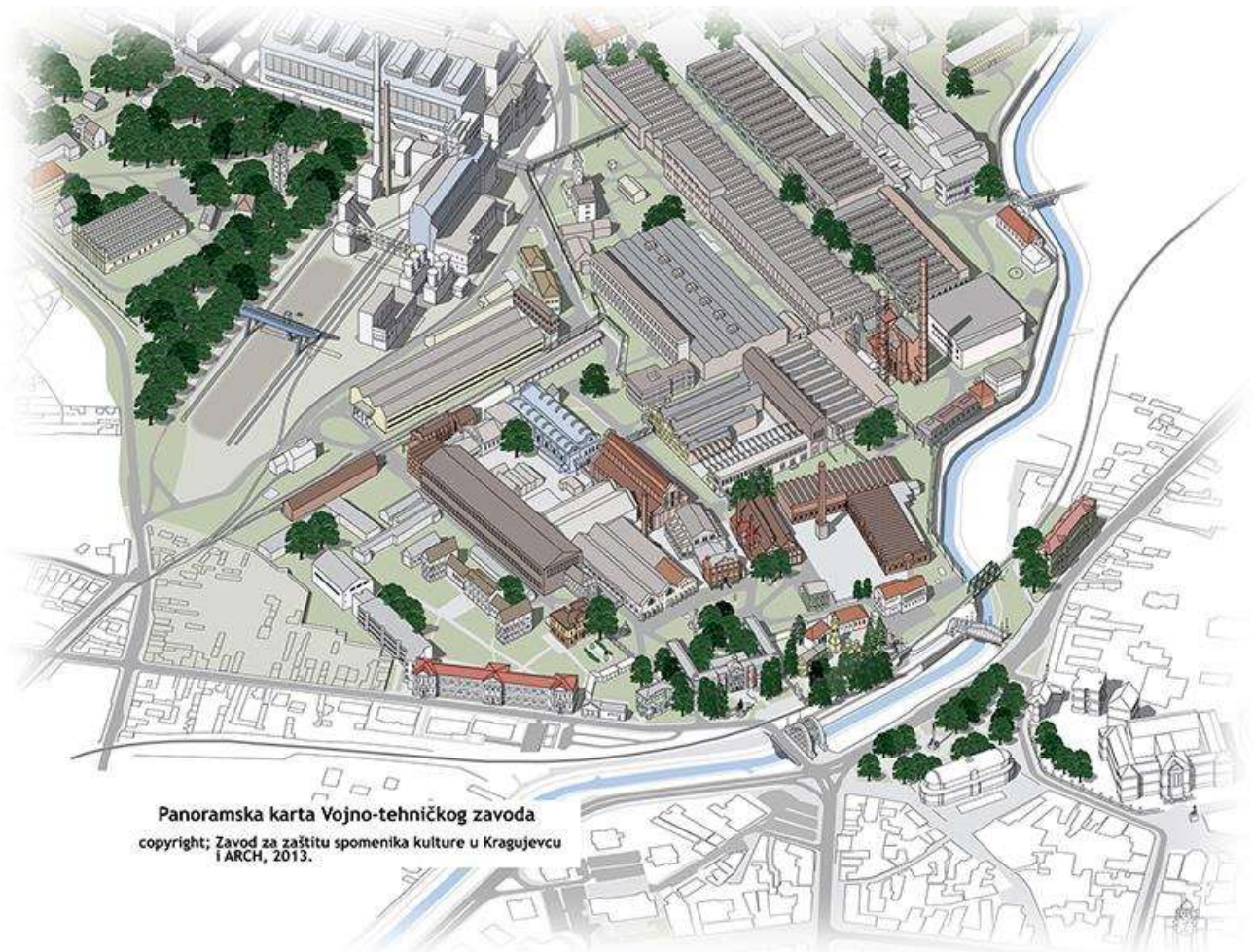




**CITY OF KRAGUJEVAC**

in cooperation with the Serbian Town Planner Association



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I ARCH, 2013.

## **PROGRAMME**

for open, international, survey, single-level, anonymous

**URBAN-ARCHITECTURAL COMPETITION**

**FOR URBAN RENEWAL AND REHABILITATION OF SPATIAL CULTURAL AND HISTORICAL UNIT  
"MILITARY TECHNICAL INSTITUTE IN KRAGUJEVAC"**

June, 2022

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FOR URBAN RENEWAL AND REHABILITATION OF SPATIAL CULTURAL AND HISTORICAL UNIT  
"MILITARY TECHNICAL INSTITUTE IN KRAGUJEVAC"**

**Announcer / Orderer of the competition:**  
CITY OF KRAGUJEVAC

**Competition conducted by:**  
Serbian Town Planner Association, Kneza Milosa 7a/III, Belgrade

[www.uus.org.rs](http://www.uus.org.rs)

[www.arsenal-kragujevac.com](http://www.arsenal-kragujevac.com)

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## **REASON, SUBJECT AND THE COMPETITION SCOPE**

## 1. REASON, SUBJECT AND THE COMPETITION SCOPE

### 1.1. REASON AND SUBJECT OF THE COMPETITION

The City of Kragujevac initiates the procedure for urban-architectural competition for the best solution of the MTI complex, according to the Decision on Urban Renewal and Regeneration of the Spatial Cultural and Historical Entity of the "Military-Technical Institute" in Kragujevac, and as part of measures and activities on urban renewal and regeneration of the spatial, cultural and historical ensemble of MTI complex.

"Military-Technical Institute Complex" (MTI) and the military industry that was developed in this area, since the middle of the XIX century has been the carrier of technical-technological, social and demographic development of the city. Today, however, the context of the MTI space is significantly different. It is characterized by stagnation, insecurity, poor lighting, non-functionality, ecological endangerment, heterogeneous ownership structure and inadequate use of the objects that represent the cultural heritage. After the City of Kragujevac bought part of the space and buildings of the former MTZ in 2006, part of the MTZ finally became available to the general public and began to reveal all its contents and pearls of industrial heritage.

"The Military Technical-Institute Complex" was determined as a cultural heritage, Spatial Cultural-Historical Unit by the Decision of the Government of the RS number 633-2365/2014, dated 25.03. 2014. It can be said that the MTI complex, in addition to being declared national, has international significance in history (the first small European state with its own armed capacities - the mainstay of the policy of liberation of the Balkan peoples), but also in architectural and urban sense. Also, this is at the same time the oldest factory complex in this part of Europe, the beginning of industrialization and a new social order, but also a strong symbol of introducing Serbia into modern European trends.

Urban renewal and regeneration of this spatial, cultural and historical unit of great importance includes preservation, revitalization, improvement, adequate use and presentation of industrial heritage sites and spaces in their environment, in order to revive the complex, improve urban-architectural, economic, environmental and social aspects regenerated space, which would also improve the image of the city's cultural landscape and its recognizability at the wider regional and international level.

The project of urban renewal and regeneration SCHU MTI aims to ensure economically justified, socially acceptable and environmentally sustainable development of this area of exceptional cultural importance, in the heart of Kragujevac through:

- restoring the original identity of space as a center of industrialization and modernization of Serbia,
- designing modern concepts for the use of buildings and spaces of industrial heritage, through their conversion and reuse ("creative industries" or "industry 4.0"),
- forming of new, picturesque and accessible ambiances as an impulse for transforming this space into a focal point of the cultural life of the City,
- strengthening the cultural identity of the city and the social cohesion of its citizens,
- resolving conflicts in space (heterogeneous ownership structure, existing way of use, protection of cultural heritage, protection of the environment, needs of current and future users of space, instruments for space management).

The City of Kragujevac has decided to, as a starting point for directing further spatial interventions, forming development goals and identifying the interests of stakeholders (city, citizens, developers, academic community, experts from various disciplines) within the subject space MTI, organize the process of announcing and implementing international urban-architectural competition and through the awarded solutions determine the guidelines for urban renewal and regeneration of the complex with a proposal of activities and measures to be taken for this purpose, which would serve as a basis for further elaboration of planning and technical documentation.

**The subject** of the competition is the conceptual urban-architectural solution of the spatial cultural-historical unit "Military-Technical Institute in Kragujevac" - zone I, with conceptual architectural solutions of buildings and ground floor areas in the area of "Knežev arsenal" (Zone 1 of the competition scope).

## 1.2. COMPETITION SCOPE

**The scope of the competitive intervention** is bordered by the regulation of the river Lepenica and river Ždraljica, Kosovska Street, Stojan Protić Street, industrial track, as well as the communal zone (outside Zone I SCHU "MTZ Complex") and a group of residential buildings within Zone II SCHU – "Pirotehnika".

The whole scope of the competition is structured in several spatial sub-units / zones, depending on the specifics of individual parts of the subject complex and the required scope and level of detail of the development of the competition solution, as follows:

**PRIMARY AREA (Zone 1)** is the introductory zone to the complex and includes the contact area of two protected spatial and cultural-historical units - SCHU "Military-Technical Institute" and SCHU "Milošev venac" with the buildings of the Old Church and the Old Assembly. It leans on the area of the Old Town of Kragujevac, from which, on the north side, it is separated from the north by the river Lepenica. This zone represents the most representative part of the complex with valuable architectural heritage that has an exceptional historical significance - it symbolizes the beginning of Serbian statehood and the beginning and rise of industrialization in the that time in Serbia. It has been segregated as a zone of public facilities and is the first phase of urban renewal and regeneration of the complex. The area covered by zone 1 is about 6.2 ha.

**PROGRAM AREA (Zone 2)** is the central part of the scope of SCHU "MTI" and currently represents a closed (publicly inaccessible) part of the industrial complex, with predominant production purposes. The program area (zone 2) represents a significant spatial resource for the future transformation and development of new central functions and is the second phase of urban renewal and regeneration of the complex. It is surrounded, beside the center of center (zone 2), by the Zastava Oruzje industrial complex, the communal zone on the south side and the contact area, which includes the school complex of the Mechanical-Engineering School and a residential block along Kosovska Street. The coverage area of zone 2 is about 14 ha.

**CONTACT AREA (Zone 3)** consists of the peripheral spaces of the entire competition area, mostly outside Zone I SCHU "MTZ Complex".

**Zone 3.1** includes the northwestern contact zone SCHU "MTZ Complex". starting from the concrete bridge (two bridges) confluence of the river Zdraljica in the river Lepenica. The border of the contact zone is Kneza Mihaila Street (Lepenički boulevard) on the north side and the corridor of the Kraljevo-Kragujevac-Lapovo railway on the north-west side. The northern part of zone 3.1 belongs to PKIC "Milošev venac". The coverage area of zone 3.1 is about 6.5 ha.

**Zone 3.2** includes a contact zone along Kosovska and Stojana Protića streets, part of the communal zone - ash dump (outside SCHU), and a smaller group of individual housing (SCHU, zone 2 - "Pirotehnika"). The entire zone is located within the boundaries of the protected environment of SCHU "MTZ Complex". The coverage area of Zone 3.2 is about 8.1 ha.

**Zone 3.3** includes the southern part of the scope of the competition bordered by the river Ždraljica and the industrial railway track, along the industrial complex "Zastava Oruzje". The coverage area of zone 3.3 is about 3 ha.

**CONTEXT AREA (Zone 4)** is a part of the whole MTZ complex where no interventions are planned in terms of its remodelling and regeneration, having in mind the specifics regarding the functioning of these parts of the complex.



**Zone 4.1** covers the area of the existing (closed) industrial complex "Zastava Oruzje". The area of the Zone is about 15 ha.

**Zone 4.2** covers the area of the city heating plant ("Energetika") and belongs to the protected environment of SCHU "Military-Technical Institute". The area of the Zone is about 2.8 ha.

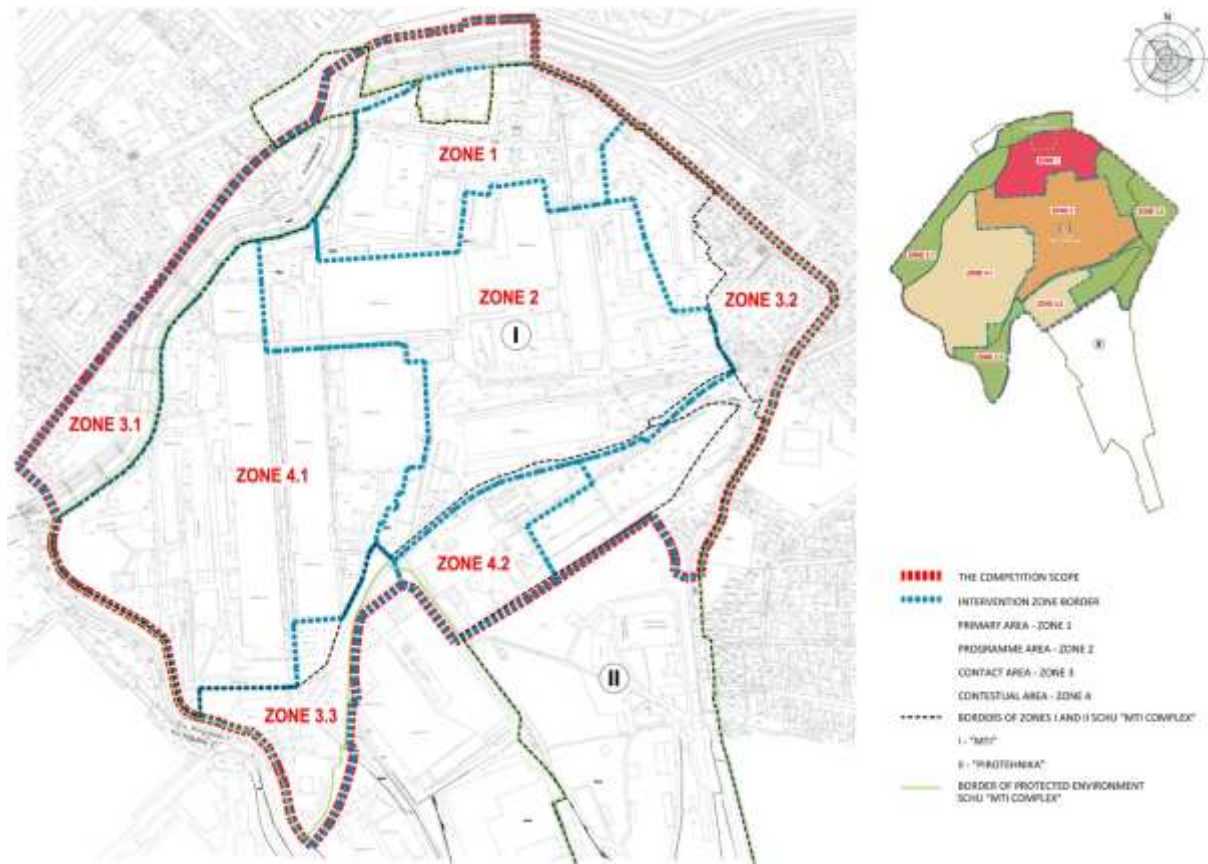


Figure 1. Cadastral plan with the boundary of the competition scope



Figure 2. Ortho-photo image with the boundary of the competition scope



## OBJECTIVES AND CRITERIA

### 2. OBJECTIVES AND CRITERIA

#### 2.1. COMPETITION OBJECTIVES

**The main goal** of the competition, in accordance with the competition task, importance and potentials of the location, is to choose the highest quality urban-architectural solution, which corresponds to the environment and is adapted to the ambient values of the protected Spatial, Cultural and Historical Unit. In accordance with the cultural-historical context, the aim is to see the current potentials of the space through competitive activities, the significance of the space, with the anticipation of its future development.

#### **General goals**

- Considering the development possibilities of the subject space through the formation of a wide range of diverse ideas, proposals and concepts of functional and design transformation of the Military Technical Institute Complex and its immediate context, while respecting the values of protected spatial, cultural and historical ensemble.
- Review of planning documents that have an impact on the subject area and proposal of their upgrade with new programs, contents, functions and design solutions.
- Rounding off the contextual ambience and complex of the Military Technical Institute into a unique and recognizable spatial framework.
- Connecting the subject space with the immediate context and the wider environment, through the redirection of traffic flows.
- Introduction of contents and assemblies suitable for the space of the cultural-historical whole "Military-Technical Institute", designed to enable quality offer of publicly available contents,

but also greater activation of space and market use, as well as aesthetic-content attractiveness (parts and wholes).

- Увођење програма који ће унапредити културну, образовну, туристичку и пословну понуду града.

**Specific goals** arising from the analysis of spatial qualities and constraints, and in accordance with the prescribed protection measures for facilities and spaces:

- Checking the potential of the space in terms of content and design, with a special attitude towards increasing the attractiveness of the whole with:
  - new construction in the direction of forming independent physical structures,
  - reconstruction of the buildings that are not subject to protection with the possibility of height regulation in the existing dimensions, in the scope and form harmonized with the chosen approach to reconstruction,
  - interpolation of new layers with heritage layers in the direction of changing the height regulation, with the possibility of implementing new functions in accordance with the conceptual solution.
- Defining of the whole according to the purpose and content of the facilities in accordance with the ambient and other characteristics, as a basis for further planning of the space.
- Strengthening the identity of space as a specific and recognizable urban environment, through the articulation of its organizational, regulatory, design and aesthetic values.
- Increasing the interest in using the available space to expand or restructure existing and introduce new content and raise the quality of functioning of the subject space and the immediate environment.
- Revitalization, reconstruction and conversion of existing buildings of cultural and historical importance (conversion of complexes into public and mixed purposes) in order to preserve the peculiarities of space and urban morphology.
- Remodeling of the urban complex through the improvement of the morphology of existing structures in accordance with the principles of protection of architectural heritage.
- Establishing a unique, organic, functional, and formal connection with the immediate contact zone, while ensuring the integrity of each individual (sub) entity.
- Reshaping the internal structure of the complex by improving the aesthetic and ambient recognizability (buildings, open spaces, urban furniture, ...).
- Renovation of the open space for various stationary attractive contents and various events of a manifestation character, by creating a flexible "scenic environment", attractive architectural structures, with accessibility and artistic impact.
- Improving the network of traffic flows, with the resolution of stationary traffic.
- Landscaping.

## 2.2. ELIGIBILITY CRITERIA

- The character and quality of improving the urban identity of the area in the context of the immediate and wider environment.
- Functional completeness and integration of the subject space into the urban city matrix.
- A clear and comprehensive spatial concept of urban renewal, recognizable in the basic idea.
- Distribution of purposes and contents in space, quality and variety of offered contents, functionality of the proposed solution.
- The scope and structure of the proposed content, the comprehensiveness of the spatial program solution and the multi-layered nature of the proposed proposals.

- Harmony of the urban context as a whole and the realized values of the identity of each ambient (sub) whole; Picturesqueness, artistry, and multi-layered perceptiveness of the subject space.
- The quality of the proposed way of adapting industrial heritage buildings to the needs of the city and the region, while respecting the principles of preserving the authenticity and integrity of buildings and spaces - by applying modern models of protection and revitalization of industrial heritage.
- Urban-architectural design and ambient characteristics of the whole and characteristic parts:
  - Attitude towards the wider and immediate environment and contact area,
  - Integral approach to the protection, preservation, and improvement of architectural and cultural heritage.
- Economic justification and sustainability of the spatial program concept and the possibility of staged implementation.
- Dynamic use of space and active participation in the life of the city.
- Clarity of presentation and persuasiveness of argumentation.
- According to the above-mentioned goals and criteria, the members of the jury will evaluate each individual work with points from 1 to 5, on the basis of which they will be ranked.

## THE HISTORICAL CONTEXT

### 3. THE HISTORICAL CONTEXT OF MILITARY TECHNICAL INSTITUTE COMPLEX

#### The establishment of Kragujevac as the first industrial city in Serbia

The oldest document on Kragujevac was recorded in the second half of the 15<sup>th</sup> century, where it was depicted as a village with 32 houses. The first settlement was established on the left bank of the Lepenica River, close to present-day Lower concrete bridge.

From the first recorded document on Kragujevac in 1476 until 1818, when it became the capital of Serbia, Kragujevac had been under the Ottoman rule for over three centuries and also under Austrian occupation for about twenty years. In that period the city developed according to the functions it performed and the characteristics of architecture at the time, particularly oriental.

The second Austrian occupation was particularly significant for the city, which spanned 21 years. In that period Kragujevac became military and strategic centre, parallelly developing its crafts, trade and livestock breeding. The town expanded further to the site of present-day post office and "Dubrovnik" hotel. In that area, a fortification with earthen rampart and a wooden fence was erected, surrounded by a trench filled with water from the Lepenica River, spawning its name "Trench-Kragujevac".



Figure 1. "Trench-Kragujevac"

Figure 2. Mosque near the Stone Bridge

After the period of city establishment and development, following the liberation from the Ottomans in 1815, Kragujevac became the capital city and fully flourished. In this period, the foundation of its industrial development was established and conditions were created to build the Old Town, which was the starting point for further development and urbanisation of the city.

### Capital city period (1818 – 1841)

After the period of city establishment and development, following the liberation from the Ottomans in 1815, Kragujevac became the capital and fully flourished. In this period, the foundation of its industrial development was established and conditions were created to build the Old Town, which was the starting point for further development and urbanisation of the city.

Numerous factors impacted the choice of Kragujevac as the capital of the renewed Serbian state in 1818. Located at the crossroads of natural channels of communication, sufficiently distant from the Constantinople Road, Kragujevac had almost ideal conditions to become the capital city of a recently liberated country. The proclamation of Kragujevac as the capital city of the renewed Serbian state, rapid development ensued in which institutions of the highest rank of state governance began to be established (Court, Parliament, etc.)<sup>1</sup>.

With a radical decree of Prince Miloš, along with the Old Town located around the Stone Bridge, on the hill, New Town started to develop on the left bank of the Lepenica River, which was slightly distant from the Ottoman town and where Prince's court was established as the governing and political centre of the Serbian capital city.

Prince's court included three residences with auxiliary facilities and a church on the right bank of the Lepenica River, which were connected with a wooden bridge (on the location of present-day concrete pedestrian bridge). The most representative building within the court was the Residence of Prince Miloš, along with the Residence of Princess Ljubica and the Amidža Residence. All these facilities defined the look of the New Town. This completed the unity, a circuit, which was reflected in the establishment of the connection with Stone Bridge between Old and New Town, thus creating the centre of the Serbian capital.



Figure 3. The court of Prince Miloš



Figure 4. The residence of Prince Miloš in Kragujevac

In the period of being the Serbian capital, cultural and educational institutions were established and they fully flourished: the first grammar school (in 1833), the first theatre (1835), Lyceum – the first higher education institution in Serbia (1838), the first art gallery, etc.

<sup>1</sup> Radovanović Boriša, *Old Kragujevac*, Kragujevac, 1996, p.39



**Industrial urbanisation period** of Serbia started in the mid-19th century and Kragujevac became the first typically industrial city in that process. Arms industry was the foundation of urban development in Kragujevac. It was established along with state formation.

Veroljub Trifunović described the foundation of the arms industry as the formation of three vertices of a subsequent large triangle of headquarters of the arms industry in Kragujevac<sup>2</sup>. The initial industrialisation step was the construction of two large barracks, in which first reparations were made and shooting guns were assembled. Military workshop within large barracks marked the beginning of industry on the right bank of the Lepenica River. This urban project represented the first vertex of the triangle.

Around 1836 the Principality of Serbia formed its first specialised arms production plants. On the right bank of the Lepenica River east to the barracks, south to the Holy Spirit church, two minor workshops were built – **Amidža's foundry and Arsenal**. These military facilities were close to the residences. This location represents the second coordinate of spatial development of the arms industry in Kragujevac in subsequent two centuries. Having been located in the city centre, on Prince Miloš's circuit, it made a crucial impact on long-term planning and construction in Kragujevac.

The third coordinate of the locations of the arms industry in Kragujevac was established with the erection of Pyrotechnics to the south of town.

As the initiator of compacted military capacities in Kragujevac, Prince Miloš charted the territory for subsequent arms industry. This unurbanised space, inaccessible to other constructors, was reserved for the military. Its area of around 70 hectares reveals the size of originally planned spatial capacities of the location.

The capital period of Kragujevac ended in 1841, when all jurisdictions were transferred to Belgrade. Stagnation period ensued until 1851 when the Gun Foundry was erected, as an arms industry complex – the new initiator of city development.

### **The period from 1851 to 1891**

The crucial event for subsequent development of the arms industry was the construction of the Gun Foundry in Kragujevac in 1851. Following a state decree, it was relocated from Belgrade. Its location was chosen on the right bank of the Lepenica River, approximately 300 metres away from the river, between Gospodarevo and Metino hills, on former Arsenal site. The facility was surrounded by a shooting range, a forge, a locksmith workshop (within Arsenal) and Headquarters. In 1854, Workshop for the manufacture of gun carriages, war chariots and the Laboratory (Pyrotechnics) for the production of cannon and rifle ammunition were erected in the vicinity of the Gun Foundry<sup>3</sup>.

One of the key problems regarding factory construction was insufficient professional staff and technology, particularly highly educated engineers. With the consent of emperor Napoleon III, a major from the French Army Charles Loubry was announced as the first director of the factory.

The production of the Gun Foundry contributed to Serbia's independence in terms of ammunition. It represents the foundation of Serbian industry, as the building which definitely confirmed state significance of its headquarters in Kragujevac, while its erection triggered the transition of Kragujevac from a town into the first industrial city within the Principality of Serbia.

Industrial development would be impossible without the education system and a single territory. On these grounds Military School of Arts and Crafts was founded in 1854, as part of the Military Institute of Kragujevac.

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<sup>2</sup> Trifunović Veroljub, *The Construction of Kragujevac in the Principality and Kingdom*, Kragujevac, 2008, p.63, 64

<sup>3</sup> Institute for the Protection of Cultural Monuments of Serbia, *Historical and cultural heritage of Military and Technology Institute*, Kragujevac, 2005, p.14, 16, 19



Figure 5. The Gun Foundry in the engraving from 1853



Figure 6. Military School of Arts and Crafts

1880s were a decade when a more intense industrial state development started and thus it can be stated that Serbia only then fully entered the period of its industrial revolution. This was the second development period of the Gun Foundry, beginning from 1876- 1878. Significant investments were made in its construction and reconstruction. Following reorganisation (in 1883), the factory in Kragujevac was named Military Technical Institute. A modern plant for the Gun Foundry was constructed in 1886.

The construction of a military plant caused the migration of a considerable number of workers and their families to the city, which led to further construction and subsequent expansion. Intensive urbanisation of the city took place in the 1870s. As a travel writer Felix Canitz noted: "Kragujevac made a successful transition from a giant village into a beautiful, modern city." This population growth was sufficient to make Kragujevac one of the first cities to have its regulation plan at the end of the 19th century and the privilege, again owing to its arms factory, to obtain the first power plant in 1886 for the needs of the Institute, while other parts of the city were lit up later. Industrial development, a hint of capitalist industry and new social relations marked city development at the end of the 19th and beginning of the 20th century, whereas the differentiation of specialised functions and activities shaped its urban milieu.

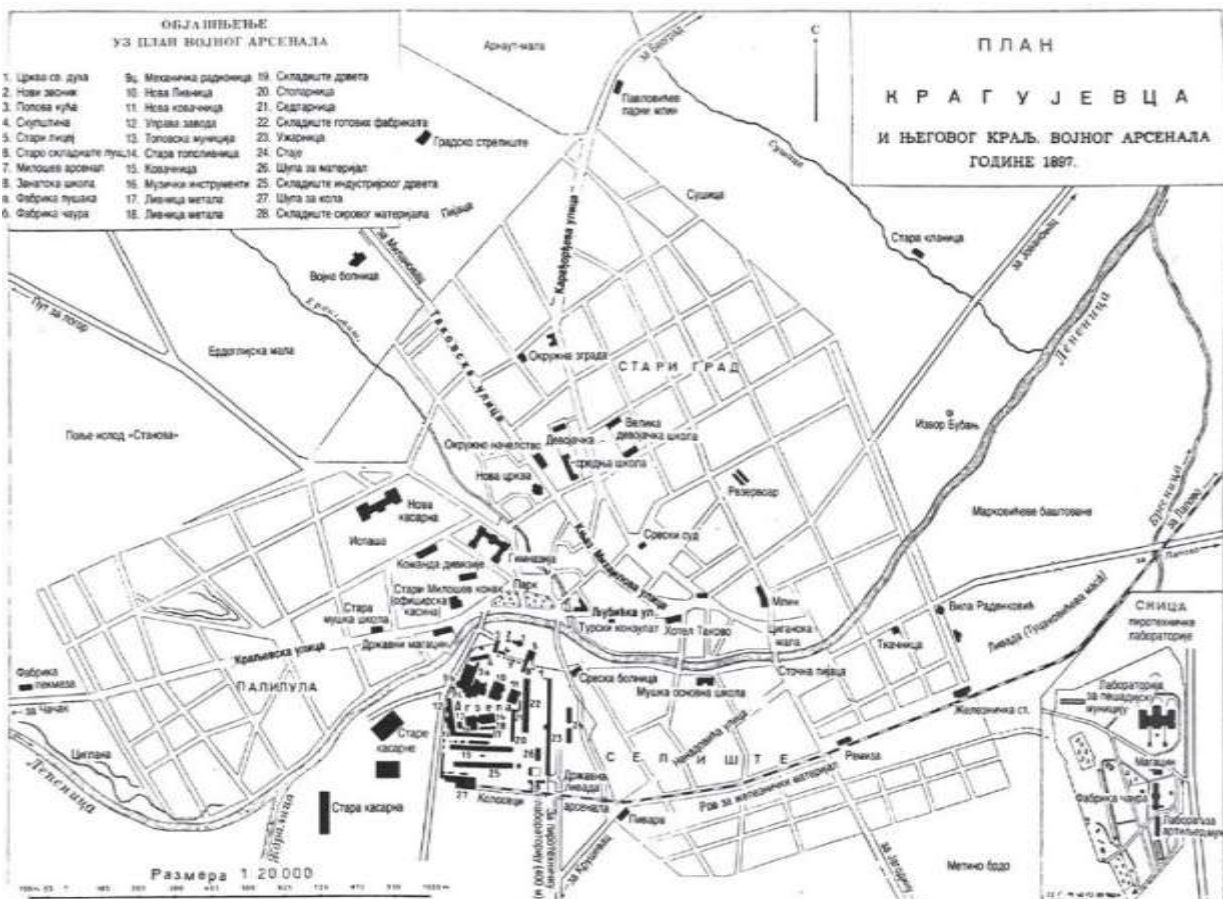


Figure 7. The map of Kragujevac and royal military arsenal in 1897

Industrial progress was dramatically interrupted by wars at the beginning of the 20th century and the Great War, which consequently left the city and its industry devastated and looted. In the post-war period, further investment was made in the construction of the Institute and after several years a number of new facilities and entire boroughs were constructed. The most significant project in this field was the construction of the borough "Old Worker's Colony", which presents extraordinary and original town-planning and architectural concept.



Figure 8. Situation plan of Military Technical Institute with Pyrotechnics (1931)

Figure 9. Aerial shot of Kragujevac between the two world wars

Military Technical Institute became a significant industrial company and the foundation of the arms industry in Serbia. It was a significant long-term factor from the point of view of the construction of Kragujevac. Modest military buildings marked an extremely large military location. The entire building history from Arsenal to arms factory "Zastava" took place in that circuit. Apart from the arms industry, car industry was also created on the same location (in the middle of the 20<sup>th</sup> century). From the viewpoint of the urbanisation of Serbia, it can be stated that there was no such industrial zone in the Principality in terms of size or comparable long-term capacities. The location of the arms industry in Kragujevac made a significant contribution to modernisation of the country.<sup>4</sup>

#### Review of historical development of facilities and sites:

- 1850 – decree to establish the Gun Foundry in Kragujevac;
- 1853 – first cannons were cast;
- 1854 - school of arts and crafts was established;
- 1881/83 – the oldest existing building of the foundry was constructed;
- 1914/18 – considerable destruction during World War I;
- 1918/1941 – reconstruction period, new flourishing of the factory and its modernisation. The construction of new plants and significant architectural landmarks;
- 1926 - "Headquarters of Military Technical Institute" was constructed;
- 1941/45. – World War II, considerable destruction of the factory and the city itself;
- In the decades following World War II – factory was transformed, military and hunting ammunition was united with the car industry. The factory changed its name into "Institutes of the Red Flag";
- 1967 – production in the Old Foundry building ceased;
- Following 2000, the industrial complex continued to be named "Zastava";

<sup>4</sup> Trifunović Veroljub, The Construction of Kragujevac in the Principality and Kingdom, Kragujevac, 2008, p. 64-67



- November 2006 – the City of Kragujevac redeemed part of premises and buildings (as reviewed by the Preliminary Technical Estimate), which became open to the public.



*Figure 10. Military Technical Institute in 1897*



*Figure 11. Construction of the Military Technical Institute in 1926*

## CHARACTERISTICS OF THE COMPETITION AREA AND ITS CONTEXT

### 4. EXTENDED AND IMMEDIATE CONTEXTUAL AREA (OUT OF COMPETITION SCOPE)

#### **Subject area in the context of the immediate and extended environment**

The competition area has central position in the overall urban structure of Kragujevac and leans on the inner center of the city. Traffic barriers (main city routes, railway), but also the use of space of this Complex, as the center of industrial development of Kragujevac from its inception until today, and the long-standing status of "forbidden city", have conditioned that, when it comes to functionality, the subject area does not correspond to the city center. At the same time, the area of the city on the south side of Lepenica river developed predominantly under the influence of Military Tehnical Institute, where significant economic systems, important traffic routes, major infrastructure systems and new housing estates developed around its nucleus.

#### **Subject area in the context of the city center**

The competition area is an integral part of the urban context of the central zone, in which it spatially and visually corresponds with the area of the historical center (Milošev venac) and the new city center (zones: Prodor and Lepenica), when it comes to spatial issue.

Today's city center has developed on the border of two historical cores from different epochs of the city's development - "Turkish" Kragujevac (the original city center) and the center of Miloš's capital (Milošev venac).



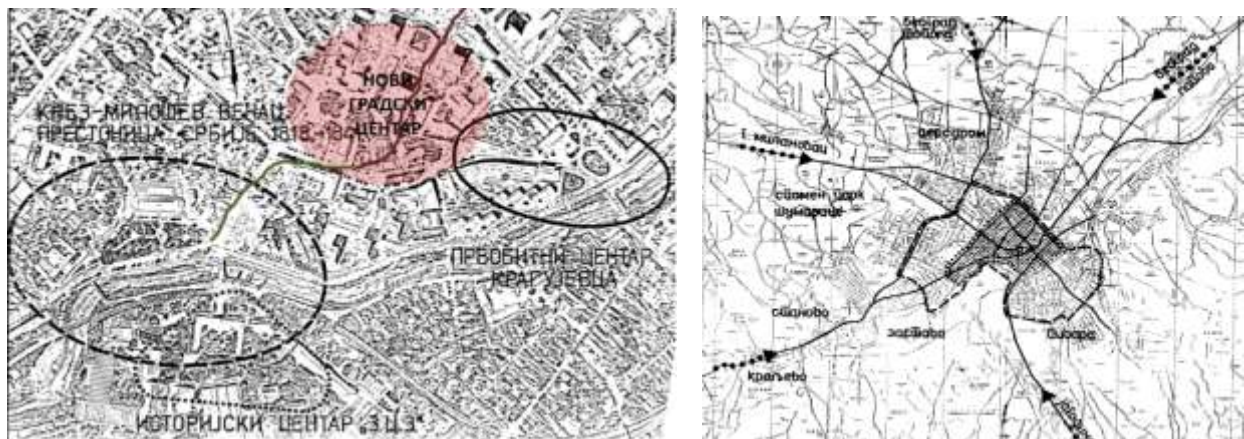


Figure 12. Development of the city center through history (the original center, Milošev venac and the new city center);

Figure 13. The position of today's city center in the urban structure of the city (right)

The old (traditional) city center is marked by different historical layers and rich architectural heritage. The area of the historical core of Kragujevac is characterized by a heterogeneous structure of urban blocks in the system of inherited (irregular) street matrix and a mixed residential and business use. Within the city center, area of "Milošev venac" stand out with its specific ambient and with the buildings of old Kragujevac from the time of the Obrenović dynasty and the middle of the 19th century, which represents the cultural and historical core of the city and the foundation of the state of Serbia. Milošev venac has developed in two directions, encompassing the area on both sides of Lepenica river connected by bridges, with the most important buildings that marked the development of Kragujevac as a former capital (gymnasium, theater, Amidža's residence, Mihailo's residence, City market, as well as the Old Church and the Old Assembly on the right side of Lepenica river).

Opposite to Milošev venac, as a point of discontinuity in the spatial development and the way of forming urban structure of the city and its old center to that point, a new city center "Prodor" was created, and took over the role of administrative and business center from its beginning. The City Hall building (that was located in the 1950s outside of the historical core of the city) becomes the gravity point of the entire city, and the green corridor called "Prodor" becomes dominant direction (defined by surrounding and emphasized with landmark buildings - Hotel Kragujevac - Department Store - City Assembly) which forms the new city center, connecting old and new core with traditional main street (27 March Street and Nikola Pašić Street). Within this area, there are several spatial-ambient zones (pedestrian street, squares, piazzetas) that also define the character of "Prodor", of which they are an integral part, and that are the connecting element between the old and new city center. The main characteristic of "Prodor" is the high quality of the location, significant facilities, achieved administrative function of the city, high density of housing and trade, traffic problems within the ring road, as well as parts of undeveloped and programmatically undirected space.

Different historical layers, that form the city center, manifest themselves in the typology of urban structure, where we can distinguish - the old town structure consisted of a set of urban blocks in the historical core, with fragmented structure and heterogeneous buildings, and massive residential multi-storey buildings located both in the center and along its edge on the northeast side and along Lepenički boulevard (immediate surrounding of the competition area).

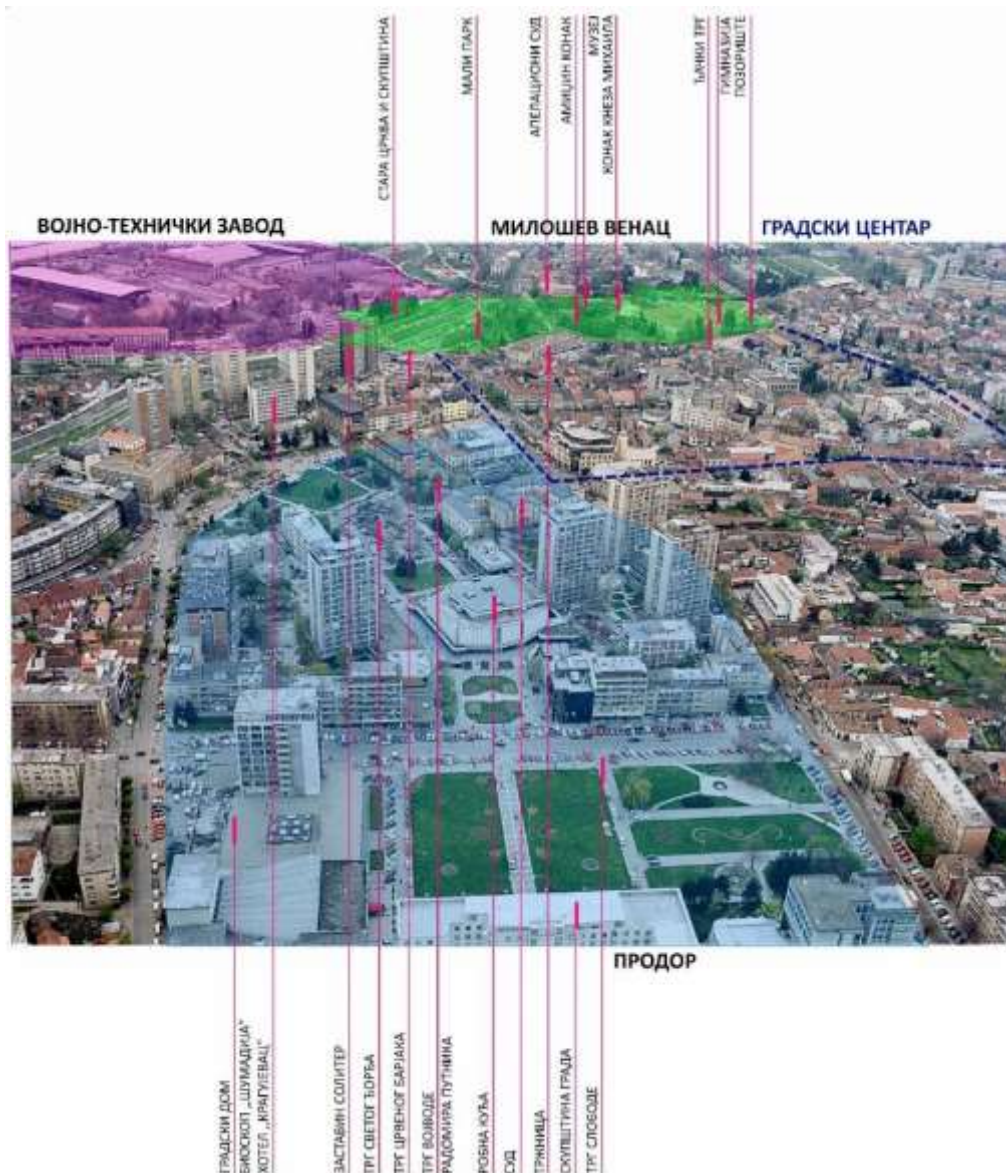


Figure 14. Spatial Spatial entities of the city center

Војно-технички завод (Military Tehnical Institute); Милошев венац (Milošev venac); Градски центар (City center), Стара црква и скупштина (Old Church and Assembly), Мали парк (Little park), Апелациони суд (Court of Appeal), Амиџин конак (Amidža's Residence), Музеј (Museum), Конак Кнеза (Mihailo's Residence), Бачки трг (Student square), Позориште (Theatre), Градски дом (City Hall), Биоскоп "Шумадија" (Cinema "Šumadija"), Хотел "Крагујевац" (Hotel "Kragujevac"), Заставин солитер (Zastava's multy-storey building), Трг светог Ђорђа (Saint George's square), Трг црвеног барјака (Red flag square), Трг војводе Радомира Путника (Duke Radomir Putnik's square), Робна кућа (Department store), Суд (Court), Тржница (City Market), Скупштина града (City Assembly), Трг слободе (Freedom square)

In the area of city center, according to the role of Kragujevac as a regional center of the wider area, some of the most important facilities and functions appropriate to the importance of the city of Kragujevac took place, some of which have regional and supraregional significance - facilities of administration, culture and education, along with commercial and trading facilities and religious objects. Due to the complexity of the urban matrix, different cultural patterns and multifunctionality, the area of the center is rich in contrasts, accents and diverse ambiances, as well as in significant architectural heritage.

The main traffic connection of the competition area with the area of the city center is made by Kosovska Street (via the car and pedestrian bridge), which continuous via Lepenički Boulevard to 27<sup>th</sup> March Street (and further on Nikola Pašića Street)- the main direction that unites the old and the new center ("Prodor").



## Ambiental entity Milošev venac

As the core of the formation of the capital in the 19th century, this area has an exceptional significance in the symbolic, identity and cultural sense, not only for the city, but also for the entire state. It is part of the old city center, which represents the spatial, functional and cultural-historical core of the city. The functional connection between the Complex of "Military Technical Institute" and the area of the former Miloš' Palace, apart from the unbreakable threads of the common history, is almost non-existent today.



Figure 15. Position of the ambiental entity Milošev venac; Image 2- Amidža's Residence  
Figure 16. Knez Mihailo's Residence

Објекти обележени на карти:

1 \_ Amidža's Residence, 1818, the only preserved building of the complex of Miloš' Palace, today part of the National Museum; 2\_ Knez Mihailo's Residence, 1860, today administration of National Museum and Museum' Library<sup>5</sup>; 3 \_ Gallery; 4 \_ Big Gymnasium of Kragujevac, 1887, first Gymnasium in Serbia; 5 \_ City Market; 6 \_ Royal-serbian theater; 7 \_ Old church with the bell tower 8 \_ Old Assembly; 9 \_ Little park



Figure 18. Milošev venac- Amidža's Residence (left), gallery of the National Museum (in the middle), Knez Mihailo's Residence (right)<sup>6</sup>

<sup>5</sup> <https://upload.wikimedia.org/wikipedia/commons/2/2f/Konak-kneza-Mihaila.jpg>

<sup>6</sup> [https://prviprvnaskali.com/pub/article/14742941578154\\_00\\_prvi\\_prvi\\_na\\_skali\\_narodni\\_muzej\\_kragujevac\\_aktuelna\\_desavanja.jpg](https://prviprvnaskali.com/pub/article/14742941578154_00_prvi_prvi_na_skali_narodni_muzej_kragujevac_aktuelna_desavanja.jpg)



Figure 19. Milošev venac- Amidža's Residence (in the middle), left- Miloš' Residence, right- Colorful Residence (according to the saved data)<sup>7</sup>



Figure 20. Milošev venac- Big Gymnasium of Kragujevac (in the middle)<sup>8</sup> Figure 21. Royal-serbian Theater



Figure 22. Milošev venac- City Market and

Figure 23. Milošev venac - Little park

The strategic plans of the city of Kragujevac envisage the functional expansion of the Milošev venac complex onto the area of the Military unit "Vojvoda Radomir Putnik" and its completion with facilities of regional and supraregional significance. Connecting this complex with Milošev venac would enable the development of a functional and historical city core, and the formation of a special place for the presentation and study of political, cultural, economic and wider civilization idea of Serbia in the European context, that was founded in Kragujevac. The City market building is to be converted into a cultural facility.

### Protected Spatial Cultural-Historic Unit "Historical core of Kragujevac"

Almost the entire area of the old city center formed around the streets of Kralj Aleksandar I Karađorđević and Kralj Petar I (an integral part of the spatial zone "Prodor") is protected as part of the Spatial Cultural-Historic Unit "Historical core of Kragujevac", with valuable architectural heritage that marked the development of Kragujevac through various periods in the past (Church of the Assumption of the Blessed Virgin Mary, Court, Firefighters station, Office building and numerous buildings of old town architecture, etc.), as well as many other valorized buildings and areas in the peripheral parts of the SCHU.

<sup>7</sup> <http://cmjp.rs/wp-content/uploads/2018/05/Milo%C5%A1ev-venac-Amid%C5%BEin-konak-u-sredini-levo-je-bio-Milo%C5%A1ev-konak-a-desno-%C5%A0areni-prema-sa%C4%8Duvanim-podacima.jpg>

<sup>8</sup> <https://www.prvagimnazija.edu.rs/images/speasyimagegallery/albums/7/images/578088-10151742497436375-963799697-n.jpg>



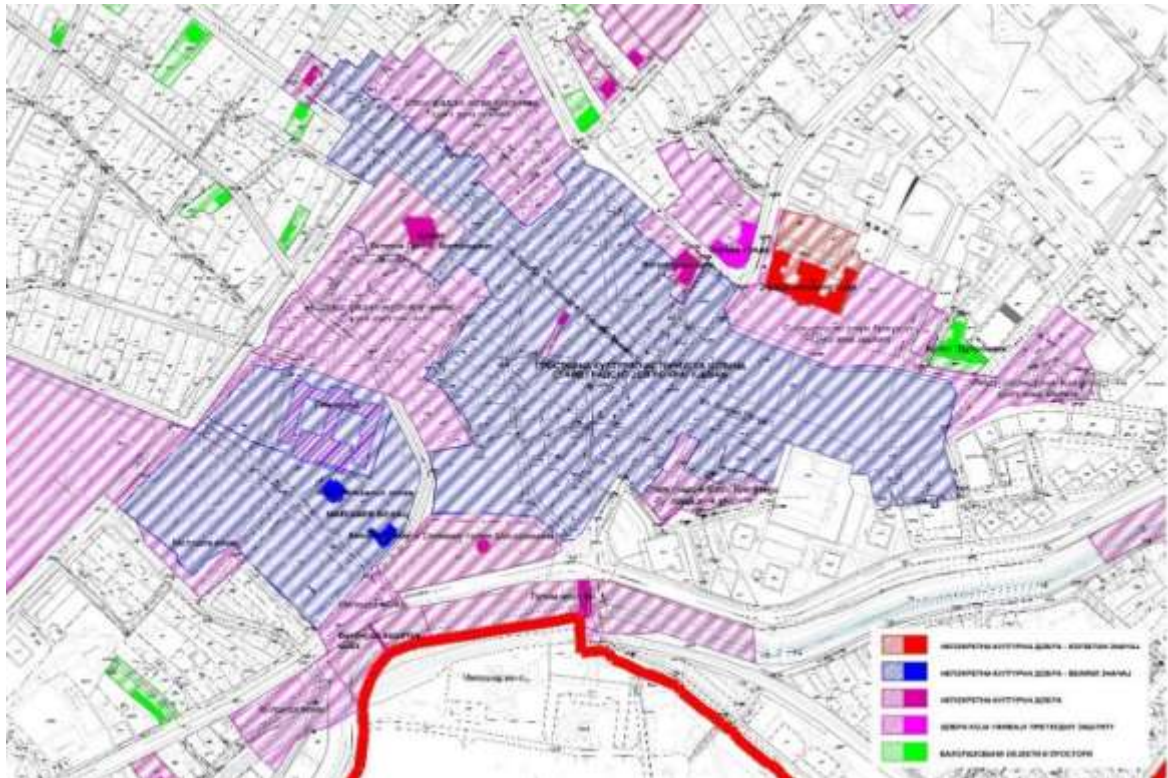


Figure 24. Map of protected Immovable cultural property (Plan of General Regulation "Old town" in Kragujevac)



Figure 25. Part of SCHU "Old Town Center of Kragujevac" within the whole Center - Prodor<sup>9</sup>

### Immediate surrounding context of the competition area

The area of the old city center partially encroaches on the central area "Prodor" and on direction of 27<sup>th</sup> March Street, in terms of volume and number of storeys, it is mostly harmonized with the contact zone towards the area of "Prodor", while, observed in relation to the competition area, it is in stark contrast to the built structure of high-rise multi-storey residential buildings on direction of Lepenički boulevard,

<sup>9</sup> <https://rs.n1info.com/wp-content/uploads/2020/04/kragujevac-panorama-izvor-n1-milan-nikic-309566-768x432.jpeg>



starting from the intersection of 27<sup>th</sup> March Street and Crveni barjak street and Crveni barjak square (the first one in a series of "Zastava's soliter", 15 storeys).



Figure 26. Panoramic view of the contextual area - an introduction to the city center<sup>10</sup>

The current plan for the city center envisions urban renovation of the old core of Kragujevac, depending on the protection regime for Spatial Cultural-Historic Unit "Historical core of Kragujevac", with the transformation of housing fund into the business one. An increase in business units is planned throughout the central zone. At the corner position, in the area of today's parking lot on Red flag square (corner of Lepenički boulevard and 27<sup>th</sup> March Street), beside "Zastava's soliter", the construction of a public garage with accompanying business units, of 14 storeys height, is planned.

### **Outer zone (extended contextual environment of the competition area)**

#### *Contextual area along the Knez Mihailo Street and the railway*

On the northwest side of the competition area, its immediate contextual area consists of subunits of the city center formed on the left and right side of Knez Mihailo Street. In the immediate contact area in the zone of the railway bridge, a multi-family residential building (Officer's apartments) stands out, which belongs to the Spatial Cultural-Historic Unit "Military Technical Institute Complex". At the approach to the complex, along Kneza Mihaila Street, the character of the built structure has no ambient significance, and their character is largely defined by the immediate vicinity of the railway (northwestern border of the competition area). In the immediate vicinity of the location, in the zone of the pedestrian bridge, next to the Milošev venac complex, are the facilities of the former army administration (now the Court of Appeals, 3 storeys). Apart from the mentioned facilities in the zone of the pedestrian bridge, the move has no ambient significance.

#### *Contextual area along the Kosovska Street*

The area on the northeast side, that is within the wider central zone, consists of parts of the neighbourhood Lepenica - Pivara, in the area between the river Lepenica, Stojan Protić Street, Jovan Ristić Street and Kosovska Street. The disadvantage of this neighborhood is the existing railway corridor that passes through the existing residential zone.

<sup>10</sup>[https://cdn.shortpixel.ai/spai/w\\_784+q\\_glossy+ret\\_img+to\\_webp/https://balkangreenenergynews.com/rs/wp-content/uploads/2021/03/Kragujevac-stedi-energiju-i-promovise-zelenu-ekonomiju.jpg](https://cdn.shortpixel.ai/spai/w_784+q_glossy+ret_img+to_webp/https://balkangreenenergynews.com/rs/wp-content/uploads/2021/03/Kragujevac-stedi-energiju-i-promovise-zelenu-ekonomiju.jpg)

The immediate context of the Military Technical Institute Complex is the urban block that is developing between Kosovska Street, the railway and Stojan Protić Street. This urban block has a mixed residential-business use. In the part of the urban block, beside the pedestrian and car bridge, is an unarranged parking lot. Opposite to the secondary technical school (former boarding school of the Military-Vocational School) there are a number of multi-family residential and business buildings in the open, mostly mid-rise (about 6 storeys). The buildings are without architectural and ambient peculiarities. The remaining parts of urban blocks that are the immediate surroundings of the location, and partly its integral part, are fragmented low-rise structures (up to 2 storeys) built on the regulation line, towards the street, mostly intended for business and trade (shops, services), while residential facilities are placed in the depths of the plot. The buildings are mostly of poor quality, without ambient values.

For this area, the current plan envisages its transformation in terms of replacing the existing construction fund and increasing its capacity of construction, with the possibility of changing the type of housing (family to multi-family). The plan defines the maximum number of storeys - for family residential buildings up to 4 and for multi-family buildings up to 6.

When it comes to the extended contextual area, Nova Kolonija neighborhood stands out on the southeastern side of the subject area, emerged under the direct influence of strengthening the role of the Military Technical Institute in the city and state economy in the 1930s, when new housing facilities for workers were needed. The neighborhood was formed around the main axis - Kosovska Street, around which a network of apartment blocks arranged in a radial system was formed, with a green square as the center and gravity point. It was an avant-garde example of workers' neighborhood for the time it has developed (in the period from 1936-1939), based on the idea of an architect Mihailo Radovanović.



Figure 27. Nova Kolonija neighborhood

#### *Contextual area - "Pirotehnika"*

The extended surrounding area, which is connected to the competition area on its southern side, is defined by the regulation of Stojan Protić Street (this street is national road of second category, no. 183) as one of the most important entry-exit routes, regulation of the southern bypass, and border of FAS complex ("Fiat" company) that ends at the railway bridge on the river Ždraljica.

Surrounding area, beside the border of competition area, includes parts of the "Zastava" production complex (Zastava Weapons, Smithy, etc.), the former "Zastava Vehicle" business complex (under restructuring), located within a large green area, as well as a smaller group of residential facilities along Stojan Protić Street.

Parts of the competition area are tangent by the route of the industrial railway towards the "FAS" complex, as well as the road that connects the entrance to the complex from its southeast side (Gromovića entrance) and the "FAS" car factory from the southwest side of the area.

The southeastern part of this area is within the Spatial Cultural-Historic unit "Military Technical Institute Complex - Pyrotechnics" (zone 2), rich with valuable architectural heritage, and which is envisioned as mixed-use zone in current planning documents, according to established protection measures for the zone.

## **5. CHARACTERISTICS OF AREA IN THE SCOPE OF THE COMPETITION**

The area within the scope of the competition mostly belongs to the Spatial Cultural-Historical Unit "Military-Technical Institute Complex " and partly to the Spatial Cultural-Historical Unit "Milošev

venac", with a number of categorized immovable cultural property (some of which are of great importance), and valorized objects of industrial and architectural heritage.

It has already been mentioned that this area, in addition to its spiritual and symbolic role stemming from its historical significance as the core of the modern state of Serbia, is also a symbol of the beginning of its industrial development, which greatly influenced the overall development and progress of the city during its modern history.

The complex "Military-Technical Institute" (MTI) and the military industry that developed in this area, since the middle of the XIX century has been the carrier of technical-technological, social and demographic development of the city. Today, however, the context of the "MTI" complex is significantly different. It is characterized by stagnation, insecurity, illumination, non-functionality, ecological endangerment (as a consequence of the bombing in 1999, but also long-term technological processes in industry), heterogeneous ownership structure and inadequate use of cultural heritage sites. After the City of Kragujevac bought part of the area and buildings of the former MTI in 2006, part of the MTI finally became available to the general public.

### **5.1. PURPOSE AND FUNCTIONAL CHARACTERISTICS OF AREA**

According to the purpose, the subject area is multi-layered and it represents various functions - culture, religion, education, business, services, industry, housing. The area is characterized by inadequately organized and regulated use of the production complex "Kamioni - Trucks", "Energy" and "Namenski proizvodi – Military industry ", partially arranged ground and green areas, partial traffic and infrastructure connections, closed to the environment, unformed system of internal regulation, significant construction, existence a larger number of protected facilities, the existence of temporary and inadequate facilities that endanger the environment, the passage of important roads and railways, the unresolved ownership structure.

The location is characterized by high attractiveness, authenticity of buildings and wholes and the possibility of a certain volume of construction through the completion of the program. It represents the specificity of the city, and imposes the imperative of protection, improvement, representative arrangement and presentation of space.

#### **PRIMARY AREA (Zone 1)**

The Primary area is part of the complex which is oriented towards the city center and has an exceptional cultural and historical value. It represents the area with the highest concentration of objects categorized as immovable cultural property of great importance, ie objects valorized as objects of great importance.

In the Primary area, there are two subunits that in the current condition do not achieve satisfactory communication, visual and content connections: 1) rounded spatial subunit that belongs to the protected Spatial Cultural-Historical Unit "Milošev venac" with the Old Church and the Assembly and accompanying facilities, communicatively and visually oriented towards the city center and 2) "Knežev Arsenal" - the introductory (most representative) part of the MTI Complex, which is currently the only one publicly available, having in mind the content of the facilities that are in function within the center of gravity, as well as the fact that a significant part of the facilities and spaces are in the state or ownership of the city of Kragujevac.

**1) The ambient subunit "Milošev venac"** occupies an area of 0.59 ha, which includes cultural monuments of great importance - the Church of Holy Spirit with the bell tower and the Old Assembly, as well as other buildings in the function of the main purpose (religion), of which the building of the Parish Home is architecturally and formally insufficiently representative, in relation to the importance of location and ambience.

The public character of this area with a dominant religious purpose is given by its undoubted historical value. The gate of the Old Church is the historical foundation of modern Serbia, its meeting place during



the 19th century, the first Assembly of the new liberated state. First, in front of the church, in the open space, and later in the assembly hall of the Old Assembly, the foundations of the statehood of Obrenovic Serbia were established.

The Old Assembly, as a building belonging to the National Museum in Kragujevac, is in function as a space intended for cultural content.

Access to the complex of the subunit "Milošev venac" is realized from the access square which was formed in front of the Administrative building of the MTI. The entrance to the complex is insufficiently prominent, and the parking space on the square greatly degrades its representativeness and ambient visibility. The railway, which is in direct contact with this area, additionally affects its isolation and difficult access to the buildings in the church complex.

The rich green fund, in addition to the aesthetic, has a protective role in relation to the negative effects of the immediate vicinity of the railway.

Communication with the remaining part of the center of gravity - "Knežev arsenal" is disabled by a high, partly brick, and partly metal fence, as well as inappropriate (auxiliary) facilities in the hinterland of the complex.



Figure 28. Position of the ambient subunit within Zone 1 of the Scope of the Competition; Figure 29. Old Assembly





Figure 30. Entrance part of the Church and Assembly complex; Figure 31. Hinterland of the complex "Milošev venac" according to the "Knezev arsenal";

2) "Knezev Arsenal" is the central point of the SCHU "Military-Technical Institute Complex" and at this moment represents its most attractive part since the far-reaching and comprehensive process of urban renewal and rehabilitation of the entire complex should begin.

Almost the entire space of this subunit of the Primary Area of the Competition was valorized as a area of exceptional monumental values, within which cultural monuments of great importance were declared, as well as valorized objects of exceptional monumental values.



Figure 32. Position of Primary area, zone 1 in the Scope of the Competition;  
Figure 33. MTI Complex (foreground - center of gravity 1)

### Purpose and functional organization of Area

The main purpose of the Area consists of facilities and areas intended for the contents of culture, education and business, as well as existing green areas and free spaces.

Of the buildings belonging to this zone, only a few are in use today - the Museum "Old Gun Foundry" (building no. 4), the Second Technical School, originally the Serbian Royal Military-Crafts School (building no. 52), the administrative building of the Military-Technical Institute (building No. 1, to date has not changed its function of the management of the Institute), as well as the new building "BIC" (facility No. 9 - Business Innovation Center).

Building no. 2 (formerly the apartment of the manager of the Institute, "Zastavino podrumče"), with a ground floor in its hinterland and two inadequate facilities, unsuitable for the location, were, until recently, in the function of business and services (currently not in function).

Building no. 5 (machine shop) is out of order. The open space / plateau between the machine workshop and the museum "Stara livnica - Old Gun Foundry " is periodically used for the seasonal music event "Arsenal Fest", and on several occasions it was used as a space for the film industry.

All other facilities within the primary area have lost their former function and are not in use, partly due to very poor construction condition and / or neglect of facilities as a result of deterioration due to loss of functions and their long-term unresolved property status. Part of the buildings became the property of the city of Kragujevac (building No. 3 – Chaurnica – Small House, building No. 5 - Machine Workshop), but to date they have not been assigned a function appropriate to their importance, when it comes to the value of historical and architectural heritage of the city and beyond.

The center of the zone is dominated by the open green space of the square, in its current state insufficiently arranged and maintained.

Road access to the zone is via the internal road between building no. 1 and building no. 2, which connects the complex with Kosovska Street. Pedestrian access is also provided through pedestrian communication along the river Lepenica, under the railway to the "BIC" building.

### **PROGRAM AREA (zone 2)**

The program area includes the space in the central part of the competition scope and extends to the industrial track for the needs of the working zone, ie to the main access road to the complex on its southern side. On the east side, it leans on the area of the production complex "Zastava Oruzje", and on its east side, towards Kosovska Street, there is the complex of the Mechanical-Technical School. Within this sub-unit are the locations of economic entities from the former Zastava Group (Zastava trucks, Zastava transport, Zastava energy in restructuring, Zastava security and others).



Figure 34. Position of zone 2 in the Scope of the Competition; Figure 35. view of the Production Hall "RAP" (44) - foreground) and the Preseraj building (8) and Car Body and paint shop (7)

### *Character and functional organization of area*

The dominant existing purpose of this area is production and, to a lesser extent, business and administration. The characteristic of the area is that, after the division, some companies have not retained functional and spatial connections, but are located in several locations within this subunit, which causes numerous restrictions and specifics of use of this space (pedestrian and car traffic is performed through plots of other users, so that there are no conditions for independent functioning of economic entities).

In its current state, this space is a closed (publicly inaccessible) industrial complex, with a large number of production facilities (halls) and ancillary facilities in the function of production and business. The



zone has great potential for the future of transformation into a zone of business, public and other complementary contents, exemplary in the significance of the spatial, cultural and historical unit.

In the ambient sense, the character of the zone is determined (except for the presence of individual buildings that represent valuable industrial heritage), its current purpose and is characterized by significant construction, free spaces formed as ancillary content of basic buildings (predominantly manipulative plateaus and internal roads), with very small participation of landscaped spaces and greenery.

With the exception of a smaller space in the eastern part of the zone formed around the Old Energy facility (building No. 14), a Warehouse (facility No. 10) and a Union Building (facility No. 11) which was valorized as an exceptional monumental value, the remaining area of the zone was valorized is as a special monumental value with the concentration of objects of special monumental value and the corresponding open spaces valorized through the ambient value.

Some of the most representative buildings in the zone - the Artillery Workshop (building no. 37), were severely damaged during the 1999 bombing.

### Contact area

The contact area consists of zones mostly outside the scope of SCHU "Military-Technical Institute Complex ", and as they are spatially separated, in order to facilitate the identification of spatial specifics, they are divided into three zones.

**Contact area - Zone 3.1** includes the complex of the Military Technical Institute on its northern and northwestern sides.

**The northern part of contact zone 3.1** includes the Lepenica riverbed between the railway bridge and the road / pedestrian bridge (two-bridge), which is the main communication link of the complex with the city center and the wider environment. This area is also part of SCHU "Milošev venac". Arch bridge no. 1 (next to which the road bridge was built) and the arch bridge no. 2, form a harmonious and unique whole of the space that connects the left and right banks of Lepenica and are categorized as cultural monuments. In the narrow belt between the railway and the riverbed, there is a pedestrian path that connects the mentioned bridges.



Figure 36. Panoramic view of the complex "Military-Technical Institute" and contact zone 3.1 (photo by Slavoljub Radojevic)<sup>11</sup>

The riverbed of the Lepenica river is regulated. The altitude of the minor riverbed is from 171.70 m above sea level on the western, to 168.75 m above sea level on the eastern border of the contact zone. On this stretch, the riverbed is greened with insufficiently arranged and maintained grass areas. The riverbed in the vicinity of the complex is intersected by visible infrastructural lines, which negatively affects the overall aesthetic experience.

**Северозападни део контактне зоне 3.1** чине **The northwestern part of contact zone 3.1** consists of contact blocks between Lepenica and the Kraljevo - Lapovo railway, on the stretch from the railway bridge to the estuary of the river Ždraljica in Lepenica.

The stretch along the riverbed is planted with tall vegetation, on both sides of the riverbed. The blocks along the railway are intended primarily for commercial activities, with a certain share of areas intended for low-density housing. Access to the blocks is from Kneza Mihaila Street, Mire Marinkovića Street and Nenadovićeva Street, with which the complex in question is connected by a bridge over Lepenica.



Figure 37. Panoramic view of the complex "Military-Technical Institute" and the northwestern part of the contact zone 3.1

### Contact area - zone 3.2

This zone of contact area includes the complex on its northeast side along Kosovska Street and the southeast side along Stojana Protića Street.

<sup>11</sup> <https://i.pinimg.com/564x/2c/9f/1a/2c9f1aeb1afd9b63a8f73db235aae1cf.jpg>





Figure 38. Position of the contact zone 3.2. in the competition scope

Part of the contact zone 3.2 is within the SCHU "MTI Complex" (school complex of the Mechanical-Engineering School - building No. 53 Polytechnic School - "HIGH SCHOOL", originally a Boarding School of the Military-Craft school, building No. 54 (new wing of the Polytechnic School) and building No. 55 (gym) with the associated (partially arranged) courtyard space in the hinterland of the buildings.

The remaining space of the contact zone 3.2 is within the protected environment of SCHU "MTI Complex " and consists of:

- on the northeast side, part of the block of mixed residential and business purposes, low densities, which with their fragmented structures and disorder, disrupt the surrounding environment of the protected spatial, cultural and historical ensemble; part of this area is intersected by an industrial railway on its southeastern side; the predominant number of storeys of buildings is P, with the beginning of the trend of block transformation and construction of multi-family residential and business buildings of medium storeys along Kosovska Street;



Figure 39. Kosovska Street in the area of the Mechanical-Engineering School; Figure 40. Constructed structure in Kosovska Street; Figure 41. The route of the industrial railway through a part of the residential zone;

- on the southeast side, the contact zone includes a part of today's communal zone next to the city heating plant, ie the area of the former ash dump, for which the process of its reclamation and remediation has begun (the heating plant has been completely converted to gas as energy). This part of the contact zone includes a smaller group of family residential buildings along Stojana Protića Street, which are located within the SCHU - zone 2 - "Pyrotechnics".



Figure 42. Panoramic view of the complex from the south side of the complex - view of the ash dump - part of zone 3.2 and part of the heating plant - zone 4.2 (close-up)

**Contact area - zone 3.3** includes a smaller area in the southern part of the scope of the competition along the industrial railway and the riverbed of the river Zdraljica. In addition to buildings no. 86 (business premises) and building no. 30 (Building D- "Old Laboratory", originally Yard of the old Military-Craft School, located within SCHU "Military-Technical Institute", the remaining area of contact zone 3.3 is located within the protected environment SCHU and consists of a group of ground floor buildings surrounded by greenery, mostly intended for business or without function, without architectural and environmental value. The area of the intersection of the roads on the south side of the complex that connects connects Stojana Protića Street (from "Gromovića ulaz") with the bridge over the river Zdraljica and further with the neighboring industrial complex (Fiat Cars Serbia - FAS).

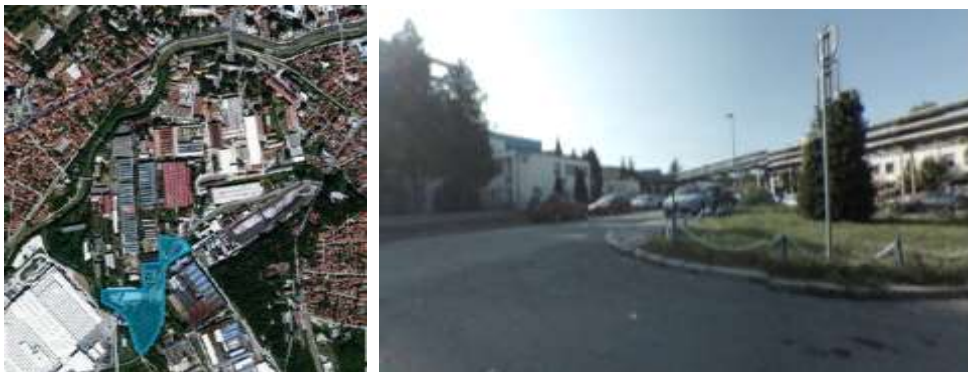


Figure 43. Position of zone 3.3 in the scope of the competition; Picture 2 - access to zone 3.3

### Contextual area

The contextual area includes "closed" and functionally rounded parts of the complex where no interventions are planned, but their consideration is necessary in the context of conceiving the future spatial and functional development of the entire MTI complex.

**Zone 4.1** is within the boundaries of SCHU MTI and includes the area today predominantly intended for industrial production - "Zastava Oruzje". Zone 4.1 spatially and visually corresponds to the adjacent program zone and forms an inseparable part of the overall ambience of the complex. The densely built-up area of the zone consists of production halls of large dimensions, with open spaces and internal roads that connect the functional parts in the correct layout.

The central part of the zone has been valorized as an area of exceptional monumental value, with objects of special monumental value that testify to the conditions of historical and socio-economic development of the area in certain periods. The remaining part of the area of the zone has been valorized as a special monumental value. In the ambient sense, the richly green area (Ž) stands out



around the business facilities in the part of the zone that includes the estuary of the river Ždraljica and Lepenica.

Zone 4.1 is connected to the neighboring contact zone 3.1 by a bridge over the river Lepenica.

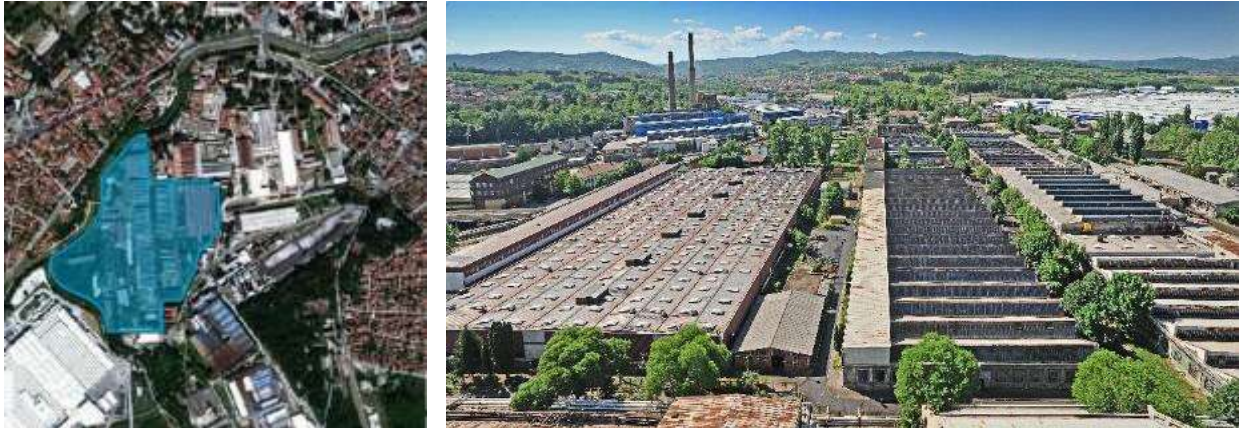


Figure 45. Position of zone 4.1 in the scope of the competition;

Figure 46. Zastava Oruzje factory halls (building no. 35 on the left, buildings 20 and 21 on the middle and right)

**Zone 4.2.** represents the second separate segment of the contextual area and includes the building and the associated space of the city heating plant, the relocation of which is not planned in the following period. It is formally integrated into the ambience of the complex. By completely switching to the use of gas as an energy, the facility, in environmental terms, will not be a constraint in the development of planned facilities in the complex.



Figure 47. Position of zone 4.2 in the tender scope;

Figure 48. access street to the southern part of the complex (left - ashtray and heating plant)

## 5.2. AMBIENTAL CHARACTERISTICS OF AREA

The Complex has an exceptional ambient and artistic value. The complex physical and functional structure of the complex represents a typical "industrial landscape", with an abundance of micro-ambiences where "industrial archeology" built according to different models (German, French and Belgian), modern production halls of utilitarian character, squares, courtyards, plateaus, manipulative spaces. streets ... The picturesqueness of the ambience is complemented by the color of red brick, wooden doxa, broken (shed) roofs ... High chimneys with surrounding buildings build a harmonious whole, and at the same time are dominant accent motifs, rappers and symbols of the urban landscape of Kragujevac.



Figure 49. Old power plant with chimney and tower for technological water (programme zone)

Figure 50. „Knežev arsenal“

#### Characteristic ambiances of **Primary Area**:

- the space in front of the Administrative Building was formed as a small square with the monument "Livac", which forms a harmonious architectural and urban whole (A) with the building;
- green and partially arranged open space in the hinterland of the Administrative building (square behind the administrative building (B));
- central open and green space (square) with accented motifs (fountains) (V);
- yard formed in the hinterland of the business facility (former building of the manager of the institute) (G),
- open green space of the yard in front of the building of the Second Technical School (D);
- certainly the most attractive ambience of the complex is a large open space / plateau (Đ) located between the museum "Old foundry" (buildin no. 4) and the machine shop (building no. 5) with a chimney (I) as an accent motif; In its current state, the open space / plateau is predominantly used for parking employees within the Institute, but also as a space for holding the already traditional music event "Arsenal Fest". It has been used several times as a scenography for the film industry.



Figure 51. Fountain within the square V (foreground) and the Secondary Technical School with a courtyard

Figure 52. Part of Square V in front of the Čaurnica (building no.5)



On the outside of the complex facing the city, the complex has a representative character with the facilities of the Administrative Building (1) and the Apartment of the director of the institution (2), which harmonized with the volumes of the school and former boarding school along Kosovska Street, build a harmonious ambient whole.



Figure 53. Panorama of the complex (foreground - square in front of the administrative building with the monument "Livac")

**The program (and contextual)** part of the scope is still predominantly purpose of business, and in accordance with that, the existing organization and arrangement of the open space has primarily a functional role. The ambient character of these zones is built by production halls of impressive dimensions, warehouses, ancillary facilities, network of streets, manipulative spaces, passages and accesses, infrastructure facilities and systems of visible infrastructure lines "hanging in space" hung on shelves, and the authenticity of the space is further enhanced by valuable examples of architectural (industrial) heritage that testify to the long historical continuity of development and the importance of this area (Old Energy (14) with Chimney (K), Trade Union Building (11), Preseraj (8), Old Artillery Workshop (37), Bodywork and Painting (7) etc.).



Figure 54 u 55. Program zone ambiances

### 5.3. BUILT STRUCTURE

#### Facilities within SCHU "Milošev venac" (Primary Area)

The scope of the competition – EXISTING FACILITIES OF THE PRIMARY AREA IN THE SCOPE OF SCHU "MILOŠEV VENAC"							
Zone designation	Object designation	Object name	Area under the building (m2)	storeys	CGA (m2)	Note	
PRIMARY AREA (ZONE 1)	Milošev Venac	I	The Old Church	246,05		246,05	Cultural monument of great importance, special monumental value, I level of intervention
		II	Bell Tower of the Old Church	55,35		55,35	
		III	Old Assembly Building	354,08	GF	354,08	Ambient value, II level of intervention
		IV	Parish home	220,45	GF	220,45	
		V	Auxiliary object	61,70	GF	61,70	No value, IV level of intervention, removed
		VI	Burner and Candle Shop	75,29		75,29	No monumental values, II level of intervention, possible replacement of the fund
		VII	Fountain and Refrigerator				No monumental values, II level of intervention, possible replacement of the fund
		<b>Zone 1 – Milošev Venac</b>	<b>1.012,92</b>		<b>1.012,92</b>		

#### Facilities within SCHU "Complex of the Military Technical-Institute " ( Zone 1 – "MTI")

##### Primary Area ( Zone 1)

The scope of the competition – EXISTING FACILITIES OF THE PRIMARY AREA IN THE SCOPE OF SCHU "MTI"							
Zone designation	Object designation	Object name	Area under the building (m2)	storeys	CGA (m2)	Note	
PRIMARY AREA (ZONE 1)	Military Technical-Institute (MTI)	1	Administrative building	1647,38 +252,38 =1899,76	B + GF + 1	3799,52	The original size is of exceptional monumental value, I level of intervention; The annex is without mention values IV level of intervention, removed
		2	Business building, originally the apartment of the Manager of the Institute	393,63	B + GF + 1	787,26	Exceptional monumental value, I level of intervention
		61	Bakery, originally a Porter's Lodge	49,20	GF	49,20	No monumental values, IV level of intervention, removed
		62	Business building	500,00	GF	500,00	
		63	Canopy	292,75	GF	292,75	No monumental values, II level of intervention, possible replacement of the fund
		64	Restaurant, originally a Summer Stage	170,15	GF	170,15	
		52	Second Technical School, originally the Serbian Royal Military-Crafts School	699,41	B + GF + 1	1398,82	Special monument value, And the level of intervention
		95	Energy	123,03	GF	123,03	IV level of intervention, removed
		96	Wastewater	135,38		135,38	IV level of intervention, removed
		65	Gas Station	25,92	GF	25,92	IV level of intervention, removed
		3	Building A, originally a Small House	382,00	GF+1	701,83	Cultural monument of great importance, And the level of intervention
4	Museum "Stara livnica –	1979,00	GF	1979,00			

		Old Gun Foundry"				
	5	Building B, formerly a mechanical / mechanical workshop	5849,35 +459,83	GF	5849,35 +459,83	Exceptional monumental value for the basic size, And the level of intervention. The extended part is without monumental values, IV level of intervention, removed
	59	Building I, originally Substation	20,86		20,86	IV level of intervention, removed
	60	Object J	228,00	GF	228,00	II level of intervention, possible replacement of the fund
	66	-	-	-	-	The building was demolished
	67	Porter	49,72	GF	49,72	IV level of intervention, removed
	9	"BIC" ( Business innovation center )	563,25	B + GF + 1	1126,50	No monumental values, II level of intervention, possible replacement of the fund.
	68	Ancillary facility	-	-	-	The building was demolished
	69	Ancillary facility	-	-	-	The building was demolished
	70	Ancillary facility	-	-	-	The building was demolished
	71	Ancillary facility	-	-	-	The building was demolished
	72	Ancillary facility	139,04	GF	139,04	No monumental values, IV level of intervention, removed
	73	Ancillary facility	25,53	GF	25,53	IV level of intervention, removed
		<b>ZONE 1 – MTI</b>	<b>13.985.81</b>		<b>17.852,69</b>	
		<b>TOTAL ZONE 1</b>	<b>14.998,73</b>		<b>18.865,61</b>	

### Program Area (zone 2)

The scope of the competition – EXISTING FACILITIES OF THE PROGRAM AREA ( ZONE 2 ) IN THE SCOPE OF SCHU "MTI"						
Zone designation	Object designation	Object name	Area under the building (m2)	storeys	CGA (m2)	Note
Program Area (zone 2)	10	Warehouse maintenance	715,55	GF	715,55	Ambient value, II level of intervention
	11	Trade Union Building	179,05	GF	179,05	Special monument value, And the level of intervention
	14	Building B-Power Plant-Old Energy	1714,21	B+GF+1	3428,42	Exceptional value, And the level of intervention
	K	Chimney of Old Energy	34,33		34,33	Ambient value, I level of intervention
	15	Technical Water Tower	49,72		49,72	Ambient value, II level of intervention
	16	Building G, originally a Blacksmith's Workshop	40,13	GF	40,13	Ambient value, I level of intervention
	94	Ancillary facility	350,38	GF	350,38	No value, IV level of intervention, removed
	38	Production hall, technical processing and installation	7778,58	GF ANNEX GF+1	8707,14	IV level of intervention, fund replacement
	37	Production hall, Old Artillery Workshop	7888,80	GF, ANNEX GF+1	8401,46	Part of the building was demolished in 1999. Preserved part of about 3560m2. Special monument value, II level of intervention
	36	Building E, formerly a Laboratory	852,70	B+GF+1	1705,40	No value, II level of intervention, possible replacement of the fund
	6	Car Body-subassemblies, originally a workshop for making shrapnel	1838,10	GF -GF+1	2268,10	Ambient value, II level of intervention
	7	Car Body and paint shop	8436,76	GF-GF+1	11568,26	(7) Ambient value,



	7a					II level of intervention (7a) No value, IV level of intervention, possible replacement of the fund
	J	Chimney				
	8	Preseraj	3146,35	GF	3143,64	Monumental value, And the level of intervention
	49	Dining room	522,10	GF+1	1044,20	No value, IV level of intervention, removed
	50	Substation	165,78	GF	165,78	
	48	Business building- Zastava security	329,28	GF+1	658,56	Monumental value, And the level of intervention
	47	Production Hall	5848,00	GF	5848,00	No value, IV level of intervention, fund replacement
	46	Warehouse	524,54	GF+1	1049,10	Ambient value, III level of intervention
	45	Production hall and Business premises "RAP"	957,53	GF - GF+1	1372,95	No value, IV level of intervention, fund replacement
	44	Production hall "RAP"	2052,54	GF	2052,54	Споменичка вредност, I ниво интервенције
	99	Warehouse	604,40	GF	604,40	No value, IV level of intervention, removed
	100	Warehouse	707,49	GF	707,49	No value, IV level of intervention, removed
	39	Production hall- mechanical processing	7975,58	GF+1 PART GF+3	9583,94	No value, IV level of intervention, fund replacement
	40	Expedition ramp	1065,65	GF	1065,65	No value, IV level of intervention, fund replacement
	41	Warehouse	191,60	GF	191,60	Ambient value, II level of intervention
	42	Central Tool Warehouse, originally a Stable	362,14	FG+GALLER Y	362,14	Special monument value, And the level of intervention
	43	Warehouse of paints and varnishes	1298,87	B+GF	1298,87	monumental value, II level of intervention
	104	Ancillary facility	225,86	GF	225,86	No value, IV level of intervention, removed
	105 106 107	Railway Facilities / not in use	663,16	GF	663,16	No value, IV level of intervention, removed
	108	Forklift Workshop	259,46	GF	259,46	No value, IV level of intervention, removed
	34	OBJECT Z	407,68	GF+1	815, 36	Ambient value, II level of intervention possible replacement of the fund
	33	OBJECT ZZ	292,61	GF+1 PART GF	463,01	Ambient value, II level of intervention possible replacement of the fund
	32	Pump overhaul workshop	467,96	GF	467,96	No value, IV level of intervention, fund replacement
	90	Ancillary facility	297,78	GF	297,78	No value, IV level of intervention, removed
	31	Fire station	767,35	GF -GF+2	1426,19	Ambient value, II level of intervention
	51	Business Building	1504,23	GF+GF+1	2447,44	No value, IV level of intervention, fund replacement
	97	Ancillary facility	832,22	GF	832,22	No value,

							IV level of intervention, removed
		103	Assembly of Vans	225,72	GF	225,72	No value, IV level of intervention, removed
		102	Vehicle Testing	46,47	GF	46,47	No value, IV level of intervention, removed
		101	Adjustage	1545,70	GF	1545,70	No value,IV level of intervention, removed
		56	School Workshop	1804,62	GF	1804,62	No value,IV level of intervention, fund replacement
			<b>TOTAL ZONE 2</b>	<b>64948.98</b>		<b>78117.75</b>	

### **Contact Area (Parts of zones 3.2 и 3.3)**

<b>The scope of the competition – EXISTING FACILITIES OF THE CONTACT AREA (PARTS OF ZONES 3.2 AND 3.3 ) IN THE SCOPE OF SCHU "MTI"</b>							
Zone designation	Object designation	Object name	Area under the building (m2)	storeys	CGA (m2)	Note	
Parts of zones 3.2 и 3.3 (SCHU MTI)	зона 3.2 (MTI)	53	Polytechnic School - "HIGH SCHOOL", originally a Boarding School of the Military-Craft school	2319,64	B+GF+1	4639,28	Special monument value, I level of intervention
		54	New wing of the Polytechnic School	1600,29	GF+2	4800,87	No monumental values, II level of intervention, possible replacement of the fund
		55	GYM	1151,97	GF	1151,97	No monumental values, II level of intervention, possible replacement of the fund
		<b>TOTAL ZONE 3.2</b>	<b>5071,90</b>		<b>10592,12</b>		
	зона 3.3	30	Building D- "Old Laboratory", originally an Artillery non-commissioned officer school	243,36	GF+1	486,72	Exceptional monumental value, And the level of intervention
	<b>TOTAL ZONE 3.3</b>	<b>243,36</b>		<b>486,72</b>			
	<b>TOTAL CONTACT ZONE IN THE SCOPE " MTI "</b>	<b>5315,26</b>		<b>11078,84</b>			

### **Contextual area (Zone 4.1)**

<b>The scope of the competition – EXISTING FACILITIES OF THE CONTEXTUAL AREA (ZONE 4.1 ) IN THE SCOPE OF SCHU "MTI"</b>							
Zone designation	Object designation	Object name	Area under the building (m2)	storeys	CGA (m2)	Note	
KONTEXTUAL AREA ( ZONE 4 )	4.1	12	Warehouse	516,24	GF	516,24	No value, IV level of intervention, fund replacement
		13	Production hall	3922,85	GF-GF+2	4857,25	No value, IV level of intervention, fund replacement
		74	Maintenance	77,83	GF	77,83	No value, IV level of intervention, fund replacement
		75 76	Recycled water pool with Ancillary Facility				No value, IV level of intervention, removed
		17	Wastewater	246,88	GF-GF+1	246,88	No value, IV level of intervention, fund replacement
		18	Service Center, originally	557,68	GF	557,68	Exceptional monumental value,

		a Kindergarten				And the level of intervention
	19	Palilula Gate				Ambient value, Level III intervention
	20	Production hall-New Artillery workshop	16330,10	GF-GF+1		Special monument value, II level of intervention
	20a	Production Hall / demolished part	3522,86			Zone of possible new construction
	21	Production hall-Artillery workshop, former Loophole	16970,77	GF+1-GF+2		Special monument value, II level of intervention
	22	Annex of the Shooting range	557,00	GF+1		No value, II level of intervention, possible fund replacement
	23	Sector A and B with tunnel-New shooting range	6619,96	GF-GF+1		No value, II level of intervention, fund replacement possible
	24	Building of technological development	1251,70	B+GF1		Ambient value, Level II intervention
	25	Prototype workshop	681,35	GF		No value, II level of intervention, possible fund replacement
	26	Construction	474,90	GF+1		No value, II level of intervention, possible fund replacement
	27	"IRC"	817,67	GF+1		No value, II level of intervention, fund replacement
	28	Production hall-Sector C with tunnel	818,55	GF+1		No value, IV level of intervention, fund replacement
	77	Oil Separator				No value, IV level of intervention, removed
	78	Assembly and canning	1766,29	GF		No value, IV level of intervention, removed
	79-82	Auxiliary facilities and Containers		GF		No value, IV level of intervention, removed
	83	Warehouse Parts	434,79	GF		No value, IV level of intervention, removed
	84	R Warehouse	1352,31	GF		No value, IV level of intervention, removed
	85	Production hall-sector C	914,89	GF		No value, IV level of intervention, removed
	86	Business Premises	555,38	GF+1		No value, IV level of intervention, removed
	29	"Kajin magacin" - Production hall	1059,71	GF		Monumental value, II level of intervention
		<b>TOTAL ZONE 4.1</b>	<b>59449,71</b>			

NAME OF ZONE			Area under the building (m2)	CGA (m2)
<b>EXISTING FACILITIES IN THE SCHU "MILOŠEV VENAC"</b>				
PRIMARY AREA	TOTAL		1012,92	1012,92
<b>EXISTING FACILITIES IN THE SCHU "KOMPLEX MTI"</b>				
PRIMARY (ZONE 1)	TOTAL		13985,81	17852,69
PROGRAM (ZONE 2)	TOTAL		64948,98	78117,75
CONTACT ZONE	3.2	TOTAL	5315,26	11078,84
	3.3			
CONTEXTUAL	4.1	TOTAL	59449,71	
		TOTAL MTI	143699,76	

**Constructed structure outside the scope of SCHU "MTI Complex"**



The remaining built structure in the scope of the Competition refers to the parts of the contact and contextual area outside the SCHU "MTI Complex".

**Zone 3.1**

- Family housing and business facilities along the railway (northwestern part of the scope), storeys GF - GF + 1

**Zone 3.2**

- Mixed residential and business block, storeys GF to GF + 4 along Kosovska and Stojana Protića streets (within the boundaries of the protected area SCHU MTI)

**Zone 3.3**

- Business facilities, GF, no value (within the boundaries of the protected environment SCHU MTI)

**Zone 4.2 – City heating plant (within the boundaries of the protected environment SCHU MTI)**

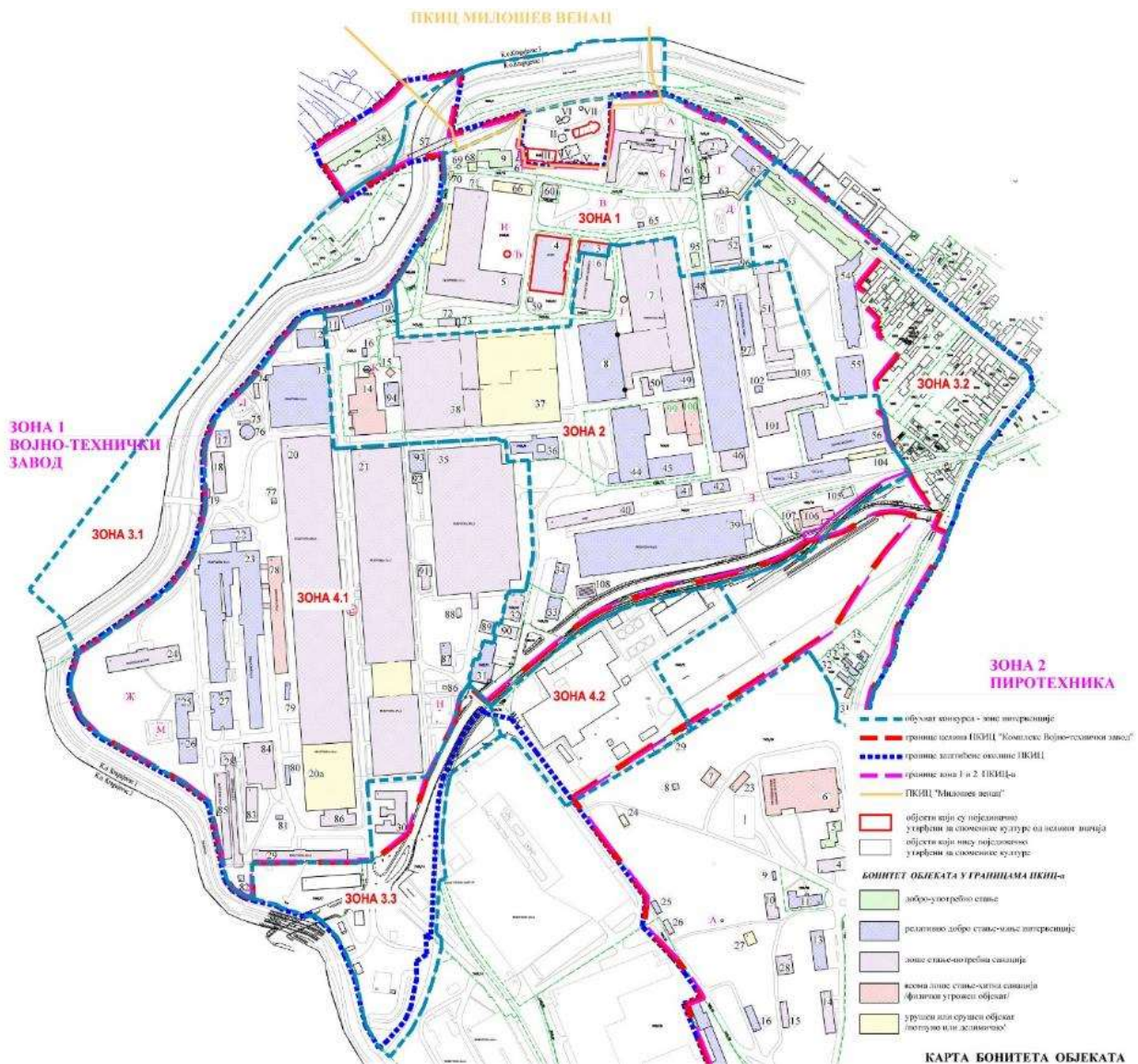


Figure 56. Map of the creditworthiness of the facilities (From the Decision on determining the PKIV "Military Technical Institute Complex")

**Property structure of buildings and land within the scope of SCHU "MTI COMPLEX" and SCHU "Milošev venac"**

Within the scope of SCHU "Military Technical Institute" - zone 1 and the part belonging to SCHU "Milošev venac", there is a complicated ownership structure over buildings and land, which has a negative impact on the existing use of buildings and land, so it will be of great influence on the selection of programs and the implementation of urban renewal of the complex.

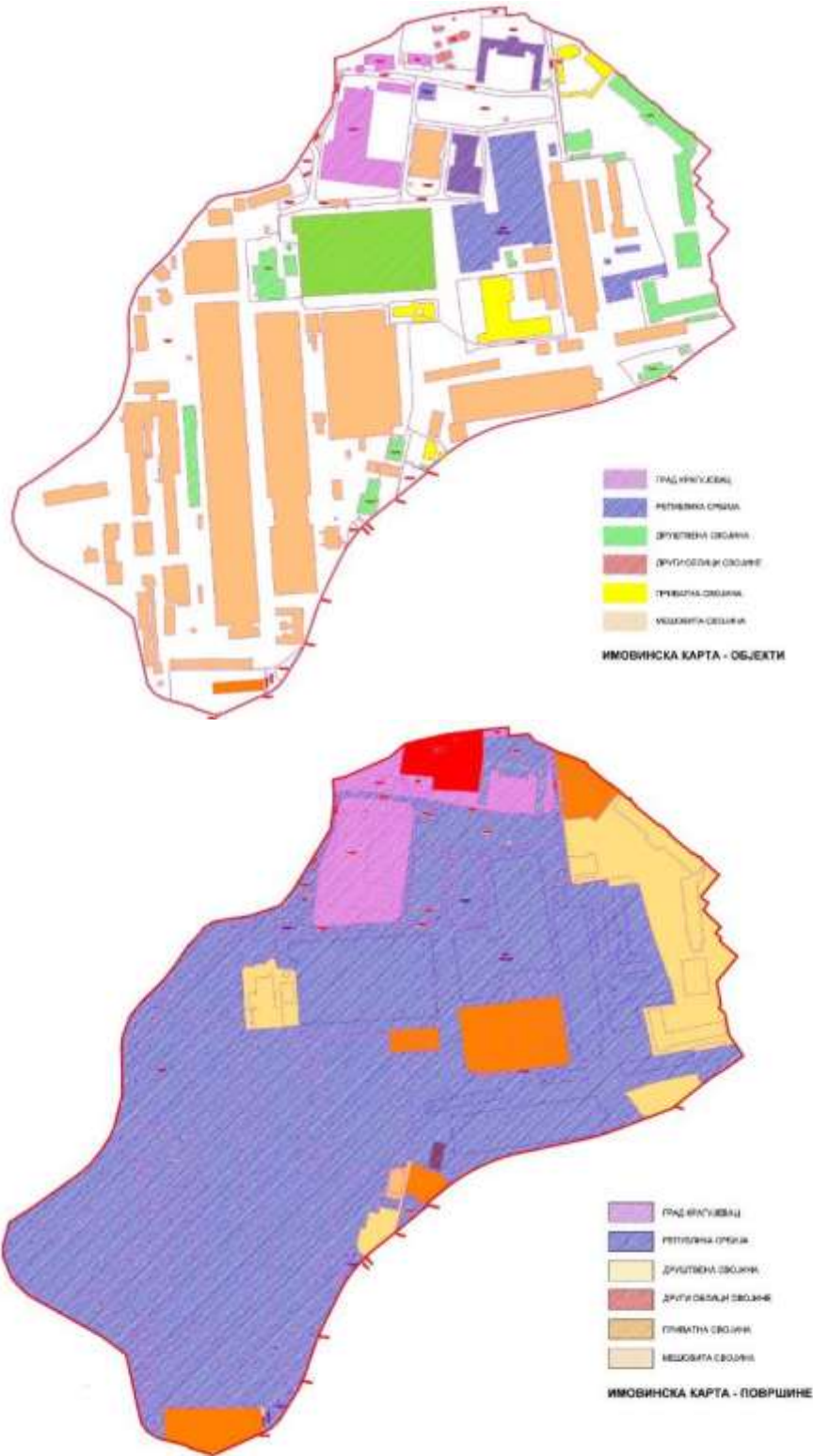


Figure 57. Property map for facilities and areas within SCHU "MTI" and works of SCHU "Milošev venac"

## 5.4. CULTURAL AND HISTORICAL HERITAGE

The competition area consists of two spatial cultural-historic units – SCHUs:

- 1) Military-Technical Institute Complex (SCHU “MTI Complex” – Zone 1) with an urban segment of protected environment as an immovable cultural property of an exceptional importance; and
- 2) the zone of the Old Church and the Old City Assembly, immovable cultural property of a great importance.

### Overview of architectural heritage in the competition area

#### 1. Immovable cultural property of exceptional importance

##### Spatial Cultural-historic Unit (SCHU) the Urban complex of Military-Technical Institute

- Zone 1 – Military-Technical Institute
- Urban segment of the protected environment of the SCHU “Urban complex of Military-Technical Institute”

#### 2. Immovable cultural property of great importance

##### Cultural monuments

- Old-foundry church in Kragujevac with the former building of the city assembly (Old Assembly Building)
- Old foundry with a tall chimney and a bullet-casing plant (cannon foundry, the foundry building and the blacksmith shop)

#### 3. Археолошки Archaeological sites (located within Zone 1 – SCHU MTI Complex)

- Tall Chimney
- Bullet-Casing plant
- Second Technical School

### Criteria for valorization of buildings and spaces<sup>12</sup>

#### Valorization of space

- **Exceptional monumental value** - complexes with concentrated objects of exceptional or special value and open spaces belonging to them, valorized through ambient value;
- **Special monument value** - complexes with concentrated objects of special and monument value and their associated open spaces, valorized through the ambient value

#### Valorization of buildings

- **Exceptional monumental value:**
  - objects of special importance for the social, historical and cultural development of the people in the national history;
  - objects that testify to crucial historical events and personalities and their activities in national history;
  - objects that represent unique (rare) examples of creativity of their time and are authentic;
  - objects that have a great impact on the development of society, culture, technology and science;
  - objects that have exceptional artistic or aesthetic value.

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<sup>12</sup> Завод за заштиту споменика културе Крагујевац





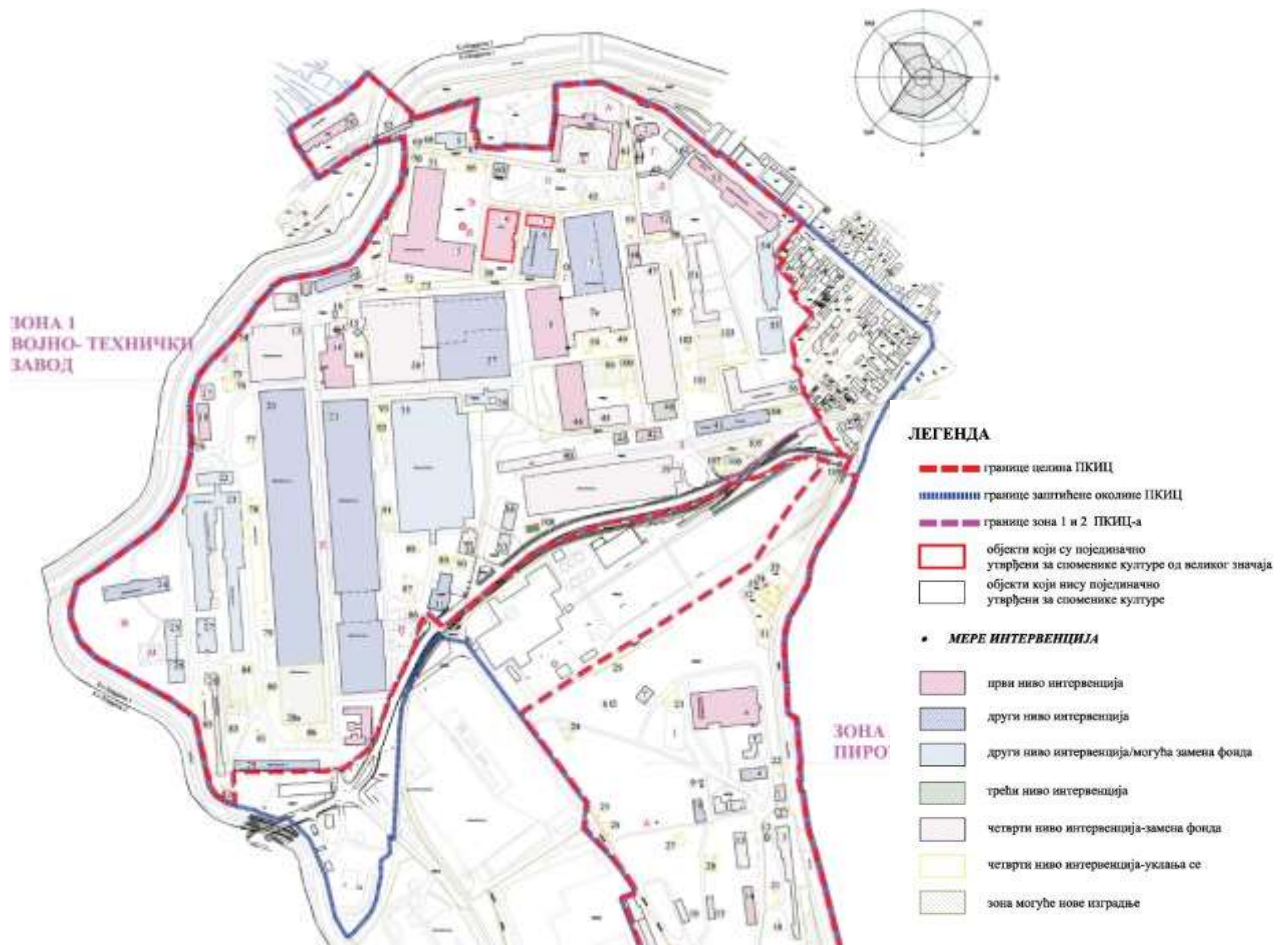


Figure 59. Map of intervention measures (according to the Decision on determining the SCHU "MTI Complex")

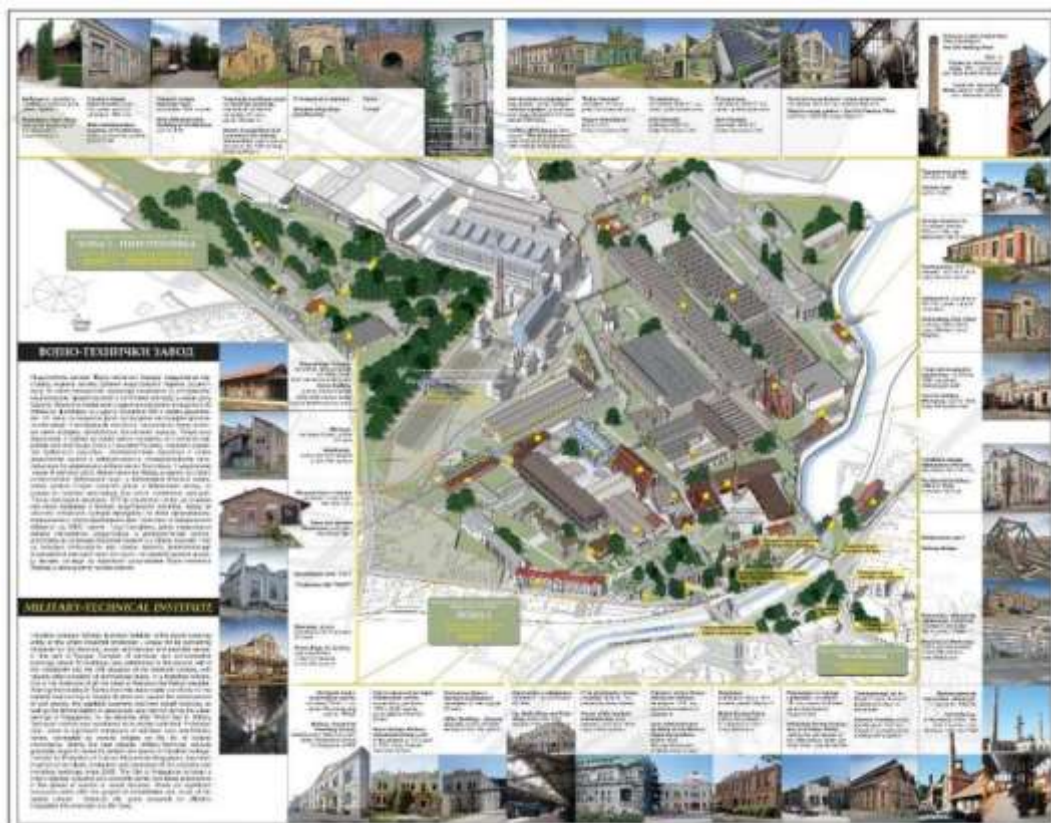


Figure 60. Overview of architectural heritage within SCHU "MTI Complex"



## Individual architectural achievements with special monumental values in the area PKIC „Military Technical Institute“ – Zone 1

### Old Gun Foundry (Museum „Stara Livnica“) – cultural monument of great importance (4)<sup>13</sup>

The Old Gun Foundry building is the oldest building inside the complex of the Military Technical Institute, built in 1882, designed by the engineer Todor Seleskovic. It is symmetrical, essentially rectangular building with the flat frontal facades and an avant-corps which adorns the eastern main facade. Combination of wooden elements, brick, concrete and iron on the facades represent a successful composition. The interior is defined by the form of the hall with high central nave, which receives daylight through skylights. The eastern, "main" façade with wooden staircase and two storey high vertical sides upon which two chimneys rely is visually the most impressive part of the building. However, in the early twentieth century, it suffered numerous changes, and its avant-corps to a large extent lost its dominance due to the construction of side annexes.

After the relocation of the manufacturing processes in 1968, the building was converted in the museum which displays the industrial heritage of the factory. Today this museum is called "The Old Gun Foundry".



Figure 60. u 61. Museum „The Gun Foundry“

### Tall Chimney – cultural monument of great importance (И)

<sup>13</sup> The symbols in the brackets are the same as those on the maps: map of validation of the buildings, map of criteria and values and map of protection measures



The Tall Chimney of the old heating plant in the vicinity of the Gun Foundry building, with which it is also physically connected represents a remarkable building. The most credible testimony of the period of its construction is the text engraved on a stone plinth panel which reads: “Built under the reign of King Milan 188 (2-9)”. It also brought the technique of brickwork, which completely respected visual uniformity and continuity of the total price. The chimney is constructed on a high plinth made of hexagonal rougher hewn stone, from which it rises gradually tapering towards the tip. It ends with somewhat wider” ring “drawn from the bearing wall of terraced brick set. Stone footings which translate a square plinth into hexagonal base of the chimney stacks further add to the stability of the structure.



Figure 62. Old Tall Chimney

### **Old Bullet Casing Plant (Ковачница) – Building A; cultural monument of great importance (3)**

The building for production of the bullets was built in 1909–1911. according to the construction documentation of the French engineers. The immediate vicinity of the Foundry building defined the shape, decorative elements on the facades and the red-brick ornaments, as well as imposed high standards for the design of the future Bullet Casing Plant. Radially composed openings, pilasters, and polyfunctional toothed rims which simultaneously perform horizontal partitioning and define the boundary of a bearing wall (cornice) are made from brick. Successful finale of the vertical construction is accomplished by a low wall above the cornice of a classical façade (attic), i.e. above the main entrance at the front of the building. Partly accentuated plastered joints in conjunction with red bricks give an air of liveliness.



Figure 63. Old Bullet Casing Plant

### Machine/mechanical shop – Object B (5)

Machine shop was built in phases during the period from the end of 19<sup>th</sup> century until the first years after the First World War. According to the records and plans of Felix Kanitz from 1897, this was the plant for production of rifles and shells and was built according to the designs of Todor Selesković and a mechanical engineer Mirosavljević. It is entirely built of brick, which was also used for the modest decoration of the façade, and in some places, combined with stone hewn blocks which were used for the construction of plinths. In this way, the materialization and visual consistency with these objects of exceptional value was achieved. Decorative expression is reduced to the outlets on the brick facades in the form of pilaster strips and toothed roof cornice, which follows the line of saw tooth roofs. The main frontal facade facing the spacious square is the most impressive in the stylistic terms.



Figure 64., 65. u 66. Mechanical/machine shop

### Main Administrative Building (1)

The monumental administrative building was built in 1926 with the eclectic expression of the Paris school - "Ecole des Beaux Arts". Unfortunately, the name of an architect is not known. The form of the building is shaped as the Cyrillic letter "П" with a particularly prominent main facade. Plasticity, primarily emphasized by the central avant-corps, is gradually reduced as one moves towards the ends of the facade, while it is almost entirely omitted on the yard facade. The area in front of the building is designed as an interesting little square with whom the building forms a harmonious architectural and urban unit.





*Figure 67. Administrative Building*

### **House of the Director of the Military Technical Institute (2)**

Next to the Administrative Building another representative building was built in 1928–1929. – House of the Director of the Military Technical Institute, who had to live here due to his important function and for practical reasons. Polygonal building built above the basement area, is stylistically very close to the neighboring Main administration building. Eclectic style is supported by the neoclassical elements, and residential use of space determined the choice of architectural elements, the degree of pretreatment, as well as positioning of pronounced plastic. The courtyard facade according to its stylistic treatment suggests that this part of the building is the residential part. Modern interior provided comfortable living, which was crowned by installing water systems in the attic of the building.



*Figure 68. u 69. Street and courtyard facades of the building with the house for the Director of the Military Technical Institute*

### **Serbian Royal Military Craft School (The Second Technical School of Kragujevac) (52)**

The existing school building that still stand today was built in two phases in 1913 and in 1922. In the first phase of construction in 1913 a single storey building from brick was constructed. The building is positioned in the space as a free-standing building with dominant lateral projections drawn from finely designed window frames, plinth, roof beams and avant-corps. After World War I, in the period of great reconstruction of the factory and growing demand for skilled labor, the school had to respond by increasing its capacities, which resulted in the construction of a superstructure – an additional floor. In the new part of the building, the basic idea of the previous façade was followed this time with a more protruding lateral projection. They, due to a different stylistic orientation, end with smaller attics in the form of tympanum. The purpose of the building still remains the same (today, The Second Technical School).





Figure70. Serbian Royal Military Craft School

### **Dormitory of the Craft School (Politechnical School) (53)**

The building is located on the verge of the factory complex in the vicinity of the aforementioned buildings of the exceptional value and directly in front of the military craft school. It was built in 1925/1927. The luxurious decorative finish of the avant-corps on the main street façade is particularly impressive. Four massive pillars, that are as high as the building itself, are particularly dominant and are designed as Corinthian capitals. The avant-corps ends with the attic in the tympanum shape adorned with bas-relief ornaments. The purpose of the building is now partially changed because it is no longer dormitory but a technical school.



Figure 71. The building of ex-Dormitory of the Craft School

### **Artillery Workshop (Production Hall) (21)**

Artillery workshop was built in the style of the most representative buildings of the Institute in 1926 on the site of the former bronze cannon foundry. The year of construction is written on the smaller attic of the southern risalit, and the contractor was the company “Delo” run by the engineers A. Jurišić and Č. Jančić. This workshop thus became one of the first major workshops built after the First World War. Spacious hall rests on a square base and a high plinth made of irregularly cuted stone. Its architecture is very impressive with two lateral risalits which emphasize its appearance. In this case, the risalites were not made by slight protrusion from the façade plane, but with the elaboration of the main facade on two levels, terminating in rectangular attics of unequal heights.



Figure 72. u 73. Artillery Workshop

### Old Heating Plant – Building C (14)

The electric power plant (the “Old Heating Plant”) and the Tall Chimney were constructed by Franjo Varšek from Ljubljana. The complex structure was erected upon a high plinth, while the building itself was visually divided in two halves. Somewhat purist monotony of the facades is interrupted by massive imperial staircase which deepens the impression of stability. The upper part of the main façade is designed as a uniform unit with a dynamic grid of windowpanes, which follow the pyramidal shape of the high façade. At the top of the triangular area, above the glassed area, there is a “blind” rosette, which is actually the only decoration. The rosette was entitled “Glory Medallion” and contained the portrait of the King Aleksandar Karadjordjević; today the rosette is covered with sheet metal.



Figure 74 u 75. The central part of the front façade of Old Heating Plant and part of the interior

### Kindergarten (Service center) (18)

The kindergarten was built in 1925/1928. The purpose of the building determined its positioning next to one of the factory gates used by the workers called “Palilulski ulaz”(engl. Palilule gate). The building has an elongated rectangular base, with low plinth made of irregularly cut stones that “carries” the whole construction. The building is built of brick masonry. Longitudinal facades contain rhythmically placed windowpanes, which are vertically segmented by brick (alluding to the internal division of space), which in its simplicity with a hipped roof complete this single-storey building. Frontal facades with “main entrances” were given the greatest attention with “main entrance”, flanked by coupled columns



leaning at a high plinth, with simple capitals that carry more elaborate square attic, which is “facilitated” in the middle with a round hole.



*Figure 76. The building of ex kindergarden*

### **Old Ambulatory Care Building (Union Building) (11)**

The building of Ambulatory care was built at the same time as the kindergarden in 1927/1928, but much smaller. These buildings are fully harmonized in architectural terms. Its basis is rectangular in shape. It was built upon a low plinth made of irregularly cut stone. The building is built of brick which makes beautiful contrast with plastered lintels, window frames and portals. Rhythmically set large windowpanes composite with other segments enhance symmetrical visual impression of the building. The building changed its purpose in the past, however it served as an ambulatory care clinic for the longest time.



*Figure 77. Old Ambulatory Care Building*

### **Artillery NCO School (Laboratory) – Building D (30)**

The most representative objects were constructed on the verge of the complex; thus, they were also woven into the city architecture and the urban population had a chance to enjoy in their beauty. It was built between 1897 and 1901 as a “T” shaped two-storey building with a longer side wing. Special attention given to the upper part of the building is crowned by finely crafted attic, set on wide parapet with blind colonnade and rim pedestals bearing stone cannonballs. The upper zone is more ornamented, especially by construction of semicircular lintels with the coat of arms in relief framed by a



curtain in the middle of each arch. The ground floor is less decorated, its façade was “broken” with simple windows and horizontal cannelures, carved into the plaster, which reinforce the impression of stability. The middle part of the facade, somewhat indented is also treated differently by zones.

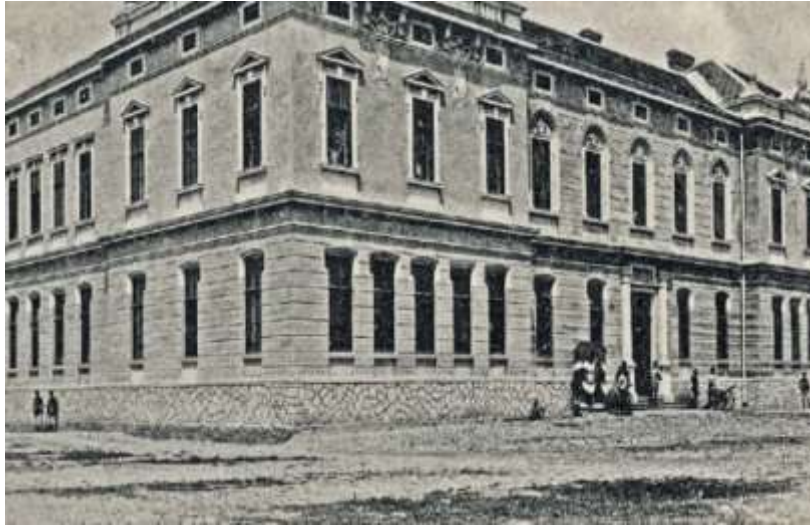


Figure 78. Artillery NCO School

#### **Zastava Security (Office Building) (48)**

There are no precise data on the time of the building construction as well as its blueprints. It must have been built in the 1930's. It is a symmetric building with a ground floor and the first floor which was constructed over a rectangular base of strict proportions. Accentuation of its horizontality is achieved by cordon cornices between the floors, and partly broken shallow vertical pilasters executed in plaster. The window openings on the ground floor and the first floor are arranged in a regular modular set.



Figure 79. Zastava Security

#### **Ammunition Workshops and Rifle Workshops – IV and V sections (Production Halls) (20, 21)**

Rifle workshops (called V Section) and ammunition workshop (called IV Section) were built in 1926/27, according to the construction plans of Belgian military engineers. This had an impact on their architectural concept based on a Belgian project principles and striking saw-tooth roofs and represented a pioneering approach to construction, at the time unknown to this region. It is in fact conceptually unified whole of seven segmented departments of different floor area sizes, but absolutely identical in style and materialization.



*Figure 80. Ammunition Workshops and Rifle Workshops*

### **Car Body Shop – workshop for production of shrapnel shells (Locksmith workshop) (6)**

The central body of the building, most likely dates back to the time of expanded production of rifle and cannon ammunition (there is no written data on the period of its construction) in 1890s, and the need to extend the capacity of Bullet-casing plant (at that time also smithy). Side annex with lanterns, was constructed later in the interwar period, and therefore need to be separately analyzed. The building underwent numerous changes over time, as indicated by variation in the design and shape of lintels. In the immediate vicinity of the building is a chimney built of bricks, but it is not known whether it was in a functional relation to the building, or just happened to be constructed nearby.



*Figure 81. Car Body Shop – workshop for production of shrapnel shells*

### **Press Shop (“Preseraj”) (8)**

Its striking appearance, impressive size and unusually arranged corpuses that make it look like a modern basilica built of brick, glass and concrete, make it quite impressive despite the fact that it is an industrial building. Central nave dominates the side wings, and it is remarkable for its large window surfaces positioned between the horizontal and vertical concrete beams. its design is similar to that of the Old Heating Plant. During World War II, this structure has been damaged to some extent, and on



the other hand its practical design and large surface openings provided the quick and effective rehabilitation and restarting of production.



*Figure 82. Press Shop*

### **Production Hall R.A.P. (44)**

This production hall was probably built in 1920s, However, it is evident that the building greatly changed its form over time, thus from the original building with a rectangular base, it became a polygonal structure due to adding a number of annexes. Practically only the central part of the building is kept from the original structure. The vast horizontality of the building is partially interrupted by shallow vertical wall pilasters, which are arranged in proper sequence, as well as the massive windowpanes that let in sufficient amount of natural light.



*Figure 83. R.A.P. Production Hall*

### **Kaja`s Warehouse (29)**

Kaja`s warehouse was built in 1910 This is a single-storey structure with rectangular base partially disturbed by risalits which slightly protrude from the façade. It is characterized by strict symmetry of the facade, with the mentioned shallow risalits and lintels arranged in a regular rhythm. These lintels are slightly arched near the roof area and framed by elements made of brick, while the glass panes have metal casements. The entrances were placed on the narrow sides of the building, while those on larger sides were made much later. So far, there is no data on the origin of the name “Kaja`s



Warehouse”, but this name is probably of somewhat later origin. Today, the building is still used as a storage.



Figure 84. Kaja's Warehouse

#### **Old Hay Storage Building “Senara” (Central Warehouse for Tools) (42)**

The building probably originates from the first decade of the twentieth century. This is a single-story building with a gallery covered by a double-sloped roof. It is built of brick, with distinctive outlets on the façade, which greatly resemble the buttresses, and a shallow cordon cornice, which results in a square segmenting of the entire surface. From humble plastic elements, there is still a saw-tooth cornice, also made of brick. The interior of the building is decorated by unusual details - ornamented metal poles.

#### **Horse Stables (Paint and Varnish Warehouse)) (43)**

Located not far from “Senara” it was probably built after World War I. Based on the oral legacy, it is believed that originally this building was a stable, and that later its floor was raised and made of concrete. The railway tracks were also installed, whose remains are still present inside the building. It is built of brick, while a broad gable roof, its façade elements in the form of shallow pilaster strips and toothed roof cornice give it to some extent appealing exterior appearance.



Figure 85. Old Hay Storage Building “Senara”



Figure 86. Horse Stables

**SCHU „Milošev venac“ (part) – The Zone of Old Church with Old Assembly – cultural monument of great importance**

**Old church with bell tower (I, II)**

It was built in 1818 on the right bank of the river Lepenica, and it was connected to Miloš's venac (Milošev venac) by a wooden bridge, on the site of today's pedestrian bridge. The church is dedicated to the Holy Spirit and was built in the manner of Slavonian and Vojvodina churches. It served as a metropolitan cathedral, court chapel and court church. The church is a small, single-nave building, combined with a triconch, a rectangular base, with two side and one central apse, vaulted with a semicircular vault. It is built of crushed stone. On the north wall there is a marble founder's inscription. In 1907, when the old wooden narthex was replaced with a new stone one, the church, according to the project of Jovan Ilkić, received a bell tower, which represents a great contribution to the development of the national style in Serbian architecture.



Figure 87. u 88. Old Church with Bell

### Old Assembly (III)

The building of the Old Assembly is located in the church yard of the Old Church and is an inseparable part of this historically significant and unique space. The first regular assembly at this place was held in 1824 in the church yard, and a little later a wooden building was erected to hold the assembly. In 1859 a building that was most similar to today's was built. In 1878, the decisions of the Berlin Congress, at which Serbia gained its independence, were read at this place. The building is architecturally simple, without ornaments and decorations. It is made of brick and mortar, with subsequently added rooms in the western part. Due to the fact when and how it was built, it is one of the first buildings in Serbia that was created in the spirit of European architecture. In 1880, the purpose of the building was changed, and its appearance was significantly changed too. Since 2014, it has had a permanent exhibition.





Figure 89. Old Assembly

### Arch Bridge No. 1 – cultural monument

Arch Bridge No. 1, together with Arch Bridge No. 2, forms a harmonious and unique whole of space that connects the left and right banks of the river Lepenica. It was built in 1923, according to the designs of engineer Vaso Novičić. The bridge is made of reinforced concrete, thirty meters open. The static system of the bridge is a tensioned arch with a suspended pavement. The total width of the bridge is 11.65 m. At the ends of the bridge on the sides, in shallow relief, floral ornaments are made, and on the front sides of the bridge are years related to historical events: 1853, 1918, 1389, 1804.



Figure 90., 91. Arch Bridge 1

### Concrete pedestrian bridge – cultural monument

It is located near the Arch Bridge 1, across Lepenica. It was built on the place where the old wooden parish used to be, whose original purpose was to connect Miloš's court with the old church and the old assembly built in the first half of the 19th century. In 1927, the construction of the bridge was completed and then it got its appearance, which it has retained until today. Its length is 34.32 meters. The concrete fence of the bridge is specially decorated. In the middle, in shallow relief, is the year of construction. Decorative lamps are placed at the ends.



Figure 92. Concrete pedestrian bridge; Figure 93. Concrete pedestrian bridge from postcard from 1930's<sup>14</sup>

<sup>14</sup> [Pešački betonski most \(kulturnonasledje.com\)](http://Pešački betonski most (kulturnonasledje.com))



## 5.5. NATURAL CONDITIONS

### Engineering-geology conditions

In terms of morphological characteristics of the terrain, lithological composition and engineering-geology condition, and terrain properties, the subject area belongs to the zone of rock masses under alluvial and deluvial plains in riverbed valleys with clayey, gravelly and sandy substrates and includes two engineering-geological regions.

Region II (subregion II – 2) consists of terrains favorable for use and urbanization with small restrictions. The terrain is inclined up to 10 ° and built of Neogene rocks: sandstones, marls, clay conglomerates, sand and gravels, with deluvial and deluvial-semi-vivial clays in the surface part. The groundwater level is below 4 m. The bearing capacity of the terrain is very good.

Region III (subregion III – 2) includes terrains of wide alluvial plains of the lower reaches of the river Lepenica. They are built of dusty clays under which there are sands and gravels, 7-10 m thick, in the base of which they are located, mostly undefomable to weakly deformable and weakly petrified rocks. The groundwater level is 1 - 4 m high, with possible fluctuations.

### *Hydrological conditions*

*Groundwater* - The depth of the phreatic outcrop in the alluvial plain of the river Lepenica is 1-2 m and going to the rim up to 4 m. Due to the shallow outcrop, the area along the alluvial plain of the river Lepenica requires the application of special engineering and technical measures during the construction of the facilities.

*Surface waters* - Along the perimeter of the complex are the rivers Lepenica and Ždraljica, which flow along the northern, north-western, and south-western borders of the complex. The Lepenica basin has a torrential character of hydrological and psalmological regime, with significant sediment production. Erosion processes and torrential sediments within the Lepenica river basin are more intense in the upper river course.

### **Climatic characteristics**

The city of Kragujevac belongs to the zone of continental climate, with four seasons and about 2063 hours of sunshine per year. The highest number of sunny hours is in July (293.5), and the lowest in December (63.7).

The average annual temperature is 11.6° (the highest average monthly temperature is in July (21.9°) and the lowest in January (0.9°)) in the total range from about -27.6° C to about 43.9° C in extreme situations.

The area of the city of Kragujevac belongs to the continental pluviometric regime, with the highest amount of precipitation in June (76.4 mm), and the minimum in January (37.9 mm) and February (37mm).

The highest values of relative humidity are in the winter period, especially in November (88%), while the lowest values were recorded in April (67%).

The intensity of winds in the area of Kragujevac is weak, and the average speed is from 1.3 to 2.3 m/s. The most common winds are north-western (which has the highest frequency in June and March, while the lowest is in November and December) and south-western (the highest frequency is in December and January, while the lowest is in October, March, and April). Westerly winds that are not frequent - northwesterly or the southwestern ones, play an important role bringing rainfalls and protecting the city from the air pollution, from the industry developed on the eastern side of the city.

## 5.6. TRAFFIC CONNECTION

### Street network

The area of the competition scope is located in the wider central zone of the city, through which the extensions of all state roads and important city roads pass. It could be claimed that the traffic connection between the complex and the rest of the city area is very good. On the northern side, it directly touches the city highway, which is the entrance-exit route along Lepenički Boulevard and Kneza Mihaila street ("Lepenički corridor" - coincides with the direction of DP Ib. No. 24 (Batočina - Kragujevac - Kraljevo)) and connects the observed area with various city facilities. Effective traffic connection with the wider city area is also achieved through the city highway on the southeast side of the complex (Stojana Protića Street - route of the state road IIA row no. 183). The connection between the two city highways is realized through Kosovska Street on the northeast side of the area of interest for the competition.

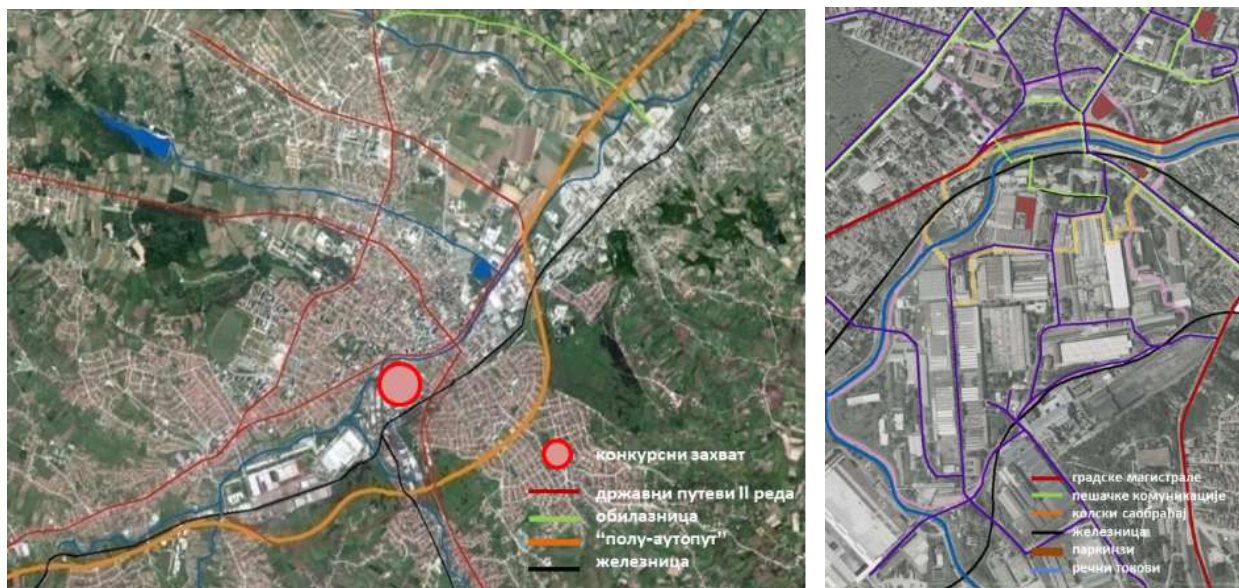


Figure 94. Traffic connection between competition area and surrounding area

The subject area, in terms of the traffic roads, is connected to the city highway - Kneza Mihaila street over the bridge on Lepenica, which does not meet the requirements of the existing traffic load. Regulatory profile of the street direction Lepenički boulevard - Kneza Mihaila street satisfies the existing volume of traffic.

The main traffic access to the complex is from Kosovska Street, between two bridges (traffic and pedestrian). The access to the central and south part of the complex is provided from the street on the south, between Stojana Protića Street and complex FAS, through which the connection between complex and existing street matrix is provided.

Within the complex, there are no built public traffic areas, but the internal traffic is adjusted to the existing purpose of the space (mostly production), except for the access Mira Marinkovic Street below it.

### **Stationary traffic**

In the current state, there are no organized parking spaces in the complex, and parking of vehicles is realised on the available free areas. Organized parking areas are located next to the contact zone in the Kosovska street near the bridge over Lepenica. Since the “productional part of the complex” is fenced and with controlled accessibility, the stationary traffic is arranged within the complex (on the plateau in front of the machine building, on the access plateau of the "BIC" building, in the hinterland of the Old Church and Assembly complex, along the side streets), as in the regulation of the access road on the south side of the complex. In the access part in front of the administrative building and the church yard, a smaller parking lot was formed, mostly for the needs of Church visitors and employees of the Institute, as well as a smaller, insufficiently arranged parking area next to the complex, in the bridge zone in Kosovska Street.

Considering the fact that complex is next to the central city zone, the existing capacities for stationary traffic do not satisfy the parking requirements.

### **Pedestrian traffic**

Within the complex, with the exception of the regulation profiles of the basic street network, there are isolated paths for pedestrian movements - along the river Lepenica (between railway tracks and river basin, on its southern side) and across two pedestrian bridges over Lepenica – Arch bridge No.1 and concrete pedestrian bridge which connects historical center of Kragujevac (Milosev Venac) on the both sides of the river Lepenica. The main traffic assess is the main pedestrian access at the same time (between Administrative building and ex house of the manager of Zavod).

The pedestrian promenade along the south side of Lepenica in the zone from the traffic bridge to the pedestrian bridge is paved and well lighted, while the open public spaces within the complex are not well maintained and without adequate furniture.

### **Railway traffic**

The position of the Kragujevac-Lapovo railway, which touches the subject area from the north and northwest, complicates the functioning of the city infrastructure, especially the functioning of traffic near the bridge zone and represents a barrier for an efficient connection with the city centre. At the current level of the rail traffic, this negative impact has been significantly reduced.

The complex on its southern side, along with the existing communal zone, is contacted by the industrial railway track, which is used for a transport in a car industry (“FCA Srbija”).

## **5.7. GREENERY AND OPEN SPACES**

Open space in the complex consists of the internal roads and manipulative surfaces, covered with asphalt, concrete and other ground surfaces with a final asphalt layer or paving.

Other undeveloped areas are mostly lawns (arranged and unarranged), with seedlings of tall and low deciduous or coniferous trees (about 290 trees), and less often shrubs with perennial and seasonal flowers.



Although there are no protected natural assets in the area of MTI, greenery and the environment of immovable cultural assets are of great importance for preserving the environmental value and authenticity of the area.

In the current state, a significant part of the urban greenery consists of woody seedlings of deciduous and coniferous type. Particularly important are the deciduous trees (pedunculate oak) in the area of the Second Technical School and the "Zastava's garden", whose age is estimated at several hundred years. Among other species, there are trees of pine, apple, maple, mulberry, linden, spruce, mournful forms of mulberry, laurel cherry, linden, chestnut, globular ash, catalpa, mukinje, white ash, black pine, poplar, birch, and others. Along the roads and riverbeds, wild grass and weed vegetation is present, and along the banks there are coppice, shrubby vegetation.

Sections of the Ždraljica watercourse with coastal vegetation in natural and semi-natural state and landscape elements with preserved or partially altered vegetation within the urban landscape (forests of indigenous species, groups of trees, individual trees, shrubs, etc.) may have the function of ecological corridor of local importance.

Preservation, improvement and protection of greenery provides the basis for the protection of "cultural landscape" and biodiversity.

The structure of greenery within the competition area consists of:

## **1. Ground floor greenery**

### **a) Squares:**

- the entrance square in front of the VTZ administrative building,
- the square behind the VTZ administrative building,
- the square with a fountain in the central part of the center of gravity with grassy areas and groups of solitary trees, among which is a valuable pedunculate oak tree - *Quercus robur*

### **b) Block greenery** (ground floor landscaped areas around buildings for different purposes):

- the greenery (park type) within the church yard,
- the yard of the building of the manager of the institute with a group of solitary trees, among which is a valuable pedunculate oak tree - *Quercus robur*,
- the yard of the old Military-Crafts School,
- the yard of the Mechanical-Engineering School with grassy areas and groups of solitary trees
- the mostly grassy areas within a closed production complex
- the block greenery inside the residential tissue along Kosovska Street

## **2. Specific greenery**

### **a) linear greenery**

- the street greenery on a pedestrian stretch that connects two pedestrian bridges along the Lepenica riverbed,
- the greenery along the rivers Lepenica and Ždraljica

**b) the protective greenery along the rivers Lepenica and Ždraljica** along the edge of the tender in the form of grassy areas or with tree, shrub, and other vegetation. These green areas are of great importance in the function of local ecological corridors.



Figure 95. Greenery of the Primary area



Figure 96. Existing condition of green areas



Figure 97. Existing condition of traffic, ground and green areas

## 5.8. COMMUNITY INFRASTRUCTURE

### Electricity infrastructure

Electricity supply is performed from SS 110 / 35kV "Zastava" from which 35 kV cables are laid to SS 35/6 kV "No. 1" and "No. 3". SS 35/6 kV "No. 1" is currently shut down and operates as a switchyard. SS 35/6 kV „No. 3 - Energetika" with a capacity of 3x12 + 1x18 MVA serves for the needs of electricity supply of 22 business entities on the site of the old factory and is owned by the company "Energetika d.o.o". Transmission of electricity from SS 35/6 kV „No. 3" - Energy up to 12TS 6 / 0.4 kV is realized by cable network 6 kV (industrial network). SS 6 / 0.4 kV 0.4 kV cables supply facilities in the complex. The complex also has one SS 10 / 0.4 kV, which is powered by a 10 kV cable from the city network. The cable network is partly laid in earthen trenches, and partly on energy-fluid racks.

A public lighting installation with about 150 public lighting poles has been built in the complex, which needs to be replaced with a more modern and economical one.

### Telecommunication infrastructure

The facilities are connected to the telecommunication system via ATC "Zastava" (M48 3000/200), which is connected to the RATC "Center" by TT cable (TK 00 100 x 4 x 0.6), as well as directly to the RATC "Center", TT cable. TC 00 100 x 4 x 0.6). From the ATC to the old Administration building, TT cables were laid through the cable sewer, while other TT distribution to individual facilities was performed mainly with cables laid on racks.

### Water management infrastructure

#### *Water supply*

The area belongs to the first altitude zone of water supply (up to 220 m above sea level). Along the perimeter of the complex, a transit main pipeline with a diameter of  $\varnothing$  300 to  $\varnothing$  800 mm was built, on which connections for the water supply network of consumers in the complex were installed. The roads within the complex have a distribution water supply line with a diameter of  $\varnothing$  63 to  $\varnothing$  250 mm, on which external above-ground fire hydrants have been installed.

Due to dilapidation, it is planned to shut down the existing water supply installation and build a new water supply network, as well as the reconstruction of the existing connection to the main pipeline  $\varnothing$  500, in accordance with the newly designed needs of the complex.

#### *Sanitary wastewater disposal*



Along the perimeter of the complex, in the regulation of rivers, the primary city fecal collector was built - Lepenica collector ( $\varnothing$  1000 mm), as well as the Ždraljica fecal collector ( $\varnothing$  400 mm). Collective sewage ( $\varnothing$  200 to  $\varnothing$  300 mm) passes through peripheral roads. For the drainage of sanitary wastewater within the complex, a network of fecal sewage ( $\varnothing$  200) was made, which was introduced into the mentioned collectors.

For the fecal sewerage, its partial extinguishing is planned, relocation in the part that passes under the newly designed facilities, as well as the construction of new branches of the fecal sewerage.

#### *Atmospheric wastewater disposal*

In the part of the complex, an industrial sewer was built with pre-treatment of industrial wastewater, before entering the fecal sewer.

Rain sewer with a diameter of  $\varnothing$  300 to  $\varnothing$  900 mm, was built in the ring roads. Within the complex, a storm sewer network was built to drain atmospheric wastewater, which was introduced into the rivers Lepenica and Ždraljica.

#### *Watercourse regulation*

The rivers Lepenica and Ždraljica flow along the perimeter of the subject area. The riverbeds of these watercourses are regulated, with lined minor riverbeds.

#### **Thermal energy infrastructure**

There are over 20 different pipelines of steam, water, air, cable lines, etc. in the distribution of energy lines within the complex, and the main hub is in the "Energy" facility. Lines are still used, but to a lesser extent, with the trend of abolition, because individual plants become independent and form the infrastructure according to their own needs, sources and directions of connection.

Overhead installations for heating buildings and for the needs of technology have been performed in the complex. The complex also has equipment for the preparation of heating water, pumping stations for the distribution of hot water, with pipelines for heating the city. The installations are performed above ground and consist of steel columns with concrete calves and girders, and supports for supporting the pipeline.

In addition to the boiler room of the thermal energy distributor "Energetika d.o.o.", with underground and aboveground installations of energy fluids, a medium pressure gas pipeline (12 bar) was built in the immediate vicinity of the complex, which supplies energy to MRS "Zastava".



Figure 98. Energy-fluid lines

## CONDITIONS, RECOMMENDATIONS AND COMPETITION TASK

### 6. RECOMMENDATIONS FROM CURRENT URBAN PLANS

#### 1.1. GUP "Kragujevac 2015"

*(Official Gazette of the City of Kragujevac, No. 7/2010, 16/2012 - first amendment)*

According to the division into the spatial and urban units, the scope of the competition is within the Spatial Unit II - Brewery, or Urban Unit No. 3 Beloševac - Ždraljica.

Within this unit, the following purposes are planned: the main city center, culture, business, work zone Zastava, secondary education, utilities and housing A2.2.



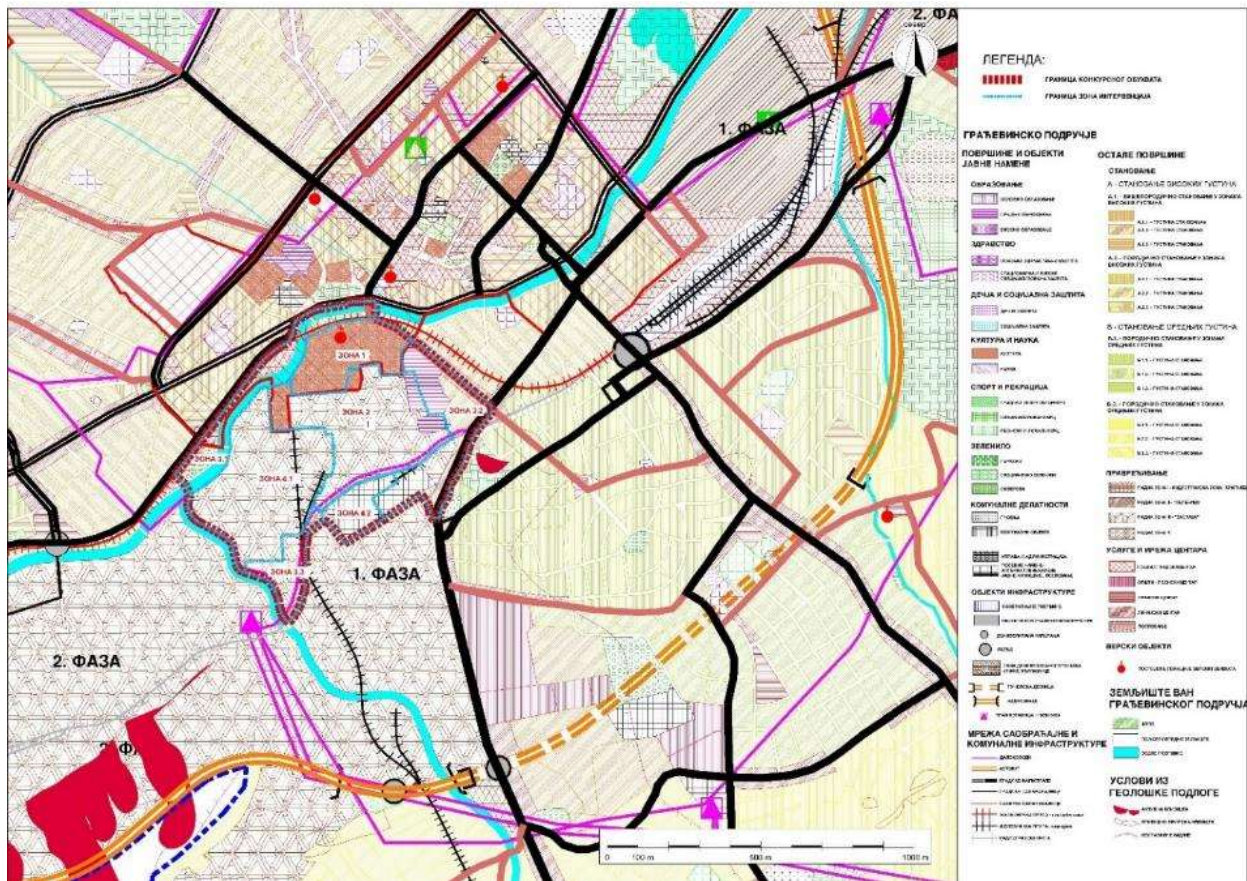


Figure 99. Map from GUP Kragujevac 2015 Chart 3 Planned purpose of the area

Према According to the GUP, the main part of the competition scope is a part of the historical city centre, and it is planned for public purposes (predominantly cultural content). The plan envisages directing and renewing the old city structures and proposes location for culture of superregional significance - the International Cultural Centre. Connection of this centre with “Milošev venac” would enable affirmation of Kragujevac in the spatial-historical context, development of the functional and historical core, and formation of a park for presentation of political, economic and cultural context of Serbia in Europe.

A business zone is planned for the greater part of the competition scope, within the working zone "Zastava", with accompanying purposes related to service activities, business, educational facilities (secondary professional schools, colleges), traffic facilities, greenery, sports and recreation, facilities of supporting infrastructure.

The planned urban renewal in the zone of high-density family housing (along Kosovska Street) includes, as an accompanying function, services, business, facilities and areas for public purposes, etc.

The planned network and functional rank of roads (city highways that connect to the directions of state roads, city and collection roads and the planned route of nearby highways) enable efficient connection of the subject area with city contents, but also provides the most important traffic corridors.



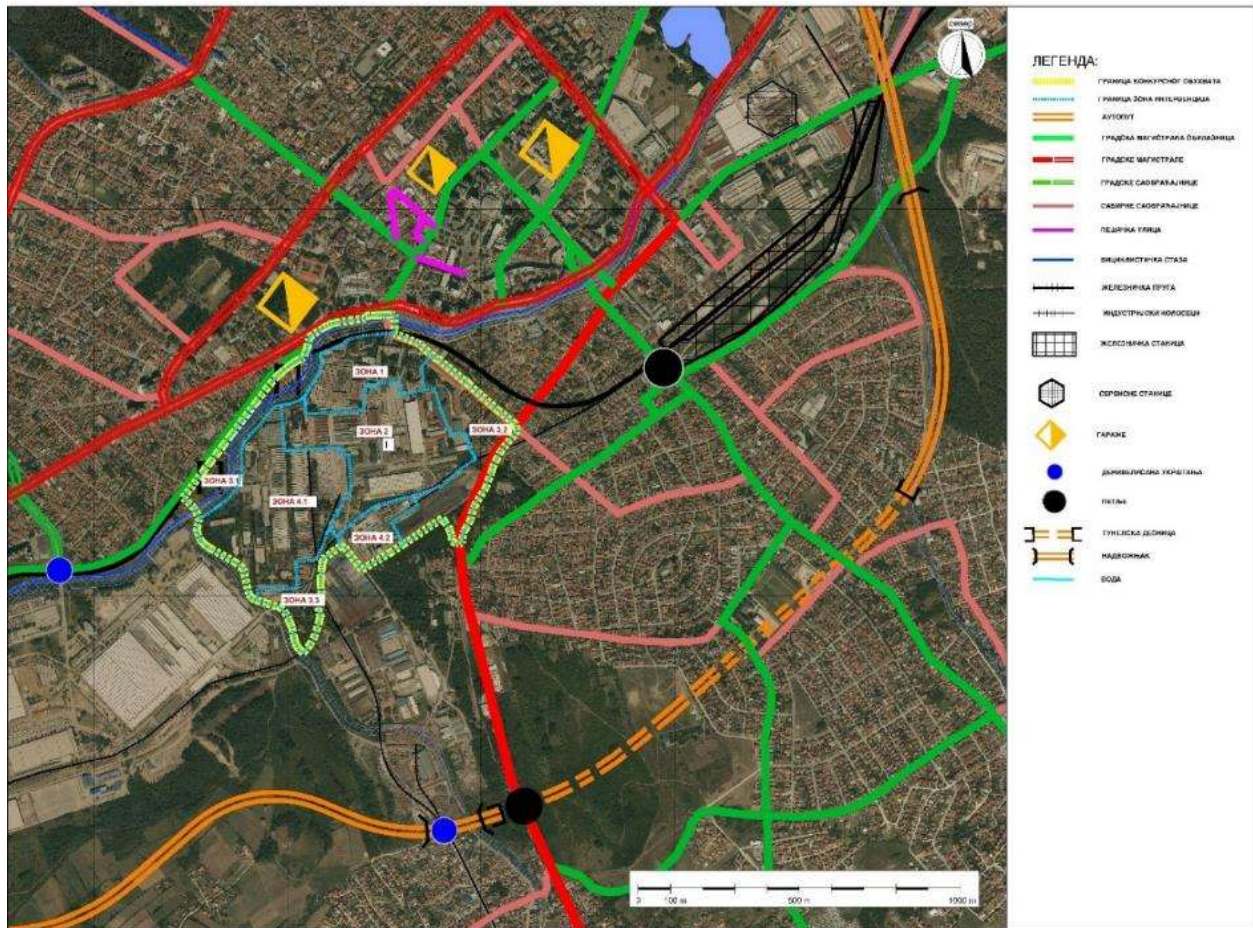


Figure 100. Map from GUP Kragujevac 2015. Chart No. 5 Traffic

## 6.2. General regulation plan "Settlements Beloševac and Ždraljica" ("Official Gazette of the City of Kragujevac" No. 39/2015)

According to the Plan, the competition area mostly belongs to Unit 4. Zastava, ie sub-units 4.1 Milošev venac and 4.2 Military-Technical Institute.

The plan envisages the transformation of existing work zones into zones of business and services of a high standard and arranges the space in a way that preserves the authenticity and representativeness of the settlements.

**Sub-unit 4.1 Milošev venac** is a special feature of the city, and imposes the imperative of protection, improvement, representative arrangement, and presentation of space.

The cultural and historical core of Kragujevac is planned to become a representative zone of public place, by raising the quality and accessibility of space. The formation and presentation of this area as a core of statehood of historical and cultural sovereignty of Serbia is especially emphasized. At this location, cultural and educational facilities are also planned, following by new pedestrian paths and strengthening the accessibility with the city center.

If necessary, the contents of higher education and scientific institutions can be positioned within the planned purposes of culture, business zones, work zones. It could rise the attractiveness, urban activity and dynamics of this part of the city.

Sub-unit 4.2 Military-Technical Institute - the transformation of production zone into businessones is planned, regarding the protection rules for the cultural heritage.

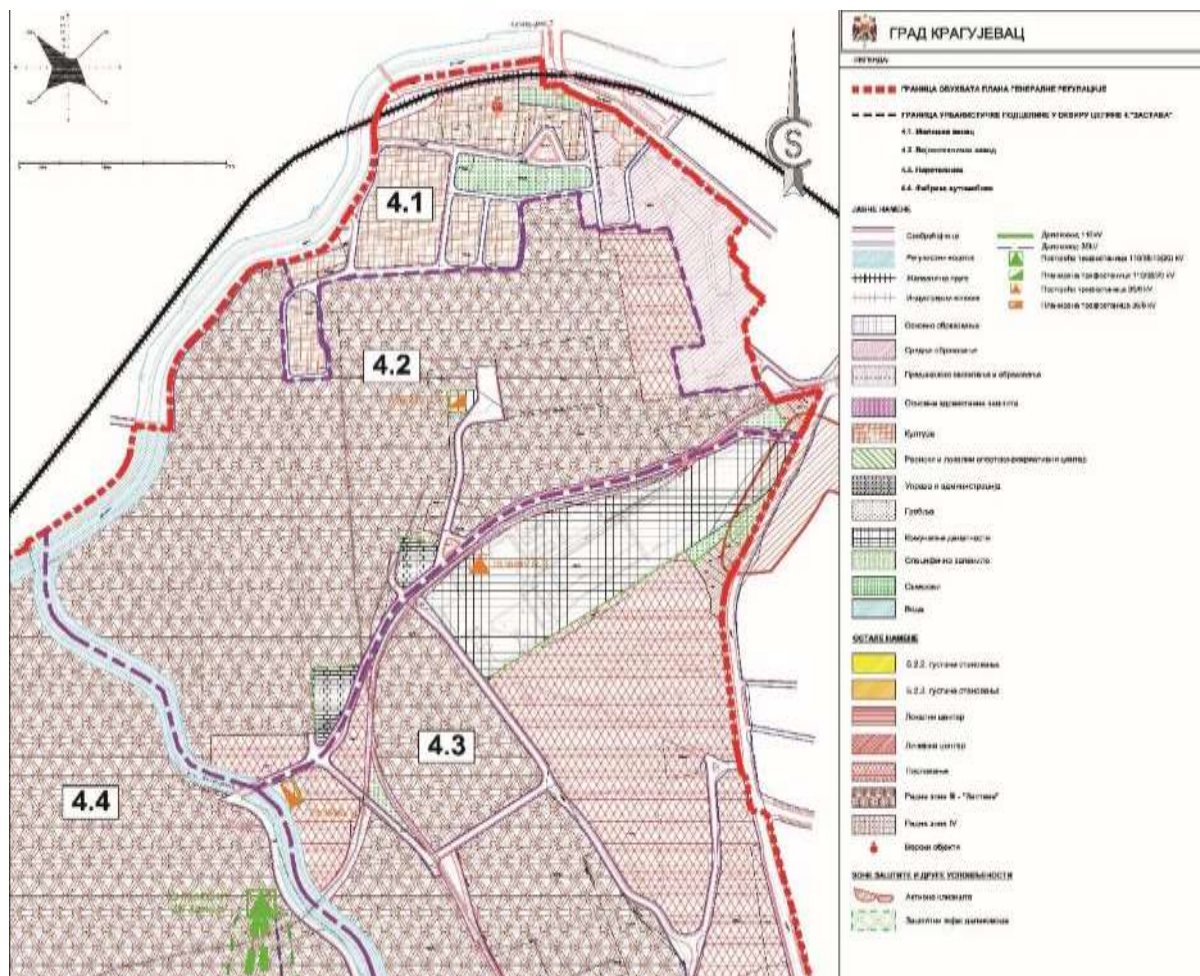


Figure 101. Map from the PGR of the settlements of Beloševac and Ždraljica. Chart No. 3 Planned purpose of the area

### 6.3. Detailed regulation plan "Milošev Venac II" in Kragujevac ("Official Gazette of the City of Kragujevac" No. 9/2005)

The plan treats the area within the focus zone (zone 1) and parts of the contact zone (Zone 3.1), within the scope of the competition. The plan forms specific functional and ambient subunits and blocks, according to their character and inherited structure. It also provides new traffic and functional connections between the location, the city centre and Milosev Venac.

Urban patterns and physical structure should be preserved. However, re-use of existing buildings is possible, with the goal to form a representative zone with selected public facilities (administration / administration / science / culture). Supporting purposes for this zone are commercial activities (business and higher-level services), city center functions. The subunit that includes Old Church and the Old Assembly is arranged in accordance with its importance, with new central facilities.

The public use of the complex is provided by new public roads within the zone, pedestrian paths and green areas in the newly formed public zone, and with the new connections within the complex.

The specificity of the Plan is the treatment of the contact zone along the river Lepenica, where sub-units 1.3 form areas for the stationary traffic, in the form of open parking (block 1.3.2) and garage parking (block 1.3.3). They are connected with the complex with newly planned bridges over Lepenica River.



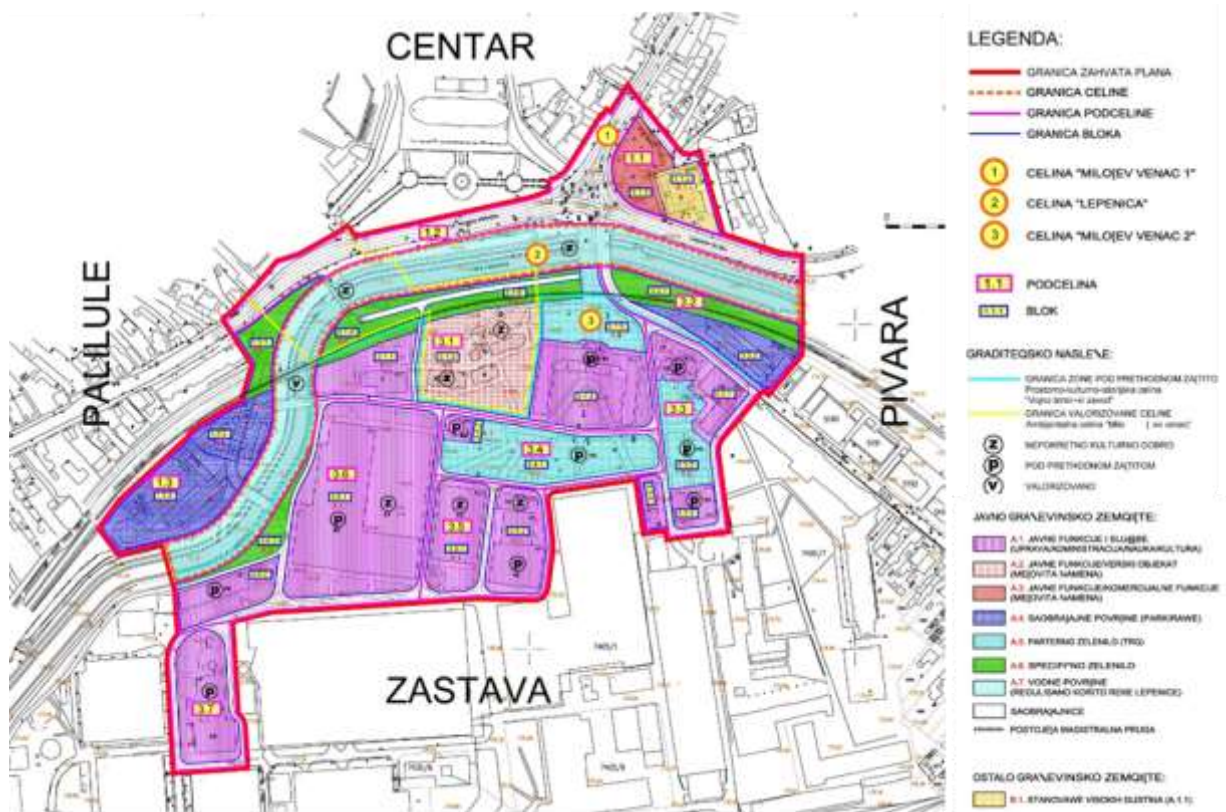


Figure 102. Excerpt from PDR Milošev venac II. Chart - Planned purpose of the area



Figure 103. Map from PDR Milošev venac II. Chart - Primary physical structure

Other valid planning documentation within the scope of the competition:

- Plan of detailed regulation of the "Main location of the Zastava group" ("Official Gazette of the City of Kragujevac", No.9/2005);

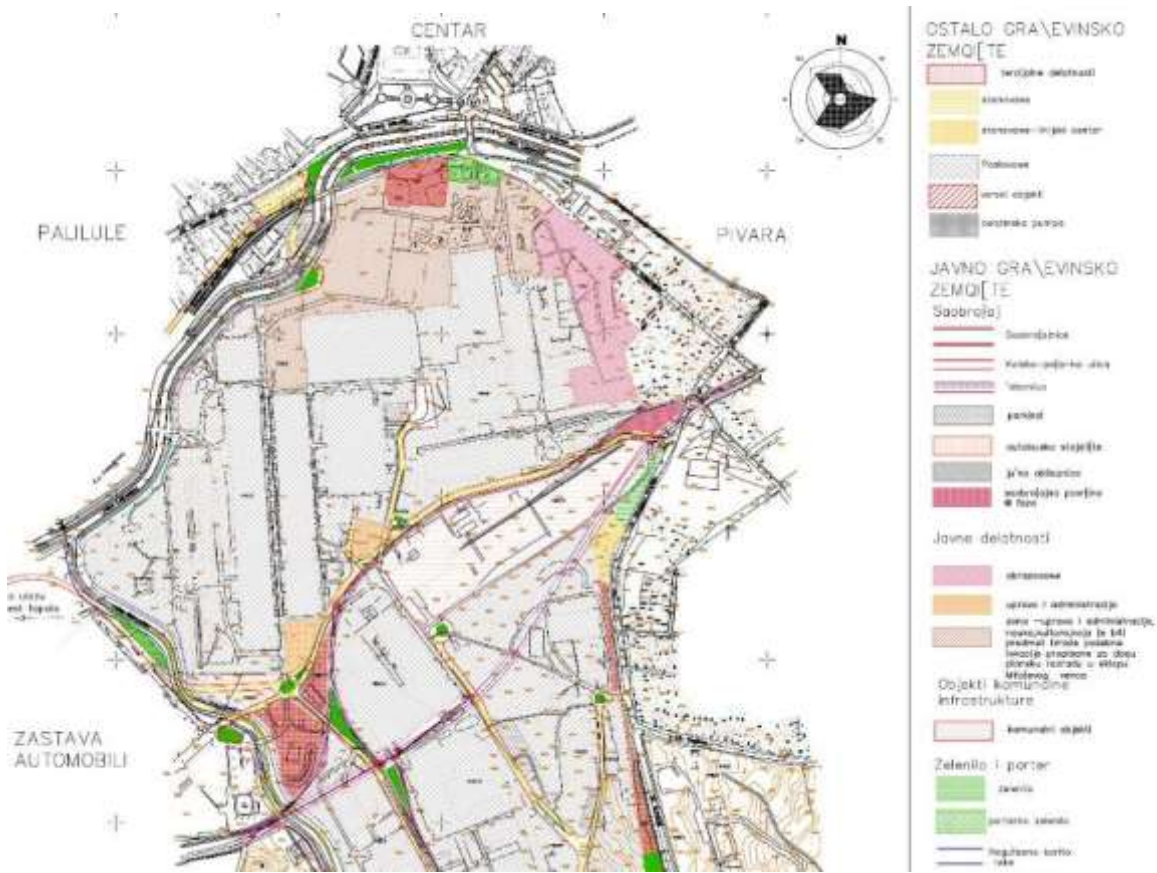


Figure 104. Map from PDR "Main location of the Zastava group" - Planned purpose of the area

- Amendments to the Detailed Regulation Plan "Main locations of the Zastava Group" ("Official Gazette of the City of Kragujevac", No. 6/2013) - road;

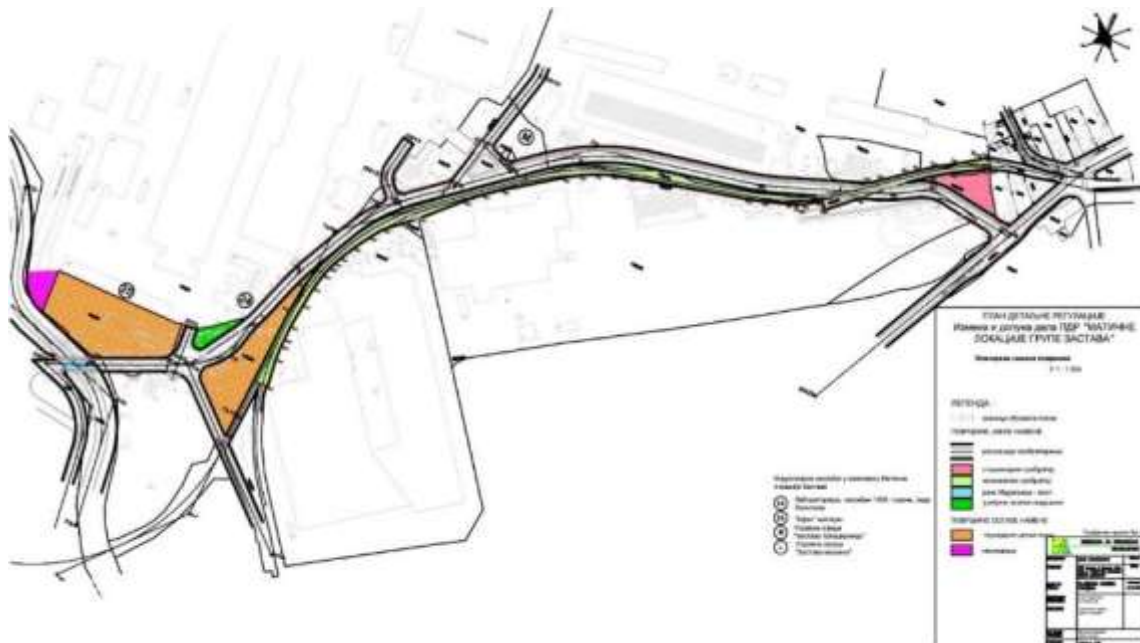


Figure 105. Map from PDR "Main location of the Zastava group" - road - Planned purpose of the area



- Amendments to the part of the Detailed Regulation Plan "Main locations of the Zastava Group" ("Official Gazette of the City of Kragujevac", No. 8/2014) - substation;

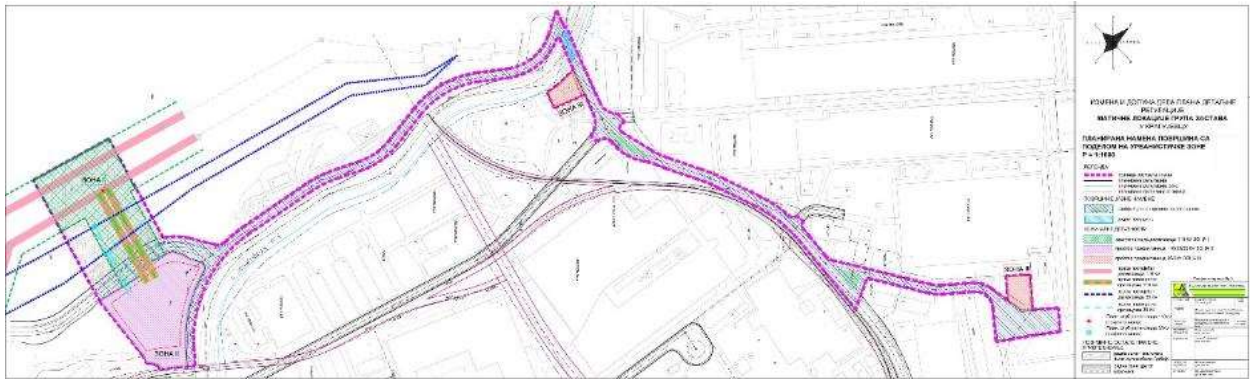


Figure 106. Map from PDR "Main location of the Zastava group" - substation - Planned purpose of the area

- Plan of detailed regulation "Main location Stara Zastava" ("Official Gazette of the City of Kragujevac", No. 41/2015).

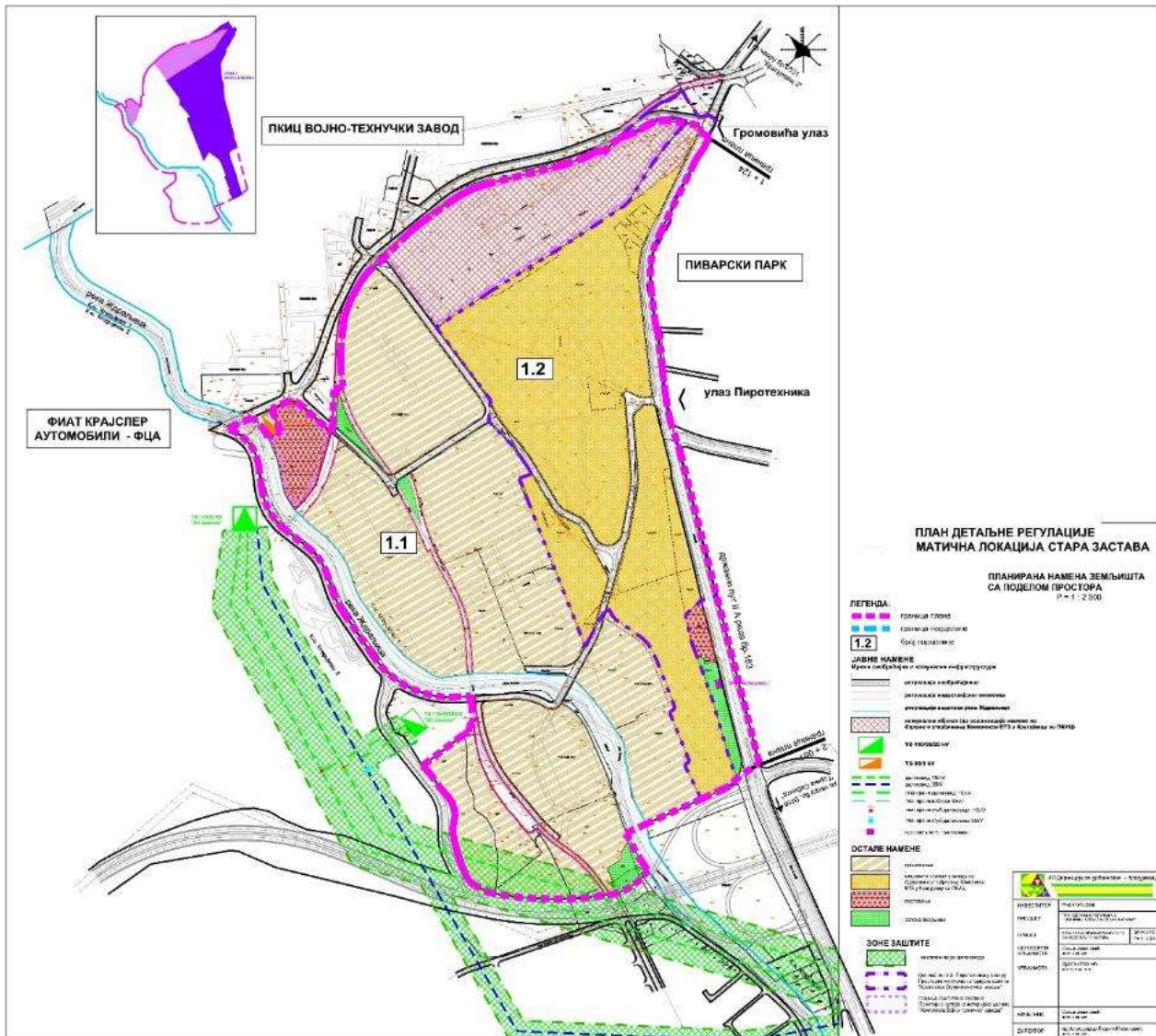


Figure 107. Map from PDR "Main location of the Stara zastava" - Planned purpose of the area



## 7. PROTECTION OF CULTURAL AND HISTORIC HERITAGE

The competition area consists of two spatial cultural-historic units – SCHUs<sup>15</sup>:

- 3) Military-Technical Institute Complex (SCHU “MTI<sup>16</sup> Complex” – Zone 1) with an urban segment of protected environment<sup>17</sup>, as an immovable cultural property<sup>18</sup> of an exceptional importance; and
- 4) the zone of the Old Church and the Old City Assembly, immovable cultural property of a great importance.

### Overview of architectural heritage in the competition area

#### 4. Immovable cultural property of exceptional importance

##### Spatial Cultural-historic Unit (SCHU) the Urban complex of Military-Technical Institute

- Zone 1 – Military-Technical Institute
- Urban segment of the protected environment of the SCHU “Urban complex of Military-Technical Institute”

#### 5. Immovable cultural property of great importance

##### Cultural monuments

- Old-foundry church in Kragujevac with the former building of the city assembly (Old Assembly Building)
- Old foundry with a tall chimney and a bullet-casing plant (cannon foundry, the foundry building and the blacksmith shop)

#### 6. Археолошки Archaeological sites (located within Zone 1 – SCHU MTI Complex)

- Tall Chimney
- Bullet-Casing plant
- Second Technical School

**The Military Technical-Institute was determined as a cultural property<sup>19</sup> – Spatial Cultural-Historical Unit (SCHU) by the Decision of the Government of the Republic of Serbia No 633-2365/2014, dated March 25, 2014** (“Official Gazette of the Republic of Serbia”, No 36/2014, from March 24, 2014). The MTI is categorised as a cultural property of an exceptional importance and further classified as a cultural monument of an exceptional importance by the Decision of the National Assembly of the Republic of Serbia No 2 (“Official Gazette of the Republic of Serbia”, No 12/2016, from February 12, 2016).

The Foundry Building with a Tall Chimney was determined as an immovable cultural property – a cultural monument by the Decision of the Institute for the Protection and Scientific Study of Cultural Monuments of the Socialist Republic of Serbia (SRS) No 309/53, from April 29, 1953. It was further categorised as a cultural monument of a great importance on April 7, 1979 (“Official Gazette of the

<sup>15</sup> Unit as a spatial cultural-historical unit – SCHU, i.e., protected ambiances by Serbian law. Hereinafter: SCHU.

<sup>16</sup> MTI – abbreviation for Military-Technical Institute. Hereinafter: MTI.

<sup>17</sup> Protected environment is defined by Serbian law on an immovable and movable cultural property (i.e., immovable cultural heritage). The protected environment around a certain cultural property has the same level of protection as the property.

<sup>18</sup> Corresponding Serbian law defines protected cultural heritage as a cultural property, which can be of an exceptional or great importance. The law also recognises immovable and movable cultural property. There are four categories of immovable property: (1) monuments of culture (buildings), (2) spatial cultural-historical units (ambiances), (3) archaeological sites and (4) landmarks (memorials). Info: [http://www.heritage.gov.rs/english/nepokretna\\_kulturna\\_dobra.php](http://www.heritage.gov.rs/english/nepokretna_kulturna_dobra.php).

<sup>19</sup> In other words, protected cultural heritage

SRS”, No 14/1979), and, as a part of the Military Technical Institute, it was categorised as a cultural monument of an exceptional importance by the Decision of the National Assembly of the Republic of Serbia No. 2 (“Official Gazette of the Republic of Serbia”, No 12/2016, from February 12, 2016).

#### **A.1. Excerpt From the Textual Part of the Decision on Declaration of the Military Technical Institute Complex in Kragujevac for a Spatial Cultural-Historical Unit**

The whole Military-Technical Institute Complex is composed of two zones: Zone 1 – Military- Technical Institute and Zone 2 – Pyrotechnics Complex, which is not included in the competition. The competition area mostly coincides with the borders of the Military-Technical Institute Complex in Kragujevac, i.e., with Zone 1, and part of the protected area of the Spatial cultural-historical Unit of the MTI Complex, which includes three archaeological sites.

### **B – PROTECTION MEASURES AND INTERVENTION PLAN**

#### **Public use of space and facilities**

In order to rehabilitate a spatial cultural-historical unit, two measures are determined in the area of the SCHU – Zone 1: to preserve the public use of space (outdoor and indoor) and to revitalise and rehabilitate space through the public functions that promote cultural heritage and are not in contrast to the nature of this space – recommended urban functions: culture, education, business<sup>20</sup>, tourism, etc. Housing in its essential meaning can not be considered as a public function and it is not acceptable in the competition area.

#### **B.1. Protection Measures for SCHU "Military-Technical Institute Complex":**

##### **A) General protection measures for Zone 1:**

- 1) The methodological procedures of conservation profession are applied in the SCHU area: research, topography, conservation, restoration, remediation, revitalisation and rehabilitation;
- 2) The preservation, arrangement, improvement and remodelling of the most valuable phases in the genesis of the historical urban fabric, building stock and outdoor manipulative space, open spaces, streets, passages, plazas, squares and views;
- 3) The preservation, rehabilitation, arrangement and reconstruction of all underground construction structures;
- 4) The preservation, restoration, rehabilitation or reconstruction of the original appearance, structural composition, volumetry, stylistic characteristics, decorative elements and colours of all buildings from the phase which is valorised as the most valuable one in the genesis of the complex, as well as of the buildings that have construction, architectural, technological and/or ambience value;
- 5) The research and exploration in order to determine environmental pollution (soil, water and building materials) and the remediation of degraded environment, with the obligation to return the levelling and shape of the terrain to pre-remediation state, all in accordance with special protection measures;
- 6) The public use of buildings and open space is predetermined: culture, education, business<sup>21</sup>, tourism and other urban functions that do not violate the values of the SCHU;

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<sup>20</sup> Business as an urban function is defined as office-based business activities, not manufacturing industry. Source: Rulebook on General Rules for Land-lot Subdivision, Regulation and Construction (“Official Gazette of the Republic of Serbia”, No 22/2015)

<sup>21</sup> Ibid

- 7) It is not allowed to use the SCHU space for the basic and supplementary urban functions that may harm or degrade the SCHU, such as warehouses, landfills, farmer's markets, filling/gas stations, the manufacturing or business that harms cultural heritage, temporary buildings, etc.;
- 8) It is not allowed to construct or set up the buildings of permanent or temporary character, which may harm cultural heritage by their appearance, size or height;
- 9) New buildings had to be harmonised to the character of the ambience and values of urban and architectural heritage regarding to dimensions, location, proportions, the type of construction and design. The design of new buildings, as well as the entire architectural creation (construction, function), should be in line with contemporary architectural design, making a harmonious ambience with the buildings in their immediate vicinity;
- 10) It is mandatory to conduct competitions or undertake feasibility studies for the zones or parts of the SCHU, in order to their protection, rehabilitation or urban renewal;
- 11) It is obligatory to relocate or remove the buildings and other structures that do not meet the functional needs or violate the cultural, historic or aesthetic values or values of the SCHU;
- 12) All elements of infrastructure, the levelling and regulation of the SCHU space should be implemented in respect to special measures for the protection of cultural heritage, prescribed by a relevant institution;
- 13) The horticultural design and the general arrangement and furnishing of outdoor spaces is mandatory, with the respect to special measures for the protection of cultural heritage, prescribed by a relevant institution;
- 14) The promotion of the monumental and functional values of the SCHU cultural heritage is obligatory;
- 15) It is exceptionally allowed to change the valorisation level of buildings in the Zone 1 in case of acquiring new information about the buildings or by changes in their condition due to *force majeure*. This procedure had to be conducted by the institutions competent for the protection of cultural heritage.

## **B) Special protection measures for the buildings and space of Zone 1:**

### **1) for the space of Zone 1:**

- 1) The preservation of outdoor space – squares and streets, i.e., their reconstruction to an original phase or, thereafter, the phase that is valorised as the most valuable one: the areas A and B both on cp.<sup>22</sup> no 7405/56; the area V on cp. No 7405/59; and street E on cp. no 7405/2; areas A, B, V and E, with all their elements, to be treated as an urban space of the first level of intervention with the application of all protection measures; the redesign of other existing outdoor areas in order to promote the monumental SCHU ambience and the more contemporary, public use of space; other free areas to be treated as the second level of intervention;
- 2) The reshaping and design of the existing empty space between the facilities of the Mechanical workshop, the museum "Stara livnica – Old Gun Foundry", area E and the part of cp. No 7405/57, specifically, the space on cp. no 7405/61 and the parts of cp. no 7405/64 and 7405/58; in this space, to form a square for public use customised to the character of the SCHU, as a pedestrian zone with access to emergency traffic;
- 3) The retention of the remains of an original railway line on cp. no 7405/1 and the appropriate presentation of this spatial element;
- 4) The functional connection of the building of the Old City Assembly with the area of the Military-Technical Institute; *The opening of the part of the masonry fence towards the MTI Complex;*

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<sup>22</sup> cp. – cadastral parcels. Hereinafter: cp.



- 5) It is allowed to set up appropriate new memorials in outdoor spaces, which will contribute to the presentation of historic events related to the past of MTI;
- 6) It is not allowed to form public parking-sites and outdoor parking; existing indoor facilities are designated for parking use, with their adequate reconstruction/adaptation;
- 7) The preservation of the value of urban greenery of tree lines, individual valuable trees and the groups of trees, with the upgrading of the already existing urban greenery with adequate new species;
- 8) The preservation of parts of the existing, overground heating installation as a functional feature of the SCHU (in the places where it will not harm valorised buildings);
- 9) The preservation and reconstruction of the existing masonry fence along the segment of the SCHU, with its optional breaking through in order to open the view; the set up of new fences is not allowed;
- 10) It is not allowed to install or construct auxiliary facilities, newsagent's shops, etc;
- 11) Shelter facilities on cp. no 7405/2 may be adapted and used in a multi-functional manner or completely removed with the consent of the competent institutions;

## 2) for Zone 1 buildings:

**The first level of intervention** implies preservation (or reconstruction) to an original state or, thereafter, the most valuable valorised phase in the genesis of a building. The following protection measures are determined for the buildings marked<sup>23</sup>: 1, 2, 3, 4, 5, 8, 11, 14, 16, 18, 30, 42, 44, 48, 52, 53, 58; and the chimneys I, J and K:

- 1) The preservation of an authentic volumetry of buildings, i.e., their horizontal and vertical dimensions, applied building materials and structural composition;
- 2) The preservation or restoration of the original appearance, composition, stylistic characteristics, decorative elements and interior of buildings;
- 3) The modernisation of buildings is allowed for their better utilisation and without the construction of any extensions (horizontal and vertical);
- 4) It is allowed to partition the internal indoor space of certain buildings according to the special measures of the institutions competent for the protection of cultural heritage.

**The second level of intervention** involves the preservation of buildings in its existing state considering their size, construction, volume, stylistic characteristics and position in urban setting. The buildings can be redesigned and optionally upgraded in accordance with the need for the promotion of their monumental values and their rehabilitation as cultural heritage. The following protection measures are determined for the buildings marked: 6, 7, 9, 10, 15, 20, 21, 22, 23, 24, 25, 26, 27, 29, 31, 33, 35, 36, 37, 41, 43, 51, 54, 57, 60, 63, 64 and 94:

- 1) The preservation of the existing size of the buildings, according to the maps: 6, 7, 24, 29, 31 and 37;
- 2) The preservation of the existing construction elements of the buildings, according to the maps: 4, 6, 7, 15, 21, 37, 43 and 57;
- 3) The preservation of the existing volume of the buildings, according to the maps: 4, 20 and 43;
- 4) The preservation of the existing stylistic characteristics of the buildings, according to the map: 20, 21, 29 and 37;
- 5) The preservation of the existing position of the buildings in urban setting, according to the maps: 9, 22, 23, 25, 26, 27, 33, 34, 35, 36, 54, 55, 60, 63 and 64; their obligatory redesign for the rehabilitation of the buildings; these buildings can be replaced with new ones (indoor or

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<sup>23</sup> They are marked in the maps that are the integral part of this Decision.

outdoor buildings), in accordance to the special measures of the institution competent for the protection of cultural heritage;

- 6) The reconstruction of the lost or noticeably damaged parts of the buildings that have been valorised to be done with modern structural elements or design, with preserving the integrity, authenticity and value of the existing building volumetry;
- 7) The harmonisation of the potential extensions of buildings (horizontal and vertical) with the dimensions and heights of valorised buildings in surrounding.

**The third level of intervention** involves the preservation and promotion of one or more monumental values of a building *in situ* or at another adequate place, which must be prescribed by the institution competent for the protection of cultural heritage. The following protection measures are established:

- 1) For the building no 19: the preservation of the original/existing values of buildings *in situ*, with the optional redesign or new construction with the retention of monumental values;
- 2) For the building no 46: relocation and the presentation of monumental values at another adequate place.

**The fourth level of intervention** means that existing buildings and structures without value are not retained. It is allowed to form new outdoor and indoor spaces, with the overall aim to rehabilitate of the SCHU area. The following protection measures are determined for the buildings and structures marked: 9, 12, 13, 17, 22, 25-28, 32, 33, 34, 36, 39, 40, 47, 49, 50, 51, 54, 55, 56, 59-108:

- 1) It is allowed to form (construct, instal, set up) new indoor spaces in the places of the following buildings: 12, 13, 17, 28, 32, 38, 39, 45, 47, 51, 56, 62-64; the existing buildings can be renewed or replaced with new ones according to the measures of the institution competent for the protection of cultural heritage;
- 2) The removal of existing inappropriate buildings and structures and formation of new outdoor spaces on the sites of the following facilities: 49, 50, 59, 61, 65, 94-109; the formation of new outdoor spaces strictly according to general and special measures related to the zone;
- 3) The immediate removal of all objects of the endangered structural composition;
- 4) On the buildings and structures planned for complete removal, it is allowed to conduct only works that are not pertained to a construction permit; exceptionally, for electrical substations (no 50 and no 94), it is allowed to remove the facilities after relocating the facility to another location.

**C) General measures for the protection of the protected environment of “MTI Complex” SCHU:**

- 1) The architectural redesign and reuse, where the new use/function is harmonised with the SCHU character;
- 2) The urban functions that promote and improve cultural-heritage site are applicable: culture, education, business<sup>24</sup>, tourism, housing and other functions that do not violate the values of the SCHU;
- 3) It is not allowed to use relevant space for the basic and supplementary urban functions that may harm or degrade the SCHU, such as warehouses, landfills, farmer’s markets, filling/gas stations, the manufacturing or business that harms cultural heritage, temporary buildings, etc.;
- 4) The research and exploration in order to determine environmental pollution and the remediation of degraded environment, with the obligation to return the levelling and shape of the terrain to pre-remediation state, all in accordance with special protection measures;

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<sup>24</sup> Business as an urban function is defined as office-based business activities, not manufacturing industry. Source: Rulebook on General Rules for Land-lot Subdivision, Regulation and Construction (“Official Gazette of the Republic of Serbia”, No 22/2015)

- 5) Parking space is to be planned inside buildings or outdoor; outdoor parking space with tall urban greenery (trees);
- 6) The prohibition of the spillage and temporary or permanent disposal of waste and harmful substances;
- 7) The prohibition of the construction or set up of the permanent or temporary buildings that can harm the SCHU by their appearance, size or height may;
- 8) New buildings had to be harmonised to the character of the SCHU in terms of dimensions, proportions, type of construction and design;
- 9) The construction of infrastructure facilities to be implemented in accordance with the conditions of the institution competent for the protection of cultural heritage;
- 10) All elements of infrastructure, the levelling and regulation of space implement in accordance with the special measures of the institution competent for the protection of cultural heritage;
- 11) Ground equipment and design shall be done in accordance with special measures of the institution competent for the protection of cultural heritage;
- 12) Horticultural equipment and landscaping are obligatory in accordance with special measures of the institution competent for the protection of cultural heritage;
- 13) Constant promotion of monumental and functional values of buildings and open spaces.

**D) Special measures for the protection of the protected environment of “MTI Complex” SCHU:**

- 1) For the cadastral parcels no 5277, 5278, 5279, 7405/12, 7405/14, 7405/17, 7405/36, 7405/40 and 7405/41; The following urban functions are applicable: culture, education, business<sup>25</sup>, tourism and other functions that do not violate the values of the SCHU; For the cadastral parcel no 7405/17: construction is not allowed and an existing building must be removed;
- 2) For the cadastral parcels no 5236, 5237, 5238, 5239, 5240, 5250, 5251, 5252/1, 5252/2, 5252/3, 5252/5, 5252/6, 5252/7, 5252/4, 5252/8, 5257, 5259, 5260, 5261, 5262, 5263, 5264, 5268, 5269, 5271, 5272, 5273, 5274, 5275, 5276, 5280, 5281, 5282, 5283/1, 5284/1, 5286, 5290, 5294, 5298, 5301, 5303, 5304, 5305 and 5306; It is allowed to construct or set up: single-family detached houses or multi-family residential buildings with retail facilities; New buildings must not harm the monumental character of the SCHU by their size, volume, architectural appearance and materialisation; it is obligatory to plant high greenery (trees) between buildings.

**B.2. Measures for the protection of the cultural monument “Old Church in Kragujevac with the former Assembly Building” (Old Assembly) – the part of “Milošev venac” SCHU**

**A) General protection measures**

- 1) The methodological procedures of conservation profession are applied in the SCU area: research, topography, conservation, restoration, remediation, revitalisation and rehabilitation;
- 2) For the buildings that have construction, architectural and/or ambience value, the preservation, restoration, rehabilitation or reconstruction of their original appearance, constructive composition, volume, stylistic characteristics, decorative elements and colours from the phase which is valorised as the most valuable one in their genesis;
- 3) It is not allowed to construct or set up the buildings of permanent or temporary character, which may harm cultural heritage by their appearance, size or height;

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<sup>25</sup> Business as an urban function is defined as office-based business activities, not manufacturing industry. Source: Rulebook on General Rules for Land-lot Subdivision, Regulation and Construction (“Official Gazette of the Republic of Serbia”, No 22/2015)



- 4) The relocation or removal of the buildings and structures that do not meet the functional needs and violate the cultural, historic or aesthetic values of SCHU;
- 5) Obligatory horticultural and ground-floor furnishing and design of outdoor space;
- 6) Constant promotion of monumental and functional values of buildings and open spaces.

## **B) Special protection measures:**

### **a) for space in general:**

- 1) For the yard of the old church (cp. no 5187); the preservation, i.e., reconstruction to an original phase or, thereafter, the phase that is valorised as the most valuable one;
- 2) The opening the surrounding outdoor space of the Old Assembly (cp. no 5186) and its connecting with the space of the MTI SCHU, with the adequate protection of the church yard;
- 3) The preservation of the value of urban greenery, both individual valuable trees and the groups of trees, with the upgrading of the already existing urban greenery with adequate new species;
- 4) The construction of new buildings and structures on cp no 5186 and cp. No 5187 is not allowed;
- 5) The construction and set up of build auxiliary facilities are not allowed in the outdoor space (yard) or immediate surroundings of the Old Church or the Old Assembly;
- 6) The relocation of the bust of Dimitrije Davidović from the Church yard, to a more appropriate place near the Old Assembly;
- 7) The preservation of the existing metal fence around the Church yard;
- 8) Horticultural and ground-floor design adapted to the character of the cultural heritage.

### **b) for buildings:**

**The first level** of protection implies the preservation of or the reconstruction to the original state or, thereafter, the phase that is valorised as the most valuable one (No I-III). For the buildings of the Old Church, the Belltower of the Old Church and the Old Assembly, the protection measures are:

- 1) The preservation of the original size and the basic values of the structural composition;
- 2) The preservation or restoration of original appearance, composition, stylistic characteristics, decorative elements and interior;
- 3) The modernisation of the buildings is allowed for their better utilisation and without any extensions (vertical or horizontal).

**The second level** of protection implies the preservation of the Parish House (No IV) in its existing position, volume, stylistic design. The building can be redesigned or possibly horizontally extended (i.e., without vertical extensions) in accordance with the need for the promotion and rehabilitation of the cultural heritage.

**The third level** of protection implies that the existing buildings and structures on cp. no 5178, without monumental values, remove. It is allowed to form new indoor and outdoor spaces for presenting the Church yard.

- 1) The removal of the existing inappropriate building (no V) and formation of a new outdoor space on the site of this building;
- 2) The formation/construction of new buildings or outdoor spaces on the sites of buildings VI and VII is allowed; these existing buildings can be refurbished or replaced with the new buildings of the same use.

## 8. COMPETITION TASK AND PROGRAMME ELEMENTS

### 8.1. COMPETITION TASK

The objective of the competition is the conceptual, urban-architectural design of the "Military Technical Institution" – VTZ complex. According to defined zones of intervention in the competition scope, the competition task includes:

- **within the focus zone (zone 1):**
  - urban architectural design with a proposal of purposes for all facilities (existing and eventual planning) in the zone with landscaping;
  - conceptual architectural design with detailed program elaboration for two buildings (minimum) in the zone, of which the architectural solution of the Machine workshop building is obligatory (building no. 5).
- **within program zone (zone 2):** architectural concept – program, with object volumetry with communications and open spaces, all in accordance with special conditions and protection measures for facilities and spaces in the zone; plan all buildings, spaces and facilities in the context of the whole, especially in the context of establishing visual and programmatic connectivity of zones 1 and 2;
- **within the contact zone (zone 3):** design directions for connecting the complex with the wider surroundings. This zone does not have to be design as a whole, but only the part that the competition participant determines important for the integrity of the concept.
- **contextual area (zone 4):** consideration and verification of spatial relations within the complex, without particular intervention within the zone itself.

Participants are encouraged to formulate their proposals freely, **allocating the desired functions up to a maximum gross floor area of 200,000 m<sup>2</sup> and a maximum height regulation of up to 50 m**. All interventions in the space should be in accordance with the protection measures for cultural heritage and open space within the PKIC "VTZ Complex".

Due to the fact that this is a very valuable urban space in the cultural-historical sense, as well as in the context of the location, its immediate surroundings, important buildings and open spaces in the vicinity and the contact environment, the competition solution should improve the content, artistic and functional characteristics of the environment. At the same time, it should affirm modern tendencies in architecture, design and arrangement of important public buildings and spaces.

The architectural-urban solution should thematically integrate the existing inherited elements with the newly designed open and built spaces and to achieve a creative dialogue between the integrity of the industrial heritage and modern architectural concepts through authentic authorial expression.

It is very important to consider the position of the location in relation to other spatial cultural and historical units (Milošev venac, the Old Town of Kragujevac), especially its place in the vistas of the city. An important element of the location is its direct contact with the river Lepenica and the vistas towards the immediate surroundings. In addition, it is necessary to consider the qualities offered by the position and volumetry of the most valuable objects in the complex and accent motifs as symbols of the "industrial landscape".

Participants are expected to apply experiences from world practice in the renewal and revitalization of industrial heritage, by providing proposals for:

- New construction towards the forming of independent physical structures,
- Reconstruction of buildings that are not subject to protection with the possibility of height regulation in the existing dimensions, in the scope and form harmonized with the chosen approach to renewal,
- Interpolation of new layers with heritage layers in the direction of changing the height regulation, with the possibility of implementing new functions in accordance with the conceptual solution.

In addition to the attitude towards physical structures, it is expected to make proposals for traffic, functional, content, technological and environmental organizations with accompanying free and green areas while preserving tall vegetation, to provide the best use of capacity and potentials of the location and formed a rational and attractive architectural-urban solution. The general character of the proposed solution should be representative, in accordance with the cultural and historical values, ambience and volumetry of the environment. The program should highlight the point of identity of the wider spatial entity.

## **8.2. PROGRAM ELEMENTS AND CONTENTS**

Participants have the freedom to define program elements and content within the given framework. The planned program's elements should be publicly available and should meet the goal of sustainable regeneration. They should affirm the planned content that will bring new value and wider significance to the city, but also be the basis for establishing public-private partnerships. Proposed initiatives may be (optional) part of the program concept.

*Restrictive relations with existing facilities and contents:*

- The museum Old Gun Foundry ("Stara livnica") retains its purpose. The content should be proposed as well as the quality and diversity of the museum program.
- The machine hall, due to its position, spatial possibilities, and possible interventions to increase the spatial capacity, is one of the most attractive parts of the complex. The possible adaptive re-uses: museum (car museum, industrial museum...), car shop sale (wine shop, ...), buildings dedicated to the Faculty of Philology and Arts (workshops, exercise rooms, halls, ...), art hubs, business innovation center, film center, accompanying service facilities, etc. The plateau in front of the hall could be planned as an extended place of the building due to the function or as separated/isolated function;
- According to prominent initiatives, the Bullet Casing Plant, as one of the most representative buildings, has been proposed to become the administrative house of the Institute for the Protection of Cultural Monuments in Kragujevac, which would take care of implementation of the program for reconstruction and revitalization;
- Adaptive re-use of the building of the VTZ Administrative Building into contents of public or publicly available contents (culture, science, administration, library, and information center, etc.).

In addition to the cultural contents (galleries, concert halls, exhibition spaces, art workshops, film centers, art hubs, ...), educational contents (accommodation of individual faculty programs), and administration, etc., it is possible to organize various tourist contents, as well as business, services, promotion of old crafts (weapons), entertainment and manifestations (festivals), sport manifestations, recreation, catering, etc., but also the development of specific forms of housing (within the complex) related to the basic purposes (business housing, student campus, art colonies, business hubs), etc. The given capacities should be realized through the new constructions, reconstruction, and interpolation of buildings in accordance with the measures for the protection of cultural heritage.



### **8.3. OBLIGATORY ELEMENTS OF THE COMPETITION SOLUTIONS**

The selected solution should offer the highest quality proposals in terms of feasibility and economy and as such become a proven basis for further planning development of this area.

Mandatory elements:

- Typology of facilities with proposed constructive systems and materialization and the estimated level of investment for their implementation (implementation costs).
- "Business model" which proves the sustainability of the proposed solution, provides an estimate (minimum level) of value and realization costs for zones (new and reconstructed) in terms of expected investments ... for existing buildings only where their technical documentation is given.
- Presentation of possible models for solving internal communications and disposition of facilities with estimated maximum capacities for the subject complex.
- Present the estimated capacities as masses of physical structures and planned purposes in the zone.
- Explain the justification of interventions in space, from the ecological, sociological, financial and economic aspects.
- Financial and economic analysis of the project options, risk analysis, conclusion on the feasibility of the project.
- Provide an analytical review of the expected impact of the project implementation (project effects, main project participants).
- Analysis of financial and socio-economic profitability and sustainability of the investment during the reference period (in order for the project to be considered financially viable, it is necessary that there is a surplus of expected revenues compared to expected expenditures at the end of the reference period).
- Analysis and identification of key risks that may negatively affect the estimated financial and socio-economic profitability and sustainability of the project.

### **8.4. EVALUATION OF THE COMPETITION PROPOSALS**

They will be evaluated by checking the fulfillment of criteria related to (the order of criteria is not important):

- checking the quality of spatial-functional connections between the complex and the historical and administrative city center,
- assessment of the planned new (public and publicly available) urban facilities appropriate to the representative character of the complex. Assessment of the position of the subject area within the urban matrix, in order to reaffirm the spirit of the place, promote monumental values and rehabilitate the complex in accordance with proclaimed principles of urban sustainability,
- respect for the directions and forms of protection of heritage. Revitalization and remodeling of valuable industrial heritage and construction of a new physical structure with a possible explanation for deviations from the prescribed protection measures and permitted interventions,
- design of new open micro-environments and connections with pedestrian routes with the immediate environment,
- reshaping the internal modular structure of the center of gravity (flows, surfaces, plateaus, levels ...) with the emphasis on existing qualities and initiating new visual-design and aesthetic qualities,
- regulation of traffic flows (car, pedestrian, service, ...),
- arrangement of open spaces, green areas, ground floor, with the proposal of adequate urban furniture that would be in the function of attractiveness and users needs,

- assessment of representativeness, attractiveness, diversity and accessibility of planned solution, according to the prescribed measures for the protection of PKIC and the strategic commitment of the city to realize the new attractive and vibrant place;
- evaluation of the layout of thematically presented zones. Dispersive - according to the position and spatial possibilities within the complex. Checking their connections with mixed zones and with the most attractive parts of the complex.
- assessment of integration of content distribution in accordance with spatial possibilities and measures for protection of buildings and open space. Checking the connections of intersectoral programs and their connection with existing content distribution on site (eg car museum (culture) / car showroom (business, tourism)) / accompanying commercial contents) ...
- The decision on the selected project option, which will serve as the basis for project implementation, will be based on the value of indicators of socio-economic profitability of the project.

## 9. SUBMITTED INITIATIVES

So far, about twenty ideas have been registered about the possible purpose of this cultural-historical whole and the buildings that are located in it. These ideas, published in public, can be classified into the following groups: culture and other public purposes with accompanying compatible content; commercial facilities; institutions, associations and others. Most of the conceptual proposals were concentrated on the central part of the VTZ space - Topolivnica from the 80s of the 19th century (space which in recent years is also known as "Knežev arsenal") with the facilities of the Old Foundry with Blacksmith, Chaurnica and Mechanical (Mechanical) Workshop, i.e. to a space that was the first to step out of the "Forbidden City" and open its pearls of industrial heritage to the public.

The initiatives that have been launched in the last 15 years speak of the importance of the location and the growing interest of both the local population and the City, the Republic, but also others interested in using the complex. Among the most important are the initiative of the University of Kragujevac for the conversion of certain facilities for university education (FILUM), museum units, cultural and tourist attractions and accommodation of a number of public institutions. Although the most important is the formation of state and local policy instruments, an interesting illustration is the initiatives and attempts of public institutions, experts, citizens' associations, students, potential investors, etc., to give their vision of rehabilitation and conversion of space and facilities.

Common to most of the proposals is a vision, which could be formulated as "Kragujevac, the capital of industry / industrial heritage" and "Kragujevac, the center of creative industries". This is the "core" of the whole development strategy.

In the program sense, the project that would move towards the realization of the vision, could be called "Museum of the first Serbian industry". Kragujevac certainly qualifies as the seat of this Museum, as a kind of center of industrial heritage of Serbia, primarily due to the fact that, due to historical circumstances, the industrialization of the country began, but also as the former capital of the state within which state and other institutions were established. Regardless of the institutional framework for the implementation of this project, the "Museum of the First Serbian Industry" could include program units such as the "Museum of Weapons" (which would include the existing museum "Old Foundry", whose current setting is outdated, and a visit very small) and the "Car Museum" (in one of the VTZ facilities), complemented by an outdoor setting (eg around the Great Chimney). These should be modernly conceived, realized and organized institutions, very dynamic and noticed by the public, with built own brand and rich, inventive and creatively designed content of work, the importance of which includes cultural-historical, social, tourist, educational, promotional and economic aspect. Such museums in the world appear as: specialized museum institutions within active producer companies, technical museums of general type (national or regional importance), or technical museums such as foundations, endowments, legacies, memorial museums, private collections, etc.

*The "Old Foundry Museum", which is currently part of the "Zastava Oruzje" factory, was opened in 1953 (on the occasion of the factory's centenary) as the "Museum of the Red Flag Institute", with a theme dealing with the history and development of the factory. program and technical equipment of the factory. When production expanded and the automobile industry came to life, the museum was changed accordingly, and in 1960 a new exhibition was added, consisting of products from the automotive industry. The setting of the museum was radically changed in 1973 (occasion - 120 years of the factory) and focuses on the historical and technical development of the Red Flag Institute, but also on the importance of the factory for economic, socio-political and cultural development of Kragujevac and Serbia. On that occasion, the exhibition was transferred from the Chaurnica building to the renovated hall of Topolivnica, where it is today. Since then, the products of the automotive industry have not been part of the exhibition. Within the idea of preserving the industrial heritage of the Military Technical Institute, it is necessary to redefine the content and role of the existing museum "Stara livnica".*

## COMPETITION RULES



## 10. COMPETITION RULES

### 10.1 Conditions for participating in the competition

Pursuant to Article 111 of Public Procurement Law (“Official Gazette of the Republic of Serbia”, No 91/2019) and Article 28 of the Rulebook on the method and procedure for the announcement and implementation of urban and architectural competitions (“Official Gazette of the Republic of Serbia”, No 31/2015), all natural persons with acquired high education (university degree) in the field of architecture are entitled to participate in the competition, regardless of their territorial affiliation and personal characteristics, as well as all legal persons that have appointed a person with acquired high education in the field of architecture.

Participants in the competition are free to include experts from other professions in their teams if they could contribute with their professional opinion and knowledge to the improvement of competition solutions, as well as students.

Competition participant may not be the person who is directly engaged in the preparation and conducting of the Competition, or is relative or directly cooperate with such person, nor can it be person who is member of management or is employed with the institution that announced this competition.

Mandatory conditions for participation in the competition:

- Competition work must be submitted in a timely manner and in the way stipulated by the Competition Announcement.
- Competition work must follow all the requirements of technical and layout formatting and must contain the whole content determined by the competition announcement.

### 10.2 Conditions for conducting the competition

The competition is announced in accordance with the Article 52. And 77. of Public Procurement Law (“Official Gazette of the Republic of Serbia”, No 91/2019) (hereinafter: the Law) and Rulebook on the method and procedure for the announcement and implementation of urban and architectural competitions (“Official Gazette of RS” No. 31/2015), (hereinafter: The Rulebook).

The competition is conducted in the form of “Competition for Design” public procurement and it is published at the Portal of public procurements of the Republic of Serbia.

Each competitor who has taken the Competition Documentation is granted the right to take part in competition.

By submitting an entry to competition, each participant accepts the propositions of this competition.

### 10.3 Content of the competition work – required competition bases and documentation

Participants shall submit the competition work in an electronic form and detailed instructions for naming documents and marking competition attachments are given in Chapter 10.4.

The content of the competition work shall include:

1. Graphical attachments – 2D views
2. Graphical attachments – 3D views
3. 3D animation
4. Volume with textual and graphical attachments
5. Small poster for digital exhibition

The competition work and all supplementary submitted attachments shall be compiled in Serbian or English.

**All participants shall submit the following documents as part of the competition work:**

#### 1. GRAPHICAL ATTACHMENTS – 2D views:

##### 1.1. Competition location/area in wider environment

*(The entire scope of the competition area)*

- Conceptual view – site analysis (situation plan with the proposals of planimetric scheme, the connections of the VTZ Complex<sup>26</sup> with city centre, expansion directions and land use plan)  
P = 1:2500

##### 1.2. Composition plan – layout of physical structures and their spatial relations

*(целокупан (The entire scope of the competition area)*

- Site plan view (with cast shadows) P = 1:1000

##### 1.3. Zoning plan – Spatial-programme design for competition area

*(Zone 1 – narrower area – and Zone 2 – programme area)*

- Plan of building blocks – an assembly plan with the disposition of outdoor facilities, the number of floors per each building, roadways and footways, entrance approaches, open-space network and the organisation of urban greenery, general levelling design P = 1:1000

##### 1.4. Urban and architectural design of competition zone

*(Zone 1 – narrower area)*

- Detailed site view with ground floor plan and landscape arrangement– landscape design, the design of transport space (roadways, footway, parking lots), arrangement of green areas,
- Preliminary architectural design (minimum two buildings, of which the design of the building of mechanical workshop<sup>27</sup> is mandatory):
  - Plans of all floors and roof P = 1:250
  - Specific cross-sections of the entire complex with coverage of the silhouettes of neighbouring buildings and ambiances on the cross-section line P = 1:250

<sup>26</sup> VTZ Complex. VTZ – *Vojno-tehnički zavod/Vојно-технички завод*, English: *Military-Technical Institute*

<sup>27</sup> *Mechanical Building*, Serbian: *Машињска радионица/Машинска радионица*

- Specific elevation views of the entire complex with coverage of the silhouettes of neighbouring buildings and ambiences on the appearance line P = 1:250

## **2. GRAPHICAL ATTACHMENTS – 3D views:**

### **2.1. 3D views of the complex with the coverage of neighbouring ambiences and buildings at the discretion of the competitor, of which one are required:**

- View on the entire complex from their entrance approach(es).

### **2.2. 3D views of specific ambiences within the complex at the discretion of the competitor.**

**Note:** Graphical attachments – 2D views and Graphic attachments – 3D views shall be submitted as files in *.pdf* format, not in poster form.

## **3. 3D ANIMATION**

## **4. VOLUME WITH TEXTUAL AND GRAPHICAL ATTACHMENTS**

This volume shall be submitted in *.pdf* format, size: 29.7\*21 cm (A4), page orientation: landscape, with illustrations in 150 *PPI*.

The volume should contain:

- Design explanation, as an addition to graphical attachments. The explanation should be clearly structured and prepared according to the required Programme objectives and criteria;
- Land-use table sheets of calculated urban capacities for all urban functions and functional zones (the segments of urban block) and total capacities calculated by the competition work;
- Design timeline of the competition work (spatial, economic, technological, etc.), from the existing state to the final design, in the forms suitable for competitors (scanned hand drawings, diagrams, description, schemes, etc.).
- All graphic attachments reduced to A4 format.

## **5. SMALL POSTER FOR DIGITAL EXHIBITION**

This poster shall be submitted in *.jpg* format, resolution: 1920\*1440 pixels, poster orientation: landscape, with illustrations in 300 *PPI*.

Participants are free to choose one or more attachments (on one poster) that they deem is the most appropriate for this purpose. The work code should be written on the poster. This attachment must also be anonymous.

**All the aforementioned elements and attachments of the competition design, textual and graphical attachments of the aforementioned content, are mandatory parts of the competition work. The competition works that do not contain these mandatory parts shall not be considered.**

## **10.4. Competition work equipment**

All graphical attachments, each page in the volume, and posters shall be marked with a unique code in the upper right corner of each sheet (Arial font, Bold, size 50 pt for graphical attachments, or 24 pt for the volume). The unique code shall consist of two letters and five Arabic numerals chosen by the competitor. The volume pages shall be marked with ordinal numbers in the lower right corner. The text font in the volume shall be Arial, size 11 pt.

**The language of the competition is Serbian or English.**



The competition work shall be submitted in one or two packed/compressed folders (electronic .zip, .rar, and similar formats, **no larger than 25 MB**), solely named by the chosen code of two letters and five Arabic numerals (eg: "JM82205").

If the content of the competition work is larger than 25MB, it is possible to form a second packed folder (or if it is really necessary, then a third packed folder), which shall be named with an ordinal number next to the selected code (eg: "JM82205" \_1 and "JM82205" \_2 ("JM82205" \_3))

The first packed ("zipped") folder shall contain:

- GRAPHICAL ATTACHMENTS – 2D views and GRAPHIC ATTACHMENTS – 3D views, defined in Chapter 10.3 under 1 and 2, in .pdf format;
- VOLUME, size 29.7\*21 cm (A4), defined in chapter 10.3 under 4, in .pdf format;
- SMALL POSTER FOR DIGITAL EXHIBITION, defined in chapter 10.3 under 5, in .jpg format.

The second packed ("zipped") folder may be submitted separately with the same code with added an ordinal number (e.g., "JM82205\_2") and it shall contain:

- 3D ANIMATION lasting up to 1 minute

The third packed folder is a spare. If it is not possible to pack all required attachments in 2 packed ("zipped") folders, it is possible to freely redistribute only mandatory attachments marked with the same code with the addition of an ordinal number (eg "JM82205" \_3).

**The zipped folder, apart from the author's code and ordinal number, must not contain other data that would indicate the possible identity of the participant.**

Attachments outside the mandatory content will not be considered.

The competitors shall submit the competition work electronically **exclusively to the Portal of public procurements of the Republic of Serbia.**

Deadline for submission of competition works as well as all necessary information on untimely admission exclusively according to the notification in the competition documentation on the **Portal of public procurements of the Republic of Serbia.**

#### **10.5. Author's envelope - the content of the competitor's statement**

Along with the electronic submission of the competition work, the participant is obliged to submit a sealed opaque envelope marked "AUTHOR" and containing on the back the selected work code of two letters and five Arabic numerals. The envelope shall be sent to the following address: **City of Kragujevac (City Assembly Building, Office 306 A), Trg Slobode 3, 34000 Kragujevac, Republic of Serbia.** (Serb. *Grad Kragujevac (Zgrada skupštine grada, kancelarija 211), Trg Slobode 3, 34000 Kragujevac, Republika Srbija*).

The author's name must not be written on the envelope so as not to violate anonymity.

The envelope shall contain:

- Text document in A4 format containing:
  - The selected used code of two letters and five Arabic numerals;
  - Name(s) of the author(s) with signature(s);
  - Name(s) of the person the person authorised to represent the authors (may or may not be one of them);
  - E-mail address for sending the decision of jury;
  - Post mail address and contact phone;

- Statement in which the author or the author team declares whether he/she/they want the work to be exhibited at a public exhibition under the code (anonymously) or the author's name;
- Statement in which the author or the author team declares on the manner of distribution of the award in percentages, with the data and instructions for payment for all the aforementioned persons;
- Printed SMALL POSTER FOR ELECTRONIC EXHIBITION for exhibition reduced to 29.7\*21 cm (A4), poster orientation: landscape.

**Deadline for delivery of the envelope exclusively according to the notice in the tender documentation on the Portal of public procurements of the Republic of Serbia.**

Anonymity when sending the "AUTHOR" envelope can be ensured by:

- Direct delivery or sending via express mail service (DHL, FedEx, etc.) with an anonymous sending note ("AUTHOR" envelope inside the sending envelope with no indication of the AUTHOR code).

### 10.6. Competition deadlines

The tender documents can be downloaded from the Portal of public procurements of the Republic of Serbia (the link to the Portal of public procurements will be stated in the notice of the competition).

Questions and requests for additional information or clarifications shall be submitted **exclusively through the Portal of public procurements of the Republic of Serbia.**

The answers of the Jury to the questions asked, and only to the questions related to the announcement and the Programme of the competition, shall be published **on the Portal of public procurements of the Republic of Serbia.**

Deadline for submitting competition works and publishing the results of the competition **exclusively according to the information in the competition documentation on the Public Procurement Portal.**

The results shall be published on the Portal of public procurements of the Republic of Serbia, the competition website: [www.arsenal-kragujevac.com](http://www.arsenal-kragujevac.com), and Serbian Town Planner Association: [www.uus.org.rs](http://www.uus.org.rs).

Awarded and unawarded works shall be posted in an e-format on the competition website: [www.arsenal-kragujevac.com](http://www.arsenal-kragujevac.com) and on the website of Serbian Town Planner Association: [www.uus.org.rs](http://www.uus.org.rs) within two days from the day of publishing the Competition results. With all the works, the basic data of works will be published: work code, award, name(s) of the author, unless otherwise indicated in the application for the Competition.

### 10.7. Type and amount of awards

Уколико If at least five works arrive by the set deadline and if they meet the rules and conditions of the competition, the following prizes shall be awarded from the total gross prize fund of RSD<sup>28</sup> 8,000,000.00 according to the following distribution:

- First prize                      RSD 4,000,000.00
- Second prize                     RSD 2,000,000.00

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<sup>28</sup> RSD – Serbian Dinars

- Third prize RSD 1,000,000.00
- Purchase fund RSD 1,000.000.00

The jury shall distribute the prizes in all respects following the provisions of the Rulebook on the method and procedure for the announcement and implementation of urban and architectural competitions, with the possibility of a different distribution of prizes within the provided prize fund.

The Client shall pay out the authors of the selected and awarded competition works according to the Jury decision and the Competition documents – announcement within **30 days** from the date of confirmation of the Jury decision by the Client.

#### **10.8. Composition of the jury and reporters**

President of the Jury:

- Ivan Radulović, Architect, representative of the City of Kragujevac, Kragujevac, Serbia

Deputy president of the Jury:

- Prof. Ivan Rašković, Architect, representative of the Union of Architects of Serbia, Belgrade, Serbia

Jury members:

- Prof. Dr. Aleksandra Djukić, Architect, representative of Serbian Town Planner Association, Belgrade, Serbia
- Prof. Dr. Ognjen Marina, Architect, Ss. Cyril and Methodius University – Faculty of Architecture, Skopje, North Macedonia
- Prof. Dr. Dubravka Đukanović, Architect, representative of Institute for the Protection of Cultural Monuments of Serbia, Belgrade, Serbia
- Prof. Dr. Saša Čvoro, Architect, University of Banja Luka – Faculty of Architecture, Civil Engineering and Geodesy, Banja Luka, B&H
- Dr. Veroljub Trifunović, Architect, representative of Serbian Town Planner Association and “Kragujevac – naš grad /Kragujevac – Our City” Association

Deputy members of the Jury:

- Mirjana Ćirić, Architect, representative of Serbian Town Planner Association
- Nikola Milanović, Architect, representative of the City of Kragujevac

Reporters:

- Jasna Marićević, Architect, Belgrade, Serbia
- Lazar Mandić, Architect, Kragujevac, Serbia

Competition Secretariat:

- Serbian Town Planner Association

#### **10.9. Legal and financial consequences for the type and amount of the award and conditions for the protection of copyright and transfer of author property rights to the investor**

- The author of the competition work shall be considered the participant who prepared the competition work and thus published the original work under his/her own name by submitting it to the competition. An author team comprises the signatories of the competition work, co-authors, and thus the holders of all joint copyrights.
- By submitting the competition project, the authors (author team) transfers to the Client the non-exclusive property right of all authors, unlimited in time and space, if the project is



awarded or purchased. The submitted projects must be original and the exclusive result of the participant's ingenuity and in accordance with the Law on Copyright and Related Rights.

- Awarded and purchased projects will serve as a basis for further elaboration of urban planning, urban design, construction, and technical documentation, without paying additional fees to the authors. By transferring copyright from the authors, the Client is given permission for those changes in the part that are technically necessary to meet the basic requirements of buildings and spatial units, with maximum adherence to the basic concept of the selected project solution at competition.
- The Client has no obligation to hire the author as the executor of urban planning, urban design and (technical) construction documentation but reserves the right to hire the author team of the selected project if there is a need for significant changes to the selected competition project in accordance with the recommendations of the expert jury, which will be regulated by a special contract, in accordance with the provisions of the Law.
- If necessary and if there is a mutual interest, the Client may consult the authors of the awarded and purchased works during the further project elaboration, and the authors shall provide consulting services to the extent necessary. A special agreement shall regulate any possible cooperation of the parties, in accordance with the provisions of the Law.
- Authors reserve the right to publish their works.
- The Client is entitled to use all submitted works, publish them, and promote the competition results.

## **ATTACHMENTS TO THE PROGRAMME – BASIS AND ACCOMPANYING DOCUMENTATION**

Link to download the basis and accompanying documentation will be published on the Portal of public procurements of the Republic of Serbia.

### **1. INFORMATIVE GRAPHICAL ATTACHMENT**

- Limits to the competition area,
- Map of land and buildings ownership,
- Objects for further architectural elaboration (existing condition).

### **2. GRAPHICAL DIGITAL DATA**

- Cadastral-topographic map of the competition area,
- Cadastral-topographic map of the wider area,
- Orthophotoplan of the competition and wider area.

### **3. INSTITUTIONS FOR THE PROTECTION OF CULTURAL MONUMENTS AND RELEVANT DECISIONS**

- Institute for the Protection of Cultural Monuments of Serbia, Belgrade,
- Regional Institute for the Protection of Cultural Monuments, Kragujevac,
- Decision on declaring the complex of Military-Technical Institute (Serb. Vojno-tehnički zavod – VTZ) in Kragujevac as a spatial cultural-historical unit (“Official Gazette of the Republic of Serbia”, No 36/2014),
- Decision of of the National Assembly, No. 2, classified the complex of Military-Technical Institute (Serb. Vojno-tehnički zavod–VTZ) in Kragujevac as a Cultural Monument of Exceptional Importance, (“Official Gazette of the Republic of Serbia”, No. 12 /2016).

### **4. EXCERPTS FROM VALID/OPERATIVE PLANNING DOCUMENTS**

- General Urban Plan “Kragujevac 2015” (“Official Gazette of the City of Kragujevac”, No 7/2010 and 16/2012),

- Plan of General Regulation “Beloševac and Ždraljica Settlements” (“Official Gazette of the City of Kragujevac”, No 39/2015),
- The first harmonisation of the Plan of General Regulation “Centre-Old Town” (“Official Gazette of the City of Kragujevac”, No 24/2013),
- Plan of Detailed Regulation “Main Site of ‘Zastava’ Group” (“Official Gazette of the City of Kragujevac”, No 9/2005),
- Plan of Detailed Regulation “Milošev Venac II” (“Official Gazette of the City of Kragujevac”, No 11/2006),
- Plan of Detailed Regulation “Zastava automobili” (“Official Gazette of the City of Kragujevac”, No 37/2008),
- Harmonisation of the Plan of Detailed Regulation “Main Site of ‘Zastava’ Group” (“Official Gazette of the City of Kragujevac”, No 6/2013) – transport corridors,
- Harmonisation of the Plan of Detailed Regulation “Main Site of ‘Zastava’ Group” (“Official Gazette of the City of Kragujevac”, No 8/2014) – electrical substation,
- Plan of Detailed Regulation “Main Site of Old ‘Zastava” (“Official Gazette of the City of Kragujevac”, No 41/2015),
- Urban project of the block "Milošev venac" (2002),
- Proposal of program task for development of the Plan of detailed regulation of SCHU "Complex of the Military Technical Institute in Kragujevac" - zone 1 (2017).

## 5. PHOTO AND VIDEO DOCUMENTATION

- General photo documentation
- Video documentation and virtual tours:  
<https://www.youtube.com/watch?v=W6ozRPS7zp8>  
[https://kg.virtualnigrad.com/milosev\\_venac/srb/milosevvenacsrpski.html](https://kg.virtualnigrad.com/milosev_venac/srb/milosevvenacsrpski.html)

## 6. SUBMITTED INITIATIVES

- Conceptual project – Proposal for Establishment of Historic-Cultural Centre “The First Industry in Serbia” in the buildings of “Prince Arsenal” in Kragujevac, “Kragujevac – naš grad /Kragujevac – Our City” Association,
- Proposal for permanent protection of technical cultural assets of the domestic automotive industry, National Museum in Kragujevac,
- Nonofficial proposals, polls.

## 7. OTHER DOCUMENTS FOR THE PROGRAMME

- Integrated Urban Development Strategy for Inner City of Kragujevac – Kragujevac 2030 (“Official Gazette of the City of Kragujevac”, No 34/2012) (in Serbian and English),
- Proposal of urban solution for the Spatial Unit Military-Technical Institute, Kragujevac (Astoc, Ambero, City of Kragujevac, 2014),
- Investment plan for the realization of the planned traffic, green and other ground (public) areas and communal infrastructure within the complex "Military-Technical Institute" in Kragujevac (Educa, Ambero, 2015),
- Real Estate Appraisal Report in the Zastava Trucks Complex (PCPI, Ambero, 2015),
- Report on the examination of the quality of the land in the MTI complex (Zaštita na radu, Belgrade, JP Urbanizam Kragujevac, 2020),
- Publications of the Institute for the Protection of Cultural Monuments - Kragujevac;

- “Istorijska i umetnička baština Vojnotehničkog zavoda / Historic and Artistic Heritage of Military-Technical Institute”, Regional Institute for the Protection of Cultural Monuments in Kragujevac & Ministry of Culture of the Republic of Serbia. Kragujevac and Belgrade: 2005. (In Serbian)
- “Industrijsko nasleđe – zaštita i revitalizacija / Industrial Heritage – Protection and Revitalisation”, Regional Institute for the Protection of Cultural Monuments in Kragujevac, Kragujevac: 2013 (In Serbian)
- Military-Technical Institute - Industrial and Technical Heritage of Kragujevac (Regional Institute for the Protection of Cultural Monuments Kragujevac, Kragujevac, 2013) / map
- Excerpt from the relevant study documentation:
  - “Konstruktivne vrednosti objekata VTZ (pregled) / Construction Values of the budlings of Military-Technical Institute (Review)”, Evica Dimitrijević Rajić, 2013. (In Serbian),
  - “Studija izvodljivosti VTZ – Ljubljanski proces II / Feasibility Study of Military-Technical Institute – Ljubljana Process II”, Regional Institute for the Protection of Cultural Monuments in Kragujevac. (In Serbian).

**Note:** Photographs that do not specify the author are photographs owned by the Regional Institute for the Protection of Cultural Monuments Kragujevac, Kragujevac City Tourist Organization, National Museum in Kragujevac, Zoran Petrovic, Predrag Mihajlovic, Veljko Lekovic, Bogdan Vranjesevic, Dragan Vuckovic, Jovan Zivanovic, Zoran Lazarevic , Bojan Pavlović and Dragan Jevtović, who gave their consent to the City Administration for Development and Investment of Kragujevac to use them for the purpose of input data for participants in the international competition SCHU "Military-Technical Institute" in Kragujevac.

In Belgrade, 23.06.2022.

Jury:

President of the Jury:

Ivan Radulović, Architect, Kragujevac, Serbia

Deputy president of the Jury:

Prof. Ivan Rašković, Architect, Belgrade, Serbia

Jury members:

Prof. Dr. Aleksandra Đukić, Architect, Belgrade, Serbia

Prof. Dr Ognjen Marina, Architect, Skopje, North Macedonia

Prof. Dr. Dubravka Đukanović, Arhitekta, Belgrade, Serbia

Prof. dr Saša Čvoro, Arhitect, Banja Luka, B&H

Dr. Veroljub Trifunović, Arhitect, Kragujevac, Serbia