

Development Strategy of the Montenegro Urbanism in the 21st Century Transdisciplinary Engagement

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Abstract—This paper examines the role and the place of transdisciplinarity in the urbanism of the 21st century, with the emphasis on Montenegro urbanism. Global processes require a systematic strategy and systemic synergistic engagement in the development of cities in 21st centuries. Urbanism as a profession and a discipline should be developed parallel and in correlation, based on the principles of integrality and communication skills, in order to enable development of the sustainable urban system. The importance of integrated urbanism and other disciplines are also emphasized as well as their synergies activities. The paper also presents the positive examples of urban theory and practice in the world, which influenced the direction of development of the modern urbanism. Transdisciplinarity is a priority methodology for sustainable urban development, which is insufficiently developed in Montenegro, but there is a basis for its development. It is necessary to unite different social sensibilities, academic and non-academic knowledge, as well as the public and private sectors in order to develop holistic, inclusive and sustainable urban spaces of the 21st centuries.

Keywords—Montenegro urbanism, sustainability, the 21st century, transdisciplinarity.

I. INTRODUCTION

GLOBAL interaction and reforms, in transition between two centuries, enabled by the technical, technological and scientific developments, has directed the development of local urban space which has taken on the title of "global city." Global "spaces" and the local "places" should develop an interactive relation where globalization shouldn't be understood as a factor of identity loss, but on the contrary, as its validation and improvement. Especially in times of global changes, when the overlap of physical, temporal and space dimensions is almost impossible, when a unified language shapes the physical urban structure and open spaces for new forms of virtual reality, where all cities more and more resemble each other, has never been more important the recognition and the authenticity of "place", the crucial for the sustainability of the local in the global. The complexity of the urban area is developed to such an extent that intellectual and organizational agility is necessary in the new century. The question of mechanisms arises, a strategy that will succeed to respond to the complex processes triggered by global challenges.

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Spatial planning becomes more and more complex process of modern civilization and everything indicates on the need for systemic engagement for responses to the complex demands of society. Urban system is determined by a complex system of parameters, the influences and the forces that manage the certain processes. More dynamic technical, scientific and social development and more complex urban requirements suggest the research strategies for improving the system.

Communication skills, integrity and system strategies are becoming prerequisites for the productive specific urban interventions. Strategic action in planning and designing of urban areas are of primary importance in the sustainable development of the built environment. By engaging of all interest groups and social factors in the process of planning and designing of urban space, it is possible to develop the strategies for the creation of an environment in which everyone can find their place and where everyone will be able to freely develop their own philosophy of life. This requires flexibility and diversity in the solutions. Unification slows down development of the system, and practical mistake each has a lasting impact on the city and its residents.

Montenegro urbanism of the 21st century requires a radical transformation for the purpose of a sustainable development. Tourism as the main economic activity insists on visual quality of the space and the harmony of all elements.

Frequent sidedness in the understanding and application of legal norms, lack of communication and cooperation between the parties, lack of awareness of universal design, lack of integrity discipline, theory and practice, especially urban planning, architecture and landscape architecture, inadequate attitude towards natural resources, lead to the partiality in space and breaks in its continuity. Tourist ambient is especially sensitive to these issues and it is necessary to invest a lot of energy in the direction of changing in relation to the built environment in the context of its sustainability and improvement in the 21th century in Montenegro.

II. STRATEGIC URBANISM

The processes of globalization and the growth of the complexity of the environment, increased risk in business and other activities, increased economic competition among cities, greater role of the regional and the local levels of decision-making, crisis of theory and practice of planning and management require associated urban engagement. Systemic

strategy is of the utilitarian importance for the sustainable perspective of the modern urban environment.

The presence of the constructive "strategy" in urban planning is essential parameter for directing the flow of urban processes. The potential, resources, capabilities and limitations of an urban system can be adequately controlled and articulated by the quality basic strategy. The primary strategy should be systemic, multi-layered, and complex and to include research and analysis of urban systems through various aspects: socio-economic, ecological, geographical, cultural, functional, programming, visual, etc.. for development of the platform for universal design and equality of the members of the community. The strategy should include the harmonization of interests of all active participants in the process of urban development.

Considering that the local environments to a large extent decide on the shape of its own environment and that each place has certain specificities, a unique methodology is not elaborated, and even impossible, except in general terms, but a common goal is present: to develop conditions in the ambience that will meet the diverse needs of the local environment residents.

Tourism is a priority economic sector in Montenegro. That requires a specific attitude to the built environment. A specific capacity of management and strategy are essential in the tourist environment. The requirements are more complex, because the needs of local residents and tourists should be met. Among the function and abilities, particularly important are infrastructure, public spaces, versatility, complexity, historical heritage, natural context, flexibility and compactness, homogeneity, order. An issue of visual identification and recognition of space is a particularly sensitive in tourist urban area. Therefore, the engagement of additional groups and users of the area is needed for the strategy, and understanding of the needs of people who occasionally stay as tourists. By getting acquainted with all categories of users and all interested groups to participate in creation of space, the development of a healthy and desirable tourism environment is allowed.

Under the strategic urban planning we involve processes and activities that are determined by the clear and firm strategies, respectively the plan for the implementation of the objectives that should be achieved in the spatial and urban planning and designing. Strategic planning is a primary process in the urban development process.

Various strategic and action urban plans in Montenegro, but in general, often emerges from under-developed point of view, and they are specialized done and do not sufficiently articulated the directions for the development of the city. Strategic urban planning of space includes, among other things, flexibility and possibility of adapting and transforming, as well as the models of the development of the city in the direction of improving its competitiveness. Productivity and quality of urban space within the existing planning systems require the creation of fundamentally new framework for planning that allows for the prediction of living

standards and health of the population, opportunities, environmental quality. The aim is to create a favorable environment in a global context, to improve the urban environment and activate and direct the development of society in order to develop a sustainable environment.

Global processes indicate the importance of changes in strategy for the sustainable development of cities. All over the world, the importance of planning is emphasized, which regulates modern conditions and needs. Urban planning in Montenegro is insufficiently respectable and the main cause is lack of inclusiveness, especially is unfavorable situation in the area of circulation in the relation between the public and private sectors.

Systematic and strategic development of the city has a primary role in maintaining of an environment that is competitive, recognizable identity, tourist attraction, visual associative, program and functionally meaningful and multileveled. In the process of strategy development is an important primary research phase of the current situation specific environment and a specific place, especially research that specific area in which the intervention is contained. In the process of strategy development, it is primary important the research phase of the current specific situation of an environment and a specific place, especially the research of the specificities that space, in which the intervention is done, contains. In the world the most developed methodology is so called SWOT analysis that involves the analysis of: strengths, weakness, opportunities and temptation of certain urban environment. Based on the SWOT analysis it is possible to provide a comprehensive assessment of the character of the space. In that process it is necessary to engage all community structures. The system strategy is a model that engages participants of the process in direction of sustainable urban development in the 21st century. Generally, new alternatives are required for implementing in the design process of the urban environment.

III. URBANISM AS A DISCIPLINE AND A PROFESSION-COMMUNICATIVITY AND INTEGRALITY

The complexity of urban planning is expressed through its dual identity: as a discipline and as a profession. Communicativity and integrality of these two fields of action are essential processes in the development of a sustainable city in the 21st century. Cities are explicit indicators of knowledge, architectural strength and culture, the development of society in general. By united engaging of discourse and practice, different professional competencies and non-academic structure and knowledge, the productive platform is developed for managing, controlling and improving of the urban system.

Communicativity and integrality are the mechanisms that shape the strategy for sustainable atmosphere of the system and its sustainable future.

Communicativity and integrality in urbanism are primarily manifested through: theory and practice, and their relation, the relation between the elements of the spatial system and

cooperation between different disciplines, as well as the layers of society.

A. The Relation of Theory and Practice in Urbanism

Throughout the history of the cities development in the world there were many movements, directions, theoretical strategies that have had a variable impact on the practice. Several of them broke the relation between theory and practice, especially modernism. In recent years, there are more and more theoretical discussions in the field urbanism as a discipline, especially because of concerns about urban policy which is changeable and of uncertain future. The field of planning and architecture are central for understanding the cities, social and ecological process of urbanization and impacts on the cities in the world. Scientific researches in urbanism have more and more important place in the urban profession. Gentrification issues, urban expansion, poverty, informal settlements, brown fields require theoretical research engagement.

Theory and practice with the common platform of knowledge and competence, corporate strategy, can encourage, empower and develop new models for designing of living space, which are necessary in urbanism of the 21st century.

Putting the theory into a practical context and vice versa, through the continuous reconsideration of the adopted theoretical principles and their modification through the project as well as a reconsideration of models from the practice, through theoretical research is of indispensable importance.

Recent theory experience and a profession in Montenegro urbanism, show that it is generally needed to put more energy into finding new theoretical models for sustainable urban systems. The city primarily requires environmental sustainability of the system, and that is possible by establishing a balance between the natural courses and built environment. This indicates the need for regenerative theory that sustainable planning and design require. The city is a center of different social processes, cultural performances and economic opportunities, which indicates the need for synergistic engagement in urban planning and designing.

In Montenegro, the relation between theory and practice is not sufficiently harmonized. It takes more inclusiveness and reflexivity through new forms of cooperation

B. Integral and Communicative Planning

Particularly two important strategies in urbanism, based on communication skills and integrity, are: *Communicative planning and Integral urbanism*.

Communicative planning is a method for finding the ways how to act in creating the ambience in the joint space and time with different possibilities for life. *Communicative planning* involves the users to influence on creation of an ambience for the life, so it would be adjusted to the different philosophies of life in the joint ambience. It is insisted on some kind of democracy and the prevention of racial, gender and ethnic

inequalities. Communicative planning is based on inclusiveness and discourse in order to establish a new, rational concept of coexistence.

Integral urbanism [1] tries to integrate:

- The functions and needs, public and private, center and periphery (local character and global forces)
- Horizontal and vertical (plan and section)
- Built and unbuilt-architecture and landscape architecture, interior and exterior, structural and surrounding systems
- People of different ethnic groups, income, age, abilities (universal design), tourists and local population
- Design of professionals (architecture, planning, landscape architecture, engineering, interior, industrial, graphic designers), theory and practice
- Process and product (time and space, a verb and a noun)
- Planned and spontaneous

Five quality of an integral urbanism according to Nan Elin are: hybridity, connectivity, porosity, authenticity and vulnerability. Integral urbanism is based on the urban design and protection of environment, with the aim of achieving the course flow. The principle of functional zoning, at different periods of urban practice, is replaced by the principle of mixed uses, diversity and interdependence. Integral urbanism recognizes and celebrates subjectivity, heterogeneity and meaning.

C. Positive Examples in Urban Theory of 20th Century in the World

Positive examples of urban conceptions in the 20th century can serve as a good basis for identifying new models and strategies in urbanism of the 21st century in Montenegro. In this paper, we shall point out two specific strategies that directed urban orientations in the late 20th century in cities around the world: New Urbanism and the New Athens Charter. Inspired by dissatisfaction and negative experiences of previous of urban conception, especially from the period of modern, urban planners have focused on finding new models for the designing and transformation of urban spaces. Thus in America, in the second half of the 20th century formed the *New Urbanism* movement [2] focused on the more human aspects of life, criticizing the previous, long-standing urban planning conceptions that have "no future". At the end of the 20th century *New Urbanism* century evolved into an urban school that kept clear, principle-based [3]. New Urbanism is intended to integrate elements of the whole, promotes interaction through orientation to the suburbs as sensitive places. The basic concept is directed towards the formation of a variety of cells as residential housing system that should regenerate the space to places with more humane living conditions. Variety and comprehensiveness, reorientation of traffic on public transport, as well as establishing relations

towards tradition and historical values, are strategic directions of the *New Urbanism*.

In a similar spirit in the European context, the *New Athens Charter* was initiated in 1998. at the international conference in Athens by the European Council of Town Planners, promotes urban concept for the 21st century, based on sustainable urban development. It is an ambitious intention to present the complexity of urban planning in the new century [4]. Comprehensive understanding of space, integrity, communication, order, and harmony are priorities of the *New Athens Charter*. It is insisted on the importance of place in the context of global trends, where, through the preservation of historic value that are not marred by the previous Urban Ventures, will be established a balance between historical and new planning schemes, then a relation between the natural and built environment in the context of improving of identity and culture. It is emphasized the development of cities as independent units integrated at the regional level. There is the tendency is to establish communication at all levels, particularly through the involvement of citizens in decision-making .

D. Positive Examples of Urban Practice in the 20th Century in the World

Urban Plan for the Southern Amsterdam, Petrus Berlage, represents the largest contribution to urban practice of the 20th century. Fantastic blend of planned and constructed, elongated facade surface, transformation of the traditional urban block in the blend of striking values, were an inspiration to many urban planners and builders of the world during the 20th century. Simplicity, regularity, order, frugality, equality, consistency, fenestration, thoughtful and studied colors and relations, the relation of horizontal and vertical regulation, treatment of specific values, integrity and communicativeness, are the characteristics of the plan for the South Amsterdam. Another example of a productive urban design practice of the 20th century is linked to the Spanish engineer Idefonso Serda, who in the mid of 19th century set mounts for the expansion and transformation of Barcelona to the modern city, and it was developing on that principles during the next 150 years. Serda considered that some kind of urban structuring was needed. He has brought together almost every discipline that has had a role in the understanding of the city as a new science. Barcelona is the basic features of the integration of all elements of the whole. Serda, by promoting the need for a new science, sought to defuse the crisis in communication that prevailed, through the development of a transdisciplinary framework and the common language for human settlements. Barcelona has so far been developed according to principles of Serda, through implementation, promotion, development and adaptation of Serde's ideas to the demands and needs of society. Barcelona is today characterized by: order, compactness, humanity, integrity, visual recognition, inclusiveness, harmony and communication.

A positive example of urban design practice in Britain is the plan for the city center of Sheffield in 1986. year, which

represents a good model of communicative planning, when an opportunity has been given to the citizens to participate in the planning process. Also, in the UK there are institutions where the locals have the opportunity to give their opinions and participate in decision-making.

Sheffield's centre plan presents the policy of mutual understanding and the complexity of the problems faced by planners. The process started by presenting the first ideas and views on the future look of the city center, citizens were invited to contribute their ideas, through the local media.

The next step was to create a forum that consists of: planners, councils, citizen representatives, working groups concentrated on economic, social and environmental problems that were intended to initiate a broader discussion on key issues in the central part of Sheffield. Citizens have used different techniques to express their demands and needs, through radio, television, newspapers and advertising. The aim was to engage community members and those who were not dominant, politically active. Twelve advisory groups of citizens participated in the commentary for the future of the city center. Sensitivity to the special needs was at high level. Comprehensive, adaptable and flexible ideas were created in order to meet the needs of the community. This is an example of open and democratic forms of decision-making about the center of Sheffield, the city of the future. The democratization of the planning process through decentralization is characterized by this action. It starts from the premise that all people are different and with a try for finding the solution that will satisfy all users, different cultures, and traditions. This inclusiveness is used here, except that it encourages that people think about the city and its prospects. The preference is given to the moral values over the material. It emphasizes the relevance of communicativeness and synergistic action.

IV. URBAN DESIGN-THE KEY OF INTEGRAL URBAN DEVELOPMENT

All over the world, it is more actual the abolition of the practices of extensive urban in favor of the renewal of the existing cities with the aim to improve human rights and quality of space. In this context, urban design is included in the current policies of many countries and cities around the world. The crisis of urban areas through the last few decades of the last century, has led to a new interest in urban design, particularly with the reduction of sense of community and environmental degradation. Urban Design is at the border between planning and architectural design, and represents a key field of integration in the urban interventions. Perhaps the primary role of urban design is to get closer to the public and the private, center and periphery, durability and changeability, built and unbuilt, in mutually integrated systems with different scales of integration. Innovative solutions are required for sustainable urban development, which will be social, practical, and productive. It is possible to carry out through the intervention, such as urban renewal, regeneration, transformation of existing urban settlements. It is important to establish a correlation between theory and practice with an emphasis on solving the sensitive and specific issues of

sustainable development, the development of trans-disciplinary activity centers, as well as international cooperation. Urban design is based on the activation of places and its adaptation to the context. The integrity of the urban design implies the development of a polycentric and multifunctional of the city, then the connection between the center and the periphery, the integrity of the natural and built, existing and new, interior and exterior space, vertical and horizontal regulation, technical and technological systems. Integrated concept implies networks in terms of traffic as well as the interaction in the formation of important places as centers of interlacing of several different activities. Urban design has a role to establish order, harmony and balance between the elements of the whole and the interaction of all functions in space: work, housing, leisure, recreation, without the possibility for the specialization and functional zoning and with the significance of continuous course of diverse social processes. Urban design is a place where subjectivity is celebrated, heterogeneity and the meaning.

V. THE INTEGRALITY OF URBANISM AND OTHER PROFESSION

When one profession has the privilege of shaping urban space, then it must be multi-disciplinary, with unbreakable connection with related disciplines. The unity of architecture, urbanism and landscape architecture is crucial for the sustainability of urban systems. The individual acting in space by architects, designers, engineers, who their projects do not harmonize with the context, reduces its value and leads to new forms of engagement.

Urban Planning processes are basically, fundamentally transdisciplinary, because they tend to develop integrated and harmonized functional units. Urban planning and design should be the main creators of the built environment, according to whose terms others act. Moreover, the concept of landscape urbanism represents a framework for an interdisciplinary urban discourse [5]. For addressing the issue of urban space, in professional and disciplinary terms, transdisciplinary dialogue is essential. It involves the use of different disciplines: architecture, art, cognitive science, cultural studies, engineering, design, landscape architecture, psychology, management, sociology, economics, urbanism, visual communication. The fields of urbanism and architecture are primary for understanding of the built environment. However, all other fields must be part of the thoughtful and research sensibilities and utilitarian understanding of urban space. Comparative studies are essential and include a variety of methods and approaches.

Disciplinary research is limited and one-sided, while integrated has a lot of significance especially with regard to specific aspects of life and society in the cities. Researches on the cities have an explicit emphasis on the social sciences.

In Montenegro is characteristic the fragmentation of disciplines, respectively their lack of presence in the urban design process. In this sense, the strategy should be directed towards transdisciplinary engagement.

VI. STRATEGY FOR THE SUSTAINABLE URBANISM IN MONTENEGRO-TRANSDISCIPLINARY ENGAGEMENT

How to realize a sustainable plan for the revitalization of settlements in environments with adverse economic base, with increase in unemployment, with the present social degradation, the lack of productive political, social and cultural intersections. The question arises, if the economic aspect is primary for the compact and sustainable development of the city, when experiences confirm that the economic prosperity is the primary exactly causes: the fragmentation, segregation, monofunctionality and monocentricity in the cities, which was dominant confirmed through the industrial period. It is certain that the new strategies and methodologies are needed in the planning process, where they will be the stimulators of economic development. Long-term strategy for sustainability of the settlements and social rehabilitation is, above all, developed consciousness of the importance of the built environment for human life. This indicates the need for development of new methods in the planning process to meet the complex demands of modern urban life. Various institutions, movements, organizations around the world, study models for the improvement and development of sustainable urban environment. International experiences point to two components that give good results: the participation of all interested parties in all stages of planning, decision-making, and intersectional approach. However, the furthest approach in that direction is the study of methodology for transdisciplinary approach to planning, as the highest level of integration, and which includes the involvement of all interested parties and different disciplines in the synergy engage in all phases of the planning area in order to meet the various needs and demands of society. Establishing a balance between power and values is particularly sensitive issue in the urban decision-making. The engagement of global processes is controlled in the local context and synergic effect is of sustainable importance. Disciplinary autonomy is not able to meet the challenges. Space and time conditions go beyond the multidisciplinary capabilities. Holistic and synergistic consideration of urbanism is imperative for the sustainability of urban system in the 21st century.

Specificity and recognition is possible by establishing communication and relation between different interested parties. Each local community has its own interests, values, meanings, opportunities, needs, requiring research phase. Urban system is determined by a complex set of parameters, the influence and forces that control specific processes. Development, which must be more dynamic technical, technological, scientific and social, requires outstanding strategy to improve the system.

Sensitivity of urbanism as a broad field of action requires the synergy of activities of different areas by the principle of network activity. Transdisciplinarity is seen here as a process of connection of different logical actors for the solution of specific problems.

Some research suggests on typological methods of spatial planning for sustainable development, with emphasis on transdisciplinary planning. They include theoretical orientation, resources, interdisciplinary and transdisciplinary orientation, strategic orientation and spatial concept [6].

In the European context, transdisciplinary research has become well known term for a research model that runs the problem solving of the real world [7]. Transdisciplinarity is directed from the central to sustainable development and it implies a balanced approach of action as necessary for an understanding of urban space.

In the Montenegrin urbanism, the concept of transdisciplinarity is relatively new and it is facing the process of implementation of urban theory into practice. Transdisciplinarity in urban design is strategy for the sustainable planning of urban space and management of changes in a dynamic urban system.

VII. PERSPECTIVE OF TRANSDISCIPLINARY IN URBANISM OF MONTENEGRO

While more and more is insisted on sustainable development global processes, the climate and green architecture in the discourse, the environmental and socio-economic reality is not high. Especially industrial and tourist areas in Montenegro, which are predominate, require new methodologies for improving of the existing situation. Urban development in the modern European context requires qualitative and quantitative research methods and action-oriented approach [8] where non-academic knowledge should be also included. Transdisciplinary researches are of utilitarian importance. This is a relatively new type of methodology that has not been developed in Montenegro and it is facing a long process of its development and implementation. The quality criteria of transdisciplinary engagement are developed in the world, which evaluates the significance of this methodology. Transdisciplinary engagement in Montenegro has the basis for development, but an ambitious preparation is required for the quality implementation. The creation of institutions is primarily that should bring together the representatives of all strata of society and all interested parties in the joint business. The difference of transdisciplinary approach in relation to interdisciplinary is to deny the boundaries of "traditional knowledge".

Transdisciplinarity deals with the problem in such a way that:

- solve problems in real situations
- understand the complexity of the problem
- taking into account the diversity of life
- represents the practice and knowledge that promote what is meant by the common good
- abolish the boundaries between disciplines

Transdisciplinarity has the ambition of the openness towards those outside of academic knowledge and therefore overcomes the interdisciplinary frameworks. Openness, communication, innovation, creativity have an important place.

For transdisciplinary perspective is necessary:

- the establishment of special urban initiatives or programs and strategies to promote researches
- unity of discipline
- financing of projects of this type
- sense of the need about the synergy engagement
- holistic consideration

Transdisciplinary research, on the one hand, shape and a specific problem context of and requires a high communication skills, flexibility and consistency of the research reform, and also aims to provide approaches that can be transferred to other contextual settings. The aim is to contribute to adequate social changes. Some kind of "activism research" is needed in the process, as well as the setting up and managing from the multiple spatial and temporal scales that are connected with the subject of research and putting local communities in a global context.

Achieving the conditions for the development of transdisciplinarity requires financial investment, knowledge and skill in of communicativeness, readiness for cooperation and dialogue, appropriate legislation and adequate transdisciplinarnost centers. In Montenegro, it is necessary development of a transdisciplinary model equal to the level of theoretical discourse and practice, because the urban activities are mainly carried out in the disciplinary context. The built environment can be shaped quality exclusive in the synergy of urbanism, social, legal, economic, environmental, aesthetic, political, cultural, and other fields of knowledge.

Transdisciplinarity is the latest step in the transformation of understanding of science and the differences between science and life [9].

VIII. CONCLUSION

Global processes in the 21st century indicate the need for the thoughtful systematic planning strategies for the sustainable development of local communities in a global context. This implies synergy and harmony of all the factors of the urban area. City is the set of developed ambiguous units, where the physical dimension is just one component of spatial composition. City area is, above all, the social stage, and its basic values are: humanity and interaction. Complexity and stratification of urbanism indicate the multi-dimensionality and interdependence of different research fields and sensibility. Urban space is so complex that in urban interventions requires the integrated engagement of all forms of knowledge, all members of the society on different levels. In this context, the perspective of urbanism in Montenegro should be built on a transdisciplinary platform, which is an imperative for the development of human, compact, healthy, sustainable urban systems, of high value.

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