

# Architectural Transformations of Fortification Architecture of the North Caucasus and Caucasus of the 10-12th Centuries: Top Trends\*

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**Abstract**—The fundamental scientific aim is the development of a problem of architectural transformations in the context of traditional culture as a reflection of processes of globalization and regionalization. In the fortification architecture processes of interaction of the introduced universals and traditional cultures in space-time development always had the brightest reflection. The main results of the conducted research are presented in the article: identification of the space-time features of formation of architecture and cultural interferences in fortification architecture of Alania and the Caucasus of the 10-12th centuries; definition of a regional system of territorial and spatial frameworks of the designated group of monuments in the context of universals of medieval fortification art, traditional environmental management and a sacral component; models of transcultural interaction between universal and traditional cultures in fortification architecture of the designated region and its separate subjects as reflection of contaminations in the outlook of the population and cultural identity.

**Keywords**—*traditional culture; fortification architecture; Byzantine*

## I. INTRODUCTION

The question of planning structure of Alania fortresses was for the first time raised by H.H. Bidzhiyev. As a result of his research the classification of ancient settlements was developed, in the basis of which was the fortification criterion that influenced the planning of settlements. Bidzhiyev revealed three main types according to the complexity of defensive works among the strengthened ancient settlements located in the territory of Alania: single-part, binary and three-part settlements [1].

The analysis of the planning structure of Alania settlements is carried out on the basis of comparison of its

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separate features to the features of mountain settlements of the XIII-XIV centuries which are carefully studied by a number of authors. Such comparison became possible due to a pronounced community of the Alanian culture and the traditional culture of the mountain people of the North Caucasus formed in living conditions of strong patronimical structures and of the mythological form of consciousness of the patrimonial person [2], [3], [4], [5].

The single-part settlements, which are typical for the foothills, had one defensive boundary. As an example of this type it is possible to mention the ancient settlement which is near the village of Sadovoe of Adygea-Hablsky area. The rectangular settlement up to 30 hectares in the plan was surrounded on the perimeter with a fortification wall with the gates in its west part. Nowadays the swollen shaft 2.25 m wide and 1.5-2 m high is everything that is left of the walls.

The fortresses which had binary structure consisted of a citadel and a strengthened settlement. Indzhur-Gatinskoye, Amgatinskoye and other ancient settlements belong to this type.

Inzhur-Gatinskoe ancient settlement is located on the western fork of the Misimian Way. At the fifth kilometer of the route at the station Kardonskaya, on the left side there is a mountain ridge that has two peaks, cut from the south by a river Inzhur-Gat (Andrikot). One of the peaks of the ridge is a small plateau, extended from west to east. The fortification is located on this territory. On the eastern side of the plateau, the saddle connects with another, rocky peak of the ridge, on the southern slopes of which the burial ground of the settlement is recorded. On the east edge of the plateau there is a hill in the form of a hill on which the citadel was located. This is evidenced by fragments of the wall preserved here, which encircles the elevation along the whole contour, and the remains of two towers. Below the citadel on the surface of the plateau there was a fortress, surrounded by a defensive wall around the perimeter. Amgatinskoe settlement is located on a mountain ridge, deep in the ridge Burush-Syrtly above the gorge of the river Teberda. The citadel of the settlement rises on the eastern, highest peak of the ridge

facing the gorge. The fortified settlement spreads over two other minor ridges on the ridge, equivalently located opposite each other and connected to the citadel by a saddle. Three-part settlements consist of a citadel, a fortress and an opened or strengthened ancient settlement. The Pervomaysky, Humarinsky, Karakentsky, Adiyukhsy, Gilyachsky, Kyafarsky and other ancient settlements belong to this type [6].

## II. MATERIAL AND METHOD

Considering the planning structure of three-part settlements, attracts attentions a number of its features characteristic of all ancient settlements given above: linear arrangement of all parts along one axis, in accordance with the established procedure: a citadel, a fortress, a strengthened settlement; composite development of planning structure down; lack of the importance of the geometrical center in town-planning composition of the settlement. Perhaps, the unity of the principles of the architectural and spatial organization of ancient settlements is connected not only with a trend of their formation on a sample of the strengthened settlement, but also Alan spatial expression of world outlook installations and preferences of traditional culture.

The Pervomaysky ancient settlement located on the dividing ridge between small rivers Beshenaya and Bezymannaya, which are falling into Big Labaon the right. In the north part of the ancient settlement, on the plateau-like height with steep rocky slopes the citadel is located. To the south from it, downhill the mountain there is a fortress and an open settlement between which there passes the stone wall with a gate. All three parts are connected by the road leading from the lower ancient settlement to citadel gate.

Khumarinsky settlement is located on a mountain plateau, on the right bank of the river Kuban over the settlement of Khumara. From the north-west side of the plateau it is limited to the Inalravine, from the south-east side- the Sugar ravine falls into it. The planning structure can be divided into three parts: the citadel, the fortress and the open settlement. The citadel of the settlement is located on the northeast edge of the plateau, on a height in the form of a hill. To the south-west of it, in the territory of the plateau, there was a fortress surrounded by a defensive wall around the perimeter with towers. An open settlement existed from the side of the Inal ravine.

On the left bank of the river Kuban, opposite the Khumarinsky settlement, the Karakent settlement is located, which rises on a plateau above the village Ordzhonikidzevsky. Three parts of the settlement lie at different height levels, which are terraced steps. The citadel is located on the southwestern outskirts, on the upper terrace of the three-level plateau. On the middle terrace there is a fortress. At the bottom terrace - there is a naturally fortified settlement, elevated to the height of about 100 m above the valley level. The fortress and the fortified settlement are located northeast of the citadel.

The Adiyukhsy ancient settlement towers are located on the mountain in the place of falling of the Adiyukhriver into

river Small Zelenchuk. In planning structure of the ancient settlement the three parts are traced which stretch at different height and are separated from each other by defensive buildings in the form of stone walls and soil ditches. The citadel of the ancient settlement is located on the edge of an abyss in the highest part of the mountain turned into Small Zelenchuk's valley. From all directions, except for the south direction, this territory comes to an end with breaks. From the South side of a citadel there are a fortress and a strengthened settlement.

Gilyachskoe settlement is located on a mountain, towering above the valley of the river Kuban, on the eastern outskirts of which, in the highest part, the fragments of the walls and towers of the citadel are preserved. On the south-west side of the citadel, the remains of residential quarter building are located on the slope of the ledges due to a sharp drop in heights. In the Planning structure of the Gilyachsky settlement, the three parts are also traced, extending at different altitudinal levels from the south-west gentle slope of the mountain.

The Kyafarsky ancient settlement is on the mountain Shpil in the place of confluence of the river Krivaya in the river Kyafar. In the planning structure of the ancient settlement there are three parts which are at different heights are separated from each other by barriers in the form of stone walls and rocky formations. At the top of the mountain in its southwest extremity rises the citadel. Lower on a slope, to the northeast of a citadel the fortress and the strengthened settlement is located. All three parts are connected by the road leading from the Lower ancient settlement to the citadel gate.

In the planning structure of the Kyafarsky ancient settlement it is possible to observe the three-part division characteristic of the majority of Alanian settlements: a citadel on which there were constructions of the imperial residence; fortress where the army of the tsar was billeted and the strengthened settlement in which there lived the civilians. All three parts are physically separated one from another by stone barriers of natural and artificial origin and located at different heights.

Let's assume that the three-part structure of the settlement is the spatial embodiment of a mythological model of the universe. Then the ideological and symbolical center of the ancient settlement presented in the form of a citadel to which runs the main street through all territory of urban development was identified with the center of the universe. According to the cosmogonic representations of the Caucasian people in the center of the universe there was a World tree to which the place "on the edge of the earth" was allocated [7]. It follows from this that the symbolical center of the universe did not coincide with the geometrical center. The same can be observed in the spatial organization of the Kyafarsky ancient settlement in which the symbolical center in the form of a citadel and the imperial residence is located on the edge of the mountain. According to the Caucasian mythology, the World tree connects among themselves all worlds and coincides with a vertical axis of the Universe. Perhaps, the mountain on which the ancient settlement is

located is the natural and spatial embodiment of a mythological image of the World tree. Its basis lying on the earth and the top resting against the sky connect three vertical parts of mythological model of the World (a vault, the earth and heaven). If three parts of the settlement located at different heights and separated by barriers symbolize mythological model of the universe, then the main street connecting them, could be an embodiment of the axis of the Universe. Ideas of horizontal structure of the universe in which the front world (light and favored) and the back world (dark and dangerous) are allocated, found reflection in planning structure of the ancient settlement too. In front of the citadel – the symbolical center of the ancient settlement, the territory of the fortress and the strengthened settlement which was associated with the light, front world is located; behind — the abyss symbolizing the dangerous and unknown back world. The planning structure of the Kyafarsky ancient settlement personified the universal scheme of the architectural and spatial organization of the strengthened settlement traditional for the majority of Alanian ancient settlements.

On the border of mountains and foothills, on opposite coasts of the Kuban River opposite to each other two fortresses — Humarinskaya and Karakentskaya are located. These fortresses were of great importance in fortification of the western area of the Alania kingdom as arose in strategically significant place: on the border of mountains and foothills, at the intersection of trade roads.

Humarinsky fortress is located on the plateau, on the right coast of the Kuban River, at the height of about 200 m over valley level. This plateau which carries the Circassian name Kalezh (Old fortress) is allocated in a surrounding landscape with the greatness and perfection of forms. The mountain Kalezh facade turned into the valley of the river and has an expressive form of a trapeze.

The slopes of the plateau represent steep unapproachable rocky formations in a combination with flat soil surfaces which did not provide full protection against invasion. In this regard all perimeter was enclosed with a fortification wallends of which are meet at citadel top. Throughout the wall it is strengthened by 12 towers.

From the citadel height there is the view to all territory of the fortress occupying the plateau, to its vicinities including both balks, to the open settlement from Inalbalk side, to the valley of the Kuban River and to Karakentsky fortress.

From the floor northeast part of a citadel there was the second defensive wall which crossed an isthmus between balks Inal and Shugara and proceeded before break. Outside a wall there was a ditch 7 m wide indicating artificial origin of the hill on which the citadel towered. Apparently, the hill and a ditch arose at a time as the earth chosen for the ditch device went for construction of an embankment under the citadel basis.

The main gates of the fortress are located on the side of Inal ravine. They are located frontally in relation to the citadel which provided good visual and spatial communication. At the same time the gates are almost

invisible from the road climbing the ravine from the gorge of the Kuban River. Besides, the main entrance ended in a gateway tower whose architecture was similar to other towers of Humarinsky fortress. Thus, the gate became inaccessible for invasion as their location was not read from the outside. Except the main entrance on the territory of the fortress, there were two more auxiliary entrances. One of them faced to the side turned into the valley of the Kuban River and was available only visually as it is executed in a wall over steep rocks and to it there was no road outside. Perhaps, this entrance had to draw attention from the outside and mislead the enemy planning a fortress siege. The other auxiliary entrance is located from Shugar's beam, in the second defensive wall which served as a peculiar proteykhizmy, complicating access to the main wall and the citadel [1, c. 57]. At the same time, this wall by two endings adjoined the main wall and created a closed space therefore the entrance 5 m wide existing in it could be a trap for the enemy.

The territory occupied by the Karakentsky ancient settlement represents the mountain spur consisting of three terraces which are one on another. The citadel of the ancient settlement is located traditionally in the highest part, on the top terrace representing the horizontal platform with steep rocky slopes. Around the citadel on the medium terrace the fortress was located and walled around the plateau perimeter. On the lower terrace located at the height of about 100 m over the level of the valley of the Kuban River there was an open settlement. Ascent to the territory of the ancient settlement was possible from the southwest — on the ravine of Karakent, from the northwest — on the ravine of Kumysh. In these parts there were external defensive walls blocking a flat part of a slope.

In contrast of the majority of Alania fortresses the Humarinsky and Karakentsky fortresses are not disguised in a natural landscape, and on the contrary, they dominate over the gorge, showing the greatness and inaccessibility. Fortresses are at equal height over the level of the valley of the river at the distance sufficient for transfer of visual signals. Thus, it is possible to say about the existence of visual and spatial communications between the fortresses. They represent the peculiar gate which arose on the border of mountains and foothills, controlling an exit of the Misimiensky way to foothill valleys. In the gorge of the river Big Laba there is a group of the fortresses forming a gate on the border of mountains and foothills too. These Pervomaysky and Subrocky ancient settlements are located in the place of an output of the Darinsky way to foothill valleys.

The characteristic location for Alanian settlements has the Gilyachsky ancient settlement which is located over the gorge of the Kuban River on a spur of the ridge cut from the South by a balk of Gilyach, from the North – by mountain Maly Gilyach. The territory occupied by the ancient settlement has evenly increasing height difference caused by the bias developing in the direction the East – the southwest. The limit difference of heights makes about 170 m. The citadel of the ancient settlement existed at the top of a spur turned to the east into the valley of the Kuban River.

Ascent to the ancient settlement is possible only from the southwest direction by a flat part of a slope which leads deep into the Small Gilyachravine. In the southwest part there is an entrance to the territory of the settlement to which the ancient road beginning in the gorge of the Kuban River led. The flat southwest side of the ancient settlement is strengthened by the fortifications blocking access to the places which do not have protective properties of a relief.

From the gorge of the Kuban River the view opens to the inaccessible mountain with steep rocks at the top of which there was a citadel. It should be noted that the only entrance to the ancient settlement existed in the most remote place, in several kilometers from an exit to the valley of the Kuban River, and its location is not traced from the gorge of the river. A similar disguise in a mountain landscape and creation of illusion of inaccessibility is that one of characteristic features of the fortification of Alanian settlements.

The Amgatinsky ancient settlement was stretched at three tops of a mountain range connected among themselves by a col. This settlement was reliably covered in the depth of Ridge Burush-Syrta located on the left coast of the Teberdy River. The citadel of the ancient settlement was at east top of a range turned into the gorge of the Teberdy River. The similar location of a citadel allowed to control, on the one hand, the gorge and in advance to expect possible danger, with another – to be disguised in a mountain landscape. The citadel is located on a horizontal platform of 11\*38 m of natural origin raised on height to 5 m, framed with steep rocks. Despite natural inaccessibility, this platform was enclosed around the perimeter with a fortification whose north part had gates. Ascent to the territory of the citadel was carried out on the ladder which is cut down in the rock. In the territory of a citadel the bases of monoapsidal church are remained. At two other tops of the range located equally spaced from a citadel and on the contrary each other the strengthened settlements stretched.

Ascent to the territory of the ancient settlement is possible from the northeast and the South and was carried out on two mountain tracks conducting from the gorge. In these parts there were defensive works in the form of fortifications. In the southeast part of the ancient settlement at the bottom of a citadel the complex of the fortifications crossing the col, and thus limiting access to the territory of the ancient settlement from the south direction is located. On the northeast outskirts of the ancient settlement which represent horizontally developed lowland of 180\*300 m concluded between northern and east tops of a range there is one more fortification. It goes around the perimeter of the low-lying platform from the bottom of a citadel to the bottom of northern top of a range and closes the northeast direction.

The fortification system of the Kyafarsky ancient settlement is presented by a complex of natural and artificial fortifications. The ancient settlement was stretched on a flat crest of the mountain which slopes, except for the northeast direction, represent the steep rocks providing natural protection against invasion. Defensive works in the form of two fortifications cross the northeast flat part of the mountain

from the Krivayariver. One of the defensive walls has passed on border of the Top ancient settlement, the second – on the border of the Lower ancient settlement. In both walls there were entrance gate through which the ancient road ran.

The citadel of fortress was in the highest part of the ridge on its southwest outskirts. In the center of a citadel in an environment of inhabited and farm buildings there was a monoapsidal church. Perhaps, in this part of the ancient settlement there was the tsar's residence. To the northeast of the citadel fortress with residential quarters in which the army of the tsar could live was located. The citadel and the adjoining fortress are representing the Top ancient settlement and were separated by the first defensive wall from the territory of urban development located below on the border of which there passed the second defensive wall.

### III. CONCLUSION

Summing up the result of what was said, it should be noted that the majority of the settlements of Alania of the X-XII centuries had defensive works, but at the same time in a different extent had qualities of the strengthened settlement which were defined by territorial and spatial arrangement and the system of fortification. On the basis of the carried-out analysis it is possible to allocate three groups of the strengthened settlements.

First, settlement-fortresses (outposts and fortresses) in which the function of defense prevailed over all others. These settlements arose on strategically important directions, for example, on entrances to gorges or intersections of trade roads. Their location was well read in a mountain landscape. They possessed the complete system of fortification which showed and provided power, greatness and inaccessibility of fortresses. Despite natural inaccessibility of location, the defensive system of this group of settlements is presented by mainly wall fortifications of continuous perimeter extent. The most striking examples of the strengthened settlements of this type are the Humarinsky and Karakentsky fortresses located on a fork of the Misimiansky way, on border of mountains and foothills and the forming peculiar gate on an entrance to the gorge of the Kuban River.

Second, quite fortified settlements disguised in the natural and landscape environment. These settlements are at big height in the depth of the ridge therefore their location is not read at distance. The defensive system is presented by prevalence of natural fortifications over artificial ones, thanks to remote arrangement. The strengthened settlements of this group are most widespread in the western area of the Alania kingdom.

Third, they are the settlements which do not have powerful fortification, but are located in the protected gorges. Apparently, these settlements represented the cultural and ideological centers which had symbolical sacral value for all people. As a rule, they were hidden in the depth of the gorge, access to which was carefully controlled by the strengthened settlements of the first of groups.

Forth, along with distinctive features in fortification of the above described fortresses and the strengthened ancient

settlements it is possible to reveal a number of the general regularities which existence is caused by traditional character of the architectural and spatial organization for a sample of the strengthened settlement. At the same time special attention was paid to the device and the spatial organization of three components of fortification. It is a citadel, the system of defensive walls and fortifications and entrance gate. The citadel as the symbolical center of the settlement was traditionally located in its highest part from where the maximum review of the surrounding territory was provided, and the inaccessibility condition was satisfied. As a rule, it was reached thanks to arrangement of a citadel on the natural height with steep slopes enclosed on perimeter with fortifications. The device of defensive walls was in close interrelation with the nature of natural fortifications as in total natural and artificial fortifications were the complete defensive system of fortress or the settlement. Traditionally, walls were built in the places which are not strengthened by the nature. Because the gate was the most vulnerable link in a defense complex the requirements were imposed providing gate inaccessibility due to disguise in a natural landscape.

Fifth, it is established that to the middle of the 10th century in Alania, along with the traditional type, the contaminated type of the settlement has formed which arose owing to the Alan-Byzantine cross-cultural interactions and contaminations, and which embodied in planning structure both traditional lines and introduced from the Byzantine culture of feature.

Manifestation of traditional lines in contaminated type of the settlement:

- The configuration of the plan of the settlement which was defined by a natural form of the occupied territory (a form of the plateau, valley of the river, etc.);
- Three-part planning structure of the settlement;
- Extreme shift of the symbolical center of the settlement of rather geometrical center of architectural and town-planning composition;
- Linear development of the planning structure of the settlement;
- The patronymic system of resettlement in the spatial organization of the territory of the housing estate.

Sixth, traditional and contaminated types of settlements had defensive works, but at the same time in different degree had fortification qualities. In this regard all strengthened settlements can be divided into three groups:

- The main fortresses whose defensive function mattered for all territory of Alania. These fortresses are located in belts of ridges on entrances to mountain gorges were with natural barriers the uniform system of defense protecting space of an inter zone hollow and Alanian settlements existing in it from invasion. Fortresses which were not disguised in a natural landscape and, on the contrary, dominated over gorges, possessed the complete system of the

fortification providing and showing their greatness, power and inaccessibility. Despite natural inaccessibility of location, the defensive system of this group of the strengthened settlements is presented mainly by the walls of continuous perimeter extent strengthened by towers;

- The self-strengthened settlements in which defensive function had the local distribution which is not overstepping the bounds of these ancient settlements. The defensive system of this group of the strengthened settlements, for which the disguise in a mountain landscape was characteristic, is presented by prevalence of natural fortifications over artificial ones. Defensive works represented the walls which had a curvilinear configuration and faltering extent which is caused by existence of natural not criminal barriers in combination with naturally not strengthened sites of the area;
- The protected settlements which independently did not have the complete system of fortification but located in the protected gorges which had the status of special honoring and the importance. The cultural and ideological centers and the centers of trade and craft covered in the depth of gorges, accesses to which were carefully controlled by the strengthened settlements of the first group, treat to this group of settlements. Their defensive works in the form of walls had the minimum extent which was defined by the shortest distance between two natural barriers.

#### REFERENCES

- [1] H.H. Bidzhiyev, Turkic peoples of the North Caucasus [Text] / H.H. Bidzhiyev. – Cherkessk, 1993. Pp. 41-45.
- [2] Robakidze, A.I. Forms of the dwelling and structure of the settlement of mountain Ossetia [Text]: Caucasian etnografiskiy c6. / A.I. Robakidze, G.G. Gegechkori. – Tbilisi, 1975. – T. V. – Part 1. P.83.
- [3] Sulimenko, S.D. Towers of the North Caucasus (symbolization of space in house-building creativity of mountaineers) [Text] / S.D. Sulimenko. – Vladikavkaz, 1997. Pp.20-46.
- [4] Kobychyev, V. P. Cities, settlements, dwellings: Culture and life of the people of the North Caucasus [Text] / Accusative Kobychyev. – M, 1968. Pp.90-102.
- [5] Kosven, M.O. Family unit and patronimiya [Text]: c6. traveling notes / M.O. Kosven. – M, 1963.
- [6] H.H. Bidzhiyev, Turkic peoples of the North Caucasus [Text] / H.H. Bidzhiyev. – Cherkessk, 1993. P.44.
- [7] Myths of people of the world [Text]. – M, 1997. – T. 1. P.604.