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ABSTRACT

This research seeks to fill the gap through a comparative evaluation of the Buddhist pagoda; Dashan Pagoda in Shaoxing, China and Islamic minarets, Mamluk Minaret, in Hama, Syria, to identify how these tall towers embody cultural uniqueness. These two structures are built based on the Buddhist and Islamic cultures are very good examples displaying culture, architectural innovation, and historicism. A pagoda or a minaret emanates a vertical form they can be categorically viewed as a religious emblem with intention to religious practice, namely, vertical signifiers of spirituality and religion. Dashan pagoda is octagonal tiered and of wood construction while the Mamluk Minaret is a stone minaret of thin elegant moldings. Making use of these elements and aspects this research will build on the existing architectural literature by addressing the issue of similarity between the building constructions and usage of religious buildings within the context of different cultures and therefore add deeper understanding of the general relationship between cultures when it comes to construction and usability of religious structures. This study will also focus on how such a type of architectural forms could be created through independent convergence or cultural interaction. Inter-connectedness was made possible through existing trades such as the Silk Road therefore the designs of the religious institutions might have been influenced by cross-cultural exchange. This research will therefore examine whether, as structures such as pagodas and minarets have similar basic forms, they arose from influence or as functionally corresponding solutions to religious visibility and symbolic height necessities. This comparative method will also help to advance knowledge on religious architecture, showing how, while different cultures and religions may come up with different forms of architecture, the forms can nonetheless have similar functions within the cultures and religions in question.

Keywords: Buddhist pagoda, spirituality and religion, cultural interaction, Mamluk Minaret

Introduction

Out of thousands of architectural masterpieces around the world, two constructions are examples of the closest representation of spirit and Culture of the respective countries: one is the Dashan pagoda in Shaoxing, China, the other is Mamluk Minaret in Hama, Syria. The two structures remain important monumental landmarks representing the architects'/builders' philosophies, esthetic sensibilities, and historical backgrounds enshrined in the two structures' verticality and elaborate features symbolizing an attempt to reach the divine. The Dashan Pagoda with the tiered structures of eight sides – an octagonal structure – and the wooden structure does depict a purpose with spiritual inclination like the Buddhist temple. On the other hand, the Mamluk Minaret, with its thin, stone structure with geometrical molding and Arabic writings symbolizing the religious might of the Islamic kingdom makes a statement of architectural importance, and the power and religious importance of the community, hence its centrality as a religious emblem.

Comparing two powerful images: Dashan Pagoda and the Mamluk Minaret, this paper focuses on discussing how and what these two religious monuments represent their religious beliefs and the role of their societies. This study expects to establish the basic unifying concepts of verticality and symbolism of these apparently diverse civilization forms, aspects, and forms of construction materials and decorative components through the assessment of the architectural forms, construction materials and decorative aspects of each civilization selected for the study. In order to understand how each structure has been viewed in the course of history and its contribution to identity creation in the areas concerned, the research will evaluate the implications of architectural presentations in terms of the model to examine other areas of cultural development.

In addition, this shall provide a basis for understanding the impacts which various environmental factors, social political aspects and inter culturally interaction have made in developing similar architectural forms in different geographical regions. In the same context, this learning analysis positions the Dashan Pagoda and the Mamluk Minaret in the context of cross-cultural accumulation and interaction in order to illuminate the broader historical processes and underlying micro-histories that frame situation sacred buildings as pragmatic aspects as well as significant assertions of cultural history and continuity. In this project, "Sacred Heights" I aim to portray these colossal constructions as emblematic connectors of faith, architecture and society and demonstrate the continued relevance of these architectural marvels for the ever continuing search for divine and communal purpose.

Objectives of the Study

- To identify and analyze architectural and functional similarities and differences between the Dashan Pagoda in Shaoxing, Zhejiang, and the Mamluk Minaret in Hama, Syria.
- To understand how cultural, religious, and environmental factors influenced the design, symbolism, and functionality of these two iconic structures within their respective historical periods.
- To explore the potential for architectural exchange or parallel development between Chinese and Islamic architectural styles, examining whether observed similarities arise from independent convergence or cultural interactions.

- To assess the impact of each structure on local identity and heritage, examining how these structures have evolved in significance over time and how they are preserved today.

Methodology

The methodology for this study is structured to provide a comprehensive, systematic comparison of the Dashan Pagoda and the Mamluk Minaret in Hama, Syria. By combining comparative research design, diverse data collection techniques, and a structured analytical framework, the study seeks to uncover both shared and unique characteristics of these architectural forms within their respective cultural, religious, and environmental contexts.

Research Design

The study utilizes a comparative research design to examine the architectural, functional, and symbolic features of the Dashan Pagoda and the Mamluk Minaret. This approach allows for an in-depth analysis of how these structures serve similar purposes—such as representing religious ideals and providing visibility—while reflecting the distinct cultural influences of Song Dynasty China and Mamluk-era Syria. The comparative design will involve:

Cross-cultural comparison to understand how each structure reflects its cultural context while fulfilling similar functional roles.

Historical analysis to contextualize the structures within their respective architectural and religious traditions, providing insights into how their forms may have been influenced by both indigenous practices and potential cross-cultural exchanges.

Environmental adaptation analysis to identify how local resources, climate, and environmental constraints shaped each structure's materials, design, and durability.

Data Collection Techniques

The data collection process will employ a mix of **qualitative and quantitative techniques** to gather a well-rounded view of each structure. These techniques include:

Historical Document Analysis: Archival research will be conducted to analyze historical documents, including construction records, architectural drawings, and historical commentaries on the Dashan Pagoda and Mamluk Minaret. These documents will provide insights into each structure's original design intentions, historical modifications, and cultural significance within its time period.

Literature Review of Relevant Secondary Sources: The study will draw upon a range of scholarly literature that addresses the architectural traditions, religious functions, and cultural symbolism of the Dashan Pagoda and Mamluk Minaret. These sources will provide foundational insights and contextual background for understanding the unique and shared features of these structures.

Literature Review

Historical and Architectural Background

Song Dynasty Architecture (960–1279 AD)

The Song Architecture (960–1279 AD) is characterised by elegant appearance, superlatively mechanical love and balance between structure and spiritualism. In this period, there was the improvement of Chinese architectural technology which employed entice features that make them robust and beautiful like the pagoda to enhance the Buddhism religious and social feature. Indeed, many scholars, drawing heavily from the existing literature, point at both

the patronage for the budding Buddhist religion and the relative stability of the Song Dynasty that most certainly encouraged architectural creativity and temple building Comparative Analysis of Stone Masonry and RCCPAGODA.

Pagoda Design and Structural Innovations

Key studies highlight how Song Dynasty pagodas embodied a dual purpose: to be regarded spiritual tokens and simultaneously express China's progress in the sphere of construction infrastructures. In her book, *Chinese Architecture in an Age of Turmoil, 200–600*, Nancy Steinhardt covers in detail the change from earlier Buddhist architecture to the Song style and how such buildings as pagodas were transformed to manifest a concern with verticality, permanence and progression up. This verticality was obtained through multiplicity in the design and construction with an octagonal or hexagonal structure to achieve better stability and architectural design. In its purpose, the architectural form quite frequently soared upward, thus representing an essential tenet of Buddhist practice—one which posited that the elevation of the structure in some way parallels the practice of the devotee Chinese Architecture: A History. By Nancy Shatzman Steinhardt Cetiya (Pagoda) : Worshipping in Buddhism.

Liang Sicheng also provides a discussion about the complex wooden structures of Song Dynasty pagodas in his work: 'A Pictorial History of Chinese Architecture'. In Liang Sicheng's work much attention is devoted to the dougong – bracket systems that allowed the creation of large, complex structures due to the increased by them loading between beams and columns. The dougong was essential in determining the durability and stability of these high, multilayer buildings especially in areas with prone seismic activity Writing a Modern Chinese Architectural History: Liang Sicheng and Liang Qichao.

Similarly, Fu Xinian, in *Chinese Architecture: In The Art and the Artifact*, the features such as upward-sweeping eaves and the multi-storied construction clearly explain how and why Song Dynasty pagodas differed from previous architectural styles. With examples of these pagodas Fu's research shows the spatial planning of the buildings were calculated to not only communicate physical verticality but also one of spirituality. Eaves, arched upwards gently, making the overall appearance less oppressive as it visually weighed as much as the ground it was standing on, having an impressing balance between earth and heavens above Buddhist Elements in Early Chinese Art.

The Dashan Pagoda located in Shan Xian of Zhejiang province has become the symbol of architects of the Song Dynasty. It comes as no surprise therefore that Dashan Pagoda was constructed in an era that incorporated great technical progress in structural architecture as well as aesthetic enhancements. As an essentially architectural feature, the pagoda in question is also as iconic as one might expect, boasting an octagonal plan, a rich vertically tiered massing conceptually, and motifs that can be seen as forming part of both the form and the aesthetic notion of this essential part of Song Dynasty and Buddhism culture.

Historical Background and Construction

The Dashan Pagoda is said to be built under Northern Song Dynasty and this period was seen as Politics and Economy stability, organised and developed Intelligence. The Song Dynasty followed policies favourable to the propagation of Buddhism and hence affecting the building of more structure such as the pagodas. Intended to act as a temple and cultural asset to the locals, Dashan Pagoda was constructed and represents tales of the Buddhist culture and

has been used as a spot for reflection. Such location within the city of Shaoxing, which is historically known for a number of scholars as well as literary personalities, only added to the purpose of spiritual edifice as well as source of cultural pride. Of Palaces and Pagodas: Palatial Symbolism in the Buddhist Architecture of Early Medieval China.

Architectural Design and Symbolism

Structure and Materials

The Dashan Pagoda is an octagonal multi-story building made mainly of bricks which is different to wooden constructions of the Chinese pagodas of the previous epoch. With regard to construction material, more emphasis on using bricks to make structures because of their elevated height for more resistance in the Song Dynasty. It is also the regular geometrical shape because it is convenient not only in a formal but also in a practical consideration; it provides an aesthetic and makes the structure automatically stronger as load is spread more evenly on to the ground.” These stability more or less were particularly necessary due to the height of the structure it had to endure various environmental factors over centuries. Of Palaces and Pagodas: Palatial Symbolism in the Buddhist Architecture of Early Medieval China.

One of them has to do with the ornate of grouping or arranging the bricks in the construction of the Dashan Pagoda. This choice of material allowed the builders to design a highly vertical Stacking with layer upon layer since wood was known to damage through humidity and the seasonal erratic; rains of the region. Furthermore, due to the use of bricks for construction the facade of the pagoda and its different levels of construction had a possibility to include intricate detail engravings on the stoned walls and also reliefs. All these details are showing the Buddhist ornamentation and the lucky signs so these works emphasised on the religious and artistic role of the pagoda. From Stūpa to Pagoda: Re-Examining the Sinification and Transformation of Buddhist Monuments from Indian Origins.

Multi-Tiered Design and Symbolic Height

Both the height and tiered structure of the Dashan Pagoda was important due to its use as a symbol. Seven floors means each of them contains an element of a spiritual ladder to the next level of purity in accordance with the Buddhist principle. In Buddhism, the building upwards and height represent the progression towards the actualisation of enlightenment and this particular pagoda was in fact built as stories represent a progression of some sort to the ultimate goal, the Nirvana. The design of the Dashan Pagoda’s tiered construction was not only symbolifying this inward religious journey, but acting as a reminder and calling to worshippers. Therefore the curved lines of the roof gives the pagoda a flowing feeling and also lighten the image of the pagoda as it appears to rise towards the sky. This design is also efficient because rainwater falls at zones that are deemed as eaves, thus reducing damage on the foundations of a structure. These design features demonstrate the elegance of the Song Dynasty in the architecture because decorations and designs fulfilled not only symbolic meanings but true functions of buildings as well. Performing Center in a Vertical Rise: Multilevel Pagodas in China’s Middle Period.

The Dashan Pagoda as a Cultural and Community Landmark

But more than its religious blessing, the Dashan Pagoda also had cultural and societal value to Shanghai especially to Shaoxing. Due to its size it was easily recognizable from different parts of the city and served as direction indicator for people and guests of the city. Archives also reveal that pagodas functioned more than a place of religious worship where

people of the community came in a pagoda for cultural programmes, fairs and festivals and even administrative notifications were made. The Influence of Buddhist Cosmology on the Idea of the Geographical Center in Pre-Modern China.

The fact that the pagoda remained visible and prominent only strengthened the function of embodying the local profile of the city of Shaoxing. As a symbol of Buddhism and the Song culture, the construction of Sangzong Dashan Pagoda laid the foundation for Shaoxing City as a city of religious and scholars interest. With the construction of other and temples, monuments signifying the construction of such landmarks made Shaoxing to be a city of significant influence with scholars, monks, travellers making the city a cultural state. Moral transformation and local identity: Reviving the culture of Shun at temples and monuments across China..

Legacy and Influence on Later Chinese Architecture

The Dashan Pagoda has brought significant change in Buddhist architectural designs in China. Thus, its eight-sided, roofed configuration with up curved eaves and multi-storied tiers represented the basis of subsequent subsequent construct of various pagodas and religious buildings in China and other Asian countries. Because of this very both functional and multifunctional construction of the upper floors of the Hall, the Royal Hall of Prayer for Rain set standardized patterns for later religious buildings in East Asia, particularly in Japan and Korea. Recognizing the Correlation of Architectural Drawing Methods between Ancient Mathematical Books and Octagonal Timber-framed Monuments in East Asia.

Influence on Later Buddhist Architecture

Other literature continues to support the impact by Song Dynasty pagodas that Buddhist architecture had into the East Asia. Academic pointed out that features such as these are shown in later Buddhist pagodas, including tiered pagoda structures, upward-sweeping eaves, and ornamental bracket systems. The biomorphic concept of height and upward extension as signs for spiritual growth dominated the Chinese religious building typology and later left its trace on the building designs in Japan and Korea too. This influence reveals the fact that architectural advances of Song Dynasty especially in such constructions as the Dashan Pagoda bore their impact on the Buddhist architectural manifestation even after the decline of the Song Dynasty. As to the special architectural features and aesthetics during the Song period (960–1279), octagonal pagodas of which the Dashan Pagoda belongs to, were characteristic of this period. The following are a few notable examples:

Iron Pagoda (Tie Ta) - Located in **Kaifeng, Henan Province**, the Iron Pagoda was constructed in 1049 during the Northern Song Dynasty. Although made of glazed bricks, it acquired its name due to its iron-like color. This pagoda has an octagonal base, stands at 56.88 meters tall, and features 13 stories. It is celebrated for its intricate tile work, depicting Buddhist imagery, flowers, and animal designs, emphasizing the Song Dynasty's emphasis on detailed ornamentation.

Liaodi Pagoda - Located in **Dingzhou, Hebei Province**, Liaodi Pagoda was built in 1055. It is the tallest existing pagoda of the Song era, standing at 84 meters, and also has an octagonal base. The pagoda is particularly noteworthy for its grandiose height and robust structure, made of brick and stone, showcasing the Song Dynasty's architectural advancements in multi-tiered pagodas with emphasis on stability and endurance.

Renshou Pagoda - Found in **Hebei Province**, this pagoda was constructed during the Song Dynasty, with an octagonal shape and multiple stories. Though less decorated than the

Iron Pagoda, it is another example of the octagonal design, which was chosen for its symbolic representation of Buddhist ideals and stability.

Lingxiao Pagoda - Located at **Puji Temple in Zhengding, Hebei Province**, this pagoda is octagonal with nine stories and made of brick. Built in the Song Dynasty, it is known for its height, slender appearance, and intricate brickwork, which represent the Song architectural style and the era's experimentation with structural elegance and stability.

Pizhi Pagoda - Situated in **Lingyan Temple in Jinan, Shandong Province**, the Pizhi Pagoda dates back to the early Song Dynasty and also features an octagonal design. This pagoda is relatively smaller but has notable religious carvings and reliefs that reflect Song Dynasty decorative trends.

These pagodas depict the ways the eight sided, a multi level stupa and exuberance of filigree work were predominant in Song Dynasty pagodas, particularly those that were buddhist towers of ascension and resistance, and altogether aesthetic taste ^{Pagoda and transformation: The making of medieval Chinese visuality}.

Mamluk Architecture (1250–1517 AD)

The Mamluk period of architecture covers the period from 1250 to 1517 AD and is characterized by high dark light vertical construction, extensive carved ornamentation, the technical elements of pointed arch and dome construction. The art of this epoch, developed in such centers as Hama in Syria and Cairo in Egypt, moulded a remarkable type of elaborated architectural form determined by its religious and social purpose. As has been said, minarets in the Mamluk period were far more than mere architectural appendages to mosques; indeed, in some cases, they were focal points, royal icons, and occasionally, part of the mosque's operational arsenal Mamluk Minarets in Modern Egypt: Tracing Restoration Decisions and Interventions.

Architectural Characteristics of the Mamluk Period

Most of the Mamluk architecture represents spiritual and social architecture where the minarets are most ornate and tall. In *The Art and Architecture of Islam*, Sheila Blair and Jonathan Bloom have named Mamluk style as both decorative and functional with heightened sense of verticality. Minarets were built in order to reach great and increasing vertical dimensions and were perceived as pointers to paradise and up ward movements of believers to heaven from earth, also as reference points by the inhabitants of cities and towns. This vertical emphasis oriented them towards the distance, reminding of the mosque in the middle of the city, and of the religious dominance of Islam in the Mamluk state.

Decorative Stonework and Geometric Ornamentation

The stonework typically elaborate is among other features used in mamluk architecture accompanied by a host of geometric figures. The minarets were normally made to contain inscriptions, fine writings and other geometric designs on their surfaces. These decorations were used for both the religious and aesthetic purposes whereby the inscriptions were normally ranged from the Quranic verses beyond the symbolic religious significance of the mosque, while the geometrical decorations represented mastery in the kind of work the Mamluk was capable of. Such geometric designs forming repetitive, interlocking patterns were expressed on minaret's facades owed to Islamic preoccupation with unity, infinity, and the divine character of a deity Out of Plumb Assessment for Cylindrical-Like Minaret Structures Using Geometric Primitives Fitting. Other features included pointed arches that supported ribbed domes where

grand spacious interiors for mosaques and huge minarets. One of the most traditional elements of Islamic architecture, the pointed arch served as both a structurally sound and a symbolic constructive form; the form pointed upwards to provide an aspect of height and otherworldliness to the structures being built. Large ribbed domes also provided large and more robust ceiling where generous volumes in mosques could imulate the vastness of divine power.

The Role and Symbolism of the Minaret in Mamluk Society

In case of Mamluk architecture the minaret had an aesthetic function and also a practical one as well. This was to pronounce the adhan, where the muezzins climb the structure to proclaim each of the five prayer times in the day. The first function of the Minaret served a practical one as a facility for the Islamic announcement while the second had an artistic and decorative function symbolizing the authority of the Islamic faith. Casting the image of a strength and religious devotion the minaret would go on to become a prominent symbol of the mosque to parts of the city, as well as a representation of the Islamic presence within the cityscape *The Minaret: Between the Constancy of the Element and the Change of Use*.

As Doris Behrens-Abouseif has also noted, Mamluk minarets were used as manifesting political power as well, on some cities where the rulers tried to reaffirm their authority. The degree of its architecture and, particularly, its height was a symbol of Islamic and politically the power of the Mamluks who initiated construction of these minarets. Thus minarets were used as means of finally ending the opposition in the literal as well as figurative sense, this is why many rulers built very elaborate extravagant and immensely tall minarets in order to prove both their loyalty to religion and power as rulers *Review: The Minarets of Cairo by Doris Behrens-Abouseif*.

Case Study: The Mamluk Minaret in Hama, Syria

The Mamluk Minaret of Hama in Syria *Mamluk Minarets in Modern Egypt: Tracing Restoration Decisions and Interventions* may serve as an example of the adherent to the principles of the Mamluk architecture and share the viewpoints of the allied meaning of the ascension, art, as well as utility. Finally, this minaret stands above Hama and gives a perfect epitome of the Mamluk orientation to elevation, ornamentation and signaling. This slenderness, the multi storeys of balconies, the variety of the ornamental stripes also pertains to some of the other major Mamluk architectural principles that relate with the vertical as well as the point of details.

Architectural Features and Symbolic Elements

Still the first idea associates with the feeling of an immediate view is the slim high minaret designed to be seen from afar in order to convey the idea of religious function and domination among Muslims. *Art and Architecture of Islam* noted that according to writers Sheila Blair and Jonathan Bloom, specifically to the Mamluk period were Minarets of meeting/religious and communal that highlighted a symbolically defined Islamic zone in the general city plan. This is well illustrated in Hama where the towering minaret is not only an ostentatious sign but also an 'ascend' which is an Mamluk architectural theme which recurs in Islamic religious buildings.

It bear quotations from the Quran and it also has the decorative bands that are features of Mamluk stylisation. Such decorations are also conducive to the purpose of this structure as the religious sign associated with the idea of Islamic art. Most of the time these are in Arabic scripts; the symbols and messages engraved reflect part of life with regards to faith and the

message basically is a reflection of the Islamic religion to those who get a chance to see the artwork. The ornaments also provide the viewers with the directional movement upwards and that is also related to sensation of flying high, which is related to the minaret shape Monumental quranic inscription on Cairene religious monuments.

In this case the repetition of the geometric patterns on the exterior of the minaret enshrines the orderliness which the Mamluk so much wanted at the aesthetic level. For example, Mamluk architects initiated a process of interconnecting geometric motifs the corridors of which revealed the aspect of the equality of difference that is inherent in Islamic art. Each is used intentionally as part of the structure; thus leading to a rhythmic character that is in harmony with the architectural rhythm of Mamluk architecture in general.

Balconies and Muqarnas

The muqarnas or balconies are specially outstanding in the Hama Minaret. Generally, the Mamluk minarets were established with more than one balcony in which the muezzin has to recite the full Get Out of Jail Free. This general organisational structure is functional and has meaning on all the levels of analysis. In fact, the balconies offered specific areas where the muezzin could shout the call to the prayer and encircle most of the cities with it. In a symbolic sense, balconies also contribute to the elaboration of the shape of the minaret, thus indicating the spiritual path – progression upwards THE INTRODUCTION OF THE MUQARNAS INTO EGYPT.

The muqarnas as an architectural element is a row of several tiers of niches or a kind of 'stalactite vault'. In Mamluk architecture muqarnas act as a mediator between the buildings and dividing the balconies and the body of the minaret. The Muqarnas of the Hama Minaret also present a rather smooth climbing feeling, which corresponds to the religious architectural theme of climbing as an essential element of the Islamic faith. This step-like layered structure guides the viewer's eye up the minaret in stages, each one visually dissimilar from the one below, but all connected and working in harmony to reinforce the single purpose of the structure: spirituality.

Geometric and Symbolic Ornamentation

The features of the minaret's body are the traditional geometrical patterns, writings in the Kufic and other scripts, interlaced and curvilinear scripts sharing Mamluk visions on cosmology and tawhid, and oneness of God. These bands are placed in a sequential manner to provide a step by step look so that the viewer's eyes move upwards with every facade. Geometry is a form of portraying order, the repeatable images, structures in this collection of Islamic art are a result of Mathematics and symbolize divine orderliness and are mathematical in origin. This symbolism is evidenced by the circumstance that the Minarets have symmetrically repeating designs each of which is castellated to contribute to the existence of the entire Minaret ISLAMIC GEOMETRIC PATTERNS AS TIMELESS ARCHITECTURE. These bands also surprise writing in Arab language and the writing are from Quran, apart from giving the minaret a good look these writings help people to be reminded of Quran teachings. vernacular Kufic script extracts from the Quran are traced often in the use, and the other forms of affords are rarer, although nice-looking, still they are the indications of the continuous creation work. The inscriptions on the Hama Minaret are an example of this tradition insofar as the script themselves become the form in which the religious text is embraced when turning an edifice into a space of worship.

Here are some of other minarets that resembled with the Mamluk Minaret of Hama in terms of architectural elements, style, and symbolism:

Sultan Hasan Mosque Minaret, Egypt

The Hama minaret has Mamluk architecture as its grand structure and height: Cairo's Sultan Hasan Mosque has similar architecture. It is much larger nonetheless, having several stories and being adored with the standard geometric motifs seen at Mamluk structures. The two minarets communicate both power and devotion; however, the one on Sultan Hasan's complex is wider and more ornate with muqarnas on at least three levels and a considerably more muscular profile that gives voice to the Egyptian Mamluk fondness for muscular, oversized construction.

Al-Maridani Mosque Minaret, Egypt

The minaret of Al-Maridani Mosque, identical to the Hama Minaret, demonstrates Mamluk architectural concepts and geometrical & floral patterns though it is smaller in size and less in height than the Hama Minaret. Although It is decorated with interlocking bands and Quranic inscriptions, similar to Hama, this design doesn't exhibit high vertical prominence. There were certain differences between Al-Maridani's minaret and Hama's tall and slim minaret; its cylindrical construction give it a more compact Mamluk look.

Great Umayyad Mosque Minaret, Damascus

The Mamluk minaret of Al-Rifai is not the only minaret of earlier period affected Mamluk architecture, the other is the minaret of the Great Umayyad Mosque in Damascus, Syria. It is less elaborate than the Hama Minaret, its structural and formal appearances are more prominent and massive. While the Hama Minaret has bands and inscriptions in the style of the Islamic art, the Umayyad minaret is comparatively uncomplicated but symbolical – it is one of the oldest important Islamic minarets. The two are both religious as well as cultural landmarks of the cities in which they are located, although the Umayyad minaret is not as ornate.

Badshahi Mosque Minaret, Lahore

The royal palace has similar height and luxuriousness of typical Mamluk minarets but is broader and COR more bulbous, embellished with red sandstone and white marble as opposed to the more monotonous stone of Hama. Similar to Hama's minarets, the height and functionality of Badshahi's minarets reflects Islamic authority and therefore community representation, however the decoration style is different, being in the mix of Mughal architectural with local design rather than simple geometry or calligraphy distinguished by Mamluk elements.

Previous Studies

Comparative Research on Religious Structures in Buddhism and Islam

Research concerning religious architecture has predominantly addressed, structures belonging to a similar cultural or religious backgrounds; in similar vein, architectural shapes such as minarets in Islamic region as well as pagoda in the eastern Asia. Through comparing and contrasting structures in the same category of religion and or culture these studies helps in revealing various aspects of architectural development, religion and culture, in addition regional differentiation peculiar to certain religions.

For example, a study based on the analyses of responses that the Great Wild Goose Pagoda Explanation of the Cultural Prototype of the Big Wild Goose Pagoda in Xi'an gave when compared with other Buddhist pagodas in East Asian architecture investigates how such

structures manifest certain specific characteristics recognizable as relating to Buddhist architectural imperatives. The Great Wild Goose Pagoda which was erected during Tang Dynasty has pretensions of Chinese Buddhist architecture; it encompasses features like multi-tiering, bilateral symmetry, and symbolic profusion of height. Architectural studies on this pagoda may focus on aspects of religion for instance the paths of enlightenment of the Buddhist faith, more features in its architectural structure like the multi-storey features and the use of brick structures as opposed to wood, which were more suitable for the climate of the region. It is in these studies where one finds out how Buddhist pagodas are both religious institutions as well as structures, only that these have taken different approaches that suit the need and complexion of China while still retaining some of the core features that define Buddhism.

In the same way, i.e. narrowly domestic approach to the subject matter, common historical and architectural research on Islamic minarets concentrates on the development of the minarets within the Islamic civilization in order to explore the differences in the construction reflecting the regional specifics as well as the shared religious intention of the *adhān* call. Empirical research shows the differences in minaret shapes by the regions, for example, slender high Central Asia Seljuk minarets. A study on the construction technology of the Seljuk minarets in Isfahan with focus on their geometric brick pattern, or the massive intricate Mamluk Egyptian minaret forms. These structures epitomize different styles, materiality, and regional adaptations of features pertaining to the proper religious architectural framework, strictly the signifying of Islamic authority and leading of the pious.

4. Comparative Analysis

4.1 Architectural Structure and Design

The architectural structure and design of the Dashan Pagoda Dashan Formation From Tower to Pagoda: Structural and Technological Transition and the Mamluk Minaret Conservation of a slender historical Mamluk-style minaret by passive control techniques Mamluk History through Architecture: Monuments, Culture and Politics in Medieval Egypt and Syria of Hama are pivotal in understanding how these structures embody the religious, cultural, and functional needs of their respective societies. This comparative analysis covers structural typology, materials and construction methods, and decorative elements to highlight the design intentions, cultural meanings, and practical functions that shaped each structure.

Structural Typology

In this paper, one discovers that the structure of the Dashan Pagoda and the Mamluk Minaret includes an evaluation of the differences and similarities in the aesthetic and sensible purposes of the two structures and their cultural relevance.

Dashan Pagoda: Located at Taiqzhou Island, Most of the construction features the octagonal shape as most Song Dynasty pagodas does; it can be further observed the Dashan Pagoda's multi-tiered as a result of a religious facade and architectural design as well. The use of the octagonal shape not only from the throne but also from an aesthetic stand allowing the surfaces and weight to be evenly distributed and therefore improving the structural capacity to endure an earthquake. The stepped structure, which tapers in at each stage, has the buyers experience that of a development toward a higher ground—this is a concept that is entrenched in Buddhism to symbolize the process of the soul, to arrive at a higher plane of understanding. This shape also creates a motion effect as one looks up to the skyward development of the

pagoda to achieve the spiritual significance of height Research on Dynamic Properties of Ancient Masonry Pagoda with Solid Structure in China.

Mamluk Minaret of Hama: This type of minaret shape is cylindrical with great importance payed to height which is characteristic of Mamluk architectural tendencies to fix the shapes of religion as well as visibility into the city. It is designed to taper upward, which makes it both more visually conspicuous and more stable; the circular cross-section helps to keep up stability particularly because of the conditions, hot and windy as they are in the Syrian climate. This minaret's height represents the tenets of spiritual ascension that are cardinal to Islamic doctrine; it is also a visible signpost to help the congregation locat The balcony is particularly used by the muezzin for the call to the prayer thus affording the structure a practical use on top of the symbolic loftiness.

Materials and Construction Methods

It can be seen that the method of construction and the choice of the type of material for the construction of Dashan Pagoda and Mamluk Minaret were guided by the availability of resources in a particular region as well as- environmental requirements and the need to conform to certain architectural preferences.

Dashan Pagoda: The hall that sits atop a stone platform and is mainly built with wooden was well-made as far as the Song Dynasty engineering and carving craftsmanship can go especially in the area of seismic engineering. Some of techniques, that Chinese builders didn't use nails but intricate joinery using wooden dowels, made the building flexible to sway and resist earthquake movements without formal failure – a valuable property in areas with seismic activities. The wood also provides inscriptions and engravings which gives the product extra durability as well as attractive appearance. Curved up roofs pull the eye upward for more elegance and give protection to the lower floors from rain and sun penetration.

Mamluk Minaret of Hama: However the Mamluk Minaret used stones which were locally sourced, a material suitable for hot dry climate of Syria unlike the Dashan Pagoda. Stone makes the minaret resistant to most of the natural wear and tear ranging from bad weather and gives the structure of the minaret a permanent and authoritarian look. Mamluk architects used workmanship known as ashlar masonry: large well-proportioned stone that are used to create blocks which are cut that they readily fit together without using a mortar in a way that improves the stability and leaves the clear austere lines that were appreciated in this period. The stone surface also offers the ability to create geometric engravings and inscriptions characteristic of Islamic culture which are able to withstand wear and tear of time and weather They also add several layers of religious significance.

Decorative Elements

The creature and writing decorations as well as various details on the facades and interiors of the structures are the supplementations of the culture and religious principles inherent in the specified architectural shapes The Proportions Code and the Environmental Aspects as a Design Generator for the Minarets in Cairo of the Mamluks Research on Dynamic Properties of Ancient Masonry Pagoda with Solid Structure in China.

Dashan Pagoda: The ornamental features of the pagoda relate the Buddhist AWAKENING and spiritual figures. On the wall there are carvings of lotus flowers, dragons and clouds; which symbolizes purity, protection and transcendence which are all core belief of Buddhism. These motifs are often found at the eaves and balconies and what you get is a

sequential explanation of the Buddhist cosmology of the structure as it rises. Every floor has the decorated roof tiles and augmenting cornerpieces in Trije style; Above all, the ridges represent upward structure and the pagoda part as the light bearer of Buddhist knowledge. The projecting cornices, especially those of the decorative type, have the most elaborate designs that express a concept that flows in the space, underlined by references to the gradual progression towards Buddhahood Solving the mystery of China's thousand-year-old wooden pagoda.

Mamluk Minaret of Hama: There is an intricate carved calligraphy band containing inscriptions and geometrical ornamentation typical for Mamluk architecture concerned heavily with Islamic imagery. Suras written on the facade of the minaret add the religious meaning to its construction and stressed the unity of God and Islamic people. These inscriptions are very commonly written at the eye level and which tends to make the onlookers think. Also, muqarnas – the vaginal likeness of stalactites – and carved ornament arabesque increases the complexity of a structure and gives the religious viewer an idea of a real depth which is matched only by divinity, which, as everyone knows, has no beginning or end. The patterns are geometric and reflect the major Islamic tenet of unity being in diversity.

Dashan Pagoda and Mamluk Minaret, though differing in cultural origins and design traditions, exhibit shared architectural intentions: they are symbols of the spirit, provokers of faith and identity signs of people's culture. In their structural type, materialization and finite ornamentation, both structures, however, demonstrate perceptible regional requirements, and spiritual creed, as well as the inherent human tendency to aspire vertically both physically and metaphorically.

Historical and Cultural Context

The historical and cultural context of the Dashan Pagoda in Shaoxing and the Mamluk Minaret in Hama reveals how each structure served its society's religious and socio-political needs. This analysis compares their religious and socio-political significance and community placement within urban landscapes, highlighting how location and function shaped their visibility and influence within their respective regions Mamluk Jerusalem: An Architectural Study.

Religious and Socio-Political Significance

These structures were not only magnificent buildings in Shaoxing and Hama, but had become religious and public landmarks representing authority, people's association, and spirituality.

Dashan Pagoda: Located in Kaifeng, Henan Province, the Dashan Pagoda was constructed during the Song Dynasty, and symbolized the Buddhist architecture visible around Chinese communities. They were religious structures, or stood as evidence for the Buddhist sect within the region and its people, or to signify concepts such as spirituality, education or liberation from suffering. The multilevel form with upwards progression elevated the viewers' thoughts toward spirituality the Buddhist way. Since Song Dynasty, the building of the pagoda was supported by the government and Buddhism had exerted major impact to the society, hence the construction of the pagoda was part of the cultural marker. In addition, pagodas also played a role as community's landmark and acted as library, shrine and event's venue for religious activities. Some of them, therefore, turned into cultural hubs of local communities uniting them through spiritual practices.

Mamluk Minaret of Hama: To the Islamic community of Hama in Mamluk era the minaret signified both, religious and sovereignty aspects. In general, the minarets embodied the might of Muslims and the necessity of their cohesion and presented the signals for the Muslim people's daily rhythmic: the mosque's presence, the call to prayer. The tall and conspicuous minarets including but not limited to the one in Hama, helped escalate Islamic authority within the cityscape and uphold the religion in the aspect of public sphere. Like the Hama minaret, we also saw how the Mamluks honoured religion and culture in their architectural buildings to present the might of the state. Hama being one of the major cities of Syria under Mamluk control, the minaret anchored the position of Islamic authority, providing a physical signal of social, political order while also fulfilling a symbolic function: a call to prayer. The minarets of Cairo : Islamic architecture from the Arab conquest to the end of the Ottoman empire.

Community and Urban Placement

The location of these structures in Shaoxing and Hama is tremendous since each of them appears to be strategically positioned within and mediates the urban fabric in some way; further, the highly visible locations of all four structures can be seen and perhaps are felt from different distances and directions as manifest in the very form and architecture of each building.

Dashan Pagoda in Shaoxing: Located at core or the high terrain of the city, the Dashan Pagoda was placed as a landmark visible across the entire Shaoxing city. Its position enabled it to be visible from different parts of the city, as a symbol of Buddhism and of the shield provided to the people. It also ensured that the pagoda was visible to be worshipped and visited by travelers to feel or relate to the symbolism. They chose the Dashan Pagoda because it was situated within an urban center and therefore can accommodate the local people as they come to pay their homage, celebrate ceremonies and receive teachings from the Buddhist masters. This central location reminded people once again that the temple was a shrine, a locale for religious tourism, and helped to solidify Shaoxing's Buddhist past while curating community identity by bonding over leisurely cultural practices. From Pagoda to Pavilion: The Transition of Spatial Logic and Visual Experience of Multi-Story Buddhist Buildings in Medieval China.

Mamluk Minaret in Hama: The Mamluk minaret under discussion stands in a mosque complex, and the location option chosen contributed to its accessibility as a signal form for the urban Islamic community of Hama. This the minaret was so tall and in conspicuous location, people both travelers and local would be able to see it and use it to navigate their way. Being the point from which the call to prayer resounds, the minaret vis-à-vis, facilitates a link between the inhabitants of the city, and the mosque that reiterates the daily routine that is/was anchored on religion. This place also had the socio-political use, while the minaret was placed on the most dominating height, it was a symbol of the Islamic community's power, despite the Mamluk domination. It stands at the heart of town and is clearly visible signifying that minaret, as a symbol of unity and cultural entity complimented by the unification of the religion of Islam in the forming of the Hama community.

Symbolism and Functionality

The manners in which the Dashan Pagoda in Shaoxing and Mamluk in Hama act as symbols and function to address the sacred and secular needs of the people are demonstrated here. This section discusses how height, shape, and tiers of each structure are significant in

context of Buddhism and Islamic architecture, as well as practical uses of these structures to accommodate the needs of the societies where they were built, to function as points of worship, observation and congregation CRESWELL AND THE ORIGINS OF THE MINARET Splendours of an Islamic World: The Art and Architecture of the Mamluks..

Symbolic Meanings

The height, shape, and multi-tiered design of the Dashan Pagoda and the Mamluk Minaret are rich with symbolic meaning, reflecting the spiritual values central to Buddhism and Islam.

Height as a Symbol of Spiritual Elevation:

The specific features of the height, shape and tiered structure of the Dashan Pagoda and of the Mamluk Minaret are clearly in line with the symbolic values of the corresponding religious beliefs which are basic to Buddhism and to Islam.

Height as a Symbol of Spiritual Elevation:

Dashan Pagoda: In Buddhist architecture, vertical dimension signifies loftiness and progression on the path to] Nirvana. The nature of the pagoda and its calm design area indicative of the climbing up to a higher levels of spiritual experience and inner serenity. This symbolic elevation is in tune with fundamental Buddhism which places the progress along Eightfold Path and the elevation to Nirvana in its center. Every tier of these multi-tiered structures is thus a posture in this spiritual quest, and the spatial reminder that the observer sees visually is that of letting go, of learning, and of illumination. When a structure gets to the heavens then it tries to touch the sky, which is the role of the pagoda: bridging the physical and the divine Typological study on the evolution of early Chinese buddhist monasteries: layout of pagoda, buddha hall, lecture hall and pavilion tower.

Mamluk Minaret: Minarets in Islamic architecture are usually the largest constructions in the sphere of a inhabited territory, thus emphasizing the suggestiveness of the religion's presence in the life of the inhabitants. The height of the minaret of Al-Shibliyya in context of Hama is a symbol of spiritual ascendancy as well as the solidarity of the Muslim society with the guidance of Allah. Suspended above the other construction in the area, the minaret is dedicated to the relation with the Allah and the call to the prayer and is indicative of the Islamic aspiration of the religious regeneration and piousness. In both the case of the pagoda and the height here the vertical is a metaphorical connector, but in addition, as with the Chinese temple, the vertical here is a way of asserting strength, of asserting the power of Islam and the presence of the religious in mainstream society.

Shape and Tiered Design:

Dashan Pagoda: Another interesting feature of the external structure of the Dashan Pagoda is that its plan is octagonal, and the number eight has great meaning in Buddhism as one of the eight branches of the path prescribed in the path of a Buddhist person. This design is tiered; nothing exemplifies the Buddhist emphasis on ascending and finding equilibrium as clearly as the stepped building is, at the same time, every floor gives you a visual clue that you are ascending to a higher plane. The pagoda's bilateral and bilateral symmetry and proportioned are opposite the Eastern order and balance that corresponds to the Buddhism principles.

Mamluk Minaret: Described as twisting in form, the cylindrical shape of the Hama Minaret is succeeded by several segments, or tiers and, their construction offers structural and

unified thematic meaning in the Islamic tradition. The interior of the concept of minaret does not have sharp edges, and its upward flowing design is an idea that Islam believes in oneness and unity, the whole image of Allah is vast. Whereas in the model the tiers are a symbol of Buddhist stages of progression, in the minaret tiers correspond to a unite ascending shape, as it reflects the tenets of unity so central in Islam and continuity of the earthly and the celestial.

Functional Aspects

Beyond their symbolic meanings, the Dashan Pagoda and the Mamluk Minaret served practical roles that met the spiritual, social, and community needs of their respective societies.

Worship and Religious Rituals:

Dashan Pagoda: The Dashan Pagoda served as a place of worship, religious tourism as well as a meditation point for Buddhists. Each floor of the pagoda was used to store Buddhist relics, statues or scriptures, so that, visitors could have a contact with symbols of Buddhism on each floor. Its physical layout also commits the worshippers to a sacred movement upwards and thus a physical and more spiritual circulation through the pagoda, which would in turn affirm prayers and adoration in every level as they circulate. Furthermore the pagoda functioned more as a shrine or temple and people from various regions visited it to pay their respect to the deities of the place and to receive blessings.

Mamluk Minaret: The first and the main religious usage was as a caller to prayer as the muezzin recited the adhan five times a day from the balcony of the . It also created unity in prayer, helped to distinguish such occurrences of the day and also helped call the Muslims to task about their responsibilities. The structure of the minaret and its position is intelligently loftier and cleverly positioned to ensure its top projected to the public and its call echoed throughout the city. Consequently, the minaret not only served an Ave for enhancing the performance of religious duties but also for underlining on the persistence of Islamic features in the urban setting.

Observation and Community Events:

Dashan Pagoda: Since the pagoda was tall structure people would use it to look at the landscape and look at the city below. At the higher floors, people could have an opportunity to watch the spectacular sights that would increase the functionality of the pagoda and provided the community with the recreational area where the people could communicate with nature and the city. At times they also contained chambers where defenders of the city could make their stand, and even acted as watchtowers helping to defend a city as they offer an elevated vantage point to watch for enemies. Indeed, the base of the pagoda was frequently used as a venue for festive assemblies, religious rituals or educational seminars and therefore was establishing community facilities to promote cultural exchange Structural Performance of Typical Beam-Column Joints in Yingxian Wood Pagoda - An Experimental Study.

Mamluk Minaret: Although the primary purpose of a minaret was to serve as a mosque, the height of the tower allowed for lookout over nearby meadows and especially in the urban setting such as Hama where the upper part of the minaret was built on the city's roof. Actual design features of the buildings, for instance the upper balconies, offered a podium from which to observe the city and its surroundings which introduces a marginal concept of defence in case of riots or invasions. Moreover, for showing the prominence of the Mosque complex, the minaret's premise was also serving as a venue for social activities that helped to enhance social interconnectivity of the Islamic community.

Nonetheless, Dashan Pagoda and Mamluk Minaret show the similarity in their architectural design and the general utilization of the structure at that period of origin that was fundamental for supporting a representational purpose as well as practical use. Their size, form, and tiered shape are symbolic of celebrating spiritual values like rising high and touching the divine while their purpose of use is both for religious purpose and also social related purposes. By their significance of meaning and purpose of uses, these structures keep on reminding the principles of Buddhism and Islam and are exemplifications of the distinctive labeled cultures of the communities.

Influences and Cross-Cultural Interactions

The Dashan Pagoda and the Mamluk Minaret that stem from two different cultural and religious systems are compared and interesting similarities are described in their shapes and functions. Understanding what kind of outside factors might have provided stimuli to fashion such structures, and how these structures may have recursively influenced their neighbouring regions, helps us further our understanding of architectural diffusion, transfer, and signification processes across cultures.

Architectural Similarities and Differences

Architectural Convergences:

Shared Height as Symbolic Elevation: The both Dashan Pagoda and Mamluk Minaret have focused on the usage of the vertical dimensions; they are the symbols of spiritual illumination in the large city. That both needed greater height, indicates that a familiar structural response was required to satisfy the demand for religious visibility and a statement of spirituality. In both cases height facilitates the concept of a reaching toward the divine and therefore each structure serves as an icon of faith within its city.

Multi-Tiered and Segmented Designs: The building surface of the two forms is divided by divisions forming a tiered form while the segmented or tiered structure implies a rhythmic upward movement. This shared design element may be a result of the basic design approach to verticality that provides stability. Other authors have discovered that verticality is a basic design factor that has a similar effect of supporting and reinforcing the main spiritual journey. All tiers signify levels of spiritual or philosophic evolution—Buddhistic and Moslem, respectively. The use of levels creates a functional unity and at the same time – a metaphor that explains an ascending path, which reflects spiritual growth.

Symbolism of Shape and Decorative Detail: The geometrical construction of the Dashan Pagoda with eight faces and the cylindrical structure of the Mamluk Minaret both place stress on the shape and ornaments in a way that is nonetheless culturally specific yet which targets symbolism at the end of the day. The octagonal structure of the pagoda and the circle round the minaret can locate the Noble Eightfold Path in Buddhism, the circle symbolizing unity and continuity in Islam. In both buildings there is interlocutory component including inscriptions or carvings that can be completed with religious standpoint, making both structures artistically formed and served the purpose of the religion.

Architectural Differences:

Structural Material Choices and Techniques: Because of specific conditions of environment and availability of local resources the construction materials of the two structures differ. The crafts-manship of the Dashan pagoda, which is made of wood and stone, is in

concert with the traditional Chinese architecture and the use of wood and stone; the major concern is joinery and stress resistance to earthquake. On the other hand, the stonework and use of geometric carvings of the Mamluk Minaret are the author's general observations of Islamic architectural design and Mamluk craftsmanship. They also show different ways, in which they used local resources and climate and, at the same time, kept each culture's style preferences.

Religious Functionality and Symbolism: Minaret seems to be tied by default to Islamic practice since it specifies a point from which the call for prayer is given and its formative principle is the ability to be heard and seen. In this case, the pagoda does not play the part of the auditory shrine but instead responds to the need for a constantly progressing visual and meditative climb toward higher steps of contemplation. The various symbols within the context of – the pagoda and the minaret become markers of identity notably physical and spiritual yet in different context of use and religious function.

Pathways for Cultural Exchange

Influence of the Silk Road on Architectural Trends:

The famous Silk Road was significantly more than a connection for trading in silk, spices, ceramics, and so on but also a center of the interchange of culture, religion, and technology. Architectural and symbolic concepts moved on this corridor and facilitated architectural interchanges between East Asia Central Asia and Middle Eastern part of the world. Silk Road connected areas as different as China, Persia and Mediterranean thus playing important role in spread of religion, including Buddhism and Islam as well as in sharing of architectural information.

Buddhist and Islamic Cross-Cultural Encounters: When Buddhism and Islam began to disseminate along the Silk Road, the architectural shapes like the pagodas and the minarets, for example, had probably borrowed something from their neighboring architectural styles. They suggest that people who travelled from one region to another such as travellers, scholars and artisans became mediums through which new structural forms and decorative techniques were brought in and passed to the architects to incorporate in style that would be appropriate to the region. For example, the art of constructing Islamic geometric patterns may have led to the formation of geometric patterns of Chinese Buddhist architecture whereas, Buddhist designs could have been developed from designs of Islamic structures met during trading along the eastern routes.

Transmission of Knowledge and Techniques:

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Adaptation to Environment and Geography

Due to differences in regional settings and resources availability both in construction area, Dashan Pagoda in Shaoxing and Mamluk Minaret in Hama are vivid examples that show how geographical and climate conditions may affect religious structures. Through analyzing these environmental conversions, the author gives the audiences the understanding how Buddhist and Islamic structures respond to the local issues with the contextual material selection, architectural forms and works that are in harmony with their context.

Environmental Adaptation

Addressing Climate and Seismic Activity:

Dashan Pagoda: This paper aims to raise an understanding of how the Dashan Pagoda, which was constructed during the Song Dynasty in the Shaoxing area, deals with problems of humidity, particularly rainwater, and structural stability regarding earthquakes. They are located in an area that is sensitive to earthquakes which places attention to stability as a primary architectural design consideration. Thus, Song Dynasty architects were able to design detailed joinery which could allow the wooden frame to move from its base while sufficient for the earthquake, though slightly. This structural flexibility was vital for this building, as it allowed it to be overtopping and resist forces that are naturally inherent in tall structures.

Mamluk Minaret in Hama: Present in Syria; where weather patterns could be severe; this structure known as the Mamluk Minaret channels the heat through the use of stones that are cramped. Some of the features include the internal temperature control of the structure resulting from the thick stone walls required for weather resistance. Third, it is a non-expressive construction of stone, which does not erode or wear out easily in a semi-arid climate. It also incorporates the wind loads more so at higher levels of design; the roundish shape would give the structural resistance against gust especially with the muezzin's call to the faithful to pray heightened and audible over long distances.

Adaptation to Available Materials:

Local Timber and Stone in Shaoxing: Dashan Pagoda relies on wood and stone – both of which were easy to procure in the Song Dynasty. Timber was preferred for its flexibility that enables the pagoda to stand seismic forces, while stone gives strength at the foundations. This has been done without nails or screws and shows how the local materials have been adapted and the craftsmanship of this area is evident through the timber joinery. This arrangement of the roof and the many-tier roof also helps avoid water stagnation on the premises of the building in order to protect the wooden structure from rotting.

Stonework in Hama: The Mamluk Minaret is made of stone which is a common material available in areas of Syria, and it is resistant to both heat and sometimes rain. The stone construction also isolates the space within the minaret in addition to giving it the mass and balance necessary for a slender structure to withstand vorticular stresses and high wind pressure. The kind of stone used was appropriate to the region and Mamluk fashion of elaborate

stone carving having geometric patterns of the doors embracing both architectural and practical dimensions fit for the climate.

Local Adaptation Techniques

Topography and Urban Placement:

Urban Center of Shaoxing: The Dashan Pagoda is located in Shaoxing within the urban area and due to the absence of much elevation in the city; it would be considered expansively conspicuous. This location makes it possible for one to notice it when being in some part of the city meaning there was Buddhist presence in a particular part of the city as well as guidance. Due to its elevated position it easily distinguishes from other lower height residences and businesses serving both as a place of worship and an urban sign of faith.

High Visibility in Hama: Just like the Mamluk Minaret which has been integrated into Hama urban plan it can easily act as a focal point in the area. Being situated higher, compared to other construction elements, the minaret provides a wider area to hear the call to the faithful while its very visibility makes it the symbol of Islamic devotion. The typical Mamluk design of a cylindrical form is used here to accommodate lesser complex ground surface, so that the whole structure can be erected to the desired height without wobbling.

Cultural and Aesthetic Integration with Geography:

Dashan Pagoda's Eave Design: Besides the aesthetic quality of tiered eaves which slope upwards at each level in the case of the Dashan Pagoda, there is a rationale. It is regarded as a rain path design, which also expels water from the facade required to protect the wood from moisture in a damp climate. This makes it look compact and well balanced. The pagoda is octagonal symmetrical and balanced structure which does not intrude on the natural forest background and is fully compatible with the Feng Shui philosophy of harmonization with nature.

Minaret Ornamentation in Hama: The Mamluk Minaret's geometric carving styled with the figures also supports both Islamic art principles and the stonework accessibility as a carving option. Usually they portray flowers and geometric shapes that have been chiseled to be as weather-resistant and as reflective as possible in relation to lighting up the city's skyline. The aesthetic and environmentally sustainable construction of such buildings and structures demonstrate how the Mamluks changed their structures beyond function to reflect their ideologies in the Syrian context.

Comparative Insights

Though the design of both the Dashan Pagoda and Mamluk Minaret reflects accommodations to the local climate and the available resources, the depictions of these structural designs differ by culture. It can be said that the Dashan Pagoda echoed the Buddhist architectural style, which focuses on adaptability as evidenced by seismic factors as well as rainwater management and a symbolic rise in performance as a pyramid. In contrast, the Mamluk Minaret has a preference for stone material on both exterior collective skin and interior individual core, substantial insulation contrasted energy economy, and a visible presence immediately associated with Islamic architectural icons, illustrating an Islamic architectural strategy of longevity, visibility, and artisanship.

Finally, changes in the local surroundings and climate, as well as geographical conditions in the construction of these buildings show that both buildings represent cultural architectural solutions and religious meaning of architecture in both cultures.

Conclusions

Comparing the Dashan Pagoda in Shaoxing, China to the Mamluk Minaret in Hama, Syria, similarities and differences of these two forms of architecture have been identified. Similarities include a rather dramatic stress on the themes of height and hierarchy as both structures were used for spiritual ascending in respective religion. The two buildings that will be compared and contrasted in this paper are the Dashan Pagoda, which has eight octagonal tiers and the Mamluk Minaret, with its slim silhouette is both an aspiration towards the divine. More also, they are central to spiritual observances and common assembly purposes and hence depict pivotal points of spiritual tenets and ethnic identity. They also inlay elaborate supporting designs that provide symbolic significance – Buddhist styles in the building of a pagoda and calligraphy along with geometrical designs in the construction of a minaret.

However, there is a large variation in architectural design and the material to be used on the projects. The main material used in the construction of the first part of the Dashan Pagoda is wooden one; therefore the architecture of the building follows the Chinese traditions. The Mamluk Minaret, on the other hand, is built of stone and the architecture corresponds to Islam. There are apparent façade considerations but, this also has a great impact on the structural aspect as well. Also, the cultural background and the developmental changes of structures vary a lot. The architecture of the pagoda based on Buddhist cosmology of the Song Dynasty whereas the minaret based on the Islamic principles and the socio political setting of Mamluk period. It also reveals that, even within a single country, each structure faces and responds to unique regional issues – for example, while designing for Shaoxing, the issue of seismicity was relevant, whereas designing for Hama, the emphasis was on arid conditions.

The resemblance of the two structures can therefore be as a result of functional evolution and cultural interaction. It is functional necessity that Towers and domes/ belfries /dome-like structures are similarly necessary in both cultures, as are niches and reliefs, of varied subject matter: here, religious, there, mythological; Functional borrowing is also plausible when it comes to motifs and their meanings and uses, particularly if cultures were connected through trade during the medieval period and earlier, when both cultures were certainly involved in the trading activities along the Silk

This research has other implications for the study of parallel occurrences in the international architectural context. Though they insist on the fact that there may be numerous possible ways to come up with same architectural solutions within different cultures they also stress how these cultures might enrich each other. This research enriches our understanding of architectural development and contends that while cultural affiliation is a significant predictor, common social processes and environmental pressures result in similar architectural manifestations in distinct global regions.

Still more comparison studies could look at other similar constructions like Buddhist stupas and Islamic minarets in various cultures, as well as the relative effects of geographical, cultural and temporal variables on such artefacts. However, further research into contemporary preservation technologies, which might be relevant to both examples – the Dashan Pagoda and the Mamluk Minaret – would be useful; they should consider the usage of 3D modeling and restoration technologies that allow preserving such monuments as historical relics. Studying effects of globalization on traditional architecture can also provide information about how modern trends influence practice of protection and use of historical buildings. Thus, analyzing

stories being told about these constructions and ways they are understood can reveal the changing roles of architecture as a historical resource in perceiving belongingness. In sum, this research does not only help expand the knowledge of the Dashan Pagoda and Mamluk Minaret but also of architecture in regard to its encompassment of cultural values, history and religion.

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