Macedonian Architecture From 19th Century in The Village of Leshok, Republic of Macedonia

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Abstract

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INTRODUCTION: The old rural architecture in Macedonia is insufficiently studied and in many villages is in the process of extinction, especially in Western Macedonia where there are many villages whose inhabitants have emigrated.

OBJECTIVES: The objective of this research is the folk architecture of the house in the village of Leshok, near Tetovo, and getting acquainted with the other types of objects that are part of the rural-economic yard and are inextricably linked to the daily work, life and customs of the peasant from this region.

MATERIAL AND METHODS: For analysis of the traditional architecture of the houses in the village of Leshok from the late 19th and early 20th centuries, 10 typical houses with different structure and location are chosen, which are identified and displayed by the Google Earth search engine.

RESULTS: The basic characteristics of the architecture of the village house in Leshok are explained, where the economic yard together with the economic objects are included. The functional solutions of the foundations of houses from the end of the 19th and the beginning of the 20th century are shown, the constructions used in the house of Leshok are described, as well as the materials that were used for their construction. In the end we get acquainted with the interior and the design of the premises in the old Macedonian house.

CONCLUSION: Leshok belongs to the group of mountain villages of compact type. The configuration of the terrain, the dead riverbed, dictated the way of construction, where the houses are placed one above the other and each has a clear view of the valley. In that way, the basic architectural features of the Leshok house are formed. It is a typical mountain house built of stone and wood, on two floors and with an open veranda.

Introduction

Architecture as a creative effort of a certain social environment most prominently affirms the intellectual and material possibilities of society expressed through the urbanization of the environment in which it lived and the architectural relations in it.

In Macedonia, the development of architectural creativity reaches its peak in the XIX and early XX century. In this period, due to the newly created socio-economic conditions, the Macedonian population acquires certain rights to more uncommitted religious, economic, and cultural activity, which will highlight the creation of the so-called folk architecture. With its constructive, functional, and aesthetic achievements, it will become present in all rural settlements on the territory of Macedonia [1].

Rural settlements are the most direct reflection of the life and work of the peasant. They, as spontaneously formed agglomerations, have their functional and aesthetic value, based on the logical approach in solving the problems related to the terrain, function and material [2].

What the Macedonian villages have in common is that they have differentiated themselves as a result of the attempts to adapt to regional, geographical and climatic factors. This is especially noticeable in those villages, which are positioned under the mountain ridges. Their houses are outstandingly adapted to the terrain configuration and location, in order to make more efficient use of natural resources [3].

In the valley Polog, i.e., Dolni Polog, about 8 km north-east of Tetovo, under the bosom of Shar Mountain is situated the village of Leshok. The village itself is of a compact type, rich in greenery and a

characteristic type of houses “with veranda” [4].

The old rural architecture in Macedonia is insufficiently studied and in many villages is in the process of extinction, especially in Western Macedonia, where there are many villages, whose inhabitants have emigrated [4]. This research is only a modest contribution to preserve the characteristic examples of traditional architecture as well as the cultural-historical heritage of Macedonian builders from the end of the XIX and the beginning of the XX century.

The purpose of this research is the folk architecture of the house in the village of Leshok and getting acquainted with the other types of objects that are part of the rural-economic yard and are inextricably linked to the daily work, life and customs of the peasant from this region.

Material and methods

Materials

For analysis of the traditional architecture of the houses in the village of Leshok from the late 19th and early 20th centuries, 10 typical houses with different structure and location were selected (Figure 1), identified and displayed by the Google Earth search engine [5].

Figure 1: The ten selected houses from the end of the 19th century and the beginning of the 20th century in the village of Leshok, taken for analysis in this Paper

Methods

The selection of the houses for analysis was made with the method of interview, during which the oldest residents of the village Leshok, as well as the oldest members of the families of the selected houses for analysis were consulted. Selection criteria were the construction of the houses at the end of the 19th and the beginning of the 20th century, and as an additional

criterion was the fragility of the analyzed houses and the possible approach for their measurement.

Each house is measured with laser measuring tool. The foundation of the houses, the thickness of the walls, the height of the floors, the dimensions of the wooden pillars, the dimensions of the doors, the windows and their parapet were measured.

Each house is photographed, as well as the individual building elements in each of them.

For each house and its component the data are displayed with an architectural drawing of the base with the 3D Studio Max graphics package [6], and several houses have been reconstructed in three dimensional space and rendered with a software plug-in Vray 1.5 [7]

The basic methods and techniques that were used in the research analysis of this seminar paper are:

With the help of the descriptive method, a description of the development of the traditional house is given with special emphasis on its functionality. It is a house created by the folk craftsman, who has successfully applied his skill, readiness, life experience and building traditions. The differences between individual houses depending on the time of building and the external influence are also studied.

The analytical-synthetic method, through which the spatial organization of the village houses in the village of Leshok is analyzed through a multidisciplinary approach, as well as all the components used in its construction, by using knowledge from architecture, art, anthropology, geography, and history.

Using the method of graphic presentation, a graphic presentation of what is theoretically elaborated in the paper is given.

In addition, knowledge obtained through direct observation, measurement and photography was applied.

Geographical conditions

The village of Leshok is located in Dolni Polog, at the southeastern base of Shar Planina, 8 km northeast of the town of Tetovo. The terrain where the settlement is located, lies on a dead riverbed from the Leshok River. From a geomorphological point of view, Leshok is located on a mild hilly terrain that descends from the base of Shar Mountain, to the southeast and towards the Polog Plain. The height difference of the terrain from the lowest to the highest point where the houses are built is about 150 meters. While the lowest point is at 489 meters above sea level, and the highest at 630 meters above sea level. The village is surrounded on three sides by orchards, and on the west side, after the meadows, are the vineyards. Immediately, on the northern side of the village rises

Shar Mountain from which springs the Leshok River. It is communicatively connected with the village of Slatina on its northeastern side, and with the village of Neproshteno on the western side. To the southeast it is connected with the highway Tetovo - Jazhince. The main road leading through the village is paved and continues to the mountain villages of Varvara and Brezno to the northwest [8].

Leshok is a typical mountain village that was formed as a settlement of compact type, rich in greenery, which was most influenced by the configuration of the terrain, geographical location and climatic factors.

In terms of climate, Leshok has a temperate-continental climate. This climate is formed because Polog is a closed valley from the north and northwest with Shar Mountain, which prevents cold air currents from that direction, and with Zheden, which prevents warm air currents from the south. With such conditions, summers are moderately warm, during the day the temperature rises high, and the nights are cool. Winters are milder with snow cover lasting from December 15 to March 15. Characteristic is the occurrence of temperature inversion whose limit is at 500 meters above sea level. From this line to the settlement, the temperature in the winter period of the year, at low temperatures, is always higher and the weather is warmer, and from that line to the field the temperature is lower and the weather is colder. The main reason for this is the fortress which rises north of the settlement, with winds coming down from the slope of Shar Mountain hitting the fortress and rising above the settlement. This climate greatly influenced the architecture of the houses [8].

The village abounds with water where the main part comes from the slopes of Shar Mountain, through the Leshok River and the rest through the four springs located in the area. Characteristic of this village is the lack of a well. Namely, through tapping the springs, the local population was supplied with fresh and mineral water. In the village at different locations there were four public fountains containing laundry basins and watering holes for livestock [9].

Thanks to these favorable climatic and hydrological characteristics, the village of Leshok abounds in rich flora. Chestnut and oak are present in the lowest areas, combined with hazel and some less common plants (acacia, elm, birch, etc.). Then follow the beech forests that are widespread to the grassy region (1600 meters above sea level). Chestnut and oak were mostly used by the local population to build their houses.

The population of this village was engaged in agriculture, farming and orcharding followed by other crafts: milling, blacksmithing and cooper's trade. The most common cereals were corn and wheat, which were processed with plow and ox with a yoke, while

processing took place in mills. Each household raised cows, oxen, calves, sheeps, goats, horses, and donkeys, indicating a difficult life at that time. Fruits (apples, chestnuts, plums, medlars, cherries, sour cherries, quinces) have been grown since the village existed, but it was unorganized and unplanned. The most famous was the apple variety - *tetovka*, known in the past as *demirka*. Vineyards were also planted in the yards, which were neither pruned nor sprayed. The population made quality wine and brandy from them.

Results

Twenty years before the beginning of the 20th century, the same typical houses with veranda began to be built (Figure 2). On the floor of each house there were a veranda, one or two rooms and one or two small rooms. All rooms were entered from the veranda. In each house there was a room called the cooking house. There was no sanitary-hygienic department, and the ceilings were smeared with whitewash or lined with planks, depending on the wealthiness of the family. The floors were made of earth or lined with planks. On the ground floor of the houses there were rooms for cattle and a basement for food and beverages. The space under the veranda was used for storing wood and as a barn for grain. The veranda of all the houses were facing south and usually occupied most of the facade (2/3 of the length).

House with a central placed veranda

These houses are characterized by a central placement of the veranda in relation to the base and with a regular shape. As an example we will mention the house of Dragan Simonovski, built in 1880 (Figure 2a). The base is symmetrical with larger dimensions and regular shape. On the ground floor, on the left and right side, there are small rooms with compacted earth on the floor, which were also used as a cellar (basement). In the middle is placed the porch from which one enters the two rooms for animal that are pulled inside (Figure 2b). The entrance to the floor is enabled through two separate stairs, made of wooden planks and inserted into two struts, with a rough fence. Through them you enter the veranda which is centrally placed and joins the balcony that extends along the entire length of the house. Upstairs, through the veranda, there is communication with the two "houses" placed frontally, with the rooms and the guest rooms that are placed laterally. The veranda is of open type with a regular shape (Figure 2c), while the house belongs to the so-called "brother house". Later, when the need arose to separate the families of the two brothers, the veranda was partitioned and thus two separate functional units were created - two apartments.

Figure 2: The house of Dragan Simonovski, built in 1880; A) exterior of the house; B) horizontal section of the ground floor; C) horizontal section of the floor

House with a veranda placed in the corner, which occupies most of the facade

Analyzing the old houses in the village, in terms of the functional solution, it can be concluded that in most of the houses there is a certain standardization in solving the foundations which gives some reflection in the spatial composition of the buildings Figure 3.

Figure 3: Three - dimensional reconstruction of Leshok house with a veranda – „Chardaklija“

Namely, one scheme is used in the solution of the ground floor, the first floor and the veranda. Thus, for example, on the ground floor in front part is located the porch in which there are two rooms, "room for animals" and "basement" and some certain economic objects, most often "barn" and "chambers" (Figure 4).

Figure 4: Horizontal section of the ground floor.

Also, in the porch are placed the stairs that lead to the floor of the veranda which is placed in the right corner of the base and occupies most of the facade (Figure 5). It communicates with the rooms and the

kitchen. We find such a solution in the house of Petre Stankovski, built more than 110 years ago.

Figure 5: Horizontal section of the floor

However, in the village there are houses where the ground floor is solved with only one room and that is the "room for domestic animals", located along the entire length of the house. Such a solution was used in the house of Momiroski Simche built more than 100 years ago. In the porch are located the bar, several egg-laying chambers and the stairs leading to the veranda (Figure 6).

Figure 6: Horizontal section of the ground floor

The veranda, apart from being used to communicate with the rooms, was also used for daily activities, for storage as well as a rest area during the summer (Figure 7).

Figure 7: Horizontal section of the first floor

Also, with families getting bigger, the need for more space arose. Thus, differentiation was made in the surfaces of individual rooms according to their purpose. We see such a foundation on the ground floor at the house of Rade Mirchevski, where the porch is

placed in the corner and ends in the same line with the right side of the house. From the porch you enter, to the left in the kitchen that was used in the hot days, and in front, pulled inwards, are the room animals and the basement (Figure 8).

Figure 8: Horizontal section of the ground floor

Through the stairs from the porch you can reach the veranda through which one communicates with the "house" and the rooms (Figure 9).

Figure 9: Horizontal section of the floor

The same solution has been used in the house of Trpe Bogdanoski, built in 1940 (Figure 10a). With several changes in the purpose of the premises. The functionality of the three rooms on the ground floor differs from the previous foundation. Namely, the porch on the left side enters a small room, while placed frontally, more inward are the basement and the kitchen (Figure 10b). The stairs leading to the veranda are not straight, and the veranda itself is limited by the size of the house on two sides (Figure 10c).

Figure 10: A) Appearance of the house; B) Horizontal section of the ground floor; C) Horizontal section of the floor

Houses with veranda placed along the main length of the facade

One of the most impressive buildings in the village in terms of the veranda, is undoubtedly the house of Zako Momirovski, over 100 years old. The foundation is larger and rectangular in shape. The porch is located on the ground floor, and at the beginning under the stairs is placed the wheat basket. In the right part of the ground floor is the basement and part of the toilet. The front door of the room for animals is placed in the left lateral part of the house (Figure 11).

Figure 11: Horizontal section of the ground floor

Wooden stairs lead to the floor and the balcony. The veranda itself is placed above the porch in the corner, but it is characteristic that it continues along the entire length of the house in the form of balconies, which allow communication with the rooms placed left and right, while communication with the house is provided through the veranda itself. As a rarity at that time, you can see the toilet located at the very end of the right balcony (Figure 12).

Figure 12: Horizontal section of the floor

Houses without veranda

From the war onwards, the construction of houses with veranda was abandoned and houses of "European" type began to be built, with kitchens, pantries, bedrooms, toilets, bathrooms and cellars (basements) [10]. These buildings were brought by the migrant workers (*gurbetdžii*), and as an example we will use two houses built in 1932, which have different solutions.

The first of them is the house of Ilija Ristoski who was a baker with several stores in Bulgaria and Serbia. What sets this house apart from all the others is the existence of a toilet connected with a clay pipe to a septic tank in the yard. Also, as a more modern solution and replacement for the veranda, a balcony with bay windows is used, centrally placed on the first floor. The foundations of the ground floor and the first floor are identical while the basement is dug underground and it is entered from the living room on the ground floor (Figure 13b).

Figure 13: A) Horizontal section of the ground floor; B) Horizontal section of the basement; C) Horizontal section of the floor

The living room, which is centrally located, communicates with the kitchen, bedrooms and hallway that leads to the bedroom, pantry and bathroom and ends with a front door on the north side (Figure 13a). The two floors are connected by wooden stairs with a fence. On the upper floor, the foundation has the same layout, with two settees with a dining table in the living room. The omission of the veranda in this type of houses, leads to a higher level of functionality of the space as well as a larger number of rooms, and a novelty is the pantry. With this architectural solution, two separate apartments with a common entrance are obtained.

The second house belongs to the teacher Trpo Onufrievski, who is presumed to have been built according to a project from Vienna, which he brought when he returned from medical treatment (Figure 14a). Due to the specific configuration of the terrain and the existence of a slope, the house is not typical for that time. The ground floor is high and is entered by stairs which are placed laterally on the facade facing south towards the yard, while the back of the ground floor faces north and is at ground level. Characteristic for this house is the basement (cellar) which is placed lower from the ground level, and it is entered in two ways, through the yard and through the hallway in the house (Figure 14c). On the ground floor centrally located is the living room through which one communicates with the kitchen, bedrooms and hallway leading to the back of the house, the pantry and toilet with sanitary cord and a bathroom (Figure 14b). As a novelty, in the functionality of the foundation, we see the solution of the kitchen that enters from the hallway, and the food was served through an opening in the living room by a maid, which indicates that the host was more wealthy than the others in the village.

Figure 11: a) Appearance of the south part of the house; b) Horizontal section of the ground floor; c) Horizontal section of the basement

Discussion

From the ancient Macedonian, through the Roman, Byzantine, and even the Ottoman period, the Macedonian house remained the same. According to the records left by the Tetovo teacher Andreja Stojanov, the houses in the 19th century were on the ground, with or without small windows. They were covered with straw and without chimneys, and the inner walls were fences woven with wooden rods and smeared with mud, just like the floors. Livestock and food were housed under the same roof - for security reasons, due to frequent looting. This type of house was abandoned in the late 19th century.

Analyzing the functional solutions of the houses in the village of Leshok in general, we find a unique treatment in terms of grouping the economic part as an individual unit on the ground floor and living of people as an individual, separate functional unit on the floor, which is an expression of a particular housing culture because living on the floor avoids many accidents such as: humidity, insufficient sun exposure, ventilation, and safety.

The functional scheme of the apartment is clear in its logical connection of the premises. Differentiation was performed in the surfaces of individual rooms according to their purpose. Thus, for

example, the veranda that has multiple functions is spacious. It is used for work, rest, as well as sleeping and storing agricultural products and here in the summer heat people ate and slept. It is open and connected to the outside environment, surrounded by a rough fence, called *trapozani*. The veranda, in addition to the listed functions, also serves as a communication space and through it the other house premises are connected. That is why the veranda, most often, has an elongated-rectangular base.

As for the organization of the space on the ground floor, the grouping of economic premises and objects arises from a practical point of view, for use and protection.

Leshok is one of the oldest settlements in Macedonia, with a continuous existence (in demographic terms) for more than two millennia, for which there is a written record. In fact, the settlement was a "center" that played a significant role in the cultural history of Macedonia (Kiril Pejcinovikj) [11]. Leshok belongs to the group of mountain villages of compact type. The configuration of the terrain, the dead riverbed, dictated the way of construction, where the houses are placed one above the other and each has a clear view of the valley. In that way, the basic architectural features of the Leshok house are formed. It is a typical mountain house built of stone and wood, on two floors and with an open veranda. In it we find organic proximity to stone, wood and clay embedded in objects with nature. There is no drastic conflict between the created architecture and the natural materials.

It can be concluded that the plastic and landscape game of the Leshok house, its complex harmony, never goes to the detriment of satisfying its practical purposes and functionality. On the contrary, the Macedonian house is eminently functional. Analyzing its functionality, we come to a confusing analogy when we conclude that the Macedonian house has functional features like the objects in modern architecture.

The disposition of the settlements enables insolation with a lot of sun and at the same time obtaining free views of the natural lowland landscape. By building these places, the national builders had in front of them the measure of the man, his essential needs, the warmth of the neighborhood and the humanity of the space. Architectural and urban-rural building in these areas are set with deep logic, without pretensions, like simple cubes sprouting from the soil.

Fortunately, this architecture is still alive or I would say somehow survives. This architecture does not want immortality, it deserves resurrection. For that purpose, conditions should be provided for the development of the so-called rural tourism in Leshok. Its conditions that would draw attention to it, is that one can find peace and quiet from the city noise and coolness in summer, because the village is located at

the foot of Shar Mountain the evenings are always accompanied by mountain wind and are fresh or even cold [12].

Conclusion

Besides the evening freshness, the visitor can find the day peace by the Leshok river, wrapped in greenery and to enjoy the natural landscapes.

Also the slopes of Shar Mountain give the opportunity for hiking, you can spend the night on the mountain and visit small dairies. There is mountain house near the village. In the hunting season, hunting of various game is possible.

Visitors of Leshok can get acquainted with the cultural-historical past by visiting the monastery complex and see old churches as well as archeological excavations.

However, what nature has given and the past has left for the visitor to enjoy may be comprised in only one day trip. Long stay is more difficult for the following reasons: firstly, an overnight stay may be found only in the monastery lodging, for really symbolic prices but without any modern conditions, secondly, there is no initiative within the local population to accept guests by organizing excursions and preparation of domestic specialities.

If investments are made in Leshok and more conditions for tourism are offered, the village can undoubtedly grow into a tourist center.

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