

SUSTAINABLE SOLUTION FOR CITY PARK 'USCE' - DIMENSION FOR THE FUTURE

INTRODUCTION

Metropolitan City of Belgrade, with the population near 2 millions, nested in extremely difficult and challenging spatial, political and economical part of Europe, nowadays is one of the hottest as well as fastest developing spots on real estate market. Process of transition and privatization, lack of well define strategy for spatial planning and development, corruption, demographic changes are just few negative impacts that shaped the future of the 'City on two rivers'.

On the other hand, City of Belgrade is a place full of potentials. Intersection for different cultures, religious and cultural influences, focal historical point, place of many archeological sites, with extreme structural complexity and ecological diversity. That is the city developed on two river banks, connected and divided with two rivers, Danube and Sava with two spatial entities: old city of Belgrade (Beograd) connected with central Serbia, surrounded with the hills and mountains, limited wit the space and sensitive for major development and new city of New Belgrade (Novi Beograd), connected with wide flat open space of Vojvodina, widely speeded and interesting for development, new business area, fast growing real estate zone.

One of the most important and attractive locations of both City entities, called 'Usce' (river mouth) in 2007-08 was proposed for reconstruction, based on sustainable urban design.

1. STRATEGY FOR SUSTAINABLE URBAN DESIGN AND HERITAGE PROTECTION

Urban spacer 'USCE' undefined green zone over 140 hectares nested in urban network, along the waterfront of rivers Danube and Sava, just on the river's mouth. Facing the Old City Fortress **Kalemegdan**, the space is known as **USCE** (river mouth), symbol of Belgrade by itself and the biggest **green spot** in urban matrix of the New Belgrade. With reach historical and archeological background, environmentally sensitive and ecologically divers, connected with the hipper-developing residential conglomerate, City Park Usce is one of the strategically most important projects in the cultural landscape of Belgrade. Enormously challenging for planners and designers of all profiles in a sense to: determine new dimension of existing buildings and define small spaces inside the **big green potential**, identify possibilities for the waterfront regulation, satisfy needs of **new and old** society and present economically potential justification of the project.

Designed and partly-built during socialism, unfinished in unstable transitional political and economical phase of Serbia, captured by modern needs, space was challenge as well as esthetic visualization of sustainable design for many reasons: as a goal to recognize the story of the space driven by the flow of two rivers, as a new structure in the endless time, as a possibility to serve and satisfy the society and the municipality and as a discovery point of essential and unknown potential of the space.

The biggest impact on conceptualization of the project was environmental compatibility within wider urban network along the rivers, as well as requirements and needs for New Opera House Building location, reconstruction of Museum for Contemporary Art and regeneration of old institutional government building known as SIV.

BASIC DIRECTIONS

The major planning goals were based on two essential tips: **integrity** and **sustainability**. Next step in conceptualization of the project was to recognize the story of the space as **story of flow**. The **story of flow** is consisted of **space**-shaped and lead by river flows, **time**-past, present and the future of one city and **people**-the witnesses and actors of historical processes and huge impacts of the cultural landscape of Belgrade.

To reach integrity and sustainability of the space, through the successful design, of the greatest importance was to determine strategy for development and protection of the space by developing methodology for integrative and sustainable conceptual design. Methodology was based on three sets of elements.

1. **Criteria:** project requirements, successful space, real needs of both cities, heritage protection, local and global integration of the space, ecological sensitivity.
2. **Objectives:** ecological, economical and social aspect of the design, through structural elements, functions (existing and proposed), connections and quality of design and the space.
3. **Tools:** zoning, determination of critical elements, sustainable solutions through protection, revitalization and recycling.

CRITERIA

1. Project requirements are based on existing condition of green space Usce and there are given by Municipality of Belgrade and New Belgrade as well as Association of Architect of Belgrade. The major concern was to identify existing spatial units for development, existing buildings condition and potentials, location for the Opera building, protection of watershed and zone of Big and Small War Island (Velikog i Malog ratnog ostrva) as unique and natural ecosystem.
2. The essential question as one of the criteria for conceptual design was to identify what makes space successful space from the aspect of design and planning. According to analytical approach of numerous similar spaces around the world, we were faced with the facts that **successful space** is equal to **good quality space** from the aspect of users, designers and investors. Good quality space is defined by characteristics of the quality by itself, such as: functional aspect of spaces defined by linkages, accessibility and sociability, low maintaining of the space, security of the space, visual aspect defined by image and comfort of the space, environmental aspect of the space defined by uses and activities.
3. To identify real needs of the both cities is based on decision which direction is going to be dominant for the future development. One direction was based on present extremely high priced real estate market and attractive location for new developers, that was from the planning and designing aspect, short term and unsustainable scenario. Another, more acceptable scenario was to design the space as unique and attractive multi-purpose location, base on long term sustainable development of solutions and satisfaction of various needs.

- Heritage protection was based on several elements of the space such as: Monument in the Park of friendship as an integral part of green space Usce, building of Museum of contemporary arts, Old government building SIV.
- Local and global integration of the space was one of the mayor criteria to identify successful sustainable concept of the City park Usce. Location of green space Usce is just the beginning of the large belt of numerous locations on the waterfront of Belgrade.



Figure 1- Global integration of waterfront locations in Belgrade, (Mitrovic, S., Konkurs za Gradski Park Usce, Belgrade, 2007.-2008.)

- Ecological sensitivity of the location was the limitation factor of design and planning as well as initiation for more sustainable and challenging design. Location of the green space Usce is directly connected with ecologically protected natural habitat of Big and Small War Islands (Veliko I Malo Ratno Ostrvo). With numerous birds and wild animals, this is unique habitat under national protection program.

OBJECTIVES

- Ecological aspect** – Protection of biodiversity of Big and Small War Islands (Veliko I Malo Ratno Ostrvo) as well as City park Usce and their connections; Develop bigger green patches and wetlands inside the Park Usce location; Protection of direct drinking

water source locations; Water front regulations and improvement; Connections on existing infrastructure elements (water, sewage and electrical systems); Connections of existing green patches by corridors to improve and protect uninterrupted migration of fauna from/to Big and Small War Islands; Reconstruction of old and development of new building based of green building design;

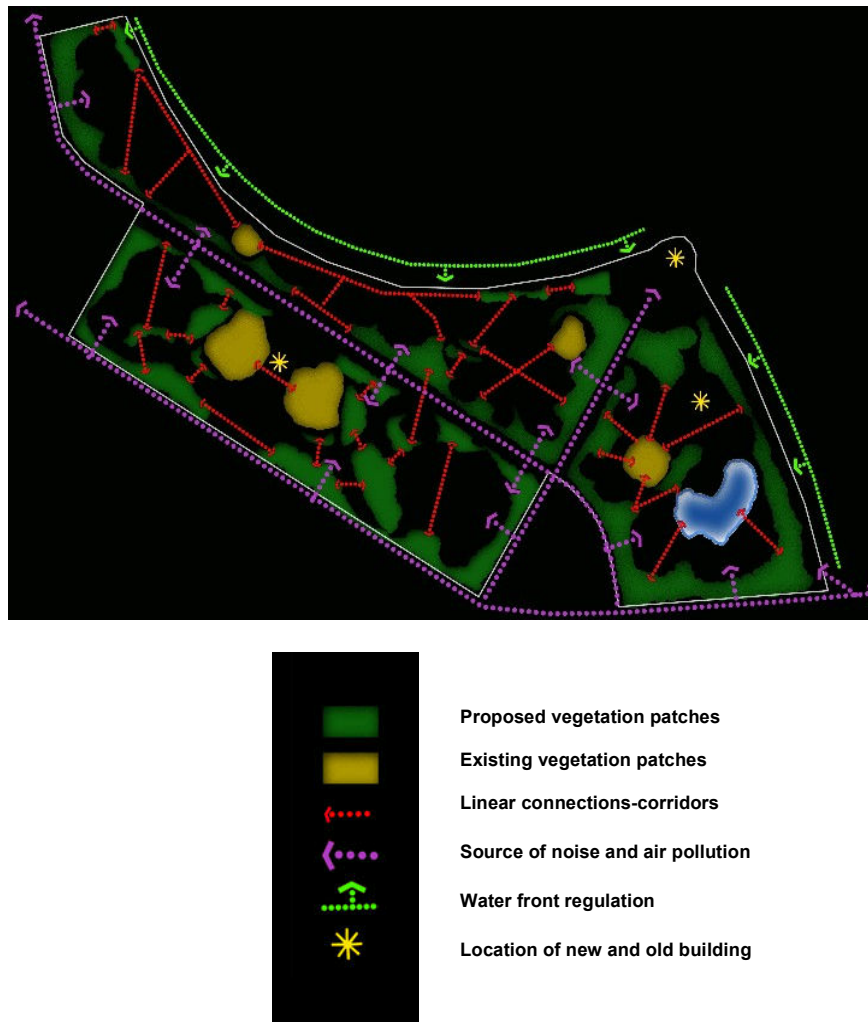


Figure 2- Ecological aspect of Park Usce,
(Mitrovic, S., Konkurs za Gradski Park Usce, Belgrade, 2007.-2008.)

- Social aspect** – Define new functional entities and their pedestrian connections; Attract different age and interest groups that generally reflect the community at large; Introduction of new environmental friendly water activities along Danube river bank; Reconstruction of existing buildings and their adaptation for different user groups and needs; Determine location for the new opera house according to users and Municipality needs.

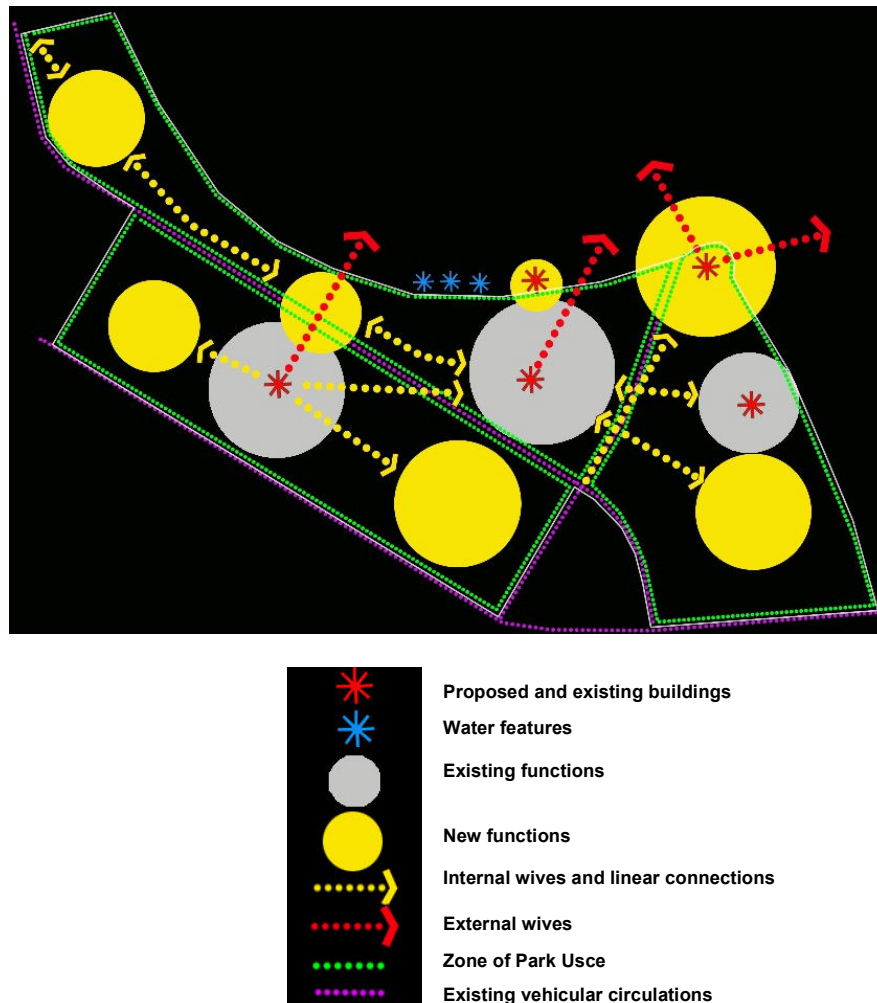
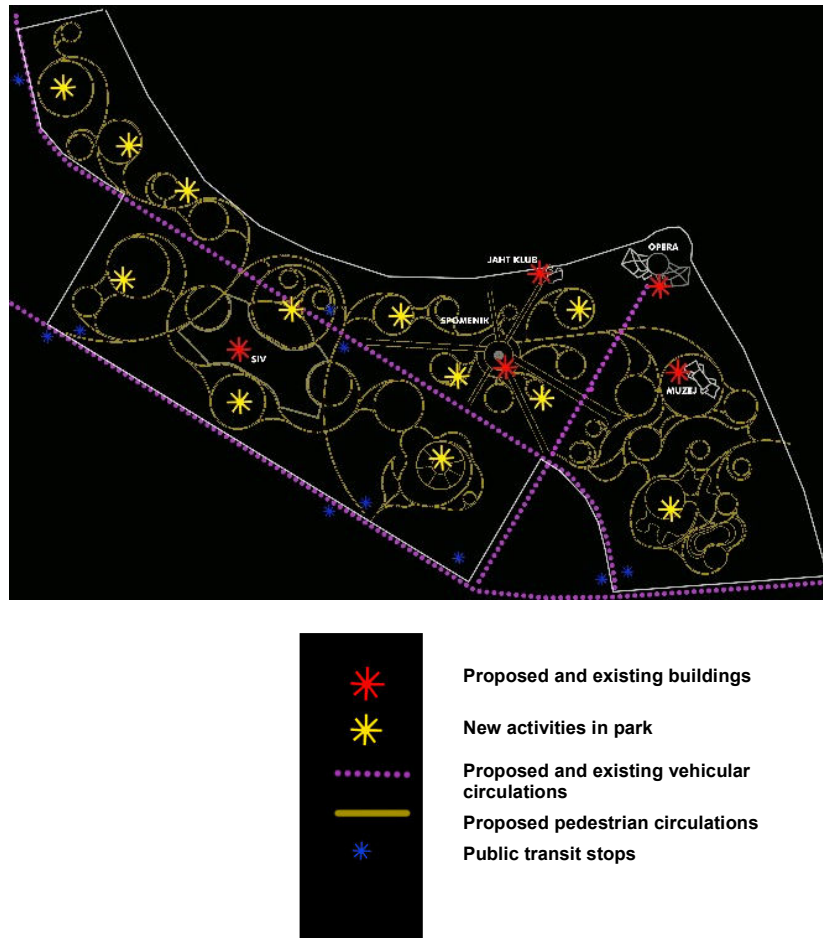


Figure 3- Social aspect of Park Usce,
(Mitrovic, S., Konkurs za Gradski Park Usce, Belgrade, 2007.-2008.)

- Economical aspect** – Initiation of small and big scale projects to attract business investors; Planning and maintaining indoor and outdoor cultural events on daily and seasonal base; Enlarge and reuse of building capacity and functions regarding to new jobs opportunity for the local population; Development and introduction of tourist attractions as an opportunity for profit and new jobs; Efficiency and saving of energy, water and other resources as well as recycling of consumer waste and bio-mass.



**Figure 4- Economical aspect of Park Usce,
(Mitrovic, S., Konkurs za Gradski Park Usce, Belgrade, 2007.-2008.)**

TOOLS

Major tools used for conceptual design of City Park Usce were:

1. **Zoning**- Based on complexity of the space and importance of particular elements of City Park Usce, whole space is divided into four zones: Zone 1-the narrow space along the river banks; Zone 2- Open space from Park of Friendship to the south-west property line near Hotel Yugoslavia. The characteristic of the Zone 2 are the close connection with the water front and Heavy traffic Boulevard of Nicola Tesla. Extremely complex zone with the length of 1,8 km and with of approximately 100 m; Zone 3- Open space around Old Government Building SIV without clearly defined characteristics of the Park; Zone 4- Open space around Museum of Contemporary Arts limited with direct drinking water source locations.



*Figure 5-Zoning of Park Usce,
(Mitrovic, S., Konkurs za Gradski Park Usce, Belgrade, 2007.-2008.)*

2. **Determination of critical elements** - There are several critical elements of the Urban space Usce. There are: Heavy traffic of existing infrastructure as a source of noise and air pollution, neglected waterfront of river Danube, boat-restaurants on river Sava bank near protected water source area, high level of underground water, complexity of the space determined by existing structure and functions (vehicular, pedestrian and bicycle circulations, intersected with three major vehicular circulation, sensitive and protected areas, needs for the new structures and functions, etc.).
3. **Development of sustainable solutions** – There are several elements defined and integrated into sustainable conceptual design for the City Park Usce:
 - **Form of the Park Usce-** Concept of free form highlight the rivers flow and movements. Just in a few particular location park is designed in formal manner existing monument and Government building SIV. All spatial units are integrated with idea of river flow as well as accented by well defined wifes (on the Old Fortress Kalemegdan, Big and Small War Islands as well as SIV Building, new location for Opera house and Yachting Club (across Smal War Island) as well as Museum of Contemporary Arts. Existing public transit stops are remained. Parking spaces are proposed around SIV Building, Opera Building, Museum Building and Yachting Club Building.
 - **Elements of the Park Usce-** Priority in initial phase of conceptual design was to create protection buffer zone around the location, regarding to existing noise, air pollution and drinking water source locations. Location for the Opera house was chosen on the nearest zone of river mouth as the spot of slow river flow to satisfy aesthetic and functional criteria. Across the Old fortress Kalemegdan is natural

and visual connection between new and old Belgrade. The Opera house is self-efficient green building with solar systems and natural ventilation, completed with rooftop gardens. SIV building is recycled and protected, with new more friendly architectural form, vertical green walls, rooftop gardens and solar systems. The function of the SIV building is revitalized by adding new contests such as new national research centre as well as Museum of nature. Proposed Museum Building was extended by 40% in a sense of green building and rooftop gardens. Vertical green walls and roof top gardens of all buildings make illusion of undisturbed green area, with no artificial structures.



Figure 6-Sustainable Conceptual Design of Park Usce
(Mitrovic, S., Konkurs za Gradski Park Usce, Belgrade, 2007.-2008.)

- **Functional zones-** There are defined as: Zone of sport and recreation on the north-west side of location; Cultural zone, open projection and artistic installations located around Monument in Park of Friendship; Educational and Discovery zone around SIV Building as well as Botanical garden; Play and Creative zone around Museum Building, mainly proposed for the kids of all ages; Zone of passive recreation, walk, pick nick areas are added around all other areas and activities.

CONCLUZION

Surrounded with two rivers, two city parts, under the extremely pressure of transitional political and economical situation in Serbia, location of City Park Usce is treasure and resource for the future as well as challenge for the present.

With proposed number of 1770 parking spaces, 10 km of bicycling route, 25 km of wall and discovery route, more then 30 squares, pavilions, 2 open amphitheatres, 9 fountains and 1 pond with wet land area and numerous streetscapes is unique entity in the hearth of the urban space of Belgrade.

Based on real case open space Usce in the City of Belgrade this is the sample of integration the past, present and the future, sustainable development, quality of the space and strategic planning for the future. Developing effective, optimal and sustainable design is complex and sensitive process that involved designers, planners, authorities as well as consumers and investors.

REFERENCES

1. Mitrovic, S., *Konkurs za Gradski Park Usce, Belgrade, 2007.-2008.*