TRACES OF ISLAMIC ARCHITECTURE IN THE DESIGN OF ‘GEDUNG SATE’ IN BANDUNG

Rahadhian P. Herwindo
Department of Architecture
Parahyangan Catholic University
Bandung, Indonesia

ABSTRACT
Gedung Sate was built to accommodate various architectural styles derived from local and foreign elements. The local elements have been widely studied, such as those relating to the architecture of Candi on the island of Java. Many external elements are associated with the Moorish European style and that of the Dutch. However, according to the elements, it also indicates the existence of Indian Islamic architecture, the Mughal style. This study aims to identify the traces of Islamic architecture in the Gedung Sate, especially those derived from the Mughal, Moorish, and local styles. This research method used a qualitative approach by studying the morphology of Gedung Sate and Mughal or Moorish architecture to identify the relationship between their architectural elements. The results show that Gedung Sate does indeed show the use of Mughal architectural elements, especially in the outer layout and mass, processing of the facade section, and the ornamental exterior column. Meanwhile, the Moorish influence is more visible in the processing of curved elements and column heads, also slender interior columns showing light elements. The idea of using Islamic architecture is carried out to represent the splendor in the typology of new buildings in Bandung. Indian architecture is used as the reference because it is considered to have a close relationship with Candi as an important resource in Java.

KEYWORDS: Islamic; Mughal; Moorish; Bandung; Gedung Sate

INTRODUCTION
The architecture of Gedung Sate, even though it was built in 1920, shows its uniqueness because it is estimated that it contains a mixture of various architectural styles in it, as is the case with Postmodern architecture today. Hence, it is very important to study it further. Gedung Sate (‘Satay Building’) is an architectural work that was built during the Dutch colonial period starting in 1920 by combining European, Asian, and Indonesian architectural styles [1]. Locality can be recognized by architectural elements that refer to Javanese temples, such as at the foot of the building and the use of the meru roof on the center tower of the building.

The architect J. Gerber revealed that its design was inspired by the splendor of the Borobudur temple (Figure 1), as evidenced by the existence of arch processing on the walls that resemble the niches of Borobudur and reinforced with details on the legs, body, and roof referring to Javanese temples (Candi) [2]. However, some interesting aspects have not been fully revealed, only Javanese temples were used as inspiration. J. Gerber was certainly inspired by the Borobudur Temple and the buildings that were considered the source of Borobudur at that time; certain works of Indian architecture.

Some Dutch architects argued that the temples in Indonesia came from the influence of temple architecture in India, so India became an important element [3]. Elements of Indian architecture can be seen at first glance at the Gedung Sate, especially the Mughal ones, such as the processing of the facade and the details of the ceiling/ceiling of the eaves. Mughal itself is one of the most prominent architectural styles in India. In the early 20th century, on a trip to the Dutch East Indies, explorers from Europe, especially the Netherlands, including architects, also visited India. In India, the Mughal style became an important icon at that time [4]. Mughal is a style that stands out in the repertoire of Islamic architecture in the world [5][6].

The references of the research on Gedung Sate Architecture in general comes from Pre-Islamic architecture in Indonesia, such as Javanese temples and colonials. However, we also find forms that are thought to have originated from Islamic architecture in the West; such as Moorish, Islamic architecture from the East, such as Mughal, and local Islamic architecture, such as a mosque with the tiered roof.

The study of Gedung Sate’s architecture with Islamic architecture has never been explored further.
Islamic architecture that is thought to have exerted a strong influence is the Mughal Architecture from India, that can be recognized in some of the building details. However, on the other hand, there are those who argue that Gedung Sate is influenced by the Spanish Moorish style which also happens to be a form of Islamic architecture. However, even though they both fall under Islamic architecture, it is necessary to further explore the role of the Gedung Sate to a greater extent. The Objective of this study is to identify traces of Islamic architecture in Gedung Sate that are often overlooked in existing studies, which is limited to its relation to Hindu-Buddhist temple architecture and Dutch architecture. Thus, the study of Gedung Sate becomes complete and more comprehensive, including drawing attention to the elements of Islamic architecture in it. This research is expected to illustrate that Islamic architecture is also used as an important source of inspiration in the design of Gedung Sate, not only from Pre-Islamic architecture or Dutch Architecture.

METHODS

Method of Analysis used a qualitative approach through a Juxtaposition study (alignment) between Gedung Sate in Bandung and Islamic Architecture, particularly Mughal or Moorish style, to identify the architectural elements in Gedung Sate. The architectural typology [7] approach is used to identify the types of spatial patterns, figures, and ornaments related to the form and process of compiling components or compositions. This study begins by exploring Mughal and Moorish architecture typology, particularly regarding the prominent characteristic patterns. For this purpose, typological studies have also been made of the Gedung Sate through the patterns of shape and layout. Furthermore, a study of the juxtaposition between Gedung Sate and the Mughal and Moorish buildings was carried out to their architectural style to establish the relationship between them.

Historical references, natural representations, and usability aspects can influence architectural types' formation. Types are volatile and easily influenced by other types. Architects can extrapolate types and compose types according to their wishes to existing references [8]. On the other hand, typology is used by Argan through three approaches; first, as a tool to systematize architectural forms. The second is to investigate aspects of architectural forms' spread (divergence). Third, it may serve as a tool in the design process [9] [10]. The second aspect will be associated between Gedung Sate and the Mughal style. In the process of 'type-formation', a specific type results from a journey from the previous type. This type can survive or be changed as desired but is still derived from the same basic form. As stated in Ecclesiastes 1:4-11 - "There Is Nothing New Under The Sun". According to Roger [11], architectural design is generally based on pre-existing concepts and results from continuous processes.

Historical studies were made to identify the background, especially the factors that led to the use of Islamic architectural elements in the Gedung Sate. Historical studies were obtained from literature studies and interviews with experts. The research was conducted through field observations and interviews with experts.

The data collection method was carried out by field surveys of objects in Bandung and partly in India. In addition, literature studies in libraries and the internet were conducted. The data were obtained from literature and field studies using theoretical and historical backgrounds, two-dimensional and three-dimensional images, also photographs as material for assessing spatial physics. Interviews with experts on the history of architecture associated with the juxtaposition study were held to strengthen the analysis and conclusions. A triangulation device was employed to avoid bias.

RESULTS AND DISCUSSION

THE C.P.W. SCHOEMAKER OPINIONS

The opinion of another architect who trained Gerber’s contemporaries in Indonesia; Charles Proper Wolff Schoemaker, also strengthened relations with India. He argued that the existing architecture pays attention to the combination of western and classical Indian architecture, which is considered to provide the most appropriate adaptation to the tropical environment [11]. According to Schoemaker, Indian architecture constituted a great example for the Dutch East Indies. It can be seen not only in several horizontal accents that he loved and admired so much but also in the closure of vertical elements with roofs in the form of stupas or pagodas in several commercial building designs (Figure 1).

C.P.W. Schoemaker referred to traditional Indian architecture: "The Indians have developed a special characteristic of tropical style, and we can recognize it from their buildings. The Indian spirit is truly permeated by nature and its organic laws of composition and design within the community they are familiar with. This spirit has succeeded in bringing the building into one with its environment by creating it according to the same orders. Their buildings in depth also translate the environment within them. Indo-European architects had to study Indian works in depth, as our first rationalists had to study medieval buildings, to understand the essence of this art and
find new impetus in it." [13]

This phenomenon does not rule out the influence of Schoemaker’s thoughts on other architects, especially on J. Gerber. C.P.W. Schoemaker had been practising as an architect in Indonesia for a long time when J. Gerber arrived in Indonesia, and C.P.W. Schoemaker is considered to have influenced young architects to a considerable extent, starting from giving lectures as well as participating in various dialogues. C.P.W. Schoemaker is included in the ranks of influential architects in Indonesia. However, he did not receive an official education in architecture, and his opinion was at odds with other architects, such as Maclaine Pont (Figure 2).

‘GEDUNG SATE’ ARCHITECTURE

In its development in the Dutch East Indies into the 20th century, cities on the North Coast of Java Island were considered unsuitable. They did not meet the requirements as an office work center, especially when used as a government center such as the City of Batavia [present-day Jakarta]. The administrative centers of government had better be moved to mountainous cities in the interior of Java Island, which has cool, healthy, and comfortable air. The cities in the island of Java's interior are Sukabumi, Bogor, Bandung, Semarang, and Malang in East Java [15]. H.F. Tillema proposed to the then Governor General J.P. van Limburg Stirum that the Dutch East Indies capital be moved from Batavia to Bandung City in the Tatar Priangan Mountains. The central government’s attention to this HF Tillema report arose after a statement from Professor. J. Klopper, Chancellor of the Bandung Institute of Technology (ITB).

Gedung Sate is a government complex that has not yet been completed to support the plan to move the capital to a new area[16]. This building looks to have an identical pattern to the old City Halls in Batavia and Amsterdam, albeit with a different appearance (Figure 3). Governor General J.P. Graaf van Limburg Stirum (1916-1921) appointed V.L. Slors, who had succeeded in building the Cimahi military area in 1895. Slors occupied his new position as Director of the Municipal Building Service with the main task of designing and building the Center for Government Agencies of the Dutch East Indies in Bandung City. In addition, he led the Building Business Commission, which constructed Gedung Sate. The term Sate is an architectural style during the renaissance, especially the west wing building. Meanwhile, the multi-storey tower in the middle of the building looks like a meru roof or a pagoda. An architectural expression that successfully combines eastern and western styles in harmony" [16]. Berlage was one of the Dutch Senior Architects who was highly respected by his fellow architects, especially the ones based in the Dutch East Indies. There are more opinions from Indonesian architects later in the post-colonial period who explicitly mentioned the splendor of Gedung Sate, such as Slamet Wirasonjaya.

According to C.P.W. Schoemaker, the THB Building (ITB) was built in the same year as Johan
Gerber’s Department van Gouvernementsbedrijven building, and both buildings raised doubts about the specific architectural design of the Dutch East Indies (Figure 4). Gedung Sate still bears a clear resemblance to the more traditional western buildings of the nineteenth century. Still, elements from Candi (ancient temples) in Java can be found in its rich ornamentation. In C.P.W. Schoemaker’s view, Indonesia has made many architectural mistakes. Gedung Sate in Bandung by Ir. Johan Gerber is the pinnacle of these architectural errors. He writes: “Only a proper understanding of foreign forms enables him to acquire their essential properties without risking the formation of new motifs and to arrange them wisely in harmonious compositions [13]. The wild nature of the design that is the result of superficial knowledge of oriental elements, when the urge to apply them has arisen, is demonstrated by Gedung Sate in Bandung.”

Figure 4. Aula Barat ITB, one of THB Buildings (upper), Gedung Sate and Post office (below) [19].

MOORISH AND MUGHAL STYLE

Characteristic elements of Moorish architecture include horseshoe or "Moorish" arches, interlacing arches, central courtyards, riad gardens, intricately carved wood and stucco as decoration, muqarnas sculpting, and decorative tile work known as zellij in Arabic or azulejo in Spanish and Portuguese. The moorish design was adapted by Christian architects and patrons, where it was combined with Romanesque and Gothic Christian typologies [20], [21] (Figure 5).

Figure 5. Some Detail of Moorish Architecture.

Mughal architecture (Figure 6) blended Islamic, Persian, and Indian architecture in the Indian subcontinent. There are 2 major Mughal architecture phases: the red sandstone phase and the white marble phase. As the name suggests, these two phases are distinguished by the material used, but there are other differences as well:

1. Red sandstone phases (Babur, Humayun, Akbar):
   a. The use of red stone as the main component in the building.
   b. Emphasis on symmetry and balance of the building in this phase.
   c. The general use of bricks decorated with terra cotta and glaze.
   d. The use of semi-precious gemstones is very popular in ornamentation.
   e. Its general figure uses a semi-circular dome.

Figure 6. Red Sandstone Architecture: Fatehpur Sikri, Agra, and Red Fort, Delhi (upper), Marble: Taj Mahal, Agra, and Pearl Mosque, Delhi (below) [22].

2. Marble (Shah Jahan, Aurangzeb) (Figure 6):
   a. The use of red stone is replaced with white marble and semi-precious stones.
   b. The Pietra Dura style became a popular feature in this phase.
   c. The semi-circular dome is replaced with the onion-shaped dome.

GEDUNG SATE AND ISLAMIC ARCHITECTURE TRACES

Mughal, Moorish, Local Islamic architecture was possible then, especially for monumental buildings such as Gedung Sate. Architect’s design inspiration can come from 5 aspects [26], namely:

- Architectural form is shaped by its intended function. The design of the form of a building can be created through consideration of certain functions, such as physical, social, psychological, and symbolic functions. In this case, the form is a representation of the function.
- Architectural form is generated within the creative imagination. The originality of architectural form was born...
through the imaginative and intuitive creativity of the architect’s thinking. It is based on the independence of intuitive thinking that is independent and not trapped by formal boundaries. Extreme examples are utopian, fantastical, futuristic, deconstructed, and other designs.

- The prevailing spirit of the age or Zeitgeist shapes architectural form. Architectural forms were created following the spirit of the era. Consideration of ideology/spirit/global and dominant ideology can influence the creation of its form, for example, Post-Modernism, which is pro-history.

- The prevailing social and economic conditions determine architectural form. Architectural forms can be created by considering social (to meet the needs of many people) and economic (effective-efficient-functional) aspects.

- Architectural form is derived from timeless principles that transcend particular designers, cultures, and climates. Architectural forms can be born through the concepts of the past. This concept is used because it is considered to have uniqueness/distinctiveness for special purposes, cultural considerations (e.g., locality), and climate contextuality, among others. It can involve historical aspects (pro-history), type, and the like. This understanding shows the possibility of using temple design elements in buildings in Indonesia’s pre-colonial (Islamic), colonial, and post-colonial times.

**FIGURE**

The figure of the Mughal building and the 'Satay Building' can be juxtaposed, where there is an element of three divisions that widen at the base. The building is divided into three parts symmetrically, with processing in the middle, which is more special than the right and left. The base is enriched with curves (Figure 7). The arrangement of the arches is also known in the Moorish pattern, however, with the emphasis on processing at the point of symmetry closer to the Mughals and strengthened by the repetition of the many curved patterns. The Moorish style is also enriched with curved patterns that make the building feel light.

Meanwhile, the Mughal figure shows the impression of volume and weight [27]. Gedung Sate represents a volumetric and heavy building like Mughal buildings in general. However, the light appearance can be recognized in the interior of Gedung Sate. On the other hand, the crown of the Gedung Sate roof reminds us of the local Nusantara mosque’s three-storied roof, such as Demak Mosque or the roof of Kudus Minaret (Figure 8).

**BUILDING CORNERS AND TOWER PARAPET WALLS**

The processing of the corners of Gedung Sate shows a polygonal pattern like the Mughal building. The processing of these thickened corners resembles the processing of the fortified corners of the Mughals (Figure 9). It is this character that Moorish Architecture lacks. Based on this preparation, it strengthens the exterior of Gedung Sate, indeed using the Mughal style. This is reinforced once again in the processing of the parapet walls of the tower that resemble the upper walls of Mughal buildings or their forts. In fact, patterns like this are also recognized in Moorish architecture in the African region but are more widely used by and are characteristic of the Mughals (Figure 10).
OUTER OVERHANG CEILING

The processing on the outer overhang ceiling of the Gedung Sate shows the presence of details that are typical of Indian architecture, such as in South India. This processing consists of rectangular geometric motifs and wood protrusions to form a pattern of stripes. The cross pattern is decorated with decorative shapes like dripping water in organic shapes. Mughal buildings used this pattern for their ceiling decorations, especially those made of wood (figure 11). This pattern seems to be commonly used in wooden buildings from India to Nepal.

The processing on the outer overhang ceiling of the Gedung Sate shows the presence of details that are typical of Indian architecture, such as in South India. This processing consists of rectangular geometric motifs and wood protrusions to form a pattern of stripes. The cross pattern is decorated with decorative shapes like dripping water in organic shapes. Mughal buildings used this pattern for their ceiling decorations, especially those made of wood (figure 11). This pattern seems to be commonly used in wooden buildings from India to Nepal.

In Moorish Architecture, such decorations are known as mukarnas. The mukarnas developed in Mughal architecture differ from those found in many of the Moorish architectural styles, although the pattern forms protrusions downward like dripping water. Thus, the Gedung Sate section clearly shows the influence of Indian or Mughal architecture. The 'Satay Building' shows the mixed use of ornaments, both from local elements, such as the legs that resemble the processing of the feet of temples in Indonesia, as well as using ornaments from outside Indonesia (especially from India), which are used in Mughal architecture. The use of Mughal ornamentation that is visible is in the processing of the ceiling on the outer overhang, which resembles a typical Mughal corbel which is processed like the mukarnas surface (figure 12).
Traces of Islamic Architecture in The Design of The 'Gedung Sate' in Bandung

The column elements of the interior of the building reinforce this light (figure 16) and slim impression. The column capital for the Gedung Sate section shows the processing that refers to the columns in Granada, Spain (figure 17). This slender column is also found in the upper part of the building, combined with massive walls. This slender column shows the influence of Mughal architecture and the Moorish style. Based on historical records, the Moorish style developed earlier and influenced the Mughal style of architecture. Thus, the Gedung Sate, based on arches and columns, is a blend of Islamic architecture from the West (Spain) and the East (Mughal). Moorish architecture was very popular in Europe, but the Mughal style was also very popular in the East, where Indonesia is an Asian country.

The outside layout shows the presence of Geometric patterns, such as gardens developed in Mughal architecture. This geometric pattern forms a centered concentric pattern with the main building at one end. At the same time, the Gedung Sate Complex does not show a concentric pattern but is linearly elongated, with its placement at one end of the side. The placement of the building at the end of the axis is one of the architectural characteristics of the Mughal era, namely Shah Jahan, and one of the buildings that follow this order is the Taj Mahal. The symmetrical geometry in the 'Satay Building' arrangement is still recognizable but linear. It distinguishes the Mughal buildings’ complex arrangement (Figure 18).

However, several elements indicate Mughal traces, such as ponds and gardens with trees. One of the main elements in the outdoor layout of Mughal architecture is the existence of a pond placed in the center of the landscape. Its function is to be a water reservoir for the surrounding gardens while at the same time reflecting the beauty of the sky and the surrounding gardens. (Figure 19)

In the initial planning in front of Gedung Sate, there was also a rectangular pool which was thought to bear similarities with the concept related to the reflection of the elements around it. Still,
unfortunately, this pool was not built and is now the Gasibu field (Figure 20). The community currently uses this Gasibu Field for various activities such as sports and recreation, among others. In addition to the pool in the outdoor layout of Mughal architecture, various types of trees are found that serve to shade and beautify the environment, such as the concept of a garden in Islam, which is like a heavenly garden. The outdoor layout of the Gedung Sate shows such a concept as well. However, in its development, Gedung Sate also has gardens with shade trees that bear fruit.

"And give good tidings to those who believe and do good, that for them are provided gardens with rivers flowing in them. Every time they are given sustenance of fruits in those paradises, they say: "This is what was given to us in the past". They are given similar fruits and for them are pure wives and they will abide therein forever. (Tafsir of the Holy Quran, Surah Al-Baqarah, Verse 25).

CONCLUSION

Based on the study, it can be seen that Mughal Architecture has more visible traces in Gedung Sate or 'Satay Building'. However, Moorish characteristics are also visible, especially in the shape of the arches and the interior column heads. The volumetric expression with arches and monumental shapes is shown on the exterior resembling the figure of the Mughal style, during the slender columns in the interior, so that the expression feels light is reminiscent of the Moorish style and the pillars of the Mughal Tower. The Mughal style cannot be separated from the Moorish one either, considering that the Moors first appeared in the world of Islamic Architecture and are thought to have also entered India. Mughal imprints on the Gedung Sate can be observed in the complex’s mass layout and outer layout, such as the use of a pool, geometric patterns, and the placement of the building on one side at the end, even though they are arranged linearly. In addition, the processing of the Gedung Sate and some details that support its figure, such as the corners of the octagonal building, show marked traces of Mughal architecture (Table 1). The repeated arches and heavy figures are reminiscent of Mughal palaces such as Diwan-i-Am (Agra) and Humayun’s tomb. The shape of the building that shows a monumental impression but represents the culture in the East seems to have been chosen by J. Gerber in presenting the new Governor-General’s Palace in Bandung.

<table>
<thead>
<tr>
<th>Islamic Architecture</th>
<th>Gedung Sate Complex</th>
<th>Mughal</th>
<th>Moorish</th>
<th>Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rounding Pillars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rectangular Pillars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>cubic side</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dome</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reiteration of Arch</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Gerber’s opinion, the Renaissance-style monumental building made of non-wood materials like the one in Europe will be presented in the Dutch East Indies but still has a non-European nuance. At that time, the temples found in Indonesia were indeed monumental. Still, the temple was a worship building related to the gods. At the same time, what would be designed as a non-worshipping building must be monumental with modern functions, namely offices closely related to human work activities, such as palaces in Europe. This model is not found in Indonesia’s typology of classical Hindu-Buddhist architecture. Therefore, the reference is excavated through buildings in India related to non-worshipping human activities, such as palaces. Indian culture at that time was seen as having a strong relationship with localities in Indonesia, namely temples and Islamic
traditions like a mosque with a tiered roof, especially since India was a stopover area before landing in the Dutch East Indies/Indonesia. However, J. Gerber still incorporated local elements through his ornamentation to continue to present elements of the archipelago so that Mughal elements are only found on parts of the outer ceiling, parapet, and decoration of exterior corners and columns. Next to Gedung Sate is the Post Office [Gedung Kantor Pos], with the columns showing more of an Islamic Indian Architecture element. This study can be discussed in further research.

The Gedung Sate can be seen as an architect's effort to localize Mughal-Moorish Islamic architecture, representing the splendor of Islamic architecture in India or Europe. The elements displayed are more inclined toward Islamic architecture than Dutch architecture, which is identical to the Neo-Classical style, Art Deco, Amsterdam School, and De Stijl. J. Gerber was looking for a new pattern in its design by presenting a mix of global and local, but not the European style that is presented. Did Gerber take into consideration the Muslim majority among the Indonesian population so that he chose the Islamic style as a design reference for the new Capital Government Building, especially since the development of Islamic politics in the early 20th century also strengthened in the Dutch East Indies/Indonesia. However, J. Gerber still adapted was not a Renaissance-style building (Figure 21).

ACKNOWLEDGMENT

- Indonesian Education and Culture Ministry - RISTEKDIKTI
- Institute for Research and Community Services, Parahyangan Catholic University-LPPM UNPAR
- Department of Architecture, Parahyangan Catholic University, Indonesia

REFERENCES


Jelajah arsitektur nusantara (Si-JAN) dan Lokakarya Nasional, Medan Brawastagi Tanah Karo, Desember, 2003.


