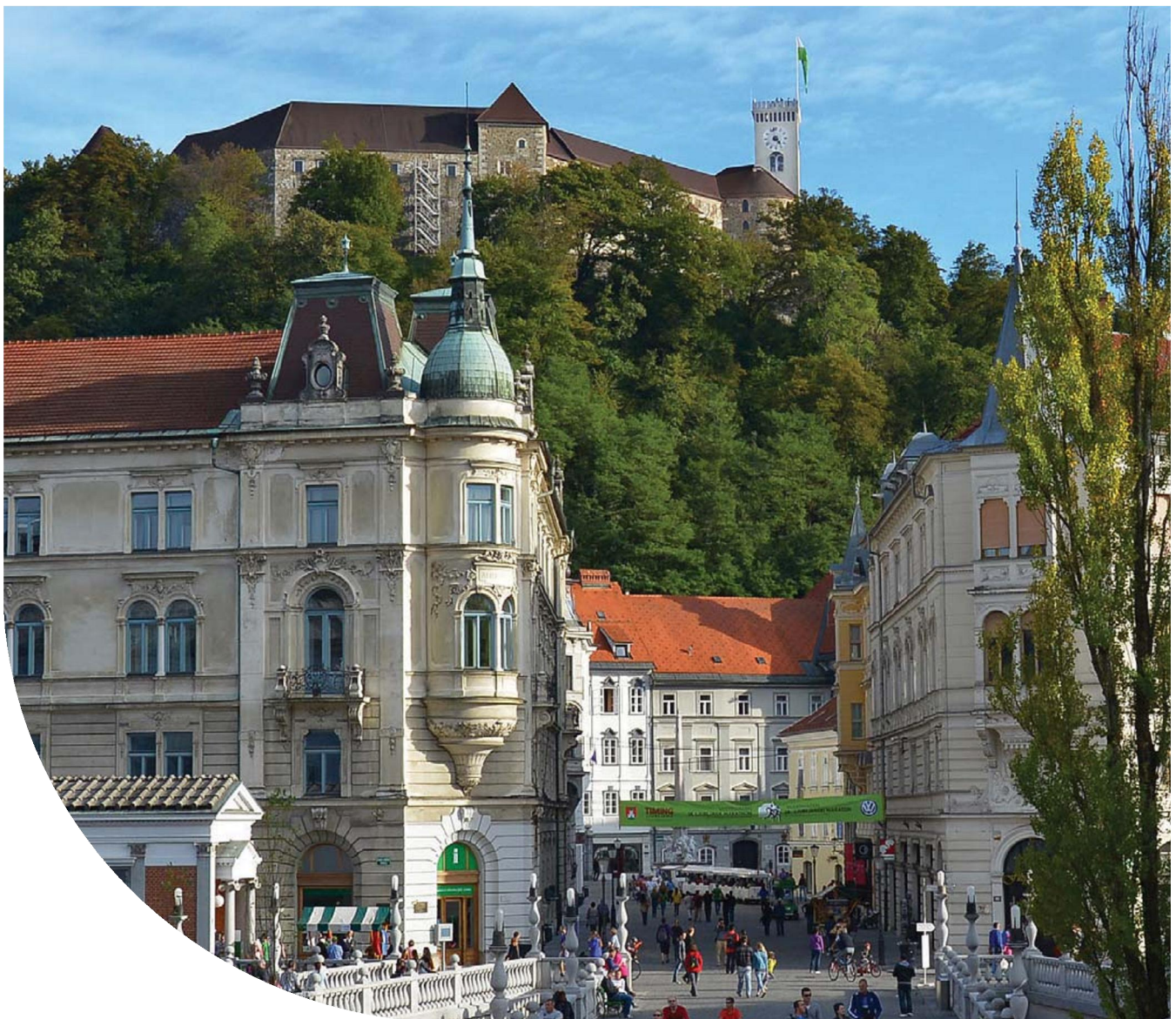




STREETS FOR 2030: PROPOSING STREETS FOR INTEGRATED, AND UNIVERSAL MOBILITY

UNIVERSITY OF LJUBLJANA, FACULTY OF ARCHITECTURE and
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NOTRE DAME UNIVERSITY-LOUAIZE, RAMEZ G. CHAGOURY FACULTY
OF ARCHITECTURE, ART AND DESIGN and
AESOP Thematic group Public spaces and urban cultures





STREETS FOR 2030:
PROPOSING STREETS FOR
INTEGRATED AND UNIVERSAL
MOBILITY

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INTRODUCTION

Dear Participants,

Welcome to the City Street4 (CS4) Conference! In 2020 this conference examines mobility in various aspects: the users, modes of mobility, and the streets facilitating but also affecting it. A current and imminent need for revisiting streets stems from the COVID-19 pandemic, which has imposed new requirements for encounter, co-presence and mobility in public spaces, among them streets. This conference is entitled:

STREETS FOR 2030: PROPOSING STREETS FOR INTEGRATED AND UNVIERSAL MOBILITY

The conference theme outlines global mobility challenges in relation to parameters of various transactions, communication modes and human flows. The status of streets is put under the spotlight to address scholars with multiple questions referring to society, climate change, the environment, technical and technological aspects, safety, urban health and quality of life implications. This international and interdisciplinary conference seeks to engage participants in discussions of everyday living and explore it from various backgrounds and considerations, with the purpose of forwarding knowledge on addressing streets to respond to current needs.

Choosing Ljubljana as the location for CS4 was intentional, as this city strives towards universal and integrated mobility. Mobility in Ljubljana is underpinned by serious endeavours from urban planners and academicians supporting professional practices and local authorities in providing a city for all. Also, the strong collaboration between the institutions: Ramez G. Chagoury Faculty of Architecture, Arts and Design at Notre Dame University-Louaize, and the Faculty of Architecture at the University of Ljubljana, along with the Urban Planning Institute of the Republic of Slovenia, emphasises the attention given to the public realm, particularly streets. This conference in Ljubljana provides a nexus across geographic areas linking academicians, practitioners from various disciplines and all those concerned with the future of streets. The richness of the contributions from which participants will learn is included within the nine conference tracks, the five keynote speakers from different backgrounds, the two roundtables related to the Association of the European Schools of Planning (AESOP) Thematic Group on Public Space and Urban Cultures, as well as the other conference activities. The tracks have contributions from 43 papers

and two posters, which cover countries in Europe, Asia, and Latin America, and explore global issues on streets and mobility. Each track focuses on different aspects related to the year 2030 ranging from the users, to diverse urban development, and implications for traffic congestion, transport systems with a focus on public transport, the role of streets as dividers or connectors, green mobility and resilience, pedestrians, walkability, culture and activism.

Under Track 1: ‘Integrated and Universal Mobility: Whose Streets?’ the contributions are concerned with street design for all amidst privatisation; the integration of ecological concerns; health concerns, accessibility and increased mobility in public spaces; the introduction of e-scooters and new technologies with their anticipated impact on public spaces; supporting social inclusion and different user groups including students through mobility; the impact of temporary changes leading to inclusion in public space. In Track 2: ‘Dense, Diverse and Designed Urban Development’ contributions address the emphasis of historic city parts through mobility; accessibility and urban design; walkability in mega projects. These topics are addressed through case studies from different cities. In Track 3: ‘Mitigating Traffic Congestion with Urban Development’ contributions examine current case studies related to globalisation, and impact on streets; street dynamics as manifested through programs; changing patterns in building uses and impact on transport. In Track 4: ‘Travel Time and Efficiency of Transport Systems’ the exploration of sustainable urban mobility measures, digitalisation of traffic, autonomous vehicles, joint development of transit corridors in various contexts provides lessons learned for streets. Within Track 5: ‘Public-Transport-Oriented Cities for All’ multimodal corridors, green spaces, alternative mobility and public health, and transit-oriented development provide analyses of advantages and disadvantages of public transport that could inform different urban contexts. Track 6: ‘Borders in Street Life: Dividing or Protecting?’ comprises papers exploring the role of material and immaterial divides including fences, music, and art in streets. Track 7: ‘Green Mobility in a Way to Climate Resilient Streets’ highlights directions for improving streets at various scales and considerations for pollution, low carbon emissions, seismic hazards. The papers provide examples at city scale and others at a university campus scale. Track 8: ‘Pedestrian Friendly Cities to Support Climate Change’ considers temporary strategies, integrated mobility, walkability as explained through several case studies. Finally Track 9: ‘Perspectives on Sustainable Mobility: Culture of Everyday Activism’ presents the theme from the eyes of the users and their cultural milieus: students, riders of informal mobility psychological impact and human experience in public

spaces; digitalisation to enhance the identity of historic public spaces; streetscape transformations with the innovative interventions to street design and social aspects, beyond engineering; and social innovation to enhance urban mobility.

We wish you a successful conference in which this platform triggers new ‘convivialities’ among participants, through the scholarly exchange of thoughts, participatory debates, and inspirations for new and adaptive approaches to further inhabit, manage, and sustain mobility in city streets for 2030.

Assoc. Prof. DR. CHRISTINE MADY

Notre Dame University-Louaize, Ramez G. Chagoury Faculty of Architecture, Art and Design:

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T2**TRACK 2: DENSE, DIVERSE AND DESIGNED URBAN DEVELOPMENT**

Track Chairs:**Branislav Folić**

University of Kosovska Mitrovica, Kosovska Mitrovica, Serbia and

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The physical component of a developed city system is changing more slowly than the ecological and social ones. This is evidenced by the appearance of many cities of the world at the end of the 20th century, namely busy city streets, large air pollution due to the over-use of cars, high levels of traffic noise, usurpation of the open parking spaces, etc. Initiated transformation of this negative picture is considered a complex and long-lasting process as well as the integral segment of sustainable urban development. Track 2 contributions identify concrete challenges and present corresponding solutions regarding:

- Urban policy for mobility infrastructure (re)development;*
- Sustainable mobility solutions for dense urban areas;*
- (Re)design of the urban space along transport corridors;*
- Spatial, social and ecological interrelations between pedestrian, singular and group (public) mobility corridors in urban environment;*
- Car-free cities;*
- Alternative mobility viewed from the perspective of social and health sciences;*
- Design of slow-mobility streets;*
- Open urban spaces as sustainable mobility nodes;*
- Integration of sustainable mobility schemes into new urban development projects.*

Keywords: Sustainable mobility, Urban morphology, Urban planning and design, Multidisciplinary approach

SUSTAINABLE TRANSFORMATION OF HISTORIC TRANSPORT CORRIDOR IN THE CITY OF BELGRADE, SERBIA

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ABSTRACT

The relocation of Belgrade's main railway terminal and the mainline for freight trains, which used to run parallel to the riverbank, opened an opportunity for the development of sustainable urban mobility zone and its integration into specific nature-based solution. Based on historical facts and the current status of the old railway corridor positioned in the central zone of the City of Belgrade, the aim of this paper is to elaborate suitability of a linear park concept for selected area and to explain one proposal for its sustainable transformation into a multifunctional contemporary urban space. In contrast to previous historical transport line, the proposed green corridor is intended to connect the city and the riverbanks in functional, ecological and visual terms. Furthermore, developed solution represents a response to some of the city's existing problems, and a contribution to safeguarding the opulent heritage in historical urban core.

Keywords: sustainable urban mobility, green infrastructure, linear park, multifunctionality, regeneration.

INTRODUCTION

The City of Belgrade was founded at the place that today is known as Kalemegdan. Kalemegdan lies on the confluence of two rivers, the Sava and the Danube. Over time, the city has been expanding from Kalemegdan towards inland, thus creating

¹ Corresponding author

new urban areas such as Gornji (Upper) Dorćol and Donji (Lower) Dorćol. At the end of the 19th century, the transport corridor known as the Slaughterhouse Railway was built around Kalemegdan and Dorćol (Figure 1). It aimed to connect industrial area on the Danube bank with the main railway station i.e. the railway bridge across the Sava river. Along this route, especially within the zone of today's Concrete Hall, many shops and storages were built. Later on, the station at the Slaughterhouses (today known as Danube station) was enlarged with additional tracks. Prior to construction of the Pančevo Bridge in 1935 and the extension of the route across the Danube, the gorge had been a 'dead end'. In the interwar period, with the spontaneous development of the industrial zone along the rivers, the railway grew into an industrial railway that served the Danube Industrial Zone (Vukmirović & Nikolić, 2020). As a result, heavy rail traffic has occurred in the area that, according to the General Plan from 1923, was planned to be the largest sports and recreation zone (Figure 2).

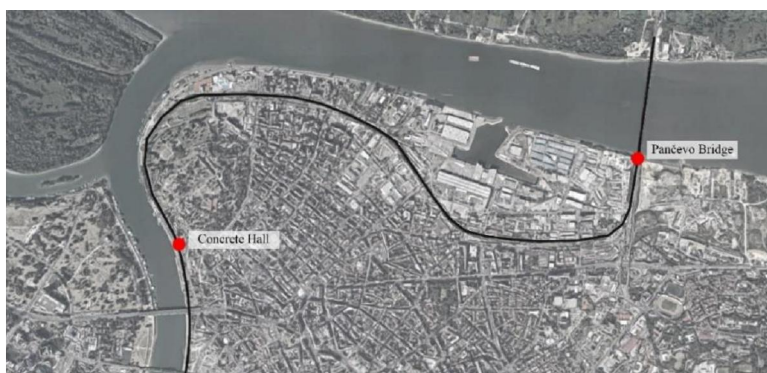


Figure 1: Old railway line from the Concrete Hall to the Pančevo Bridge



Figure 2: A section of historical railway line in Lower Dorćol: Current state

The railway route stopped operating in 2018, when Belgrade's main railway terminal and the mainline for freight trains were relocated. This has opened up ways for finding the new mobility solutions. Simultaneously, the redevelopment of the old railway route has been seen as an opportunity to respond to some existing urban problems in this part of the city, including the lack of greenery, high risk from river flooding, occurrence of the urban heat island effect, bad air quality, lack of good-quality leisure space, etc.

MULTIFUNCTIONAL LINEAR SPACES AS A RESPONSE TO LOCAL CONDITIONS

In densely built urban areas, and especially in central zones, green infrastructure is a common problematic issue. To increase the presence of greenery and improve the quality of life, ultimately, voids needed to be found. In post-industrial cities, these void spaces are likely a "by-product of a plethora of cultural processes and needs", e.g. disused railways, pipelines, post-industrial waterfronts, rivers, etc. (Kullmann, 2011).

In recent theory and practice, adaptive reuse of linear infrastructural spaces is most commonly referred to as the design of linear parks. According to Kullmann (2011), thin parks located on infrastructural-type, linear sites need to be calibrated as programmatic sequences of experience – whether variably visual, tactile, or event based. Such is the case with the adaptive reuse of abandoned rail infrastructure and its transformation into the High Line New York park that later inspired many worldwide projects and proposals. Copying of the High Line New York concept to other places, however, is not always successful due to numerous local specificities, so when planning linear parks on the foundations of the old traffic infrastructure, it is necessary to consider keeping, i.e. reintroducing suitable modes of transport (Ascher & Uffer, 2015). In the Vauxall Missing Link Park in London, different mobility routes were successfully brought together by forming a buffer between pedestrian/cyclist/vehicular traffic.

Adaptive reuse of linear landscapes is of broad cross-disciplinary relevance (Kullmann, 2011). By integrating new cultural, ecological, developmental, agricultural, and recreational values (Faggi, et al., 2017) into existing urban structure, some urban problems, and at least those found in physical proximity to a line subjected to transformation, should be taken into consideration. For example, linear parks could mitigate local urban heat island effect, improve health and well-being, and strengthen the resilience to floods (Giannakis, et al., 2016). At the same time, they should be designed to take advantage of local conditions (Santos, et al., 2012). Tanghe River Park in Qinhuangdao, China, even introduces encompassed natural habitats into educational use and allows its visitors to experience local nature.

TRANSFORMATION OF OLD BELGRADE RAILWAY: PLANS AND ACTIONS

Although the Belgrade Master Plan from 1972 intended to bring Belgrade back to its rivers and thus foresaw the removal of railway line in the central urban zone and the relocation of the central railway station, this topic has only recently begun to be discussed more seriously. In late 2018, the Belgrade Land Development Public Agency initiated a Detailed Regulation Plan for 4,600 m-long section of the old railway line extending from the Concrete Hall to the Pančevo Bridge (Figure 1), based on the Decision of the City of Belgrade Assembly from September 2018. The Urban Planning Institute of Belgrade has been engaged in drafting the plan. In April 2019, the media (Mučibabić, 2019) announced that the architectural studio 'Diller Scofidio and Renfra' was invited to submit a project proposal for the transformation of the subject area into a park. Eventually, the fee for hiring the world-renowned team turned out to be extremely high, which resulted in a need for a different approach.

Standard planning procedure was subsequently amended and harmonized with the international scientific project CLEVER Cities (Vukmirović & Nikolić, 2020), whose main topic is the co-creation in city planning by utilizing live lab approaches and nature-inspired solutions. In this manner, the team working on the project, along with the group from the Urban Planning Institute, devised a plan development methodology that was expected to involve all relevant stakeholders. As a result, the Urban Innovation Partnership has been set up, uniting around 50 members from more than 35 local and national public and private sector institutions, scholarly community, and common society.

The initial co-working phase on the project CLEVER Cities has resulted in defined vision of the Linear Park 2025, an attractive, self-sustaining, multifunctional, eco-technological, artistic, educational and research demonstration ground that promotes healthy living, community, cosmopolitanism through national culture, nature protection and youth empowerment (Belgrade Urban Living Lab, 2020). The call for design solutions for the Linear Park in Belgrade was closed on 28/01/2020 and 28 proposals were submitted.

THE LINKPARK CONCEPT

The LinkPark design concept is among ten selected solutions for the transformation of the area along historic railway into a linear park. The guiding idea of the LinkPark 4-member team was to establish a direct spatial, socio-cultural and natural-ecological connection between the Sava and the Danube rivers and their banks, and the city. This implied a radical shift in notion of the subject spatial line that in the past was treated as a firm spatial edge, i.e. a boundary. Therefore, the concept of transformation is based on the need to generate a strong spatial identity, establish continuity of space, connect river banks, integrate rivers with the city core, and provide spatial contents to be used throughout the day, in all seasons and

by all citizens. On the other hand, the key design elements were derived from the main characteristics of the context: river— authentic natural habitats – old railway line – city centre.

In spatial terms, special attention was paid to the issue of accessibility and the integration of park into a public space network. Accordingly, the accessibility of space has been achieved by introducing longitudinal and transverse linear strokes. Longitudinal paths are aimed at establishing a connection between the Sava and the Danube banks, while at the same time enabling the creation of five thematic routes.

Predominantly pedestrian transverse connections represent an extension of existing street routes, thus allowing for the direct access to the Danube quay. (Figure 3)



Figure 3: LINKPark thematic routes – MAIN, ACTIVE, TRAM, EcoCAR and SENSORY lines.
Authors: Vukmirović, et al., 2020

From the perspective of landscape architecture, the concept is based on mimicry of wetlands of the alluvial plain of the Danube (Vukmirović, et al., 2020).

In terms of ecology, LinkPark offers significant strengthening of green infrastructure with all its benefits, as well as the introduction of various modalities of sustainable urban mobility (Figure 4). Defined longitudinal routes so include walking as a primary modality (MAIN line); cycling and micro-mobility (ACTIVE line); tram transport (circular TRAM line); and the use of environmentally-friendly (zero-emission) vehicles exclusively (EcoCAR line consisted of two lanes with green interspace). Finally, proposed water transport aims to establish a direct connection with other parts of Belgrade (Figure 5).



Figure 4: LINKPark image. Authors: Vukmirović, at al., 2020



Figure 5: LinkPark proposal for a new water taxi station. Authors: Vukmirović, at al., 2020

CONCLUSIONS

The City of Belgrade has recognized the location of abandoned rail traffic as a creative opportunity to develop new green corridor. In that way, Belgrade has finally begun to transform the abandoned zone into contemporary city centre amenity, changing back this area to its original purpose, and using the inherited advantages and weaknesses of the space.

LinkPark proposal fully opens the riverbanks of old Belgrade to the users. Next to different modalities of sustainable mobility, the concept envisages nature-based solution that has the potential to connect isolated remnant habitat patches and provide ecosystem service in the city (Zhang, at al., 2019). The concept could also be understood as an impetus for gradual green transformation of the whole central urban zone, and the city in general, aimed at improving its sustainability- and resilience-related capacities.

Keeping in mind general developmental tendency of Belgrade central area that is to decrease the intensity of motor vehicle traffic, and the necessity to apply new ways of sustainable mobility, a more holistic approach could in future include the consideration of time-related quality of space, e.g. the chrono-urbanism (Gwiazdzinski, 2015; Moreno, 2019). In that case, the transformed infrastructural corridor presented in this paper could also be considered an integral part of future development of “interconnected network of pathways and relationships” (Mehaffy & Salingaros, 2013).

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