SMART CITIES` DEVELOPMENTAL CAPACITIES IN THE FIELDS OF SPATIAL PLANNING AND CONSTRUCTION - LESSONS FROM COPENHAGEN TO BELGRADE

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Abstract

This paper focuses on smart cities` capacities to improve quality of public services and decision making in all policy fields, with open data and co-production. Spatial planning and construction are chosen for research as vitally connected with economy and sustainable development[1].

Research methods are: the analysis of existing studies, the comparison of Copenhagen as smart city, and Belgrade, which can learn from good practice (case studies). Main recommendations: change in values, in priorities and patterns of behavior.

Key words*: Smart Spatial Planning, Construction, IT Applications, Participative Decision Making, Evidence Based Policy Making*

INTRODUCTION

Spatial planning and construction policies are very complex policy fields, vitally connected with economy and development, and also are very lucrative. The quality of data, their public availability, and public debates on spatial plans and construc-

[1] Serbian Ministry of Education, Science and Technology financialy supported this research, through Scientific Research Plan implemented on FPS, Belgrade.

tion projects (participative creation and corrections) are of a huge importance for the quality of citizens` life in city ("First we build city, and then city build us"). (e.g.: [Gehl, 2014:]);

Copenhagen as smart city with democratic procedures, transparent way of work, good accessibility of data basis and good practice of co-production of data[2] (e.g.: [Fugini, Bracci, Sicilia, 2016:30); represents good practice for these two policy fields. These lessons will be useful for Belgrade and other cities in the world. Although Belgrade uses some of IT instruments and devices in these public fields, it often misses transparency in creation of public documents and projects (rare public debates), lacks good data bases, and practice is often burdened with corruption.

1. SMART SPATIAL PLANNING MATTERS?

Denmark changed its traditional, hierarchical and centralized system of spatial planning as excessively bureaucratic, too technical and engineering. In the period from 1990 to 2010, spatial planning is decentralized, created from the bottom up as a partnership and participatory. The precondition for these changes was provided by the local government reform (2007) which meant: amalgamation of municipalities (from 270 to 98 municipalities with the increase of average population to 30,000), increasing competencies, fiscal and financial autonomy, as well as development capacities. 14 districts have merged into 5 regions. Municipalities have gained far greater independence in the field of spatial planning. Hierarchical practice in which state and districts must confirm local government plans was abolished. Denmark, like Finland, other Scandinavian countries, then the Netherlands and Germany, has opted for *a comprehensively integrated approach to planning* (e.g.: [Damsgaard 2014: 21-41]); and therefore municipal officials and servants are specially trained in integrated planning.

New planning system introduced a certain flexibility and simplified procedures. Municipalities have a major role in that process. They have the obligation to discuss the plans each 4 years, with three possibilities: just to extend them without corrections, to make some corrections and finally to make other plans (flexibility). Regions create a regional plan together with the municipalities (partnership) and it is a more basic strategic document that inspires all municipalities in the region to be innovative with their plans. Municipal plan is an important strategic and developmental instrument based on reliable and accurate data and always participatory created (good quality databases).

State creates a spatial plan in cooperation with local governments and it is in a form of strategic plan with main guidelines. State steer the development of Copenhagen as a metropolitan region (capital region), and care for: trade and sales, the regulation of the coastal zone, the water regime (implementation of the EU Water Framework

[2] Co-production means voluntary citizens participation in planning, designing and evaluation of public services, making possible that these services were created according citizens` needs.

Directive) and the conservation of biodiversity. It cares also about the development of the cross border region, such as the Oresund Region (includes northern Zealand and southern Sweden). (e.g.: [Damsgaard 2014:31-33]);
Copenhagen develops its planning system as contextual, opening up the questions like strategic, sustainable development, climate change, environmental protection, biodiversity, etc. In this process, the city has, like all other municipalities, the support of the Danish Association of Local Authorities. Special attention is paid to stimulation of local and regional economic development in which the city includes civil society, NGOs, business, university, etc. (e.g.: [Laage, Blok, 2020]); Copenhagen has overcome the problem of industrial decline quite well and has successfully grown into a city of service economy, reducing unemployment while raising the standard and well-being of the city. This city, like other Danish cities, pays great attention to the development of tourism, the economy of experience, sustainable and smart development which include combating climate change, commitment to green energy, smart use of IT and fostering citizen participation. (e.g.: [Agger, Poulsen, 2017]);
Copenhagen leaders focus on creating functionally mixed spaces (residential, commercial and business), and on "condensing the city" around a transport system that provides more efficient traffic, while reducing car use (relying on public transport) with the affirmation of pedestrians and cyclists.
Copenhagen has ambitiously included the goal of becoming a zero carbon city in its strategy, suppressing the use of fossil fuels and dirty technology, which raises the quality of air, water, soil, thus raising the quality of housing, work and the general standard of living. (e.g.: [Fraker 2013: 43-69]); IT sensors monitor and measure the quality of water, air and level of noise, presented them through various indicators. Copenhagen is dedicated to the production and consumption of green energy, so in that context it has built over 100 wind generators, a power plant - a waste incinerator and a biomass power plant. (e.g.: [Fraker 2013: 11-43]); There are sidewalks in the city that transform the kinetic energy from the movement of citizens into electricity, which is used to illuminate the streets.
Copenhagen has achieved results in the development of green transport, which puts it among the leaders in the world. The purchase of electric cars or the eventual use of mixed energy sources is encouraged (by subsidies), cars on gasoline and gas are taxed and cars on diesel are completely eliminated. A rich network of for-free battery chargers for electric cars has been developed. Public transport vehicles are battery-powered and functionally fit with the use of bikes (trains have a bike section). There is a sensor for identification of free parking spaces, which shortens the search for parking and reduces CO2 emissions. Sensors also identify the real flow of traffic for its more efficient regulation and direction (reduction of congestion). This city has a long tradition of cycling as a basic way of transport, considering it as a useful form of daily recreation. Copenhagen has a huge network of wide bike lanes all over the

city and the light system allow cyclist a green wave, enabling them permanent ride, without stopping.

1.1. Belgrade

Serbia does not pay enough attention to cities (the problem of centralization), although they are important drivers of economic development. Despite the implemented reforms, it is not a sufficiently decentralized country and a number of important factors are missing to ensure a good urban policy. The strong mayor model was introduced in 2002, in order to strengthen leadership and professionalism, to reduce party voluntarism and improve the quality of final policy results. However, in 2007 the model of a weak mayor was returned, due to political party conflicts with "their" strong mayors. A part of the reform package has been preserved, and therefore municipalities have the right to have a city manager (as an economic developer) and cities – a city architect to care for the quality of urban design (e.g.: [Djordjevic 2014: 16]). Although the law on local finances provided a fiscal and financial autonomy to local authorities (2006), in practice, since 2008, the state, using bylaws, has limited the amount of transfers from the budget for local governments, justifying itself by economic crises.

Partnerships and cooperation in the creation of missions, strategies, public policies and projects have not yet been established between the state and local self-government. The principle of subsidiarity as an instrument of bottom-up policy-making is not accepted (e.g.: [Djordjević 2017: 27-28]). Instead, the right of the state to decide and control beyond legal limits is persistently preserved practice. Occasionally, the state and cities (Belgrade as well) establish a partnership based on belonging to the same political party or coalition, ensuring good results. Sometimes, some cities, thanks to a great leadership, despite the bad environment, gain great results, but these are exceptions. It often turns out that when the state and local self-governments are in a conflict, the price is always paid by the citizens.

A legally stipulated system of employment and promotion in the public administration (of the city or state), according to merits which strengthen professionalization and the creation of knowledge-based policies, has not been applied in practice. The spoilt system prevails with a strong influence of political parties and nepotism on employment, job evaluation and promotion.

Political institutions work by role, pretty isolated (role driven government model), and poorly cooperate through partnership and teamwork. Policy making is not led by mission, it is not cross-sectoral (this way of work as innovative is rarely implemented), it is rarely participatory, indicators are rarely created and only sometimes the results of the implemented policies and projects are actively measured. Political elites in state but also in cities, create ad hoc projects, and consequently there are often no positive, cumulative effects of development in sectoral policies.

Therefore, databases are slowly being developed, enriched and were scarcely open to the public.

The spatial planning system is modern by regulation. The last changes were made in 2018, when the system of integrated urban development was established together with the same named Strategy until 2030. This democratic and modern way of spatial planning includes a participatory, multidisciplinary approach to planning, affirms the flexibility of plans, focusing on problems and actively solving defined priorities. (e.g.: [Colic, 2015]);

Despite a good legal solution, the practice of creating strategies and plans in Serbia (and in Belgrade) is essentially neglected. These documents sometimes do not even exist, generally they are created in closed groups, deprived sometimes even from expert discussions. Citizens are not involved in planning process, unless it is a pilot project, although participatory planning has been a very well developed practice in Yugoslavia for 4 decades (1950-1990). In this way, an important resource for good landscaping, achieving sustainable development and community satisfaction, is lost. (e.g.: [Stojkov, Damjanovic, Krizanic, Petrovic 2015:53-57]);

A bad practice of the poor availability of these plans, projects and clear information in this area, as well as suppression of good practice of public debates, was introduced in the 1990s. The reason for hiding the data is in opening space for various abuses and procuring great financial benefits for certain interest groups, primarily from the construction process. Some of the types of abuse are: earnings through a change in zoning (for example, from an industrial zone to a residential - commercial one) and from trade with plots, whose price increases after the construction of valuable facilities (the practice of internal trade with information is not punished). In Belgrade, which is particularly attractive due to the high value of land, there are many examples of these abuses and there is no political party that has not used this generous resource.

When it is asked why plans and projects are made out of the public eye, it is explained that “citizens are not interested in public discussions on these issues.” Authorities simply ignore the fact that their job and legal obligation is to procure public debates on spatial plans and urban projects, which have existed as a good practice for decades: to invite citizens to debates, to make good and clear information on spatial planning and projects, to formulate clearly alternative proposals, and to leave enough time for debates.

There are rarely public discussions about a change of zoning in public space and about the way of land use. One can hardly find genuine eagerness of public authorities to enrich the use of existing public space or buildings (streets, sidewalks, bridges, parks, river banks, islands), but also future facilities (multifunctional recreational and cultural-entertainment centers, etc.) in participatory way to fit to citizens’ needs. So, a lot of lessons can be learned from Copenhagen about participatory and innovative design of space.

1.2. The importance of using databases and IT applications

Copenhagen has developed good databases and IT application packages (most with the state support) which is very important for good quality of city management and the provision of good public services in all policy areas. All large systems in the city (transport, heating, cooling, water supply, sewerage, waste recycling, energy production) but also other activities (education, health, social support, economic development, etc.) use these databases that are open to citizens in order to inform them and to hold public debates about quality of services (evidence based policy & participative decision making), problems, possible improvements. Copenhagen's political leaders point out that a holistic strategy in planning and implementing policies and projects is a crucial factor that enables good quality of services and satisfaction of citizens. (e.g.: Holden, Airas, Larsen, 2019]);

In Serbia, state and local authorities (Belgrade too) have been more actively developing IT applications and digitizing in various areas since 2016 (the cadaster, land books, digital spatial plans, GIS, etc. have been digitized). A number of administrative affairs were digitalized (registers and public documents, taxation, pension system, etc.). Parts of the education and health system have been digitized (from enrollment in kindergarten, school, college, through online classes and exams during Covid 19, over applying for medical examinations, obtaining all relevant information regarding Covid, scheduling examinations, tests, obtaining results, scheduling vaccinations, issuing certificates, etc. Citizens were surprisingly easy accustomed to the new way of working. IT can (and should) be used to involve citizens in decision-making processes, and special attention must be paid on prevention of any form of IT abuses like: widening insufficient, confusing or inaccurate information, endangering personal data and human rights, etc.

2. SMART BUILDING AND CONSTRUCTION

In Copenhagen, the practice of violating laws, decisions and building standards is almost never encountered. City authorities have shown great leadership potential, raising enthusiasm for innovative and participatory problem-solving process. (e.g.: [Agger, Poulsen, 2017]); In that sense, *the Laboratory for Smart Solutions in City Projects* has been established as a new governing body that encourages citizens, civil society, companies, educational institutions, art associations and other interested actors to get involved in creative problem solving. There is a *permanent program of involving citizens in designing and adapting urban solutions* to their daily needs. Citizens have all the necessary data through IT platforms and programs created for these purposes, and can report a problem, send suggestions, requests and offer some good solutions. (e.g.: [Ebsen, 2022]); An important collaborator in this process is the *Danish Architectural Center*, which has so far enabled the emergence of great spatial, urban and architectural solutions.

Copenhagen has an inspiring practice in the field of design and construction and a long tradition of creating pleasant living spaces that are characterized by simplicity, functionality and a beauty, procuring good balance of form and purpose (it has the brand of "city of architecture"). Lovely urban design is a result of long-term efforts made to create "city for people", which feel good, pleasant and comfortable in it. It is characterized by smart design of *roads*: streets, sidewalks, bicycle lanes, functionally designed cross sections of sidewalks and streets, with the principle that pedestrians and bicycles have priority in traffic.

Every aspect is taken into account in the construction of *buildings*: use of natural materials, use of good technological solutions for heating and humidity maintenance (passive houses, active solar facades) with rationality and economy (recycled materials, frequent renovation instead of demolition of old settlements to preserve the community - model of sustainable Housing Transformation, SHT). (e.g.: Holden, Airas, Larsen, 2019]);

The implementation of the zero CO2 strategy has provided beautiful, innovative and creative solutions that are both environmentally friendly and highly functional: the recycling and energy production plant is also a beautiful building, a hill for walking, skiing and ski jumping. An ecological, central cooling system was built as a new necessity for this city, caused by global warming and hot summers. This central system is affordable, effective and ecology-friendly, covering 90% of the facilities in the city. It was created by innovative technology of using the cold currents of the North Sea, and in several years save tones of CO2 which would be cost of fuels. For Denmark and its capital, achieving the zero CO2 goal is possible until 2025, and for Serbia and Belgrade it remains a distant goal (e.g.: [Djordjevic 2019: 724]).

Pictures: 1.a. Copenhagen Incineration and 1.b. Sport and Recreation Hill

Source: 1.a. https://www.azuremagazine.com/tag/urbanism/page/5/
1.b. https://www.archdaily.com/925966/copenhill-the-story-of-bigs-iconic-waste-to-energy-plant.

2.1. Learning from good practice

Copenhagen is one of the most beautiful cities in the world. Its nice classic and modern buildings are skillfully combined, high buildings are avoided ("little is beau-

tiful") and the city is a real oasis of functional solutions. Copenhagen has a status of comfortable place for living (livable city). It has beautifully arranged public spaces for meetings and gatherings, lovely buildings, well arranged settlements and rich cultural and artistic life. (e.g.: [Cariglio, Delbo, Nijkamp 2011: 65-82]; [Gehl 2016: 1-41]); Pictures 2a and 2b show Nyhavn Street running along the canal. The warm colors of the facades of the buildings, a beautiful and functional space, dynamic entrances with cafes, restaurants, taverns, shops, a beautiful promenade full of walkers and a canal with various boats on which boards people often enjoy, add a cheerfulness to this space.

Pictures: 2.a. and 2.b. Street Nyhavn

Source: 2.a. https://commons.wikimedia.org/wiki/File:Nyhavn_MichaD.jpg
2.b. https://www.flickr.com/photos/mariaeklind/29326535852/

Copenhagen is a city on the water, and urban planners skillfully integrated entire space of canals, footbridges and bridges, which are often enriched with symbols of the sea. Pictures 3. Presents first, the moving footbridge, constructed to let larger boats pass, and people enjoy looking its movement. Then a footbridge enriched by masts, gives both pedestrians and bikers a feeling of walking and riding over the deck of a ship (located a cross of Black Diamond - National Library). Last photo shows a very common ambience of attractive residential buildings along a canal full of boats

Pictures: 3.a. Moving footbridge, 3.b Footbridge with masts and 3.c. Canal with boats.

Source: author

The streets and sidewalks are carefully and thoughtfully designed, adapted primarily for pedestrians and cyclists, and cars are largely "pushed out of the city." The space of the streets (they are wide and large) consists of wide sidewalks, wide bike lanes and the same widths of car lanes (for cars is allowed mostly slow traffic).
In designing the public space, special care is taken that they are attractive and accessible to all age groups (young, middle-aged but also old) and pleasant for meetings and socializing (picture 4a). Sidewalks, squares, parks, but also walkways and bridges are designed so that people can recreate and engage in various sports (jogging, parkour, skating, etc.). On the sidewalks, small elastic trampolines are placed at ground level, on which you can jump, which is done by both young and old. Copenhagen is a real "city of the game".
Some fountains are moved out of the pool and placed at street level (picture 4b). On warm days, sitting on beautifully designed spaces, children, young people, parents, the elderly are sprayed, played and refreshed, which creates a relaxed and cheerful atmosphere.

Pictures: 4.a. Superkilen Park quarter and 4.b. Fountain in city centre

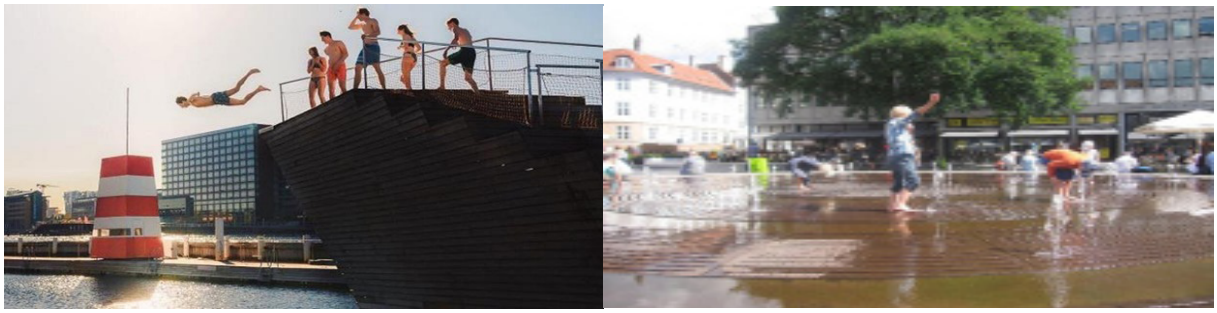
Source: 4.a. https://www.re-thinkingthefuture.com/architectural-community/a3115-20-thesis-topics-related-to-community-architecture/2/ and 4.b.author

Sensors connected to IT applications, monitor the patterns of people`s movement in various parts of the city. These data are used in urban planning to optimize and enrich the use of space and resources (multi-functionality), to offer a variety of content and to increase traffic safety. A good example is a renovation is the Dronning Louises Bridge, as one of favorite places where people enjoy lovely view on city. It was renovated, car lanes were narrowed, bicycle paths and sidewalks for pedestrians were extended and even benches have been installed.
Danes are very attached to the nature and the health of the population is very important to them. In that sense, Copenhagen has many parks, with a variety of plants, often with small lakes, spaces for recreation and cultural and artistic performances. (e.g.: [Laage, Blok, 2020]), [Engberg, (2018]);
City procures various recreation installations for all citizens, regardless of age, gender, ethnicity or richness, as one of social democratic values. A good example is

Prism Sport and Community Center in southern Copenhagen as a multi-purpose facility and community center with: theater, spaces for conferences, cultural performances, flea markets, street culture but also various spaces for sports and personal exercises. This public facility designed all in glass, is open to the green areas that surround and it is always for free at the service of all citizens, enriching the quality of life in the community and contributing to social cohesion.

Since the 1950s all baths in harbor have been closed due to pollution. Since 2000, after purification, it has been possible again for people to swim in water. A lovely *Islands Brygge Harbor Bath* project (established in 2003) unites the harbor and the citizens again. It has 5 pools (2 for children), two diving towers (3 and 5 meters high) for jumping, offer possibility for open air swimming on increasing number of hot days in Copenhagen. Even in the winter period there are regular swimmers and visitors (pictures 5a and 5b).

Pictures: 5.a. Islands Brygge Harbour Bath in summer and 5.b. in winter



Source: 5.a. https://www.visitdenmark.com/denmark things-do/authentic-experiences/harbour-baths and 5.b. https://medium.com/@siobhan_farmer/open-air-swimming-copenhagen-style-d74567b5b649

2.2. Belgrade

In Serbia and Belgrade, the cadaster, land books and the system of issuing permits have been digitalized. Good indicators of increasing the speed of issuing permits (from 189th position in 2012, to 9th in 2019) still do not mean that corruption in this policy area has been seriously reduced, because it is preserved on other points of procedure. (e.g.: Djordjevic, 2019: 727-729]);

In construction policy in Belgrade there was identified the practice of forgery with digital recordings, shadowing upgrade the old building with 2-3 floors in order to enable the demolition of old building and construction of a new one higher than the prescribed standard in that settlement. Beside this tolerance to violation of *height and number of floors of buildings*, investors are still allowed to violate other construction standards like *construction on plots where zoning plan forbids* it, as well as the standard of occupancy of the plot. Investors often do not leave the obligatory space for green spaces or parking, but use the entire plot space for the building. This decreases green spaces in settlements, creates an overcrowded urban space with excessive load increase of infrastructure networks in the settlement (electricity, heating, water supply, sewerage, IT network, parking places etc.).

Corruption is a very serious problem and construction activities are accompanied by more or less visible scandals. Citizens do not have insight and become aware of the problems later, through the construction process or, more often, after it, when little can be done.

In this area, the involvement of citizens through IT applications would be of great importance. Involving citizens in GIS (geographic informational system), digital cadaster and land registers, would allow inaccuracies to be reported on the recordings, which could eliminate accidental and intentional "errors", which would reduce urban clutter, voluntarism in space management and abuse. In this way, citizens get used to this IT instrument. They understand the importance of spatial planning, the severity of problems that arise if mistakes are made in the process and learn why their contribution to the functionality and beauty of urban design is beneficial. The IT program should involve clear and visible standards for each plot and it should be easily visible whether a project deviates from the prescribed standards. During the construction, the citizens could indicate through the IT application where there is a problem so that the inspection (always understaffed and poorly equipped) would have a better insight into the problems and could do its job more efficiently. (e.g.: [Djordjević 2017: 101,102,104,105]);

The Belgrade authorities (city and city municipalities) could develop a permanent program to involve citizens in adapting urban solutions to their needs. In order to make optimal use of it, there must be a commitment of the political leaders to involve citizens and the community in these processes and a commitment to that goal (sustainability), which is currently lacking, at least in Belgrade (and Serbia).

Much has been done in the process of rebuilding squares, streets, infrastructure, but the biggest problem is insufficient transparency. Namely, the city authorities generally announce their intentions, presented as an already prepared project, usually without any public debate about it. Often, these projects cause a lot of trouble to citizens which leads to protests. One of such examples, is the excessively long reconstruction of "27 Marta" and "Dušanova" streets during 2018 and 2019 when it was hard even to walk along these streets.

The reconstruction of the Republic Square contributed to functional solution because space was created for larger gatherings (for the winter market, sliding spaces, performances, etc.). Yet, the space remained quite bare, without enough greenery and without any interesting, more dynamic functional units. Despite the important cultural institutions and beautiful buildings of the National Theater and the National Museum and the sculpture of Duke Michael on horseback (all from the beginning of the 20th century), as well as numerous, always full cafes, the square space at first gives the impression of some sterility and maladaptation to citizens (pictures 6a and 6b). Fortunately, later some benches with solar panels and chargers were installed with some greenery by crossroad, which mitigate these weaknesses.

Pictures: 6.a. Republic Square Before Reconstruction and 6.b. After Reconstruction

Source: 6.a. https://www.novosti.rs/vesti/beograd.74.html:745354-Trg-Republike-Majstori-pod-kamerama-dan-noc and 6.b. https://beobuild.rs/zavr%C5%A1ena-rekonstrukcija-trga-republike-p2887.html

Another example is Flower Square situated across the Yugoslav Drama Theater, developed as a pleasant meeting place, with cafes and an open space under linden trees used for sitting outside. It was framed on the other side with charming demountable open bars on a wooden platform, which gave the space a feeling of comfort and pleasure. This lovely designed place has been rearranged: demountable objects have been removed, leaving only chairs and tables outside, which leaves a feeling of incompleteness and discomfort. The part of the square heading toward the Theater, which used to be a market in the first part of 20th century (never adequately designed) again in this reconstruction left the flower shops empty and paved the whole space with stone, which further contributed to the feeling of emptiness.

In this reconstruction project, flowers could be nicely combined with water (Fountain) and trees (linden and large old oak) to enrich this area practically and symbolically making the square a favorite destination for rest and meetings of all citizens (pictures 7a and 7b). The common destiny of "urban and architectural solutions made without people" is to remain sterile.

Pictures: 7.a. Flower Square after Reconstruction without flowers 7.b. Without charming demountable bars

Source: 7.a. https://sr.wikipedia.org/sr/%D0%94%D0%B0%D1%82%D0%BE%D1%82%D0%B5%D0%BA%D0%B0:Cvetni_trg_01.jpg 7.b. https://www.novosti.rs/vesti/beograd.74.html:590659-%D0%9C%D0%BD%D0%BE%D0%B3%D0%BE-%D1%99%D1%83%D0%B4%D0%B8-%D0%BC%D0%B0%D0%BB%D0%BE-%D1%86%D0%B2%D0%B5%D1%9B%D0%B0

For several decades the city authorities have had plans for better arrangement of the neglected city river banks as lovely locations with an excellent view (*City on Water on* Danube bank facing Vojvodina coast and *Belgrade Waterfront* on Sava bank facing coast of New Belgrade), but these projects have been delayed (e.g.: [Čamprag 2019: 187-189], [Djordjevic, 2018: 83]);. Both projects create residential, recreational and commercial zones and contents.

Since 2015, Serbian government has tarted intensive work on the Belgrade waterfront on Sava river band. [Djordjevic, 2018: 82]);[3] The whole space is completely reconstructed: neglected river banks were transformed with the construction of beautiful residential and commercial buildings, bike lanes, with a beautifully landscaped promenade with cascades, stairs, platforms over water, enriched with lovely vegetation, equipped with benches. There are playgrounds for children, and numerous cafes, restaurants, interesting food stores (in the form of train compartments or vans of beautiful colors), etc. The citizens quickly got used to it. Today, it is a favorite destination where citizens enjoy walking and biking along the river or relaxing on the platforms above the water.

It is also planned to build a line park (4.5 km) that would connect these two destinations (from the Concrete Hall to the Pancevo Bridge), with many recreational and cultural facilities.

Pictures: 8.a. Belgrade waterfront, and 8.b.. Panoramic view on Kosancic venac

Source: 8.a. https://beogradzadecu.com/listings/setaliste-savamala/ 8.b. http://wikimapia.org/1392958/sr/%D0%9A%D0%BE%D1%81%D0%B0%D0%BD%D1%87%D0%B8%D1%9B%D0%B5%D0%B2-%D0%92%D0%B5%D0%BD%D0%B0%D1%86

Belgrade Waterfront project was created in a non-transparent way and the creators of these projects were primarily motivated by the profit. The Serbian government involved a number of foreign architectural houses like: studio Libeskind, Gehl Architects, Sou Fujimoto Architects, Zaha Hadid Architects (e.g.: [Čamprag 2019, p.185]); and

[3]. In Serbia, political will is decisively important for the implementation of the project. The other project - the City on Water on Danube bank has been frozen, due to conflict between two parties (DS and DSS). Recently, Serbian government started slowly resuming it again.

the solutions are often beautiful and modern, but various problems necessarily arise. The public is familiar with some details of ready-made solutions. Domestic experts are only partially involved (rather because of their willingness to fix already-made solutions than with the government's intention to include them).

A number of problems remains: unclear financial calculations of the project`s costs as well as future tax burdens that citizens will have to pay is one of them. Further, the groundwater problem and the poor developed solutions for potential flood problem remains as technical one. Regarding buildings´ size, there is dilemma why such tall buildings, symbolically poorly designed, have been made? Having in mind that this space is very suitable to set up multifunctional facilities, especially for cultural and artistic performances and exhibitions, the public wonders why until now these contents have not been announced. The public can only hope that, in final phase of construction, authorities would understand the importance of these contents, not only for pleasure of citizens, but also for economic benefits (experience economy). It was proven once again that the dialogue between the government and the citizens is of a huge importance, however, objectively, in Belgrade it scarcely exists.

2.3. GREENING BELGRADE

Climate changes have caused very pleasant warmer winters in Belgrade, but also very hot summers (especially in August) with effects of greenhouse and urban heat islands. A general idea in all Belgrade strategies and plans, including Local Sustainable Ecological Plan, is to focus on greening spaces. Citizens are poorly informed about these plans. They are only informed about some larger projects, already prepared for implementation, and about some smaller local projects.

Belgrade has more then 40 big and medium size parks, and numerous small ones (publicly maintained). Some additional greening projects were implemented by civic initiatives like: pocket parks, vertical greenery, green terraces and roofs, all around the city. (e.g.: [Simić, Stupar, Djokic, 2017: 4-8]); Researches show us that only planting roof gardens would highly contribute to environment. One research in New Belgrade, on 132 buildings with roof space of 91 000 m2 showed that planting green roofs can yearly neutralize 4500 tons of CO2, saving 7800 MWh of energy. (e.g.: [Đorđević K., Joksimović O., Jovanović - Popović M., 2018: S1217-S1229]); Implemented on all flat roof buildings in Belgrade, these great effects can be highly multiplied, contributing greatly to good air quality and healthy environment in general.

Regarding garbage processing factories, in Vinča settlement, on the outskirts of the Belgrade, on the Danube bank, has been a land field dump for decades as an ecological black spot. The project of sanitation of land field and building a waste processing factory has been mentioned for decades, and only recently a project has started in cooperation between the city and the Japanese-French cooperation. This power plant will burn methane for energy production and further heating part of city (connected to the heating pipeline). The public received only basic information about this envi-

ronmentally friendly solution, but again there was no public debate about it. In architectural terms, the factory buildings are beautiful but there are no innovative ideas or multi-functionality, like those applied in Copenhagen`s factory.

Pictures: 9.a. Belgrade Vincha landfield dump reconstruction & 9.b. New waste - electric factory (in 2024

Source: 9.a. https://www.politika.rs/sr/clanak/466824/Beograd/Preuredenje-deponije-u-Vinci-najsavremenija-tehnologija-za-preradu-otpada 9.b. https://www.politika.rs/sr/clanak/441147/Beograd/Elektrana-na-otpad-za-tri-godine

3. CONCLUSION

Spatial planning and construction are policy fields in which researchers can identify, following various indicators, the quality of democracy (participative or not) and provision of services and goods (according to citizens` needs) as vital for people´s daily life. In this paper it is proven again, that participative decision making in creation, implementation and correction of public documents, plans and projects is the main content of democratic community and satisfied citizens. Copenhagen and Belgrade are pretty different cases.

In both countries, there is a model of integrated *spatial planning*, but in Belgrade the practice deviates from legal regulation. Copenhagen has good and open databases and developed practice of coproduction and participative decision making. There are regular public debates involving the community, citizens and certainly professional associations and experts in good landscaping. Copenhagen authorities show great patience and conflict resolution skills which are very important for solving problems in decision making and finding best solutions in zoning and landscaping. [Agger, Poulsen, 2017:381-384]). The city abounds with public facilities affordable and available to all citizens and has a spirit of city created for all people.

Belgrade, does not have good data basis and these data often are not open and available for public. Public debates are mostly non-existent, or when a debate is conducted mostly it is mostly in narrow groups (members of parties, members of closed groups or friends). In this way landscaping is privatized, a number of dysfunctional and poor solutions is created in space and often citizens cannot feel a city as their own, but as “stolen” for some influential groups’ needs. Belgrade government, in such a way, deprives itself from beneficial contribution of community in spatial planning

through expression of citizens' needs, useful suggestions, initiatives, and from beneficial public control.

In Copenhagen, *construction policy* is compliant with spatial planning standards (zoning) and construction standards, and there is no practice of violating these norms. The strategically adopted norms of ecological construction and the use of natural materials are followed, as well as frequent renovation instead of demolition of neglected buildings (sustainable), and application of innovative, green technologies (solar energy, passive houses, green roofs and balconies), etc. Furthermore, the city has a tradition of involving experts and the community (citizens) in creating projects and constantly adapting urban and project solutions to the daily needs of citizens. In that process, functional, beautiful and innovative solutions are created.

Belgrade does not have good quality of data bases (part of these bases is developed as digitalized) and these data are mostly closed. There are no strict standards for building style in each settlement, and there is often a great variety of solutions. Furthermore, in construction, it is allowed to violate the standards of the spatial plan often causing great troubles (construction in a forbidden area), but also to violate the standards of construction (number of floors, occupation of the plot). The cause of this situation is profit as main motive, less care for public goods and developed corruption in this very lucrative area.

Energy efficiency has only recently demanded as obligatory, while the application of environmental standards, greening and the application of new technology are not mandatory. Belgrade and its municipal governments do not organize public debates about building projects, and therefore beneficial influence of community is missing. There are not good IT applications prepared for co-production of solutions in these policy fields. Therefore, learning from excellent Copenhagen practice would be very beneficial for Belgrade government and the citizens as well.

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