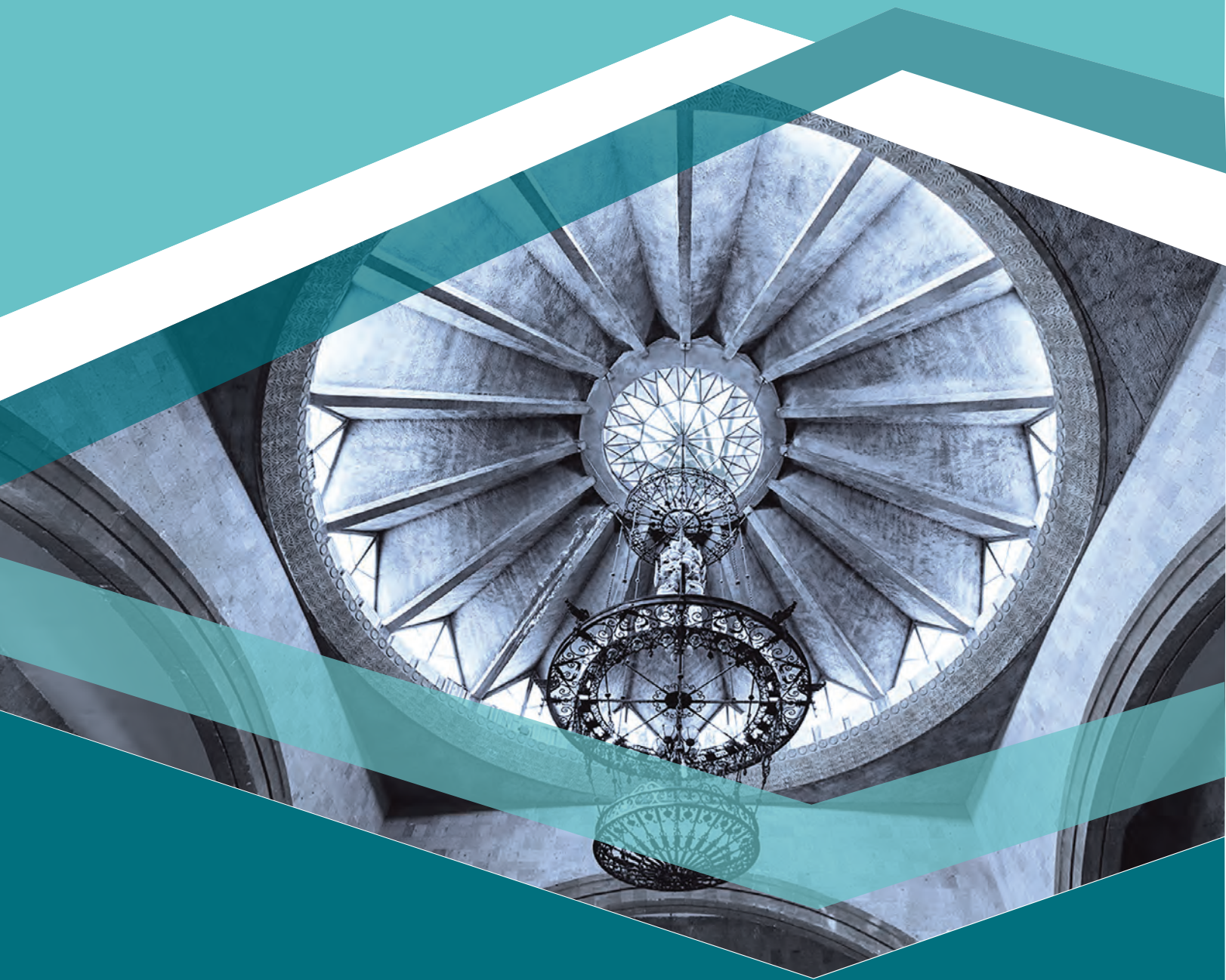
ISSN 2738-2656

2025-Special Issue I



JOURNAL OF ARCHITECTURAL AND ENGINEERING RESEARCH

National University of Architecture and Constraction of Armenia approve the journal for publication
Scientific Council

THE MINISTRY OF EDUCATION, SCIENCE, CULTURE AND SPORTS OF THE REPUBLIC OF ARMENIA

JOURNAL OF ARCHITECTURAL AND ENGINEERING RESEARCH

2 0 2 5 - Special Issue I

YEREVAN 2025

CONTENT

YEREVAN BRICKWORK RESIDENTIAL BUILDING ARCHITECTURE AND THE IMPORTANCE OF GEOGRAPHIC INFORMATION SYSTEMS (GIS) IN PRESERVATION OF ARCHITECTURAL MONUMENTS AND STRUCTURES

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Abstract: *Many buildings were built in Yerevan with bricks. The specifics of brickwork, residential buildings, architecture, and building art in Yerevan have become the subject of the article. Especially, the characteristics of Iranian architecture are observed in the architecture of residential houses in Yerevan. The building material is mainly brick, and the front decoration of the buildings is carried out through the decorative brick masonry, which is more typical of Iranian architecture, with unique solutions of the decoration elements and wooden balconies. This combination points to the skill of Armenian architects and masters. This research aims to gather and maintain accurate information about brick structures, which significantly impacts their preservation. In a GIS environment, it is possible to combine vector and text information. The recommended technology makes it possible to see the location of the object on the map, not only in two dimensions but also in a 3D model. The proposed data processing in the GIS environment, both graphic (vector) data processing and linking of textual data to them, is already carried out. As a result, a complete database is obtained, which can be published for free use as well as serve as a basis for the preparation of maintenance or restoration projects, further monitoring, and analysis.*

Keywords: *brickwork buildings, residential houses, architecture, Yerevan, information database, geo information data, GIS.*

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Received: 04.11.2024
Revised: 20.01.2025
Accepted: 15.02.2025

Introduction

Residential houses built on the brick of Yerevan were built mainly in the late 18th and early 19th centuries. During this period, Yerevan was under the control of the Iranian khanate. Yerevan had three residential districts: Shaharas (the royal palace) was in the northeastern part of the city, the Thapabashi (hill, present Kond) was in the eastern part, and in the southeastern part was Damir-Bhulag (iron fountain) [1-3]. Most of the brickwork structures in Yerevan were demolished in the early 20th century for the implementation of the master plan of A. Tamanyan (Fig.1).

Fig. 1. *Placement of residential houses in Yerevan* ● *- standing building,* ● *- destroyed building*

Materials and Methods

The brick houses in Yerevan have come to us with some modifications. They are mainly adapted to modern requirements. Initially, the houses had a large plot of land and a lot of supporting structures, but today residents only benefit from the residential sector, and the supporting structures have been demolished and destroyed.

It is evident that houses built by the Sardars and Khans had Qajar dynasty architectural stylistic points. These are distinguished by compositional, artistic, and constructional characteristics. Specific types of decorative masonry are made of different sizes of bricks (Table). This diversity of sizes was based on that decorative style, each of which had its own meaning[1][4].

The master plan of the residential houses of this period had the following structure: the residence part, the garden, and the little yard surrounded by several supporting structures like the kitchen, storage, bathroom, barn, and summer rooms[2,3] (Fig.2 [4]). In the central part of the yard, there was a fountain stone pool that was designed for ventilation and air conditioning. The yard was also greenish, especially with mulberry trees.

Table. Different sizes of bricks

Dimension of bricks used in residential houses (cm)			
	Width	Length	Height
1.	21	21	5
2.	25	13	7
3.	20	20	6
4.	30	25	7
5.	20	10	5

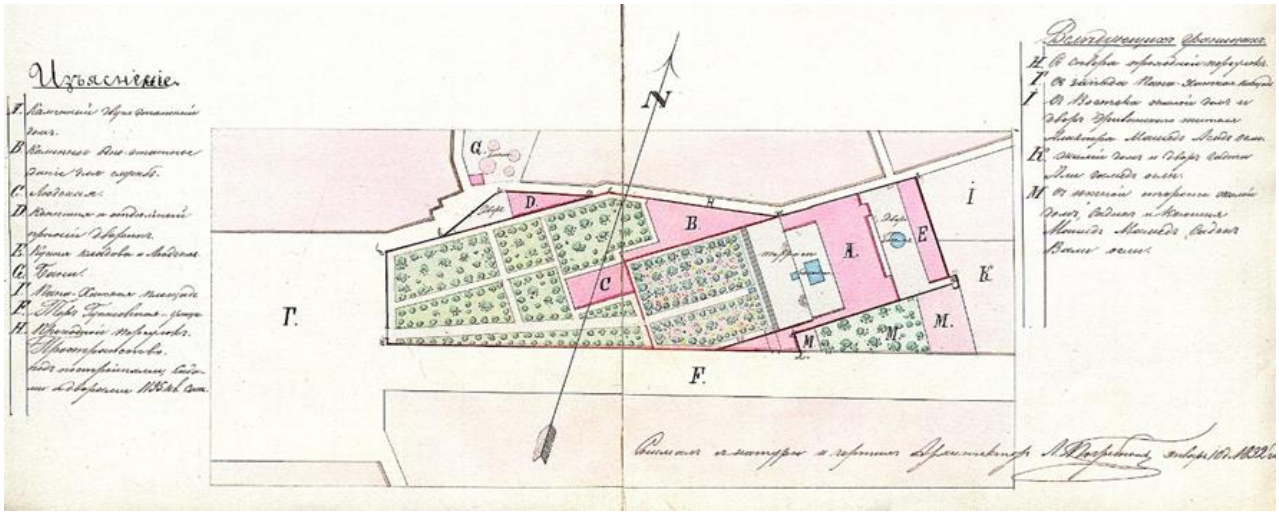


Fig. 1. *Panakhan residential house master plan (1892)*
A. *Two floors residential house,* B. *Service building,* C. *Summer room,*
D. *Barn and store for animals with its adjacent yard,* E. *Kitchen and store,* G. *Bath,*
F. *Nowadays Nalbandyan street,* I,K. *Residential building,* M. *Interior summer rooms*

Plans of the residential houses in this region were mainly built with two floors: a basement and a second main residential floor. Each floor had its own room layout, and it was the layout of these rooms that characterized the residential houses of the Iranian period. The basement floor was mainly used for storage, but there were also rooms for maids and servants. The second and main floor was considered the residential part. The rooms on this floor vary, but there are rooms that are basic in all houses. When entering the entrance, we find ourselves in a corridor or in the part of today's vestibule. There are rooms to the right or left of the vestibule, but only one of these rooms has a door opening to the vestibule, which is considered a common room or a room for receiving guests. From the opening in the opposite section, we enter the dining hall or luxurious living room, where the main and important guests were received. To the right of this room is the fireplace or brazier room, which was mainly used in winter. The room on the left was already the bedroom, where the men of the house were accommodated, and next to the fireplace room was the women's bedroom, which was less visible from the common room. In the houses of the rich, there were several additional rooms. On the first floor, there was a laundry room and a bathroom, along with a bathtub. On the second floor, there were kitchen and utility rooms (Fig.3) [4,5].

[1] Hin u nor Yerevan (author's edition). Yerevan History Museum, 2009 (in Armenian).
[2] Ibid.
[3] Panakhani bnakeli tan glkhavor hatakagitsy. Hayastani azgayin arkhiv, 1892.

The main facades of the houses were located by the side of the yard. They were decorated with decorative bricks and large stained glass windows. The rooms were bright and colorful according to the transparency of these windows. On the main facade, windows and opening parts were emphasized with arches. Such elements were used in Armenian architecture, but they were more typical of Iranian architecture.

The facade was not only a functional but also an artistic element with a wooden balcony, which mostly had ornaments. The balconies were on the main and the street façade. The balconies of Yerevan houses often have been on the street façade (Fig.4).

The rooms were covered with white plaster and ornaments (with light relief) that were very similar to the ornaments of European chambers. The heating of the rooms was carried out through fireplaces and also used for the firepan (manghal). In the ordinary, people did not have furniture in their homes; the walls were covered with carpets. The houses of the rich (khan) were furnished. On the walls were two levels of niches, which were placed in the bottom part of the boxes, and in the upper part there were bottles of rose water (Gulab), wine, and vodka, as well as crystalline plates.The niches were covered with gold filament pieces [4,6,7].

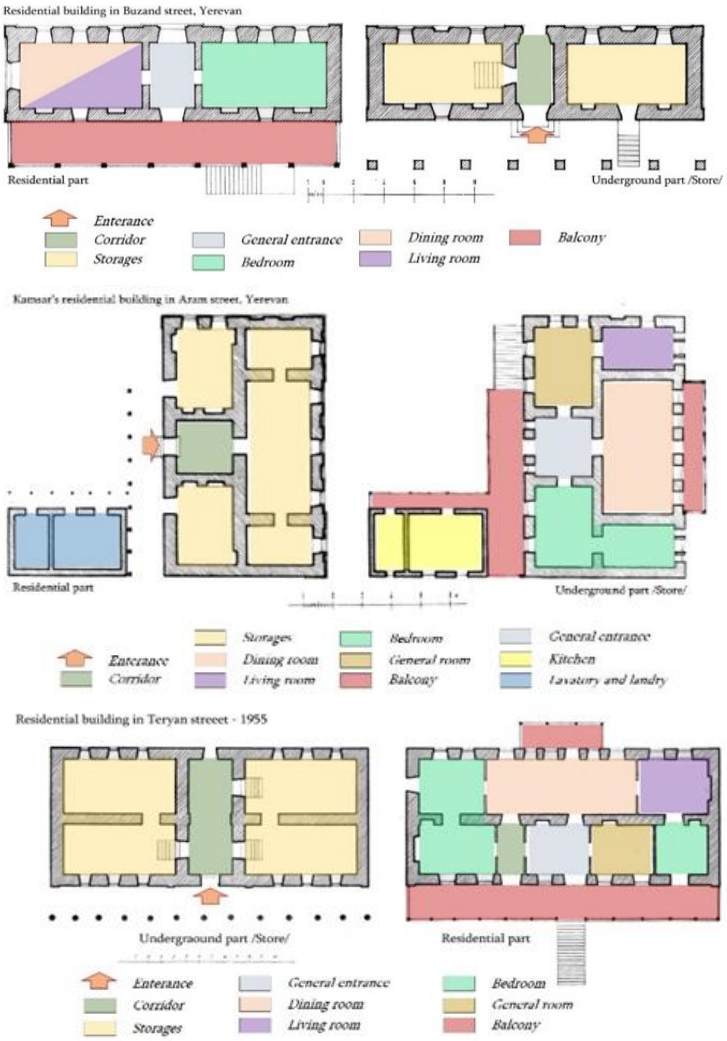
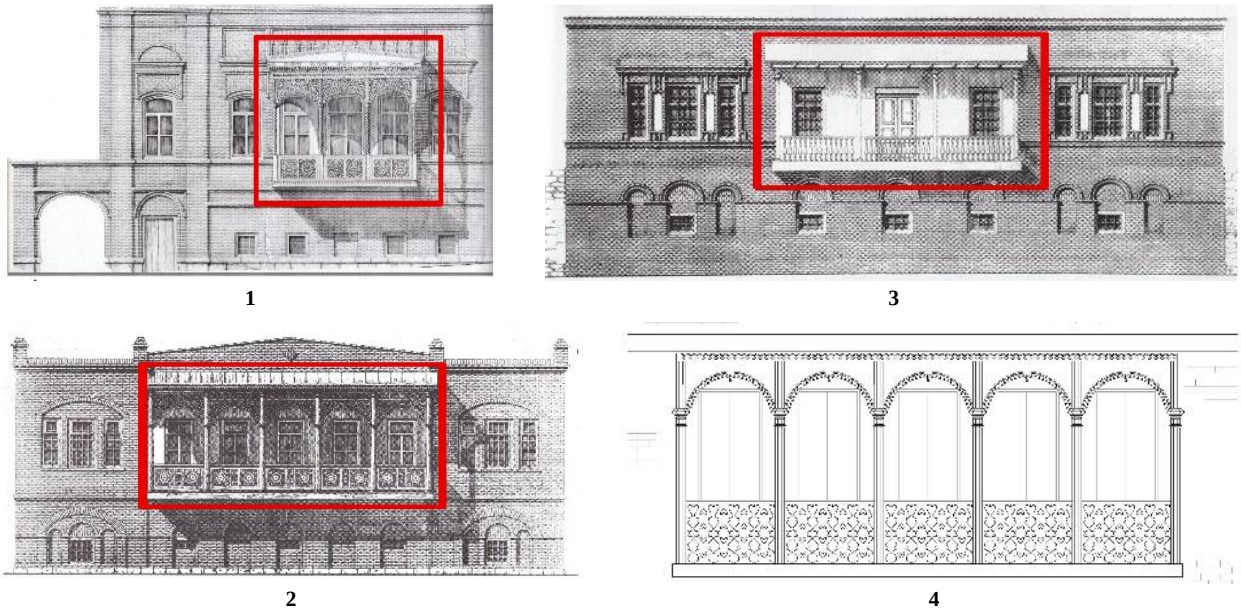


Fig. 2. *Residential houseplan zoning*



1 **3**

2 **4**

Fig. 4. *Wooden balcony of residential house*

1. *Yesayan house,* 2. *Kamsars house,* 3. *Khachatryan house [5],* 4. *Balcony survey by E.Ordoukhanian*

Fig. 5. *Panakhan residential house old view*

The decorative brick masonry was used in the ceilings of the rooms. The brick color was also important; mainly, they were turquoise, green, and red. Each color has its mythological meaning: turquoise, the heavenly world; green, nature and abundance; and red, life and joy[4].

Panakhan's residential house is a good example of similar houses built in 1824 (Fig.5). Panakh had his own houses and mosques in the Shahar district of Yerevan, which were built with brick and wood. One of his houses has survived to this day but has a few little changes.

The house is located in the northeastern part of Sakharov Square, at the end of the second lane of Vardanants Street. Panakhan's house is separated from the surrounding construction. Its position is justified by the presence of large plots of land adjacent to residential buildings that are part of the former construction system, which have been constructed and got the current situation during urban development. The building is two stories, and in the central part, a three-story attic floor is usually intended for women. There are two entrances on the main façade, which have been opened over the years; none of these entrances is the initial entry of the house. The old entrance to the building has been blocked by a recent build, which also divided the main façade into two parts. The left entrance ceiling is preserved in original form, with decorative brick masonry in turquoise, green, red, and yellow colors (Fig.6)[5] [8].

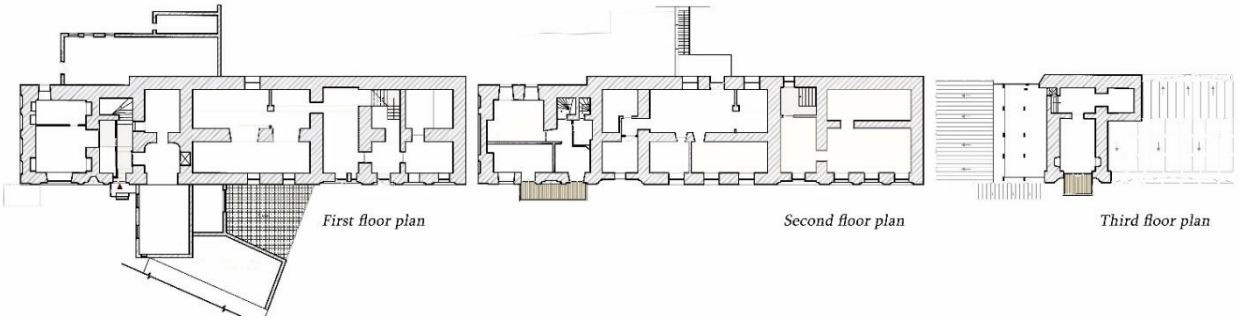


Fig. 6. *Panakhan residential building, survey by E.Ordoukhanian*

Panakhan's residential house is a good example of similar houses built in 1824. Panakh had his own houses and mosques in the Shahar district of Yerevan, which were built with brick and wood. One of his houses has survived to this day but has a few little changes.

The left-side room on the first floor has also preserved its original appearance, with a niche with openings in the walls and a large wooden window to the yard, and the right-handed room is fully altered and adapted to modern requirements. A staircase is located at the end of the corridor. The second floor has completely lost its original character. At present, there was the addition of a kitchen, a bathroom, and a lavatory. The preserved old wooden balcony is in an emergency condition. The second floor joins to the third floor with the staircase, which is in the wall thickness. The third floor has largely preserved its old look. On the last floor, there is an old wooden ceiling (Baghdad style) and a wall of clay plaster. Also, the niches of the walls, wooden windows, and balconies have been preserved. The old stairs can also be lifted up to a well-preserved flat roof, on which the residents build a slate roof with a tile. The right side of the house has been completely transformed indoors and outward, keeping its original appearance on the first-floor ceiling, but it has also lost color tone (Fig.7)[6] [8,9,10].

[4] Hin u nor Yerevan (author's edition). Yerevan History Museum, 2009 (in Armenian).
[5] Ibid.
[6] Ibid.

Fig. 7. *Phanakhan residential house, photos by E. Ordoukhanian (2015)*
1. *Main façade,* 2. *Second floor room*, 3. *Entrance old staircase and ceiling colored brick*, 4. *Roof,*
5. *Left side room ceiling decorative masonry*, 6. *House left façade which covering with cement*

In the old district of Yerevan, like Nork, we find a combination of building materials: brick with stone. The majority of these structures are made of stone, and the frames of windows and openings are decorated with bricks made of decorative elements inspired by Iranian architecture. In these structures, the shape of the first-floor ceiling arch is noticeable, which is typical of all the brick houses (Fig.8).

Collecting and maintaining correct information about brick structures has a very important effect on preservation. Modern technologies, such as laser scanning, allow you to obtain millimeter accuracy on the appearance of the building and to have 100 or more points per square meter, which makes it possible to draw up every brick. The study with the method of ultrasound scanning allows getting information about the situation in the walls of the structure [11,12].

Fig. 8. *Nork residential houses decorating masonry*

GIS and BIM environments of modern technologies provide wide opportunities for classification, processing, and storage of information collected by various methods (Fig.9).

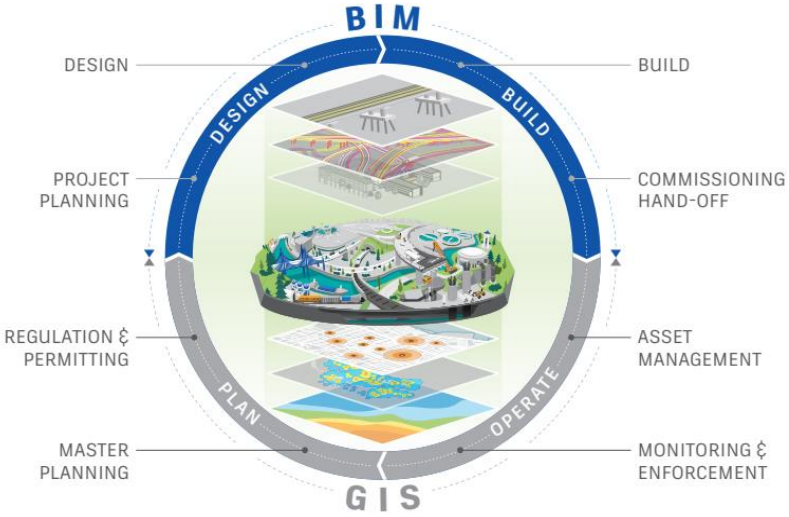


Fig. 9. *BIM and GIS integration*

Especially in a GIS environment, it is possible to combine vector and text information [13]. This technology makes it possible to see the location of the object on the map, not only in two dimensions but also in three dimensions (3D) (Fig.10). See information about it, such as name,

practical or applied meaning, date of construction, construction material, construction technology, degree of damage, etc. In the case of correct and complete data collection, it is possible to make classifications very quickly, for example, to distinguish all the buildings that were built before the 5th century, are located in conditions of high air humidity, and have a high degree of preservation. Similar analyses allow us to get quite interesting and memorable information about previously used building materials, technologies, and architectural solutions.

The study of brick structures by geodetic methods allows for an increase in the accuracy of collected data, reduces the influence of anthropogenic factors, and reduces the possibility of random errors.

In order to achieve the maximum efficiency of data collection, the combined use of technologies is important.

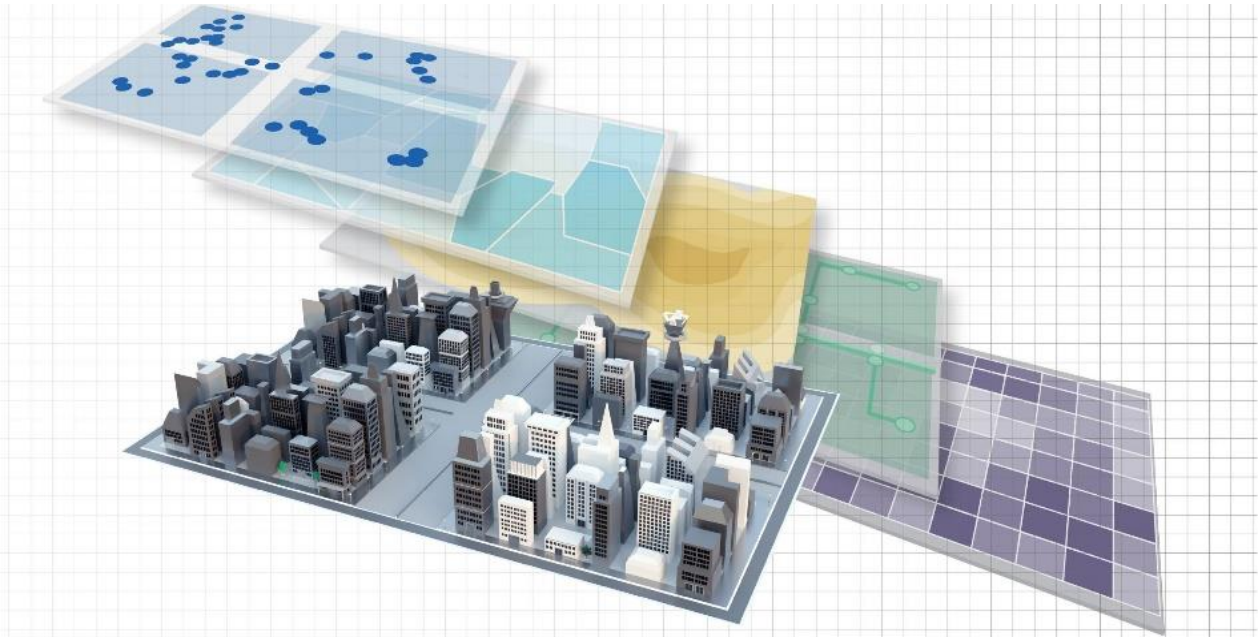


Fig. 10. *GIS environment, 2D and 3D information in same time*

In the case of using the combined method, for the complete mineralization of the object, a geodetic network is created using GNSS satellite receivers, and then alignment is carried out by means of spatial processing [12,14].

Next, with the use of an electronic tachometer, the mining of the brick structure and its main elements is carried out to obtain its general data and geometric dimensions.

Laser scanners are used in those areas where there are special architectural elements that require more detailed data collection. The use of a laser scanner allows for the abandonment of the implementation of manual drawings, which not only speeds up data collection several times but also excludes the influence of the human factor.

Conclusion

Yerevan's brick residential houses were mainly located in the central part of the city, at the crossroads of Pushkin-Teryan, Nalbandyan, and Sayat-Nova streets and the Kond district. They were built during the Persian period (Fig.11).

The houses of the rich persons have an adjacent yard and a garden surrounded by the rooms.

The use of decorative brick masonry is mainly in facades and ceilings, but the use of colored bricks is mainly in interior design. The shape of the first floor ceiling was arches.

The houses of Old Nork are built in combination with stone and brick. In the stone structure, the frames of windows and openings are decorated with bricks made of decorative elements. Here is the influence of Iranian architectural decorative elements.

	Address	Standing	Broken dow	Destroyed	Raw brick	Fired brick	In combinati on with	Old Photos	New Photos
1	Vardanants street 19	+	-	-	-	+	-		
2	Buzand street 32	-	+	-	-	+	-	-	
3	Noragavit	-	+	-	+	-	-	-	
4	Hanrapetutya n street	-	+	-	-	+	-	-	
5	Parbetsi street	-	+	-	+	+	+	-	
6	Yekmalyan street	+	-	-	-	+	+	-	
7	Hanrapetutya n street 50	-	+	-	-	+	-	-	
8	Pushkin-Teryan intersection	-	-	+	-	+	-		completely destroyed
9	Nalbadyan street	-	-	+	-	+	-		completely destroyed
10	Sayat-Nova street	-	-	+	-	+	-		completely destroyed

Fig. 11. *List of brick residential houses located in the central part of Yerevan*

The balconies built on the frontal part of the brickwork buildings had Armenian decorative motifs. This combination points to the skill of Armenian architects and masters, preserving traditional Armenian architecture in the Iranian state.

During data processing in the GIS environment, both graphic (vector) data processing and linking of textual data to them are already carried out. As a result, a complete database is obtained, which can be published for free use as well as serve as a basis for the preparation of maintenance or restoration projects, further monitoring, and analysis.

Conflict of Interest

The author declares no conflicts of interest.

Funding

This research did not receive any financial support.

References

[1]. S. Vardanyan, Haykakan zhoghovrdakan bnakeli tneri chartarapetutyun. Haypethrat, Yerevan, 1959 (in Armenian).
[2]. H.F.B. Lynch, Armenia, travels and studies (vol. I). London, New York: Longmans, Green, and Co, 1901.
[3]. L. Amirjanyan, Yerevan in the First Half of the 19th Century, According to Bishop Hovhannes Shahkhatunyants. Yerevan History Museum, 2017. Available at: https://yhm.am/archives/8757?lang=en Accessed on October 14, 2024.
[4]. E. Ordoukhanian, Architectural and Stylistic Particularities of 19th Century Yerevan Brick Residential House (with Panakhan House Sample). Bulletin of National University of Architecture and Construction of Armenia, 3, 2015, 41- 45 (in Armenian).
[5]. J.M. Chopin, Russie. 2, Contenant la fin de la Russie d'Europe, y compris La Crimée, par M. César Famin, et les provinces russes en Asie, Circassie et Géorgie, par M. César Famin. Arménie, par M. Boré. Firmin Didot, Paris, 1838.
[6]. R. Melkumyan, The Architecture of the Public Dwellings of old Yerevan. Hushardzan, Yerevan, 2007 (in Armenian).
[7]. H. Ayatollahi, The History of Iranian Art. Alhoda - UK, 2003.
[8]. M.G. Nersisyan, Iz istorii russko-armyanskikh otnosheniy (vol. 1). Academy of Sciences of Armenian SSR, Yerevan, 1956 (in Russian).
[9]. E.Shahaziz , Old Yerevan (2-nd ed.). Mughni, Yerevan, 2003 (in Armenian).
[10]. M.A. Gasparyan, Arkhitektura Yerevana 19 i nachala 20 veka: Gorod v prostranstve i vremeni. Palmarium Academic Publishing, Germany, 2018 (in Russian).
[11]. S. Khodorov, Geodeziya – eto ochen prosto. Vvedeniye v spetsialnost. Infra-Inzheneriya, Moscow, 2013 (in Russian).
[12]. R.M. Zonntag, Skanery. KompasGid, Moscow, 2013 (in Russian).
[13]. Yunying Qu, Zhiping Lu, Shubo Qiao, Geodesy: Introduction to Geodetic Datum and Geodetic Systems. Springer, Berlin, 2014.
[14]. V.V. Brovar, M.I. Yurkina, B.V. Brovar, Gravimetriya i geodeziya. Nauchnyy mir, Moscow, 2010 (in Russian).

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MODERN CHALLENGES TO THE PRESERVATION OF THE ARMENIAN ARCHITECTURAL HERITAGE OF ARTSAKH /Nagorno-Karabakh/ [1]

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Abstract: *The preservation of the Armenian architectural heritage of Artsakh in the 21st century faces significant challenges, primarily stemming from armed conflicts and ethnocultural and religious intolerance. The wars initiated by Azerbaijan against Artsakh and Armenia, beyond territorial conquest, aim to erase Armenian identity, history, and cultural landscape systematically. Architectural monuments, as tangible evidence of historical Armenian presence in these territories, stand as a cultural obstacle to this agenda. The deliberate destruction of Armenian cultural values and historical and cultural heritage exemplifies Azerbaijan's long-standing policy of cultural genocide. For over a century, even during peacetime, Armenian Christian heritage in regions such as Nakhichevan and Nagorno-Karabakh has suffered irreversible losses. This destruction continues today at an even larger scale, particularly following the 2020 Nagorno-Karabakh war. The article presents the vandal actions of Azerbaijan, which began at the time of the First Nagorno-Karabakh War (1991-1994) and continue to this day, which are carried out against Armenian Christian monuments (Holy All Savior Ghazanchetsots Church and St. Hovhannes Mkrtich Church (St. John the Baptist), or Kanach Zham (Green Church), in Shushi, Gandzasar, Dadivank, Amaras, the monastery complexes of Yegnasar, churches of Tsitsernavank, Vankasar, Tsaghkavank, and many, many others). These actions unfold through various forms, including physical destruction, appropriation, disfigurement, desecration, and changing the primary function of tangible heritage. The principles of authenticity, integrity, and the importance of safeguarding the Armenian historical legacy in the international system for the preservation of the Christian heritage of Artsakh are revealed. Initiatives aimed at preserving the medieval heritage of the region were noted.*

Keywords: *Armenian architectural heritage, preservation, the cultural policy of Azerbaijan, distortion, albanization.*

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Received: 06.11.2024
Revised: 25.01.2025
Accepted: 21.02.2025

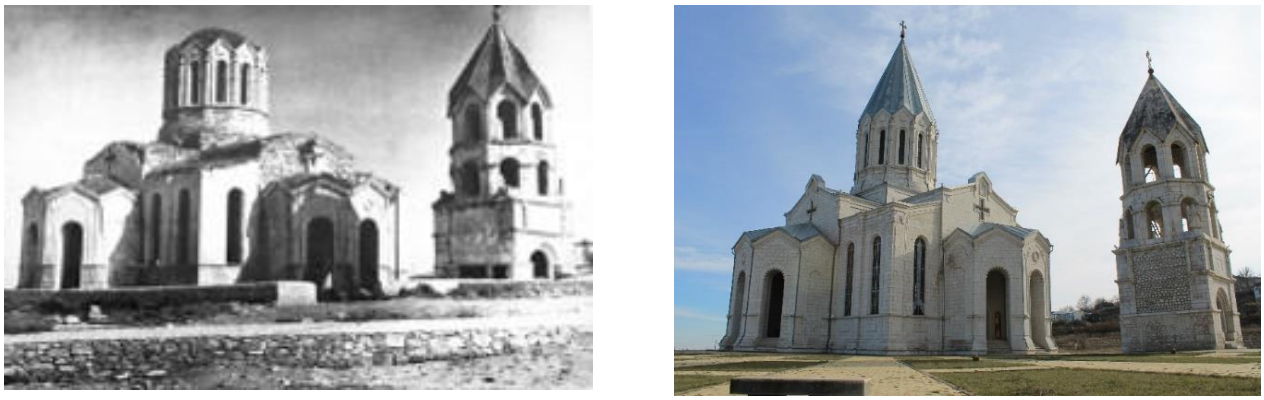
Introduction

The architectural heritage of Artsakh, which has a thousand-year architectural history, has always been the target of Azerbaijan's anti-Armenian policy. The policy of destruction, transformation, and desecration of Armenian monasteries, churches, and monuments was aimed at destroying the Armenian trace in Artsakh. Azerbaijan's ambitions towards the Armenian territories have always been connected with false attempts to legitimize the Azerbaijani presence in the region. The beginning of Azerbaijan's systemic policy of destruction and expropriation of cultural, and in particular, architectural values was set by the influence of the extreme nationalistic policy of Turkey, which started in 1918. From the formation of Azerbaijan as a state and the 1930s, the concept of "Azerbaijani people" came into circulation [1]. In the Soviet period, these approaches developed, turning into large-scale wars in the post-Soviet period. Azerbaijani propaganda is constantly trying to "prove" that Armenians in the Caucasus, and especially in the territory of Artsakh, are immigrants or that they are the natives and descendants of the Christian Agvans here. There are many monuments proving the

[1] Some of the concepts discussed in this article are presented on the website Monumentwatch created by us.

opposite in the Armenian highlands and particularly in the territory of Artsakh-Karabakh, which were an "obstacle" for Azerbaijan on the way to achieving their ultimate goal because they are indicators of ethnicity.

In 1994, after the indefinite cease-fire in May, the Republic of Artsakh started to organize the preservation of architectural monuments. The process was slow. It was hindered by several circumstances (the non-political recognition of the Republic of Artsakh, the war situation, the priority security issues, being cut off from international cooperation, and the prohibitions and complications of joining international structures). Nevertheless, some measures for the protection of architectural monuments were implemented (creation of a legislative system in the field of protection, compilation of lists of architectural monuments, discovery of newly discovered monuments (Artsakh's Tigranakert complex, Handaberdi monastery), implementation of fixing and restoration of monuments (Holy All Savior Khazanchetsots and Hovhannes Mkrtich Churches in Shushi, Toghi Melik complex, walls of Shushi, Dadivank, Amaras, Vankasar, and Pirumashen Churches, Tsitsernavank), three-dimensional modeling, etc.) (Fig.1).



a. **b.**

Fig. 1. a. *The view of the Holy All Savior Ghazanchetsots Church in Shushi from the northwest (1972), Photo: a page from the book by Mkrtchyan Sh., Davtyan Sch., 1997*
b. *General view of the Holy All Savior Ghazanchetsots and the bell tower of Shushi from the northwest (after restoration, 1998), photo by L. Kirakosyan*

Slowly, but the ongoing process was stopped in 2020 with the war unleashed by Azerbaijan against the Republic of Artsakh on September 27, which was aimed not only at the elimination of the civilian population but also against the cultural heritage of that area. New challenges faced Armenian, especially Christian, architectural builders and structures. Their targeting of the many cases of vandalism both during the war and after the ceasefire proves that the Azerbaijani authorities, using various expropriation mechanisms, eliminate the traces of Armenians and Armenianness in the occupied territories, "legitimizing" their policy. The issue of architectural heritage in the territory of the Republic of Artsakh, occupied and depopulated by Azerbaijan, is a matter of survival and has caused concern in both the Armenian and the international communities.

According to the Artsakh human rights defender's 2021 January report, the endangered heritage includes 161 Armenian churches and monastic complexes, of which 56 are in Hadrut, 42 in Karvachar, 26 in Kashatagh, 13 in Askeran, 9 in Martakert, the same number in Martuni, and 6 in Shushi; 591 khachkars and 345 inscribed stones and tombstones; and 43 palaces and fortresses[2].

Materials and Methods

During the research, bibliographic materials were used, and the method of comparative analysis and original research was employed. Reference was made to declarations and laws of international structures for the

[2] The Human Rights Ombutsman of the Republic of Artsakh, Ad Hoc Public Report. The Armenian Cultural Heritage in Artsakh (Nagorno-Karabakh): Cases of Vandalism and at Risk of Destruction by Azerbaijan, Stepanakert, 26 January, 2021.

protection of monuments. Related materials posted on Azerbaijani websites in 2021-2024, as well as publications on the website "Monument Watch"[3], were also used.

Results and Discussion

Artsakh's architectural heritage and Azerbaijan's consistent policy of vandalism

In the conditions of war and peace, it has been more than 100 years since the Armenian Christian architectural heritage suffered irreversible losses in Nakhichevan and Nagorno-Karabakh as a result of the policy conducted by Azerbaijan, which continues even today on a larger scale. In the current situation, the Artsakh architectural heritage is facing new challenges. It is in a highly endangered state and needs immediate support.

The article presents the actions that Azerbaijan has taken with regard to these complexes with individual examples and indicates the ways that the architectural heritage should be protected.

Starting in 2020, the city of Shushi has become a focal point of Azerbaijan's deliberate agenda to erase and appropriate Armenian historical and cultural heritage in the occupied regions of Artsakh. Following the cessation of war, Azerbaijan swiftly enacted a state policy aimed at reshaping and confiscating the Armenian historical and cultural landscape of Shushi. This policy traces back to the Soviet era, specifically the 1960s, when the history of Shushi City underwent revision. As a result, scientific and popular literature focusing on the city began to portray Shushi as exclusively Azerbaijani, gradually minimizing references to its Armenian cultural and historical heritage and ultimately omitting them altogether. It is important to highlight that between the 1960s and 1992, the Azerbaijani authorities successfully undertook the destruction and alteration of a substantial portion of Shushi's Armenian cultural heritage, which encompassed the city's Armenian cemeteries as well.

Following the occupation of the city by Azerbaijan in 2020, a fresh phase in the de-Armenization of Shushi emerged (Fig.2).

Fig. 2. *The exterior of the Holy All Savior Ghazanchetsots Church in 2020, during the war, after the bombing*[4]

Novel narratives were introduced, notably designating the city's central symbols, the Holy All Savior Ghazanchetsots Church and the St. Hovhannes Mkrtich Church, as Russian Orthodox churches. Within these churches, the Azerbaijani authorities commenced "rehabilitation" initiatives, primarily aimed at erasing the Armenian essence of these structures, to showcase this to the international community [2]. The fundamental objective behind these alterations to Armenian churches and other structures is to eliminate the Armenian characteristics of Shushi. This culminates the trajectory set in motion by the state dating back to the 1960s.

The St. Hovhannes Mkrtich Church of Shushi was targeted during the military operations of the 2020 war, violating the international principles of wartime heritage protection and humanitarian law norms. Shortly after the 2020 war, the St. Hovhannes Mkrtich Church was blown up, damaging the church steeple and bell tower (Figs. 3-5). Later, in July 2021, Azerbaijanis unjustifiably denied the Armenian affiliation of the church, started the work of presenting the structure as Russian Orthodox and "transforming" the church, and performed illegal

[3] monumentwatch.org.

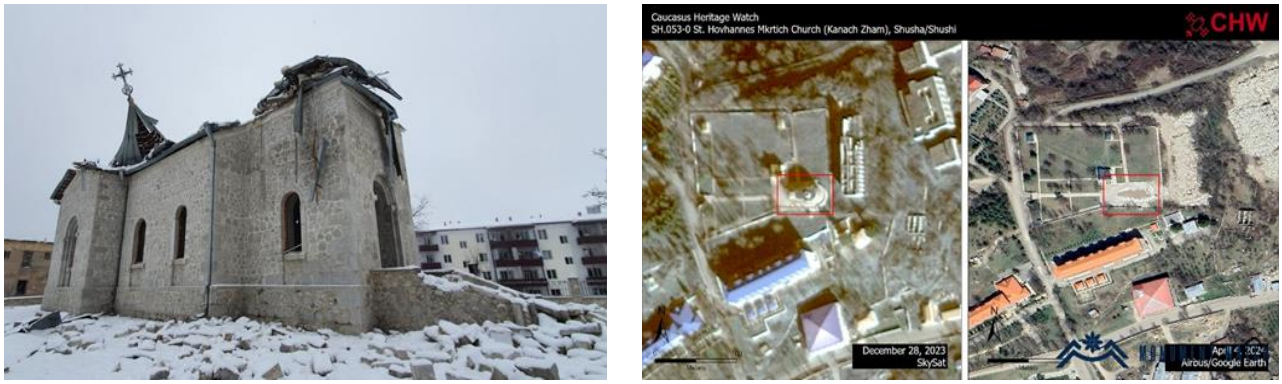
[4] Photo source: meganewes.am/assets/uploads/ 7vu8puzzo7ftn596c1mz1605464215.

rituals in the church. Unable to find a valid argument to de-Armenianize it, Azerbaijan ultimately destroyed the church (Figs. 3,4).

Damage to the church, as outlined in the 1954 Hague Convention on the Protection of Cultural Property in Armed Conflict, constitutes a serious violation. According to Article 4 of the Convention and, additionally, Article 15(a) of the adopted Second Protocol in 1999, such actions can be prosecuted as war crimes in international courts[5].

Fig. 3. *General view of the St. Hovhannes Mkrtich Church of Shushi from the southwest, 2020, before the war*[6]

A similar violation is also the physical destruction of the churches of St. Astvatsatsin in Mehakavan, destroyed on March 25, 2021 (construction began in 2013, completed and consecrated in 2017), and in October–the churches of St. Sarkis in the village of Mokhrenes and St. Holy Ascension in Berdzor (the construction of the church was completed in 1998, and the cross on the dome it was consecrated on May 31 of the same year) (Fig.5).



a. **b.**

Fig. 4. *The process of physical destruction of the St. Hovhannes Mkrtich Church:* **a.** *During the war of 2020,* **b.** *After the war of 2024*[7].

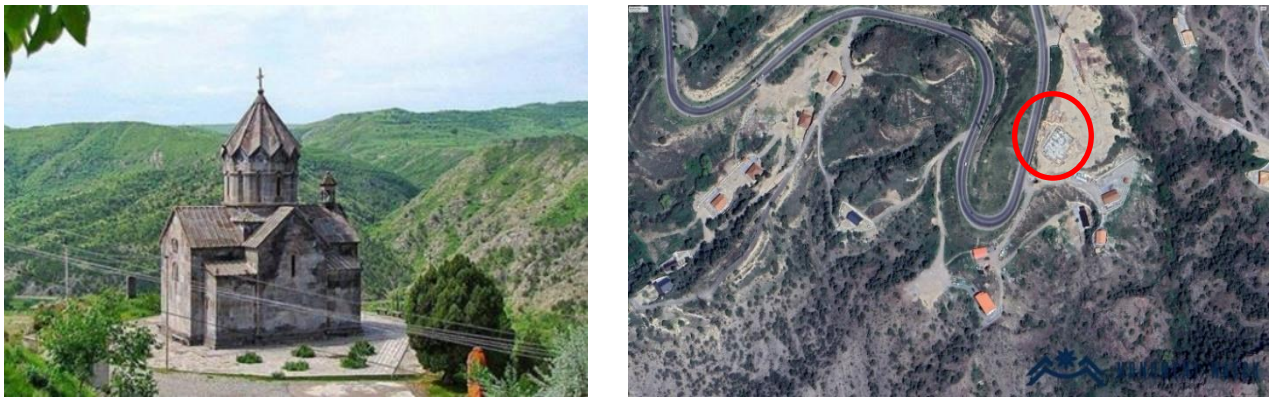


Fig. 5. *Destruction of the Holy Ascension Church in Berdzor*[8]

[5] Available at: https://www.arlis.am/DocumentView.aspx?DocID=31415 (accessed on October 2, 2024).
[6] Photo source: https://surl.lu/cabohe
[7] Photo source: https://surl.li/nsmyik
[8] Photo source: https://surl.li/igguri

The report of CHW, documenting the destruction of the church[9], was submitted to the European Parliament and has already been condemned by a number of deputies. As strong evidence of the ongoing policy of Azerbaijan, it was included in the report "New European Agenda for Culture and International Cultural Relations", which, on the one hand, condemned Azerbaijan for such practices, and on the other hand, showed the negative consequences of such practices in the field of world cultural policy.

Another manifestation of encroachments on architectural heritage is their Albanization and privatization. In March 2021, during a visit to the Hadrut region, and in particular to Tsakur, Azerbaijani President Ilham Aliyev, pointing to the inscription on the lintel of St. Astvatsatsin Church of Tsaghkavank, stated that the inscriptions and carved crosses had just been engraved and that it was an Armenianized Udi church[10].

This once again speaks of the fact that the Armenian cultural heritage in the occupied territories is being altered and destroyed under high state patronage [3].

Dadivank, Gandzasar, Amaras monasteries, and the Vankasar church were declared Albanian, contrary to all possible evidence (building inscriptions in Armenian, structural and structural features, etc.) [4-7].

This theory has been repeatedly condemned by Armenian and international scientists [8,9]. According to Adam Smith, Armenian churches, in particular Dadivank, could not have been founded by a kingdom called Caucasian Albania, which fell into decline around the 8th century [10] (Fig.6).

The agvanization of Armenian historical churches and the denial of Armenians is a violation of the principle of authenticity of heritage established by UNESCO and the process of destroying history and identity. The importance of preserving the authenticity of cultural heritage is stated in the Nara document on the authenticity of Cultural Heritage, adopted by UNESCO in Japan in 1994[11].

a. **b.**

Fig. 6. *The Katoghike (main) Church of Dadivank:*
a. *before restoration,* **b**. *after restoration, photo by S. Ayvazyan*

[9] Available at: https://caucasusheritage.cornell.edu/index.php/report. (accessed on October 9, 2024).
[10] Available at: https:youtu.be/blq-Kn1QnMs (accessed on October 17, 2024).
[11] Available at: https://www.icomos.org/charters/nara-e.pdf. (accessed on November 1, 2024).

Cases of desecration of architectural heritage (the monastery of Kataro, the monastery of the Apostles of Egishe) are also not isolated.

The International Court of Justice of The Hague in 2021. The decision of December 7 banned acts of desecration of Armenian churches: "Azerbaijan is obliged to take all necessary measures to prevent and punish acts of vandalism and desecration committed against the Armenian cultural heritage... "[12].

Modern structures and monuments also do not remain aloof from the vandal actions of Azerbaijan. Azerbaijan has destroyed a memorial monument erected behind the Khachatur Abovyan school in Shushi, and a monument to Charles Aznavour was destroyed on the territory of the Charles Aznavour Stepanakert Cultural Center. On the right, it was stopped on May 18-22, 2022, in commemoration of the 100th anniversary of the birth of the world-famous singer. Azerbaijan continues the process of de-Armenianization of Stepanakert. The buildings of the National Assembly of Artsakh and the Union of Soldiers-Liberators were demolished (Fig.7).

a. **b.**

Fig. 7. *The buildings of the National Assembly of Artsakh in Stepanakert:*
a. *before the war,* **b.** *after the war of 2024* [13]

It should be noted that in accordance with the 1954 Hague Convention prohibiting the Destruction of Cultural Property in the event of armed conflict, the prescription (old or new) or the nature of the monument cannot serve as a basis for justifying the destruction[14].

It is of utmost importance to emphasize that the International Court of Justice has confirmed that the laws in force in the occupied territories, including provisions for the protection of cultural values, have attained the status of international customary law (as per jurisprudence). This means that these laws serve as universal and binding rules for all states[15].

The deliberate destruction of cultural heritage in the occupied territories of Artsakh during the 44-day war and the following four years is weighty evidence to consider the displacement of the people of Artsakh by Azerbaijan as "forcible." Let's give just a few facts. They are: the destruction of the Church of Surb Astvatsatsin in Jebrayil (Mekhakavan), the destruction and distortion of the dome of the Holy Savior (Surb Amenaprkich) Ghazanchetsots Church in Shushi, the destruction and complete demolition of the dome and bell tower of the Hovhannes Mkrtich Church, the destruction of the "Revival" khachkar in the village of Hadrut Arakel, the complete destruction of the Surb Sargis Church in the village of Mokhrenes, the destruction of the monument dedicated to the memory of the victims of the Armenian Genocide in Shushi, the destruction of the "Resurrected Talish" monuments in the village of Talish, the destruction of the historical cemeteries of Shushi and Sghnakh, the disappearance of 51 sculptures from the "Garden of Sculptures" attached to the State Museum of Fine Arts of Shushi, the desecration of the churches of Dadivank, the Surb Khach Monastery of Hadrut, the

[12] Available at: https://www.icomos.org/charters/nara-e.pdf. (accessed on November 1, 2024).
[13] Photo source: https://monumentwatch.org/hy/alerts/.
[14] Available at: https://www.arlis.am/DocumentView.aspx?DocID=31415 (accessed on October 2, 2024).
[15] International Court of Justice, application of the International Convention on the Elimination of All Forms of Racial Discrimination (Armenia v. Azerbaijan), December 7, 2021, No. 2021/34).

Surb Astvatsatsin of Tsakuri, the Surb Yeghishe of Mataghis, the Surb Hovhannes of Togh, the desecration of the function of Armenian churches by representatives of the Udi community, etc. In Stepanakert, the statues of Stepan Shahumyan and Alexander Myasnikyan, the memorial stone of Ashot Ghulyan, the monument of Artsvi in the upper part of Stepanakert, and the statue of Charles Aznavour in the Armenian-French park were destroyed; the cemeteries of Hadrut were damaged; the 7th-century church of Vankasar was desecrated and its cross removed; Surb Sargis of the Tsar was destroyed; the khachkars of the medieval churches of Surb Grigor with their unique inscriptions were demolished; and the village of Mokhrenes with its Surb Astvatsatsin Church was leveled. The two khachkars of the monument-spring of Aghanus village and the monument of Getavan were destroyed; the Azeriization and Turkification program of historical Hadrut was initiated; the Islamization program of Shushi was launched; and the new program called "Western Azerbaijan," which covers the current territory of Armenia, was activated. These and many other actions are classified as war crimes under the conventions and international regulations of UNESCO and the Council of Europe. Sooner or later, Azerbaijan will be held accountable for these actions[16].

Conclusion

Summarizing and evaluating the confirmed situation of preservation of the architectural heritage of Artsakh, we state that this heritage is facing a mortal danger. The main directions of damage caused to the architectural heritage by Azerbaijan have been singled out:

1. Physical destruction during the wars and in the occupied territories (St. Hovhannes Mkrtich in Shushi, St. Zoravor Church in Mekhakavan, St. Sargis Church in Mokhrenes village, khachkars, and tombstones).
2. Appropriation (Albanization, Azeriization, Russification, etc.) (Dadivank, Gandzasar Monastery, Yeghisha Arakyel Monastery, Tsitsernavank, Shushi St. Amenprkich Ghazanchechots, Tsakuri St. Astvatsatsin, Hadrut St. Cross churches).
3. Desecration, robbery, change of function (St. Yeghisha Church of Mataghis, St. Astvatsatsin Church of Tsakuri (Tsaghkavank), churches of the Kusanats desert, Kataro monastery).

It should also be noted that the way to face and respond to the modern challenges of preservation of the architectural heritage of Artsakh is to consider them from the point of view of international law, based on the statutes of heritage preservation.

It is also confirmed that any heritage is a universal value and that its protection and management are anti-national, and its violation is a serious crime committed against the entire civilized world and punishable by relevant laws.

Conflict of Interest

The author declares no conflicts of interest.

Funding

This research did not receive any financial support.

References

[1]. A. Zhamkochyan, A. Atanesyan, G. Harutyunyan, et al., Adrbejani hakahaykakan teghekatvakan hamakargy. Noravank, Yerevan, 2009 (in Armenian).

[2]. L. Kirakosyan, Holy All Savior Ghazanchetsots Church in Shushi and "Protection" of Cultural Heritage in Azerbaijan. Journal of Architectural and Engineering Research, 3, 2022, 49-58.

[3]. L. Kirakosyan, L'«Albanisation» des monuments de l'artsakh comme une des facettes du discours anti-Arménien en Azerbaïdjan: Le cas du monastère Tsakhkavank, YSU press, Translation Studies: Theory and Practice, 1 (SI), 2023, 108-116. Doi: https://doi.org/10.46991/TSTP/2023.SI.1.108

[16] Available at: https://monumentwatch.org/ (accessed on November 4, 2024).

[4]. L. Kirakosyan, Vankasari yekeghetsu chartarapetutyuny yev adrbejanakan "verakangnumy". Patmabanasirakan Handes, 1, 2013, 120-134 (in Armenian).
[5]. V. Grigoryan, Hayastani vagh mijnadaryan kentronagmbet pokr hushardzannery. Academy of Sciences of Armenian SSR, Yerevan, 1982 (in Armenian).
[6]. S. Karapetyan, Hay mshakuyti hushardzannery Khorhrdayin Adrbejanin brnaktsvats shrjannerum. National Academy of Sciences of the Republic of Armenia, Yerevan, 1999 (in Armenian).
[7]. Z. Yampolsky, Pamyatniki Kavkazskoy Albanii na Gore Beshidag. Sovietskaya Archeologiya, Moscow, 2, 1960 (in Russian).
[8]. H. Petrosyan, Mshakutayin etnotsidn Artsakhum (mshakutayin zharangutyan brnayuratsman mekhanizmy). Adrbejani petakan ahabekchutyuny yev etnikakan ztumneri kaghakakanutyuny Lerrnayin Gharabaghi dem, in: M.A. Harutyunyan (Ed.), Proceedings of the International Scientific and Practical Conference, Stepanakert and Shushi, March 21-24, Kachar, 2010, 137-149 .
[9]. A. Tigranyan, Artsakhi haykakan mshakutayin zharrangutyuny: pashtpanutyan mekhanizmnery zharrangutyan pahpanutyan mijazgayin hamakargum. Yerevan, 2023 (in Armenian).
[10]. L. Khatchadourian, A. Smith, The US can help prevent the destruction of cultural heritage in Nagorno-Karabakh. Here's how, 2020.

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ARCHITECTURAL REHABILITATION BUILT AS LIVING HERITAGE

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Abstract: *In the paper "Public space built as living heritage", the same authors argued the substantial condition of public space as cultural heritage. In this paper, we are going to discuss heritage buildings that, having lost their original use, undergo a rehabilitation process that includes a change of use. Only a small part of the inherited architectural heritage can be preserved in a more or less consolidated ruined state. The majority, however, has to recover its usefulness through a new function that satisfies new needs. A key concept in this process is the compatibility of the new intended use with the existing building's shell. It is, in general, the recovery of utility that brings architectural heritage back to life. The selected examples are three different-scale buildings, located in Galicia, that have been rehabilitated with changes to their former use.*

Keywords: *Landscape, architecture, city, cultural heritage, architectural rehabilitation, intervention criteria.*

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Received: 12.11.2024
Revised: 05.02.2025
Accepted: 23.02.2025

Introduction

In the words of Cesare Brandi [1], "Restoration must be directed towards restoring the potential unity of the work of art, whenever this is possible without committing an artistic or historical falsification, and without erasing any trace of the course of the work of art through time". Although Brandi extends his theory of restoration to any art, and due to this generalization, it is not always easy to transpose his discourse to the field of architecture, in this case Brandi's words clearly explain what restoration activity should consist of.

Any work of architecture is born with the means to enjoy a long life, which evolves over time, along with the circumstances that go with it, transforming itself to meet the requirements of use as necessary. It also suffers from deterioration over time. This can lead us to conceive an architectural work almost as a living being. However, among the many characteristics that differentiate them, the architectural work can last longer over time thanks to restoration and rehabilitation. We speak of restoration when we refer to the act of repairing, recovering, and returning something to its original state, altering it as little as possible. We speak of rehabilitation when we refer to the act of making something functional again, achieving its previous or new performance. The concepts of restoration and rehabilitation designate two types of intervention, applicable to the object–also architectural–apparently similar, but which should be differentiated since they imply action processes with different results. Possibly the main difference lies in the fact that rehabilitation contemplates the possibility of incorporating new uses, adapted to the needs of the moment. Following this argument–point of view–architectural rehabilitation is what allows the building to adapt to the new needs that arise over time. Architectural rehabilitation will therefore be the action associated with the maintenance of a living heritage.

Although we have an architectural heritage of exceptional historical and artistic value, where its current use is secondary, even absent, and its conservation is of high interest, the maintenance of most of the built heritage without utility service would not be sustainable. Gustavo Giovannoni [2,3] classified architectural heritage of high historical-artistic value with amortized use as "*dead monuments*", designating monuments with active use as "*living monuments*". Using the designation set by Giovannoni, we could say that in dead

monuments only the strictest restoration is admissible and that rehabilitation will be an action proper to living monuments.

On the other hand, UNESCO links the term "living heritage" with intangible cultural heritage, relating 500 elements inscribed on the list of the 2003 UNESCO Convention[1]. Intangible heritage is distinguished from tangible (built) heritage and mainly refers to knowledge, techniques, and manifestations of a group, which are repeated and give them identity. It is referred "living heritage" when it is about intangible heritage in use by a group. "Living heritage" is considered current intangible heritage (dynamic), not past intangible heritage (static). This "living" intangible heritage has an integrative character (non-exclusive); it is representative, non-hierarchical (without greater value of one element over another); and it is in continuous evolution, so its authenticity cannot be evaluated–understood as a condition of identical repetition. Intangible heritage that is no longer alive may have been consolidated as cultural heritage if the products of that forgotten knowledge, which is no longer common in the group, are preserved [4].

Finally, the idea of a "dynamic" built heritage, which adapts over time, together with Giovannoni's concept of a "*living monument*", leads us to state the possibility of a "*living built heritage*" resulting from architectural rehabilitation, which updates it. However, in rehabilitation processes with a change of use, it will be necessary to keep in mind the compatibility of the new use with the fundamental values of the building. This consideration is decisive for the proper preservation of heritage values. Searching for real rehabilitation examples will let us draw conclusions from practical experience.

Materials and Methods

Study of three cases of building rehabilitation in Galicia

The chosen work method is based on the study of three cases of building rehabilitation with change of use in Galicia (Fig.1). These three rehabilitated buildings, with heritage value, are located in places of great responsibility[2,3]. The three interventions go by three different scales, from the domestic to that of a large public facility. Two of the examples are two historic cities (Ourense and Lugo), placed on the border of the footprint of their old downtown. And the third example, inside the core of the old town of a small fishing village (Redes) in the middle of the Artabro Gulf.

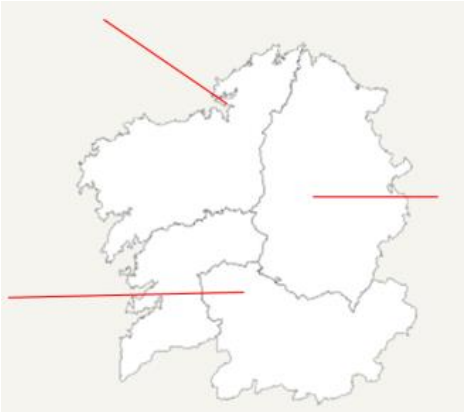

Fig. 1. *Position of these projects in Galicia*

These are the chosen examples:

1. Rehabilitation of the Convent of San Francisco de Ourense, located outside the walls to the east of the old downtown, as headquarters of the Provincial Historical Archive. Project designed by architects Xosé Manuel Casabella López and José Luís Martínez Raído.
2. Intervention in two buildings in the ancient landscape of the Roman wall of Lugo. The buildings are now converted into a museum and offices for the vice-chancellor of the University of Santiago de Compostela in this city (Lugo). Project designed by architects Felipe Peña Pereda and Francisco Novoa.
3. Rehabilitation of the House of the Japanese. This example reviews an old house of sailors and farmers, with a stable on the ground floor, located in the centre of the village of Redes (Municipality of Ares). Redes village is a small fishing port, unique in the Galician coastal landscape. Project designed by architect Luis W. Muñoz Fontenla.

[1] UNESCO. Text of the Convention for the Safeguarding of the Intangible Cultural. París, 2003.
[2] Ley 6/1985, de 25 de junio, del Patrimonio Histórico Españo. Estate law, Madrid: Spanish Government, 1985.
[3] Ley 10/2015, de 26 de mayo, para la salvaguardia del Patrimonio Cultural Inmaterial. Estate law, Madrid: Spanish Government, 2015

Rehabilitation of the Convent of San Francisco de Ourense (2010-2021)

The recent restoration of the Convent of San Francisco de Ourense is a project carried out by the architects José Manuel Casabella López and José Luis Martínez Raído after winning a national competition to use the complex as a historical archive of the province of Ourense. The building was abandoned after its last use as a military barracks. The convent, whose foundation by Franciscan monks dates back to the 14th century, became state property during the confiscation of church property carried out by Mendizabal [5] in the 19th century. At this time, the monks took the apse and doorway of the church to another location, leaving the rest of the convent's buildings. Once in state hands, the convent without the church was used as a military barracks, with a separate military pavilion being added in the convent's gardens during the 19th century. Although the military carried out various reforms inside the convent, its original wall structure and the two cloisters, one Gothic and the other Baroque, had been respected. This Gothic cloister is the best Galician example of the period, preserving the outstanding set of carved capitals of its granite arches. When the recent rehabilitation project was undertaken, the convent had no forgings, and only the roof of the Gothic cloister remained, clumsily repaired, with the rest of the naves exposed to the elements (Figs. 2-5).

After the study of the state of the building, the historical research, and its diagnosis, the project tries to incorporate the new use planned as a historical archive, respecting the fundamental values of the building. When we began to work on the building, we found the load-bearing walls as the only preserved remains. Observing its walls, we can understand its structure and configuration; structure not only in its meaning of supporting system but, beyond that, in its meaning of organization or fundamental order [6]. It is precisely this opportunity to appreciate the naked organization of the architectural space that has led us to consider the structure and order of the building as the most significant quality and value of its architecture (Figs 6-10).

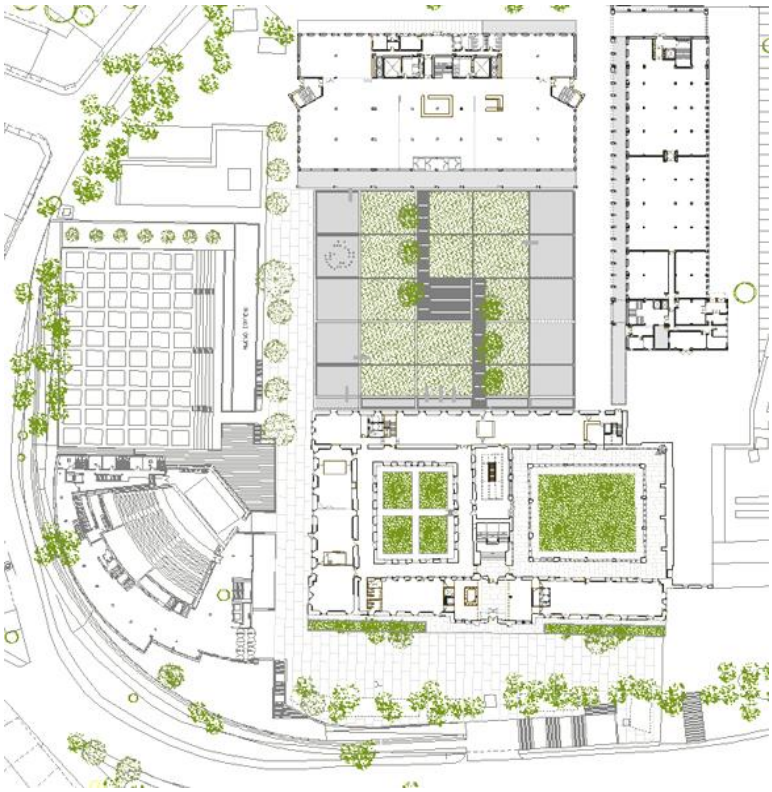

Fig. 2. *Plan of the site of the convent of San Francisco de Ourense*

Fig. 3. *Aerial view of ruins of the convent of San Francisco de Ourense, in 2014*

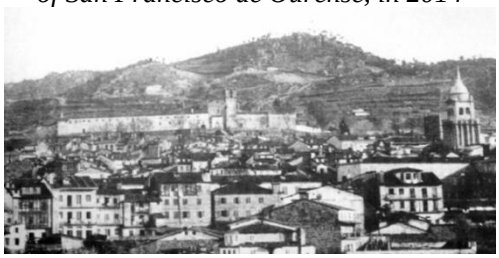

Fig. 4. *View of convent of San Francisco de Ourense, on the hill; early 20th century*

Fig. 5. *Back facade of the convent of San Francisco de Ourense; early 20th century*

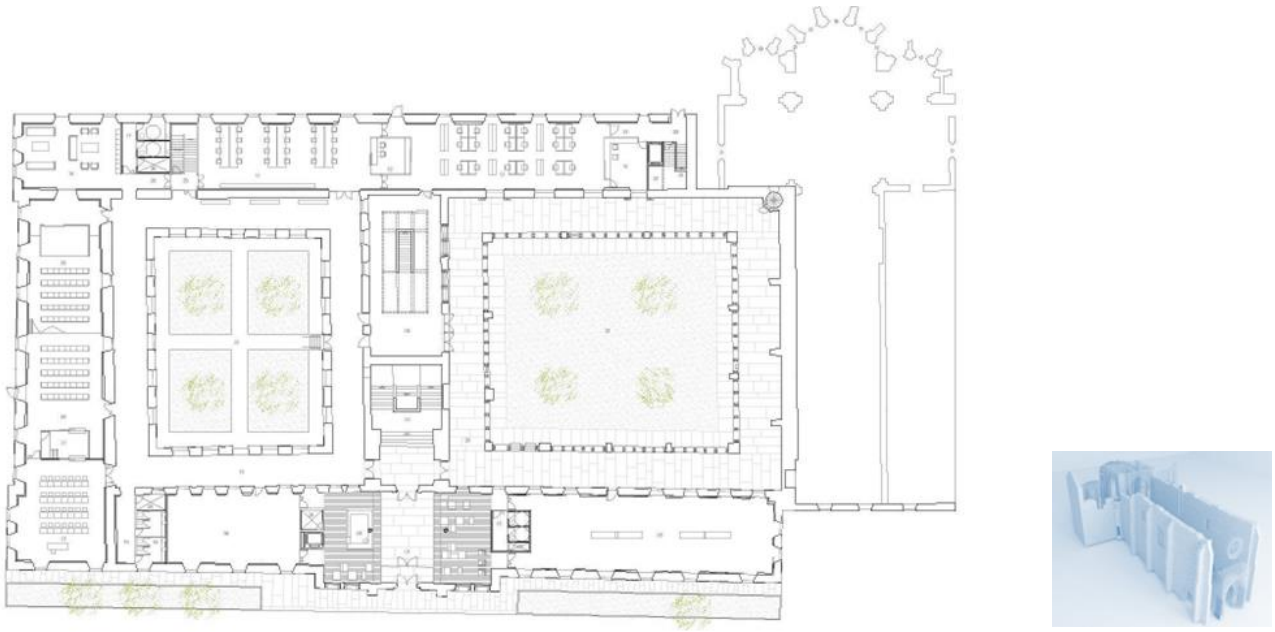

Fig. 6. *Ground floor of the monastery of San Francisco de Ourense rehabilitated as Historical Archive*

Fig. 7. *First floor of the monastery of San Francisco de Ourense rehabilitated as Historical Archive*

Fig. 8. *Chapter house before rehabilitation*

Fig. 9. *Timber floors under construction*

Fig. 10. *Interior of the monastery after rehabilitation*

The configuration/order of its own architectural space, together with ornamental carved elements and fabrics, was considered a fundamental value. The different elements of composition and ornamentation characterize any architectural period, but if we only look at these elements, we will not be able to understand the deep spatial conception that characterizes this architecture. However, the substantial value of architecture is the space. Thus, without knowing the façade of a building, we can identify whether we are in a Romanesque or Gothic space, a Renaissance or Baroque space, classical or contemporary space. The order of space is, therefore, the main architectural value.

In this situation, the new use was arranged in the existing naves and cells. The chapter hall maintains its wall configuration to house now the permanent exhibition room on the archive's collections (Figs.11-13).

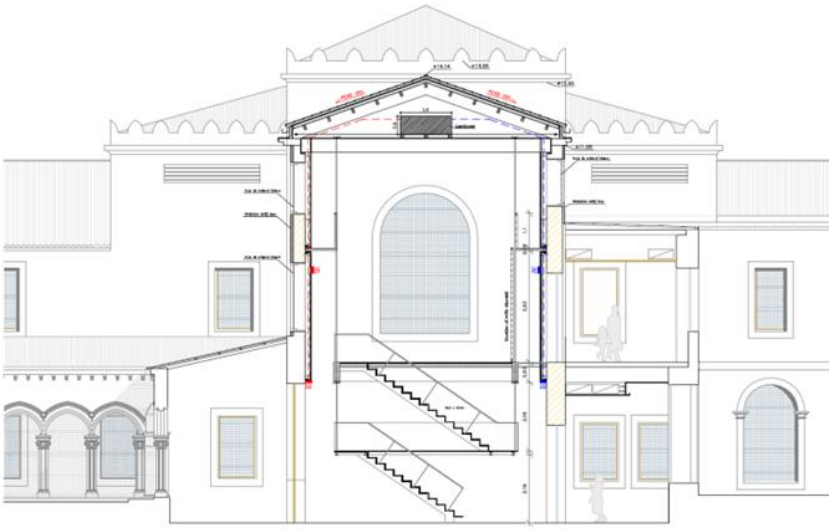

Fig. 11. *Cross section of the Chapter House*

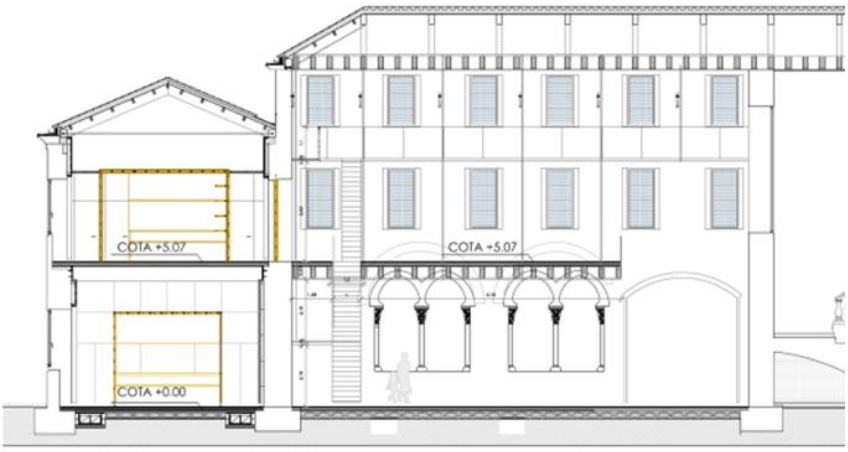

Fig. 12. *Longitudinal section of the Chapter House*

The monastic naves receive the new consultation rooms. When secondary walls are added, they are set so as not to distort the perception of the original space and are installed without affecting the original fabrics (masonry), guaranteeing reversibility. The baroque staircase is restored, keeping its position.

Fig. 13. *Photographs of the interior of the Chapter House*

The construction systems used are similar to the original ones (Figs. 14-17). The load-bearing walls have laminated wood beams, similar to the original sawn wood floors. Any technological update must be respectful and compatible with the original construction systems, both in terms of their technical performance and their appearance (aesthetic and proportional). Likewise, the new air conditioning system is arranged discreetly so that it doesn't dominate a space where it was not traditionally present. The air conditioning system is hidden behind floors or walls to leave the exposed wood ceilings clean. A minimal lighting system is incorporated into the space, suspended without touching the walls, emphasizing the idea of reversibility in the incorporation of these accessory elements.

Fig. 14. *Gothic cloister*

Fig. 15. *Baroque cloister*

Fig. 16. *Front façade of monastery after rehabilitation*

Fig. 17. *Back façade of monastery after rehabilitation*

Vice-Rectorate of the University of Santiago in Lugo (2000-2013)

In 2000, the University of Santiago de Compostela (USC) called an architectural competition to design its institutional headquarters in Lugo. For this purpose, it acquired two emblematic buildings in the ancient landscape of the Roman defensive wall [7], declared a World Heritage Site that same year. The new headquarters of the Vice-Rectorate is placed opposite the Cathedral, Neoclassical in Romanesque origin, and next to the Gate on the defensive wall named Santiago Gate (Fig.18). The appearance of an important archaeological site, with a Roman villa and a temple of Mithras, forced the project to be modified to make the USC vice-chancellor's offices compatible with the musealization of the archaeological remains. In this magical place, many layers of the city's history are superimposed. The volume that represents the university consists of two buildings. The main building of the Pazo de Montenegro and the complementary building that, supported by a studied structure, allows us to guess the history hidden beneath a solid institutional construction (Fig.19).

As can be seen in the images (Figs. 20-23), the place is very compromised; it is very delicate from a heritage point of view. A place with a strong character and an unmistakable atmosphere (Fig.24). Without a doubt, the most determining factor of the project.

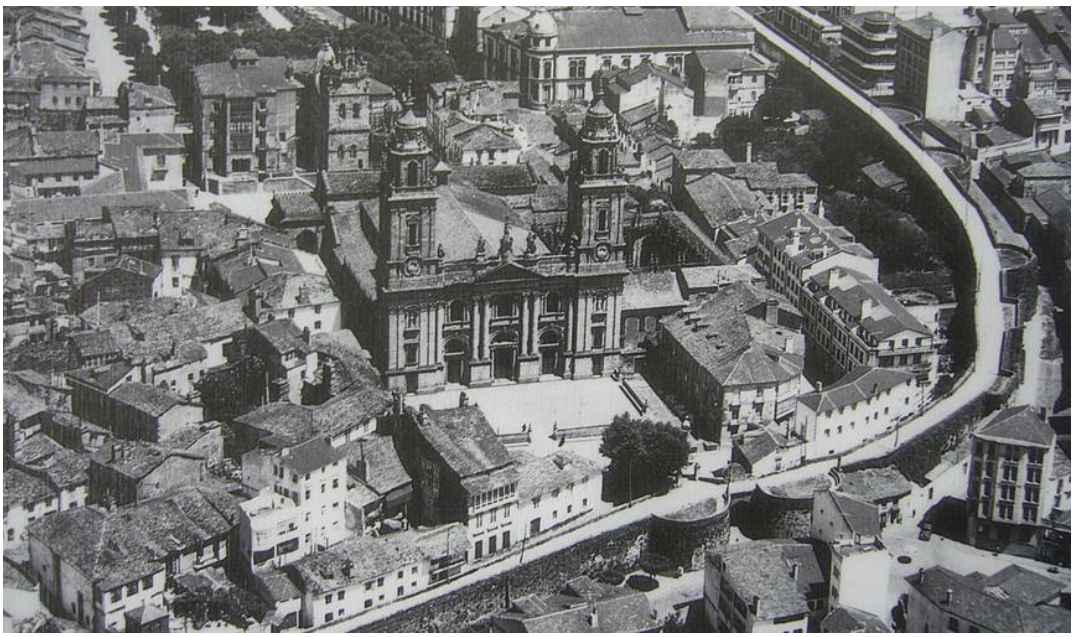

Fig. 18. *View of Lugo city with its cathedral and defensive wall, 2006*

Fig. 19. *Sketch of the proposal drawn by Felipe Peña, 2014*

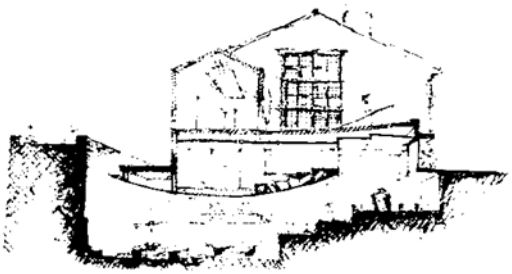

Fig. 20. *Sketch of the proposal, 2001*

This project reuses two buildings: an urban palace and a house are going to be converted into the offices of the USC in Lugo and, as the works progress, into a museum with an auditorium. At first glance, the compatibility of the uses seems complicated. Felipe Peña has to do a bit of magic to reconcile the new needs with the pre-existing buildings.

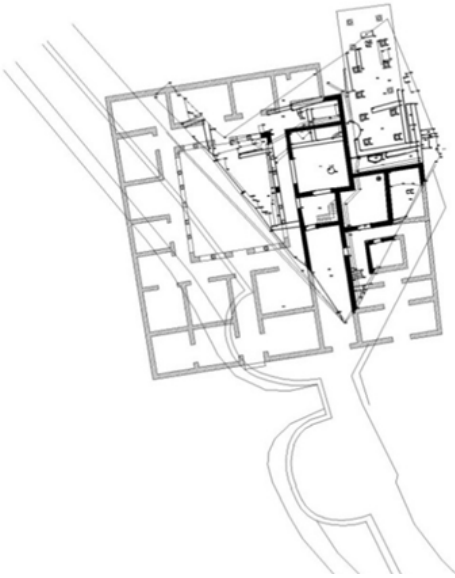

Fig. 21. *Plan of the proposal, 2001*

During the works, beneath the second building, the remains of a Roman villa and temple appear. The Romans had first built the villa, then the temple, and, finally, the city wall. The Roman walls of Lugo are like an enormous chest (Figs. 25-27).

One of the volumes, the main building of the Pazo intended for the vice-chancellor's office, is maintained, and its casing is being restored. The second volume is going to be demolished. However, it is being redesigned without falling into the temptation of creating a new, decontextualized museum. On the contrary, the project is subject to control of the forms and respecting its surroundings. To do this, he reinterprets the play of volumes of the original building, subtly incorporating the new use of a public building. And all this, with the new building literally floating above the Roman ruins (Fig.28).

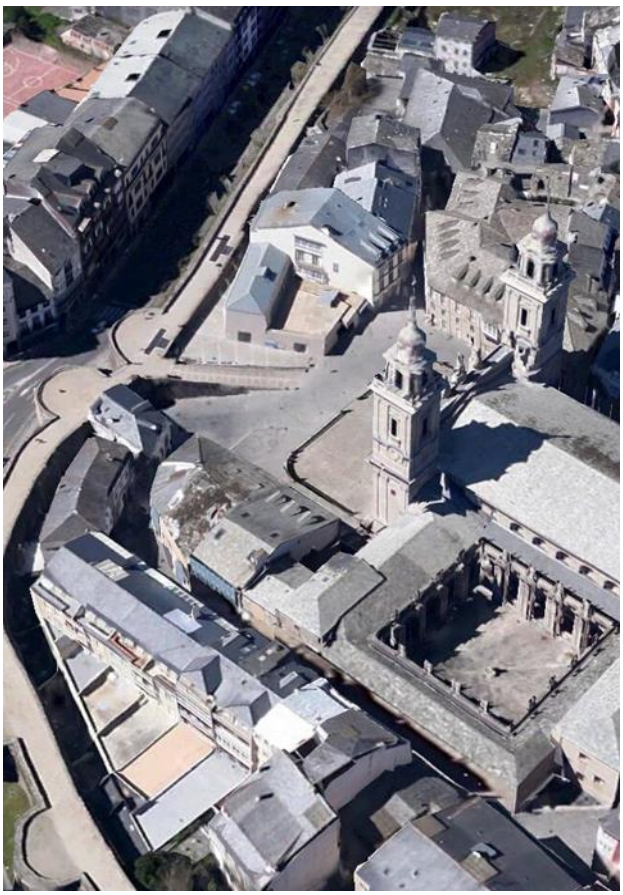

Fig. 22. *Birds view. Google Maps*

Felipe concentrated his design efforts on the lower part of the second building to give it a new institutional character (Fig.29, red rectangles). He maintained the original play of volumes, but in the detail of the openings and the entrances, he achieved the image of an important public building. This is reinforced by the use of an architectural language that is different from the other buildings, covering the facades with large pieces of stone, like a huge sculpted block of stone (Fig.30). The influence of great architects, such as Moneo and Siza, is evident.

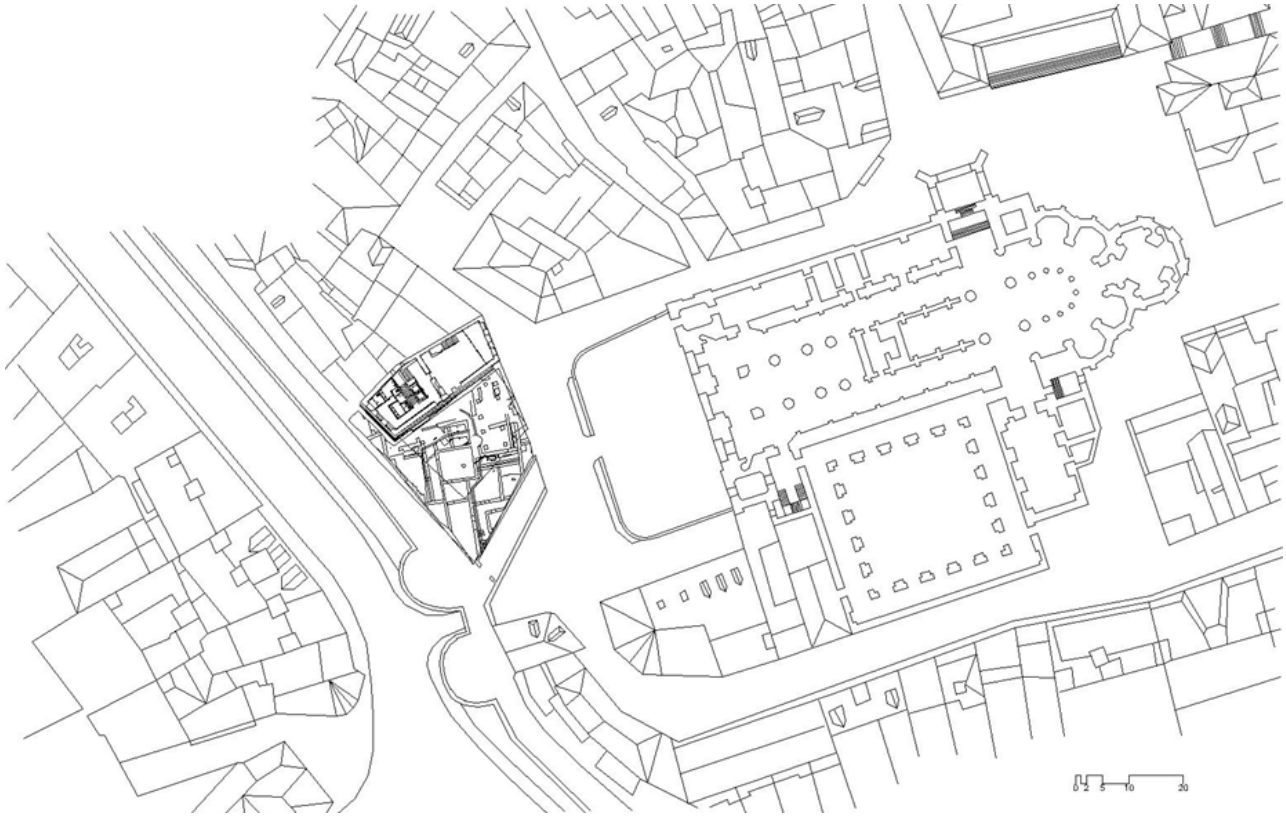

Fig. 23. *Site plan with the proposal, 2001*

Fig. 24. *Old photo with atmosphere of the place*

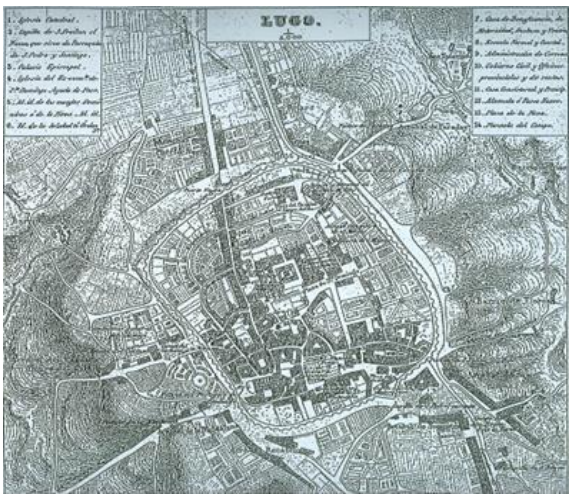

Fig. 25. *The place on the plan of the historical city*

Fig. 26. *Images of the remains of the Roman ruins*

Fig. 27. *Images of the remains of the Roman ruins*

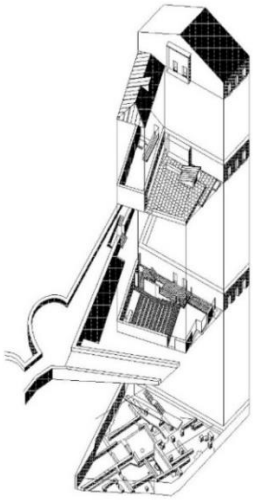

Fig. 28. *Axonometric proposal*

Fig. 29. *Plans, elevations and sections of the project*

And the bad location of a waste bin ruins the entire building and the public space that surrounds it. This is an example of typical uncontrolled decisions by the city councils when it comes to the arrangement of street furniture. Reflections about the furniture in the public space surrounding built heritage are an interesting issue. This question would be the subject of another study.

Fig. 30. *The finished work*

Rehabilitation of the House of the Japanese (2009-2024)

The House of the Japanese is an old house for sailors and farmers, with a stable on the ground floor, located in the centre of the town of Redes. It is a construction from the beginning of the 20th century, which has had a couple of important renovations and extensions.

The town of Redes, which has a small fishing port, is an exception in the Galician coastal landscape. We bring this project due to the appropriate integration of its urban structure in the place, the quality of its architecture, both popular and cultured, and for having managed to maintain its essence and scale over time. Despite the profound evolution of living conditions.

In this rehabilitation, the use remains the same, more or less. It is still a home, but the stable on the ground floor disappears, and the way of life changes completely. And it changes because the original inhabitants of this rural centre had needs, derived from the economic and social conditions of the place, which have disappeared today. The process of tertiarization of the economy, moving from the primary sector, based on agriculture, ranching, and fishing, to the tertiary sector, i.e., services, especially tourism, is almost complete.

Below, the position of Redes in its geographical context and the house in its urban context are shown (Figs. 31-33). And also the atmosphere of the place seen from the sea (Fig.34).

Fig. 31. *Location of the house in the Gulf of Artabro, on the nautical chart*

Fig. 32. *17th century plan (Teixeira 1634); first plan showing village of Redes*

Fig. 33. *The oldest photo of the house*

Fig. 34. *Landscape of the port of Redes from the sea in the mid-twentieth century*

Redes (nets, translated into English) takes its name from the influence that the Cabrias (Fig.35) had on its coastal landscape. The Cabrias are primitive wooden structures consisting of pillars driven into the sand and beams tied at the top, forming porticos. Sailors hung the nets from the boat itself, as if it were a curtain. This fact transformed the landscape of the town. These striking elements have been partially recovered in the first decade of this century thanks to the initiatives of the Caamouco Instructional Association (2005) and the Galician Association of Architects (2007).

Fig. 35. *Cabrias in Redes*

The project we present is located in a privileged position, on a corner in the middle of the historic centre of the town, facing southeast. A corner where the streets are widened, generating a public space of great intensity. In the following images you can see the strategic way in which the buildings of the urban layout are located in the place, the almost unaltered conservation of this structure until today, the distribution of ownership of the plots (cadastral map), and the location of the house in the village (Figs. 36-39).

Although it applies to all cases, we will begin on this occasion by underlining the importance of the analysis and data collection phases in architectural projects, in architectural rehabilitation projects, and, especially, those carried out on built cultural heritage.

The first task of the rehabilitation was to measure the building. In addition, accurately calculate the angle between the facades. It is not an easy task. There are no right angles in the house, and some walls are warped. Then you draw it by hand and measure it again. You do the same with the third dimension. And measure it again. It is like scanning the house, internalizing its dimensions and its character. A work of art (Fig.40).

Fig. 36. *American flight from 1956*

Then it is drawn on the computer, which does not add anything new but speeds up the work. Moreover, different alternatives for the organization of the house begin to be designed… (Fig.41).

The most important thing is to break the box or, rather, to break the boxes inside the box. And it is also important to consider the distribution of light inside [8]. We respected all the original openings of the building, doors, and windows, and we added three windows on the roof. This was our criterion when facing rehabilitation.

The building consists of four floors: ground floor, first floor, second floor, and attic. The ground floor has two levels to adapt, in part, to the slope of the streets. It has access from each street: the main one to Rúa do Medio (with a three-leaf door) and another from Travesía do Pedregal (with a two-leaf door). With a floor area of approximately 50 square meters (6x8). The two streets have a steep slope from Praza do Pedregal, where the port is located, to the upper part of Rúa do Medio. The long façade faces southeast, and the short one faces northeast. The other two walls that define the plot are dividing walls from the adjoining ones.

Fig. 37. *Urban and ownership structure of town*

According to construction evidence, the house had at least two important extensions, which are undated. The first consisted of adding a floor. And the second, in the addition of an open gallery to the northeast. This gallery covers the main entrance and a bench next to it, attached to the façade. In this way, the transition from public to private space is lengthened and enriched. The three-leaf access door also multiplies the relationships between the outside and the inside.

The plot has the shape of a deformed rectangle, like a rhombus. There were no right angles in the original layout. The house, on its upper floors, is organized by dividing the surface into six parts. Three on the long side by two on the short side. In the central part, on the long dividing wall, is the staircase, an element that organizes the house three-dimensionally.

The staircase occupies the perfect place for the spatial organization of the house. For this reason, it maintains its position in the renovation, changing the material from wood to steel and opening up to the interior space. The design of the railing becomes a fundamental issue in the project. This is done in collaboration with the sculptor Benito Freire (Fig.42).

The building was used as a family home. But most of the ground floor, the lower level, was occupied by a stable with space for three animals (pigs or cows). The stable was accessed via the Travesía del Pedregal and was paved with a well-executed concrete slab. The other part of this floor was used as a hall, storage, and meat salting. It is accessed through the main door, via Rúa do Medio, and the pavement was compacted earth (in Galician, chan, flat ground). Over time, the only bathroom in the house was installed in this space. The first floor was occupied by the kitchen, a small room in front of the staircase, and a bedroom overlooking the gallery. On the second floor, there was a living room and a bedroom. And in the attic, there was storage space.

Fig. 38. *Current aerial view of the house*

Fig. 39. *Current bird's eye view of the house*

Fig. 40. *Planimetric survey of the pre-existing building*

Fig. 41. *Plans of the previous state, alternative distribution and definitive solution*

Fig. 42. *This is the ground floor. With the position of the old stable. And the light cube. / This is a diagonal view through the light cube. / View through the light cube on the first floor*

The house was in poor condition, very deteriorated, when it was acquired in 2005, but the load-bearing walls are strong, if they do not get wet, because they are made of slate and mud (Fig.43).

It is a humble house, but with a significant presence in the village. That is why the decision was made to respect its facades with the original door and window openings. Initially, the pavement of the streets was made of concrete. In 2007, before the municipal elections, the council paved the streets with asphalt. People protested and stopped the work. In 2008, the asphalt and concrete were removed. And in 2009, it was paved with stone with the help of European funds (Fig.44). The material is undoubtedly the most suitable, but in doing so, the level (grade/slope) of the streets was modified, removing the platform of the threshold and demolishing the bench at the entrance. Note the evolution of this transition space, this threshold, under the gallery (Figs. 43,44).

In 2010, we began the work. Time was on our side. On the outside, we focused on the study of colors (white, ecru, pink, and blue…), because the criterion, as has been said, was not to modify the shell, the casing of the building (Fig.44).

The most difficult part of the rehabilitation project remained: the organization of the interior space and its lighting. We took time to reflect on its design and materialization, and we began the works, within the building envelope, in 2014. As has been said, the key was to break up the box and distribute natural light. This was resolved by placing a **light cube** in the heart of the building, freeing the ground floor from the stable wall, leaving it open and at two levels, using glass partitions on the first floor, and leaving the second floor open with a partition of practicable panels (Figs. 42,45,46).

Fig. 43. *Street made of concrete (2006), asphalt (2007) and under construction (2008)*

Fig. 44. *The stone-paved street (2008), the house in construction (2010) and the renovated house (2011)*

Fig. 45. *These images represent the most important decision of the intervention, the* ***light cube***

Fig. 46. *The second floor, which is an open space with a movable partitio*

Finally, it should be noted that the pace of the actions has marked the character of the project and the work. The long periods of reflection allow for the decisions of the project, the contracts, and the execution of the phases of work.

Results and Discussion

If the negative of the built landscape, in photographic terms, is the public space [9], the positive would be the buildings. In this paper, we have discussed heritage buildings that, having lost their original use, undergo a rehabilitation process that includes a change of use. As has been said, only a small part of the inherited architectural heritage can be preserved in a more or less consolidated state of ruin. The majority, however, has to recover its usefulness through a new function that satisfies new needs, even if only in a limited way. A key concept in this process is the compatibility of the intended new use with the existing building's shell. It is, in general, the recovery of the usefulness that brings the architectural heritage back to life [10].

The case of the Tower of Hercules, in A Coruña, declared a World Heritage Site by UNESCO in 2009, is a paradigmatic example of a building built in the time of the Roman Empire that maintains its original use as a lighthouse. This is an exceptional case. The most common thing is that architectural heritage changes its original use to a greater or lesser degree. This is the situation in the three case studies that we have analyzed in this research.

Historic buildings usually have the quality of being versatile in terms of changing their use. In the interventions in the built heritage belonging to the Modern Movement, the difficulty of finding compatible uses is greater due, among other things, to the fact that they were based on functional precision.

Our examples of rehabilitation are carried out on historic buildings. But the context and the place must be taken into account so that the intended synergy continues to be strengthened. In architectural rehabilitation, the importance of the program and the place (as in any architectural project) is added to the importance of the pre-existence on which it acts. In these cases, the criteria for intervention on the Heritage become relevant. The evolution of these criteria, from the second half of the 19th century and throughout the 20th century, enriches the theoretical foundations of the discipline. From the opposing positions of the romantic John Ruskin [11] and the daring Eugène Viollet-le-Duc [12], debate is still evolving [13].

In the three cases analyzed, we find common characteristics and also differential features. In all of them, it is a question of intervening in the built cultural heritage in places of great responsibility, but with its specific problems and scale.

To sum up:

In the Convent of San Francisco in Ourense, we find an enormous pre-existing structure that has been greatly altered. Not only due to the deterioration caused by abandonment and the passage of time, but also due to a very ill-advised previous intervention. The complex must be restored, as far as possible, to its state before that intervention. The uses required by the new needs of society are very different from the original function of the Franciscan monastery, now becoming part of a cultural complex. One of the main tasks of the project is to make the new uses compatible with the building, fitting the parts of the program in such a way that the essence of the organizational structure of the old convent is not lost. Another issue to be resolved is the dialogue between the new parts of the rehabilitation and the existing ones. We are in a typical task of establishing criteria in rehabilitation projects. The site of the project is a challenge due to its location in the urban layout. A position outside the city walls, on the edge of the old city wall.

At the Pazo de Montenegro in Lugo, the problems in the abstract are similar, but they are concretized differently. The place and its intense spirit represent a commitment that is difficult to overcome. The two buildings to be rehabilitated are in a very delicate part of the city. Located on the Roman wall on one side and facing the atrium of the cathedral on the other. The new use was as offices for the university with its representative character. The two Pazo (palace) buildings, as a large palatial house, seem to adapt well to the new function. The surprise comes when the works begin and, beneath one of the volumes, some important

archaeological remains from the Roman era appear. The new use of a museum with an auditorium appears, and the need to allow the archaeological campaign to be visited by the public. This requires the use of different criteria for rehabilitation in the two parts of the pre-existing building. The main volume of the Pazo will be restored as the headquarters of the University of Santiago in Lugo, and the second building will be rehabilitated as a museum. Without any stridency, maintaining its volume almost unchanged but giving it the required institutional presence.

In the case of the house in the fishing village of Redes, we also find ourselves in a very delicate location. We are on an important corner between the public spaces of the historic centre. The original use was for housing and stables, a typical construction of a rural Galician centre, a fishing village. The new function is still housing, although the socio-economic transformation of the place and, in general, of the rural environment has been radically transformed. The rehabilitation criterion adopted in this case is that of a qualified restoration of the shell. A more far-reaching action goes on the interior to organize the needs of the new house. Distributing natural light appropriately and trying to *break up the box* with a volumetric continuity, with the staircase as the main element. Of course, the maintenance of the existing openings, gaps, in the façades partly conditions the interior solution. This case, conceptually, is similar to that of the Pazo de Montenegro in Lugo.

Conclusion

The detailed analysis of these three case studies and the synthesis of results allow us to conclude the importance of the program and the site in the rehabilitation of architectural heritage, the determining factor of pre-existing buildings in the development of the projects, and the intervention criteria applied. The integration strategies of the new uses proposed have been compared, both in the buildings and in the architectural landscape. In these three cases, it is demonstrated that time is crucial in the process of developing projects and in the execution of works.

In any case, despite the specificity of these projects in the field of architectural rehabilitation, it is still a specialty of architectural design. We are talking about Architecture. Finally, once again, it is clear that drawing is a fundamental tool for approaching architectural projects [14].

Other aspects of the study, which do not fit into this paper, are the importance of the furniture in the occupation of the space, the artificial lighting, and the climatic and energy issues.

Acknowledgment

Thanks to the Department of Architectural Design, Urban Planning, and Composition of the School of Architecture of the University of A Coruña, to the Iacobus Program, and to the research unit **pARQc** (Landscape, Architecture, and City) of the UDC (Universidade da Coruña).

Conflict of Interest

The authors declare no conflicts of interest.

Funding

This research did not receive any financial support.

References

[1]. C. Brandi, Teoría del restauro. Alianza Editorial, Madrid, 1988.
[2]. G. Giovannoni, Vecchie città ed edilizia nuova. Il quartiere del Rinascimento a Roma. En Direzione dalla Nuova Antologia, Roma, 1913.
[3]. G. Giovannoni, Restauro del monumenti e urbanistica. Palladio (Istituto Poligrafico e Zecca dello Stato), 21 (2-3), 1943.
[4]. M.A. Roque, Un patrimonio vivo y dinámico. Quaderns de la Mediterrània, 13, 2010,178-184.
[5]. F. Tomás y Valiente, El marco político de la desamortización en España. Ed. Ariel, Barcelona, 1972.

[6]. J.L. Martínez Raído, La Disociación de Masas. Incidencia de la estructura en la forma arquitectónica. Doctoral thesis. ETSAC Universidade da Coruña, A Coruña, 2023.
[7]. J.L. Martínez Raído, Las murallas defensivas según Vitruvio. La muralla de Lugo. In Recinto Lugo: historia y ciudad. UDC, A Coruña, 2014, 104-127.
[8]. G. Michel, La ruptura de la caja muraria de Wright. En Aprendiendo de la arquitectura. Diseño Editorial, Buenos Aires, 2020, 255-278.
[9]. F. Peña Pereda, L.W. Muñoz Fontenla, J.L. Martínez Raído, Public Space Built as Living Heritage. Multidisciplinary Reviews, 7, 2024. Doi: https://doi.org/10.31893/multirev.2024ss016
[10]. S. Pérez Arroyo, S. Mora. La piel y los huesos. En Proyecto de restaruación del Monasterio de Carracedo. Diputación Léon, 1987.
[11]. J. Ruskin, The Stones of Venice. Smith, Elder & Co., London, 1851-1853.
[12]. E. Viollet-le-Duc, Dictionnaire raisonné de l'architecture française du XIe au XVIe siècle. A. Morel, París, 1868-1875.
[13]. R. La-Hoz Arderíus, De Ruskin a Viollet-Le-Duc. III Congreso Internacional de rehabilitación del patrimonio arquitectónico y edificación. Academia San Fernando, Madrid, 1996.
[14]. F. Peña Pereda, Dibujo y Proyecto. Universidad de A Coruña, A Coruña, 2006.

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THE IDEOLOGICAL CONTENT AND ARCHITECTURAL FEATURES OF DRINKING FOUNTAINS

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Abstract: *In the late Middle Ages and until the beginning of the 20th century, the drinking fountain was one of the economic and cultural structures of the settlement. After the Sovietization of Armenia and especially during and after the Patriotic War, when monument-building was encouraged, favorable conditions were created for the construction of springs and especially spring-monuments. In Armenia today, memorial fountains come in a wide variety of forms and are placed in various locations for various purposes. Their ideological content and structural, figurative analysis have not yet been fully explored in the thematic literature. Since these monuments already form a sizable group in material terms, we believe it is essential to discuss the subject and fully unveil the image, to present a comprehensive study of the process of forming monumental fountains as a materialized product of memory. This work aims to present the memorial fountains' plan, spatial composition, typology, and characteristics, as well as the reasons behind their construction. It also attempts to address their ideological content, installation motives, compositional, structural and artistic features, to expose the cultural perception of memorial fountains, which is closely linked to the cult of water and the materialization of memory. The study used the landscape research method, based on analysis, data collection, and synthesis of interdisciplinary studies. The method also included work with literature, which made it possible to trace the historical development of memorials as separate monumental structures.*

Keywords: *monument, memory, water, worship, fountain, culture, architectural, heritage.*

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Received: 20.11.2024
Revised: 20.02.2025
Accepted: 10.03.2025

Introduction

Drinking fountains are monumental structures erected in public spaces that have a public function and are intended to preserve the memory of important events and people of public importance. The study of memory, particularly in the last century, is one of the directions that has developed within the social sciences. It is an interdisciplinary field of study that draws on psychology, sociology, anthropology, history, and cultural studies to show how memory functions at the individual, collective, and cultural levels, where the focus of the study is not the event and date but the formation of social memory about this or that event and date and its manifestation. Here, we are particularly interested in a process that is commonly called "materialization of memory" in professional terminology.

The concept of "materialization of memory" has been used by various researchers, so it is difficult to point to a single source. However, the term is particularly associated with the French philosopher and sociologist Maurice Halbwachs, who, in his 1925 work Les Cadres sociaux de la mémoire (Social Frameworks of Memory), discusses how memory is shaped and influenced by social structures and collective experiences, and how memory can manifest itself in tangible ways in societies. For Halbwachs, memory is an objective reality that exists outside and independent of human consciousness and shows how memories work together in society and how their actions are structured according to social order [1]. It was later used by the French historian Pierre Nora, who is known for his concept of "lieux de memoire" (places of memory), which emphasizes the importance of physical spaces and material objects in the formation of collective memory [2].

The mystery of the spring, and in particular the fountain, is associated with both the sacred ritual of memory and the cult of water.

Alongside the beautiful legends about water worship among Armenians, we find place names that are also related to springs and ultimately the worship of water. In Armenia, there is Byurakan, which is precisely defined as a place with numerous springs. Of those "many springs" of Byurakan, seven springs are very famous: Katnaghbyur, Toghaghbyur, Paghaghbyur (spring), Gyughi metz aghbyur (spring), Kamun aghbyur (spring), Sev hatik aghbyur (spring), and Meghrik jur aghbyur (spring). They have special power. In folk tales, these seven springs are often found with coded meanings. The hero of the tale, passing by these seven springs, overcomes certain trials, and each spring has its unique meaning. According to ethnographers, the hero first goes to Katnaghbyur, which is connected with Tsir Katin (Milky Way) and the "first spring" from which a person is nourished when he is born. That is, from mother's milk he receives the genetic information, the genetic memory, which only that person should know. Then the hero goes to Taghaghbyur or Toghaghbyur. Here, knowledge is given through poems and lines, books, school, study, etc. Next, the hero reaches the Paghaghbyur (Cold Spring), which crystallizes his knowledge, as if freezing it, and when he approaches the Kamun aghbyur (Windy Spring), it mixes and shatters everything that a person had believed in for so long. Passing through this spring, he reaches the Sev hatik aghbyur (the Black Grain Spring), which symbolizes the dark point that happens in almost everyone's life, the stage of difficult trials, which if the hero overcomes with honor, he reaches the Great Spring of the Village. The elders of the village always sit here. That is, the hero grows up, already has experience and wisdom, and gets the right to vote. And at the end, he enjoys the water of the Meghrik (honey) spring (the source is located near the St. Hovhannes Church in Byurakan), which symbolizes perfection, paradise, and light. The hero of the fairy tale fulfills his life's mission.

The architectural examination of Armenian sources and particularly memorial fountains is presented in the works of V. Harutyunyan [3], S. Mnatsakanyan [4], H. Khalpakhchyan [5], Z. Dolukhanyan [6], K. Balyan [7], S. Karapetyan [8], L. Kirakosyan and G. Nahapetyan [9] and others. The cultural examination is found in the works of H. Marutyan [10], A. Safarian [11].

Applying a multidisciplinary approach, the research aims to present a comprehensive examination of the process of shaping memorial fountains as a materialized result of memory, which is contested in space. Currently, memorial fountains in Armenia are numerous, multifaceted, and installed for various occasions and in different places. Their structural, figurative examination, and ideological content have not been fully presented in the thematic literature to date. Considering that these monuments already form a fairly large group in material terms, we believe it is necessary to address the topic and, to fully reveal the image, to conduct the discussion in the context of "memory" and "recollection" categories. The work aims to describe the authenticated memorial fountains, identify the motives for their construction, and present the plan and spatial composition and typology. It also aims to reveal the cultural image of memorial fountains, which is directly related to the materialization of memory and the cult of water.

Materials and Methods

The article used the landscape research method based on analysis, data collection, study, and synthesis, which includes describing memorial sources, photographing them, and classifying them, as well as working with literature.

Results and Discussion

A memorial fountain is a monumental structure and is found in the recent past. The structure of the fountain, however, and the traditions of memorial architecture in Armenia are old, dating back to ancient times. The first monumentalization of a fountain and water is seen in the example of vishapaqars (dragon monuments). Their erection near water bodies and springs, according to some researchers, is associated with the cult of water [8,12] (Fig.1).

These took on perfect forms already during the periods of the Kingdom of Van and the early Armenian state. They were also manifested in the form of monuments, separate structures, and their complexes in the Middle Ages. The excavations of Dvin revealed the remains of a fountain dating back to the 4th-7th centuries, emerging from a vertical slab with a horizontal spout [13]. In the developed Middle Ages, the spring was already an architectural structure with a more complex composition. It became a remarkable element of the ritual environment. And the ritual environment itself represented a complex structure: a church, a chapel, a khachkar.

Especially interesting from the Middle Ages are the springs of Haghpat and Sanahin, the first of which, with its solutions (at least in the front part), can be said to be the prototype of the Zorats St. Stepanos Church in Yeghegis, and the second, thanks to the division of the internal volumes into two parts by an arched roof, has affinities with the architecture of Armenian inns. The spring is located outside the walled area of the Haghpat monastery complex, about 100 m east [8] (Fig.2,). It is an elongated hall with a rectangular plan, three walls of which are blank, and the southern longitudinal wall is formed by two small arched openings on the sides and a large central one under the gable of the gable roof. Inside, along the entire length of the northern wall, six interconnected troughs or basins are installed, through which water flows. And these troughs are specially made so that more people can use the water at that moment.

The Sanahin monumental fountain is a rectangular hall stretched horizontally in plan [8] (Fig.3). The front part is double-arched, which is also bordered by blind walls on the sides. The pair of semi-cylindrical chambers covered with a depth rest on the lateral walls and, in the middle part, on a lower transverse arch. The roof is gabled. In the right-hand corner of the interior of the hall, where the water outlet is located, a square-cut stone trough is built. From there, the excess water is poured into a water-collecting vessel built of large basalt slabs connected next to the longitudinal wall. Inside the hall, there are two interlocking khachkars, and on the wall is carved the inscription of the donation for the reconstruction by the priest Mkhitar. The source of the spring water is located in the depths of the mountain adjacent to the Surb Sargis chapel, from where it was brought in clay-fired pipes.

Such memorial fountains were built in Haghpat, Makaravank, Khorakert, and elsewhere.

In the late Middle Ages and until the beginning of the 20th century, the drinking fountain was one of the most important socio-cultural structures of a settlement (especially a rural one). These are no longer monumental structures but mainly open-air structures, not covered, with a water collection basin, a well, and a boat.

Fig. 1. *Vishapaqar (Dragonstone)*

Fig. 2. *The spring of Hagpat monastery complex*

Fig. 3. *The spring of Sanahin monastery complex*

Fig. 4. *Drinking fountain dedicated to Armenian Genocide victims, 1965. Etchmiadzin*

In the Soviet years, the construction of memorial fountains was intensified in the post-war years, especially in connection with the construction of complexes dedicated to the victims of the Patriotic War. A large group also includes complexes dedicated to the victims of the genocide, which are directly related to collective and historical memories (Fig.4). They are important elements characterizing the terms "ethnic community", "nation", and "national identity". This situation conditioned the emergence of memorial complexes and, in particular, memorial fountains already in the years of independence. It is noteworthy that springs, along with other public-benefit structures, such as bridges, have been and remain unique monuments worthy of gratitude and inexhaustible blessings from generations, which is why people who have a desire to leave a good memory have given special importance to the construction of drinking fountains for centuries. Moreover, fountains were mostly built in memory of both living and deceased persons, as well as victims and martyrs who dedicated their lives to the homeland. There are also fountain-monuments built to commemorate individual anniversaries and significant events.

The abundance of these structures in the Armenian Highlands is primarily due to Armenia's arid climate. Water has been culturalized and has become an object of worship.

There are beautiful traditions related to water worship among Armenians, both in the Armenian epic and mythology, in everyday rituals, etc. The product of the ideas of our distant water-worshipping ancestors is the monumental monuments with bull-headed, fish-shaped, or simply mythical animal images–dragon stones–placed mostly at the sources of springs or on the shores of lakes. According to the ideas of the ancestors, these controlled and ensured the uninterrupted flow of water, protecting them from the encroachments of evil forces.

In the early days of Christianity, the ideologists of the new religion, using the people's reverent attitude towards water, attributed the emergence of various springs to the miracles of this or that apostle or saint (especially the prayers of the apostle Thaddeus or the striking of his staff on the ground). Springs named after various saints were built, to which healing properties were attributed (for example, the treatment of vision or infertility). This is where the names of the springs Katnaghbyur, Pagalhbyur, and Meghrik Jur came from. The drinking fountain becomes an integral element of the ritual environment. Each drinking fountain had its own church, chapel, and khachkar.

The emergence of memorial fountains and their spatial composition

The memorial fountain was not widespread in the ancient past. Its presence was excluded in the case of death monuments. There were separate fountain structures, and the monuments and tombstones that were erected for the deceased were located in the areas near churches or in cemeteries, which were usually located outside the settlements themselves. The reason for the separate appearance of the fountain and the tombstone was related to the semantic-symbolic incompatibility of the fountain and death that existed in early perceptions. According to the earliest perceptions, water, on the one hand, is the embodiment of chaos, and on the other hand, it is a symbol of eternity and this-worldly life, a new life.

The monument and tombstone built on the occasion of death were supposed to guarantee the safe passage of the deceased or his soul to the other world. The monuments erected in the ancient past had exactly that purpose and were exclusively for saving, which is why the idea of a fountain in that context became absurd. The fountain, built in memory of the deceased as a monument, appeared in public spaces later as a result of the transformation of these ideas.

The 20th-century Armenian architect Rafael Israelyan made a great contribution to the construction of fountain-monuments. The first fountain-monument, according to his idea, was built in 1943, during the Patriotic War, in Parakar. The construction of such fountains, as Israelyan himself notes, "became a demand

with which they constantly came to the Presidium of the Supreme Council" [14]. Fountain monuments in memory of the heroes of the Patriotic War were erected in different places in Armenia. Israelyan implemented more than two dozen such structures. They had the composition of medieval fountains but were not mere repetitions. The use of reinforced concrete structures allowed the Master to create freer, more sculptural, and even abstract architectural forms. Through the reinterpretation and symbolic depiction of clearly traditional architectural elements, he creates modern architecture. Israelyan's fountains are characterized by the exceptional richness of relief painting, which sometimes covers the entire surface of the stone. The architect conveys the elegance of medieval Armenian miniature painting on the stone. In some cases, this is a series of ornamental sculptures; in other cases, it is separate decorative layers that enhance the artistic content, necessarily subject to the tasks of architecture.

Another fountain-monument called "Katnaghbyur" is located on the eastern side of the courtyard of the Mother Cathedral of Etchmiadzin, to the left of the main road, a little back from the road, west of the printing house buildings. According to the beliefs of the Armenian people, the "milk" fountains are endowed with a variety of signs. They gave people strength and power, cured various diseases, gave children to childless women, and provided milk to those who did not have milk. There was such a "milk fountain" in the garden of the Ter-Grigoryan dynasty in the city of Keghi. They erected this fountain in the courtyard of the Mother Cathedral in memory of the "Katnaghbyur (Milk Fountain) in their native garden and their relatives who were martyred during the genocide. The lower part of the "Katnaghbyur (Milk Fountain) built by Israyelyan is a fountain with a decorated belt and a beautiful rosette; the upper part is a khachkar placed in a half-arch, like a half-ruined building, which symbolizes the destroyed settlement. The buried plain is separated by a long wall resembling a bench, where passers-by often sit and enjoy the soothing sound of water, awakening ethnic memory in them. The construction record is carved on the wall of the Milk Fountain-monument, according to which it was built in 1967. The symbol of eternity is carved next to the inscription (Fig.5). In this monument, the architect not only followed the style of classical fountains but also made the medieval khachkar an integral part of the fountain.

Fig. 5. *Katnaghbyur drinking fountain in the yard of Etchmiadzim Cathedral by Rafael Israelyan*

In 1965, in Yerevan, and in 1967, in Carrara, Italy, two drinking fountains were built by Israyelyan to commemorate the sister cities.

The Yerevan drinking fountain-monument is located in the Circular Park and presents the following composition: In the center is a vertical, slightly expanding main part; on its right and left sides are sculptures symbolizing rams looking at each other, which in shape resemble the traditional sculptures of rams of Jugha. These are decorated with bas-reliefs. On the ram on the left, in addition to plant motifs, a horseman is carved. The right one is covered only with patterns. The central monument has the grape motif characteristic of Israyelyan. From two connected branches stretching upwards in the middle, curved branches with leaves at the ends extend to the right and left sides, each of which has a cluster carved under its curvature. The entire composition symbolizes the tree of life. Above this are two large, one-dimensional, differently decorated rosettes. A bird-like fairy is carved under the right rosette. The sculpture of a mythical bird introduces asymmetrical activity into the overall symmetrical composition. The Yerevan version is built of gray tuff. The building material is gray tuff (Fig.6).

Fig. 6. *Yerevan version of Israelyan's drinking fountain*

In the Italian version, the fountain-monument is made of orange tuff. In the composition, the right and left rams are this time not facing each other but are placed perpendicular to the central monument, facing forward in the same direction. Here, the bird is in the center. Instead of the horizontal Yerevan version, the motif of the ornaments is the same, but the ornamental carvings are different (Fig.7).

The widespread use of fountains was greatly facilitated, of course, by the development of construction techniques, which facilitated the laying of water lines and the round-the-clock supply of water. These circumstances were the reason for the construction of fountains in the border zones of settlements and on nearby heights.

Fig. 7. *Italian version of Israelyan's drinking fountain (made of orange tuff)*

A unique fountain was opened in 1963 in memory of the late medieval Armenian poet, ashugh, and philosopher Sayat-Nova (in front of the Sayat-Nova Music School, at the intersection of Mashtots Avenue and Moskovyan Streets) (Fig.8). The architect is Eduard Sarapyan, the sculptor is Ara Harutyunyan.

Fig. 8. *A unique fountain was opened in 1963 in memory of the late medieval Armenian poet, ashugh, and philosopher Sayat-Nova (in front of the Sayat-Nova Music School, at the intersection of Mashtots Avenue and Moskovyan Streets)*

The monument is a rectangular memorial wall lined with white marble stones, which, with a wide opening in the upper part and the absence of some stones in the lower part, seems to be divided into two equal parts. On the left side of the wide opening is the bust of Sayat-Nova; on the right is the fountain, from which water flows into a decorative, small pool in front of the memorial wall. It seems that Sayat-Nova's lyrical poems emanate from that fountain. And the upper right-hand stone of the memorial fountain is covered with a bas-relief decorated with motifs from Sayat-Nova's poems, which depicts Caucasian women in national headdresses and roses. The smoothness and rhythm of the lines harmonize with the plastic forms of the poet's sculpture. His broad forehead, regular features, the purity of the stone processing, and the white color reveal the melancholic but inspiring image of the immortal singer of love.

On the left side, the following lines from Sayat-Nova's famous poem are engraved, which seem to be the key to understanding the combination of the fountain and the sculpture:

Not everyone can drink my water; it is a different water.

Not everyone can read my writing; it is a different writing.

Don't assume my essence is sand; it is a rock.

In this memorial fountain, memory is represented in the form of a bas-relief, a writing, and decorative motifs, which the passerby admires when he approaches the fountain to drink water. This phenomenon resembles a ritual. This is how the greatest masters materialized memory and culturalized the given

environment, because they realized that remembering the past is an active, constructive process and not a simple restoration of information. To remember means to place a part of the past in the system of views and serve the needs of the present.

In the Soviet period, memorial fountains were more of an economic and cultural nature. The fountain was built to receive water and had a practical meaning. Here, it is appropriate to single out a type of memorial fountain, which is called a spurting fountain and is a purely Armenian phenomenon. These are mainly widespread in cities and are erected for various occasions.

One of the original examples of these is the "Seven Springs" fountain in Republic Square, next to the National Gallery, which was installed in 1965. Initially, the fountain was decorated with bronze decorative fittings in the shape of a fortress tower and had heads in the shape of a chessboard, which, in 2010, at the suggestion of designer-jeweler Nur, were replaced with new ones.

The idea of "Seven Springs" represents the epic spring on Mount Aragats. Epic heroes and legends drank water from there, becoming strong, powerful, courageous, and able to defeat any enemy.

The "Seven Springs" fountain consists of seven fountains and has a circular structure. The heads of the fountain are made of bronze. Patterns are made along the perimeter, which contain a message that charges the water with positive energy, which is transmitted to those who drink water from the fountain. According to the author, one can also tell the time with the help of the fountains, since they are specially made to serve as a sundial at the same time (Fig.9).

Fig. 9. *The "Seven Springs" fountain in Republic Square*

All the memorial fountains presented above, and most of them, were built of solid stones (basalt, granite, and tuff). Being made of stone ensured permanence, eternity. These are memorial monuments and carry within them the idea of perpetuating memory; it was desirable that they be stable structures.

Location of memorial fountains, motives for construction, and sculptural themes

Memorial fountains are placed in public spaces: in micro-yards of residential complexes, in school yards (Fig.10), on sidewalks adjacent to highways, in main squares, at street intersections, in parks (Fig.11), near buildings, near church complexes (Fig.12), in village canyons (in the canyon of the village of Vahramaberd, Shirak region (Fig.13).

The motives for construction are numerous: they are built in memory of people who died in accidents, to perpetuate the memory of those who died unexpectedly or prematurely, in memory of famous people and events, and in memory of the repressed.

Initially, they had a collective nature, referring to a group of people who died not by an accidental death, but as martyrs, and thanks to whose sacrificed life a new life began and continues.

After the Spitak earthquake, which was followed by the Artsakh War of Independence, the fountain appeared

Fig. 10. *A drinking fountain in a school yard*

as a permanent component in many monuments erected in memory of innocent victims and fallen freedom fighters. Monument-fountains dedicated to a large number of individuals began to appear. These memorial fountains were dedicated to fallen freedom fighters and carried an educational and cognitive function, that is, they preserved the idea of martyrdom and the creation of a new life. And on these memorial fountains, the military nickname of the deceased was indicated, as well as his name and surname, which were simultaneously mentioned.

The memorial fountains are themed according to the sculptures on the walls. They depict:

- the sign of eternity, connecting with the idea of the eternity of the soul, symbolizing the sun, life, fire, lightning, fertility and childbirth, and progress and development.
- an inscription, through which information about the deceased is indicated, sometimes the motive for the erection, and other information.
- a cross, which, after the crucifixion of Jesus Christ, became a sign of salvation, victory, and eternal life for Christians. In the cross-stone inscriptions, the cross is presented as the hope and helper of believers, the guarantee of the salvation of their souls, and the guide to God, and in the cross-stone composition, the cross was perceived as a universal mediator between the believer and God.
- plant-geometric motifs, in particular the vine and bunches of grapes, pomegranates, and fruits, which, in addition to Christological symbolism, are also evidence of the garden worldview of the Armenians, which we find formed at least since Urartian times and whose stable development is observable almost throughout the Middle Ages.
- portraits or other thematic images related to the life of the deceased.

Fig. 11. *A drinking fountain in a park*

Fig. 12. *Memorial fountain in memory of Khrimyan Hayrik, Echmiadzin*

Fig. 13. *A drinking fountain in the canyon of the village of Vahramaberd, Shirak region*

Conclusion

Armenian fountain-monuments belong to the group of memorial architecture and have traditions from ancient times.

We see the first monumentalization of a fountain and water in the example of dragon monuments, the erection of which near waters and fountains is associated with the worship of water.

Fountains are monuments and are found in the recent past. They embody memory, connecting the past and the present. Fountains are placed in public spaces and have public significance. They are aimed at preserving the memory of important events and people of public importance and contain comprehensive information about the details of the biography of an event or a memorable person, which are worthy of remembrance and have educational significance. In fountains, memory is also preserved through a monument, which bears an inscription, a cross, an image, etc.

As monuments or monumental components dedicated to the memory of the deceased, the first memorials appeared in our reality during the years of Soviet rule and after World War II.

Monuments from different periods of Armenian architecture and art history are of great importance with their architectural features, stone processing, artistic solutions, and educational function.

Conflict of Interest

The authors declare no conflicts of interest.

Funding

This research did not receive any financial support.

References

[1]. M. Halbwachs, Sotsialnyye ramki pamyati. Novoye izdatelstvo, Moscow, 2007 (in Russian).
[2]. P. Nora, Problematika mest pamyati, in: Frantsiya-pamyat. Sankt-Peterburgskiy universitet, 1999, 17-50 (in Russian).
[3]. V.M. Harutyunyan, Haykakan chartarapetutyan patmutyun. Luys, Yerevan, 1992 (in Armenian).
[4]. S. Mnatsakanyan, Haykakan vagh mijnadaryan memorial hushardzanner. Academy of Sciences of Armenian SSR, Yerevan, 1982 (in Armenian).
[5]. O.Kh. Khalpakhchyan, Grazhdanskoye zodchestvo Armenii. Literatury po stroitelstvu, Moscow, 1971 (in Russian).
[6]. Z. Dolukhanyan, Rafael Israelyan. Graber, Yerevan, 2008.
[7]. K. Balyan, Memorial Yegern. Tatlin, 2015 (in Russian).
[8]. S. Karapetian, Armenian Fountains. Research on Armenian Architecture Foundation, Yerevan, 2023.
[9]. G. Nahapetyan, L. Kirakosyan, Historical Memory and Volumetric-Spatial Composition of Tsitsernakaberd Memorial Complex. Journal of Architectural and Engineering Research, 7, 2024, 40-48. Doi: https://doi.org/10.54338/27382656-2024.7-04
[10]. H. Marutyan, The Manifestations of Cemetery Culture in Armenian Monuments and Memorials. Handes Amsorya, Vienna, 2020 (in Armenian).
[11]. A. Safaryan, H. Muradyan, The Spring and the Khachkar (Monuments of the Second World War and Formation of New Khachkars in Soviet and Post Soviet Context). Multidisciplinary Reviews, 7, 2024 Doi: https://doi.org/10.31893/multirev.2024ss018
[12]. G. Tumanyan, Vishapakareri pashtamunkayin-kirarrakan gortsarruytnery, in: A. Petrosyan, A. Bobokhyan (eds.), Vishap karakotvoghnery. Gitutyun, Yerevan, 2015, 99-120 (in Armenian).
[13]. K. Ghafadaryan, Dvin kaghaky yev nra peghumnery. Academy of Sciences of Armenian SSR, Yerevan, 1952 (in Armenian).
[14]. R. Israyelyan, Hodvatsner, usumnasirutyunner, aknarkner. Sovetakan grogh, Yerevan, 1982 (in Armenian).

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THE ICONOGRAPHY OF THE DOME AS AN ARCHITECTURAL ELEMENT IN ARMENIAN MEDIEVAL MINIATURE PAINTING

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Abstract: *The article discusses the iconography of the dome as an architectural element in Armenian medieval manuscript illumination. The work aims to examine the features of depicting the architectural setting and its symbolic aspects and observe the types of dome-towers found in medieval ecclesiastical architecture. The study highlights how miniatures not only reflect the aesthetic views of the period but also serve as visual documentation of contemporary architectural practice. The key research task is to reveal, through comparative analysis with medieval Armenian churches, the interaction between artistic expression and architectural reality. This study contributes to a deeper understanding of the cultural and religious context, which can be shaped by considering the depiction of domes in miniature painting as historical documents. The research offers insights into the synthesis of visual art and architecture in medieval Armenia and emphasizes the enduring significance of this unique cultural heritage. This research may serve as a guide for researchers studying the origins and formal development of the dome in Armenian medieval architecture.*

Keywords: *manuscript, illustration, divine images, symbol, composition, architectural setting, church, dome, structure.*

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Received: 25.11.2024

Revised: 03.03.2025

Accepted: 21.03.2025

Introduction

Miniature art had a unique place in medieval Armenian culture. Since the early Christian era, the manuscript has been regarded as a holy book. Therefore, master artists spared no effort to endow it with spiritual qualities. Over time, miniature art acquired a symbolic and mystical character, becoming a vehicle for conveying Christian ideas. The books were luxuriously illustrated to make theological knowledge more descriptive and accessible. In addition to floral, avian, and animal motifs, the artists depicted plants, rhythmically repeating geometric patterns, and architectural elements. Great importance was attached not only to ornaments but also to calligraphy [1].

In monasteries, various religious manuscripts were created in the scriptoriums adjacent to churches. Despite the massive destruction of manuscripts by different conquerors throughout the centuries, approximately thirty thousand manuscripts have been preserved in collections around the world. A significant part of them is kept at the "Matenadaran" Research Institute of Ancient Manuscripts, named after M. Mashtots, in Yerevan; a large number are also kept in the libraries of the St. James Patriarchate in Jerusalem and the Mekhitarist congregations in Venice and Vienna, as well as in other museums [2].

Many authors have presented comprehensive studies on Armenian medieval miniature art, revealing the rich artistic heritage of Armenian manuscripts. However, several art historians, while conducting detailed iconographic studies of miniature compositions and stylistic trends, have paid little attention to the depiction of the architectural setting. It is worth noting that the prominent Armenian historian A.Sh. Mnatsakanyan's work "The origin and ideological content of the main motifs" is a unique study of the significance of ornamentation in Armenian visual art and the architectural motifs depicted in miniatures. He also draws parallels with the analyses of the architect and theorist T. Toramanyan, which relate to architectural compositions and history.

This article focuses on the iconography of architectural elements in Armenian medieval miniature art. The study aims to uncover the principles behind the depiction of the dome.

The addressed issues are:

- the scarcity of research on architectural iconography in Armenian medieval miniatures,
- the artistic interpretation challenges in the depiction of domes in medieval miniatures.

By addressing these issues, the article aims to enhance the appreciation of Armenian medieval miniature art, thereby contributing to a more nuanced understanding of its historical context.

The interconnection between architecture and miniature art is justified by the fact that in endless pictorial compositions, one can find architectural facts of significant importance. The numerous images of various architectural structures preserved in manuscripts contain abundant material for research related to both decoration and other architectural issues. Therefore, the unresolved questions of the origin and conceptual content of domes, towers, and architectural monuments in miniature art require new interpretations.

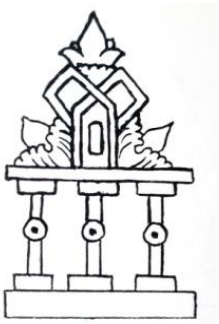

Fig. 1. *Decoration motif of a church-chapel*

Materials and Methods

As is well known, in ecclesiastical environments, thrones, cathedras, and altars were made of wood, artistically designed, and usually decorated with chapel-like ornamental adornments. In essence, these were models of ancient temples, which were simultaneously incorporated into Christian structures and churches being built during the same period (Fig.1).

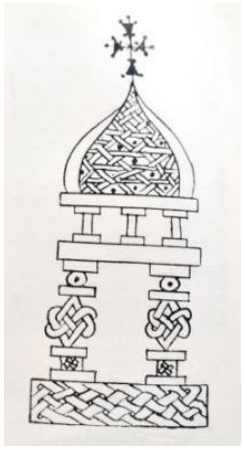

Fig. 2. *Ornamental painting of the church*

The manuscripts' diaries provide vast information on technologies, construction techniques, types of materials, and paint compositions. Artists worked with a variety of pigments, including tempera, natural pigments, plant-based adhesives, gold dust, and resin mixtures [2].

The rich miniature data confirms that medieval Armenian artists were not only engaged in calligraphy but also invested their efforts in architecture and sculpture, as they were originally designers. Based on their creative intentions, the masters depicted various forms of structures: stylized towers, pediments, columns, arches, and so on. Architectural elements in thematic paintings were conventional and often depicted schematically (Fig.2).

This research is carried out using iconographic and comparative analysis methods. The material includes scientific works on medieval miniature painting and architecture, along with diverse informational literature.

Results and Discussion

In the thematic compositions and decorative motifs of the manuscripts, artists consistently incorporated images of both secular and religious structures from their era, presenting both Armenian architectural elements and influences from other cultures (Figs. 3,4).

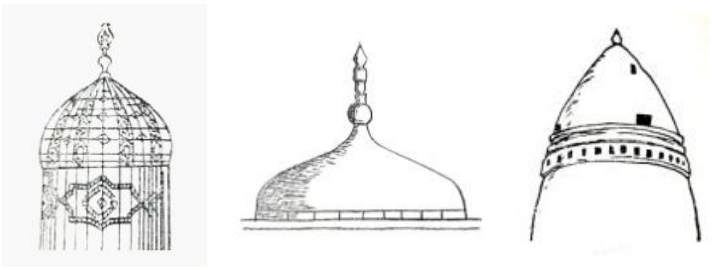

Fig. 3. *Types of mosque domes*

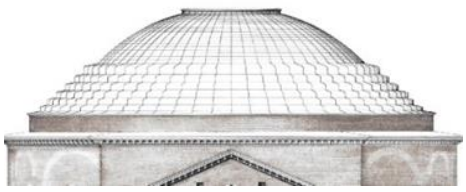

Fig. 4. *Dome of the Pantheon in Rome*

The composition and structure of the dome are of great interest. The word "dome" originates from the Latin "cupula" or "cupa" (meaning "cup"). It refers to the spatial covering of buildings. The dome is often shaped like a hemisphere or another surface formed by the rotation of a curve. Essentially, the dome is a vaulted roof or external arch placed on the top of a structure - often a hemispherical or spatial covering with different types of convexity.

Domes are mainly used to cover round, polygonal, or elliptical spaces, allowing large areas to be spanned without additional intermediate supports. This structural element is organized with upwards various convex curves.

Fig. 5. *Dome of the Mother Cathedral of Etchmiadzin*

In dome constructions, vertical load generates compressive forces and also horizontal thrust on the supports [3].

Having been part of ancient Armenian folk architecture, the dome reached its pinnacle in medieval Armenian church buildings, with the earliest known example being the Etchmiadzin Cathedral (301-303, reconstructed in 484 AD and 17th century) (Fig.5).

According to historian Agathangelos, in his vision, Gregory the Illuminator sees a dome rising on four pillars. The description serves as indirect evidence of the use of the dome. *"On the crosses of four pillars, remarkable arches were connected to each other, and upon them, I saw a dome-shaped cube and a divine cloud-like structure"* (Fig.6) [4].

Fig. 6. *Decoration motif of the dome*

The architectural form of the dome, as seen in ancient Armenian structures, serves as both a spiritual and cultural symbol. It represents the sanctified heavens - the celestial kingdom - and functions as a symbol of the Church's spiritual authority. This interpretation aligns with the observations of T. Toramanian regarding Armenian architecture, where he suggests that the tradition of dome construction may have roots in pre-Christian Armenian ritual practices. In one of his studies, he wrote: *"There is a hidden traditional pre-Christian custom in Armenian dome construction, which was originally associated with worship but later transformed into a symbol in the Christian period"* (Fig.7) [4].

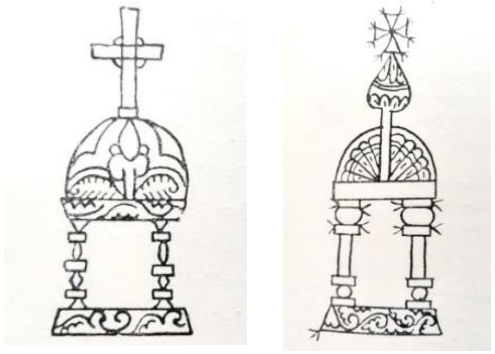

Fig. 7. *Decorative paintings of the domes*

Toramanian attempted to link the origin of the dome's structure to naturalistic meanings, reflecting the concept of Armenian mountains. He even emphasizes an example such as Mount Ararat. Although this argument is not fully substantiated, the author highlighted the cult nature of dome shapes and how Armenia's geography could influence architectural symbolism. Here, the dome can be viewed not only as an architectural form but also as a bridge between the sacred natural world and human-made structures, embodying both ritualistic and sacred values [5].

In miniatures, various types of temple - chapels are adorned with grain symbols. These are considered early representations of fertility-related rituals. The fruit-grain motif decorates the Christian cross, and the latter crowns the top of the dome. Miniature decorative paintings are filled with various types of chapels, columns, arches, domes, towers, the Tree of Life, floral and fruit combinations, and all architectural forms, as diagrams, are schematic (Figs. 6,8) [5]. As for the divine images, realistic dome constructions appear, with detailed descriptions.

Selected miniatures from Armenian medieval manuscript monuments are presented, particularly notable for their depictions of domes and arches.

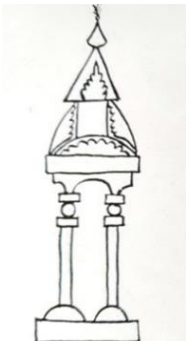

Fig. 8. *Decorative painting of the chapel*

Although the artists sought to depict scenes from the New Testament, they nonetheless reflected the architectural principles of their time in the portrayal of the environment. Thus, the presence of the temple is realistically emphasized in almost all manuscripts, particularly in the scene of the "Tyarnndarach".

According to ancient Mosaic religion, when a mother gave birth to a son, she was required to visit the temple forty days later to bless the newborn with holy fire and water. According to tradition, Mary and Joseph take the child to the temple for this ceremony. At that time, Simeon the Elder, upon seeing Jesus, realizes that He is the Savior and goes to meet them. This event gave rise to the "Tyarnndarach", which means *"To go to meet the Lord"*[1].

In the 11th-century manuscript of the *Gospel of Mughni*, the image of the temple is shown frontally, with antique Corinthian columns and an ornate arch design. In this depiction, the dome is shown schematically, which seems to suggest the entrance of the temple (Fig.9) [6].

Fig. 9. *Gospel of Mughni, 11th century, Manuscript, No. 7736*

In the 11th-14th centuries, the schools of miniature painting of Upper Armenia and Ani-Arsharunik developed in Mets Hayk (Great Armenia).

Cilician miniatures also stood out for their high artistic quality. Thanks to the craftsmanship of 12th-13th century artists, manuscript culture reached its peak. A key feature of Armenian miniatures was the richness of decorative motifs. The miniatures fully depict the rise of Armenian architecture and royal splendor, while the environment is portrayed with lively motion and secular depiction [2,7].

One of the prominent figures of the Cilician school is Toros Roslin. He created a number of luxurious manuscripts for the royal family and was the most realistic artist of his time. The talented painter depicted characters with human traits. Thanks to him, the first steps of the Renaissance were formed in Cilicia [2,8].

Fig. 10. *T. Roslin, 1268.* Malatya Gospel, *Presentation of Christ in the Temple, Matenadaran, No. 10675*

An outstanding example of Roslin's work is the *Malatya Gospel*, in which the decoration of the temple ceiling is presented in the *Tyarnndarach* scene (Fig.10) [9].

The tower has an upward-pointing conical shape and is supported by a flat surface, which is depicted as an oblique angle, creating the illusion of a square in the viewer's eye. The slender pillars supporting the sails are five in number and form an apparent pentagonal structure. It has a partially three-dimensional design, due to the light and shadow effects. The overall environment is laconic and expressive. As was customary in medieval painting, the composition is flat.

Another example of a dome can be found in another royal manuscript, the *94-22 Gospel*. There is no information about the author or the design of the book. Again, in the *Tyarnndarach* scene, an architectural structure is depicted. Although it is mostly flat and lacks volumetric development, the front view of the arch creates a delicate three-dimensional effect, emphasizing a sense of depth within the stylistic conventions of the medieval period. The drum resting on the sails is crowned with a dome. It can be assumed that this type of structure was widespread in Cilician church architecture, as there are numerous references to it in the manuscripts (Fig.11) [9].

[1] Kristonya Hayastan hanragitaran. Haykakan Hanragitaran hratarakchutyun POAK, Yerevan, 2002 (in Armenian). Available at: https://surl.li/blzuew (accessed on October 12, 2024).

In the XIII-XIV centuries, in Mets Hayk, a miniature school operated alongside the University of Gladzor. This school was more closely associated with monumental art (architecture, sculpture) than other schools of book art [10].

Toros Taroniatsi is a prominent representative of Gladzor. In the evangelical scenes, he depicted the environment in meticulous detail. In the *1318 Gospel*, in the *Tyarnndarach* scene, the dome is portrayed in a unique, realistic manner (Fig.12). The compositional layout is balanced. The artist attempted to address the perspective problem through the scale of the architectural structure, as well as through linear and color contrasts. The dome is convex, and a curtain with folds hangs from inside, creating a sense of depth. The artist moves away from the flat depiction, providing a certain level of three-dimensionality through a stylized approach [2,6,10].

Fig. 11. *13th century,* Gospel, *Matenadaran, No. 9422*

Fig. 12. *Toros Taroniatsi, 1318, Presentation of Christ in the Temple, Matenadaran, No. 206*

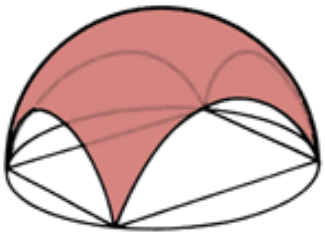

Fig. 13. *Structure of the Dome*

The miniature image can schematically be represented as follows. The dome is a protruding spherical structure that symmetrically descends with four sails and intersects at the same level of points on the same plane, creating volume and depth (Fig.13).

Domes with sails, also called "Byzantine domes", have a unique structure. The foundations do not merely form arches to hold the dome above, but they converge in the center, thus forming the dome. Such domes resemble a square sail, with the four corners anchored from below and expanded from beneath. A classic example is the dome of the Areni Church (Figs. 14,15) [3,11].

The tradition of Armenian miniature painting, through the depiction of religious scenes and architectural forms - especially domes, arches, and columns - not only reflects the ecclesiastical and cultural identity of medieval Armenia, but also its innovative artistic achievements.

Fig. 14. *Interior of the Dome*

The Vaspurakan school developed in the 12th-15th centuries. Miniature painting had a folk character and belonged to the genre art. Iconography was preferred with a graphic approach. The characteristic feature was the narrative, the presence of inscriptions within the image space, as well as the symbolic depiction [2,12].

Tserun Tsaghkogh is a representative of the school. His work includes the *Gospel of 1391*, in which the *Tyarnndarach* scene stands out for its simplistic portrayal. On a parchment-like paper background, three domed architectural forms appear, adorned with delicate decorative touches. The combination of a few restrained yet vibrant colors enlivens the scene (Fig.16).

The cone-shaped domes, with their broad, expansive bases, resemble clerical vestments, such as a klobuk or, at times, a stylized open parasol. They often appear in marginal decorations with architectural embellishments, in ornamental borders, headdresses, and, mainly, in divine images (Fig.17).

Fig. 15. *The Church of Areni*

An excellent example of a fan-shaped structure is the dome of Saint Stepanos Monastery's main church on Mount Magharda from the 9th century (Fig.18) [5,13].

In another illustration, structures with rhythmically repeating domed towers create the impression of a monastic complex (Fig.19).

The presence of multiple domes suggests the number of churches - a common architectural feature in medieval Armenian monastic complexes, where it was customary to build two or three churches along with chapels and other functional buildings (Fig.20) [11,13].

Over centuries, each school of miniature art and master craftsman contributed to the creation of a distinct Armenian visual language, bridging the sacred and the secular, the architectural and the pictorial.

Fig. 16. *Tserun, 1391 Gospel, The Presentation of Christ in the Temple, Matenadaran, No. 8772*

Conclusion

The research highlights the various forms of domes depicted in Armenian miniature art and compares them with medieval architectural forms. Armenian medieval miniature iconography is canonical, following established conventions. Thematic scenes often employ reversed perspective, giving the space an illusory character. The miniatures have a symbolic nature, as they are laden with mysterious and conceptual motifs. A distinctive feature of these images is the emphasis on flatness and contours, which is typical of Armenian medieval aesthetics.

Fig. 17. *Decorative Motif of the Dome*

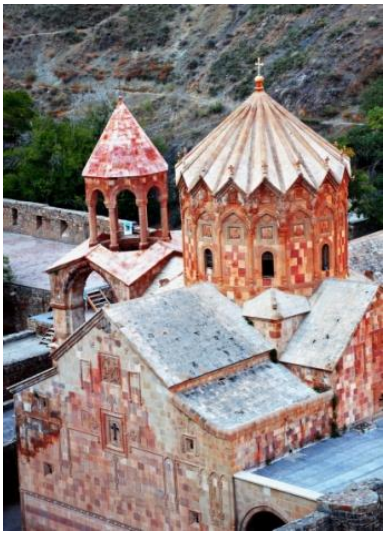

Fig. 18. *Maghardavank, 9th century, Church Dome*

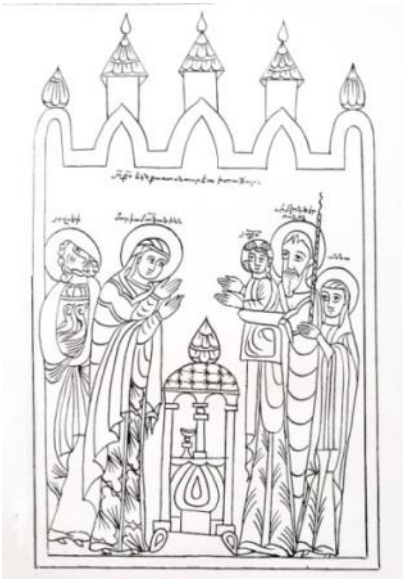

Fig. 19. *Gospel, Schematic Image, No. 8772*

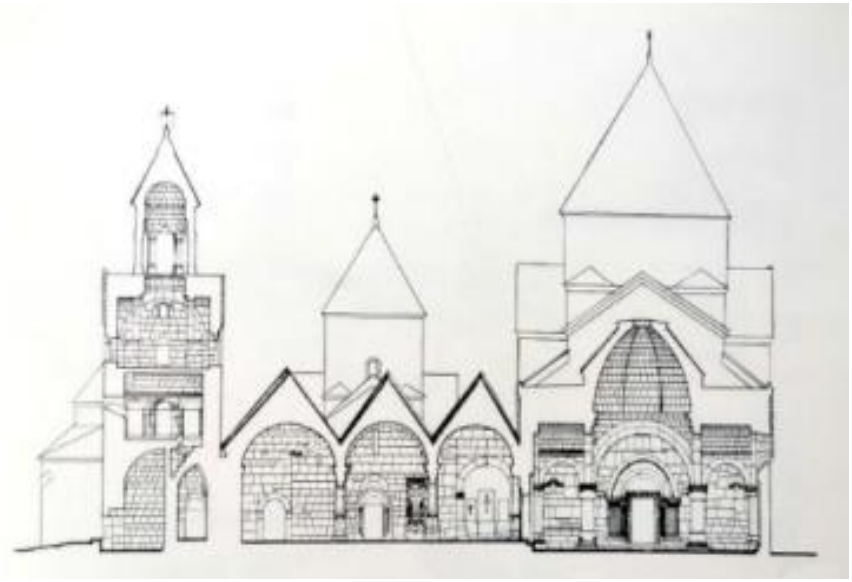

Fig. 20. *Monastery with several churches (Sanahin)*

The analytical work leads to the following conclusions:

- Apart from their artistic value, Armenian manuscripts provide rich ethnographic material about the medieval culture of the Armenian people. In many ways, they serve as a key to uncovering the aesthetic views and artistic perceptions of the time.
- The miniatures depict architectural structures with a flat-plane layout and stylized decorative embellishments. This choice of stylization allows the architectural forms and narrative elements to maintain a captivating simplicity while ensuring visual clarity and compositional balance.

The flat yet dynamic architectural depictions in the miniatures continue to be objects of interest, representing both the material and spiritual heritage of Armenia, inviting ongoing scientific engagement.

Conflict of Interest

The author declares no conflicts of interest.

Funding

This research did not receive any financial support.

References

[1]. L.A. Dournovo, Haykakan manrankarchutyun (R.G. Drampian, ed), Mesrop Mashtots Research Institute of Ancient Manuscripts, National Gallery of Armenia. Hayastan, Yerevan, 1967 (in Armenian).
[2]. A.V. Aghasyan, H.H. Hakobyan, M.M.Hasratyan, V.H. Ghazaryan. Hay arvesti patmutyun, Zangak-97,Yerevan, 2009 (in Armenian).
[3]. V.M. Polevoy, V.F. Markuzon, D.V. Sarabyanov, V.D. Sinyukov, Populyarnaya khudozhestvennaya entsiklopediya: Arkhitektura, Zhivopis, Skulptura Grafika, Dekorativnoye iskusstvo (vol. 2). Sovremennaya entsiklopediya, Moscow, 1986 (in Russian).
[4]. T.H. Toramanyan, Materialy po istorii Armyanskoy arkhitektury (vol. 1). Academy of Sciences of Armenian SSR, Yerevan, 1942 (in Russian).
[5]. A.Sh. Mnatsakanyan, Haykakan zardarvest: Himnakan motivneri tsagumn u gaghaparakan bovandakutyuny. Academy of Sciences of Armenian SSR, Yerevan, 1955 (in Armenian).
[6]. A.L. Babajanyan, Iconography of the Architectural Environment in the Armenian Medieval Miniature Painting, in: N. Pirumyan (ed.), Proceedings of 8rd International Conference on Contemporary Problems of Architecture and Construction, Yerevan, Armenia, October 26-28, 2016, 6-12.
[7]. E.M. Korkmazian, I.R. Drambian, G.H. Hakobian, Armenian Miniatures of the 13th and 14th centuries (the Matenadaran collection, Yerevan). Aurora Art Publishers, Leningrad, 1984.
[8]. V.H. Kazaryan, S.S. Manukyan, Matenadaran (vol. 1): Armyanskaya rukopisnaya kniga VI-XIVvv. Moscva Kniga, Moscow, 1991 (in Russian).
[9]. L.R. Azaryan, Kilikyan manrankarchutyuny XII-XIII dd. Academy of Sciences of Armenian SSR, Yerevan, 1964 (in Armenian).
[10]. A.N. Avetisyan, Haykakan manrankarchutyan Gladzori dprots, National Academy of Sciences of the Republic of Armenia, Yerevan, 1971 (in Armenian).
[11]. V.M. Harutyunyan, Haykakan chartarapetutyan patmutyun, Luys, Yerevan, 1992 (in Armenian).
[12]. H.H. Hakobyan, Vaspurakani manrankarchutyuny (vol. B), Academy of Sciences of Armenian SSR, Yerevan, 1982 (in Armenian).
[13]. V.M. Arutyunyan, Kamennaya letopis armyanskogo naroda, Sovetakan grokh, Yerevan, 1985 (in Russian).

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GENERAL SYSTEM AND C-K THEORY
HOW CAN DESIGN PROCESSES BE REPRESENTED?

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Abstract: *Through previous research, I have highlighted a complete analogy between two cosmologies: the Chinese 5 elements and the 5 Platonic solids, thereby linking the Chinese and Greek modes of thought. The correspondence between these two systems reveals an identical underlying structure that can only correspond to L.v. Bertalanffy's notion of the General System. To explore the possible applications of this General System to the field of engineering and architecture, I propose to interpret and optimise a theory that models creativity and design processes in a unified way. The aim is to consider how to put into analogical correspondence Hatchuel and Weil's C-K theory with the General System and to think about how to integrate into it the two archetypal modes of thought defined by L. Vandermeersch: Greek causal thought and Chinese correlative thought.*

Keywords: *CK theory, project design, innovation, General system, correlative thinking, Chinese elements, Platonic solids.*

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Received: 02.12.2024
Revised: 10.03.2025
Accepted: 30.03.2025

Introduction (background, questions, previous research itinerary)

The developments in C-K theory that I propose in this article are linked to a teaching experiment in innovation methods and project design that I have been conducting at the École Nationale Supérieure d'Architecture de Lyon for the last fifteen years. These developments are also based on the results of earlier research, which argues in favour of a *rapprochement* (in the sense used by M. Serres) [1] *between Greek* and *Chinese thought*. To extend this research, we should first summarize its main principles.

Comparing Greek and Chinese cosmologies: two analogous systems

Because I was wondering about the choice of forms for the *design of* projects, I sought to establish a relationship between inhabited geometric forms and man – his organism and his relationship with the environment. I finally established an ***analogical correspondence*** **between the two cosmologies, Greek and Chinese,** which have underpinned these two cultures for millennia [2]. I showed that the two *systems* – *Platonic solids* and *Chinese five elements* (*Wuxing in simplified Chinese, 五行*) – are perfectly *analogous* from structural and functional viewpoints (Fig.1). Note that what has been translated as the *5 elements*, particularly in France, does not correspond to the Chinese meaning. *五* (*Wu)* means five and *行* (*xing*) means *rhythm, process, movement…* and is often translated by European sinologists as *agents* or *phases* [3].

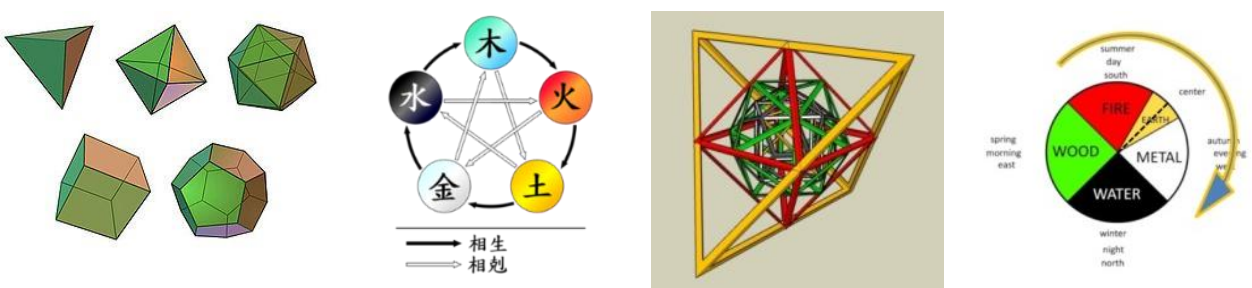

Fig. 1. *On the left: a common representation of the 5 Platonic solids and the 5 Chinese elements (Wikipedia). Right: temporal representations of the system of Platonic solids and the wuxing system as I developed them [4]*

Causal and correlative thinking

These two cosmological models, Greek and Chinese, reflect and express two relationships to the world and two modes of thought based on different choices established from the outset. I propose to describe them as *duality* in the geometric sense or *antagonistic duality* in the sense of S. Lupasco [5]. Since thought is strongly correlated with the tools it uses to develop, these initial choices have been reinforced by two very different linguistic systems. Indeed, F. Jullien suggests combining the two terms into a single one, *language-thought* [6].

These two modes of conceiving the world – Greek and Chinese – have been identified by various sinologists: M. Granet [7], A. Graham [8], M. Porkert... In the end, it was L. Vandermeersch who defined more precisely what distinguishes them [9]:

- ***Greek thought*** is characterised, within a given *space*, by *causality*, i.e., by cause-and-effect relationships and *logical* transmissions *over time*. Chains of causality form the basis of *rigorous, scientific* Greco-Western thought.
- ***Chinese thought*** is characterised, over a given *time*, by *correlation*, i.e., relations of transmission across space, through phenomena of analogy and/or resonance. These chains of *correlation* form the basis of the *action strategy* developed by *Chinese* philosophy (*wisdom)* [10].

Chinese thought is just as *rigorous* as *Greek thought*, but it is a different kind of "scientific rigour", as L. Vandermeersch sums it up. He also explains that the Chinese use *correlative thinking* first and then, if necessary, *causal thinking*.

Notion of General System (GS) and contemporary systems approaches

This *rapprochement* between *"Wuxing / 5 Solids"* and "Chinese and Greek *modes of thought*" led me to conceive of these *cosmologies* as two *systems*, or more precisely, as two *models* [11], two *interpretations* [12] of the same "meta-system". I finally associated this "meta-system" with the notion of the ***General System*** developed by L. v. Bertalanffy in his main work, *General System Theory* [13]. It is therefore thanks to the *Solids/Wuxing* correspondence that I was able to "identify" this *General System* and that I am now proposing to apply it to the *design* process, using the *C-K Theory*.

Before developing this line of research, it is necessary to clarify a few important aspects linked to this notion of *General System (GS)*. The concept of a GS is not always well received as a plausible or even "conceivable" scientific hypothesis in the context of contemporary research [14], particularly by French epistemologists. J.-L. Le Moigne [15] is probably one of the scientists most involved in this fight against the very idea of a *general systemology* [16]. On the other hand, in some other disciplines, the hypothesis of a *General System*, as a necessary paradigm *for transdisciplinarity*, is seriously envisaged by the mathematician R. Thom, for example [17], or by the philosopher M. Serres, with the concept of the *organon* [18]...

As far as traditional Chinese thought is concerned, with a little common sense, it is easy to see that the primary and sought-after function of *wuxing* is exactly to be *a General System*, applicable to everyone. So why, for so long, has *"*Western science*"* been unable (or unwilling) to find a link between *wuxing* and Bertalanffy's *General System*? The only argument that can be put forward is that, as M. Porkert [19] points out, even if *wuxing* have existed for several thousand years, they are only "beliefs" and therefore have no value for Western *science*. The research I have been undertaking since the 1980s [20] proposes to provide an answer to this fundamental question, i.e., to provide *wuxing* with that *scientific* explicitness (in the Western sense) that the Chinese tradition has not invested in – since it based its own culture on another paradigm of thought, *correlative reason*. Building this *bridge* [21] between the Chinese and Greek cultural traditions establishes a new *key passage* between East and West (as the *Rosetta Stone* did between the Greek and Egyptian cultures), and this *passage* opens the way to new fields of research.

General system and definition problem

The theoretical advantage of "defining" a *general system* is that, based on its "mother structure", it is possible to interpret systems from any other disciplinary field to understand how they work. In principle, this is the strategy adopted by *traditional Chinese thought*. With this objective in mind, it has passed on the *wuxing system*: a kind of *organon* with a *representation* whose principles are as synthetic as possible. Following this postulate, the *wuxing representation* should therefore *be necessary* and *sufficient* to understand and use the *General System*.

But this is not the case. In reality, we can consider (from a Western point of view) that the *wuxing system* is only a "tool", it does not "define" the *General System* on its own. So China has only given us one piece of the puzzle (of this representation of the GS). The same applies to the Greek tradition, with that rather mysterious passage in the *Timaeus* about *Platonic solids*. We could ask ourselves why these Greek and Chinese "choices" were made, but that's not the point of this presentation.

To put this jigsaw together again – i.e., to obtain a *satisfactory representation of the General System* – I had to put the *wuxing* system *into analogical correspondence* with the system of *Platonic solids*. This was also a way (perhaps the only possible way) of providing a more rigorous foundation for *wuxing*, since the system of Greek polyhedra, which characterises the first regular forms of the 3D space in which we live, involves only purely geometric transformations [22]. At the same time, however, it makes it possible to develop a *representation* of *wuxing* that is as coherent as possible and therefore the most "efficient" from the point of view of the SG (see next paragraph).

This necessary dual approach illustrates the principle stated by M. Serres: it is impossible to know a system from a single representation, and this applies first and foremost to the SG. To "describe" a *system*, we need at least two representations: "*a topology and an energetics are enough*" [23]. We can consider that *wuxing* describes the energetic transformations of the SG and *Plato's system*, its topological transformations. The complete analogical correspondence between these two types of transformation highlights the existence of an *isomorphism* between these two *mathematical models*, it being understood that the Platonic system can be the *canonical representative*, "*as elementary as possible", of this equivalence class* sought by R. Rosen [24] (Fig.2).

But this *wuxing/solids isomorphism* is not enough to know about the SG completely; it only allows us to "identify" it, to describe its general morphology. Acquiring "total knowledge" of the SG is tantamount to *tending towards an infinite limit*: something that is concretely unattainable. C. Canullo points out that the more *translations* we have of a system (or, in our case, the more *representatives we have* of the same *equivalence class*), the more precise it becomes thanks to its different *interpretations* [12]. The aim of this article is, therefore, ultimately twofold: to deepen and perfect the operation of the C-K theory and also reciprocally to develop knowledge of the General System (the *truth* concerning *knowledge of* the *General System* being a "perspective" to be constructed progressively).

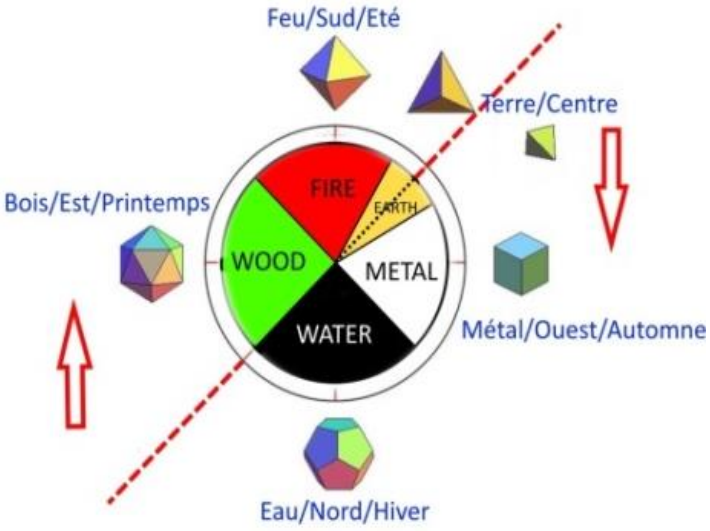

Fig. 2. *Matching the Platonic solids with the temporal model of wuxing, showing a border separating the anabolic yang part on the left and the catabolic yin part on the right [25]*

General system and representation problem

We have seen that, in principle, *wuxing* is the *synthetic tool* that should enable us to *use* the SG. But how do we *represent* the *wuxing system*? Our current understanding of *wuxing* originates in a very short, rather elliptical Chinese text [9], which is part of the Chinese book, *Shu Jing.* This *classic document* is thought to have been written by officials, and the current version is probably incomplete [26].

This text has given rise to numerous graphic interpretations, both in China and in the West. However, in my opinion, only the correspondence established with the *Platonic model* can make it possible to specify a coherent way of interpreting the functioning of the *wuxing* and to choose an appropriate representation. For the conception and representation of the *wuxing* (and therefore of the SG), I will rely mainly on the research of the French sinologist and physician J. A. Lavier [27].

This cycle of transformations, which corresponds to *the temporal representation* of *wuxing*, is conceived as a purely logical deployment that takes into account the data of time, space, the concept of energy (sender or receiver), and the situated presence of a conscious observer. This logical system can therefore be applied in other contexts. In the end, the SG is not such a *complex* structure to understand (in the sense of *complexus* [28]), as long as we take the trouble to specify some fundamental principles and express these principles with an appropriate graphical representation (Fig.3):

- The general orientation is correlated with the "orientations" of space and the "seasons" of time (also the hot/cold ratio) and is determined by the South at the top, because man, at the centre of the system, looks at the path of the sun from left to right.
- There are two zones separated by a 45° border. These two zones – which can be described as *yin and yang* – are two major *periods*, *active/passive* or *anabolic/catabolic* [29], with an upward "push" (*wood* and *fire* wuxing elements) on the left of the diagram and a downward tendency (*metal* and *water* wuxing elements) on the right.
- Traditionally, there *are 5 elements* (*phases*, *seasons*, *agents*…depending on the translation), but the *central element* is dual, meaning that the *same element* paradoxically has two modes of existence depending on whether it is considered to belong to the *yin* or *yang* category.
- There are 2 *operators*:
  - one main one, *generation* (temporal), which allows the different *phases of* the system to transform "from one to another" over time (*mother feeds son*) – thus allowing the system to reproduce itself cyclically,
  - and a *control* operator (linked to the spatial layout), which can be understood as a system regulation mechanism (*the grandmother controls the grandson*).
- There is a third type of "operator", linked to the *earth wuxing element*, which provides for the other *wuxing elements'* needs. Thus, through this *central element*, the whole system is "*animated from within"* by what Lavier calls the "*activating centre"*, represented by the *45° border*.

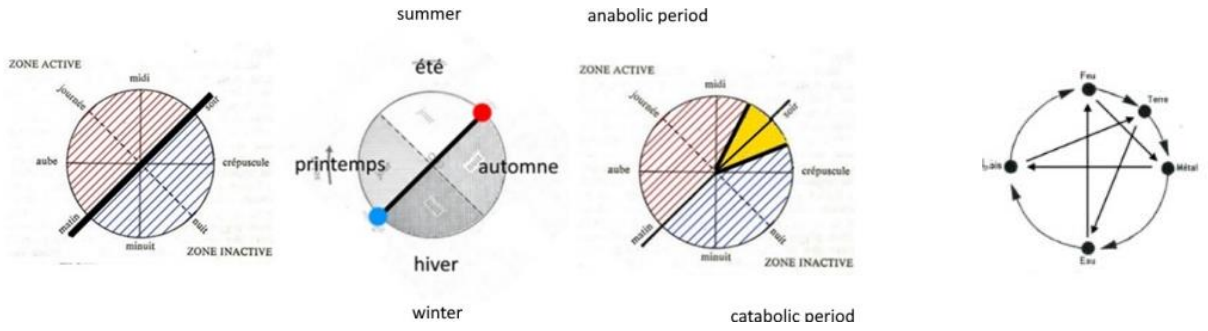

Fig. 3. *Some characteristics of the SG developed from the wuxing temporal model: 1- on the left, the two main periods yang/yin and their border; 2- the 4 main phases; 3- the two main periods and the double centre in yellow. On the right: the two main operators are shown together (personal sketches based on Lavier [30])*

Following on from this research, the idea of linking the two main modes of Greek and Chinese thought (*causal* and *correlative*) in a single *scheme* based on the *General System* architecture has become an interesting hypothesis to explore. All the more so since *CK theory* seems to provide arguments in favour of this hypothesis. In the following sections, I therefore propose to match the two *systems*, SG and TCK, and to examine how this *design theory* can be interpreted, according to the SG, and even reformulated, to better respond to the need to model "design processes". The aim is therefore to propose a new *interpretation* and a new *representation* of the CK Theory.

Reinterpreting *C-K Design Theory* (TCK): What strategies?

A formalism of "*radical creativity*": what's at stake?

In my teaching career, in addition to questions about the choice of forms, I have also been led to identify methods *for organizing* and *conducting* architectural design. In France today, engineers from the Mines de Paris are proposing a ***general design method*** [31], the *C-K theory*, and there are many reasons to study it:

- This theory is the French reference on an international scale: it is interpreted and pursued by several teams elsewhere in the world [32]. It has been criticised for aspects often external to its structure [33], but, to my knowledge, no study uses the approach proposed in this article.
- It aims to create a unified theory by integrating all the previous "theories of design": *brainstorming* [34], *discovery matrices* [35], *serendipity* [36], reasoning by *abduction* [37], and so on.
- According to the authors, the TCK theoretical framework combines, in a single model, the two antagonistic logics of creation: *that of the artist, who claims an ability to "see" new worlds*, and that of the "*engineer, who claims an ability to create new knowledge*" [34].
- It is therefore an essential methodological tool for training architects, engineers, and all designers (town planners, object designers, etc.).

In addition to all these aspects, and what is particularly interesting for this study, the graphical model of the TCK has many similarities in its structure and operation with the temporal model of the SG previously defined.

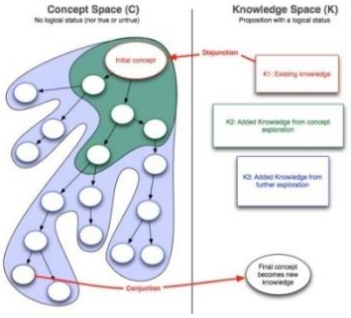

Fig. 4. *Most common representation of C-K theory (free illustration from Wikipedia)*

Similarities between the TCK and SG graphic models

Let's briefly summarize these similarities. In the TCK graphic model, as in the *General System*, there are two spaces in which two radically different systems of thought develop, and they are *separated* by a marked *boundary* in the *CK diagram* (Fig.4):

- 1. The *K space* consists of all the knowledge *already known*, on the right in Figure 5.
- 2. The *C space* (left) is the place where new concepts are formed, unknown before, and above all, "*undecidable"* from the point of view of their possibility of existence in the current context of science.
- In these *K and C spaces*, there is probably a set of transformations internal to the design processes. And we will assume that they are organized in a "continuum"; but the authors of the TCK have indeed "identified" 3 successive *phases*, identified by 3 colours: red, green, and blue.
- Finally, there are two types of *operators*:
  - to switch from one *phase* to the other in each reference *space* C or K,
  - but also "between" them: by crossing the border between C and K.

Issues and objectives

Bearing in mind that the authors acknowledge that this theory is being studied and that it still poses *problems of definition*, is it possible to propose a new interpretation, a new *translation of the* TCK, based on

the principles of the *General System*, which would provide *additional truth* in Pareyson's sense [38]? In short, how can we "optimise" the TCK by proposing a rigorous analogy with the SG while reinforcing the "organizing principles" determined by the authors?

It is therefore not only a question of enriching this theory with external knowledge – which the SG makes possible – by linking it to other disciplines like architecture, philosophy, anthropology, etc., but also of consolidating it from a scientific point of view by associating it with the "formal framework" of the SG.

Method

The strategy will mainly consist of transforming the *TCK graphic model* so that it "corresponds" ("isomorphically") to the structuring of the SG, without a priori modifying the "principles" of operation of the TCK. The method will consist of establishing *analogical connections* between the two graphical models in a coherent and precise order, following five progressive stages.

These comparisons will be supported by changes in disciplinary and cultural context, based on philosophical research in particular. Initially, therefore, I shall concentrate mainly on the morphological changes to be made to the CK model, while more concrete functional aspects may be the subject of subsequent research.

Main hypothesis: C for Correlative and K for Causal

To relate and argue what Hatchuel and Weil call the *two spaces* of TCK, *Concept* and *Knowledge*, they rely mainly on mathematical models (set theory in particular). I propose a new *philosophical* reading. My central hypothesis is that it is possible to characterise the TCK better by using the two categories of thought defined by Vandermeersch, which are not *spaces* (as the authors consider) but *temporalities*, i.e., *periods*:

- the C *period*, which refers to Chinese thought and mainly mobilises *correlative reason*,
- and the *K period*, which refers to Greek thought and mobilises *causal reason* (or *Kausal* in German).

There are many other clues linking these two modes of thought, TCK and SG. Let's look at them in the next section.

Argumentation

Analogue and Catalogue

Correlative thinking and Chinese writing predispose and encourage the formation of *metaphors*. Through the *allusive mode they introduce*, they make it possible to express things *without defining them* – by relating them, by placing them "in relation to each other" [39]. Of all these allusive modes of expression, *analogy* is also a *setting in relation* that defines *relationships* rather than *terms* [40].

The Greek root "*ana"* means "from bottom to top" and is therefore associated with an upward movement, whereas "*kata"* means "from top to bottom" and is associated with a downward movement. *Analogue* is the opposite of *catalogue*. The *catalogue* describes a way of thinking that defines a tree structure of successive hierarchies and analytical divisions; however, the *analogue* (and, more broadly, *metaphors*) is more of an incipient and free, "budding" way of thinking.

These remarks are all the more important because, as we have already seen with J.A. Lavier, in Traditional Chinese Medicine, *the yang* zone of *wuxing* is *anabolic* and the *yin* zone is *catabolic.* This already allows us to hypothesize an initial graphic modification of the C-K diagram (which in no way alters the authors' intention and, on the contrary, considerably strengthens its coherence): the movement in C – "the *budding of non-decidable concepts"* – can only unfold *analogously* in an upward direction, whereas the movement in K is intrinsically a downward movement. A horizontal axis of symmetry enables the diagram to be inverted upwards and downwards.

For each change in the graphical representation of the CK diagram (for each of the 5 paragraphs in this third part), the first figure presented (with a small scale on the left) will show the initial state, and the diagram of the "after change" state will be enlarged on the right (Fig.5).

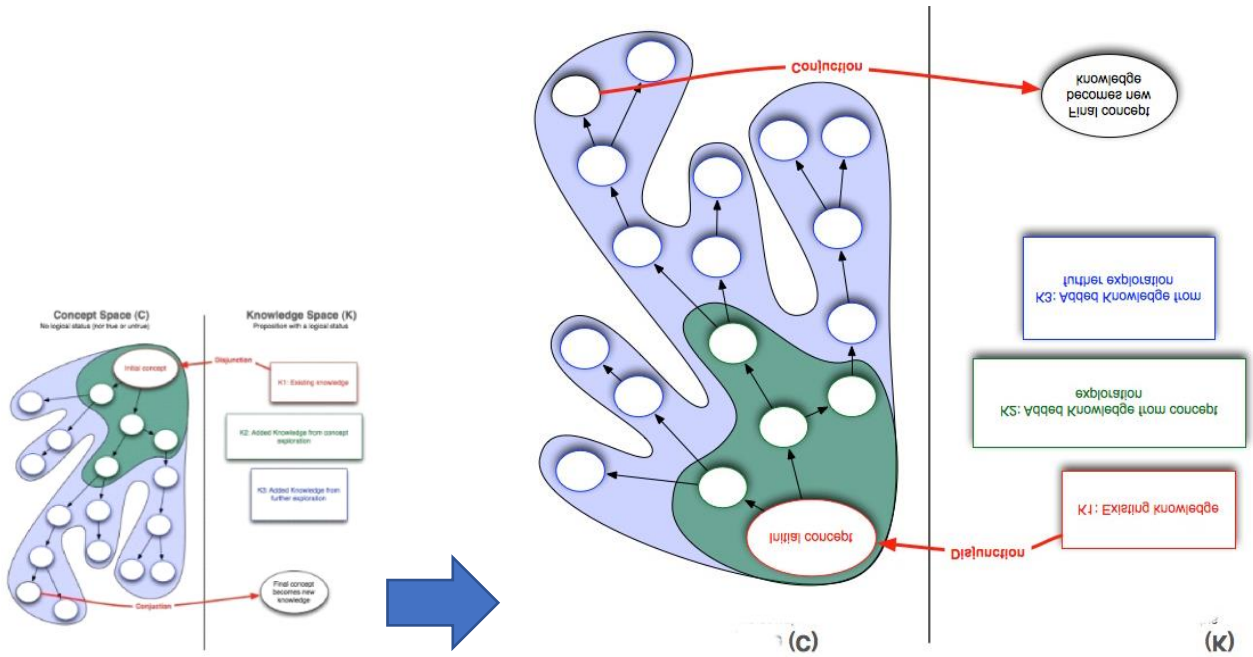

Fig. 5. *The meaning of "ana", "upwards" in the analogue C period (left), and "cata", "downwards", in the K period of the catalogue (right), suggests an initial "top-bottom" inversion of the CK diagram*

Symbolic and graphical expressions of the two periods, C and K

From a graphic point of view, the rectangular *frames* drawn within the K *period* (on the right-hand side of Hatchuel & Weil's diagram) do indeed *represent* the different logical chains of a *catalogue*. On the left, on the other hand, while the idea of *budding* (and its illustration using a schematization of the *ficus vesicularis* algae) is coherent, the *tree-like relationship between* the forms is questionable.

For *period C*, I propose using different representations that refer to the work of two authors: the English anthropologist T. Ingold and the French philosopher G. Deleuze. For this *period C*, we can envisage another way of "*approaching things*": simply by representing "the links that construct them" [41].

Tim Ingold often contrasts two ways of thinking:

- the one that *defines* a concept by surrounding a given place,
- and the one that *evokes the* object through a series of *connections* represented by *lines that form a knot* (*without grabbing the object*, as Hatchuel & Weil point out in their book) [42] (the same concern to build a *science of relationships* can also be found in M. Serres [1]).

In a substantially different way, Gilles Deleuze contrasts the "arborescent system", metaphorically assimilated to the *major mode of* science (which we will associate with the *K period*), with the image of the *rhizome* (which we will associate with the *C period*), which implies no logic, no predefined direction – and which Deleuze envisages as the *minor mode of* science: "*Whereas the tree is made to last, the rhizome manifests "creative functions, non-conforming uses […] which proceed by intersections, crossings, meeting points in the middle" [43].*

In my opinion, *node of relations* and *rhizome* are two references that also characterize *period C*, which could moreover be called in the same way the "period of Correspondences", by relying on the latest T. Ingold's research [44] (Fig.6).

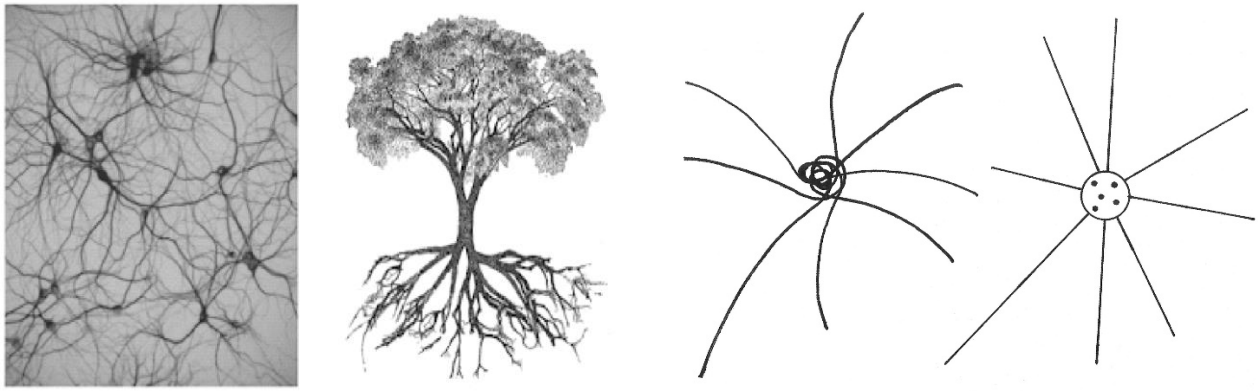

Fig. 6. *On the left, the rhizome system versus the tree system, according to G. Deleuze[1]. On the right, intersecting lines forming a node of relationships (left), as opposed to a space surrounded and closed by a boundary (right), according to T. Ingold (Illustrations Wikipedia)*

So, in the CK diagram in the Period C (Fig.7), I propose to establish new connections in all directions.

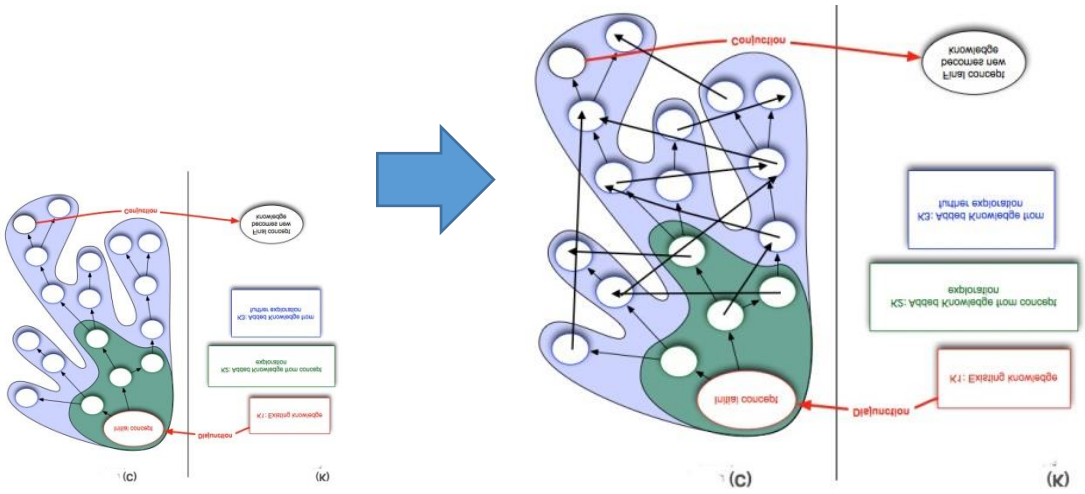

Fig. 7. *Period C (on the left of the final diagram) is built by establishing connections in all directions, without following a priori the diagram of a global tree structure (unlike period K on the right)*

Cyclic time

From the point of view of representation, to be consistent with a *unified theory* of design and to correspond to the *General System*, it is imperative that the design activity can continue over time and that the cycle is repeated. It is therefore essential to represent ***cyclical time*** [45], which allows the successive loops to renew during design operations.

We therefore need to add arrows in the direction of rotation of the cycle – i.e., "down" in period K. This direction of progression of the cyclical process corresponds well metaphorically to the direction of rotation of the sun and the perceptions associated with it. The *ascent* to the left and upwards (to the East) is associated with spring, the emergence of ideas, openness, and discovery. Then comes the afternoon and

[1] Collective, New cartography: from trees to rhizomes? Transit-City, August 2015. http://transit-city.blogspot.com/2015/08/nouvelle-cartographie-de-larbre-aux.html

evening (to the West and downwards), when thought begins to take stock, to recapitulate... Finally, there is fading into oblivion when the project is completed [46]. The activity can then begin a new cycle, with new ideas and new *undecidable correlations*.

The addition of arrows in period K completes the cycle and also the hierarchical process for developing the data in the *catalogue.* Once again, these graphical modifications do not betray the authors' original intentions (Fig.8).

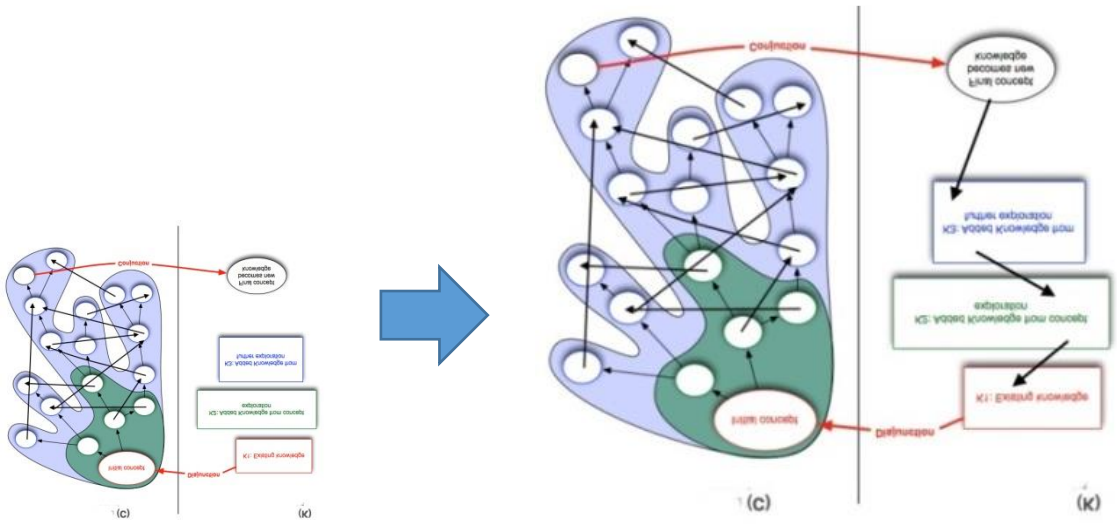

Fig. 8. *"Applying cyclic time to the TCK makes it possible to establish a true correspondence with the SG*

The limit between the two periods, C and K, and the two "passages"

In Hatchuel & Weil's model, there is a vertical *boundary* – deliberately marked – between the two *periods* of each regime of thought. To be consistent with the SG (i.e., with the temporal representation of *wuxing* defined above), I propose to rotate the CK diagram 45° to the right (which, again, does not change the operating principles of the TCK).

Thus *inclined* and *oriented*, following the principles of traditional Chinese space, this boundary of the TCK can correspond analogously to the *activating centre of the SG*: i.e., to the "motor" inside the *system* that relaunches the movement at each *apogee* [25]. I won't go into the particular nature of the "*motor"* in the case of this *design theory*; that will be the subject of another article. But as in the case of the *wuxing* and the SG, this lateral inclination makes it possible to restore coherence to the CK diagram by locating in particular *the completion of the project* at the bottom of the diagram, in the North (the place of completion and also of oblivion), and the birth of *new research* in the East.

Between the South and West *phases* of the diagram, there is a first *important passage* that takes place in the *central period*. In a way, this *central period* "presides over" *the crossing of the activating centre*, and enables us to move from an *undecidable concept* in Zone C to a *now-known knowledge in* Zone K.

J.P. Guilford [47] had already paid particular attention to this passage and its "opposite". He recognised them as the two characteristic, "decisive", "breaks" in the design process:

- the *conjunction* in the top right-hand corner indicates when a *solution* has been identified,
- and the *disjunction* at the bottom left (North-East), where the search for a "new", as yet unknown, solution begins again... (Fig.9).

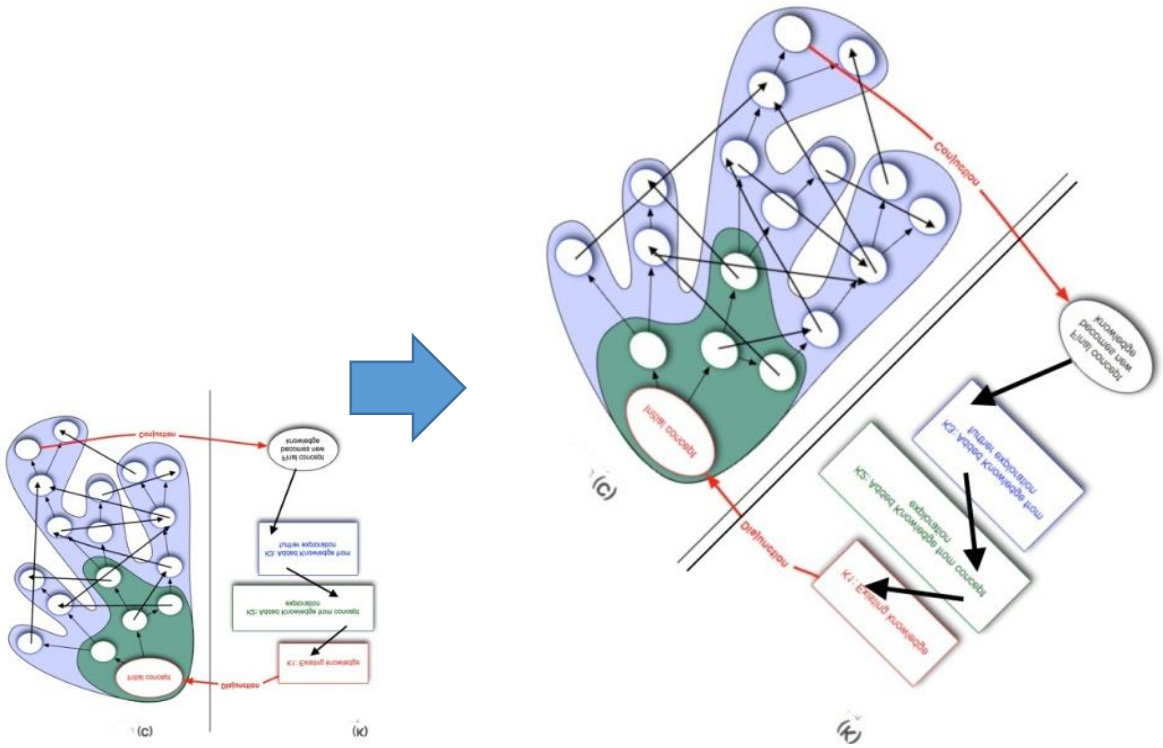

Fig. 9. *The 45° border makes it possible to identify the two remarkable passages of the TCK, conjunction and disjunction, between the two dual periods of design activity. Thus, the last rectangle at the bottom of the K period is well associated with the North East in the spatial correspondence of the wuxing and with "oblivion"*

The fifth element

In this entire process, we need to take a closer look at the *transition* from *the "conjunction" operator* at the top right: how does this transformation operate, from ***undecidable concept*** to that of ***decidable knowledge***?

If in the *"disjunction"* passage of the *border* at the bottom left, the object under consideration changes its nature completely a priori because a new loop in the research process corresponds to a new idea, in the *"conjunction" passage*, it is the same object of knowledge that suddenly passes from one *period* to the other. In the eyes of the designer, following a simple "awareness", it changes status and suddenly adopts the status of a *solution.*

So, by simply "crossing the border", the same *central object* is *separate* and can be considered to have *two dual representations,* one belonging to the *Research period* and one belonging to the *Development period*. Similarly, it is more accurate to represent the border as a double line with an *empty interval*. As with the "research idea/solution idea" object, one of the lines of this *boundary* belongs to zone C and the other to zone K: the *central zone*, which belongs to neither of the two *periods*, "*has no being*" – what F. Jullien calls "the *in-between*" [48].

To express this *duality of the central object* graphically, I propose that this *"undecidable, round"* concept becomes transformed into a "*decidable square"* on the right and is therefore represented by the first blue rectangle. In the end, we can consider that there are 3 remarkable stages (*phases*) in each of the two *periods*, with the 3 colours: red-green-blue / then blue-green-red for each of them. With the graphic transformation that I propose, there will indeed be, as one could suppose, **5 phases in total in the TCK**, following the principle of the general system and the wuxing, **with a double central phase** (Fig.10).

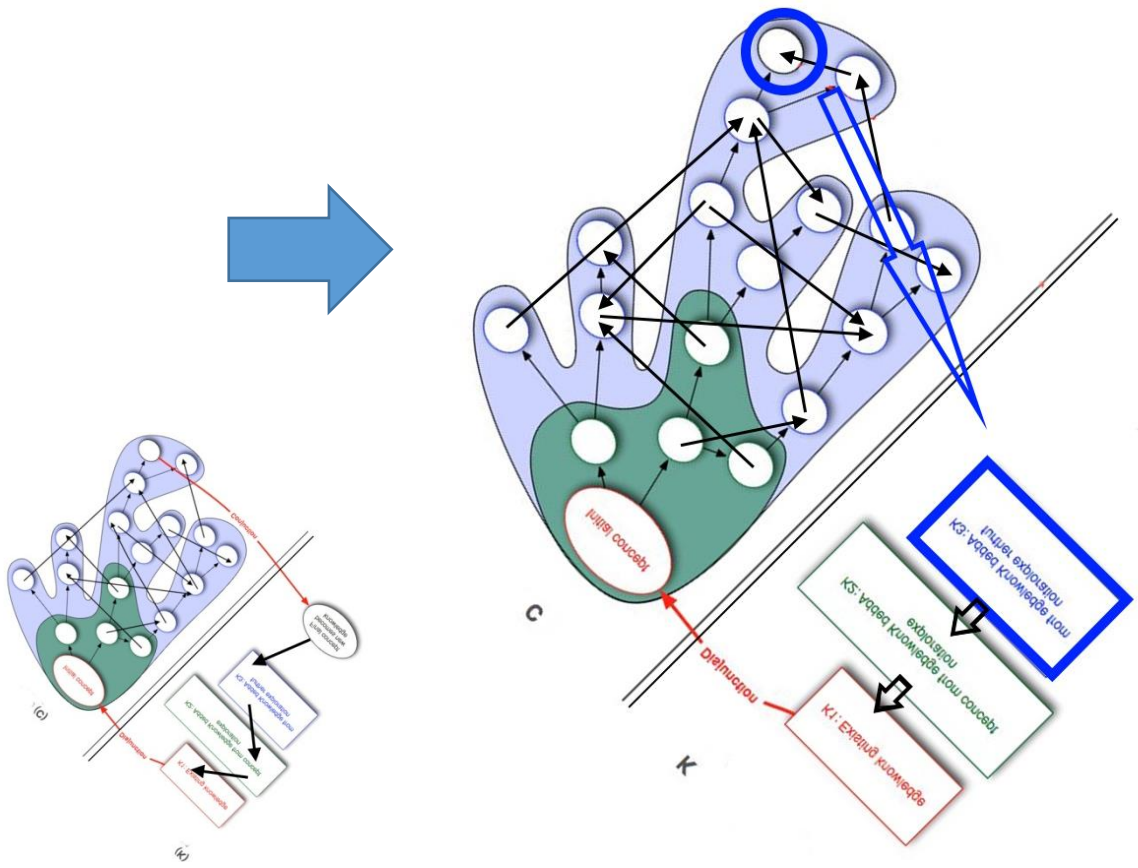

Fig. 10. *The fifth element of CK Theory: the "possible idea" which becomes the "solution to be developed"*

Discussion and Conclusions

Results and limitations of this research

Finally, as we have seen, few adaptations are necessary for the TCK graphic model to correspond to the SG temporal model and for the two modes of thought, Greek and Chinese, to be articulated in the same scheme.

For Hatchuel, the main difficulty with TCK lies in *defining* the *set C* [34]. But some of the terms he uses to suggest it qualitatively clearly refer to the vocabulary of Chinese thought: *allusive*, *ambiguous*, *processive*... F. Jullien often contrasts the mode of thought of *effectiveness*, "*applying a model with a view to an end"* (which he also refers to as the *logic of modelling*), with the mode of *efficiency*, i.e., *"exploiting the potential of the situation"* [49]. This major opposition established by F. Jullien between the Chinese "*science of adequacy*" [50] and the Greek "*science of modelling*" also seems to correspond to the antagonism formed by the C/K pair. This new philosophical reference reinforces the hypothesis developed in this article.

On the other hand, if we wanted to establish an analogy between the transformation that I propose for the *CK theory* and the theory itself, we could consider that *the argumentation* developed in the previous section (the TCK/SG rapprochement in 5 steps) is first located in *zone C*. Then, the coherence of the proposed correspondence – the effectiveness of the argumentation, so to speak! – should allow us to *move on* to *zone K*. But, it would then be necessary to check in this zone if all the thought processes described by the authors (in the various articles they have published) are "compatible" with the latest modified graph...

There are also other aspects to check or develop:

- the operation of the *SG spatial operator* transposed into CK Theory,
- and the exact role of the *activator centre* and how to implement all these tools in the specific case of operational research?

New perspectives on teaching architectural design

This different *reading* of the CK Theory opens up new perspectives, both for design theory and for "project-based pedagogy" (which is often lacking in French schools). Generally speaking, we can already put forward the idea that frequenting places of creation, exhibitions, and art, or reading texts that help establish evasive thinking as poetry, are fertile sources of inspiration for designers...

More concretely, regarding the teaching of architectural design in schools, I see two questions that deserve further exploration. The first concerns *the* start-up *phase*. At the start of a project, should we begin with endless analyses (in *zone K*) or rather with a search for analogies and metaphors (in *zone C*) – as J.P. Chupin seems to suggest, for example [51]? To complete this theory, it would also be necessary to examine precisely the *qualities of the* four main *phases* in the deployment of the SG for clarifying their specific roles in relation to each other and to the *central period*...

More generally, could we not consider this *C-K theory* as a *general theory of epistemological speeds* (as an engine *speed*), in the sense employed by G. Bachelard, who opposed and systematically separated these two fields of knowledge, *phenomenology* from *epistemology* [52]? To resolve the problem of this *separation*, Mr. Serres (his disciple?) has been a lifelong militant in establishing *passages* between literary and scientific disciplines. He even invented the notion of *pantopie* [53]. Isn't *CK Theory* the *bridge* which allows us to bring together these two philosophical points of view?

References

[1]. M. Serres, Éclaircissements, Five Interviews with Bruno Latour. François Bourin, Paris, 1992.
[2]. S. Monnot, La conception architecturale dans l'Ecart entre les solides platoniques et le Wuxing. Proceedings of the 10th International Conference on Contemporary Problems in Architecture and Construction. Beijing, China, September 22-24, 2018.
[3]. A. Cheng, History of Chinese Thought. Seuil, Paris, 1997.
[4]. S. Monnot, Proposition d'intelligibilité pour habiter le carrefour des cinq éléments chinois et des cinq solides platoniques - entre raisonnement et résonance. Journal of Architectural and engineering research, 6, 2024, 56-70. Doi: https://doi.org/10.54338/27382656-2024.6-007
[5]. S. Lupasco, Le principe d'antagonisme et la logique de l'énergie - Prolégomènes à une science de la contradiction. Le Rocher, Monaco, 1987.
[6]. C. Ruby, François Jullien and Chinese thought: an exercise in disruption. Non fiction Philosophy, psychology, religions..., 2019. Available at: https://surli.cc/pbnzqv (accessed on October 10, 2024).
[7]. M. Granet, La pensée chinoise. Albin Michel, Paris, 1999.
[8]. A.C. Graham, Yin-Yang and the Nature of Correlative Thought. Quirin Press, Melbourne, 2016.
[9]. L. Vandermeersch, Les deux raisons de la pensée chinoise: Divination et idéographie. Gallimard, Paris, 2013.
[10]. F. Jullien, Conference on Efficiency. Puf, Paris, 2005.
[11]. D. Parrochia, Quelques aspects épistémologiques et historiques des notions de système et de modèle, in: M. Brissaud (ed.), Modélisation: Confluent des sciences. CNRS, Paris, 1999.
[12]. C. Canullo, Translation between metaphor and truth. U-PAD Unimc - Pubblicazioni Aperte Digitali, University of Macerata, Italy, 2013. Available at: https://surl.li/jtexxv (accessed on October 14, 2024).
[13]. L. Von Bertalanffy, General Systems Theory. Dunod, Paris, 1973.
[14]. P. Juignet, Current State of General Systems Theory. Philosophie, science et société, 2015. Available at: https://surl.li/vltvhn (accessed on October 20, 2024).
[15]. J.L. Le Moigne, La Théorie du Système Général - Théorie de la modélisation. Puf, Paris, 1990.
[16]. D. Pouvreau, Une histoire de la "systémologie générale" de Ludwig von Bertalanffy - Généalogie, genèse, actualisation et postérité d'un projet herméneutique. Doctoral thesis. Thesis, École des Hautes Études en Sciences Sociales - Centre Alexandre Koyré, Aubervilliers, 2013.
[17]. R. Thom, Catastrophe Theory and Biology: A Plea for Theoretical Biology - A Memorial Lecture for J.C. Jacobsen. Det Kongelige Danske Videnskabernes Selskab. Lunos B. Bogtrykkeri, Denmark, 1979.
[18]. M. Serres, Hermès I, La communication. Éditions de Minuit, Paris, 1969.

[19]. M. Porkert, Theoretical Foundations of Chinese Medicine: Systems of Correspondence. MIT Press, Massachusetts, 1974.
[20]. S. Monnot, S. Dermarsoubian Monnot, Un centre de recherches en bio-énergétique, Diplôme d'architecture de l'Ensal. Lyon, France, 1990.
[21]. M. Serres, L'art des ponts, Homo pontifex. Le Pommier, Paris, 2006.
[22]. D. Sun, S. Schein, Keplerian nest of polyhedral structures in different symmetry groups. Physical Sciences, 2020. Available at: https://surl.lu/hovgfo (accessed on October 24, 2024).
[23]. M. Serres, Hermès IV, La distribution. Éditions de Minuit, Paris, 1977.
[24]. R. Rosen, Modelling: An Algebraic Perspective. Proceedings of the North American Annual Meeting -The General Systems Paradigm: Science of Change and Change of Science, Denver, USA, 1977.
[25] S. Monnot, Entre raisonnement et résonance: Proposition d'intelligibilité pour un habiter à la croisée des cinq éléments chinois et des cinq corps platoniciens. PhD thesis. Thesis, Université Lumière Lyon 2, 2023.
[26]. S. Allan, What is a shu 書? In EASCM Newslettre (European Association for the Study of Chinese Manuscripts). 17/01/2011.
[27]. J.A. Lavier, Chinese Medicine, Total Medicine. Grasset et Fasquelle, Paris, 1973.
[28]. E. Morin, La stratégie de reliance pour l'intelligence de la complexité. Revue internationale de systémique, 9 (2), 1995.
[29]. J.A. Lavier, Bio-énergétique chinoise. Maloine, Paris, 1976.
[30]. S. Monnot, Deux systèmes traditionnels grec et chinois: une réponse à la théorie générale des systèmes? Proceedings of the 13th International Conference on Contemporary Problems of Architecture and Construction. Yerevan, Armenia, October 6-8, 2021.
[31]. A. Hatchuel, P. Le Masson, B. Weil, L'étude de la créativité en design: l'apport de la théorie C-K. Studying creativity in design: Design. 2008.
[32]. A. Hatchuel, P. Le Masson, B. Weil, Théorie, méthodes et organisations de la conception. Presses des Mines, Paris, 2014.
[33]. E. Coateana, J. Forest, D. Choulier, CK Engineering Theory: Contributions and Limits. 22nd International Conference on Design Theory and Methodology. Montréal, August, 2010, 83-92, halshs-00705402.
[34]. A. Osborn, The Constructive Imagination. How to Get the Most out of Your Ideas. Principles and Processes of Creative Thinking and Brainstorming. Dunod, Paris, 1959.
[35]. A. Moles, R. Caude, Créativité et méthodes d'innovation dans l'entreprise. Fayart-Mame, Paris, 1970.
[36]. S. Catellin, Serendipity. Du conte au concept. Seuil, Paris, 2014.
[37]. S. Catellin, L'abduction: une pratique de la découverte scientifique et littéraire. Hermès, La Revue, 39 (2), 2004, 179-185.
[38]. L. Pareyson, Verità e interpretazione. Mursia, Milan, 1982.
[39]. F. Jullien, De l'évasif pour une nouvelle épistémologie. Chair on Otherness, 2017-2018 seminar, Fondation Maison des sciences de l'homme, Paris, 2019. Available at: https://surl.li/cowwzo (accessed on November 12, 2024).
[40]. B. Morizot, O. Morizot, Faire des liens - mais quels? Pour une théorie pratique de l'analogie, in: E. Audureau (ed.), Sciences et Humanités: décloisonner les savoirs pour reconstruire l'université. Presses Universitaires de Provence, Marseille, 2019, hal-02363768
[41]. T. Ingold, Walking with Dragons. Zones Sensibles, Belgium, 2013.
[42]. T. Ingold, A Brief History of Lines. Zones Sensibles, Belgium, 2019.
[43]. G. Deleuze, C. Parnet, Dialogues, 1977. Flammarion, Paris, 1996.
[44]. T. Ingold, Correspondences. UK Polity Press, Cambridge, 2020.
[45]. C. Feng, La cosmologie de la médecine chinoise: Les cinq cycles et les six souffles - selon les Sept Grands Traités du Suwen du Huangdi neijing. Doctoral thesis under the supervision of M. Kalinowski. 2003 in Paris, EPHE, in partnership with the École pratique des hautes études (Paris). Religious Studies Section. CreateSpace Independent Publishing Platform, 2003.
[46]. J-P. Boutinet, Anthropologie du projet. Puf, Paris, 2012.
[47]. D.A. Sisk, J.P. Guilford: A Pioneer in Modern Creativity Research. Celebrating Giants and Trailblazers in Creativity Research and Related Fields, chapter 11, 2022, 171-185.
Available at: https://surl.li/njvffg (accessed on November 18, 2024).
[48]. F. Jullien, L'écart et l'entre - Leçon inaugurale de la Chaire sur l'altérité. Galilée, Paris, 2012.

[49]. D. Pieret, Efficacité et efficience selon François Jullien. Dissensus, 4, 2011. Available at: https://surl.gd/uljteb (accessed on November 26, 2024).
[50]. J-P. Bompied, Penser par écart, le chantier conceptuel de François Jullien. Descartes & Cie, Paris, 2019.
[51]. J.P. Chupin, Analogical Thinking in Architecture - Connecting Design and Theory in the Built Environment. Bloomsbury, London, 2023.
[52]. G. Bachelard, La poétique de la rêverie. Puf, Paris, 1986.
[53]. M. Serres, Pantopia: From Hermes to Little Thumb - Interviews with M. Legros and S. Ortoli. Le pommier, Paris, 2014.

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THE ARTISTIC DECORATION OF ARMENIAN MEDIEVAL ARCHITECTURE (12th - 14th CENTURIES)

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Abstract: *The means of artistic decoration of the second stage of developed Armenian architecture (12th-14th centuries) are presented. The research aims to highlight the features characteristic of the given period through a general analysis of ornamental art. The scientific innovation lies in clarifying the general features and the origins of form creation in the decorative means characterizing a given period, which will enable the determination of the monument's date, even when bibliographic and lithological data are scarce. As a result of the examination, the means of artistic decoration, with their new manifestations, played an important role in the formation of the stylistic direction of that period. They were formed on the achievements of the previous phase, the Bagratuni period (9th-11th centuries), as a result of cultural interactions with neighboring countries and were inherited by the following centuries.*

Keywords: *ornament, columned rotunda, portal, stalactite, pointed arche.*

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Received: 12.12.2024

Revised: 12.04.2025

Accepted: 05.05.2025

Introduction

The second stage of the High Middle Ages of Armenian architecture covers the 12th to 14th centuries. The abundance of decorative means of structures distinguishes it. Luxurious and diverse ornamental carvings were used in the decoration of the walls of religious structures, as well as khachkars. The art of stonemasonry had reached high perfection. The diversity of floral and geometric ornamental motifs and their creation with embroidery elegance, as well as the use of iconography, led to the creation of structures that are the best examples of the synthesis of architecture and sculpture. Many of them, becoming national values, replenished the treasury of both the Armenian and the world culture as well.

Both Armenian and foreign scholars have addressed the combination of Armenian architecture and ornamental sculptural art of the 12th-14th centuries. The works of great contributors to the field of Armenian architecture studies, T. Toramanyan [1], V. Harutyunyan [2], A. Yakobson [3], J. Strzygowski [4], S. Mnatsakanyan [5], N. Tokarsky [6], Sh. Azatyan [7], Z. Hakobyan [8], A. Ghazaryan [9], H. Petrosyan [10], H. Khalpakhchyan [11], and others are noteworthy.

In the given study, a systematic analysis of the artistic decoration of individual structures and khachkars of different architectural schools of the period under consideration (Ayrarat, Gugark, Syunik, Artsakh, and Ani) was carried out. The task was set to study the origins of their form creation, as well as their interactions with Western and Eastern cultures. The correlations of fresco painting, miniature painting, and embroidery developing in the given period with ornamental carvings were also observed. An attempt was made to identify the features characterizing the given period, in which artistic decoration played a decisive role.

Materials and Methods

Scientific domestic literature, archival materials, photographs, and measurements were studied. The research was conducted based on photographs taken on-site and comparative analyses.

Results and Discussion

Historical overview

In the second half of the 12th century, Armenia experienced unprecedented economic development, which created favorable conditions for the rise of cultural life. This rise lasted only 4-5 decades (it was interrupted

by the Mongol invasion) in central Armenia, but in some provinces of Armenia (Vayots Dzor, Artsakh, and Syunik), as well as in the independent kingdom of Cilicia, it continued until the 14th century. In central Armenia, this rise was led by the Ivane and Zakare Amirspasalar Zakaryans, who fortified a number of fortresses, including the city of Ani, and built new monastery complexes. Their example was followed by the Vachutyan, Proshyan, Orbelyan, and other princely families and wealthy nobles, and in Artsakh, by the princes of Khachen. Various economically wealthy monastic communities carried out some renovation works as well [2].

The mentioned period is notable for the works of such masters as Vetsik, Minas, Poghos, Siranes, Momik, and others. They were created with innovation born of the dictates of the era [5]. The works of these talented masters, nourished by national origins and relying on the rich heritage received from previous stages, enriched the treasury of Armenian architecture with new achievements.

As in the previous stages, in the second stage of the High Middle Ages, architecture in Armenia developed based on its national heritage, as well as on the interactions of cultures of other, especially neighboring, countries (both Christian and Islamic). In the period under consideration (12th-14th centuries), the main means of external decoration of religious buildings were portals, window arches, niches, wall arches, cornices, domes, and iconography (ktetor and family symbols and Christian symbols–icons, birds, angels, etc.). They were supplemented by new decorative sculptures–sundials and intricate geometric ornamental sculptures. Polychromy also played an important role in artistic decoration, with the use of multi-colored stones as well as paint. In the interior decoration, the columns, capitals, pillars, the shapes of the trumpets, and the decoration of the facades of the stages (stage fronts). Fresco painting was also developing.

The verticality in the spatial compositions of monastic complexes, as well as in the planes of structures and walls

The architrave becomes one of the important features of the spatial compositions of monastic complexes and individual structures of the 12th-14th centuries. It was also the main feature of Gothic art, which was the main stylistic direction in the architecture of Western European countries of that period.

Since the 13th century, bell towers with columned rotundas have appeared in monastic complexes as vertical accents. The best examples include the bell towers of the Sanahin and Haghpat monasteries, built in the 13th century [11]. The bell tower of the newly constructed Kobayr monastery (1279) also features a columned rotunda (Fig.1). Starting in the 14th century, three-story churches topped with a columned rotunda were built, emphasizing vertical development. Notable examples are the church-bell towers of Yeghvard, Noravank, Kaputan, and Goshavank (Fig.1).

The bell-tower of Haghpat, 1245

Kaputan, 1349

Noravank, 1339

Fig. 1. *Church-bell towers, 13th-14th centuries*

During this period, even low-lying cloisters were crowned with slender rotundas. The cloisters of Gandzasar, Hovhannavank, Saghmosavank, Harichavank, and other monasteries have such a design.

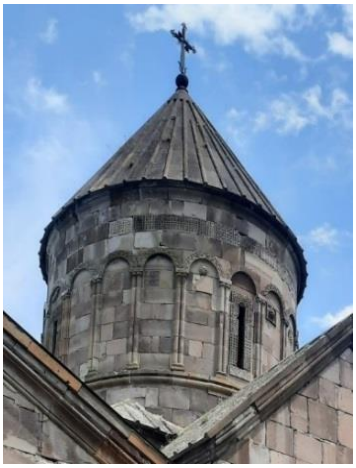
The aspiration for revival is also observed in the composition of the domes of the churches. In the period under study, two types of domes were used: fan-shaped with a spire and conical. The domes formed in the previous period served as the basis for both types.

The number of drum seats in fan-shaped domes increased in some structures, resulting in a corresponding increase in the number of columns. The cornices and columns became thinner, taller, and more slender. In their intermediate sections, carved windows, niches, iconostasis, and ornamental reliefs of various geometric shapes appeared. A more pronounced vertical light-shadow contrast emerged, which added lightness and stretch to the fan-shaped domes. The best examples are the main churches of St. Hovhannes Mkrtich in Gandzasar, Harichavank, and Hovhannavank (Fig.2a). Domes with cylindrical drums and conical spires became more pointed and slender from the 13th century onwards. The number of arches encircling the drum increased. The intermediate sections of the arches were sculpted with various geometric ornaments. During this period, the upper surfaces of the drums were encircled with sculpted ornamental bands. Examples include the churches of St. Gregory of Ani, the main church of Makaravank, St. Astvatsatsin of Goshavank, St. Astvatsatsin of Geghardavank, Tigran Honents of Ani, and others (Fig.2b).

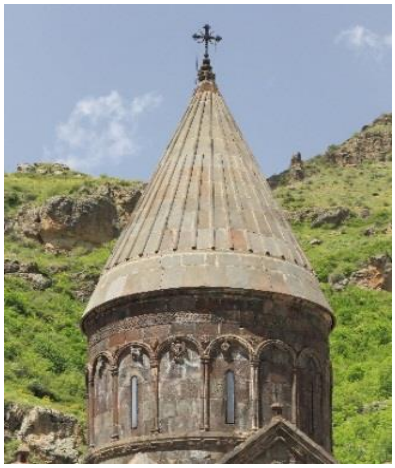
Church of Harichavanq, 1201

Church of Hovhannavanq, 1216-1221

a. *Fan-shaped roofs of domes*



The main church of Makaravanq, 1205

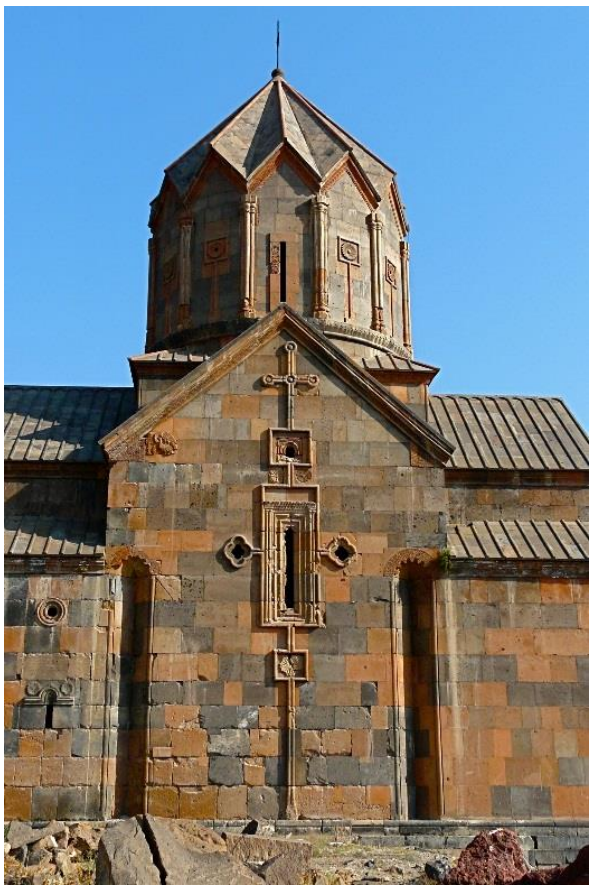


The main church of Geghard, 1215

b. *Conical roofs of domes*

Fig. 2. *Cupolas, 13th century*

In the decoration of the planes of the walls of the cult structures of the period under consideration, there is a dynamic development in two directions: vertical and horizontal. The vertical axis was emphasized by the portal, a vertically developing profiled strip, which, without interruption, encircled the rectangular windows and niches, and in some facades, it turned into a cross stretching the entire height of the facade. The decoration of the cross appeared in the planes of the facades from the 12th century [12]. Before that, they were found only in khachkars. With its elongated composition, the cross further emphasized the vertical axis of the facade of the structure (Tigran Honents, Harichavank, Makaravank, Gandzasar, Noravank, Haghpat Belfry, etc.). The lower wing of the bas-relief of the cross sometimes descends along the entire length of the wall, emphasizing the axis of symmetry (Haghpat Belfry, Hovhannavank, Gandzasar, etc.) (Fig.3).



The southern facade of Hovhanavank

The western facade of Yeghvard Church

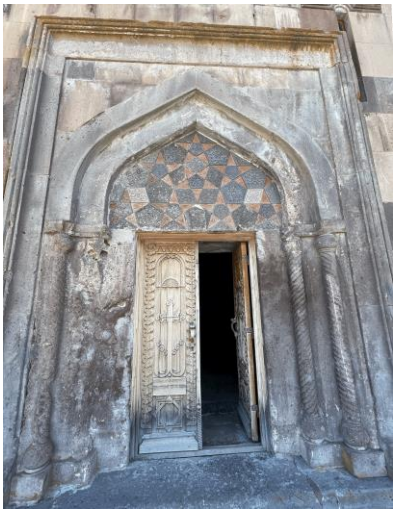
Fig. 3. *The cross ornament on the facades*

Portals

The main, mainly western, facades of all structures of monastic complexes were emphasized by luxuriously decorated portals, which became a compositional dominant [7].

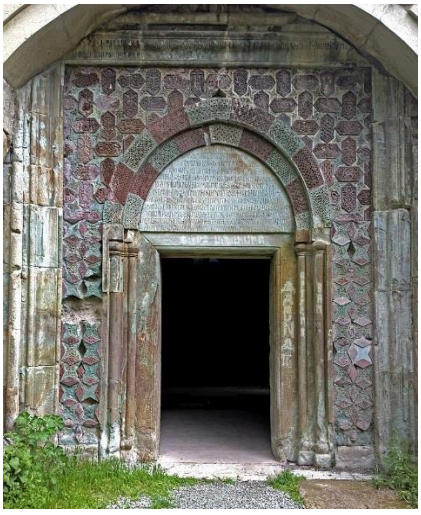
The main features of the portals of this period were:

1. In some structures, the entrance, crowned with an arch, was inscribed in a rectangular or stepped frame.
2. Polychromy was used in the decoration of portals, especially tympanums. It was obtained in two ways: with mosaics of large stones of different colors (Nor Varagavank, Harichavank, Makaravank, Tigran Honents, etc.) or by applying paint, especially vordan karmir (Gandzasar, Hovhannavank, etc.) (Fig. 4).



Harichavanq

Gandzasar

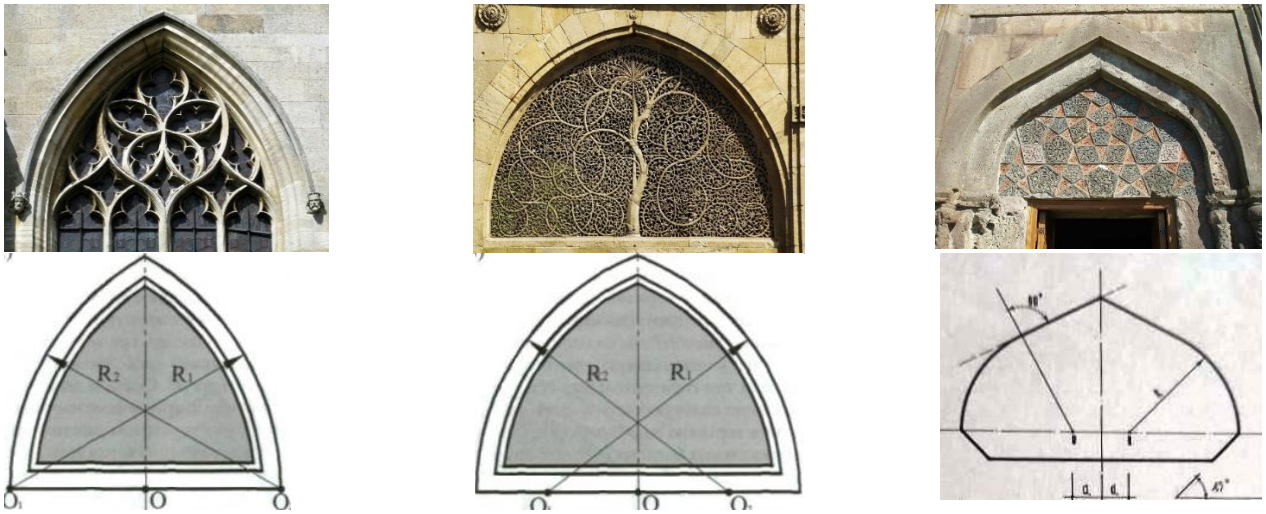


Nor Varagavanq

Fig. 4. *Polychromy*

3. Starting from the 13th century, pointed arches were widely used in the portals, along with semicircular arches. They crowned the pillars of the entrances and had a pronounced pointed shape, due to which they gave verticality to the portals. It should be noted that pointed arches were first encountered in Armenian architecture at the beginning of the 11th century, in the Ani Cathedral (1001). The architect Trdat used pointed arches in the constructive structure of that building. They, forming part of the constructive structure of the structure, rest on beam-shaped columns. A bunch of columns turned into arches without interruption, thereby emphasizing the dynamic verticality of the internal space. This circumstance was meant by the Austrian historian and scholar Josef Strzygowski, who noticed Gothic features in the Ani Cathedral [4]. The decorative wall paintings were first widely used in the external decoration of religious buildings of the 13th-14th centuries, in the portals, becoming one of the features characterizing the period under consideration. It can be said that the use of pointed decorative arches in the exterior decoration of buildings was an innovation in Armenian architecture.

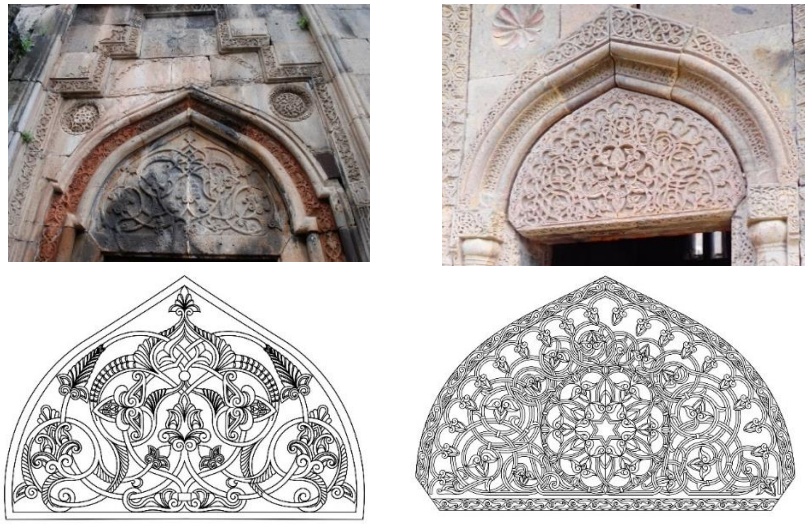
   The pointed shape of arches was also found both in the Islamic and neighboring Persian and Arab cultures and in the Western European Gothic architecture of that period. Armenian pointed arches were strikingly different in their construction. They were formed by a semicircular volume and a series of straight lines tangential to it from both sides (Fig. 5).



Gothic arch *Islamic arch* *Armenian arch*

Fig. 5. *Arrow-shaped arches*

4. The tympanums of the portals were sometimes decorated with luxurious floral and geometrical motifs, reminiscent of miniature painting. The best examples are the southern portals of the main church of Geghardavank and the western portals of the gavit of Geghardavank, St. Gregor church of Goshavank, the main church of Gandzasar, and the portal of the gavit of Harichavank, etc. These motifs have something in common with miniature painting. (Fig.6).



The tympanum of the western portal of the gavit of Geghardavank

The tympanum of the western portal of St. Gregor church of Goshavank

Fig. 6. *Luxurious decorative motifs of the portal's tympanums*

5. Stalactite decoration was used in the archivolts of the arches of the entrances (churches of Spitakavor, Noravank, Neghuts Monastery, and the Church of the Apostles in Ani, etc.). This decoration is also found in the arches of the niches (the crowns of the niches of the Haghpat bell tower), on the upper slabs of the capitals, and in the decoration of the ceilings of some gavits (the gavits of Geghardavank and Gandzasar). In this case, we can talk about interactions with Eastern Islamic architecture. The Armenian stalactites are strikingly different from the Islamic multi-colored mosaics. It had a clear geometric three-dimensional structure, formed by polyhedral stones, which created rich light and shadow (Fig. 7).

The portal's tympanum of the gavit of Neghuts vank

The ceiling of the gavit of Geghardavank

The portal's tympanum of Spitakavor church

Fig. 7. *Stalactite decoration*

The decoration of the tympanums of the portals with pictorial sculptures, combined with rich floral and geometric ornaments, becomes a feature of this period. One of the best examples is the works of the talented medieval architect, sculptor, and miniaturist Momik in Noravank. The structures created by the master are wonderful examples of the synthesis of sculpture and architecture (Fig.8). In this case, there are connections to both neighboring Orthodox (Georgian and Byzantine) and Western European Catholic architecture. We also find carvings in the decoration of portals in the Romanesque and Gothic architecture of European countries.

6. The appearance of icon sculptures in the tympanums of the portals (Noravank, Hovhannavank, Spitakavor Church), on the surfaces of the walls (Aghjots Monastery), and on khachkars can also be explained by the fact that in the 13th century, frescoes became an important part of the interior decoration of church buildings. Of course, fresco painting, as an inseparable part of architecture, is one of the oldest manifestations of Armenian culture. Even some of the Armenian churches of the 5th-7th centuries had frescoes (for example, Lmpadavank, Mren, Aruch, Talin, Kosh, Yeghvard, etc.), and this tradition continued in the following centuries (for example, Tatev, Akhtamar, Haghpat, Horomos, Ani's

The western portal of the main church of Hovhannavank

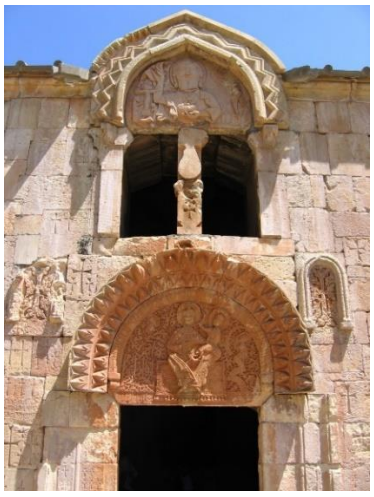
The western portals of St. Astvatsatsin of Noravank

Fig. 8. *Decoration of the portal's tympanums with pictorial sculptures*

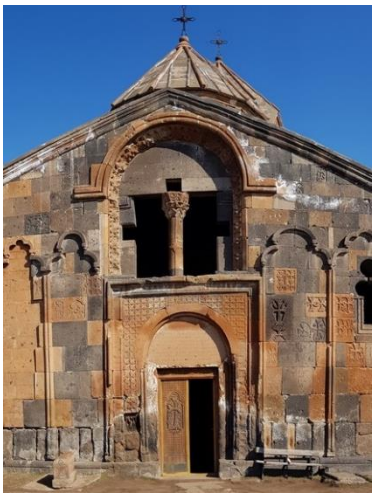
Holy Savior, Dadivank, Geghard, etc.). This form of Armenian fine art continued to flourish in 17th-century Armenian churches and monasteries (e.g., Holy Etchmiadzin, Old Julfa, Asdabad, Agulis, Varagavank, St. Gevorg of Mughni, Meghri, etc.).

In the period under consideration, in addition to the portals, iconography also appeared on the khachkars. In the 13th century, the Amenaprkich khachkars were created, depicting the crucifixion of Christ. Icons were also placed on the altars of the khachkars. The best examples are the khachkars of Haghpat, the village of Marts in Lori, and others [10].

In addition to these features, window openings with a unique design are also found. For example, the window openings above the western portals of the cloisters of Noravank and Hovhannavank are unique. They are divided into two parts by a column in the center of the design. Similar examples are found in Europe, in the portals of Gothic cathedrals (Fig. 9).



The western fasad of Noravank's gavit



The western fasad of Hovhannavank's gavit

The western portal of Notre Dame de Paris

Fig. 9. *Armenian and Evropian portals*

Since the 13th century, Armenian architecture's building facades have also featured arches and ornamental forms, which have affinities with the Gothic art of that period. This is not accidental, as Armenia, particularly Cilicia, maintained close trade and cultural ties with European countries, especially Italy and France.

Arches and niches

As in the previous phase, the decoration of walls and domes with archways continues in this period. Their prototypes are found in the early medieval architecture of the 7th century (the churches of Zvartnots, Talin Kathiqe, and Artik), as well as in some structures of the 9th-11th centuries (Ani Cathedral, Gagkashen, Marmashen, Khtskonk, and other churches) [13]. In the period under consideration, the emphasis was already placed on rich, luxurious, and elegant designs, sometimes reaching the level of embroidery, rich in complex and dynamic solutions (Tigran Honents). If in the previous phase the capitals were sculpted, then in this phase, rather thin and slender pillars crowned with capitals of simple composition were used. The intermediate angular surfaces of the arches were mainly sculpted (as in the Zvartnots temple). The spatial compositions of the archways also differed from the previous phase. The rhythmic chain of archways in the wall planes also included window openings, niches, or portals. Sometimes a combination of semicircular and pointed arches was used.

The wall arch used in the decoration of the walls of the St. Gregory the Illuminator Church in Goshavank has a unique solution. It rotates around the entire perimeter of the structure, and at the intersection of the western and southern facades, the angular arrow-shaped arch is divided: half remains on one facade, and the other half rotates towards the perpendicular facade. A similar solution is also found in the church of the Deghdzout monastery [14].

Based on the experience of the previous stage, in this period decorative niches also became an important means of expression in the decoration of wall surfaces. In this period they were included in the chain of wall arches, becoming a part of them. In the crowns of niches, the flat ornament is already transformed into a volumetric, three-dimensional ornamental sculpture. This was also a novelty and was used in this period.

Ornamental motifs

Ornamental motifs include a variety of geometric (circular, quadrangular, polygonal, etc.) and plant motifs in non-repeating versions, which have common features with miniature painting. In the 13th-14th centuries, the Cilician school of miniature painting was especially flourishing. Sculptures of pairs of birds are often found on the arches or cornices of the windows of buildings, which are also characteristic features of this stage. Bird ornaments are also found in miniature painting.

The ktetor sculptures and princely coats of arms also became widespread [15]. Sundials are also found in the decoration of the southern facades of any of the churches or cloisters that were part of the monastic complexes. In the Middle Ages, the idea of time was given by the sundial, which over time also found its place in religious structures. They consisted of a semicircular tablet and a stationary rod; the time was determined by the shadow and the angle formed by a horizontal line. The oldest sundial preserved in Armenia is that of the Zvartnots Temple (7th century). Later, they were widely used, especially in the second phase of the High Middle Ages (we also find them occasionally in the 10th-11th centuries). Sundials showed not only the time but also harmoniously integrated into the artistic decoration, becoming its integral part.

Khachkar made by Master Poghos in Goshavank

The rosettes of Dadivank's khachkars

Fig. 10. *"Embroidered" khachkars*

During the period under study, the ornamental carvings found in the decorations of religious structures and khachkars were sometimes elaborated with "embroidery". It can be assumed that in addition to miniature painting, lacemaking was also developing in Armenia. The best examples of "embroidered" khachkars are the khachkars of Master Poghos in Goshavank, the khachkars of Momik in Noravank, the twin khachkars of Dadivank, etc. (Fig. 10).

Khachkar art developed in parallel and in harmony with the spirit of the time. As already mentioned, pictorial carvings also found a place in the decoration of khachkars: scenes of the crucifixion, icons, and angels. And the realistic fruit ornaments of grapes and pomegranates, which were widely used in the past, are now appearing in a stylized form with floral and geometric ornamental motifs that have a connection with miniature painting.

The discussed features are characteristics of different schools of Armenian architecture of the 12th-14th centuries. The architecture of Ani, Ayrarat, Shirak, Gugark, Syunik, and Artsakh developed with the characteristics typical of each region, having the common features that were characteristic of the given period. As an example, let's consider the Church of St. Hovhannes Mkrtich and the gavit of Gandzasar Monastery in Artsakh [16]:

- The dome of the church has a pronounced verticality typical of the period under consideration, thanks to the fan-shaped cupola and the polyhedral drum columns.
- The external walls of the church are decorated with vertical cross reliefs, icon sculptures, including ktetor sculptures, many geometric ornament motifs that reach an embroidery elegance, and wall arches.
- The gavit is crowned with a slender columned rotunda. The ceiling is stalactite.
- The tympanum of the vestibule, with its luxuriously sculpted belt, is decorated with polychrome.

Conclusion

Thus, in the second phase of the developed Middle Ages (12th-14th centuries) of Armenian architecture, the means of ornamental decoration played an important role in the formation of the stylistic direction of that period. It was formed based on the architectural heritage of previous periods, bearing the cultural interactions of neighboring Near Eastern and Western European countries as well.

As a result of the studies, we can make the following conclusions:

- The main feature of the architecture of the second stage of the developed Middle Ages, the 12th-14th centuries, was the luxurious and rich exterior decoration of the structures.
- This period was characterized by verticality, polychromy, the use of arrow-shaped arches, stalactite ornaments, figure sculptures, and exquisite "embroidery", which have similarities with miniatures and lacework.
- Architecture had been developing in synthesis with sculpture and mural painting.
- The masters of the period under review, without breaking the chain of inheritance, built on the achievements of the previous phase and created a new one in accordance with the dictates and spirit of the given period.
- Innovation, which was present in all means of artistic decoration, carried the national spirit without being cut off from its origins. At the same time, the architecture was in parallel with the world architecture of the period under study.

Conflict of Interest

The author declares no conflicts of interest.

Funding

This research did not receive any financial support.

References

[1]. T. Toramanyan, The Cathedral Church of Ani.Yerevan, 2008.
[2]. V. Harutyunyan, Haykakan chartarapetutyan patmutyun. Luys, Yerevan, 1992 (in Armenian).
[3]. A. Yakobson, Ocherk istorii zodchestva Armenii V-XVII vekov. Gos. izd-vo arkhitektury i gradostroitel'stva, Moscow-Leningrad, 1950 (in Russian).
[4]. J. Strzygowski, Arkhitektura armyan i Yevropa (v.1). Gitutyun, Yerevan, 2018 (in Russian).
[5]. S. Mnatsakanyan, Varpetats varpetner: Manuyel, Trdat, Momik. Academy of Sciences of Armenian SSR, Yerevan, 1982 (in Armenian).
[6]. N. Tokarsky, Arkhitektura Armenii IV-XIV vekov. Armgosizdat, Yerevan, 1961 (in Russian).
[7]. Sh. Azatyan, Portaly v monumental'noy arkhitekture Armenii IV-XIV vv. Sovetakan grokh, Yerevan, 1987 (in Russian).
[8]. Z. Hakobyan, Armenian Early Medieval Sculpture (4-7 Centuries). YSU press, Yerevan, 2016 (in Armenian).
[9]. A. Ghazaryan, Antichnoye naslediye v armyanskoy arkhitekture kontsa X – nachala XI veka. K probleme «Renessansov» v srednevekovoy kul'ture. Arkhitektura: sbornik nauchnykh trudov, 6, 2013, 21-26 (in Russian).
[10]. H.Petrosyan, Khachkar: the Origins, Functions, Iconography, Semantics. Printinfo, Yerevan, 2008 (in Armenian).

[11]. H. Khalpakhchyan, Arkhitekturnyye ansambli Armenii. Iskusstvo, Moscow, 1980 (in Russian).
[12]. L. Erikh, A. Ohanjanyan, M. Mittermayr, S. Qrisrofer, Hayastani chartarapetutyuny kristoneakan mshakuyt arevmutki shemin. Hamematakan chartarapetutyan institut, Yerevan, 2006 (in Armenian).
[13]. N. Mkhitaryan. The Origin of the Armenian Architecture Artistic Decoration Forms during the Reign of Bagratunis. Multidisciplinary Reviews, 7, 2024. Doi: https://doi.org/10.31893/multirev.2024ss014
[14]. N. Mkhitaryan, A. Poghosyan, Artistic Decoration of the Monastery Complex Goshavank. Scientific papers of Nuaca, 2 (73), 2019, 69-76.
[15]. V.Tamazyan, Ktitorakan patkerakandaknery mijnadaryan hay chartarapetutyan mej: PhD thesis, Yerevan State University of Architecture and Construction, 2005 (in Armenian).
[16]. Sh. Mkrtchyan, Artsakhi gandzery. Tigran Mets, Yerevan, 2000 (in Armenian).

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THE IMAGE OF THE "CHAIR" IN THE CREATIVE LIFE OF GEVORG MSHETSI JAVRUSHYAN

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Abstract: *In this research we have studied the pictorial features of "chair" as a main character and the semantic content of the image in painter, sculptor and designer Gevorg Mshetsi Javrushyan`s three-dimentional, volumetric series of works named "Chairs". These unique collages created over different years predominate in his creative life (they are approximately 60), so they have a great role and importance in the context of studying and enlightening his art. Having a unique ideological and philosophical content, an interesting presentation of external form, they have received various interpretations. Each "Chair" has something to say, some message, which can be understood through the title mainly presented in the form of catchprase or aphorism. The article refers to the depiction of the chair in the world and Armenian fine art, starting from its initial stage of the growth of importance. Through individual examples, comparative parallels are drawn between the similar works of the artist and those of other artists representing different artistic movements and cultural periods. Thus, this article aims to study this period of Gevorg Mshetsi's work, to present and illuminate it for art lovers and the scientific community, and, importantly, to do so in the context of Armenian and world fine art.*

Keywords: *Gevorg Mshetsi Javrushyan, chair, collage, three-dimensional work, catchphrase.*

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Received: 14.12.2024
Revised: 20.05.2025
Accepted: 14.06.2025

Introduction

Gevorg Mshetsi Javrushyan (1958-2022), artist, sculptor, and designer, not so popular among scientific and art-loving circles and the wider society, has left a significant legacy that stands out for its original and engaging style and profound thematic and ideological substance. However, it should be noted that his legacy has not been studied and appraised at its true worth in Armenian fine art. It should be noted that the family archive contains approximately two dozen literary references to his work, but these are mostly informative or fleeting, more lyrical and emotionally charged publications in the press [1-6], rather than complex artistic analyses. There are no serious scientific studies of his work.

We can fill this gap with a comprehensive monograph, which will embrace his entire creative activity, along with all the stages of its formation, development, and establishment. However, in this article, we will refer to only one still significant and extensive part of his oeuvre.

It should be stated that the artist was limited to neither the choice of genre nor the theme or material during his creative activity, and he worked in various fine art spheres. However, Gevorg Mshetsi's large-scale collage series "Chairs" is particularly noteworthy, which embraces free thematic thinking typical of an artist, the perception of plasticity and dimensions characteristic of a sculptor, and the accurate artistic planning of ideas typical of a designer. The chair itself, by its form, plasticity, and as a base of creativity and a core idea, already occupies a significant place in the oeuvre of Gevorg Javrushyan. The fact that the series includes about 60 chairs is evidence of the above-mentioned. Each work is created, as a rule, directly on the base of a chair and/or on one or other fundamental part, in combination with other surfaces. The creative process is accompanied by an original presentation of a collage while synthesizing various things that are no longer suitable for use on the surface of a unique "born" chair. This is not just a mere combination of various subjects, not at all; even the smallest, insignificant detail in the composition has its sense, it has something to say, and it occupies its

irreplaceable and inviolable place carefully thought out and sought out by the artist. The permanent existence of things in the above-mentioned ideas and the fact of expressing what the artist wants to say in their language may be due to the fact that Javrushyan seemed to be constantly in an inner silent dialogue, in a close psychological relationship with the surrounding world, elements of nature, and also with the objects created by man and the reality created by these objects. Therefore, his inner connection with all this could not but occupy a certain place in his works through the language of the same things. This was the means through which Javrushyan tried to convey his thoughts, emotions, and feelings to the viewer, which he had experienced through his own world perception and which received an original interpretation: his inner turmoil and indignation, admiration and reverence, and sharp humor and sarcasm. This was, in fact, his original way of associating with the viewer on this or that phenomenon in the past, present, and sometimes also in the future. All of this is particularly aptly and eloquently presented in his comprehensive series.

In this article, the features of the artist's unique depiction of chair were analyzed from the artistic viewpoint, and a certain idea was highlighted through them. It was also interesting to consider various depictions of chair in world and Armenian fine art, their iconographic transformations in different cultural periods, as well as to refer to the comparative parallels between Javrushyanesque chairs and similar works of artists representing different art movements.

Materials and Methods

"There is a misconception that things around us are dumb.
Not at all. They can talk like us. All we need is to have
a desire to listen to their speech till the end"[1].
Gevorg Mshetsi Javrushyan

Such is the perception of an object, perhaps of no significance at first glance, in the works of artist, sculptor, and designer Gevorg Mshetsi Javrushyan.

The chair, as such, seems to be just a component of everyday life, a necessary piece of furniture. However, sometimes things surrounding us fascinate not only with their function but also with their shape and form; they are even a source of inspiration to develop an idea for an artwork of artistic value. This factor became particularly significant in fine art in the works of prominent representatives of world fine art of the 20th century, Van Gogh, Henri Matisse, Salvador Dali, Egon Schiele, and Andy Warhol, and this even became one of the signature details of the Bauhaus school. The chair went beyond the narrow limits of applicability and truly acquired an aesthetic value. Initially, it was depicted as a part of an interior, being juxtaposed with various things in it (table, rocking chair, tableware, bed, and other elements of furniture) (Figs. 1-3). In this regard, not so much the chair but the entire interior, mood, and atmosphere were generally highlighted. This, of course, was also contributed to by the selected color, the chiaroscuro interplay conditioned by the author's state of mind, the season of the year, and the instants of the day.

Sometimes a chair served as a support for a still life, playing the role of a table. In this case, its incorporation into the picture had a dual use: it served only as a mere surface carrying the still life on one hand, where it appeared only with reliable descriptions of the material and formal aspects, or with an interesting stylistic interpretation (Figs. 4-6). On the other hand, it also entered into a direct dialogue with this or that symbolic object placed on it, hung on it, or wrapped around it (Figs. 7-9).

In the case of the second version, the chair took on a dominant role, becoming the protagonist of the work and an irreplaceable actor, thus forming the idea and the concept itself. Here, the key idea is that every object created by human beings carries an immaterial stamp of the phenomenon of human memory. Personal life perceptions, emotions, and feelings are at the roots of this pictorial alternative and allegorical thinking.

[1] From the artist's notes kept in the family archive.

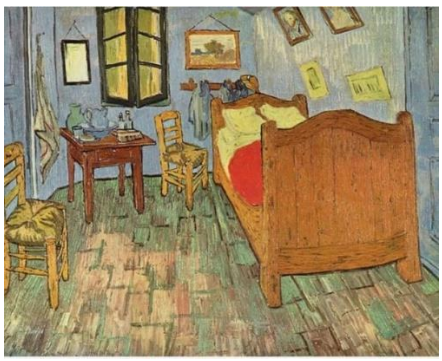

Fig. 1. *Van Gogh, Bedroom in Arles, 1889*

Fig. 2. *Egon Schiele, My Room in Neulengbach, 1911*

Fig. 3. *Andy Warhol, Living room, 1948*

Fig. 4. *Henri Matisse, Chair, 1919*

Fig. 5. *Atanas Matsoureff (untitled)*

Fig. 6. *Hagop Hagopian, Still life, 1961*

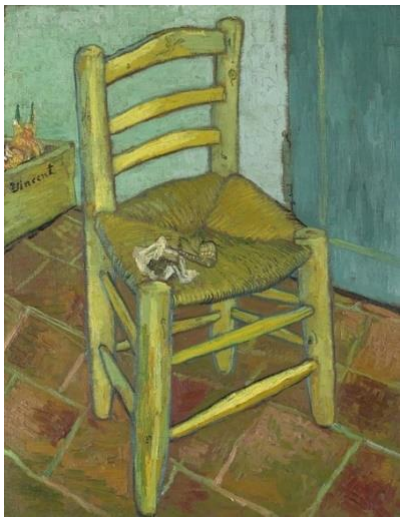

Fig. 7. *Van Gogh, Vincent`s chair with his pipe, 1988*

Fig. 8. *Hagop Hagopian, Memory, 1974-1975*

Fig. 9. *Van Gogh, Gauguin's Armchair, 1988*

The chair in this case sometimes acts as a symbol of inner emptiness, loneliness, and abandonment of a man, and sometimes as a symbol of expectation and introspection. It is often vivified; it embodies the origins of human existence, the absence of a human being, or, on the contrary, its paradoxical presence. This is especially obvious in the "chairs" painted by Van Gogh (Figs. 7,9). The temperaments of the two artists, Van Gogh and Paul Gauguin, are presented in an allegorical style, which soon were often to be in conflict and led

to arguments[2]. Again, each selected object (chair, mannequin, coat, glove...) in the paintings of Hagop Hagopian, one of the peculiar representatives of Armenian fine art of the 20th century, is an expression of the artist's contemplative feelings, human relationships, love and struggle, life and death, a response to the diverse phenomena in the world, and an expression of his and the environment's state of mind in its own way (Fig.8) [7]. Thus, among a number of artists, the chair itself begins to carry more often the semantic and ideological background of the idea, to be perceived as the main leitmotif of the work, around which the idea would unfold, the content, which itself would prompt and dictate the thematic substance of the work. Therefore, this component of furniture gradually ceases to be of an auxiliary nature in art and is already considered within the thematic compositional genre. In addition, the depiction of this object is so prioritized that artists begin to present it also within the complete series. In this context, the works of Giacomo Mantzu (Fig.10), Ashot Baghdasaryan (Fig.11), Ruben Arutchyan (Fig.12), and Artur Sharafyan (Fig.13), should be highlighted.

In the sculpture work "Tebe Che Cade" (Falling Thebes) (Fig.10) by Italian sculptor Giacomo Manzù, which has only one point of support, where the dynamism of the composition solution and the realistic solution of the figure are harmoniously combined, the instant seems to be literally stopped[3]. And the interview of Armenian artists R. Arutchyan and A. Baghdasaryan on the exhibition titled "Creation of Chair," which opened in 2018 at the Russian-Armenian (Slavonic) University, unfolds A. Baghdasaryan's fascination with the chair as an object of depiction with its two dimensions: horizontal, on which one can sit, and vertical, the back, which allows the sculptor, using the horizontal surface, to make the vertical dimension serve as a background.

The chair for R. Arutchyan, as he himself notes, is a fundamental concept, a base, which allows the sitting person to even reveal his/her own personality[4]. It should be noted that Arutchyan's works are generally endowed with inner motion. As the art critic Armen Gasparyan wrote, Arutchyan categorically rejects the state of immobility, and in the ordinary material world the artist creates mood and speech beyond the mere demonstration of material objects [8]. In the paintings of contemporary artist Artur Sharafyan, the chair appears again as the main leitmotif of the artistic piece of "work". As the artist himself states, the character becomes a chair and gives the audience more reason to think[5].

Noteworthy is also the 12-meter monumental sculpture "Broken Chair" (Fig.14) by Daniel Berset, erected in front of the European headquarters of the UN in Geneva, Switzerland. It is an allegorical embodiment of the collective image of those who lost their limbs due to infantry bullets and a substantive objection to their application. In contrast to such a dramatic, sensual depiction of a chair (a similar interpretation is also found in Gevorg

Fig. 10. *Giacomo Mantzu, Tebe Che Cade, 1983*

Fig. 11. *Ashot Baghdasaryan, Struggle for existence, 2012*

Fig. 12. *Ruben Arutchyan, From the series "Chair", 1997*

Fig. 13. *Artur Sharafyan, Dream, 2024*

[2] Masterpieces from the Van Gogh Museum. Museum of Van Gogh, Amsterdam, 2011.
[3] https://izi.travel/ru/9d4f-dzhakomo-mancu-padayuschaya-tebe-1983/ru
[4] https;//www.golosarmenii.am/article/72503/eto-stul—ego-tvoryat
[5] https://surl.lu/yyxqfm

Mshetsi's "Veteran" chair (Fig.15)), its presentation in "The Wasilly" chair by Hungarian designer and architect Marcel Breuer, representative of the Bauhaus, is quite different (Fig.16). Here, where the artist was inspired by the bicycle frame, not the content, but the original, stylistic presentation of the chair is highlighted. Salvador Dali's "Chair" (Fig.17) stands out for its amusing, humorous, even funny interpretation of this piece of furniture as an ideological axis of perception, where the artist applied the principle of using an optical binocular, the stereoscope. It is based on human binocular vision. In the case of both the device (binocular) and Dali's work, we are dealing with two parts of the same scene, taken from slightly different observation points, each of which is meant for a specific eye; however, when looking through a stereoscope, the image appears dimensional to the viewer. It turns out that a simple image externally viewed on a flat surface can surprisingly also be viewed in a three-dimensional format.

Next to the above-mentioned artists and sculptors who have adopted various artistic concepts, it is noteworthy to consider Gevorg Mshetsi's collage series "Chairs", which was exhibited for the first time in 2016 at the Artists' Union of Armenia within the framework of his solo exhibition "Timextimextime" (15 collage-chairs of the collection, including around 60 items, are now on permanent display in the Dilijan Geological Museum Gallery). Note that the mentioned artists form the chair itself with painting and sculptural materials, with color, bronze, and wood. In Javrushyan's chairs, the base is the chair itself or any distinctly recognizable part of it. The fact that the Javrushianesque chairs are presented in the form of collages allows us to single out this series of his, to study the peculiarities of its formation, to analyze the content structure, and to view it in the context of both Armenian and world fine art. It should be noted that Javrushyan personally knew Sergey Parajanov and was in touch with the greatest artist of collage, who greatly encouraged him [1].

The material used in the ideas of Gevorg Mshetsi is a wonderful means of self-expression and self-discovery [2]. Therefore, both in this and other dimensional works, to deliver his message to the viewer as accurately and eloquently as possible, Javrushyan juxtaposes various materials, things that have been forgotten and have lost their functional properties, that are simply thrown away; nevertheless, their usage in the composition is thought out and logical. In this way, he makes the idea more alive, direct, and dynamic; makes it more emotional; makes the viewer-creation dialogue easy and effective on one hand; and breathes new life into the used household items and moves them to another aspect of the spiritual value system on the other hand. As Mshetsi himself admits in one of the interviews, there are many abandoned objects next to us; however, each of them has its own biography, many of them seem to dictate, become a guide for their preferred role, and he is only in the role of a mediator to breathe new life into them [3]. Moreover, as Ara Hovhannisyan states, the artist is not fascinated by the external beauty of the objects but penetrates inside them with acuity, highlighting the content and the inner essence [4]. These Javrushyanesque experimental tricks, free creative thinking, profound philosophical and symbolic interpretations resulted in the creation of unique works with a mysterious content and unrevealed sense, which, as a rule, need interpretation.

Fig. 14. *Daniel Berset, Broken Chair, 1997*

Fig. 15. *Gevorg Mshetsi Javrushyan, The Veteran chair*

Fig. 16. *Marcel Breuer, The Wassily chair, or the Model B3 chair, 1925-1926*

Fig. 17. *Salvador Dali, The chair, 1975*

To become associated with their content, it is necessary to use one's own analytical and even research arsenal and one's own cognitive potential and capacity to find the key that will guide towards the discovery of the artist's message. Basically, the "key" is the title of the work, which sometimes appears in the form of an aphorism or a catchphrase and sometimes in the form of a phrase taken from a proverb or an idiom. For example, those mentioned above (Figs. 18-21) have titles based on literary works of G. Aghayan (Fig.18), H. Tumanian (Figs. 19,20), and A. Khnkoyan (Fig.21), on the catchphrases that have originated in those works. In the first chair, we visually see the unhappy Aghayanesque pulley wheel; in the second one, the spoons and ladles of hunters who have not tasted anything from the bowl in the story of False Hunt described in Tumanian's fairy tale. In the other one, the Tumanianesque ruler-stick "measuring" human height is striving for the small purse with banknotes on the base of the footwear. And in the last one, the key substance of A. Khnkoyan's fable "The Frog and the Crow", we see the "bare" water. Javarushyan's frequent references to proverbs and adages may be due to the fact that, as Ph.D. Professor Valery Mirzoyan states, a proverb or saying plays the role of a moral norm: it instructs, exhorts, warns, forbids, imposes...[6] And Gevorg Mshetsi did exactly the same thing in his chairs; again, he admonished and reprimanded through conventions and tried to educate in this way. As we read in one of the artist's notes, "Most of my works are "ideograms", are interesting at first glance, and still they are also unclear, unexplained, and undeciphered." On his unique creative path, while working on each piece of the collection, the artist used metal objects turned into production waste, including iron bowls, pipes, taps, spoons, ladles, baskets, pulleys, mechanical counters, chess pieces, badges, banknotes, lower limbs of mannequins, water heaters, horns, mechanisms of various electrical devices, meat grinders, glassware, piano keys, parts of a guitar and trumpet, easels, and signboards–that is, everything that would help the artist to express this or that idea. Moreover, the artist would not consider the work finished until he had found this or that detail, even a small one, that was so necessary for his composition. In this respect, for an artist who has brushed numerous paintings, it was much more difficult to turn a three-dimensional voluminous work, created like a collage, from a sketch into a thought-out three-dimensional image than if it was done merely as a "picture". The issue is that if you can depict what you want to depict with the painting materials at hand–the brush and the color–while working on a painting, then you cannot do the same when working on this kind of work. In this case, first of all, you need to search and find the necessary materials to create the form of the composition, where the most improbable object, which is the most difficult to find, may serve for it. This process often required a long period of time; the sketch of the idea found on paper or the chair based on it could remain unfinished in the small house-studio for years until the specific detail required for the specific part of the work was found. This is also the reason why Mshetsi worked on this series for about 30 years.

Fig. 18. Gevorg Mshetsi Javrushyan, Pulley, pulley, my wheel

Fig. 19. Gevorg Mshetsi Javrushyan, The chair without a seat, or The false hunt

Fig. 20. Gevorg Mshetsi Javrushyan, The purse of money raises human height

Fig. 21. Gevorg Mshetsi Javrushyan, Till the water comes, the frog's eye will get out

[6] https://surli.cc/tontkx

Chairs that raise social issues and have a political connotation reflect the artist's original style, as well as his wide scope of creativity. Making the visible or invisible sides sharper and depicting the phenomena of reality grotesquely, Javrushyan presents the reality to the public, which is mysterious and extremely conventional on one hand and terribly "bare", undisguised, on the other hand. As the artist's notes preserved in the family archive read, "Life is reflected so clearly and so obviously in my works that one can be disgusted with our days, our reality." Similar "Chairs" (Figs. 22-24) are usually of a sharp critical nature and sometimes bear a satirical and sarcastic tone, condemning lies, falsehood, injustice, lawlessness, human greed, stinginess, and servility.

On one hand, according to him, the vocation of an artist is to tell the truth, and the works are created according to the dictates of time[7], and on the other hand, the artist is a struggling, intolerant, patriotic, and suffering personality who treats many phenomena with humor, sometimes with sarcasm [5]. Another important fact should be considered as well: Gevorg Mshetsi was a great advocate and fan of the literary activity of Ler Kamsar, a famous writer and satirist; he did the illustrations of the author's books, as Kamsar's granddaughter, Vanuhi Tovmasyan, describes, and was truly devoted to Kamsar. If Ler Kamsar exposed the negative, unhealthy realities of Soviet society through his literary works, Javrushyan instead did it mainly through his graphic works, especially sculptural, large-scale compositions. For example, in the case of the "Stair by Stair" chair (Fig.22), it is symbolically shown how, during the years of the Cult of Personality, by walking up the stairs with the appropriate signboards, "overcoming" the subordinate positions indicated by the instructions, one could take the position of the highest leader. Through another chair (Fig.23), he plays on words, taking the stem of the word "campaign" and mocking the pre-election campaign, which seems to remind him of horse races: to make every possible trick, to make ingenious chess moves, to place the maximum bet, so that one's own fictitious "throne" reaches the place first by dragging it. The chair "Press" (Fig.24) is about the right to freedom of speech, which is constantly limited, unfree, and "bound". If these Javrushyanesque chairs referred to Soviet mores and dictatorial regime, then we see the reflection of internal political realities of the independent, sovereign Republic of Armenia in the graphic artworks "The Throne" and "March, 2008" (Fig.25) of Sergey Narazyan. In these works, the protagonist is once again the chair, and to highlight the supremacy of its sense, the artist depicts it quite large in both artworks.

When starting a new work, Gevorg Javrushyan applied new forms of plasticity expression, implemented new techniques in art, and made use of the capacity of the chosen material in a new way. Biographical chairs are also of great interest, which, as a rule, highlight the fact that Gevorg Mshetsi is an artist.

Fig. 22. *Gevorg Mshetsi, Stair by Stair or Keep cleanness, close the door*

Fig. 23. *Gevorg Mshetsi, Election campaign*

Fig. 24. *Gevorg Mshetsi, The Press*

[7] https://surl.li/ypttcu

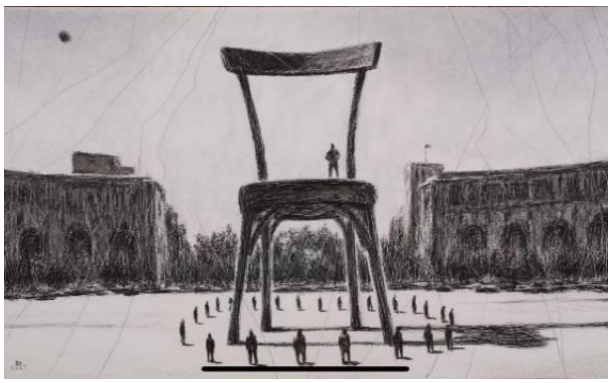

Fig. 25. *Sergey Narazyan, March 2008, From series "Dreams of Yerevan", 2021*

In the work "My Chair" (Fig.26), we see the crown of thorns of Christ's crucifixion hanging on the easel on one side and the wreath symbolizing "The Lord's Triumphal Entry into Jerusalem" on the other side. This suggests the bond of creation existing between the mission of the artist and Christ: that is, to make, to create eternal life and truth in the world, and to enlighten the human heart and soul consciously at the cost of one's own life. Along with all the differences in art issues, we also see some similarity with the Biblical figure in the "Self-Portrait", attributed to 1994 (Fig.27) of artist-architect Albert Sokhikyan, which again alludes to seeing one's self in the context of an "artist-creator", the artist's conviction to perceive his existence as a mission [9]. In the case of the other chair (Fig.28), Javrushyan's position that the metal legs of the artist's travel case are legs for the artist and the palette is the back and the support is quite clear. He even incorporated into the composition a vegetable grater for the artist to be constantly alert and vigilant. The chair "Objective" (Fig.29) is close to Parajanov's aesthetics in its original depiction and is worth special attention in Mshetsi's "Chairs" series. There are small and big parts of mirrors in the composition. Their use in the concept also makes the viewer who tries to get acquainted with his art and accidentally finds himself in the reflection of the mirror obviously become a participant. This contributes to the completeness of the composition. One of Javrushyan's articles related to these works, including a mirror, reads, "Presence of a human with its entire spiritual and emotional world, along with the evil and the good in it, not only within the collage done by the artist, but also outside it when catching the gaze of each staring individual" [6]. In the same article, parallels are also drawn with the phenomenon in the theater when the actor, being among the audience, eliminates the border between the audience and the stage, enters into a unique dialogue with the audience, and makes them be part of the actions on the stage. The work becomes complete with the accordion attached to the lower part of the chair, through which we see photos of known and unknown people representing different times and realities behind the glass of the small box formed by it—people who may have played a significant role in the artist's life.

Fig. 26. My chair

Fig. 27. Albert Sokhikyan, Self-Portrait, 1994

Fig. 28. Chagall, Beatrice and Me

Fig. 29. The Chair Objective

One can endlessly speak about Gevorg Mshetsi's unique collage-chair comprehensive series, trying to bring out and analyze the artist's philosophical thoughts and ideological messages and to study the artistic and plastic means of each work that he has used to achieve maximum expressiveness. In this way, we automatically become associated with his rich artistic arsenal, which summarizes Javrushyanesque critical thinking about various realities of spatial and temporal coexistence, his exhortations, or simply his witty humor filled with sarcasm. Therefore, in this research, we have sought to present this original series of Javrushyan, which has not been fully illuminated or properly appreciated in the art-loving community, particularly among scientific circles, with all its manifestations as comprehensively and concisely as possible.

Results and Discussion

Indeed, it can be stated that such an interesting Javrushianesque series of collage chairs, born during the 30 years of his creative activity, is an original reflection of the artist's thoughts and feelings. However, each exemplar was developed and depicted in detail not only based on his sensory impulses, impressions, feelings, memories, and their traces imprinted in the human consciousness but also those of human beings in general, formed as a result of association with their own inner world and external environment. Therefore, Mshetsi seems in this way to ingeniously try to return the sense and meaning of the surrounding world to the human being, sometimes seasoning them with subtle satirical and sarcastic episodes and sometimes even developing human dramas. It is clear that this period of creativity of this artist-intellectual endowed with an original worldview and imaginative leaps proceeded consistently, restlessly, and swiftly.

Conclusion

Thus, artists have always been interested in the depiction of chairs, and they have repeatedly found their place in their paintings, graphic and sculptural works. We can often see pictures of chairs in the works of both Armenian and foreign artists, even up to the present day. However, while compared with the chairs of artists representing world fine art, Gevorg Javrushyan's chairs are distinguished by their manner of execution and the innovative use of technical skills; they are done according to the logic of collage, when each necessary component is an integral part of the complete picture and is fixed on the priming not at will, but thought out in advance and put in its exact place. They are thought out mostly within the thematic thinking, have a great emotional impulse, and are saturated with allegories, conventional, symbolic, and even surrealistic elements, which gives them an obvious philosophical tone. In addition, the chairs of the series are as similar as they are different in their plasticity forms, performance, and interesting presentation. They seem to be the "evidence" of the reality that breathed new life into the artist's oeuvre. Owing especially to these chairs, Javrushyan's creative path acquired its clearly recognizable "form" in the sphere of fine art.

Conflict of Interest

The author declares no conflicts of interest.

Funding

This research did not receive any financial support.

References

[1]. T. Mamayeva, So storony vidneye. Vremya i dengi, 185, 2006 (in Russian).
[2]. S. Margaryan, Ktavnery paterazmi u khaghaghutyan guynerits. Martik, 49 (862), 2009 (Dec. 4-12), 6 (in Armenian).
[3]. N. Gizlijyan, Inknutyan droshmy. Avangard, 47, 2002 (Dec. 18-24), 5 (in Armenian).
[4]. A. Hovhannisyan, Lkvats srbutyunneri anteghvats kraky. Ankakhutyun, 6 (332), 1994 (Feb. 17), 6 (in Armenian).
[5]. V. Tovmasyan, Lerr Kamsar, Getsemani partezi aksoryalnery. Edit print, Yerevan, 2023, 5 (in Armenian).

[6]. S. Ghazaryan, Gevorg Mshetsi: Khorhrdavor yntrik. Vasn Hayutyan, 38 (56), 2002 (Nov. 4), 15 (in Armenian).
[7]. M. Khachatryan, Hakob Hakobyan-100. Hogu hayeli. Tsutsahandes, Hayastani azgayin patkerasrah (catalog), Yerevan, 2023, 7 (in Armenian).
[8]. R. Arutchyan, Arutchyan-Michayel, Sergey, Ruben. Ministry Culture of Armenia, Yerevan, 2012, 10.
[9]. L. Arsenyan, Self-Portraits in the Paintings and Graphic Works of Architect and Artist Albert Sokhikyan. Proceedings of the 11th International Conference on Contemporary Problems of Architecture and Construction, Yerevan, Armenia, October 14-16, 2019, 8-15.

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