



Architectural Restoration of the Tegalsari Grand Mosque, Jetis, Ponorogo, East Java (1994–1997 CE)

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ABSTRACT

The Tegalsari Grand Mosque is a cultural heritage structure protected under Indonesian Law No. 11 of 2010; however, it has not yet been formally designated by the Government of Ponorogo Regency. A major renovation undertaken by the local government in 1978 substantially altered the mosque's original form, resulting in the erosion of its distinctive Old Javanese architectural identity. This study investigates the historical background of the restoration of the Tegalsari Grand Mosque, the factors that motivated the restoration, and the outcomes achieved through this process. Specifically, the research addresses how and why restoration efforts were carried out to recover the mosque's original architectural character. Employing a historical research method, the study follows the stages of heuristics, source verification, interpretation, and historiography, drawing upon both primary and secondary sources. The concept of architectural restoration serves as the principal analytical framework. The findings demonstrate that the mosque was founded in 1742 CE by Kiai Ageng Muhammad Besari in Gendol Hamlet, Tegalsari Village, Jetis District, Ponorogo Regency, and originally embodied the characteristics of Old Javanese Mosque architecture. Restoration was initiated by the Cultural Heritage Preservation Agency between 1994 and 1997, following the gradual decline of the mosque's identity as an ancient Javanese mosque. The restoration was implemented in three phases, encompassing the main prayer hall, the veranda and pavilion, and the courtyard along with its supporting structures, ultimately reaffirming the mosque's historical and architectural significance.

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INTRODUCTION

Mosques constitute one of the cultural manifestations of Islam that emerge from human expression in fulfilling spiritual, educational, and social needs. Daliman (2012) explains that a mosque is a sacred structure in Islam whose development accompanies the spread of Islamic teachings within a given region. In the Indonesian archipelago (Nusantara), the process of Islamization unfolded peacefully through mechanisms of acculturation with pre-Islamic cultures, particularly Hindu–Buddhist traditions, a process that is clearly reflected in mosque architecture (Tjandrasasmita, 2009). This condition explains why a number of mosques in Indonesia display a synthesis of local Javanese, Hindu–Buddhist, and Islamic architectural styles. Such acculturative phenomena not only demonstrate the adaptability of Islamic teachings in engaging with local cultures but also affirm the role of mosques as centers for the dissemination of Islam imbued with profound historical and cultural values (Barliana, 2008).

Islam began to spread widely in the Ponorogo region in 1486 CE through the role of Bathoro Katong, who is also recognized as the founder of the city of Ponorogo. As Islam continued to develop in this area, various Islamic historical structures emerged, one of which is the Tegalsari Grand Mosque, founded by Kiai Ageng Muhammad Besari in the eighteenth-century CE. Muhammad Besari is estimated to have been born around 1635 CE in the Caruban region, which at that time was recorded as a regency, as mentioned in the *Babad Kartasura* (Purwowijoyo, 1984). During his youth, he grew up alongside his two brothers, Kiai Nur Sodik and Kiai Ketib Anom, who later pursued similar intellectual journeys. All three demonstrated a strong inclination toward the development of Islamic scholarship from an early age.

Around 1660 CE, Kiai Ageng Muhammad Besari, together with his two brothers, sought permission from their father, Kiai Ageng Anom Besari, to continue their quest for knowledge in Ponorogo. They subsequently studied at Pondok Pesantren Setono, led by Kiai Donopuro and located in Setono Village, Jetis District, Ponorogo Regency, to the west of the Keyang River. Their decision to study at this pesantren was grounded in the moral exemplarity and social teachings of Kiai Donopuro, which were widely recognized by the community. These teachings emphasized compassion,



concern for others, and social responsibility in communal life. Such values constituted an essential foundation of pesantren educational traditions at that time (Purworijoyo, [1984](#)).

The Tegalsari Grand Mosque is situated approximately 10 km south of the center of Ponorogo City, precisely at RT 001 RW 001, Gendol Hamlet, Tegalsari Village, Jetis District, Ponorogo Regency, East Java Province. Initially, Tegalsari Village consisted of forested land that was later cleared by Kiai Ageng Muhammad Besari at the instruction of his teacher, Kiai Donopuro, for the establishment of a pesantren complete with a mosque. Kiai Donopuro was the caretaker of the pesantren in Setono Hamlet, while Kiai Ageng Muhammad Besari was among his principal disciples (Nurdianto et al., [2018](#)). In the course of his spiritual and social maturation, Kiai Muhammad Besari also studied under Kiai Nursalim of Mantub Ngasinan. This relationship culminated in his marriage to Kiai Nursalim's daughter, further strengthening his social standing and scholarly authority (Laporan Pemugaran Masjid Tegalsari Tahap II, [1996](#)).

After his marriage, Kiai Ageng Muhammad Besari returned to Pondok Setono to continue deepening his religious studies. However, after approximately one year, Kiai Donopuro entrusted him with the mandate to open and establish a pesantren on his own *tegalan* (dry field) land located across the Keyang River. This mandate was realized through the construction of a mosque and pesantren that are now known as the Tegalsari Grand Mosque (Laporan Pemugaran Masjid Tegalsari Tahap I, [1995](#)). The mosque exhibits the distinctive characteristics of an ancient Javanese mosque, as evident in its tiered roof (*atap tumpang*), the presence of a veranda (*serambi*), and its square floor plan. In addition, the mosque structure is supported by 36 wooden pillars and capped with a conical roof. The number of pillars carries symbolic meaning, representing the *Walisono*, while the roof form symbolizes the majesty of Allah SWT.

As a structure with high historical value and an age exceeding two centuries, the Tegalsari Grand Mosque is categorized as a cultural heritage building protected under Law of the Republic of Indonesia No. 11 of 2010 on Cultural Heritage (Laporan Evaluasi Pasca Pemugaran Masjid Tegalsari, [2014](#)). Between 1740 and 1743 CE, the event known as the *Geger Pecinan* occurred, forcing Pakubuwono II of the Kartasura Palace to seek refuge in Ponorogo in order to reorganize his political power. In this context, Tegalsari Village became one of Pakubuwono II's places of refuge. As the fulfillment of a vow, the village was subsequently designated as a *Desa Perdikan* after the Kartasura Palace was successfully reclaimed (Fathoni, [2018](#)). This designation resulted in a transformation of the village's leadership status, through which Muhammad Besari was granted the title Kiai Ageng Muhammad Besari, by which he is known to this day.

The Tegalsari Grand Mosque is currently estimated to be approximately 250 years old, making it one of the oldest mosques in Ponorogo Regency. As the building has aged, various conservation and restoration efforts have been undertaken to ensure the continuity of its function and preservation. A major restoration was carried out between 1994 and 1997 by the Regional Office of the Department of Education and Culture and the East Java Cultural Heritage and Antiquities Preservation Agency (Zainal, [2011](#)). From an architectural perspective, the mosque possesses distinctive features of ancient Javanese mosques, characterized by a three-tiered roof, a spacious veranda, a square plan, and teak wood supporting pillars. These elements represent the close interconnection between Javanese cultural traditions and Islamic teachings. This architectural form simultaneously serves as evidence of the peaceful acceptance of Islam through cultural approaches (Arief & Alfiansyah, [2025](#)).

Nevertheless, the dynamics of changing times have also affected the condition of the Tegalsari Grand Mosque. A major renovation conducted by the local government in 1978 resulted in the removal of several of its original architectural features as an ancient Javanese mosque. Consequently, the mosque's historical and architectural identity experienced significant degradation. To address this condition, a comprehensive restoration was undertaken between 1994 and 1997 by the East Java Cultural Heritage and Antiquities Preservation Agency, with the aim of restoring the mosque's original form (Fahrezi et al., [2024](#)). The restoration process was implemented in three stages, encompassing the main prayer hall, the veranda and *pawestren*, as well as the courtyard and other supporting structures (Siddiq, [2022](#)).

Based on the historical, architectural, and cultural values embodied by the Tegalsari Grand Mosque, this research is important to conduct in order to provide a comprehensive account of the building's trajectory over time. The major restoration carried out between 1994 and 1997 was not merely a technical intervention, but rather a critical juncture in the effort to preserve traditional Javanese architectural heritage. This process reflects the dynamic interplay between safeguarding authentic values and adapting to the needs of modern society. Accordingly, an examination of the restoration of the Tegalsari Grand Mosque makes it possible to reveal the extent to which original elements were

preserved and which parts underwent alteration. This analysis also sheds light on the perspectives of both the community and policymakers regarding the preservation of Islamic heritage.

Furthermore, this study opens a space for understanding the relationship between tradition, local communities, and cultural preservation policies. By tracing restoration documents, material traces of the building, and testimonies of restoration actors, the research not only records the mosque's physical transformations, but also maps the values underpinning the preservation process. The findings are expected to enrich scholarly discourse on models of historical building restoration in Indonesia, particularly with respect to traditional Javanese mosques. The results are also anticipated to offer strategic recommendations for future cultural heritage preservation efforts. In this way, the Tegalsari Grand Mosque may continue to be understood as an integral part of collective memory and the history of Islamic civilization in Java.

METHOD

The research method adopts a historical–architectural approach that focuses on reconstructing the restoration process and identifying the physical changes to the Tegalsari Grand Mosque during the 1994–1997 period. Data collection was conducted through archival research and the examination of technical documents, including project reports, working drawings of floor plans and building elevations, photographs documenting conditions before and after restoration, as well as administrative correspondence related to the implementation of the restoration works. All documents were systematically selected and reviewed in order to construct a detailed timeline of the restoration activities and to map the types of interventions carried out at each stage. In addition, direct field observations were undertaken to record the mosque's current architectural condition. These observations included re-measurement of building elements, documentation of differences between original materials and replacement materials, detailed photographic recording of structural components, and the preparation of simple sketches to indicate building parts that had undergone modification (Kuntowijoyo, [2013](#)).

Structured interviews were conducted with community leaders, mosque administrators involved in the restoration activities, local craftsmen or architects who executed the project, as well as representatives of heritage preservation institutions holding authority at the time. The interview questions focused on technical decision-making processes, the rationale for material replacement, methods of dismantling and installation, and constraints encountered during the restoration. The collected data were subsequently analyzed through visual comparison between archival photographs, working drawings, and the mosque's current physical condition in order to identify changes in form, structure, and ornamentation. Architectural morphological analysis was employed to trace transformations in the floor plan, structural system, roof form, veranda, and interior elements of the mosque. Within this process, distinctions were also recorded between original materials—such as teak wood and clay roof tiles—and replacement materials, including concrete and modern roofing tiles.

All research findings were organized chronologically to illustrate the sequence of the restoration process, beginning with the initial survey stage, followed by dismantling, structural works, and concluding with final finishing. Data validation was carried out by cross-checking interview results against restoration archives and physical evidence that remains observable in the building. This step was intended to ensure that the information presented objectively, technically, and scientifically represents the restoration process. Through this methodological framework, the study provides a comprehensive account of the architectural transformations of the Tegalsari Grand Mosque during the 1994–1997 restoration period. Moreover, the research elucidates the technical factors underlying the occurrence of these changes.

RESULT AND DISCUSSION

A Brief History of the Tegalsari Grand Mosque, Ponorogo

The Tegalsari Grand Mosque is located in Tegalsari Village, Jetis District, Ponorogo Regency, East Java, and forms an integral part of the Tegalsari Islamic Boarding School (Pondok Pesantren Tegalsari) complex, which covers an area of approximately 4,500 m². The first mosque in Tegalsari was established in 1669 CE on the eastern bank of the Keyang River as a place of worship for the local community and the early cohort of students. As the number of congregants and students increased, a second mosque was constructed in 1724 CE at a site further east. The original mosque was later swept away by the currents of the Keyang River and is now known as the Ishaq Mosque. This building was bequeathed

to the son of Kiai Ageng Muhammad Besari as part of the continuity of the family's historical legacy and religious institution (Daryono, [2016](#)).

Architecturally, the Tegalsari Grand Mosque exhibits strong and consistent characteristics of an ancient Javanese mosque. The structure is distinguished by an odd-numbered, multi-tiered (*atap tumpang*) roof covered with wooden shingles (*sirap*), four *saka guru* pillars made of Pulung teak wood, and the presence of a *serambi* (veranda) equipped with a *beduk* (traditional drum). In addition, the mosque includes a *pawestren* as a designated prayer space for women and a square floor plan enclosed by perimeter walls. Another distinctive feature is the presence of a *batu bancik* at the threshold of the mosque's main entrance, which, according to oral tradition, was brought directly by Kiai Ageng Muhammad Besari from Majapahit. Collectively, these elements reflect the integration of Islamic values and local Javanese culture in the mosque's architectural conception (Felisiani, [2009](#)).

The Tegalsari Grand Mosque was founded by Kiai Ageng Muhammad Besari, a prominent Islamic scholar and educational figure who lived between the seventeenth and eighteenth centuries CE. He was a descendant of Kiai Ageng Anom Besari of Caruban (Madiun), with a lineage connected to Majapahit through his paternal line and traced to the Prophet Muhammad SAW through his maternal line (Alizanda et al., [2021](#)). From its inception, the mosque functioned not only as a center of worship but also as a hub for Islamic preaching and education. This role became increasingly significant with the establishment of the Tegalsari Islamic Boarding School, which later developed into one of the most influential pesantren in East Java. In this way, the mosque and the pesantren formed a unified institutional framework for the dissemination and development of Islam in the Ponorogo region.

Kiai Ageng Muhammad Besari passed away in 1747 CE and was buried in the rear complex of the Tegalsari Grand Mosque. The leadership of the pesantren and the management of the mosque were subsequently continued by his sons, who played a crucial role in preserving the continuity of scholarly traditions and the mosque's architectural character. This process of leadership regeneration ensured the sustained function of the mosque as a center for worship and Islamic education. Accordingly, the Tegalsari Grand Mosque represents not only a legacy of Javanese Islamic architecture but also a symbol of the long historical trajectory of Islamic preaching and education in Ponorogo. These historical values have established the mosque as an essential component of the collective memory of the local community (Rahayu & Wirajaya, [2020](#)).

Early Architectural Characteristics of the Tegalsari Grand Mosque

Architecturally, the Tegalsari Grand Mosque reflects the distinctive characteristics of an ancient Javanese mosque, marked by a square floor plan, a three-tiered (*atap tumpang*) roof, the presence of a *serambi* (veranda), *mihrab*, *pawestren* (women's prayer space), and a spacious courtyard (Sudarsono, [2001](#)). The mosque complex is enclosed by a masonry fence approximately 1.5 meters in height, which underwent renewal following restoration works carried out in 1976–1977 CE. In its early period, the courtyard in front of the *serambi* was equipped with a small water channel that flowed toward the Keyang River to the north and west of the mosque. The presence of this channel indicates the close relationship between the mosque's spatial organization and the surrounding natural environment. This arrangement reflects the principle of adaptation in traditional Javanese architecture to its local geographical context (Handinoto & Hartono, [2006](#)).



Figure 1. Photograph of the Installation of Wooden Wall Beams and Ventilation
Source: Cultural Heritage Preservation Agency (BPCB) East Java

The *serambi* of the Tegalsari Grand Mosque is divided into two sections: the older *serambi*, rectangular in form and measuring 16.20 × 13.56 meters, supported by 12 teak wood pillars; and the newer *serambi*, constructed with assistance from President Soeharto in 1978, measuring 16.25 × 6.90 meters. The main prayer hall of the mosque is likewise square in plan, measuring 16.20 × 16.25 meters, and is supported by 36 pillars, including four *saka guru* made of Pulung teak wood. On the western side of the main prayer hall is a *mihrab* measuring 2.06 × 1.30 × 2.17 meters, adorned with carved vegetal (*sulur-suluran*) motifs. In addition, there is a teak wood *mimbar* (pulpit) decorated with floral and vine ornaments, reinforcing both the aesthetic and symbolic dimensions of the space. These elements demonstrate the richness of traditional ornamental vocabulary in Javanese mosque architecture.

The *pawestren* space is located on the southern side of the mosque, with a floor plan measuring 8.25 × 18.42 meters, and underwent significant alteration during the 1977 restoration. At that time, the original materials were replaced with reinforced concrete, resulting in a more modern architectural impression. The mosque's roof is a three-tiered *atap tumpang*, which philosophically symbolizes *Iman*, *Islam*, and *Ihsan* as the foundational principles of Islamic teachings. At the apex of the roof originally stood a *kemuncah* in the form of an inverted earthen jar, a legacy attributed to Kiai Ageng Muhammad Besari; however, during the 1978 renovation this element was replaced with a modern dome. This change reflects a shift in aesthetic preferences and construction approaches in the course of the mosque's renovation history.

Another distinctive feature of the Tegalsari Grand Mosque is the presence of three *batu bancik* stones positioned in front of the mosque's entrance. According to oral tradition, these stones originated from the ruins of Majapahit structures and were reused as part of the mosque's architectural elements. Two of the *bancik* stones bear inscriptions in the form of Old Javanese numerals, while the third stone is plain and uninscribed. Beyond their function as steps leading into the main prayer space, the *bancik* stones also symbolize the continuity between pre-Islamic traditions and Javanese Islamic architecture. This element further reinforces the mosque's character as a place of worship imbued with deep historical and cultural significance.

Symbolic Dimensions of the Architecture of the Tegalsari Grand Mosque

The Tegalsari Grand Mosque functions not only as a space for worship, but also as a representation of a philosophical symbolic system that reflects the spiritual and cultural values of the Javanese–Islamic community. One of its principal elements is the *mihrab*, designed as a recessed niche resembling a passageway, which is interpreted as a symbol of the “cave of the One Essence,” signifying the presence of God within the sacred space. Flanking the *mihrab* are two bell-shaped lamps that symbolize human obligations toward God as well as the Divine light that illuminates human life. In front of the *mihrab* stands a teak-wood *mimbar* adorned with carved calligraphic motifs resembling a four-legged animal. This *mimbar* functions not only as a platform for delivering sermons, but also represents the dignity of the *khatib* and the glory of the Muslim community (Syahroni & Pujiyanto, 2024).



Figure 2. Photograph of the Three-Tiered Roof of the Mosque
Source: author's documentation

The main prayer hall is supported by 36 pillars, which symbolically represent the *Walisongo*, the nine saints credited with the dissemination of Islam in Java, through the numerological combination of the numbers three and six, resulting in nine. In the *serambi*, there are 12 pillars that are interpreted as symbols of the six pillars of faith (*rukun iman*), represented in balanced form on the right and left sides of the building. Furthermore, the presence of *batu bancik* stones at the mosque's entrance constitutes a legacy from the Majapahit era that has been repurposed as steps leading into the mosque. This element symbolizes the transformation of society from Hindu traditions to Islam under the leadership of Kiai Ageng Muhammad Besari. Thus, the mosque's structural elements serve not only constructive functions but also embody profound historical and symbolic meanings (Karim et al., [2020](#)).

The mosque's three-tiered (*atap tumpang*) roof carries complex symbolic meanings, functioning both as a representation of *shari'a*, *ma'rifa*, and *haqiqa*, and as a symbol of *Iman*, *Islam*, and *Ihsan*. At its apex stands a *kemuncak* in the form of an inverted earthen jar, which serves as an ornamental feature as well as a talismanic element intended to ward off misfortune, in accordance with local traditional beliefs. The mosque's fence, designed with curved forms projecting outward, is interpreted as a symbol of Allah's protection over the Muslim community from satanic disturbances and external threats. The presence of the tomb of Kiai Ageng Muhammad Besari within the mosque complex further reinforces the symbolic relationship between life and death, in which the mosque is understood as a space of piety and the tomb as a place of repose on the journey toward the hereafter (Salsabila, [2024](#)). Accordingly, all architectural elements of the Tegalsari Grand Mosque integrally reflect the synthesis of Islamic teachings, local traditions, and the spiritual values of Javanese society (Multazam, [2021](#)).

DISCUSSION

Stages of the Architectural Restoration of the Tegalsari Grand Mosque (1994–1997 CE)

The Tegalsari Grand Mosque is one of the historical buildings in Ponorogo Regency that is more than 250 years old and is protected under Law No. 11 of 2010 on Cultural Heritage. Given its high historical and architectural value, restoration efforts were undertaken to preserve the authenticity of the ancient Javanese mosque form without eliminating the remaining original elements. A major renovation had previously been carried out in 1978; however, this intervention resulted in significant changes to the mosque's façade, causing it to no longer reflect the characteristics of a traditional mosque. This condition prompted the implementation of a more comprehensive restoration during the periods of 1994/1995 and 1996/1997. These restoration activities were conducted by the Regional Office of the Department of Education and Culture in collaboration with the East Java Cultural Heritage and Antiquities Preservation Authority (Suaka Peninggalan Sejarah dan Purbakala Jawa Timur) (Kusnanto & Hartono, [2017](#)).

The restoration initiated in 1994 was motivated by the findings of a study conducted by the East Java Cultural Heritage Preservation Office (Balai Pelestarian Cagar Budaya/BPCB), which identified serious physical deterioration and architectural alterations that had diminished the mosque's authenticity. Several major issues were noted, including the replacement of the original teak-wood shingle (*sirap*) roofing with locally manufactured clay tiles, the complete deterioration of the *reng* (roof battens) structure, and modifications to the dimensions of the *usuk* (rafters) that no longer corresponded to the original design. In addition, the clay *kemuncak* was replaced with an aluminum element, and the teak wood pillars were coated with paint, thereby obscuring their original material character. Additional elements such as *lisplang* (fascia boards) and *jurai* were also considered inconsistent with the principles of ancient Javanese mosque architecture. Collectively, these findings indicated deviations from established cultural heritage conservation principles (Susanta, [2007](#)).

Based on the results of technical and structural feasibility studies, the Tegalsari Grand Mosque was deemed suitable for restoration through a system of partial dismantling in selected sections. The primary objective of the restoration was to preserve the traditional architectural characteristics of the mosque while extending the building's lifespan so that it could continue to function as a proper place of worship. The restoration was implemented through a self-managed system (*swakelola*) and was guided by the provisions of Law No. 5 of 1992 on Cultural Heritage Objects and Government Regulation No. 10 of 1993. This approach emphasized prudence in physical intervention and respect for the historical values of the building. Accordingly, the restoration of the Tegalsari Grand Mosque was oriented not only toward technical repair, but also toward reinforcing the cultural identity of Javanese Islam in Ponorogo.

Stages of the Implementation of the Restoration of the Tegalsari Grand Mosque

Prior to the restoration carried out in 1997, the condition of the Tegalsari Grand Mosque, based on data from the Cultural Heritage Preservation Office (Balai Pelestarian Cagar Budaya/BPCB), was considered suboptimal due to structural damage and the impact of a total renovation undertaken during the 1976–1977 period. That renovation resulted in significant alterations to the form and architectural elements of the mosque, thereby reducing the building's level of authenticity. In response to this condition, the BPCB determined that restoration measures were necessary in order to recover and preserve the archaeological data inherent in the mosque. Restoration planning was conducted with reference to the principles of conservation as stipulated in Article 1, paragraph 28 of Law No. 11 of 2010. This approach emphasized that restoration is not merely a technical endeavor, but one that must be grounded in cultural heritage preservation regulations.

The restoration planned for 1997 CE was initially structured into two stages based on the results of technical studies. However, during implementation, the process evolved into three stages due to limitations in funding and time that did not fully align with the original plan. This adjustment of stages was undertaken to ensure the continuity of the work while maintaining prudence in the conservation of a historic building. Each stage was designed to address specific parts of the structure in a gradual and measurable manner. In this way, the restoration could proceed systematically despite encountering technical and administrative constraints.

Phase I Restoration: Main Prayer Hall (1994–1995)

Phase I of the restoration focused on the main prayer hall of the Tegalsari Grand Mosque, particularly the roof structure and wooden shingles (*sirap*). The preparatory stage included the construction of a *werkit* as an administrative workspace and material storage facility, as well as the installation of scaffolding to support the roof dismantling process. The work began with the removal of the ceiling, roof tiles, ridge elements, and *lisplang* (fascia boards), most of which were products of the 1978 renovation and therefore did not require special registration. Dismantling then continued to the roof construction elements, including *reng* (battens), *usuk* (rafters), *jurai*, and *jambangan*. Damaged *reng* were replaced entirely, while the *usuk* and *jurai* were dismantled selectively in order to preserve the authenticity of the building's structure.

During the dismantling of the roof construction, special attention was given to the *jambangan* elements made of terracotta, which were highly vulnerable to damage. Prior to dismantling, all elements were marked or registered so that they could be reinstalled without any alteration in position or form. The aluminum coating on the *jambangan* was first removed, after which the elements were carefully lifted and temporarily placed on prepared scaffolding platforms. Wooden components that remained structurally sound were cleaned of nails and debris and then stored for subsequent conservation processes. The primary challenge at this stage was the presence of corroded *paku dudur* (traditional nails), which required a high degree of precision to prevent damage to the original timber (Ernawati et al., [2023](#)).

The subsequent stage of restoration focused on the repair and addition of building structures, beginning with the dismantling of columns and beams (*blandar*) at the first level. Several columns exhibited varying degrees of deterioration, necessitating special treatment in the form of mortar infill in hollow sections and patching of worn areas. In addition to structural repairs, efforts were made to restore construction forms that had been altered during the 1978 renovation. These measures included extending the *usuk* by 110 cm to restore their original length and creating new *purusan* joints on the first- and second-level *usuk* in accordance with traditional mosque construction techniques. These steps were intended to maintain continuity in both form and structural system.

At this stage, the production of *sirap* shingles was also undertaken as a primary preparation prior to the installation of the main roof. The fabrication of *sirap* was carried out in advance to accelerate the installation process and to anticipate wood shrinkage due to weather changes. The process began with planing the upper, lower, and side surfaces of the wood until they were smooth and even, after which the shingles were shaped to replicate the original *sirap* based on remaining data from the old structure. The lower ends of the *sirap* were formed into a semi-circular shape in accordance with the original characteristics of the mosque's shingles. Once shaped, the *sirap* were treated with anti-insect coatings and waterproof protective layers to enhance material durability (Setyawan et al., [2017](#); Interview with Kunto Pramono, 2022).

Phase I of the restoration successfully reinstated the fundamental form of the main prayer hall of the Tegalsari Grand Mosque in accordance with its original construction. In addition to addressing structural damage, this phase reinforced the building system so that it could continue to function optimally as a place of worship. The technical approach applied demonstrated a balance between conserving original materials and meeting the functional requirements of the building. Consequently, Phase I served as a crucial foundation for the continuity of the restoration process in subsequent stages.

Phase II: Restoration of the Main Hall Roof and Reconstruction of the *Serambi* and *Pawestren* (1995–1996)

Phase II of the restoration of the Tegalsari Grand Mosque was carried out from mid-1995 until February 1996 as a continuation of the first restoration phase. This stage aimed to complete the installation of the *sirap* roof on the main prayer hall, dismantle the *serambi* structure, and reconstruct the *serambi* in accordance with its original architectural form based on the technical assessments of the East Java BPCB. The work commenced with the adjustment of the main interior structural elements, including columns, beams (*blandar*), and bracing (*pengerat*) as reinforcing components of the building. Once the structure was deemed stable, wooden wall panels and ventilation openings were installed on the second and third roof tiers in an effort to revive the natural ventilation system characteristic of traditional Javanese mosques. All of these initial stages adhered to cultural heritage restoration principles that emphasize authenticity of form and material (Susanta, [2007](#)).

The next stage involved the sequential installation of the *usuk*, beginning with the first roof tier, followed by the second and third tiers, in accordance with the registration data of the original building. For the *jurai* sections, bamboo pegs were used as fasteners, consistent with traditional construction techniques that maintain both flexibility and structural strength of the roof. After all *usuk* had been installed, the work continued with the installation of the *reng*, starting from the third roof tier and proceeding downward to the second and first tiers. The *lisplang* were fabricated with *purusan* holes to ensure a strong connection with the *usuk*, after which the *sirap* were installed from the uppermost level downward. This technique required careful determination of the roof's central axis to ensure that the arrangement of *sirap* remained neat and symmetrical in accordance with the original form (Ernawati et al., [2023](#)).



Figure 3. The Pawestren Space and the Process of Cutting the Serambi Columns

Source: Cultural Heritage Preservation Agency (BPCB) East Java

In the *serambi* area, dismantling was carried out comprehensively on the roof covering, structural frame, and columns, which were remnants of previous renovations. Non-original materials were separated for replacement, while original elements such as *usuk*, *blandar*, *jurai*, and truss columns were marked and registered so that they could be reinstalled in their original positions. The *serambi* floor was then dismantled to trace the presence of original *umpak* foundations concealed beneath layers of soil. Excavation revealed twelve andesite stone *umpak* with trapezoidal forms, which constituted an important component of the ancient mosque's structure. These *umpak* were conserved through thorough cleaning and the application of waterproof coatings to ensure the stability of the structural elements above them (Setyawan et al., [2017](#)).

Alterations were also made to the partition wall between the main prayer hall and the *serambi* by shifting it 30 cm eastward so that it aligned with the *blandar* of both spaces. In the area of this shift, a concrete gutter was constructed to function as a rainwater drainage channel as well as an additional support for the roof *usuk*. Furthermore, an additional structure in the form of a terrace on the southern side of the mosque was dismantled, as it was incompatible with the original construction of the first roof tier and lacked a strong historical basis. The entire series of works undertaken in Phase II constituted an integral part of the effort to restore the form, structure, and architectural identity of the Tegalsari Grand Mosque. This restoration process was corroborated through testimonies of technical restoration actors and BPCB documentation (Interview with Suparnun, 2022).

Phase III: Completion of the *Serambi* Roof and Mosque Environmental Arrangement (1996–1997)

The implementation of Phase III of the restoration of the Tegalsari Grand Mosque was carried out in 1996 and completed in December of the same year as a continuation of Phase II. The primary focus of this phase encompassed the completion of the installation of *sirap* roofing on the *serambi* structure, the restoration of the *pawestren*, the construction of supporting facilities, and the arrangement of the mosque courtyard. The installation of the *serambi* roof using teak-wood *sirap* began with the reinstallation of the original *umpak* foundations of the *serambi* columns, which had previously been conserved through thorough cleaning and the application of waterproof coatings. The installation process was conducted with careful re-measurement and trimming of the *serambi* columns due to variations in height across several sections. To preserve structural authenticity, the positions of the *umpak* and columns were adjusted in accordance with their original conditions using registration marks or numbers (Budi, 2017).

Once the *serambi* column, *blandar*, and *pengerat* structures were deemed stable, the work proceeded with the installation of the *usuk*. On the northern, eastern, and southern sides, the *usuk* reached only as far as the *blandar*, necessitating the extension of new teak wood segments measuring 25 cm using dovetail (*ekor burung*) joints. These adjustments followed the form of the *limasan* roof of the *serambi* and affected the first-level *usuk* of the main prayer hall due to the approximately 30 cm eastward shift in wall position. The installation of the *usuk* was carried out sequentially in accordance with the original pattern—beginning from the east–south side, followed by the north, west, and south sides—to prevent displacement of the layout. This stage concluded with the installation of *lisplang*, *reng*, *sirap*, and ridge elements (*bubungan*) in accordance with traditional construction principles (Ruliansyah et al., 2025).



Figure 4. Photograph of the Restored Pawestren Viewed from the Front
Source: Cultural Heritage Preservation Agency (BPCB) East Java

In addition to the restoration of the *serambi*, Phase III also included the construction of supporting facilities such as ablution areas, bathrooms, toilets, septic tanks, infiltration systems, and storage spaces to enhance the mosque's functional capacity. In the *pawestren*, structural reinforcement of the truss system (*kuda-kuda*) was undertaken to accommodate the new building span measuring 20 × 9 meters. The roof framework continued to utilize original teak wood, most of which remained in good condition, while the roof covering was retained using locally produced pressed clay tiles. The restoration also encompassed improvements to newly constructed buildings, including men's and women's ablution facilities, the southern terrace, and the installation of water gutters along the *serambi*. After all

primary construction works were completed, the *werket* or temporary structures were dismantled, as they were no longer required (Sudarsono, [1996](#)).

The arrangement of the mosque courtyard constituted an important component of Phase III through the repair of the perimeter fence, the construction of pedestrian pathways leading to the entrance using paving stones, and the organization of surrounding vegetation with shrubs. These measures were intended to enhance the integration between the main building and its surrounding environment. Overall, Phase III not only restored the mosque's authentic form through the installation of *serambi sirap* roofing and the reinforcement of the *pawestren* structure, but also addressed functional and aesthetic considerations. The mosque complex was thus organized to align with the values of Islamic architecture while accommodating the needs of contemporary congregants.

CONCLUSION

The Tegalsari Grand Mosque affirms its position as an ancient Javanese mosque whose historical, architectural, and cultural significance is inseparable from the development of Islam in Ponorogo. The restoration undertaken during the 1994–1997 period demonstrates that the preservation of cultural heritage buildings cannot be separated from efforts to recover traditional architectural identities that had been diminished by earlier renovations. Through a phased restoration approach grounded in archaeological data, historical documentation, and the building's physical condition, this conservation initiative successfully reaffirmed the character of the Javanese mosque as an expression of the acculturation between Islam and local culture. Accordingly, the restoration of the Tegalsari Grand Mosque functioned not merely as a technical intervention, but as a statement of commitment to the preservation of a highly valuable Javanese Islamic heritage.

Future research is recommended to broaden the scope of inquiry to include cultural heritage preservation policies, particularly with regard to the formal designation process of the Tegalsari Grand Mosque at the regional government level, so that its preservation may attain stronger legal legitimacy. In addition, comparative studies with other ancient Javanese mosques that have undergone similar restoration processes would enrich understanding of conservation practices in traditional Islamic architecture in Indonesia. Further research may also be directed toward examining the involvement of local communities in mosque preservation as part of a strategy for representing collective memory and ensuring the sustainability of the building's socio-religious functions. A multidisciplinary approach integrating history, architecture, and public policy is expected to strengthen academic contributions to the study of Islamic cultural heritage preservation.

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