CUSTOMARY RULES OF THE RAJAC
WINE CELLARS CONSTRUCTION

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This paper considers the possibility of implementing the customary rules of construction and organization of the Rajac wine cellars, as well as whether and to what extent they have been implemented so far. Wine cellars of the village of Rajac are a unique example of ethno-architecture in the Republic of Serbia and its surrounding. They are under the protection regime as a rare spatial-cultural-historical entity, i.e. cultural property of exceptional importance to Serbia.

The paper analyzes various elements of spatial development and structure, as well as specific characteristics of construction carried out by migrant workers. Considering that customary rules of construction are found in some other complexes of folk architecture in the immediate and broader surrounding of the Republic of Serbia (Korčula, Dubrovnik and Ilok in the Republic of Croatia), it has been indicated, based on comparative analysis, that it is possible that the same rules as those implemented during the foundation and development of the Rajac wine cellars have also been implemented later during their renovation by introducing new architectural principles through characteristic way of construction of Macedonian craftsmen-builders – migrant workers.

Key words: customary rules, Rajac wine cellars, migrant workers, cultural heritage

INTRODUCTION

The phenomenon of spontaneity, a specific characteristic for the past time settlements, which could "at first sight" be explained as a complex of architectural structures emerging without any regularity or order in the time when there were no written rules able to define these relationships in more specific way, is nevertheless characterized by certain regularities, both in terms of structure and organization of settlements oriented towards their surrounding and natural conditions, as well as in terms of architecture.

These regularities could be explained by the so far insufficiently investigated notion of customary rules of construction often found in folk architecture.

Customary rules of construction represent a set of organizational and aesthetic principles, as well as principles of construction that have been passed on orally amongst people and implemented in founding and developing settlements in times when no written laws existed which would specify these relationships in more detail.

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The emergence of customary rules may be compared with rules of construction existing in statutes of towns on the Adriatic coast (Korčula, Dubrovnik, Šibenik), which date back from the 13th century, and which were based on tradition of local customs and modified Roman law (Karač, Braun, 2000).

One of the first town statutes in immediate surroundings, which has also regulated the construction, is the Statute of Korčula (1214). It has been observed that customary rules, such as the "right to share a wall" and the "right to access", mentioned in the Statute and recognized in the organization and development of the town of Korčula, have also been implemented in the construction of the Rajac wine cellars.

It is almost certain that customary rules have originally been orally passed on amongst people, to be later, in economic and cultural development of certain towns, recorded in a form of statute, which has been a common and practically only form of a privileged communal legislation (Karač, Braun, 2000).

This conclusion may be supported by the fact that there is a great similarity amongst the rules of construction of towns having statutes and rules of construction, which may be recognized in "spontaneously emerged" settlements.

The two most often ways in which the customary rules were in the past passed on from one community to the other were: a) migrations of population, and b) activity of craftsmen-builders.

During this period, craftsmen who worked as migrant workers have often brought their families with them, so that sometimes they would settle permanently in the place in which they have worked. Thus, they passed down their tradition in building to native inhabitants (Kirovska, 1981).

From this aspect, the possibility that the customary rules have been implemented in the organization and/or development of the Rajac wine cellars, and if so, in which form and way, will be considered further in this paper.

RAJAC WINE CELLARS

Position, origin and development

The Rajac wine cellars are situated in Negotinska krajina, a wine-growing region in the eastern part of the Republic of Serbia, 22 km south of the town of Negotin.
The Rajac wine cellars are different compared to the aforementioned examples show how much the Rajac wine cellars are different compared to those of Rogljève, thus being the unique examples of folk architecture.

**Position and structure**

**Location outside the village**

Wine cellars of the Rajac village are situated on the boarder of geomorphologic surfaces, on the edge of a plateau above the village at the distance of 500-1000 m. Building wine cellars on the hill above the village may be considered as being justified in terms of hygienic conditions, which is also in line with the folk saying that wine-growing requires cleanliness and quietness (Žikić, Đorđević, 1999).

Good aeration of the place in which the Rajac wine cellars are situated, which is exposed to winds all the year round, as well as clean air and environment, but also their distance from stable smell and other unpleasant smells, represent an elementary condition for wine care, since wine easily absorbs odors from its environment (Lajković, 1997).

Compared to other wine cellar groups in the surrounding, the Smedovac wine cellars, which are integrated into the village structure and the Rogljève ones which are adjacent to the village, the Rajac wine cellars are situated outside the village as spatially and functionally independent entity.

**Wine cellars located in the vicinity of vineyards**

One of the most important preconditions for greater efficiency of technological grape processing process (grape processing and quick start of fermentation) is that wine cellars should be located in vicinity of vineyards.

Considering that in the past the houses in Serbia were built of more moderate materials (wattle-and-daub huts, post and petrail type huts), often without sufficient space for grape processing and wine storage, building the wine cellars near vineyards was considered to be justifiable, particularly because there was the possibility for engaging watchmen who lived in the complex and who were given certain compensation (in wine) for keeping guard of wine and wine cellars (Pantelić, 1960). Other examples of wine cellars in Negotinska krajina also indicate this important principle, particularly the wine cellars situated far from their villages. The inhabitants of these villages built wine cellars in places with favorable conditions for grape growing, although they were tens of kilometers far from their villages, so for them they were a temporary place to stay, store their tools and keep the products which they later brought to the village.

Vineyards have often been far from their homes and they have had to go on foot for even several hours to their vineyards, thus they could not go to work in vineyards and afterwards return to village in the same day (Pantelić, 1960).

Just like for other wine cellars in surroundings, it has been of crucial importance for Rajac wine cellars to be in vicinity of vineyards. The Rajac wine cellars are situated at the very edge of escarpment and are surrounded by vineyards from several sides.

**Fertile land used as a buildable land**

Rationality of the Rajac attitude is to great extent reflected in the fact that the first wine cellars have been located and built on a barren land remaining after the fertile land has been used for planting grapevines. Fertile land and vineyards have been “a sacred thing not to be touched”, which directly influenced the way in which wine cellars have been grouped, as well as their additional densification.

Similar examples of structure densification are found with fortress towns – bastides, once surrounded by fortified walls. This principle in a similar form has been implemented in the Rajac wine cellars, because the development and widening of the complex has been conditioned by surrounding fertile land, which has been preserved.

Dense structures, as a way of preserving the fertile land in immediate surrounding of the settlement, are found in other vineyard regions in surrounding. The examples of Grožnjan and Motovun in Istria are well-known examples, where the settlements have been developed by grouping structures on the hill above vineyards.

Secondly, it is unknown when the first forms of wine cellars have emerged in Negotinska krajina, although it is known, based on archaeological researches carried out in Prahovo and Gamzigrad, that wine-growing tradition in this region is very old and dates back from the period of Roman Empire (Maslovarč, 1969). It is also assumed that the first wine cellars in Negotinska krajina have been built by mountain peasants who in their village areas have not had suitable conditions for growing wine grapes (Pantelić, 1960).

Furthermore, the wine cellars were built in the neighboring regions (Sikole, Bratujevac, Štubik) suitable for growing wine grapes. Just like most of the forms of folk architecture, these wine cellars were built as log cabins with stone cellars, since timber was abundant in these regions. An example of the cellar built in this way is preserved in Atenica near Kraljevo.

In the mid 19th century (1858), in the period when grapes growing developed in Negotinska krajina, emerged the first forms of stone wine cellars (Rajac, Rogljève and Smedovac), suitable for better and modern wine preserving (Žikić, Đorđević, 1999).

Fig. 1. Location of Rajac wine cellars

Compared to other wine cellars in the surrounding, only Rajac wine cellars are completely built of chipped stone, while those in Rogljève and Smedovac are built using post and petrail system on a stone base.

**Fig. 2. Rajac wine cellars**

The aforementioned examples show how much the Rajac wine cellars are different compared to wine cellars in the surrounding areas. There is a similarity amongst the Rajac wine cellars and Rogljève ones in terms of choice of material and methods of construction. However, by their spatial organization and truly beautiful craftsmanship, the Rajac wine cellars are outstanding compared to those of Rogljève, thus being the unique examples of folk architecture.
By analyzing the structure of the Rajac wine cellars, the differences in density, structure and position of wine cellars in relation to vineyards may be observed. These differences occurred between the zone with oldest wine cellars and zone with wine cellars that have been built later. It is evident that a part of common land, which were barren and originally envisaged for building the wine cellars, were used over time, while the bordering parts of vineyard parcels have been used only later.

**Wine cellars as a market place**

Once, the owners of wine cellars used to spend most of the day in vineyards in production or wine cellars dealing with wine care. In the past, there were butcher's shops which were usually open during the vintage, when the wine cellars were the busiest. Likewise the comparison of wine cellars with the "caršij" (Turkish word for market place) may often be heard (Lutovac, 1959).

The distribution of the widening at the junctions has also enabled trading activity associated with wine cellars (Stefanović, 2004). Several hundreds of people used to gather in the complex during the vintage and at the time when new wine was brought in wine cellars. Thus, during that period, the entire public life took place there.

However, no content of similar character is present in the complex today, since the wine production is at the quantitatively much lower level than it was at that time. Nevertheless, the recent reconstruction of old wine cellars into the "Sveti Trojum" inn raises hopes that something has still remained.

**Adjusting wine cellars to the terrain topography**

One of the important architectural principles that guided local architects in founding original complex of wine cellars is a principle of respecting the terrain topography.

Since the Rajac wine cellars are situated on the hillside of Beli breg, on a gentle slope of southern orientation, the inclination of the terrain has enabled the wine cellars to be positioned and built in dense and elongated groups, which are at some places dug into the ground.

Building the wine cellars in clusters and belts following terrain contours provided easier access for loaded horses or horse-drawn carts to wine cellars due to more gentle street slope.

Wine cellars were built in continuous rows, one next to the other, thus forming the streets. In such rows, the roofs leaned on each other or became as one, so that several wine cellars were, so to say, under one roof. Today, only some older houses are found in such sequence (Pantelić, 1960).

Building and grouping structures according to the terrain topography is an old customary rule of spatial organization and development of settlements, which may be found throughout the territory of the Republic of Serbia, and even in surrounding regions. This indicates the logics of development which is reflected in the respect and adjustment of buildings to the existing characteristics of the terrain.

**Ownership and parceling**

When Velika Hoća was inhabited, the villagers of Rajac divided the land among themselves in equal parts, so that connection between the size and shape of parcels and dealing of villagers with the same kind of production may be observed. The original parcels were narrow, vertical to the direction of terrain contours and very elongated, which provided suitable conditions for planting the vineyards and for grape growing.

Ownership over land was important only for arable land, because the inhabitants made a living from it. Wells, surrounding forests and stone pits for extracting stone for building the wine cellars were shared, and there was no question whose it was. Barren land was not divided among themselves, but used by all as a common good for building the first wine cellars and local cemetery (Žikic, Đorđević, 1999).

Wine cellars have been erected on barren land and at the end of vineyard parcels, so that the process of their parceling out took place only later after the settlement was formed.

There has been an old story amongst the villagers that the first wine cellars had a similar disposition, as well as houses in the village (referring to the vicinity of family and neighborly wine cellars), and that this principle was also respected in dividing the parcels amongst themselves, this could also partially explain the implementation of the "right to share a wall" in certain parts of the complex, while in other parts the wine cellars were built as detached structures.

**Gathering place of villagers**

The villagers of Rajac had a custom to gather in the center of the complex, where since ancient times there was a space like a "gathering place" with inscription, which was used as a place where they gathered during festivities, "slava" (Serbian family or village town feast in honor of their Patron Saint) and for negotiating business.

The gathering place has been gradually formed around the old mulberry tree already during the original foundation of the settlement, since the remaining part of the slope has been used for building the wine cellars.

The vintage has usually begun on the Day of the Cross (27th September), regardless of whether the grapes have ripened or not. Nobody could enter the vineyard and start the vintage on that day. This old custom meant to prevent causing the damage to vineyards by uncontrolled vintage. The custom has been strictly observed since ancient times (Maslovarić, 1969).

**Grouping the wine cellars in clusters and rows**

The dominant way of grouping the Rajac wine cellars are clusters and rows. The reasons which influenced the commitment to organize wine cellars into separate, dense groups are the following:

a) Keeping guard of vineyards and wine in cellars was resolved by engaging the watchman who lived in the complex (Pantelić, 1960).

b) Tendency to save arable land, which has over time resulted in densification of the settlement.

Wine cellars in Negotinska Krajina were built at small distance from each other, while some were even adjacent, so they looked like being built in a row. A narrow alleyway was left between wine cellars, so that there were no fenced courtyards and regulated access roads (Findrik, 1994).

**Accessibility – the right to access**

The "right to access" is one of the customary rules of construction that probably influenced the incoherent structure of the settlement to the greatest extent.

Basic element regulating the position of some wine cellars is the possibility of free access. A lot of care has been taken to prevent the deterioration of relationships between neighbors by building the wine cellar, precisely by blocking or narrowing the access to the wine cellar. Since the first wine cellars have been erected on common land, everyone has had the right to his own wine cellar. A minimum width of the alleyway between wine cellars had to be such as to provide free access of loaded horses or horse-drawn carts to the wine cellar entrance.

The land on which wine cellars have been erected has been in the ownership of the municipality in which they have been located, so that any vilerager could build a wine cellar in a suitable place, provided that he/she should not obstruct any alleyway or access (Pantelić, 1960).

**Design and the way of construction**

**One-storey houses**

Wine cellar interior is often a single space of irregular shape, which is directly conditioned by building the cellars in an incoherent structure.
Smaller wine cellars have been of approximate size $4 \times 4$ m, while bigger (less often) ones, about $3.5 \times 7$ m and usually with two rooms (Žikić, Đorđević, 1999). Spatial organization of wine cellars is simple, with barrels placed along both sides of the cellar and a working space in the center.

**Half dug-in cellars**

The back side of most wine cellars is dug into the ground, with floors that are lower than the street level (50 cm in average), and with a few descending stairs at the entrance. The floor is made mainly of raw earth (and less often paved with bricks) in order to maintain proper humidity level in the cellar.

By building on the slope and lowering the wine cellar floor below the street level, the wine cellars is sometimes even up to 2 m dug into the ground. By half-digging the wine cellars, an access from two levels is provided: a) from the level of entry doors, through which equipment is brought in and the wine cellar entered; and b) through openings at higher level of the wall opposite the entrance, through which the grapes are brought in.

**Outdoor staircases**

There are very few one-storey buildings with wine cellars in the Rajac complex owned mainly by affluent persons. Aiming at optimal usage of interiors of buildings with wine cellars and more directly connecting the ground floor with the first floor, the outdoor staircases are built along exterior walls not to prevent passing of horse-drawn carts.

The staircases are made of wood and such placed to provide an easy access to the first floor, but without narrowing the alleyway leading to neighboring wine cellars.

**Cutting the outer corners**

Given that the streets in the Rajac complex are mostly very narrow, cutting the outer corners, where possible, has been considered while building the wine cellars, thus providing the enlargement for maneuvering during transportation of grapes.

With irregular bases of wine cellars, this principle was necessary to implement because of some backside corners, otherwise it would be difficult to maintain and use wine cellars. In cases when it was necessary to free a wider alleyway, the corners of wine cellars were cut to a greater extent, or an "entrance on the corner" was built.

**Ornamentation**

In addition to the basic function of doors to provide connection between two spaces, the doors in folk architecture have also served for identifying the room to which they have led. More representative doors have been more richly decorated, often with shallow carved surface decorations and geometric lines (Kirovska, 1981).

The examples of decorating the doors are also found in the Rajac wine cellars, where ornaments may be found on the entry doors leading to wine cellars, as well as on window openings, eaves, and corners of houses.

Besides having a role in decorating, the ornament symbols have also indicated the purpose of the space on the other side of the door.

At many places, anthropomorphic representations of abstract faces symbolizing the owner or some of his/her family members may be found above entrances to the wine cellars. Through portraits carved in stone, the owner or person to whom the wine cellar is dedicated is identified with his/her house. The ornaments in the form of geometricized bunch of grapes, as well as unusual symbols of ionic volute and eye, may also be found.

**Choice of materials and way of construction**

If we look back into the architecture of the past, the buildings were mainly built out of stones (Martinković, 1985):

1. In the areas where stone was used as a basic building material, regardless of difficulties in extracting stone from excavation pits and its subsequent processing;
2. Whenever someone wanted to emphasize his/her own wealth, prestige and political power; and
3. When there were tendencies towards achieving the visual harmony between the building and its natural environment, etc.

Processed (roughly or finely chipped) or raw stone was used to build the Rajac wine cellars. Finely chipped freestone was used to build wine cellars belonging to affluent persons, as well as for strengthening the wall ends. The stone used to be transported from quarries on the hill across the wine cellars. The raw stone was used to build walls, foundations and staircases.

The stone ranged in several colors from natural stone color, natural white color, grey and golden-yellow or their gradation, just like in other examples of folk architecture in surroundings (Kirovska, 1981).

The walls were built out of more massive blocks on the corners of the houses in order to strengthen the wall-to-wall connection (stretcher & header type), while walls were filled with...
broken stone. An average thickness of the wall was about 50cm, being sufficient enough to provide the necessary conditions for wine care.

At some places, the projected stones served to strengthen the wall - to - wall connection of neighboring wine cellars, at the same time providing cheaper construction.

This old customary rule was known throughout Croatian and Montenegrin coast as the "right to share a wall".

**Windows and doors**

Bridging the span by stone arcades, which has been for centuries passed on in form of architectural experience and tradition has been carried out in the form of profiled arch in the Rajac wine cellars with decorative geometrical, anthropomorphic and vegetable ornaments edging.

Most of authentic doors and window openings in the complex have stone arches, except for the single-layer or double-layer ones (with the second profile being slightly recessed). Shutter (sometimes coated with sheet metal) or without any visual or thermal protection, except for iron grilles. Widows have mostly been north-oriented, thus protecting wine cellars from direct exposure to sunlight.

The original entry doors in wine cellars were made of wood. Later, they have been coated with sheet metal and for 10-15cm wider and higher than the largest wine vessels designed for cellars (-ranging in size from—200 to 220 cm).

**Roof structure and roofing**

Most of the roofs are double pitched and four pitched roofs, although there are more complex forms of roofs at places with cut corners of wine cellars. Roof structure also contains rafters connected to wooden ceiling beams by wooden hangers.

Specific feature of roof structure are "double-layer" eaves with rafters supported by ceiling beams and thresholds often projected for about 120 cm and more. They served for driving in the carts, so the work could be easily carried out even during the rain.

Similar example of roof structure may often be found in the examples of ethno-architecture in the south of Serbia and in the Republic of Macedonia.

The roofs have mainly been covered with mission tiles, but they have recently being replaced with flat roof tiles. Precisely the roof represents the greatest problem in association with wine cellars in terms of necessary technological conditions, since the roofs cannot satisfy the modern technological conditions for wine care due to lack of adequate thermal protection and intensive overheating of space through the roof surface.

In the past, the roofs were covered with a layer of reed which was fastened to the lower part of the ceiling beam. Over time, the wine cellars have been poorly maintained due to which they are today in a poor state.

When walking through the complex, one can easily notice that there are no chimneys. Wine cellars have since ancient times been called "houses without fireplace".

Given that primarily they have not meant to be a place for stay, but a place for wine production and storage, chimneys are found only occasionally and mainly on one-storey houses with wine cellars.

This is precisely one of the essential differences between the complex of wine cellars and other settlements in the Republic of Serbia, since they have been large production complexes with visual and other characteristics of the settlement.

**IMPLEMENTATION OF RULES OF CONSTRUCTION AND THE INFLUENCES OF MIGRANT WORKERS IN BUILDING THE WINE CELLARS**

The majority of wine cellars, , was erected by borrowed workers—upon request (Ždik, Đordević, 1999). Building the wine cellars was not a simple task at all, it required experienced craftsmen. We learnt from many sources (Pantelić, Maslovarić, Hasanbegović) that the original wine cellars were built by migrant workers coming from the Republic of Macedonia. After completion of the renovation of the first wine cellars, migrant workers explained their way of construction to some villagers. Some of them even settled and continued to live in Rajac.

What has not been sufficiently clarified, but may only be hinted, is to what extent the immigrant workers have influenced the way in which the wine cellars have been built, as well as whether the customary rules have been implemented in building the original wine cellars and, if so, to what extent?

Analyzing the spatial organization of the complex, it may be noticed at first sight that the structure of the complex probably emerged spontaneously, but that, nevertheless, there are certain regularities which may be explained as a result of social consensus.

In the period before the coming of the migrant worker, the old social norms that were passed on from generation to generation in form of customary rules had a dominant influence. Based on these rules, the first wine cellars were positioned on top of the hill, far from damaging smells and the village. Furthermore, awareness of being thrifty while building the wine cellars, is reflected in the fact that they built only on barren land less exposed to the sun, as well as in the need for wine cellars to be closer to vineyards, indicates the logics which is not used only in this region, but in other regions as well (Dubrovnik, Korčula, etc.).

In the period when the wine cellars needed to be renewed, the migrant workers brought other (Oriental, Byzantine) influences reflected in a specified way of building with stone and taking into account previously defined spatial organization of the settlement.

Therefore, these influences may be classified into two groups: the first group, comprising old customary rules of construction which implementation resulted in a specific organization of the settlement, and the second group, comprising the influences from 'outside', which may be recognized in the way of construction of migrant workers.
Customary rules might have had an influence during the organization of the original settlement and positioning of wine cellars:

1. Land division - parceling, the use of barren land, wells, and organized payment of watchman’s compensation;
2. Right to share a wall - right to free access to wine cellar;
3. Wine cellars in the vicinity - it has not been possible to go to vineyard, work in it and then return to the village in the same day;
4. Right to healthy environment - tendency to relocate dirty facilities far from the house (in the village), as well as to build wine cellars far from strong smells and dirt;
5. Arable land and development - tendency to save arable land by positioning and building the wine cellars on barren land;
6. Grouping the wine cellars - adapting to terrain topography and cost-effective construction;
7. Gathering place of the villagers - the need for a space at which festivities and rituals are to take place (at the tree - inscription).

Influences of Byzantine and partially Oriental architecture, interwoven in the architecture of the Rajac wine cellars thanks to migrant craftsmen, are the following:

1. Entrance on the corner - the use of poorly accessible place for entrance
2. Projecting the deep eaves - possibility to work even during the rain
3. Carved rafters - need for beautification, being distinct
4. Ormamentation - need for beautification and hint of activity carried out on the other side of the door or window
5. The right to share a wall - leaving projected stones as a possibility for neighboring wine cellars to be later connected.

It is difficult to find out what has had more influence on the final elevation of wine cellars, either migrant worker’s way of construction or the need for obtaining adequate conditions for wine processing and wine care.

There has been an old story amongst the Rajac villagers that, during the period when grape Phylloxera plague spread in Europe, a group of French wine growers came to the village in search for the best place to protect their best grape sorts until the disappearance of grape Phylloxera plague. It is well-known that the Rajac villagers are extremely proud of the quality of their wines. They are also very proud of their neighbors from Rogojivo and Smesovac, so that it may be assumed that their immeasurable rivalry has emerged from building these exceptional wine cellars.

**CONCLUSIVE CONSIDERATIONS ON THE IMPORTANCE OF WINE CELLARS AND APPRICABILITY OF CUSTOMARY RULES TODAY**

One of the reasons for actuality of these theme lies in the need to indicate the existence of customary rules in folk architecture also on the territory of the Republic of Serbia, their appropriateness and justifiability in the past, as well as to indicate the possibility for their implementation today in plan and technical documentation (Maksin-Milić, 2005), but also in promoting and revitalizing cultural heritage (Dokić, Radijević, Roter-Blagojević, 2008).

The Rajac wine cellars are a valuable indicator of regularity in organizing economic (wine) settlements in old times, that has been considered nonexistent in such form in the Republic of Serbia.

The closest examples of similar organization of wine and other settlements may be found in the Republic of Croatia (Korčula, Dubrovnik, Ilolok, Grožnjan, Motovun) and the Republic of Montenegro (Budva, Kotor), where their existence and the use of customary rules in building the structures has been ascertained.

Customary rules are a specific example of folk methodology of organization and construction since they are based on the respect for life, space and good neighborly relationships.

They have existed for centuries in customary laws and have been orally passed on to new generations, to be, in a certain moment, integrated in written form into town statutes of economically developed towns.

**References**

Group of authors (1984-85) Običajno pravo u izgradnji naselja, Belgrade, The Faculty of Architecture.


Pantelić N. (1960.), Pivnice-pivnice, Belgrade, Glasnik etnografskog muzeja, knj.22-23, pp.171.


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