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Implementation of The Islamic Form Concept in The Main Building of The Islamic Center Area in Sidoarjo City

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ABSTRACT

Islamic Center in Sidoarjo City is a building area that aims to facilitate the growth and development of Islam in Sidoarjo City. This is due to the absence of facilities that provide for Islamic religious activities. With the existence of this building area, it is expected to be able to accommodate scholars and Muslims to develop and maintain the values of Islam. Through the application of the Islamic Architecture theme, the buildings in this area apply the concept of Islamic Geometry to the form of the building with the aim of creating a form of Islamic architecture that is able to express the characteristics of Islamic architecture. The concept of Islamic geometry in the form of architecture will focus on creating an attractive, charming design that has deep meaning. Islamic Geometry Design can include various elements that make the building an attractive and inviting sight. The concept of this form must create an eye-catching form for people towards the surrounding environment, so that the existing building form is able to respond to the conditions of the surrounding environment.

Keywords: *Architecture; Islam; Islamic Center; Religion; Sidoarjo*

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ABSTRAK

Islamic Center di Kota Sidoarjo merupakan sebuah kawasan bangunan yang memiliki tujuan untuk memfasilitasi tumbuh dan berkembangnya agama islam di kota Sidoarjo. Hal ini dilatarbelakangi belum adanya penyedian fasilitas untuk aktivitas keagamaan islam. Dengan adanya kawasan bangunan ini, diharapkan mampu mewadahi para ulama dan umat islam untuk mengembangkan dan menjaga nilai-nilai dari agama Islam. Melalui penerapan tema Arsitektur Islam, bangunan yang ada dalam kawasan ini menerapkan konsep Geometri Islam pada bentuk bangunan dengan tujuan untuk menciptakan sebuah bentuk arsitektur Islam yang mampu mengekspresikan karakteristik arsitektur Islam. Konsep geometri Islam dalam bentuk arsitektur akan berfokus pada menciptakan desain yang menarik, menawan, dan memiliki makna yang dalam. Desain Geometri Islam dapat mencakup berbagai elemen yang membuat bangunan menjadi pemandangan yang menarik dan mengundang. Konsep bentuk ini harus menciptakan bentuk yang *eye catching* bagi orang-orang terhadap lingkungan sekitar sehingga bentuk bangunan yang ada mampu menanggapi kondisi lingkungan sekitar.

Kata Kunci: *Agama; Arsitektur; Islam; Islamic Center; Sidoarjo*

INTRODUCTION

The enthusiasm of the Sidoarjo community toward Islamic activities has been consistently high, as reflected in the widespread participation in religious lectures *(tausiah)*, Quranic studies, Islamic education for children, and other religious events. However, the lack of a dedicated facility to accommodate these activities has forced many gatherings to be held in inappropriate venues, such as the Gelora Delta Sidoarjo Sports Hall (GOR), which is originally designed for athletic events rather than religious functions. This mismatch underscores the urgent need for a purpose-built Islamic facility that caters to the diverse and increasing religious needs of the community [1].

The establishment of a main building within the Islamic Center area in Sidoarjo offers a strategic solution to these spatial and functional deficiencies. Ideally, this facility would support a variety of Islamic activities such as religious studies, marriage ceremonies, and Islamic education, particularly for children. To ensure the facility's effectiveness and long-term usability, it must be equipped with comprehensive supporting infrastructure, including reliable electricity systems, elevators, fire detection systems, air conditioning, regular maintenance protocols, and robust security measures [2], [3].

Beyond fulfilling its functional role, the building should embody the spiritual and cultural identity of Islam through the implementation of Islamic architectural forms. Elements such as domes, arches, Islamic calligraphy, geometric patterns, and the use of natural lighting not only serve aesthetic purposes but also convey deep symbolic meaning rooted in Islamic tradition [4], [5]. Recent studies have shown that such architectural expressions significantly influence users' emotional and spiritual experiences, contributing to a more meaningful connection between space and its intended religious purpose [3], [6].

Moreover, Islamic architectural concepts that integrate sustainability and local context have the potential to foster stronger social cohesion. This is supported by recent research showing that buildings designed with sensitivity to local identity and religious values contribute positively to the social and cultural environment [7]. For instance, Islamic Village in Tangerang serves as a model where community space, religious symbolism, and architectural form interact to enhance communal solidarity in an urban setting [8]. Therefore, the proposed main building of the Islamic Center in Sidoarjo is not merely a physical facility but is envisioned as a cultural and spiritual landmark that represents and reinforces the religious life of the community.

LITERATURE REVIEW

Islamic architecture refers to construction based on the principles of Islamic law (sharia), not limited by location or function, but distinguished by the Islamic character embedded in its form and decoration. Contemporary studies have broadened this understanding; Turan and Şahin highlight that muqarnas, a three-dimensional honeycomb-like ornament, remains a vital element in both traditional and modern Islamic structures, symbolizing a fusion of structural utility and spiritual meaning [9]. Naz further notes that in modern architecture, muqarnas has re-emerged through parametric design, allowing for a harmonious blend of advanced technology and traditional Islamic aesthetics [10].

The Islamic Center serves not only as a spiritual nucleus but also as a space for education and social activity that supports the propagation of Islamic teachings (*da'wah*) within the framework of national development [11]. Ilyas emphasizes that mosques such as Jami' Tua Palopo have evolved into hubs for community religious activities, encompassing Quranic education and social services. This evolution demands architectural designs that can accommodate multifunctional usage [12]. This aligns with the findings of Baydoun who, in a case study of Putrajaya Islamic City, stress the deliberate integration of calligraphy, geometric, and floral ornaments in civic architecture to reinforce Islamic identity [13].

Primary architectural characteristics in Islamic design include mashrabiya (latticework), arches, domes, mihrabs, minarets, and gateway entrances, all of which have long served as visual identifiers of Islamic architecture. However, recent studies explore how these features are evolving in modern contexts. Eljaouhari describe how the mashrabiya has been reimagined as a modern

façade element, valued not only for its cultural symbolism but also for its climatic efficiency and sustainability [14]. Turan and Şahin offer a typological analysis of muqarnas, demonstrating its continued visual and structural relevance in contemporary Islamic architectural projects [9].

Islamic decorative arts, such as Arabic calligraphy, have also received growing attention in architectural scholarship. Baydoun emphasizes the importance of calligraphy placement in historic buildings such as the Alhambra and Al-Azem Palaces, showing that proper integration enhances both the religious expression and aesthetic value of the architecture [15]. Collectively, these studies affirm that contemporary Islamic architecture not only preserves traditional design elements but also embraces digital innovation, sustainability, and symbolic depth, reflecting a holistic and adaptive design philosophy [16].

METHODS

The research conducted in the writing is a qualitative research method through a case study with a descriptive method approach that presents the case study object through data collection related to the case study and aspects that are analyzed based on architectural theories. Literature case study data collection is done through papers, journals and books accessed through the internet. Meanwhile, the field case study data collection was conducted through direct observation of objects in the field. The data collected in planning and design of Islamic Center with Islamic Architecture Approach is in the form of primary and secondary data. The primary data in question is field case study data obtained from direct interviews and surveys. While Secondary data is literature study data through papers, journals and books or through internet media. The process of problem solving and data processing is as shown in Figure 1.

RESULTS AND DISCUSSION

The main building in this area serves as a venue for prayer activities, marriage ceremonies, da'wah, and studies, as well as a place to study the book of Al-Qur'an. Through the function of the building that is directly related to the Islamic religion, the design of the building form will visually express how aspects of Islamic architectural characteristics. In this main building, the building form is derived from a basic square shape. This square shape will reflect Islamic architecture in the shape of the building. This basic square shape will undergo a transformation process, changing its shape to the final form of the building, as shown in Figure 2.

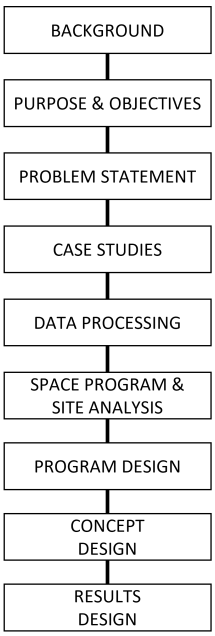

Figure 1. Methodology chart.

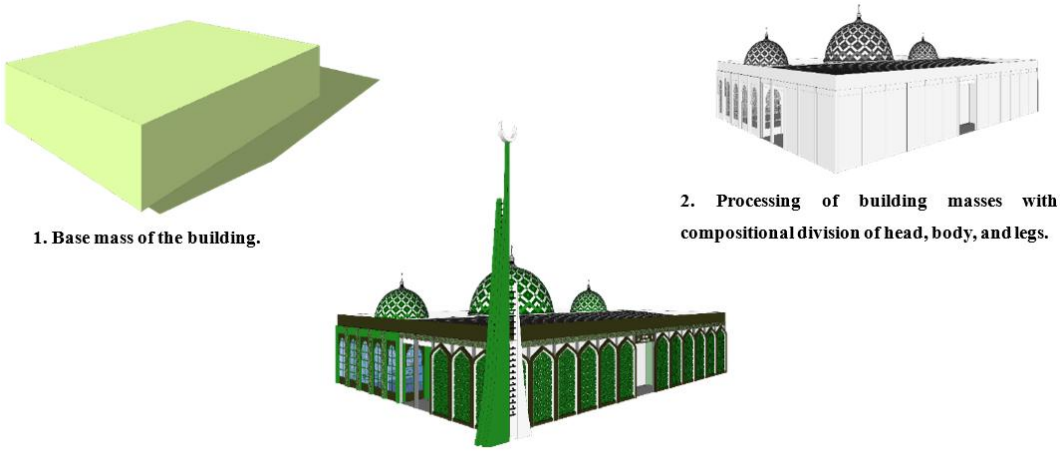

Figure 2. Transformation of building.

As shown in Figure 2, the transformation of the main building's shape begins with a square base, a base shape that is drawn vertically to create a height. After this, the building shape is processed into three segment shapes: the head, body, and foot segments. The head segment of the building consists of building roof elements. The roof of this building features a sloping roof combined with a dome, a characteristic of Islamic architecture. The building body segment consists of plane elements that surround the building, which, in its application, this plane will be expressed as a second skin element of the building. This second-skin-building body will incorporate curved elements, geometric shapes, and calligraphic art. The foot segment of the building consists of columns. After undergoing the transformation of the building segment division, the final transformation process involves processing the building facade through architectural details and building materials. The most prominent architectural detail is the second skin element. This second skin element consists of a combination of calligraphic art, curved shapes, and geometric shapes that appear quite dynamically, both through flowing shapes and also through the materials and color scheme. These accent elements are dynamically arranged and will certainly convey the characteristics of Islamic architecture more strongly in the appearance of the building's facade. The transformation process of the building results in the appearance of the building facade, as shown in Figure 3.

As illustrated in the east-view picture in Figure 3, it incorporates a game of Islamic ornaments with arc or curved formations, utilizing the rhythmic repetition design element. The facade has a combination of curved and geometric shapes that represent the characteristics of Islamic architecture. It can be seen in the picture in Figure 3, which shows a decorative ornament featuring kufi calligraphy motifs from verses of the Qur'an, with colors that use a combination of

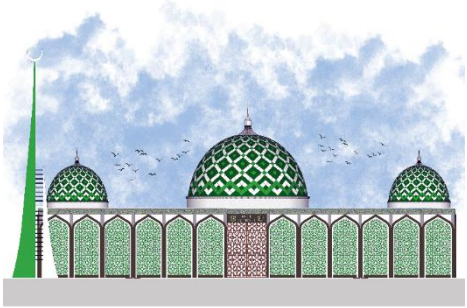

Figure 3. The result of building form transformation.

bright colors, namely green and white. As shown in Figure 3, the northern view features a game of Islamic ornaments with an arc or curved formation, utilizing the rhythmic repetition design element, as visible in the window and door openings on this northern view.

The basic form of this building embodies the essence of Islamic geometry; therefore, the building features a simple, basic form combined with several curved formations and bright building colors, which are characteristic of Islamic Architecture. For the shape of the facade frame, curved and rosette ornaments are created in the form of Islamic motifs, which are derived from geometric shapes with infinite meaning. The selection of a specific dome roof with three domes departs from the meaning of the three terms: *hablum minallah*, *hablum minannas*, and *hablum minalalam*. The translation of the concept into the building's appearance is expressed in Figure 4.

As shown in Figure 4, the building facade displays the appearance of the building, which is represented by the second skin element. This second-skin element is the primary feature of the building's facade that will be highlighted. Second skin, which has a game of curved formations and calligraphic art, strengthens the characteristics of Islamic architecture. The second skin facade is made of Aluminum composite panel material, commonly referred to as ACP. The second skin is raised with a color difference, further emphasizing the distinct shape of the second skin design on the building facade. In addition to the game of second skin, on the facade of the building, there is a window opening with an arch design and an additional element, namely the tower next to the building. To create a more distinctive impression of Islamic architecture, the building's roof features a dome element with varying dimensions. To avoid a monotonous accent, the impression raised should be more typical of Islamic architecture as the central element of the building's facade appearance. The details of the second skin of the building facade are visible in Figure 5.

As shown in Figure 5, the material used is APC (aluminum composite panel) material. As shown in Figure 5, the building's appearance features a secondary skin composed of geometric shapes reminiscent of a curved window or arc, which embodies the concept of Islamic geometry and incorporates a calligraphic Kufi Arabesque design. As shown in Figure 5, the details of the secondary skin are visible, utilizing basic aluminum composite panels with geometric motifs and connections made from hollow steel and then given green and white colors. Secondary skin details with a size of 3.9 × 3.1 meters. As shown in the detailed picture of Figure 5, it is made of concrete material, measuring 9.8 × 4.2 meters, and designed in a curved shape. It is then combined with

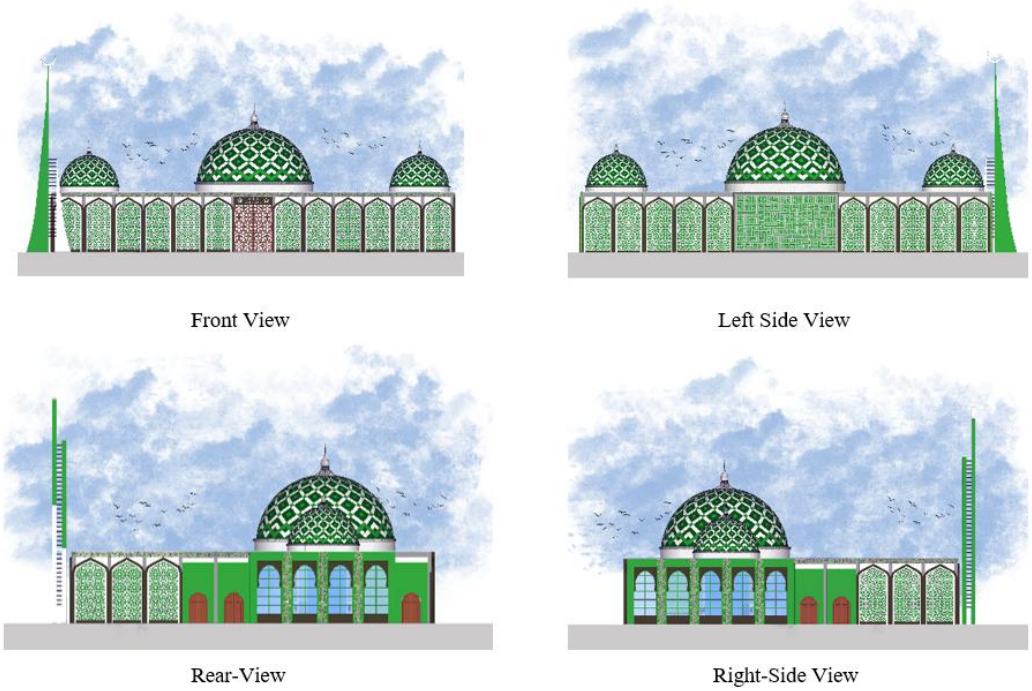

Figure 4. Main building view.

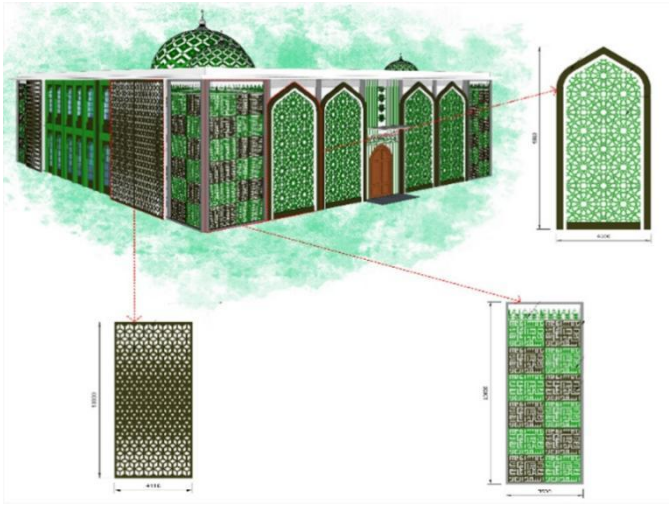

Figure 5. Second skin detail.

a concrete roster featuring geometric motifs, incorporating green and white colors. As can be seen in the architectural details of Figure 5, the shape of the arch frame is composed of concrete material combined with Islamic geometric motifs and verses from the Qur'an. As shown in the secondary skin detail image of Figure 5, a square frame with aluminum composite panel material serves as a barrier to excess sunlight, functioning as the secondary skin.

CONCLUSIONS

This religious center in Sidoarjo is a building area of the Sidoarjo City Islamic Center Project designed to accommodate religious activities in the city of Sidoarjo. Especially the activities of proselytizing and Education about Islam. It is also expected that in the future, Sidoarjo Regency, East Java, will become a religious tourist destination, one of the centers of Islamic religious development, which can improve the regional economy and population. The Islamic center employs an Islamic architectural approach as a form to maintain the locality of character or characteristics of Islamic religious buildings. With the theme of Islamic architecture, the macro and micro concepts must reflect the characteristics of Islamic architecture. The macro concept of Religiosity is the forerunner of the three concepts. The micro concept of *rahmatan lil alamin* land order, the micro concept of Islamic Geometry shape, and the micro concept of *hablum minalalam* space. These concepts create a unique identity that reflects the character of Islamic architecture. Through this design theme, it is expected to inspire people to maintain and develop their Islamic faith.

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