

Study of The Decorative Diversity Elements on Buildings During The Socialist Period in Mongolia

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ARTICLE INFO

Article history:

Received: 30 April 2024

Received in revised form

Accepted: 15 October 2024

Available online: 23 June 2025

Keywords:

Motifs and Ornaments,
Architectural Heritage, Buddhist
Monasteries, Mongolian
Architecture, Diversity

ABSTRACT

Mongolians are nomadic people, because of the extreme climate conditions, nomadic people were living in a nomadic lifestyle in the four seasons of the year. Nomadism has survived to this day and is a way of life in perfect harmony with nature. Therefore, the Nomadic Mongolian did not have the opportunity to build a city and live in a settled place, but due to the influence of Buddhism, the need for a settled life such as "khuree city" where the monasteries were created. Influenced by Buddhism, Mongolians began leading settled lives and establishing monasteries. This led to the rise of unique Mongolian architectural styles in the 17th century, marking the end of the Feudal era. The style further evolved and developed until the Socialist era (1921 to 1989), when buildings incorporated Soviet-style characteristics. In 1948, the first Mongolian architects were trained in the Soviet Union and initiated the construction of buildings in Mongolia. Although the buildings were constructed in the Soviet style, Mongolian architectural elements were incorporated. Traditional Mongolian motifs and ornaments were included into the Socialist buildings, reflecting earlier monasteries and totems used for both interior and exterior decorations. Mongolian design is rich in ornaments and motifs, each having its meaning. Their incorporation greatly enhanced the aestheticism of the buildings. There's substantial research on various architectural periods, but minimal study specifically on the decorative elements of Mongolia's Socialist-era buildings. There's a significant gap in knowledge about the impact of Mongolia's Socialist era on its culture, architecture, and the link between architecture and regional socio-economic statuses. Therefore, the aim of this research is to evaluate and comprehend the influence of the Socialist period on Mongolia's architectural styles with a focus on decorative diversity, and to study the correlation between architectural aspects and socio-economic statuses in different regions of the country. Field research with observations and photos will be used to collect primary data from Socialist-era architectural sites in Mongolia. Secondary data will come from academic articles, history records, and archives. Data will be analyzed qualitatively, categorizing decorative elements by form, material, and motifs. The association between these features and socio-economic factors will be examined using correspondence analysis. The study's findings and results will be finalized post-study. The aim is to gain insights into the diverse decorative elements and their significance during Mongolia's Socialist period. The conclusion will summarize the study's main findings, emphasizing the importance of architectural diversity in Mongolia's Socialist period and its links with socio-economic conditions. Future studies could look at how these buildings are preserved or compare Mongolia's Socialist-era architecture with similar periods worldwide to better understand cultural and political impacts on architecture.

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1. Introduction

During the socialist period, the main works that defined Mongolian architecture were created by combining the styles of neoclassical and other modern movements with the principles of traditional Mongolian architecture and, when necessary, incorporating Mongolian motifs into modern decorative elements. Rather than mentioning the obvious results, the study aims to investigate the use of Mongolian style in detail and prove how the use of motifs makes the buildings Mongolian architecture. Based on the results of the research, we also bring on examples how to use Mongolian styles, especially motifs, in contemporary buildings, so that important buildings can look Mongolian.

B.Adiya, a researcher, architect, and restorer, defines the pattern decoration: the color and image of Mongolian national architecture is found in the incomparable decoration, including colors, carvings, sculptures, moldings, castings, sewing, and quilting, in general, anything that can be created by human ingenuity. It is mentioned in the ancient scriptures that Mongolians used 64 different basic colors to build buildings with the knowledge of color harmony and its use. When matching the colors of the ancient architecture, it is said that the owners of the four spiritual guardians /maharanza/ guarded the entrance, decorated with many religious auspicious signs on the upper part of the building, and especially powerful people decorated the facade with motifs and ornaments [1].

To conclude from this, the way of reflecting Mongolian motifs and ornaments in architecture should be studied separately. The use of motifs and decorations by nomads is more likely to be used in household items and clothing. The use of patterns in architecture is mostly related to the period after the spread of Buddhism. When Buddhism spread in Mongolia, they tried to keep the Mongolian style in the construction of Buddhist temple architecture. Recent archeological research shows evidence of the use of traditional motifs in the cities and buildings from the Hun dynasty to the Mongol Empire, and there are many records of buildings with beautiful motifs in written sources. However, there is no generally researched and proven information. This is not a question of the fact that motifs were not used before Buddhism, but because buildings with those motifs have not survived to this day, and it is impossible to know what the pre-Buddhist architectural works looked like. Therefore, the research was done based on the existing architectural research.

The research is concerned with two components: Buddhism and Socialism. The use of Mongolian motifs is one of the main ways to make buildings more aesthetic. Mongolian artisans have been developing the method of using motifs in architecture with a precise harmony of form, design, color, and content that meets artistic taste. Nowadays, if there is a need for architects to use Mongolian design in architecture, they should pay attention to using traditional planning principles as well as appropriately reflecting the ornamentations.

2. Methodology

Building ornamentation and historical context

An attitude that arose when the need to decorate the building made it impossible to define the building structure in many ways. Each civilization used different patterns in architecture to determine how to decorate the building. Among these architectural movements, the classical style of architecture, which is most widespread throughout Europe under the influence of religion, is the Hellenistic style that followed Greece and Rome and became famous in the world from the 15th century.

After the establishment of the Soviet Union, Russian architecture, which developed naturally after the establishment of the Soviet Union, re-applied classical architecture under the influence of I.V. Stalin for political reasons. Since the 1940s, the classical model has been re-applied to the socialist cities due to the idea that the newly developing cities of the Soviet Union should look the same as the highly cultured European cities. In the 1920s, Mongolia, as a socialist country, began to build new urban settlements under compulsion and choice. At this time, I. V. Stalin's neoclassical architecture

was reflected in Mongolian urban planning. From 1947, the first Mongolian architects who were trained through academic training worked on classical style buildings. This is the reason why most of the buildings included in the first general plan of Ulaanbaatar, developed between 1947 and 1953, have a neoclassical design. After the death of I. V. Stalin in 1953, the influence of the neoclassical trend decreased in the Soviet Union and Mongolia. Buildings built in the next phase of the downtown area of Ulaanbaatar began to adopt a modern style from the 1970s. Architects began to create their works by selecting architectural styles that interested them. The buildings we are taking as examples vary in their time of construction and their architectural styles.

During the period of socialism, architects used to respect the traditional approach as much as possible when planning the buildings to be built in Mongolia and reflected them appropriately in their projects. Of course, it is not possible to keep every building with Mongolian design, so Mongolian design was used by making the most optimal solution according to the given situation. The most possible option was to use motifs to make the building look Mongolian.

Mongolian design principles in architecture

Studying Mongolian design reveals three main conditions. It is represented by 3 factors: 1. shape \pyramid-shaped\, 2. shape \triangular\, 3. spatial relation \zero square or circular structure\. In addition, one important issue that should not be overlooked is the condition of the use of patterns. In short, it was found that Mongolian buildings use light patterns without burdening them, and based on the above-mentioned 3 conditions, they seek beauty through shape, image, and spatial relationship. However, the architectural decoration that is thought out and used rationally will occupy an important place in Mongolian design principles. Therefore, 4. decoration was defined as the 4th principle to be used in Mongolian design [2].

Mongolians' traditional approach to buildings

Mongolians have reflected the above principles when building buildings since ancient times, and especially paid special attention to the decoration. The extent to which these principles were incorporated was indicative of the building's importance. When decorating the palace or the most important buildings of the settlement, they pay special attention to traditional motifs and shapes. Later, during socialism, when buildings with modern architecture were planned, Mongolian design principles were reflected while determining the current direction. In particular, it was necessary to reflect the national style in the main national buildings, such as the Central House of Culture, the Drama Theater, the Lenin Museum, and the Wedding Palace. As a result, these buildings are today regarded as masterpieces of socialist architecture. Therefore, these buildings were used as examples in the research work. What are the characteristics of these buildings, how they simply expressed the Mongolian design principles, reflected their decorative elements and the general shape of the building in the modern architectural style, becoming not only the architectural heritage of the capital of Mongolia today, but also its appearance.

Mongolian traditional decorative element

When using decorative elements, they are used from household items. National tradition is the form of converting and using the patterns reflected in the daily objects that we use into buildings. Urban settlements were established and the size of buildings related to them increased. These buildings had to be decorated against their will. At this time, when we were trying to make the buildings of the temples built in a Mongolian style, the patterns that we used in our daily life were reflected in the architecture. On closer inspection, Mongolian motifs are more simplistic than the motifs that decorate other Buddhist temples.

Because the decoration of the church is done in a fixed style, so that no one can change it at will, but there is an unwritten law to apply it in a way that it is passed down and enriched. Exterior decoration of buildings can generally be classified into five categories. 1st is the top layer, 2nd is the pavement layer, 3 is the bone layer, 4 is the wall layer, and 5 is the road area and the floor [3].

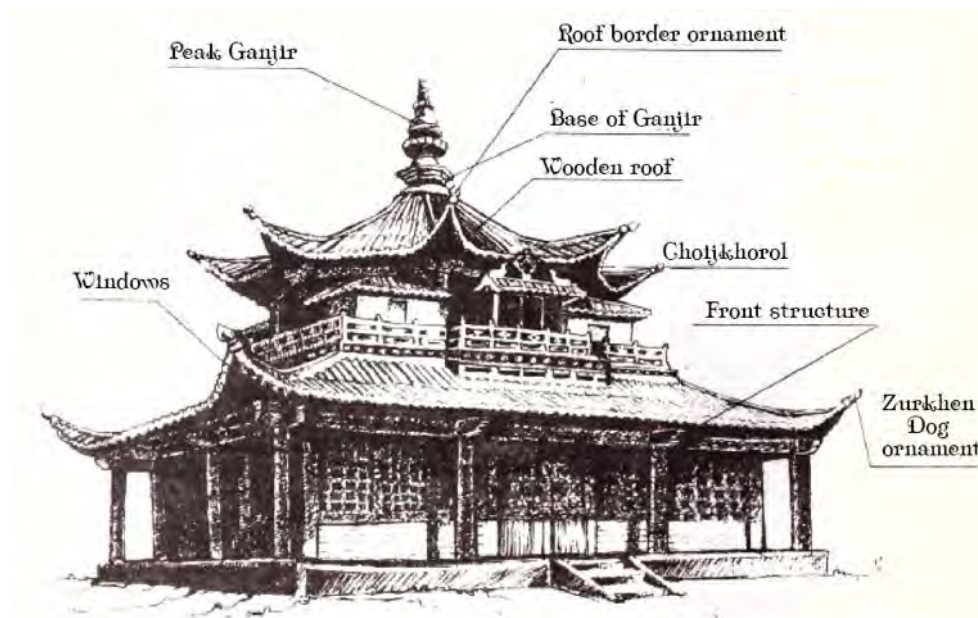


Illustration 1: Dorjapvan Temple, at Zuunkhuree. B.Ahya, Mongolian architectural ornaments, p.15

Vernaculars refer to uniquely shaped objects with special symbols placed on top of religious structures, including ganjir, jantsan, choijkhonorol, and other decorations. It is a tradition that God does not pray in a temple without Ganjir. Ganjir is a symbol of respect for God's home [4].

There are many peaks in the church, but the one that should be mentioned here is Teluur ridge or Mukhar pyramid. This roof is said to have been created by High Saint Zanabazar himself. The roofs of wooden-roofed dugans such as Gandan Dugan of Gandantekchenlin Monastery and Batsagaan Dugan of the Eastern Range are related to this. This model later began to be used as a key element in Mongolian architecture [5].

In the course of the historical development of the building architecture of any nation, its roof covering is solved differently, and it is one of the main problems of building design. Since ancient times, Mongolians used to ingenuity to construct the roof of the building by creating a network of knotted trees and covering it with pottery, planks and other materials to protect it from rain, snow and other natural forces. Therefore, since the top of the building is made of artistic design and indecipherable writing, it becomes a determinant of the style and shape of the building. It can be considered that this design was passed down from the Hun dynasty to the present day, and it was decorated with animal and other elaborate images to keep it strong and rich in meaning. Since ancient times, the golden roof has been used because it was used to create peace. Therefore, 1.the roof is, the top of the temple and its types; 2. Characteristics of the roof structure and materials; In the 3rd section, we can consider the classification of the roof and its meaning [6].

The wooden structure is the internal structure of the temples and shrines, consisting of the network of bearing walls, wooden beams, junctions, curtain walls, bearing and other columns. This wooden network is the structural skeleton of the building. This 'wooden knotted strands' looking has become the artistical characteristic of the workshop places [7].

The wall of an ancient religious constructions refers to separate the inner space from the outside world, and has the basic structure of doors, frames, and windows. The retro interior and exterior walls of the church create a luxurious environment that gives the crowd a sense of awe and pleasure. In

addition to the pictures on the outer wall of the theme of banishing evil, striving for peace, and blessing for a long time, it also indicates its purpose. On the inner walls, images of gods, monsters, and mythological themes were painted [8].

Mongolian traditional motifs

Traditional motifs have been formed since ancient times, and because they are a source of expression and symbols of the national customs, they have a deep content and a special meaning for each of them. In Mongolian traditional motifs, have been preserved in women's jewelry, men's jewelry, weapons, saddles, household artifacts, shamanism, religious objects, architecture, and Mongolian state symbols. A careful study of traditional motifs is essential to defining a pattern. The national form is also manifested in the form of content that is not revealed by the unique external form. Among the traditional arts, the motif is a deep and elaborate art in terms of its symbolic content.

Mongolian ornaments can be divided into 5 classes:

1. Geometrical motifs
2. Vegetal motifs
3. Symbolic motifs
4. Animal motifs
5. Natural motifs [9].

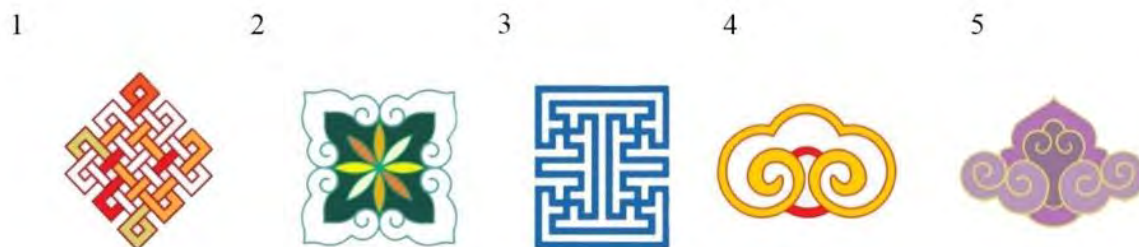


Illustration 2: representatives of each of the 5 classes of motifs

But today, architects combine traditional patterns with modern materials and methods to create a work called Mongolia. There was a need to make innovative designs with decorations. After the operation, the building can be identified as having a Mongolian design.

Architectural style

In the development of modern architecture in Mongolia, it was closely related to the construction, technology, investment, and political conditions of the time. Because all construction orders will be the Mongolian People's Republic, and it was responsible for giving its requirements and orders to the architecture according to the available conditions. In such conditions, it was difficult for the architect to come up with an interesting design solution. This creates a requirement to harmonize the general requirements given in the background with the Mongolian Style.

Due to cultural influences, there is little research on the models used in Russian architecture. This is ideological, and the value of these studies is reduced by the political context of the country in which they are used. Russian cultural influence prevails in our country, so the buildings built in our country have designs similar to those of Russia.

Result Of The Study

In the course of the research, it was aimed to determine how decorative elements in architecture were reflected in buildings of different styles. In order to study how decorative elements change

according to the architectural style, the buildings that were considered to be different in terms of style and built in Mongolia during the socialist period were selected and studied. In this

1. The Cultural Center
2. The State Drama Theatre
3. The Lenin Museum
4. The wedding palace

Central Cultural Center

The building of the Central Cultural Center was ordered by the Ministry of Culture. Soviet constructors built over a period of 4 years and became operational in 1987. The exterior decoration was inspired from the Secession of Vienna, especially the golden ornamentation. The interior was decorated following the Art-Deco principles.

The building has golden decorations, and the design of the decoration was planned in combination with Mongolian motifs. The Cultural Center is a part of the Mongolian ornamental architectural heritage as it mix Mongolian traditional motifs and patterns with the style of the Secession of Vienna and of Art-Deco movement.



Illustration 3: Cultural center facade /2024.04.26/

1- The golden ornamentation imitating the Secession of Vienna and used on the facade of the Cultural Center reminds the Mongolian use of golden yellow in roof coverings for religious constructions. It merge well with the architectural style and bears the significance of peace, union, tranquility. Moreover, the general appearance of the building evokes the general Mongolian design of primitive buildings, especially the roof part and the general composition of the construction. At has been designed according to the Mongolian architectural principles.



Illustration 4 : traditional motifs on the facade of the Cultural Center, Ulaabaatar.



Illustration 5 : Primitive Mongolian constructions (from N. Tsulmen, Mongolian artistical buildings, 1988) Teluur ridged church

2- The Erkhen motif (circular motif used on the upper strip, see Illustration 5) was greatly used in constructions designed under the socialist era. Some studies claim that these ornamentations refer to Tibetan religious ornamentations, but Tibetan ornamentations have no clear periodicity in their representations, while the Erkhen motifs used in the Cultural Center are regularly spaced on the upper strip. The use of this motif as an architectural item might then refer to the architectural style of the shrine of Bat-Tsagan, where the Erkhen motif was used.



Illustration 6 : The 'hammer' motif on the Cultural center.

3- The Mongolian 'hammer' motif has been adapted and displayed on the front and sides of the building (see Illustration 6). The 'hammer' pattern is a motif that Mongolians have been using since the first step of their civilizations. It symbolizes the perpetuity of the movement, the continuity of life and bear a meaning of endlessness. Its shape is mainly rectangular, but has countless versions, and can be use as circular or corner onamentations. [10].

National Academic Drama Theatre, formerly the Palace for the Youths

The Palace for the Youths, now known as the National Academic Drama Theatre, was thought and designed between 1952 and 1954 by the first Mongolian architect B. Chimeg, and was finished on 1956. This construction is an example of the Stalinist architecture merged with Mongolian architecture. The configuration of the ornamentations and the details on the plan of the buildings became the foundation of the later Mongolian style. The building wasn't build according the first plans, as the planned Ganjir at the peak of the building was removed, and the heads of sheep were changed for heads of horses at the top of the columns of the monument (see Illustration 8a and 8b).

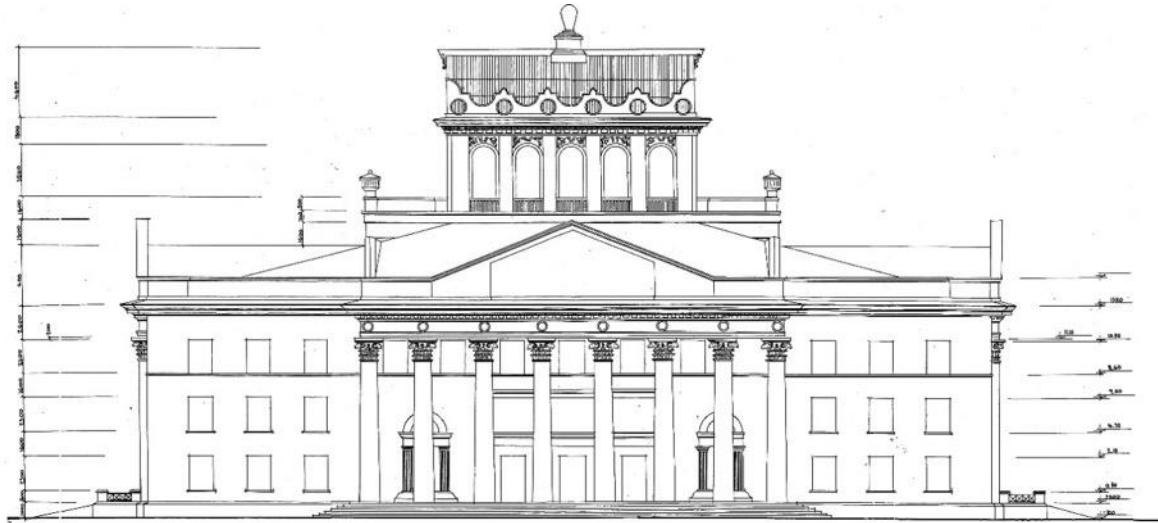


Illustration 7 : National Academic Drama Theatre, /Image from the National Center of Archives



Illustration 8 : National Academic Drama Theatre facade /2024.04.26/

1- The Mongolian National Erkhen motif integrated into the Stalinist architecture has a circular shape and is displayed as regularly spaced on the front of the building (see Illustration 8).

2- The National Academic Drama Theater display as ornamentations on his façade heads of horses, and at the top on each column are four horse heads, each one oriented in one of the four directions (see Illustration 9). These ornamentations differ from the European or the Asian style and than are considered as part of the Mongolian architecture. At the head of the columns, more than 100 horse heads are reproduced. As stated by the architect B. Chimed, ‘designing the shape of the building that refers to the Mongolian style was useful both from an artistical and economical point of view. The building was decorated with national motifs as the horse heads on the columns, which created an interesting and appealing architecture for the public’ [11].



Illustration 9a: First planned sheep head on columns, from the National Center of Archives, plans drawn in 1958



Illustration 9b : the actual horse heads on top of the columns

The National Academic Drama Theatre is not only one of the best representative of the Mongolian architecture, it bears several thousands old signs of Mongolian history, adapted and merged by Mongolians themselves into a neoclassical style. It is in this whole a new creation and a contribution to the neoclassical movement.

Lenin Museum

Between 1974 and 1980, museums were ordered and built by the Ministry of Culture, with national funds. The first of these museum was the Lenin Museum. It is a brutalist building with characteristic Mongolian architectural traits. The plans were designed and drawn by the architect G. Luvsandorj, the drawer Y. Urjnee, drawers and decorators V. I. Korotkov, V, L. Rivin.



Illustration 10: Lenin Museum facade, reproduction by S. Amgalan

Looking at the Lenin Museum one can discern the style of Kenzo Tange with influence of the modernism mouvement, where wooden materials are visible directly in the concrete.

1- On the roof of the Museum you can see the Teluur nuruu (the pyramidal structure at the top of the roof), a feature of the Mongolian traditional architecture. It is noticeable that this feature is visible on each side of the building, see Illustrations 10 and 11.

2- Circling the building, the above mentioned ‘hammer’ pattern is visible in a very unusual version, imitating the brutalist style of the building.

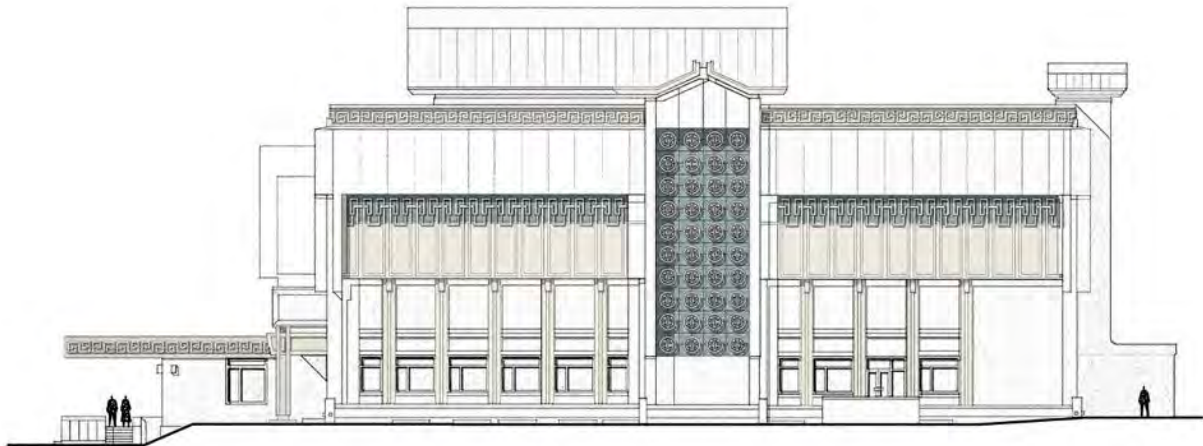


Illustration 11 : Lenin Museum façade from the side. reproduction by S. Amgalan

3- The Lenin Museum also bears on its front an engraved mural fresco in 5 acts, as depicted on Illustration 12. Each of the 5 pictures are in the Mongolian style, and show events of the socialist era. The pictures are from the artist Y. Urjnee.



Illustration 12: mural fresco from Y. Urjnee, reproduction by S. Amgalan

4- The Puusen motif, or the coin pattern (Illustration 13), is usually used as an interior decoration of temples, represents the sun, the moon and the stars and symbolizes growth, support, rise. When used as an architectural item, it is usually used as a decoration for the windows, and aims at reducing the exposure to sunlight.

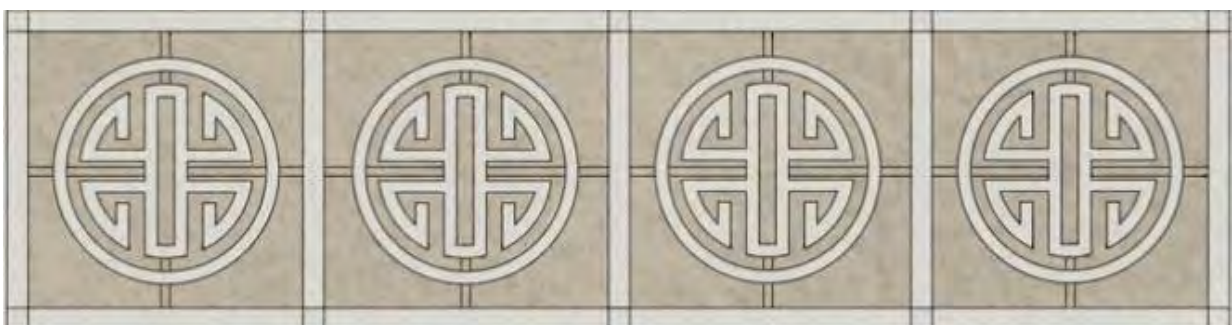


Illustration 13 : Puusen motif, or coin pattern, on the façade of the Lenin Museum, reproduction by S. Amgalan

5- The façade of the Museum showcases items such as columns and beams reminding architectural features of the temples and shrines.

The Wedding Palace

The plans of the Wedding Palace have been drawn at the Moscovian Institute of Planning in 1972. The interior was designed by the collaboration of the drawer D. Amgalan and the engraver L. Chuvaamid. The building was finished in June 1976 and was the first Wedding Palace in Asia. Looking at the construction, it looks like an assembling of large prefabricated structures and then fall in the modernism characterisation. On the roof is a pyramidal structure made of glass, and on the walls are displayed heavy lass windows, with golden frames that reminds the expressionism style.

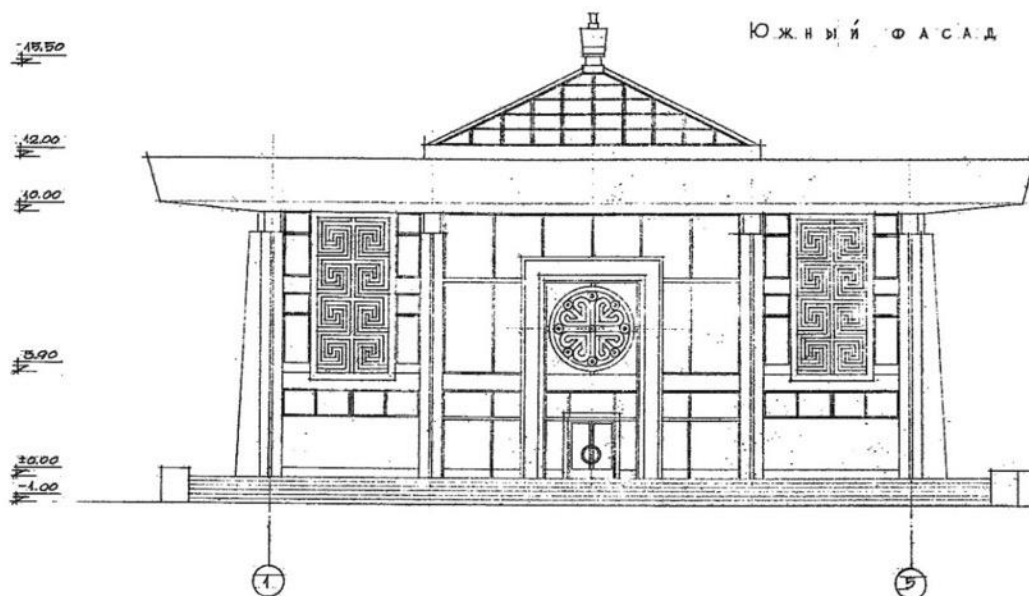


Illustration 14 : Front of the Wedding Palace /from the National Center of Archives/

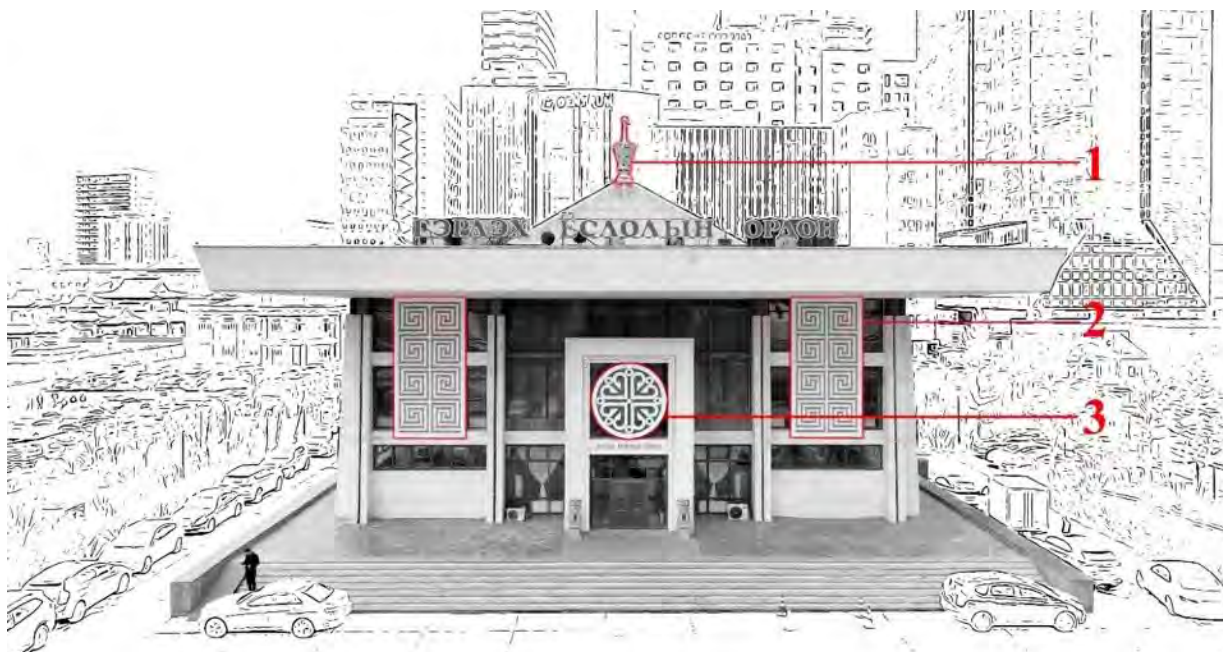


Illustration15 : The wedding palace facade /2024.04.26/

By its name and its function, the building has a strong significance, and the ornamentation of the buildings has to reflect this significance, bearing meanings as perpetuity, infinity, as shown by the golden roof who represents peace and tranquility in the Mongolian symbolism.

1- The general shape of the building evokes the shapes of the temples, encompassing the cultural aspect of the family, with couples getting married at the temples. At the top of the pyramid of glass is a type of Ganjir which represent a connection to the deities in the Mongolian religious culture.

2- On each side of the building geometrical versions of the hammer motif are displayed, representing the constant movement of the human life. This motifs is widely use as an ornamentation of buildings.

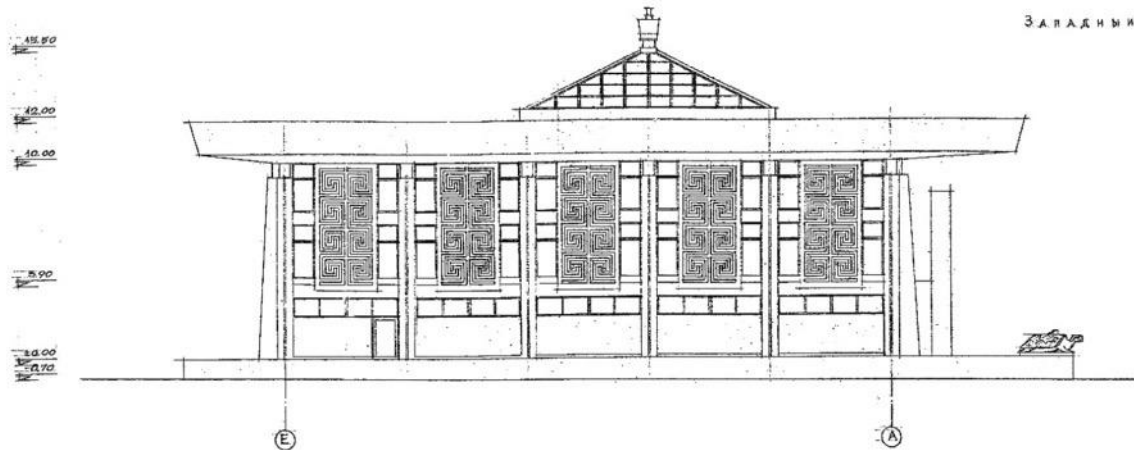


Illustration 16 : Wedding Palace from the side /from the National Center of Archives/

3- On the façade of the construction are represented horn motifs. The horn motif is one of the first Mongolian traditional motif that appeared, according to ethnographic studies , and is called so because it represents a horns of an animal. It symbolizes longevity and peacefulness. Showcasing this motif on the façade of the wedding palace is a way to wish an happy wedding to the newlyweds.

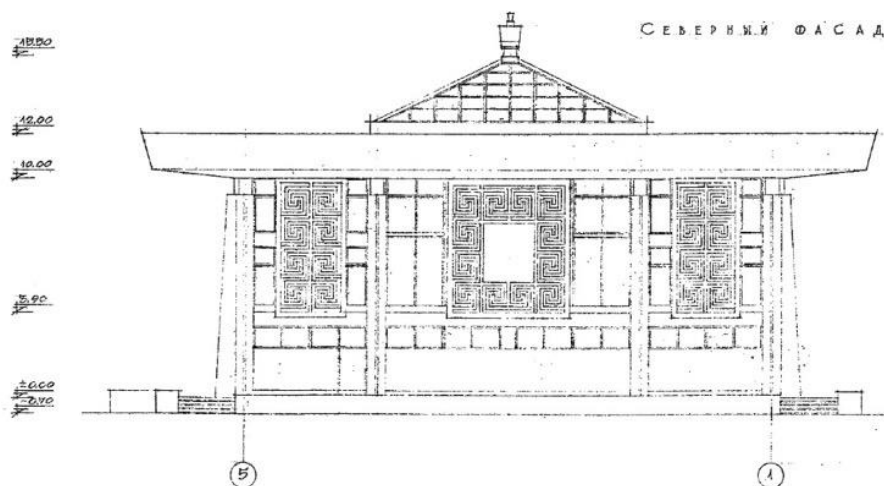


Illustration 17 : Wedding Palace from the back /from the National Center of Archives/

3. Results

The general appearance of the above four buildings has generally a white, grey, red, yellow colouring, due to the influence of modernism. Ornamental items are generally geometrical motifs and are adapted to fit the general style of the building. Based on this study we can conclude how nowadays buildings could display the characteristical Mongolian architectural ornaments. Mongolian people at first used in their habitation ornaments with meanings, as the four mighties, the eight offerings or the nine gem of the Mongolian folklore. They used to draw, sew them and passed them down to the next

generations that kept these traditions until the present day. Thus, at the light of the present study on how to use ornamentations as architectural items, we designed our on building that we named the 'Palace of the Local Governance' to illustrated our findings (Illustration 18).



Illustration 18 : First result of this study / 'Palace of the Local Governance' /

By incorporating characteristics from temples and shrines to the building, on one hand we wanted to represent the Mongolians beam of these workshop places, one the other hand we endeavored to remind the shape of the roofs of the temples. As for the symbolism of the building, we choose to incorporate the horn motif to signify the longevity and the long peace, and the Mongolian Khas motif that encompasses strong foundations of the building. Moreover, to imitate the style of the Bat-Tsagaan shrine, conceived by the Saint Zanabar, we add ornamental columns to the buildings, making it a clear example of the Mongolian architecture.

The first result of this study was the use of ornamental items in the Mongolian architecture. Furthermore, we established that buildings with a Mongolian architectural style follow precise principles, with a pyramidal form, symmetries on the façade, rectangular configurations, all that blended with ornamentations taken from the rich and vast field of Mongolian motifs, which constitutes the second result of this study.

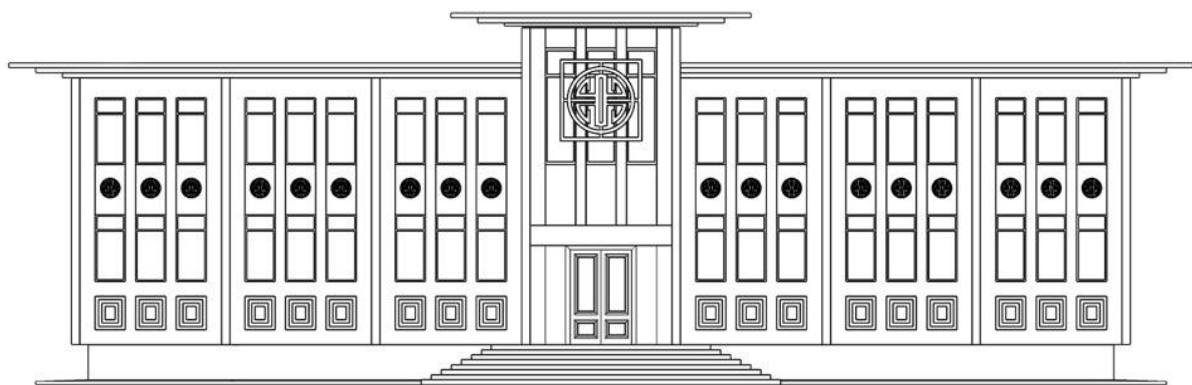


Illustration 19 : Second result of this study / 'Palace of the Local Governance' /

4. Conclusions

Ornamental items of buildings are distinctive traits of architectural style. It is the expression of cultural aspects and represents details of the everyday life of the local people. It is also influenced by the natural environment and climate. Thus, buildings with similar arrangement and functions can have very different appearance from a place to another, due to these ornamentations. This is why these decorative items are far from being insignificant.

In Mongolia, the use of traditional motifs and patterns in ornamentations is consistent and keeping this practice is could have a great influence. Traditional motifs and patterns have significance, and they might be used in accordance with their meanings depending on the duty the building has to fulfill. Thus while choosing the ornamentation of a building, one might think of the building itself and of the origin and the meaning of the traditional motifs and of the relations between the building function and the significance of the motifs.

Before and even during the socialist era, architects were conscious of the meanings of the motifs and used these in relation with the design and the type of the building. Future architects should remind these principles when using traditional motifs.

Beyond the the decision of the general architectural design, the exterior of the building, especially the colouring of the facade, whatever the motif is painted, pasted or embedded, engraved or sculpted, it plays an important role in the building aesthetic. In order to optimally plan the architecture, the colouring should not be left out when deciding shapes, configuration and ornamental items. Pattern decoration is not only an shape but also has meanings that can be expressed through the choice of colours, for the motif itself but also for the background behind it. Such considerations need attention.

Before 1990, the buildings were built with the European or Russian style, that has similar standardized ornamentations. The decorations of these buildings reflect the societal and religious environment and the architectural trend of that time.

Ornamental items of the Mongolian architecture have been developed during Socialism and used on the buildings of that time. From that period, many buildings have borne decorations that weren't a good fit in terms of ratios, configuration, repetitions and colouring. We tried in this study to bring a solutions to such problems, showing how traditional motifs could be used to avoid such mistakes : we even produced an experimentation on what could make a building look like a part of the Mongolian architectural Legacy.

Acknowledgement

This research was funded by a grant from Ministry of Higher Education of Malaysia (FRGS Grant R.XXX123456789x).

References

- [1] B.Adiya, "Decoration of Mongolian architecture," Ulaanbaatar, pg11, 1996.
- [2] A.Namuun, B.Biziyasuren, "Principles of Mongolian design in Architecture," Ulaanbaatar, pg7, 2024.
- [3] B.Adiya, "Decoration of Mongolian architecture," Ulaanbaatar, pg12, 1996.
- [4] B.Adiya, "Decoration of Mongolian architecture," Ulaanbaatar, pg13, 1996.
- [5] B.Adiya, "Decoration of Mongolian architecture," Ulaanbaatar, pg34, 1996.
- [6] B.Adiya, "Decoration of Mongolian architecture," Ulaanbaatar, pg27, 1996.
- [7] B.Adiya, "Decoration of Mongolian architecture," Ulaanbaatar, pg62, 1996.
- [8] B.Adiya, "Decoration of Mongolian architecture," Ulaanbaatar, pg80, 1996.
- [9] D.Lvinjinkhorol, "Catalog of Mongolian folk motifs," Ulaanbaatar, pg4, 2022.
- [10] D.Bat, G.Tuya, "Architect Chimed Budjav," pg75, 2018.
- [11] D.Lvinjinkhorol, "Catalog of Mongolian folk motifs," Ulaanbaatar, pg6, 2022.