

Historic grain warehouses - values and potentials

Anica Tufegdžić¹, Maria Siladji¹

¹Department of Architecture and Urban Planning, University of Novi Sad, Serbia

ABSTRACT

As early as the 18th century, Bač - Bodrog County was already leading in the Empire regarding the level of development of agriculture, whereas Torontal County did not appear as a rival until the 19th century. Southern parts of Hungary were therefore called *food pantries*. The main crop was wheat, because it is this type of grain which particularly favoured the soil of Vojvodina.

These economic conditions led to the construction of grain warehouses across southern Hungary as early as the 18th century. There were two types of warehouses depending on the site of a construction or location. The first type occurred along significant traffic routes, first along rivers and canals, and later along railways. The second type were warehouses built on estates of feudal lords who acquired their estates on auctions at the end of the 18th century and created entire 'agricultural towns' on them.

On the territory of Vojvodina, in spite of the fact that it was and still is the largest granary in the region, there are few historical grain warehouses whose value is recognized and adequately presented. Having lost their original purpose, former grain depots are mainly used as storage spaces for other types of goods, or they are entirely abandoned.

In addition to historical values, grain warehouses also have a high contemporary use value, and in the process of revitalization it is essential to treat them in harmony with principles of active protection in order to make use of its economic and tourism potentials.

INTRODUCTION - DEVELOPMENT OF AGRICULTURE IN Vojvodina during 18th and 19th centuries

After the Treaties of Karlovac (1699) and Požarevac (1718), the territory of present-day Vojvodina was liberated from the Turks, and then merged with the Habsburg Monarchy. The development of agriculture in this sparsely populated area was dependent on the success of the colonization and the drainage of wetlands. Among the largest draining wetland operations realized until the first half of the 18th century was linking Begej and Tamiš River by one channel, which provided better conditions for growing cereals in Banat.

By the mid-18th century state authorities were organised transport of grain for the nutritional needs of immigrants in Banat and Bačka, as well as distribution of grain seeds as encouragement for activities related to agriculture. Those regions became granaries of the Monarchy in the 19th century, when authorities were recorded greater success in cereal growing than in cattle breeding, previously the dominant branch of agriculture. Production was soon exceeded the needs of the local population, which has led to the emergence of the first reserves and the development of cereal shopping centers.[1] Although cereals were initially transported only in Vienna and Western Europe, the market has quickly expanded after opening roads towards the Adriatic Sea.

At the end of the 18th century, thanks to the development of large feudal estates, the state's role in the grain trading were gradually taken by nobles. In the first half of the 19th century Banat was called *Egypt of Hungary* or *pantry of Vienna*, because of its extremely fertile land. [2] By the mid-nineteenth century, grain output on the estates of feudal lords was increased fifteen times.[1] According to some experts, the quality of the soil of the present-day Vojvodina was significantly improved during the Ottoman rule, since it was not cultivated for 150 years. [3]

TYPES OF grain WAREHOUSEs

Since the center of the food processing industry was in Budapest, in southern granary of Monarchy it was necessary to build different types of grain warehouses for temporary storage. In the 18th century the state administration was controlled trade in agricultural goods and funded the construction of warehouses. In the future this type of buildings was built on private properties and in the settlements, as evidenced by the fact that in 30's of 18th century each larger village had a grain warehouse, while in the smaller villages goods were stored in attics. [1] There were two types of warehouses depending on the site of a construction or location: warehouses along significant traffic routes (rivers or canals, railways) and warehouses built on estates of feudal lords.

Warehouses along significant traffic routes

Along watercourses

The wetland areas of present-day Vojvodina, especially in Banat, were hard to pass during the 18th and 19th centuries; hence the transport of goods on such impervious roads has been unthinkable. Therefore, agricultural goods were transported by waterways to the north along the Tisza and Danube rivers, which allowed faster development of Bačka. The road was long and quite expensive, so the goods often failed due to inadequate insulation of ships. Until the discovery of the steam engine, the grain was transported either by horse power ships or by those that were run by slaves. [1] Due to the difficult and slow river trade soon has appeared the problem of storing large quantities of cereals in this region, which resulted in the construction of grain warehouses. [4]

The most important trade centers, such as Novi Bečej, Zemun, Petrovaradin, and Bačka Palanka, were developed along the Tisa and Danube, the busiest rivers in the region. In addition, transport was occurred on channels that were built at that time: the chanel Begej in Banat and Franc chanel in Bačka, which connected the Tisa and Danube rivers, and thus shorten the transport time for three weeks. [5]

At the time of the Napoleonic Wars (1804-15), when this territory became *the pantry of the Monarchy*, river transport was gained even greater significance, which is caused not only the development of new trade centers along the rivers and canals, but also the construction of new grain warehouses in existing centers. Those cities have been visited by grain traders from the entire territory of the former state. [6]

Shortly after the founding of the Military Frontier there has been the emergence of large reserves of agricultural goods given that the state government demanded tenth of yields. In Banat were built large military depots, such as those in Zemun, Pančevo, Zrenjanin, Perlez. [1]

Historic warehouses were monumental, as evidenced by preserved examples built of brick, solid indigenous material, outside simply plastered, mostly without decorative moldings, with wooden construction inside.

Certain grain warehouses along the waterways are still preserved as a testimony about the former importance of this branch of agriculture, even long ago have lost their original function. With the development of the railway, and later motor traffic, waterways have been marginalized, and the buildings along them lost their significance.

Along the railway lines

Nineteenth century was a period of rapid development in different fields of life, especially in engineering and technology. The train service was one of greatest innovations, which quickly spread across Europe. In Austro-Hungarian Empire railways were built in three different ways: as state owned, private or vicinal. The first railway line in Hungary appeared in 1846, between Pest and Vac, and from that moment was constantly expanding until the World War I. Private railways were built according to an order issued in April 20, 1868. Construction of vicinal railways began after the adoption of the legal act XXXI/1880 and IV/1888.[7]

On the basis of special laws were issued concessions for vicinal railways construction. Local rail network, built in addition to the main railroads, had great significance in everyday life of rural population. Although only a small part of vast rail network, vicinal railways were very important for ordinary people because of its primary purposes. [8] Local trains were basically used as wagon trains, for transport of agricultural products. In fact, in Torontal and Bač - Bodrog Counties freight transport had a higher priority than passenger transport.[9]

The entire network of Bač-Bodrog and Torontal County, consisting of lines of all categories, was built between the mid-19th century and the First World War.

Rapid development of the railway network on the territory of present-day Vojvodina caused a completely marginalization of river traffic, even the difficulties in inland waterway grain transport occurred earlier. New railroads often circled current cereal trade centers, so the dominant role of Novi Bečej, as the most important grain center in Banat, was taken over by new cities, such as Kikinda and Vršac.[10]

During the mid-19th century reception buildings and other facilities at line Szeged-Timisoara were carried out by the Austrian State Railways and realized by standardized projects according to the French model. Later, the same plans, with minor modifications, have been taken by the Hungarian State Railways and vicinal railways.[11] The buildings of railway stations were built from local materials, which in the case of Torontal and Bač - Bodrog Counties were clay and bricks. Reception buildings, as well as additional objects, including grain warehouses, were placed in a few categories, depending on the importance and size of settlements. Regardless of the building dimensions and category of railway station, warehouses had a simple wooden structure. They were always terrestrial, opposite of the monumental multi-storey buildings of the same function along waterways and on the estates of feudal lords.

The weakening of the importance of the rail transport in the 1960s was resulted in the degradation of wooden warehouses. Some examples of warehouses built of brick in the first half of the 20th century have been preserved until today, but they lost their original function.

Grain warehouses on the estates of feudal lords

Great noble estates on the territory of present-day Vojvodina appeared in the late 18th century, when aristocratic families bought or leased the former Comorian estates, where they later have formed a model farms. [12] Their primary goal was personal enrichment, and then the improvement of agriculture in these areas. For a rather short time they have created a modern farms, where they built a residential, religious, and mainly economic facilities, and in this way they significantly contributed to the transformation of the swampy territory. [13]

The most influential aristocratic families were as follows: Čekonjić, Dunderski, Lazar Kiš, Nako, Karačonji, Marcibanji, etc. [2] On its vast estates they established homesteads, small agricultural centers, from which were monitored parts of the estate. Thanks to this rational organization of management nobles were constantly improving agricultural activity.

Homesteads were organized like small villages, which were providing better quality of life for workers. Given that the nobles took a leading role in agricultural trade, among the economic buildings located at the homesteads were grain warehouses. Noble grain warehouses were multi-storey, large size buildings, with massive brick walls, thickness up to 1 meter. External plastered walls were decorated, mainly around the openings in the form of shallow niches, tympanum and lunette. The entrance door, made of iron, was also decorated. Interior wooden structure (columns, beams, floor construction) was probably transported from Transylvania, as this area had very little forest. Although on the preserved building's roof is covered with ceramic tiles, it is assumed that the original roof covering was bulrush.

By reorganization of agriculture after the Second World War and later in the period of transition grain warehouses on the former feudal estates have become redundant. A small number of warehouses have been preserved until today; some have lost their original function, while some have been completely destroyed.

case studies

On the territory of Vojvodina, in spite of the fact that it was and still is the largest granary in the region, there are few historical grain warehouses whose value is recognized and adequately presented. Having lost their original purpose, former grain warehouses are mainly used as storage spaces for other types of goods, or they are entirely abandoned.

Only seven grain warehouses were declared cultural monuments, six of which are in the category of cultural heritage, with only one being in the category of cultural heritage of great importance. The largest number of valuable warehouses spontaneously collapses.

In recent years there were efforts to revitalize few historical grain warehouses by changing their functions. Multipurpose potential of the former warehouse gives the possibility to preserve and present their past social role and architectural features.

Grain warehouse along Tisa River, Novi Bečej

Historical background

The grain warehouses in today's Novi Bečej was built between 1778 and 1780 at the former confluence of the Mali Begej and the Tisa rivers, in former Vranjevo. It served for storing grain collected from population of Velika Kikinda District.¹ Together with the warehouse in Taraš in 1816 both warehouses stored: 10689 *'požun'* units of grain, 3506 units of barley, and 1650 units of oats.[14]

At that time river traffic was the most favourable means for transportation of agricultural products, and the settlement of Vranjevo was one of the most important trading posts for exporting grain, determining its price for the whole of the Habsburg Monarchy. After the regulation of rivers in the region of Banat, the armet was drained, whereas the warehouse has been left beside the dam, away from the Tisa River, partially losing its former importance.

The fate and the ownership over the warehouse after the World War I is unknown. However, the large grain warehouse in former Vranjevo was known to be the last residence of

¹ Present-day Novi Bečej was created by merging Vranjevo and Turkish Bečej in 1946.

all Jews of North Banat. [15] In the socialist era, from the mid-20th century, the warehouse was taken over by local agricultural cooperative, which owns it nowadays as well.

Spatial arrangement and architecture

Building is rectangular in plan, dimensions of 68 x 13 m, and area of almost 900 square meters.[16] Its massive walls are made of brick and have a thickness of 69 cm, while the span between the longitudinal walls is 10 m.

The interior is divided into three levels: ground floor, first floor and attic space. The floors are separated by wooden floor structures and connected by wooden staircase. In addition to perimeter walls, floor structures are also supported by wooden poles. The wooden floors of the first floor and the attic space contain small openings through which the wheat was poured into sacks, while the ground floor is made of packed soil.[17]

The roof structure is also made of quality wood, as a system of slant chairs. The entire woodwork of the warehouse survived in nearly original condition. The roof is hipped, covered with crown tiles and casts a large shadow on the facade of the warehouse. The roof is equipped with mansard windows that enable ventilation in attic space.

The external appearance of the grain warehouse is not a particularly impressive sight. The large wall surfaces are pinched by a dense network of small square and rectangular windows, with doors also appearing along the longitudinal facades. The double doors, one of wood and two of metal, were probably installed in the second half of the 20th century. There is no specially designed main entrance to the building.



Figure 1 Grain warehouse along Tisa River, Novi Bečej

Values and potentials

The building largely preserved its original appearance, but the lack of maintenance and continuity of purpose will very quickly lead to a complete devastation of this valuable heritage of technical culture. Since the building can be freely accessed, it makes a potential refuge for the homeless who are not aware of its value.

The grain warehouse was declared a cultural monument in 2001. In addition to being one of the oldest buildings in the village, the warehouse also has a great historical significance as a unique testimony of the former way of storing grains, as well as of economic status of the village at the time it was erected. Based on the real needs of the local community it is necessary to determine the future purpose of the building, taking into account the fact that its integrity and authenticity should be preserved, as well as the most important values adequately presented.

Grain warehouses along former vicinal railway, Srpska Crnja

Historical background

Grain warehouses in present-day Srpska Crnja were erected on Julia homestead, once a part of the Jimbolia estate of Čekonjić family. The original grain stores, erected immediately after the homestead founding in 1828, were replaced with new in 1889, as evidenced by the data on a single beam. Julia homestead was connected with other parts of the estate by economic wagon pulled by horses, as well as with other parts of the former monarchy by narrow gauge railway line Jimbolia - Veliki Bečkerek.

After World War I Čekonjići have lost a large part of the estate, but this homestead remained in their ownership until 1934, when it was sold to trader Aleksandar Šajović. During World War II the warehouse had several owners, and after the war became the property of the local agricultural cooperative. In the transition period homestead was privatized, while buildings were sold separately. Grain warehouse has already been changed several owners.[18]

Spatial arrangement and architecture

Warehouses are located in a separate complex, outside the village built structure; one is set up perpendicular to and the other parallel to the main road at the entrance to Julia homestead. Basis of warehouses are compact, rectangular shaped and the same dimensions (45 x 7 m)

The interior of buildings is divided into five levels: basement, ground floor, first floor and two levels in the attic space. They are built in a massive construction system with walls of large format brick. The walls are very thick, reaching one meter in the basement. Massive wall surfaces are indented with small rectangular windows. Main entrances, which are oriented to the courtyard, are not particularly emphasized. The roof covered with tiles was ventilated through small metal openings. Inside the building is well preserved complex wooden structure, used for floors, ceilings, pillars and beams, as well as the roof structure.[13]

The external design is dominated by a military rigor and simplicity; the facades are plastered and painted in yellow colour, which is also one of the hallmarks of military and economic architecture.

On the facades there is no mortar plastic nor vertical and horizontal division. There is no decoration around the openings, which are deeply recessed, with metal bars and metal valves decorated with floral motifs.

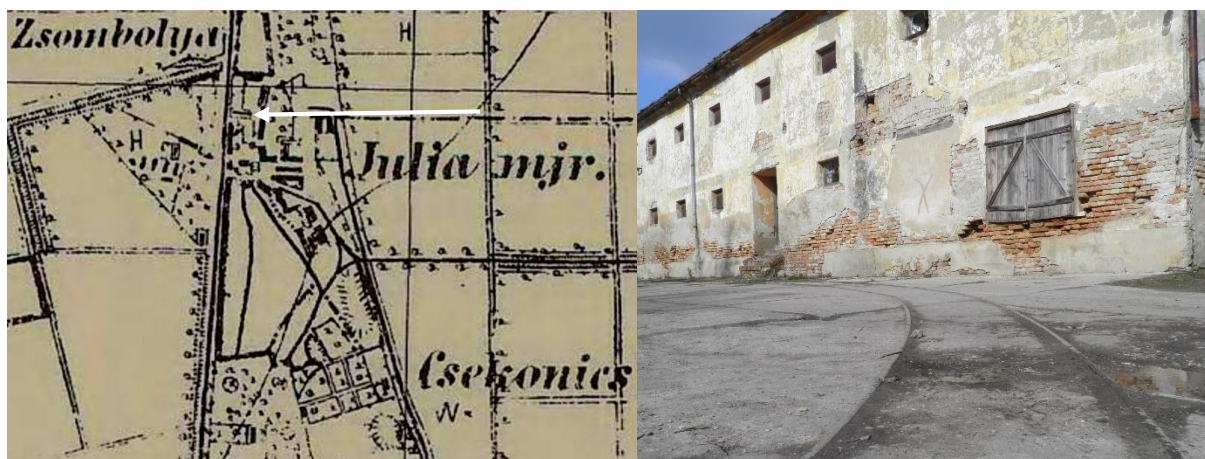


Figure 2 Grain warehouse along former vicinal railway, Julia homestead

Values and potentials

Warehouses have retained the original function; used for the storage of grain and other agricultural goods, but the way of storage is different from that of the more than 100 years ago. Although the grain warehouses have not been renewed since the time when they were owned by Čekonjić family, their construction is in good condition, which should be preserved.

The complex of Julia homestead is under previous protection, but cereal warehouses unfortunately have not been revitalized, even they could keep the spirit of the past time and present former success of agriculture in the region.

Given the fact that the village lacks facilities for public use, on the homestead could be established a museum on the open air, where the visitors would be able to learn about traditional agriculture and the manner of former noble estates functioning.

Grain warehouse on the former Karačonji estate, Novo Miloševo

Historical background

The construction of the grain warehouse in today's Novo Miloševo is linked to the establishment of Karátsonyi 'agricultural town' in former Beodra.² According to one source, the family settled in this area in 1799, when it was given the 16.000 hectares estate in Beodra. [19] According to other source, they purchased the estate at an auction in Vienna in 1781.[20]

The estate in Beodra had 6.980 cadastral acres of land, where mainly wheat and maize were grown.[21] This is evidenced also by the impressive grain warehouse and the maize crib on the opposite side of the road running by Karátsonyi László castle, which was built in 1842-46. According to the inscription on the front door, the warehouse itself dates back to 1834. All the buildings of the estate symbolized economic and social ascent of the family, even the grain warehouse, which reflected a perfectly organized agricultural estate.

After the World War I and the first agrarian reform, the family lost much of the territory of the estate. The warehouse was purchased by or was given to Mohota Adam and he owned it until his death in 1944.[22] Afterwards, the warehouse was nationalized and transferred into the ownership of the agricultural cooperative, which still uses it nowadays.

Spatial arrangement and architecture

The warehouse, characterized by massive structure and features of classicist architecture, was set to the regulatory line of the settlement's main street. The brick walls are very thick: about 100 cm in the basement, 90 cm on the ground floor, and 70 cm on the first floor. The span between longitudinal walls is 10 m.[17] The plan is rectangular with protruding aedicules to the street and along the side facades, as well as with a large porch along the courtyard facade. The small porches consist of two Doric columns on which the tympanum rests, the porch along the courtyard facade on the ground floor is with arched openings below of which is the entrance to the building, while the first floor is closed.[16] The main entrance is on the street side, where six steps are leading from street level to the ground floor. The entrance to the basement is through the porches on side facades and the incised staircase. The front door is made of iron sheet and decorated with stylized floral motifs.

The facade decoration is made in plaster and consists of shallow niches around the window frames. On the ground floor, these niches are round-arched; on the upper floor they are rectangular. The facades are also horizontally divided. The building's basis is accentuated, while

² Novo Miloševo was created by merging Karlovo and Beodra after World War II.

the body is defined by a cornice in the attic, and a cornice at the height of the centre of the semicircle niche. Ventilation is ensured by small rectangular windows that provide the entire object with rhythm. The row of basement windows is at ground level; ground floor windows are with semicircular frames, while the upper floor windows with rectangular frames. Shutters on the frames are made of iron sheet and decorated with stylized leaves.

The interior is dominated by wood. The floor structure, floors and staircases connecting the warehouse's levels are all made of this material. The building has five levels: basement, ground floor, first floor and two levels in the attic area. The high gabled roof is supported by a wooden structure; it is covered with crown tiles with two rows of openings providing ventilation. As a result of the damaged roof cover, the building's static stability has been disturbed.

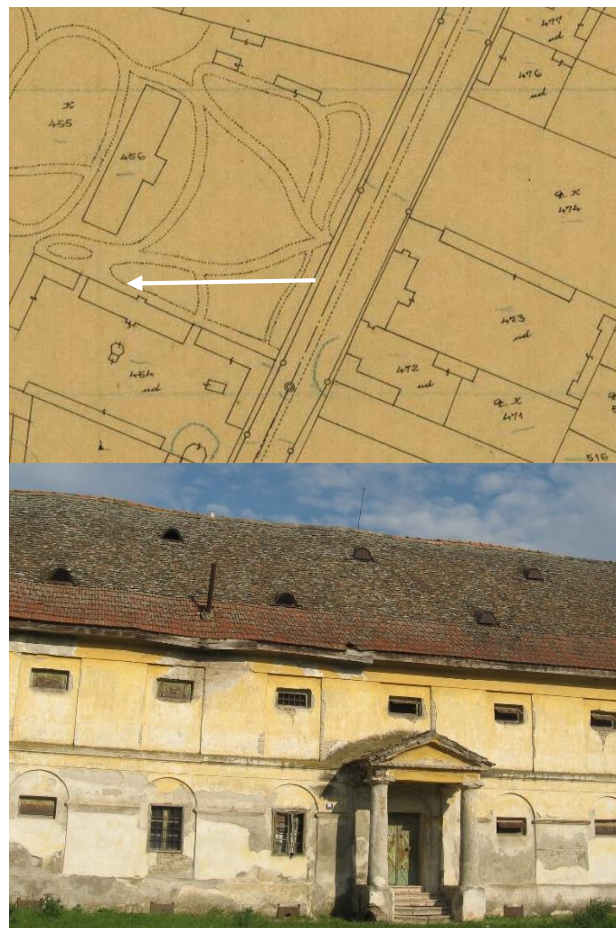


Figure 3 Grain warehouse on the former Karačonji estate, Novo Miloševo

Values and potentials

Despite various historical circumstances, the grain warehouse in Novo Miloševo has retained its authentic appearance to this day. In addition to the grain warehouse, the maize crib has also been preserved in the assembly of which once the agricultural objects consisted. Based on the architectural expression, it is believed to be built in the same year.

The architectural values of the agricultural complex were recognized at the end of 2003, when it was declared a cultural monument as an example of high technical culture and a model of successful agricultural economy in the 19th century.

During the conservation works, the damaged parts of the floor and roof structure were replaced, a new roof cover was deployed. The next phase of works will involve reconstruction of the facades and restoration of vent covers, without which the building fails authenticity.[23]

In addition to historical values, the grain warehouse in Novo Miloševo also has a high contemporary use value, and in the process of revitalization it is essential to treat it in harmony with principles of active protection in order to make use of its economic and tourism potentials. [24] Even last year warehouse was adapted for exhibitions, it is used periodically. Real historical and use values and potential of warehouse will be completely exploited only after the revitalization of the castle complex, which has a remarkable tourist potential.

CONCLUSION

Present-day Vojvodina is not a traditional tourist destination attractive to foreign tourist, although has exceptional natural, historical, architectural, cultural and anthropological qualities. The specificity of the region and its most important development resource is a unique fertile land, agricultural potential, potential for organic food production and traditional manufacture of agricultural produce.

Historic grain warehouses, as a specific type of technical heritage, have been recognized and valorised as a platform for the promotion of regional economic and social history, as well as generator of economic, cultural and touristic development.

Most of remained grain warehouses are the oldest buildings in the villages. They are often unique witness of economic status of the region. Some of buildings have exceptional architectural and structural values, and represent exam, as well as keepers of secret about traditional way of storing grains. Some of buildings have exceptional architectural and structural values, and represent examples of high technical culture, which should be protected, preserved and presented.

Apart from a few exceptions which are legally protected, restored and reactivated, the largest number of very valuable grain warehouses is very devastated and endangered.

Conservation approach to reactivation of this kind of heritage is very complex and should include: a systematic analysis of the existing situation, evaluation, conservation project, a feasibility study and test of the local community needs, in order to reach appropriate and sustainable proposal for its reuse.

REFERENCES

- [1] Kalapis, Z. (1998) Búza, dohány, selyem. Forum Könyvkiadó, Újvidék.
- [2] HEGEDIS, A. (1987) Agrarni odnosi u Torontalskoj županiji u Banatu 1779-1848. Doktorska disertacija, Novi Sad.
- [3] Theschedik, S (1786) A paraszt ember Magyar orszagban mitsoda és mi lehetne. Engel János betűivel, Péttsett.
- [4] Gruber, E. (2012) Bács-Bodrog vármegye útleírásainak áttekintése. Létünk, 3, 123-130.
- [5] Györe, Z. (2011) Bácska demográfiai és gazdasági jellemzői a XIX. század elején. 316-343. - http://www.vmtt.org.rs/mtn2011/316_343_Gyore_A.pdf
- [6] Kunits, M. (1824) Topographische Beschreibung des Konigreichs Ungarn. Ludwig Landerer Edlen v. Fűskút, Pest.
- [7] Stehlik, V. (1951) Postanak i razvitak železnica u Jugoslaviji. Sto godina železnica Jugoslavije, Beograd.

- [8] Silađi, M. Tufegdžić, A. (2011) Possibility of vicinal railway Zrenjanin.Jimbolia rehabilitation in the context of cultural tourism. Importance of place – Conference Proceedings (CD), Cicop BiH, Sarajevo.
- [9] Frisnyák, Zs. (2001) A magyarországi közlekedés krónikája 1750-2000. MTA Történelemtudományi Intézet, Budapest.
- [10] Csehák, K. (1971) Radnički pokret u Banatu do osnivanja Socijaldemokratske partije Ugarske: 1868-1890. Institut za izučavanje istorije Vojvodine, Novi Sad.
- [11] Horváth, F. Kubinszky, M. (2003) Vasúttársaságok építkezései a Bánságban. Műszaki Szemle, 23, 3-9.
- [12] Bodor, A. (1914) Délmagyarországi telepítések története és hatása a mai közállapotokra. *Stephaneum*, Budapest.
- [13] Szilágyi, M. Tufegdžić, A. (2014) Az uradalmi majorok épületállománya a zombolyai Csekonics-birtok példáján. *Létünk*, 2, 139-160.
- [14] Stajić, V. (1950) Velikokikindski distrikt 1776-1876. Matica srpska, Novi Sad.
- [15] Kiselički, B. (1991) Da se ne zaboravi. Zbornik-Prilozi za istoriju Novog Bečaja. Novi Bečej.
http://www.novibecej.rs/index.php?option=com_content&view=article&id=233&Itemid=45
- [16] Kulturna dobra, Žitni magacin u Novom Bečaju, Zavod za zaštitu spomenika kulture Zrenjanin, <http://www.zrenjanininheritage.com/kulturna-dobra/spomenici-kulture/zitni-magacin>
- [17] Bakić, S. (1999) Graditeljsko nasleđe na teritoriji opštine Novi Bečej. Građa za proučavanje spomenika kulture Vojvodine, 20, 36.
- [18] Szilágyi, M. Tufegdžić, A. (2014) Zaboravljeno nasleđe: Graditeljsko nasleđe imanja Žombolj porodice Čekonjić/Elfeledett örökség: A Csekonics család zombolyai uradalomának épített öröksége/Vergessenes Erbe: Das Bauerbe des Csekonics-Gutes in Hatzfeld. Fakultet tehničkih nauka, Novi Sad.
- [19] Nagy, I. (1860) Magyarország családai czímerekkel és nemzetségrendi táblákkal 6. Ráth Mór, Pest.
- [20] Szentkláray, J. (1882) Száz év Délmagyarország külön történetéből, 1779-től napjainkig. Temesvár.
- [21] Borovszky, S. (1911) Torontál vármegye. Magyar Monográphiai Társaság, Budapest
- [22] Kovács, N. A Karátsonyi grófok Beodrán -
http://www.karatsonyi.hu/Karatsonyiak_Beodran.htm
- [23] Sijak, D. (2012) Sanacija i rekonstrukcija krova žitnog magacina u Novom Miloševu. *Glasnik društva konzervatora Srbije*, 36, 84.
- [24] Tufegdžić, A. Silađi, M. (2010) Potencijal industrijskog nasleđa u razvoju kulturnog turizma Banata. *Nauka i praksa*, 13, 149-152.