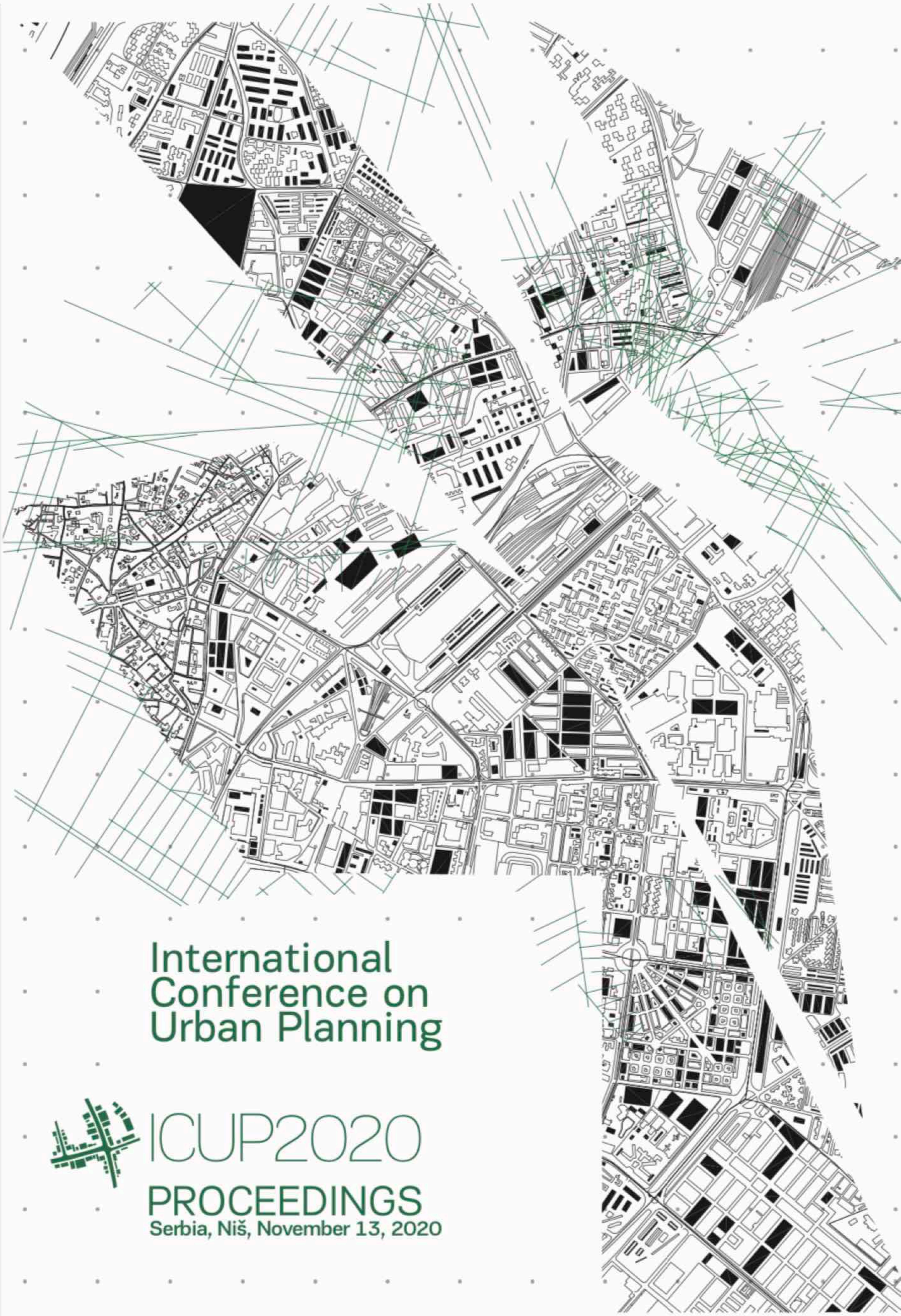

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FOREWORD

It is a great honour and privilege to present to you the Proceedings of the Third International Conference on Urban Planning - ICUP2020, which is taking place online in these uncertain times of coronavirus pandemic. This year's event is scheduled for November 12-13th, 2020 in Niš. The conference is organized for the third time by the Faculty of Civil Engineering and Architecture - University of Niš and Urban Planning Cluster, thus continuing the tradition of being a biennial manifestation of the University of Niš. We believe that the main conference goal is accomplished, since we have once again brought together scholars, researchers, students and professional from all over the world and from the fields of Urban Planning, Urban Design, Architecture, Civil Engineering and related fields.

Having successfully discussed a broad spectrum of planning, design and development issues during the First and the Second ICUP conference, it is now time to focus on the resilience of cities, while trying to shape urban landscape by promoting nature, cultural heritage, technologies and social equity. Topics that ICUP2020 is focusing on this year include, but are not limited to: Nature-based solutions in urban areas, Mitigation strategies for climate change, Cultural heritage in building urban identity, New approaches and concepts in preserving built heritage, New technologies and materials in construction, Social aspects in urban planning and design, Planning, design and development challenges in creating resilient communities, and Links between regulations, urban planning and architectural design.

After the review process, 30 conference papers from various study areas and diverse places in the world are discussed at the ICUP2020 conference. Contributing papers deal with highly topical reselience issues and therfore provide a valuable insight into contemporary urban theory and practice. The presentation of our eminent key-note speaker contributes to an interesting and successful conference, while the scientific contribution from the members of our international Scientific Program Committee guarantees a high quality Book of Proceedings that will inspire future research. I would therefore like to thank all of them, as well as teachers and associates engaged in the technical preparation of these Proceedings.

Given the importance of the topics elaborated at the conference and numerous questions that are raised here, ICUP conference will continue to explore topical issues in urban development for the benefit of our cities. I am pleased to invite all authors from the academic and research community to participate in future ICUP conferences.

See you all at ICUP2022!

***Petar Mitkovic**, PhD, Full professor*
Faculty of Civil Engineering and Architecture, University of Nis
Chairman of the Scientific Program Committee

CONTENTS

THE RESEARCH HISTORY OF SHRINKING CITIES: A CONCEPT OR NOT?
Branislav Antonić, Aleksandra Djukić 01

URBAN REGENERATION & ARCHITECTURAL RECONVERSION. TWO PROJECTS
Andrea Zamboni 09

TALL BUILDINGS ARTISTICALLY CONSIDERED? HIGH-RISES AND THE HISTORIC URBAN LANDSCAPE
Martin Horáček 17

POSSIBILITIES AND BENEFITS OF NATURE-BASED SOLUTIONS IN URBAN REGENERATION OF LARGE HOUSING ESTATES FROM SOCIALIST PAST
Ljiljana Vasilevska, Magdalena Vasilevska 25

BANJA LUKA URBAN BACKBONE AS THE ARCHITECTURAL STATEMENT OF HISTORICAL DEVELOPMENT
Miroslav Malinovic 33

THE DEVELOPMENT OF CONTEMPORARY URBAN TRANSPORTATION IN RELATION TO URBAN STREET NETWORK
Peter Nikolov, Boryana Nozharova 41

SHIFTING FROM SUSTAINABLE TOWARDS REGENERATIVE DESIGN AND DEVELOPMENT IN CREATING URBAN ENVIRONMENTS
Aleksandra Cvetanovic, Mihailo Mitkovic 49

APPLICABILITY OF POP-UP APPROACH TO FLOATING URBANISM: DEMOCRATISATION OF AQUATORIUMS IN THE CITY OF BELGRADE
Milica Simovic, Petar Mitkovic 57

POCKET PARKS AS A TYPE OF URBAN GREEN SPACE – BENEFITS AND POSSIBILITIES OF IMPLEMENTATION
Magdalena Vasilevska 65

RESIDENTIAL SPACE AS CHANGEABLE AND RESILIENT POLYGON FOR FUTURE LIVING
Borjan Brankov, Marina Nenković-Riznić, Mila Pucar 73

SHARING IS CARING: CO-HOUSING AS A MODEL OF STUDENT HOUSING IN SERBIA
Hristina Krstic, Miomir Vasov, Vladana Petrovic, Mirko Stanimirovic 81

COMMUNICATING BUILT HERITAGE - SEMIOTICS OF INDUSTRIAL HERITAGE IN THE CONTEXT OF URBAN TRANSFORMATION
Ljiljana Jevremovic, Branko AJ Turnsek Aleksandar Milojkovic, Ana Stanojevic, Marina Jordanovic 91

REGAINING THE CITY - IDEAS AND INTERVENTIONS IN URBAN PUBLIC SPACES
Constanta Carmina Gheorghita 99

THE WORSHIP SPACE AS AN IN-BETWEEN PLACE
Constanta Carmina Gheorghita 105

THE POTENTIALS OF WINE REGIONS FOR THE FORMATION OF CULTURAL LANDSCAPES: EUROPEAN EXPERIENCES
Ana Stanojevic, Branko AJ Turnsek, Ljiljana Jevremovic, Marina Jordanovic, Isidora Djordjevic 113

WHEN DISASTERS AND ERRONEOUS GOVERNMENTAL DECISIONS MEET IN HISTORICAL CENTRE: THE CASE OF THE OLD MARKETS OF THE LEBANESE TRIPOLI
Antoine Dib, Hristina Krstic 121

CONSEQUENCES OF IMPROPER PLANNING - ARCHITECTURE IN PIROT
Mirko Stanimirovic, Slavisa Kondic, Tanja Obradovic, Vojislav Nikolic, Hristina Krstic 131

ENVIRONMENTAL BENEFITS OF GREEN ROOFS
Dušan Ranđelović, Miomir Vasov, Dragana Dimitrijević Jovanović, Jelena Stevanović, Aleksandra Ćurčić 139

KINETIC FACADES AS ELEMENTS OF CONTEMPORARY AND SUSTAINABLE ARCHITECTURE
Aleksandra Ćurčić, Gordana Topličić Ćurčić, Nataša Matić, Dušan Ranđelović 145

REVEALING NATURE THROUGH PLAY IN URBAN DESIGN EDUcation
Jelena Živković, Marija Cvetković, Rajko Korica 153

PROPERTIES AND QUALITIES OF DISPERSED URBAN FABRIC: UNDERSTANDING THE BANJA LUKA URBAN FORM
Nevena Novaković, Anita Milaković, Dijana Simonović 163

GREEN LIVING ROOFS AS A PART OF GREEN INFRASTRUCTURE
Dragana Dimitrijević Jovanović, Danka Kostadinović, Predrag Živković, Dušan Ranđelović 171

SOLAR PARKING CANOPY AS A PART OF ENERGY EFFICIENT URBAN PLANNING
Aleksandar Pantić, Dragana Dimitrijević Jovanović, Petar Mitković, Mirjana Laković – Paunović, Mihailo Mitković 179

SUSTAINABLE MANAGEMENT OF OPEN PUBLIC SPACE IN A LARGE HOUSING ESTATE IN SOFIA: INTEGRATING PHYSICAL CHARACTERISTICS AND SOCIAL DIMENSIONS
Milena Tasheva - Petrova 187

COMMON OPEN AREAS AS INTERACTIONAL SPACE IN SOCIAL HOUSING - DESIGN PRINCIPLES AND SPATIAL CHARACTERISTICS
Nataša Petković, Branislava Stoiljković, Vladana Stanković 197

BUILDING RESILIENCE THROUGH CREATIVE STRATEGIES IN SMALL POST-SOCIALIST SHRINKING TOWNS
Milica Ljubenović, Ivana Bogdanović-Protić, Petar Mitković, Milica Igić, Jelena Đekić 205

PREFABRICATED HOUSING FOR INCREASING RESILIeNCE TO FORCED MIGRATIONS
Vuk Milošević, Michał Chodorowski 213

SMART GREEN PORT ASSESMENT ON PLANNING SOLUTION OF DOCKYARD IN BELGRADE
Tatjana Mrdjenovic, Miodrag Ralevic 221

FUNCTIONAL AND AMBIENT QUALITIES OF SCHOOL GROUNDS: A CASE STUDY IN NIS
Milan Tanic, Danica Stankovic, Vojislav Nikolic 229

PLANNING, SCALE OF OWNERSHIP AND THE OPTIMAL NUMBER OF CO-OWNERS
Aleksandar D. Slaev 237

SMART GREEN PORT ASSESMENT ON PLANNING SOLUTION OF DOCKYARD IN BELGRADE

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ABSTRACT

Urban planning in Serbia is in dilemma on the paradigm and style of planning it should follow. There were plenty of opportunities taken and realized used top-down approach: eg. Belgrade waterfront, Urban regeneration of Belgrade Downtown, Infrastructural projects, etc. It seems that they achieved what was not possible over decades, however there is still lack of participation in crucial sense that will enable integration of all pillars of sustainability in urban planning and development. The paper will do a critique on existing planning solution for Dockyard in Belgrade taking into account Danube strategy and Sustainability paradigm as framework together with theory of Integrative urban space and green urbanism in relation to communicative theory of urban planning. The hypothesis is that top-down approach resulting in blue print planning can be starting point for wider participation towards smart solutions, in this case creating Smart port. Aims of the paper is to give guidelines for integration of top/down and bottom/up approach in Serbia exploring case of Plan of detail regulation for Dockyard in Belgrade, resulting in suggestions for its improvement towards "smart port".

Keywords: *urban planning, urban regeneration, sustainability, smart and green urbanism*

1. INTRODUCTION

We can say that urban planning is in major crisis on global level since global capital on one hand and democratic and identity movements together with protection of individual rights in regards to land ownership are rising since 1990s. We know that urban planning should give answer on what?, where? and how? Should be distributed in place, but the main question nowadays is why do we need planning? Since 19th century urban planning has a main role in protection of public good, especially related to working class, industrial zones, traffic and housing. The state was the actor who defined public good which is now under the discussion in regards to pluralism different interests and needs. So the answer to the question why do we need planning is to protect public good. But what is public good nowadays? It is not the same as it is before or it is somehow rearranged in regards to sustainability and globalization?

Town planning in Serbia went through different phases since 19th century over 1950s until today. The first urban regulation plan, done by Emilian Josimovic has the main aim to regulate settlement outside the Kalemegdan fortress and to enable further development of the Belgrade city according to clear planimetry, horizontal and vertical regulation main axes and quality of open and built spaces (image 1). Since then urban planning in Serbia was more or less regulated through large urban designs and competitions since 1950s when the first urban master plan for Belgrade was done aiming to provide social housing for working class who were migrating from countryside to cities in order to enable process of industrialization. This master plan was done instrumentally providing development and realization of complete new city on the other side of Sava river: New Belgrade, one of the largest projects in Europe and globe at the time.

This was possible because of social regime, absence of democracy, assumption and standardization of social class needs. So urban planning from 1950-1990s was regulated according to Maslov's hierarchy of needs that defined different classes in social regime: working and communist elite. The concept of Radiant city was forced in building New Belgrade, together with prefabrication, brutalism and strict standards. However, the need for housing was not in direct proportion to the state capital, who was the only actor at the market which actually did not existed because of singularity, therefore the human needs were defined bellow the Corbusier's standards, so housing were not at all close to his Unite. The process of planning was dedicated to urban planning institutes who were directly carrying out the state policy. In late 80s when Tito died, the state was not the only player at the "market" so large urban blue print plans were not able to satisfy citizen's needs, especially related to housing as well as to new players at the land market. In 1990s the new law on Urban planning and construction was adopted after decades of the old system which enabled flexibility and mixed use in land regulation, ie enabling functioning on quasi market at the time. Today, we can say that after collapse of SFR of Yugoslavia Serbia is somewhere in between top-down/instrumental planning, advocacy planning without real participation.

The reason why the New Belgrade was exposed in precious elaboration is that the Dockyard is on this side of the city. We can say that there are two intellectual movements in planning system in regards to this city: 1) Preservation and continuation of concept of Radiant city and 2) Redefinition of modernist urban morphology in order to provide new development, that are closer to contemporary needs and interest od citizens, public and private sector. The main question is how to integrate these two tendencies.

2. INTEGRATIVE APPROACH IN PLANNIG: CASE OF SERBIA

This chapter will discuss urban planning in line with different sectors and dimensions that should be integrated in sustainable development. In relation to socio-economic transition, process of urban planning should seek to bound different interests into coherent whole establishing an arena for Habermas's communicative action (Habermas, 1984). The discussion will be led by the thought that urban planning is multidimensional process can provide creative solutions for different developmental sectors of sustainable development: economy, society and environment, overcoming problems of rational and collaborative paradigm in urban decision making through communicative action.

Urban planning, seen as a communicative process it is strongly related to the traditions of urban decision making when it is more rational ("top-down") or collaborative ("bottom-up") process. The key factor in this dilemma is the type of rationality that is practiced in wider social context. Rational paradigm is based on objective rationality and positivistic approach to development. It means setting and evaluating all possible solutions and forming defined scope of action."It is based on instrumental rationality, namely on expert's analysis which enables setting of goals, identification of alternative courses of action, evaluation of the means by which the goals would be achieved and the creation of systems of implementation"(Dovey,1999).

In urban planning theory it is mostly supported with Faludi's model of planning agencies where they practice systematic and rational approach to urban development integrating different levels of governance into coordinated multi-planning system (Mrđenović,2013). The main critique to rational paradigm comes from Simon's rational constrains where it is not possible to generate and evaluate all possible alternatives because of constrains of human thinking. On the other hand, Lindblom in his theory of "muddling through" says that rational approach to development is not realistic in the real politics with complexity of different interests and stands for generating solutions in incremental approach (Linblom,1959).

Both systematic and incremental approaches have their positive and negative side. We can't for sure perceive reality in positivistic manner, and on the other hand if we lean on incremental approach we can be in situation without any developmental options. Healey in theory of collaborative planning sees urban development as putting fragments of viewpoints and interests into common picture through communicative process of bottom-up participation in different social arenas. She argues rational paradigm saying that it is not applicable in plural society and its complexity of different interests and thoughts.

Nowadays, sustainable development seeks to integrate the positive aspects of all paradigms creating glocal, integrative space. The space becomes as an arena for mediating differences in plural society. This integration means making linkages not only between the sectors of sustainability and different interests, but also linkages between different levels of governance, both horizontal and vertical. Therefore, we believe that sustainable urban planning is a process of creating glocal identities and places using integrative space as an instrument for developing Healey's "hard and soft" infrastructure or Giddens's "structures and agencies" (Giddens according

to Dovey, 1999). Here, we stand on Dovey's point that mediation in integrative space should be more "power to then power over" (Dovey,1999). In line with that, creating, developing, and maintaining integrative space becomes a main subject of sustainable regeneration. Thus, the question: How do we create, model, develop, and maintain the integrative space? The answer needs further elaboration on the model of integrative space.

By our opinion the model should provide glocal identities, spaces, and places that are in between CIAM and New Urbanism. Here, we lean on Castells's attitude that individuals and local and national identities are "frustrated" by the process of globalization. According to him they should create "project identity" based on memory, present moment, and dreams of the future. This identity makes them pro-active actors in the global community. Such actors are ready to develop new attributes with care and protection of traditional ones [9]. Only in that way the 'ratio' can be renewed on solid bases, integrating plural identities and values into a coherent whole: "I believe in rationality, and in possibility of calling upon reason [...] I believe in the chances of meaningful social action, and transformative politics, without necessarily drifting toward the deadly rapids of absolute utopias." (Castels, 2004:4). We also believe in Baudrillard's objective space (Baudrillard, 2001) opposing the 'legality' of the mutual presence of relative rationalities that postmodern time favors. This 'new rationality' determines and supports a model of integrative space.

The model is challenged by conflicts among differences, as it should provide and develop the integrity of individuals, communities, and nations into a 'new rationality'. This rationality is more a hierarchical puzzle or dynamic, live-fractal than it is universal. On the other hand, we believe the barriers can challenge the development of the model. Our attitude introduces the main issues in designing the process, stated as follows: In which situations should the urban design process for regeneration be 'guided', 'mediated', or 'facilitated'? Should and can Landry's "creative milieu" overcome the obstacles in communication? Can it create preconditions for open communication, an argumentative approach, and Habermas's "communicative consensus"?

We believe that process of urban planning can create the preconditions for Habermas's "field of intersubjectivity" (Habermas, 1984), argumentative approach, and integrative space and place. However, we think that some conditions should be met before and during the process. Moreover, we stand with the position of Woolcock and Fukuyama that the process of emancipation should be iterative in developing human and social capital from bounding, linking, and partnership making (Woolckok & Deppa,1999; Fukuyama, 2001).

Those are the standards for the development of the model of integrative space. The creative milieu should make good spirit for change. Regarding the conditions, we would point out several criteria:

- The process should not start if there are big disparities among the stakeholders (NC);
- If there are big disparities, the programs of human capacity-building should be provided (NC);
- When disparities become smaller, the art and design can play a key role in integration (SC 1,2);
- Urban planners should not design the process alone (NC);
- The process should be designed by an interdisciplinary team, but urban planners can play a crucial role in designing it (NC) (See Figure 1).

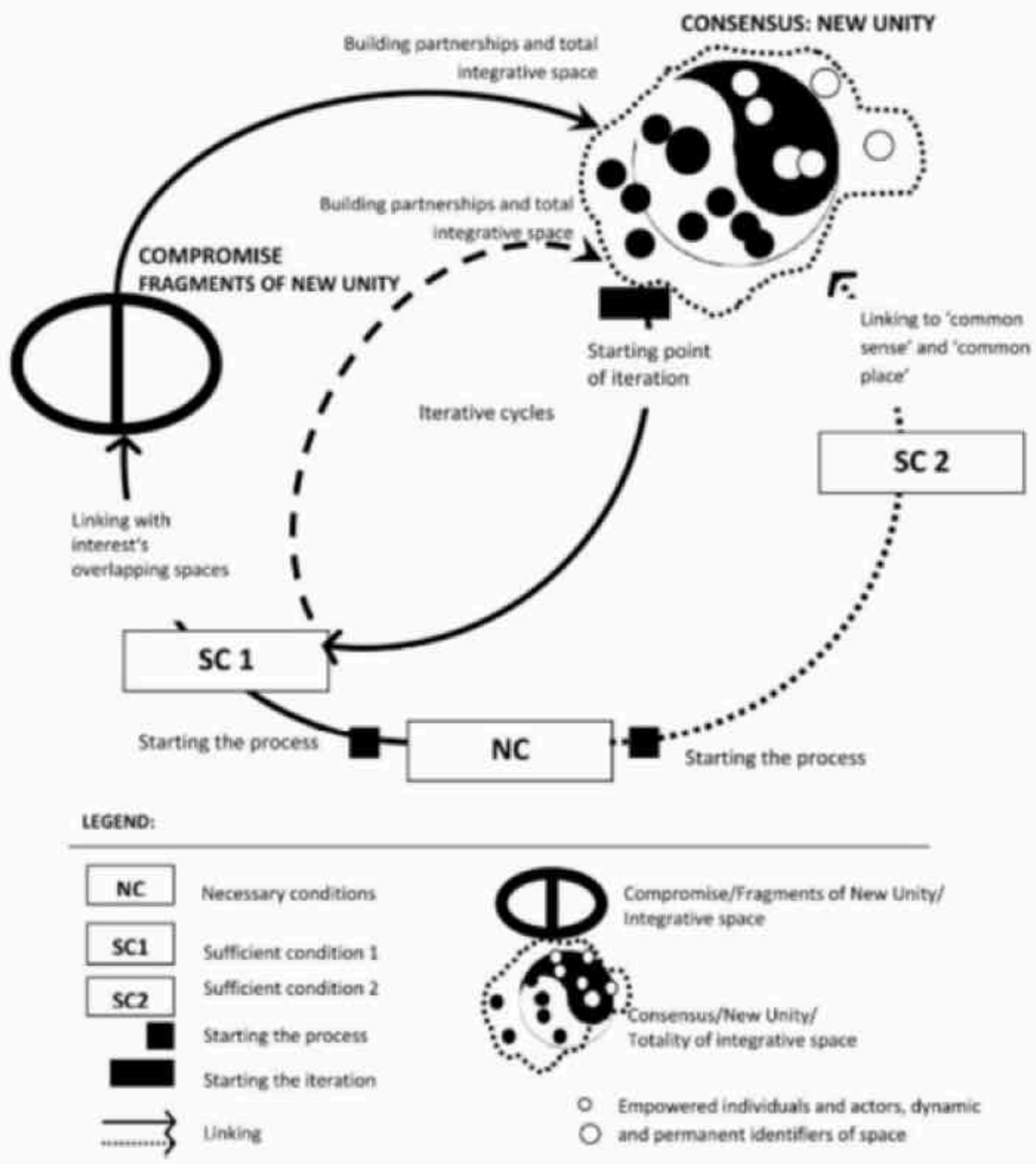

Figure 1: The model of creating integrative space

Integrated planning in Serbia is according to present legislative related to horizontal and vertical integration of present planning system, meaning that arrangements from upper planning level should be incorporated into plans on lower level. According to present Planning and construction law for urban areas there are several planning instruments that should protect public good and enable activation of urban lots and their development: 1) Master plan, 2) Plan of general regulation, 3) Plan of Detail regulation, 4) Plan of lot rearrangement, 5) Urban design project. These urban planning instruments are hierarchical and in that manner integrated (RS, 2018). However, present Low on planning and construction does not give guidance for methodological approaches even though it is mentioned that concept of sustainability, ecology, equity should be respected, but it is not defined how.

The previous theoretical discussion clearly shows that integrated planning has a wider meaning in relation to creation a space for communicative consensus on what is common meaning and common interest or common public good for a particular urban area or lot enabling participation of all relevant stakeholders that come from public, private and civil sector.

3. DISCUSSION ON PLANNING SOLUTION OF DOCKYARD IN BELGRADE

This chapter will discuss planning solution od PDR for Belgrade's dockyard on Sava river in regards to theoretical conclusions and guidelines from wide EU macro regional strategies for Danube region.

3.1 Overview on main principles and aims of Danube macro regional strategy

EU macro regional strategy for Danube region defines several developmental pillars: A) Connecting the Danube region; B) Protecting the environment in Danube region; C) Building prosperity in Danube region; D) Strengthening the Danube region. Each pillar has its specific areas for action plans: A) 1) to improve mobility and multimodality, 2) To encourage more sustainable energy, 3) To promote culture and tourism, people to people contacts; B) 4) To restore and maintain the quality of waters, 5) To manage environmental risks, 6) To preserve biodiversity, landscapes and the quality of air and soils; C) 7) To develop the Knowledge Society through research, education and information technologies, 8) To support the competitiveness of enterprises, including cluster development, 9) To invest in people and skills; D) 7) To develop the Knowledge Society

through research, education and information technologies, 8) To support the competitiveness of enterprises, including cluster development, 9) To invest in people and skills (EU, 2010)

According to these priorities and aims we can say that overall vision for Belgrade's dockyard can be defined as:

"SMART PORT – DOCKYARD OF CULTURE in the Danube region. Urban regeneration of Belgrade's dockyard in multimodal transport node, through activation of industrial heritage for cultural purposes, improvement of environment and creating specific meeting places for trade and commerce, bound by traditions, energy efficiency and socio-economic prosperity."

3.2 Overview on the plan solution and its relation to main principles of Danube strategy

The Plan for Detail regulation for Belgrade's dockyard is lining on the instruction from Master plan for Belgrade which defines the area as commercial, housing and public services (spot facilities and transport) in line with morphological schemes from its surrounding. The other documents that are according to PDR and Law on planning and construction relevant for this zone are: Plan for general regulation and Plan for distribution of floating objects along Sava river as well as Plan for Ring road. The plan does not even mention EU Danube strategy.

The plan regulates the industrial zone through urban regeneration into commercial, housing, sports, public, transport and green zones in a way that it respects morphological postulates of its surrounding. The energy supply is regulated through traditional electro energy system of heating stations using traditional energy sources like gas or coal. It does not even mention the possibility of regulating high water through mini hydropower stations or using plants and alga for producing electricity through research and innovation. Existing IT college is not recognized as potential that should be developed into IT technological park or smth. Similar which could transform existing area into smart port through innovation-technology center for sustainable development of the port and its surrounding. The transport system is regulated traditionally through hard measures – building new roads, pedestrian and cycling routes, however the Mobility center for managing transport system is not even mentioned even though the area is on the main point to be new, strong mobility node in Belgrade, Serbia and wider region, connecting Croatia, with Black sea as well as two sides of Belgrade city with the globe through highways, train and airport.

Furthermore, the plan does note provide mixed use framework for development, delivering blue print zones for distributing of activities, so we can say that it is not market oriented as land has no opportunity costs as the basis for its value. (Image 2) The ratio of distribution of housing and commercial activities is app. 50:50 with medium percentage of land consumption. Also, the distribution of activities is more based on traditional, Maslov's theory of needs where housing is in front area of the aquatorium and commercial activities are in the "backyard". We can say that this plan, even though it should regulate interests on micro locational level is everything but "not in my backyard". On contrary it seems that it is based on social system of planning where Detail urban plans were norming public good. Therefore, we can say that even though the aims of the plan seem promising they are resulting in blue printed, not communicated and negotiated solution where public good was put instrumentally not incrementally through consensus. What is more it does not even mention the inputs from EU Danube strategy in which area the port is. There is no clear vision of the image of future port, so the aims are more sectorial just providing connection with existing other sectorial laws on water, environment, security. We can say that plan answered only partially to the one of pillars of Danube strategy: Protecting the environment.

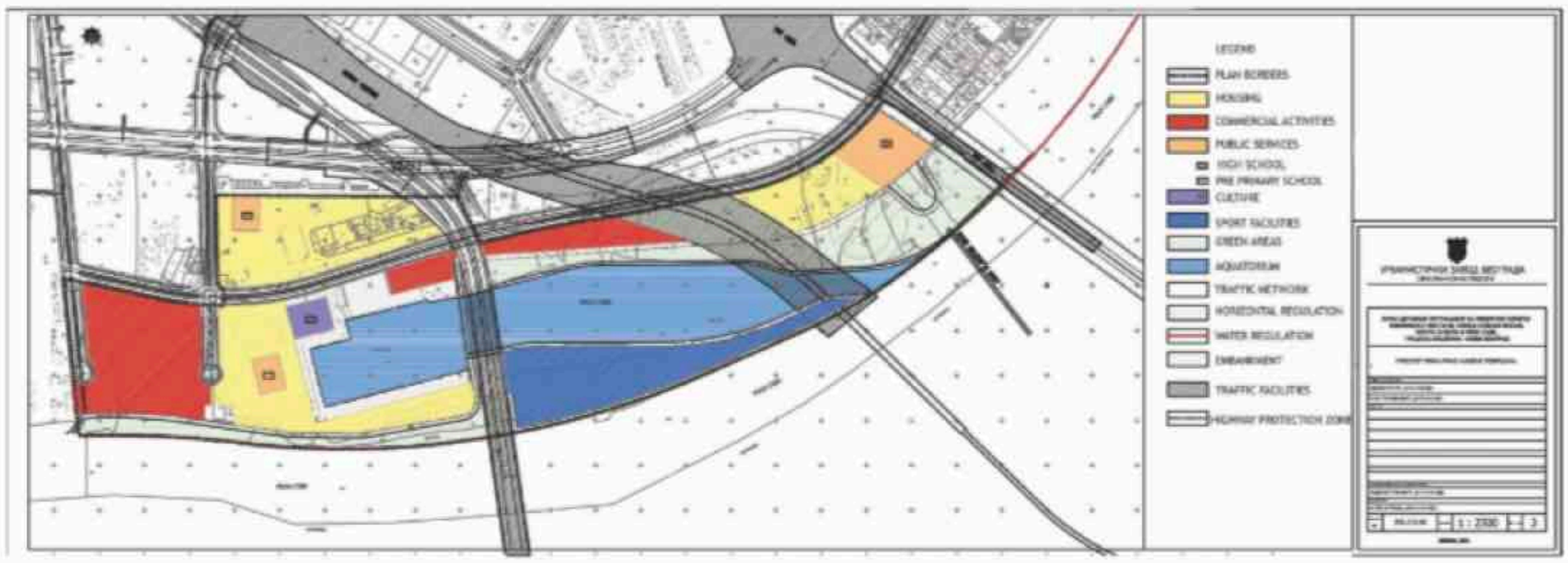

Figure 2: Proposal of activities distribution (MU of New Belgrade, 2017)

We can not say that Building prosperity can not be done with 50:50% of share between traditional housing and commercial activities without technological parks, Tourism development, Innovation center for exploring water systems, etc., Accommodation facilities, new landing stages, etc. Also, Connectivity in the Danube region can not be accomplished without Mobility center that will regulate flow of people and goods. Also, there is no clear regulation of connecting different people in the port through cultural activities as tourism is not even mentioned in the plan even though there are regulated cultural structures but there are plenty of them in Belgrade, especially in New Belgrade. Further more the port is not treated as a place for cruisers, yachts and other floating structures with its accommodating facilities especially for tourists.

Also, trade as one of the most important economy branches is regulated through commercial activities, not mentioning possibility or regulating trade market of goods from the region which would open possibility for the port to be Regional trade center for specific goods that should be negotiated through stakeholders and provide connectivity of people in wider region building prosperity through innovation. In line with this plan estimates 6.100 employees in commercial sector that is calculated according to new built area, not according to real investments and prosperity. Sports activities are not connected or related to tourism, exploring nature, practicing traditional ways of living, etc , so we can say that none of the proposed activities are not related to some of developmental branches like: IT industry, Trade and Innovation centers, Technological parks, Tourism, Alternative energy, new ways of living with water not on the water etc.

The rules for building of the future structures are defined according to the surrounding urban tissue which is regulated according to radiant city without upgrading the morphological arrangements to more global needs and standards without mentioning iconic architecture and forms, its possible distribution according to visors, etc. We can say that in regards to morphological solutions the plan offers structures that are more for housing near water on the site that is not of high importance in regards to its position, traffic potentialities for economic and blue growth, etc. The main contradiction with this concept is that maximum building levels for housing is 6 and for commercial 12 levels that is far more beyond surrounding structures. We can say that plan underestimate the importance of the area especially related to commercial structures, its distribution and percentage of share in other activities.

4. CONCLUSIONS - GUIDELINES FOR IMPROVEMENTS OF PDR FOR BELGRADE'S DOCKYARD ON SAVA RIVER

The research showed that the planning system in Serbia is nowadays still on the central level with non-transparent process of participation of all relevant stakeholders, meaning that some of them are regulated within planning procedure, however the others are not involved or not recognized as relevant. The Law on planning and construction obliges governments to the low level of participation: consultation through public seeing it is still not the model that is coherent with global society, sustainability and dynamic development. However, most of the relevant projects has been done through this kind of planning: Belgrade's waterfront, Reconstruction of inner city of Belgrade, major segments of infrastructure, but they are not either on the side of modern "Radiant" city nor "Futuristic". We can say that the system of planning is using old model for new kind of modern hybrid society.

The case of Plan of Detail regulation for Belgrade's dockyard showed that the planning process, and solution did not go through full participation process, therefore public good is defined according to normative needs not

through communicative consensus for creating integrative space (See Figure 1). The dockyard is treated as just one of the brownfield, neglecting its spatial and policy position. Most of the potentialities are neglected, especially environmental ones. The major pillars of EU Danube strategy are not reached. Even though the aims of the plan are promising it is not clear how they are reached though distribution of activities in space and the building rules.

The most important activities for Strengthening the region, Connectivity and Blue growth are missing like Mobility canters, Technological parks, Innovation centers, Alternative water energy sources, trade centers for connecting the region an its products, Tourism development, Green infrastructure, green architecture. It is not clear for whom this plan is done: who will live here, who will do trade here, etc. Therefore, the other level of planning and creating integrative space is missing: Branding towards multicultural society.

We can conclude that this kind of solution could be anywhere and everywhere. The site specificity including the involvement of specific stakeholders from public, private and civil sector is missing, so the criteria for generating integrative, sustainable place were not followed fully, we can say that only fourth and fifth were respected which means that the plan is more on the side power over that power to (See Figure 1).

On the other hand, most of the pillar and actions proposed by EU strategy for Danube region were not taken into account so the plan propose environmental activities that are in the area of managing environmental risks but not being friendly with environment, resilient and open for diversity. The future dockyard is not smart in branding, in technological aspect, in mixing activities, in capacity building, in smart usage of natural and cultural environment. So, we can conclude that this plan should be revised taking into account everything that is mentioned above, including international competition for this site.

Proposed activities for improvement of the future port are:

Multimodal logistics center: water traffic - rail - air traffic; Hydrological water management system for energy and Purification; ICT center for traffic management, waters, activities, facilities and surfaces in port for sustainability; Formation of hiking, cycling trails and other multimodal infrastructure

GAS depot: Sustainable energy station; Mini-hydro centrals; Solar station; Algaes; Windmills

Tourism and cultural center: Independent entertainment and recreation centers; Developmental - research center; Different forms of accommodation capacities; Integrative recreational spaces; Theme parks; Tourist information points; Wellness centers; High water protecting system; Green housing;

Green housing and technology: New flora and fauna Habitats; Ecological bridges; Ecological sleeping walls; Educational-development research center; Electronic services; Establishing a regional business center; Technological parks for the improvement of food products; To establish a metropolitan cultural center; Forum center for dialogue and participation.

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