding. Eliade views sacred space as different from profane space because it orients humans to the transcendent and marks the presence of a cosmological order in human life (Eliade and Trask, 1987). However, in the development of spatial and religious studies, the sacred is no longer understood only as a quality inherent in a certain place. Knott asserts that religion is also produced through location, practice, body, boundaries, and social relations (Knott, 2005), while Lefebvre understands space as a social product formed through practice, representation, and lived experience (Lefebvre, 1991). Sacred space can thus be understood not only as distinct from profane space, but also as a space whose meaning is constantly shaped through social use, experience, and interpretation.

This concept is significant in the context of mosque design since mosques do not possess a single and universal architectural form. Frishman and Khan show how mosque architecture evolved across the Islamic world by adapting to local social, cultural, climatic, material, and visual conditions (Frishman and Khan, 2002). These elements also change and are reinterpreted in response to local cultural contexts. In line with this, Utaberta and Rasdi stress the need to re-examine concepts of Islamic architecture that rely too heavily on specific historical forms or formal symbols (Utaberta and Rasdi, 2012). Therefore, sacred space in contemporary mosque architecture should be viewed as a cultural space where religious values, regional memory, and architectural expressions interact.

Architecture as a Cultural Text and Identity Representation

Cultural meaning is not naturally attached to objects, but is produced through representational processes involving language, symbols, and social practices. In this case, architecture can be read as a system of signs that represent specific identities, values, and ideologies. This approach encourages researchers to read buildings as cultural texts, i.e. cultural artefacts that contain a variety of symbolic references that can be interpreted through their social and historical contexts (Hall, 1997). Mosque architecture uses a combination of form, space, and text to convey meaning (Şimşek, Peker and Şener, 2024). Double coding is a concept proposed by Charles Jencks, a

key figure in postmodern architecture. Jencks criticised modern architecture for tending to be universal and singular, which prevents the public from perceiving it from different perspectives. In double coding, buildings can combine symbols easily recognisable to the public with cultural references understood by certain groups. This makes architecture a medium of communication that has more than one meaning (double code) (Jencks, 2005). The meaning of Islamic architecture derives from the constant negotiation between many actors, situations, and systems of representation rather than from its formal characteristics (Bartsch, 2005).

Methodology

This study uses an interpretive qualitative approach to examine how cultural, religious, and contemporary design codes interact to produce architectural meaning. The chosen approach is therefore the interpretation of architectural elements as cultural texts with multiple layers of meaning, not a quantitative measurement. This study is about the roof and ornamentation of the Grand Mosque of Syekh Ahmad Khatib Al-Minangkabawi in West Sumatra, Indonesia. The roof and ornaments were chosen as the most visible part of the structure and as a concrete site for studying the interaction between the Islamic spiritual reference, the local visual memory and the modern architectural expression. In this sense, the roof and its ornaments are understood as a structural but also symbolic and mediating instrument that orders and interprets different codes.

Data were collected through visual documentation analysis and literature study. Visual documentation included photographs of architecture, images of buildings, visual materials related to design, and documentation available from architectural publications and internet sources. The visual material was evaluated to identify formal features, visual references, symbolic levels and the interaction of architectural codes in the roof element. The roof of the mosque was contextualised within broader discussions of Minangkabau visual culture through literature on mosque architecture, sacred symbolism, cultural representation, and modern architectural expression. Data analysis used architectural reading and symbolic interpretation. Architectural reading examined the roof and ornaments as a sign system, while symbolic interpretation explained how different codes operate within the same architectural element.

The analysis was primarily guided by Charles Jencks's concept of double coding. Jencks's concept provided the initial theoretical lens for identifying the simultaneous presence of multiple architectural codes within the roof and ornamental system. Through visual and symbolic reading, the analysis then examined how these codes interacted rather than merely identifying what each code represented. From this interpretive process, four recurring relational dynamics were identified: co-existence, contestation, negotiation, and re-semantization. These dynamics therefore emerged from the interpretation of the case as an extension of double coding, rather than being predetermined categories derived directly from Jencks's theory. This study uses them to explain how regional, religious, and contemporary architectural codes interact within the mosque roof. Through this approach, the study positions the roof not merely as a representation of local

identity, but as a mediating element through which cultural meaning is relationally produced in contemporary sacred architecture.

Discussion

Islamic visual culture works not as a fixed representation of meaning, but rather as a system of visual mediation which, through ornament, ambiguity, and the experience of space, produces a plurality of interpretations in the interaction between form and observer (Grabar, 2024). The development of mosque architecture in Indonesia (especially West Sumatra, Indonesia) has generally been shaped by two influences: the Hindu-Buddhist tradition and the Middle East. First, owing to Hindu-Buddhist influence, the overlapping or stepped roof form that is the basis of the vertical structure of this roof has strong roots in the architecture of temples in Java and Sumatra in the Hindu-Buddhist era, which was then absorbed and adapted by the architecture of old mosques in the archipelago to create a sacred transitional space. Second, Middle Eastern aesthetic elements appear in detailed ornamentation and building proportions that balance monumentality and spirituality. This influence was combined with the overlapping roof structure, creating a synthesis between *vernacular* (local) forms and global Islamic architectural typologies (Fig.2 and 3).

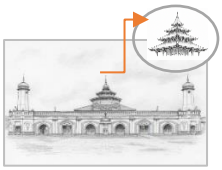


Figure 2: Mosque design with Hindu-Buddhist influence, *tumpang* roof.

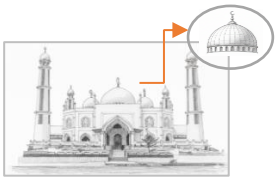


Figure 3: Mosque design with Middle East influence, *dome/gobah* roof.

The roof of the Grand Mosque of Syekh Ahmad Khatib Al-Minangkabawi is the most visually and symbolically dominant architectural element in the building's overall composition. The sharply curved roof shape is inspired by the architecture of Rumah Gadang, a traditional Minangkabau house with gonjong that resembles buffalo horns and also reflects a rich cross-cultural fusion. In traditional Minangkabau architecture, the gonjong shape functions not only as a structural element but also as a symbol of cultural identity that represents the local community's traditional values and history. When this form is adopted in contemporary mosque architecture, the roof is no longer only understood as a building component, but as a symbolic medium that conveys various cultural references. Therefore, the roof of this mosque can be read as a *cultural text* that contains various layers of meaning, ranging from Hindu-Buddhist roots that are combined with local traditions, to the resonance of Middle Eastern spirituality, which, as a whole, forms an expression of contemporary architecture that is unique and rich in regional identity. The roof design of the Grand Mosque of Syekh Ahmad Khatib Al-Minangkabawi, an abstraction of the Rumah Gadang, is also inspired by the story of the Prophet Muhammad resolving a dispute among four clan leaders over the placement of the Black Stone (Hajar Aswad). The Prophet's cloth, held at

each corner by the four clans, inspired the architect to apply the same idea to the mosque's roof. In terms of construction, the four edges of the tapered roof are designed to tower as a visual marker of the mosque's presence in the community. The community initially opposed the unusual roof shape used as a marker for this mosque. This resistance stems from their collective memory that mosques are domed or overlapping-roofed buildings. When the researchers interviewed members of the public, many said that, before learning its actual function, they had assumed the building was a traditional building, a wedding hall, an office, and so on. The variety of ornaments attached to the mosque's roof-wall structure strengthens the sense of locality and gives it a double meaning (Fig.4).

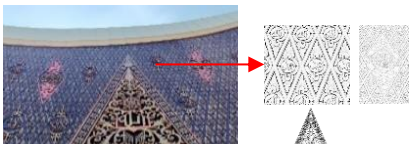


Figure 4: Ornamental patterns on the roof of
Syekh Ahmad Khatib Al-Minangkabawi Grand Mosque

As the house of God (House of Allah), the mosque presents ornaments not merely as decorative elements, but also as a medium that contains spiritual and symbolic meaning (Destiarmand and Santosa, 2017). The visual system on the triangular facade of the roof is a privileged site of intertextual negotiation, where regional material culture and sacred Islamic textuality meet directly. The decoration shows a clear structural relationship between traditional Minangkabau woodcarving (ukiran) motifs and orthodox Islamic calligraphy. Vernacular ornaments are geometrically adapted and embedded, such as the rhythmic interwoven patterns of itiak pulang patang (ducks returning home at sunset) and the upward triangular dynamics of *pucuak rebuang* (bamboo shoots). In Minangkabau custom (adat), these motifs symbolise social peace, discipline, and the never-ending process of spiritual development. These regional codes are not isolated in this architectural environment but intertextually woven within the main calligraphic emblem of Allah and Quranic passages. The flowing lines of the Arabic letters are elegantly interlaced with the stylised vegetal curves of the indigenous ukiran, minimising potential friction between pre-Islamic cultural memories and Islamic iconoclasm. The religious Arabic text is translated into the visual language of Minangkabau identity so that the facade is no longer merely an ornamental surface. Rather, it becomes a dynamic textual hybrid, visually synthesising and relationally re-semantising the cosmological worldview of Adat basandi Syarak, Syarak basandi Kitabullah (Adat based on Islamic Law, Islamic Law based on the Quran) in contemporary form.

Interpreting these interactions among regional, religious, and contemporary codes reveals four recurring relational dynamics through which architectural meaning is produced: coexistence, contestation, negotiation, and re-semanticisation.

Coexistence of Cultural and Religious Symbols

The analysis shows that the mosque's roof shape presents the coexistence of two different systems of meaning: the symbol of Minangkabau culture and the symbol of the Islamic worship space. On the one hand, the gonjong shape, which refers to the Rumah Gadang, represents a strong local cultural identity in Minangkabau society (Fig.5). On the other hand, the building still functions as a mosque and the centre of Muslim religious activities. The presence of these two meanings simultaneously demonstrates the principle *of double coding* in architecture, where a single architectural element can communicate more than one symbolic system at a time. In this context, the mosque's roof becomes a medium that allows local cultural symbols to coexist with religious symbolism in an architectural form.

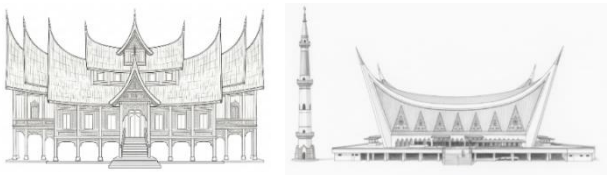


Figure 5: *Rumah Gadang*, which serves as one of the design inspirations for the mosque

Contestation of Architectural Meaning

Although integrating local cultural symbols in mosque architecture creates a plurality of meanings, the process also opens the possibility of interpretive contestation. In Islamic architectural traditions, domes are often considered architectural elements that represent the mosque's identity universally. Therefore, using a roof shape that departs from this typology can spark debate about the legitimacy of architectural symbols in religious buildings. In this context, the roof shape inspired by the Rumah Gadang can be understood as a reinterpretation of architectural symbols that challenges the standard mosque typology associated with Middle Eastern traditions. This contestation shows that the meaning of architecture is not fixed but continues to be produced and negotiated through social interpretation.

Negotiation of Architectural Codes

Beyond contestation, the architecture of the mosque's upper structure also reveals a negotiation between several systems of meaning. The architects do not simply copy the shape of the Rumah Gadang but adapt it so that it can function in the setting of modern design of the mosque. This is an attempt to harmonize the symbolic needs of an Islamic place of worship with the presentation of regional cultural identity. Thus, the design of the mosque roof is one of the outcomes of symbolic dialogues that integrate Islamic religious principles, modern architectural languages and Minangkabau cultural traditions.

Re-semantisation of Vernacular Symbol

The fourth dynamic is re-semantisation. Introducing a regional visual code into a contemporary mosque is not simply a transfer of meaning from one context to another. The code is transformed within a new symbolic building, with public visibility, sacred function and modern architectural expression. The roof of the Grand Mosque of Syekh Ahmad Khatib Al-Minangkabawi shows how a common local symbol can become part of the visual identity of a sacred public building. This method alters the regional reference but does not delete it. In its architectural context, the roof is no longer simply a regional marker. It becomes a link between religious signification, contemporary design language and cultural memory. Thus, the re-semantisation is a relational re-arrangement of meaning, not a substitution of meaning. This practice renders the roof a space where the modern, the religious and the regional are recoded in the context of sacred architecture.

Conclusion

The findings of this study indicate that the roof and ornamentation of the Grand Mosque of Syekh Ahmad Khatib Al-Minangkabawi can be interpreted as a cultural text in modern religious architecture. The roof is not merely a marker of local identity; rather, it is a mediating architectural element that connects modern architectural expression, Islamic religious reference and local visual memory. The mosque roof is not unitary or static in meaning; rather, its meaning is constructed through the interplay of various codes within a single dominant architectural form.

Additionally, the study shows that the coexistence of two symbolic references is not the only way to interpret double coding in sacred architecture. Through the case of the mosque roof and ornaments, double coding may be read as a relational process involving four interrelated dynamics: co-existence, contestation, negotiation, and re-semantisation. This article's primary contribution is the relational model it suggests for interpreting architectural meaning. This model shifts the focus of the study of sacred architecture from what a symbol means to the way in which codes interact with each other to stabilise, contest and re-interpret meaning within the architectural form. The findings show that contemporary sacred architecture can foster cultural continuity not only by inserting regional symbols into existing structures but also by reorganising cultural references within new architectural relations. Thus, sacred space should be considered as a dynamic cultural text in which architectural meaning is constantly produced and reinterpreted, rather than a static container of religious meaning.

References

Bartsch, K.A.R. (2005) *Rethinking Islamic architecture: A critique of the Aga Khan Award for Architecture through the paradigm of encounter*. Available at: https://researchers.adelaide.edu.au/profile/katharine.bartsch.

Destiarmand, A.H. and Santosa, I. (2017) "Karakteristik Bentuk dan Fungsi Ragam Hias pada Arsitektur Masjid Agung Kota Bandung / The Characteristics of Forms and Functions of Decoration Styles on the Architecture of Masjid Agung Kota Bandung," *Sosioteknologi*, 16.

Eliade, M. (1987). *The sacred and the profane: The nature of religion* (W. R. Trask, Trans.). Harcourt Brace Jovanovich. (Original work published 1957)

Frampton, K. (1983) "Towards a critical regionalism: Six points for an architecture of resistance," in H. Foster (ed.) *The Anti-Aesthetic: Essays on Postmodern Culture*. Bay Press. Available at: https://doi.org/10.4324/9781315504612-26.

Frishman, M., & Khan, H. U. (Eds.). (2002). *The mosque: History, architectural development & regional diversity*. Thames & Hudson.

Grabar, O. (2024). *Islamic Visual Culture, 1100-1800*. London: Routledge. Available at: https://doi.org/10.4324/9781003554882.

Hall, S. (Ed.). (1997). *Representation: Cultural representations and signifying practices*. SAGE Publications

Jencks, C. (2005). *The new paradigm in architecture: The language of post-modernism*. Yale University Press. Available at: https://yalebooks.yale.edu/book/9780300106783/the-new-paradigm-in-architecture/.

Knott, K. (2005) *The Location of Religion: A Spatial Analysis*. London: Equinox Publishing, Ltd.

Lefebvre, Henri. and Nicholson-Smith, Donald. (1991) *The production of space*. Blackwell Publishing.

Nasr, S.Hossein. (1987) *Islamic art and spirituality*. State University of New York Press.

Rapoport, A. (1990). *The meaning of the built environment: A nonverbal communication approach* (Reprint ed.). University of Arizona Press.

Şimşek, C.F., Peker, A.U. and Şener, S.M. (2024) "Symbolism in The Mosques of Mimar Sinan: Inscriptions, Meanings, and Architectural Order," *Kadim*, (8), pp. 143–189. Available at: https://doi.org/10.54462/kadim.1343868.

Utaberta, N. and Rasdi, Mohd.T.Hj.Mohd. (2012) "Rethinking Islamic architecture in the modern world: A critical review," *Asian Social Science*, 8(3), pp. 3–11. Available at: https://doi.org/10.5539/ass.v8n3p3.

Venturi, R. (1966). Complexity and Contradiction in Architecture. The Museum of Modern Art Papers on Architecture, *with an introduction by Vincent Scully*. New York: The Museum of Modern Art.