

WHERE THE RIVER ACTIVATES

*Ecological Restoration of Urban
Systems in New Belgrade*

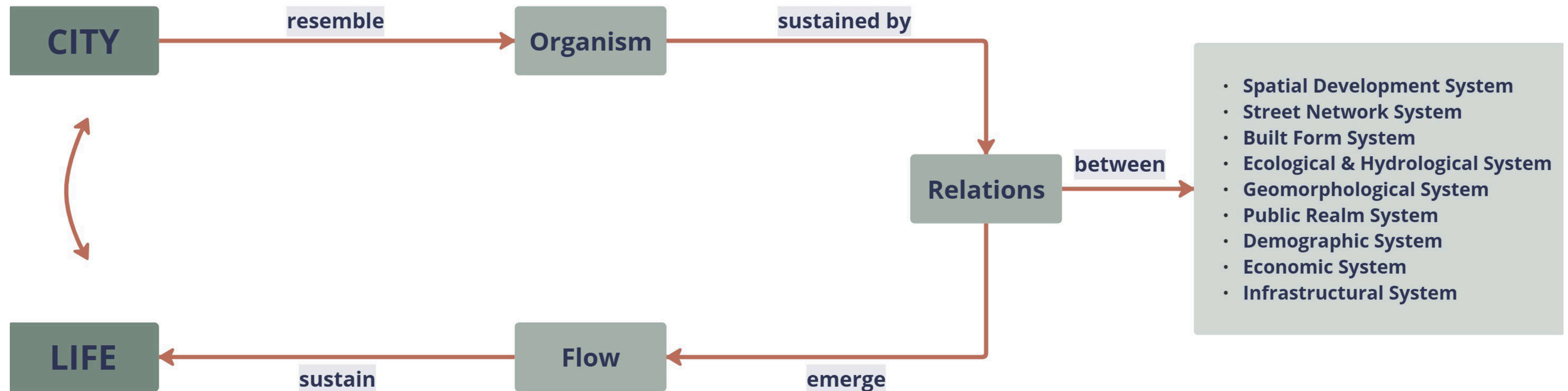
Project No: 275



1 Conceptual Opening

1.1 Cities as Living Organisms

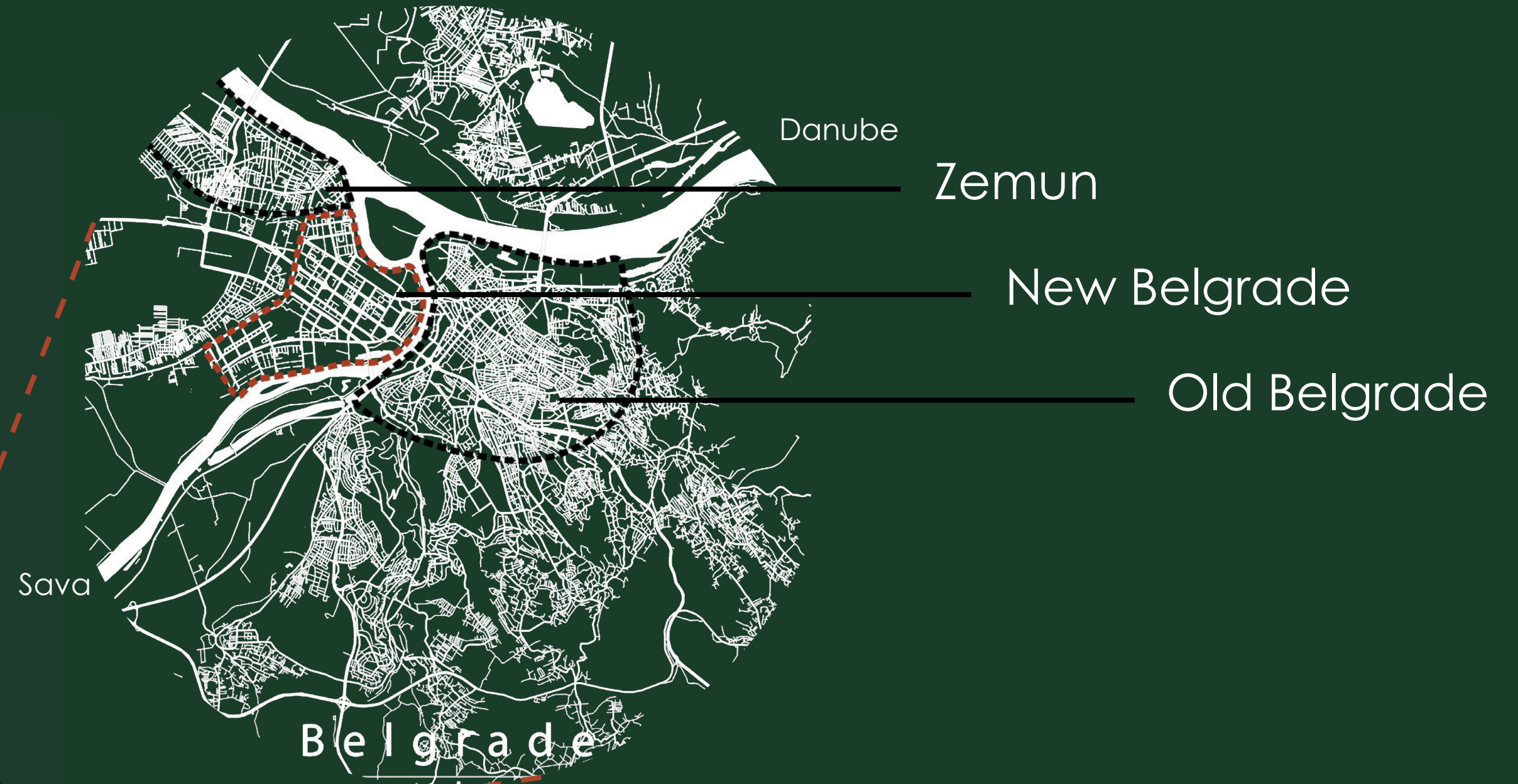
“As in a biological organism, the city is composed of a number of elements which, once combined, create a complex ensemble ...”
— Henri Lefebvre



As Lefebvre suggests, **cities behave like living organisms**, composed of mixed elements that create a complex ensemble. A city is sustained by the **relations between various urban systems**, and its vitality depends on the **fluid interaction** between them. When these systems are interconnected, **the city functions as a dynamic, breathing structure where life is sustained**.

2 Urban System Analysis

2.1 Site Introduction



Belgrade is the capital and the largest city of Serbia. It is located at the confluence of the Danube and Sava rivers and at the crossroad of Balkan Peninsula. Belgrade is one of the oldest continuously inhabited cities in Europe.

2 Urban System Analysis

2.2 Spatial Development of Belgrade

Early 19th century (Belgrade & Zemun) * The city was originated first around Kalemegdan and then Zemun with marshland in between and irregular street patterns.	Late 19th century (Astro-Hungarian & Ottoman Empire) * Belgrade's historic cores underwent a transformation according to Emilijan Josimović's modern regulation plan in 1867. * 1884 - railway construction	Interwar period (Kingdom of Serbs, Croats & Slovenes) * A competition held to transform the marshland between the left bank of the Sava and the right bank of the Danube. * 1929 - airport * 1934 - bridge construction * 1937 - international fairground --> during war - concentration camp	Post-war Period (Socialist Federal Republic of Yugoslavia) * Across the Sava, New Belgrade was built as a large-scale modernist planned extension, while older districts densified. * 1948 - construction works * 1950 - highway Belgrade-Zagreb * 1962 - relocation of airport * 1970 - relocation of railway	Post-socialist Period (Republic of Serbia) * The city shows a mix of historic layers, socialist blocks, and modern developments. Growth continues along transport corridors, with increasing emphasis on mixed-use spaces and redevelopment of central and waterfront areas.
				

2 Urban System Analysis

2.2.1 Competition Proposals for New Belgrade Spatial Development



The area was built according to plans on 1948 and designed with a **grid system, wide boulevards, large green spaces and residential blocks.** Throughout the time New Belgrade became the **administrative and business center of the city**, hosting important government institutions, corporate offices, cultural facilities and residential units.



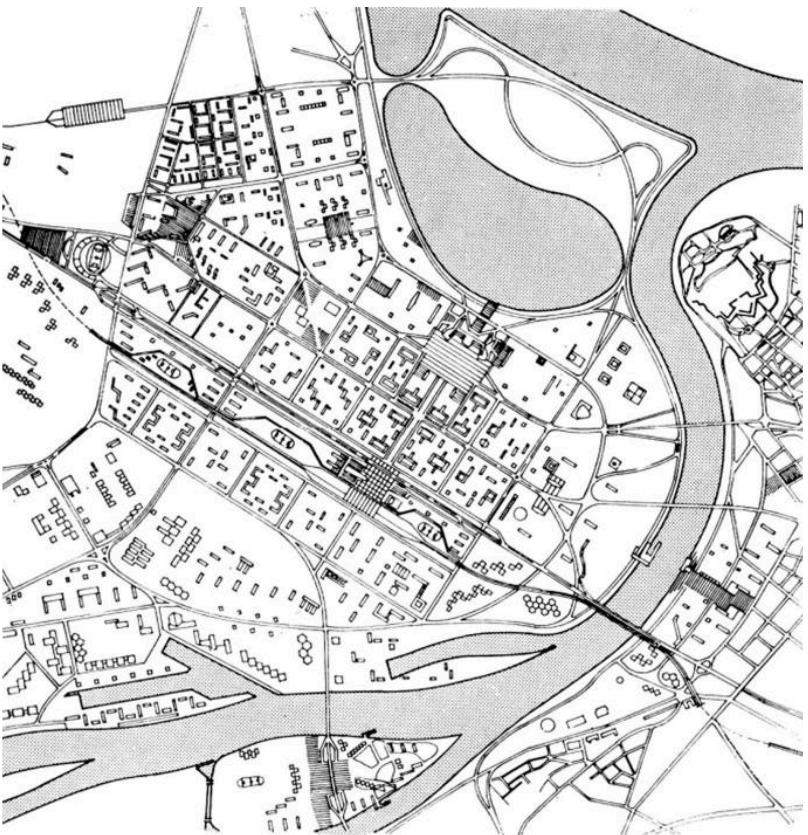
General Urban Plan
by Djordje Kovaljevski, 1923



Preliminary Urban Plan of New Belgrade
by Nikola Dobrovic, 1948



Revised Plan of New Belgrade
by Vido Vrbancic, 1950



Master Plan of New Belgrade
by Branko Petricic, 1958

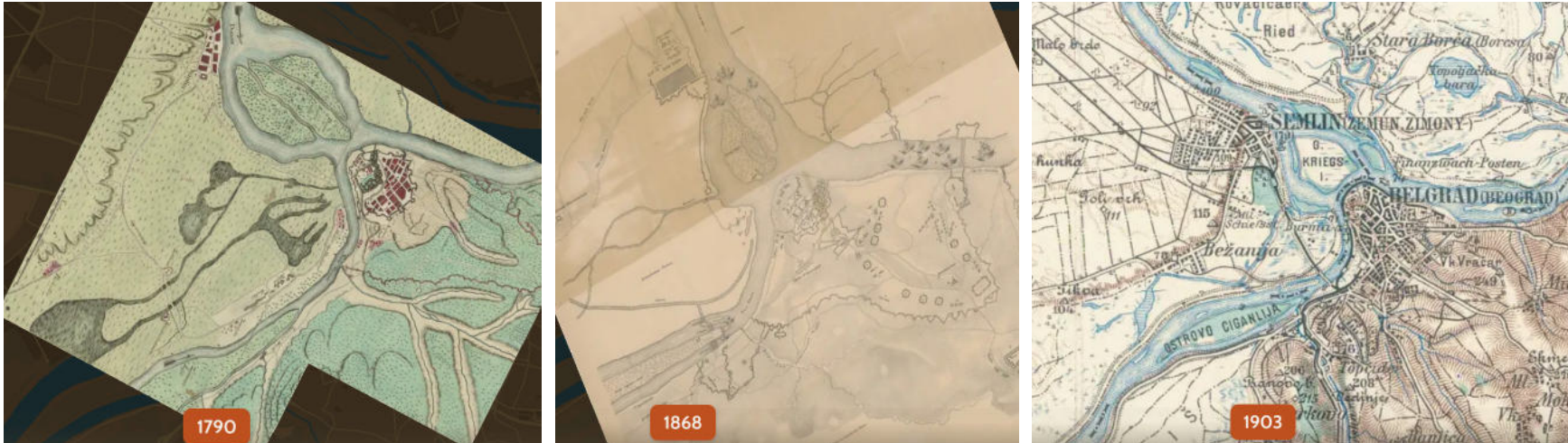
2 Urban System Analysis

2.3 Ecological, Hydrological & Geomorphological Systems of Belgrade

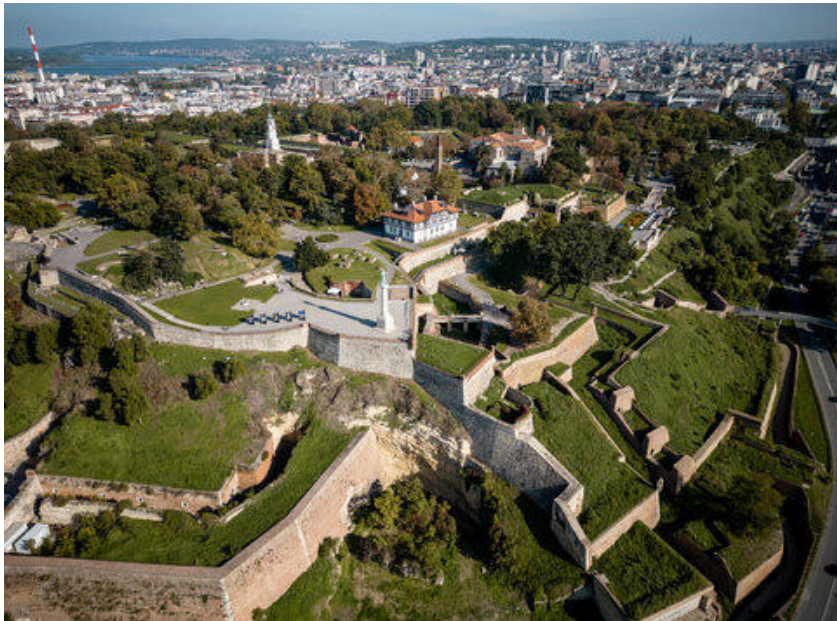


Historically, Belgrade's ecological and hydrological systems created a **dynamic landscape fostering biodiversity, natural flows, and human interaction**. While Old Belgrade maintains a **resilient relationship** with its topography, New Belgrade is defined by a **flattened, engineered terrain**. This transformation has resulted in **fragmented ecosystems, residual greens, increased flood vulnerability, and a weakened connection to the river**.

Where the River Activates - Ecological Restoration of Urban Systems in New Belgrade



Ecological & Hydrological Transformation of Belgrade



Kalemegdan Park from Old Belgrade



Residual green area in between New Belgrade blocks



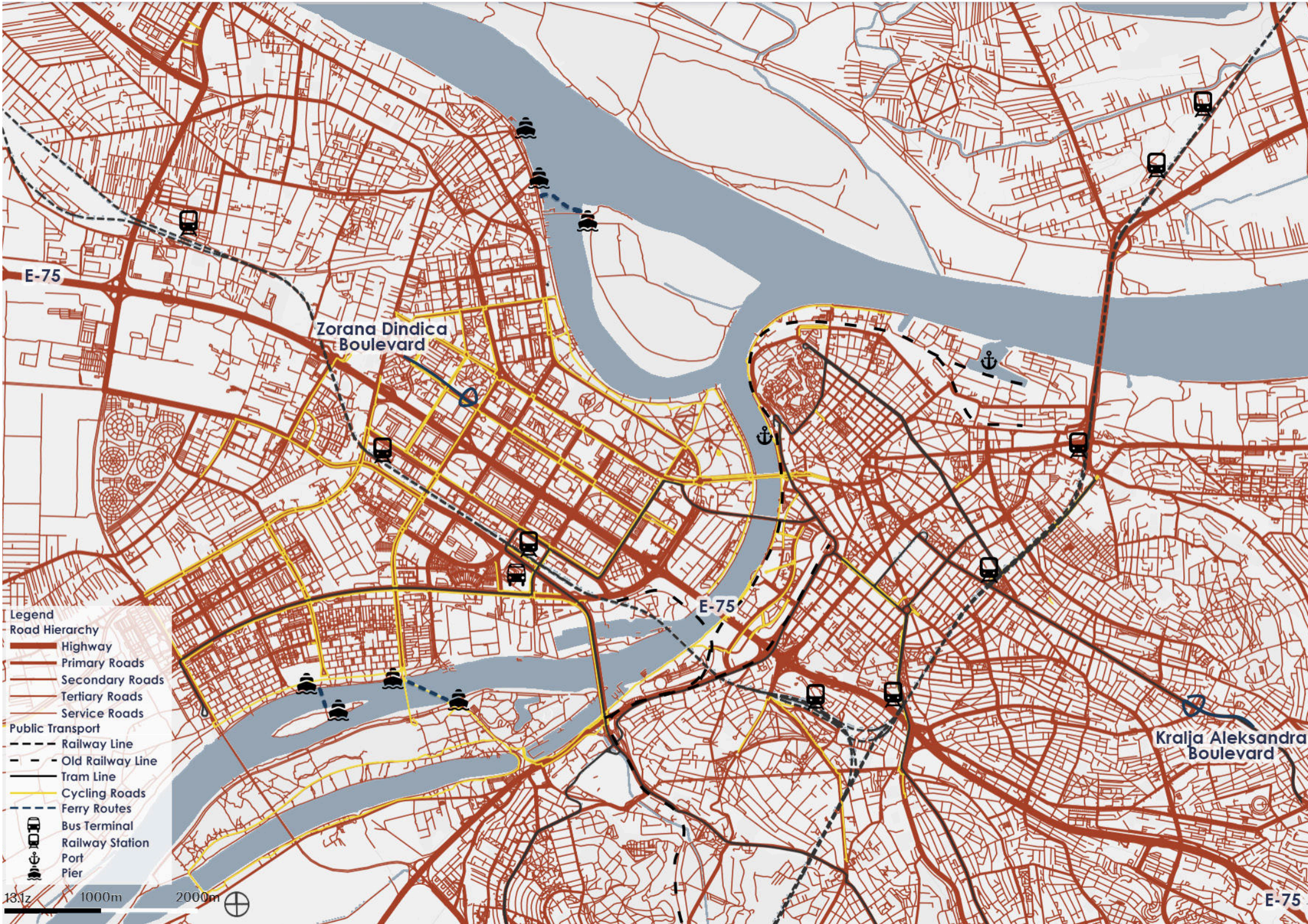
Old Belgrade Waterfront



New Belgrade Waterfront

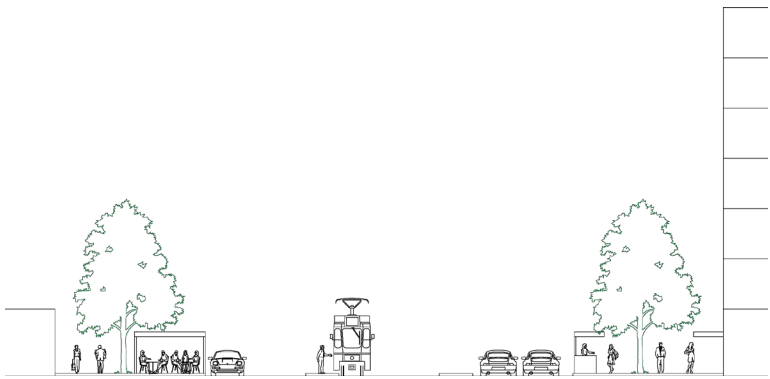
2 Urban System Analysis

2.4 Transportation & Circulation System of Belgrade



Old Belgrade is characterized by an **organic, fine-grained street network** that enables **permeability, diverse route options, and continuous pedestrian movement**. In contrast, New Belgrade is structured by a **rigid, car-oriented grid** where major roads dominate and **internal connectivity is limited**. Furthermore, the **highway and railway** connecting two sides, create **physical barriers** that prioritize vehicular traffic over human-scale circulation.

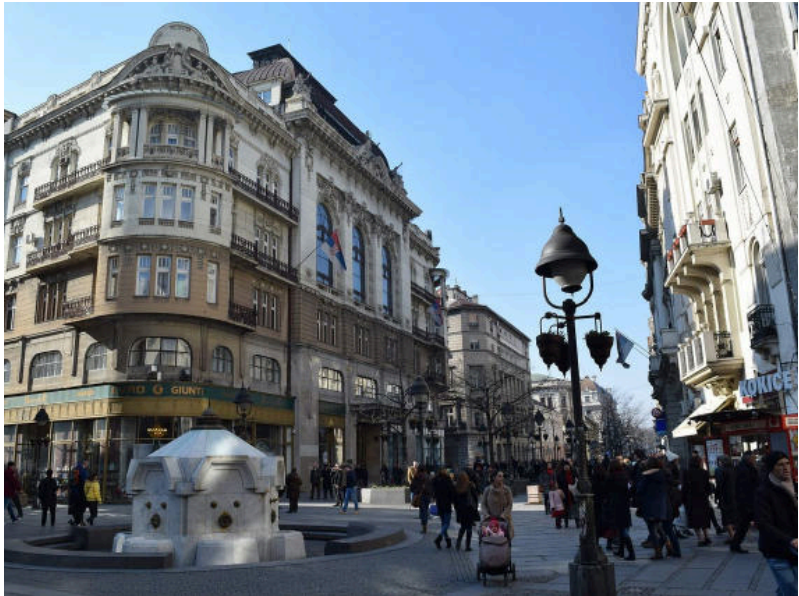
Where the River Activates - Ecological Restoration of Urban Systems in New Belgrade



Section of Kralja Aleksandra Boulevard from Old Belgrade



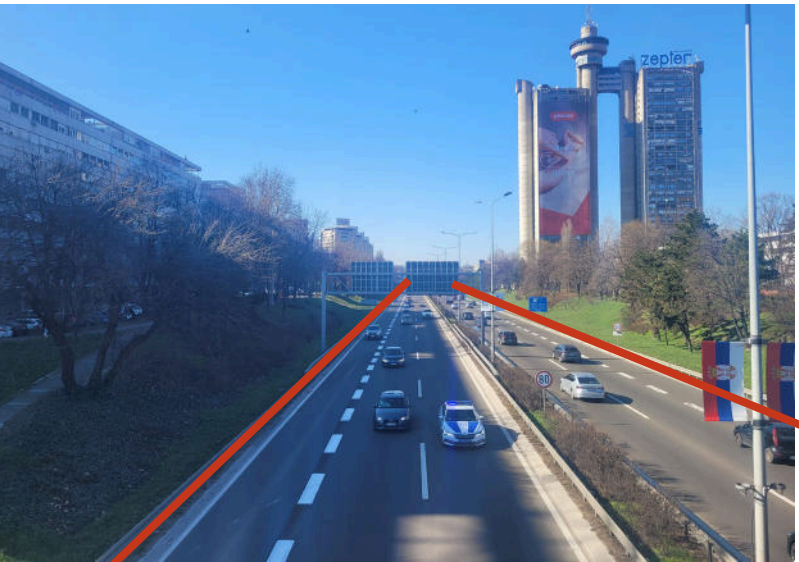
Section of Zorana Dindica Boulevard from New Belgrade



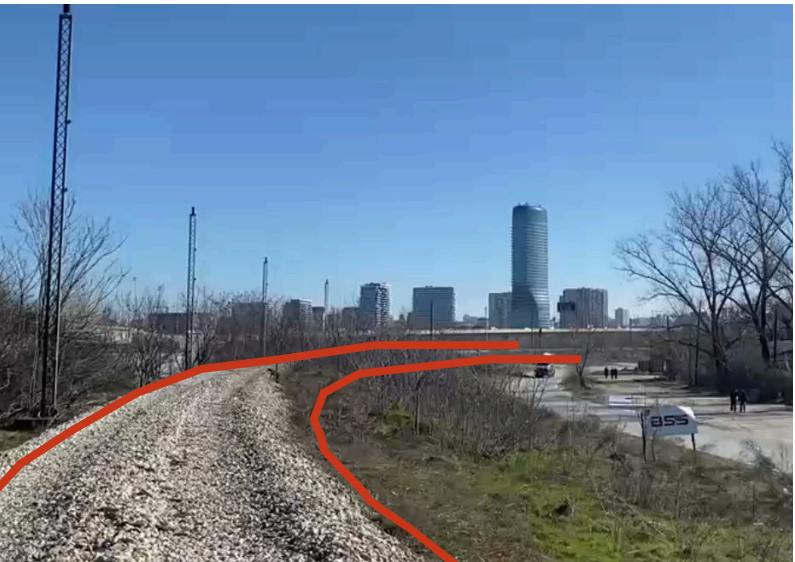
Knez Mihajlova Pedestrianized Street of Old Belgrade



Overpass from the Highway of New Belgrade



Highway as a barrier



Railway line as a barrier

2 Urban System Analysis

2.5 Built Environment of Belgrade



Old Belgrade exhibits a **compact, continuous fabric** where **perimeter blocks and active street edges** create a strong relationship between buildings and public spaces. On the other hand, New Belgrade is defined by **freestanding buildings set within large, open plots**, resulting in **fragmented urban forms and weak spatial definition**.

Where the River Activates - Ecological Restoration of Urban Systems in New Belgrade



Birds-eye view to Old Belgrade



Birds-eye view to New Belgrade



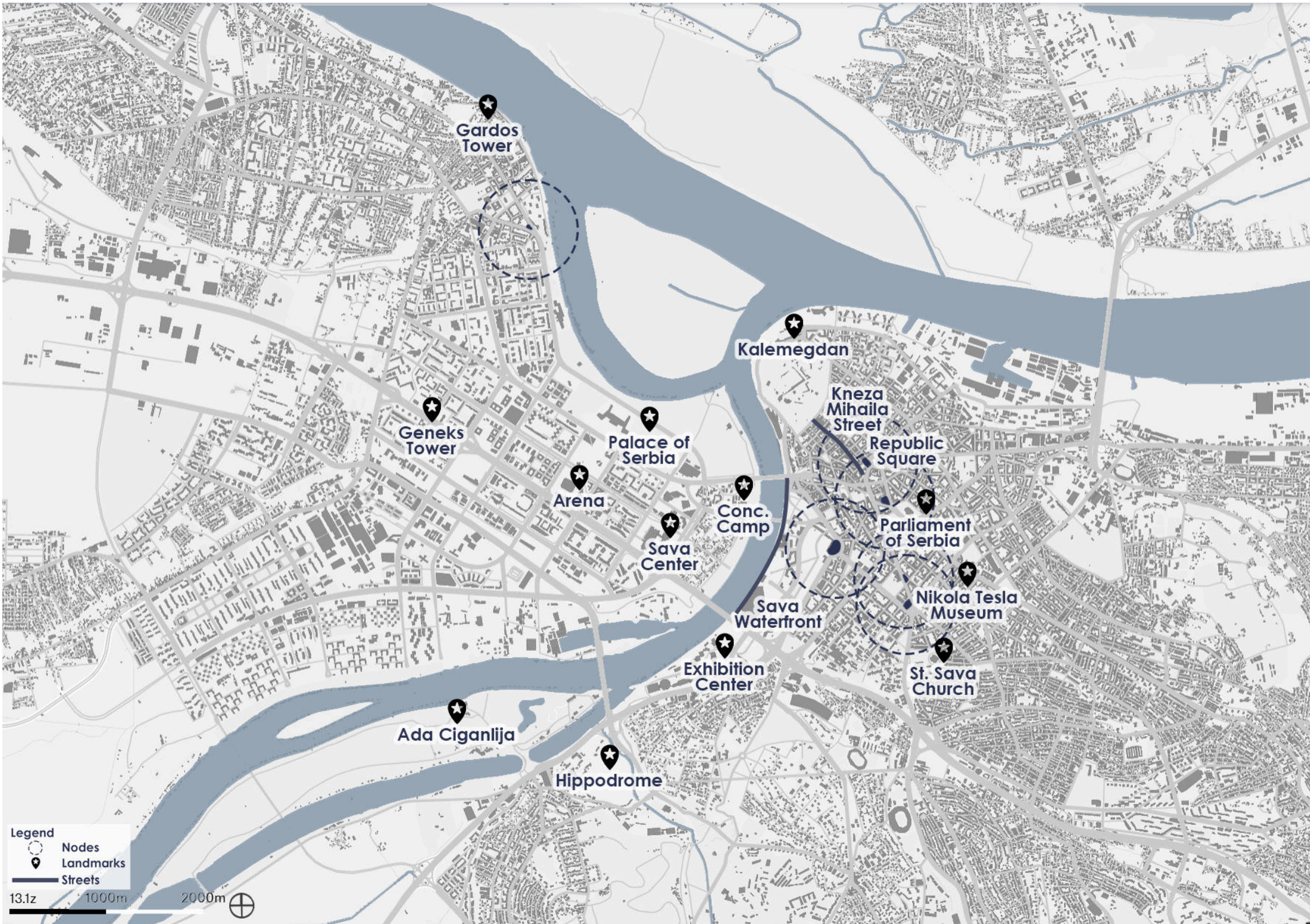
Built fabric of Old Belgrade



Built fabric of New Belgrade

2 Urban System Analysis

2.6 Public Space System of Belgrade



Old Belgrade offers a **dense, interconnected public realm** supported by **mixed-use streets** and a **diverse range of social spaces**. In contrast, New Belgrade is characterized by **residential blocks with weakly articulated public areas**, where the lack of interface **reduces social interaction**. Furthermore, New Belgrade **lacks defined public squares or communal nodes**, which inhibits the spontaneous gathering of residents.

Where the River Activates - Ecological Restoration of Urban Systems in New Belgrade



Public spaces with landuse



Republic Square from Old Belgrade

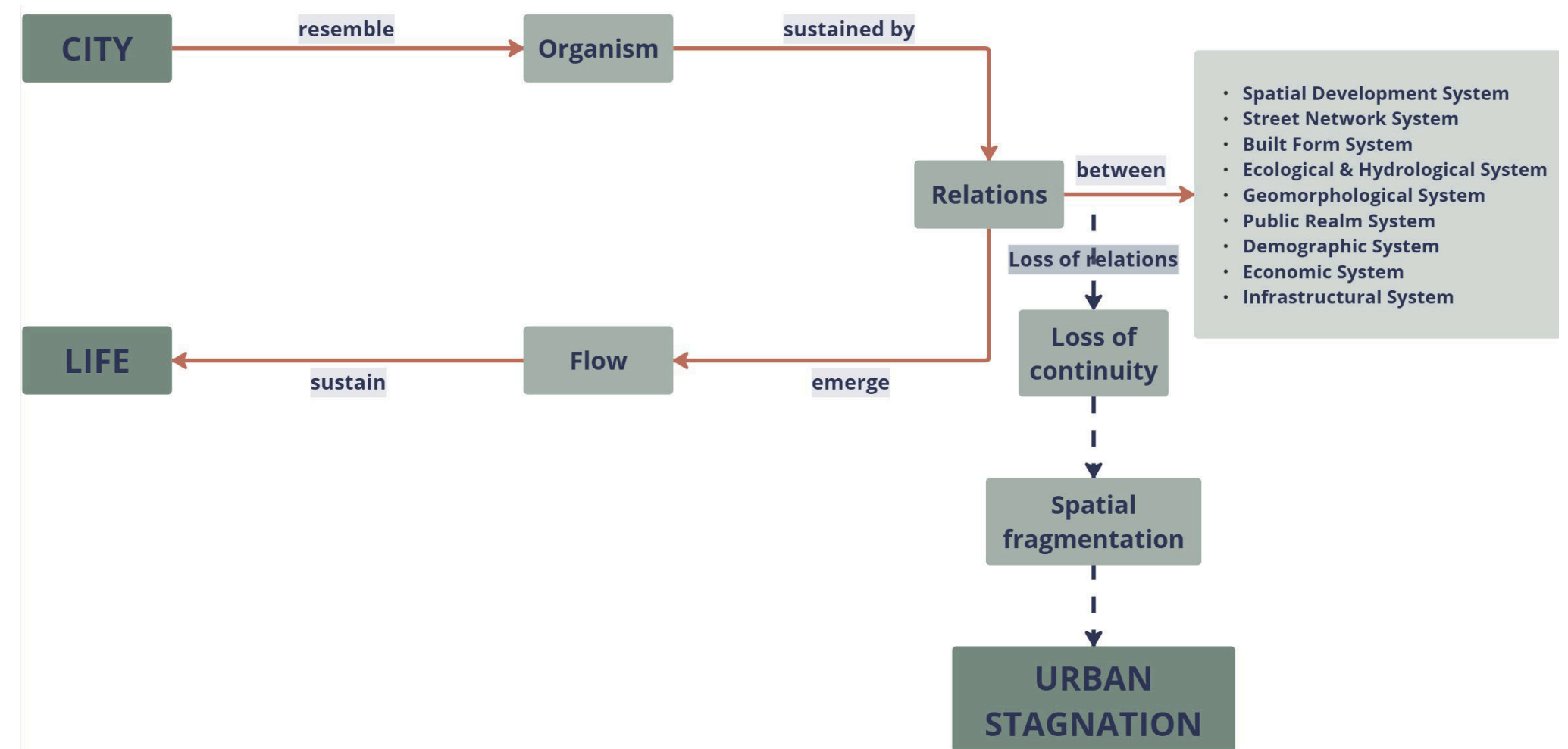


Geneks Tower from New Belgrade

2.7 Synthesis & Diagnosis



Results of the relationships of urban systems in Old & New Belgrade



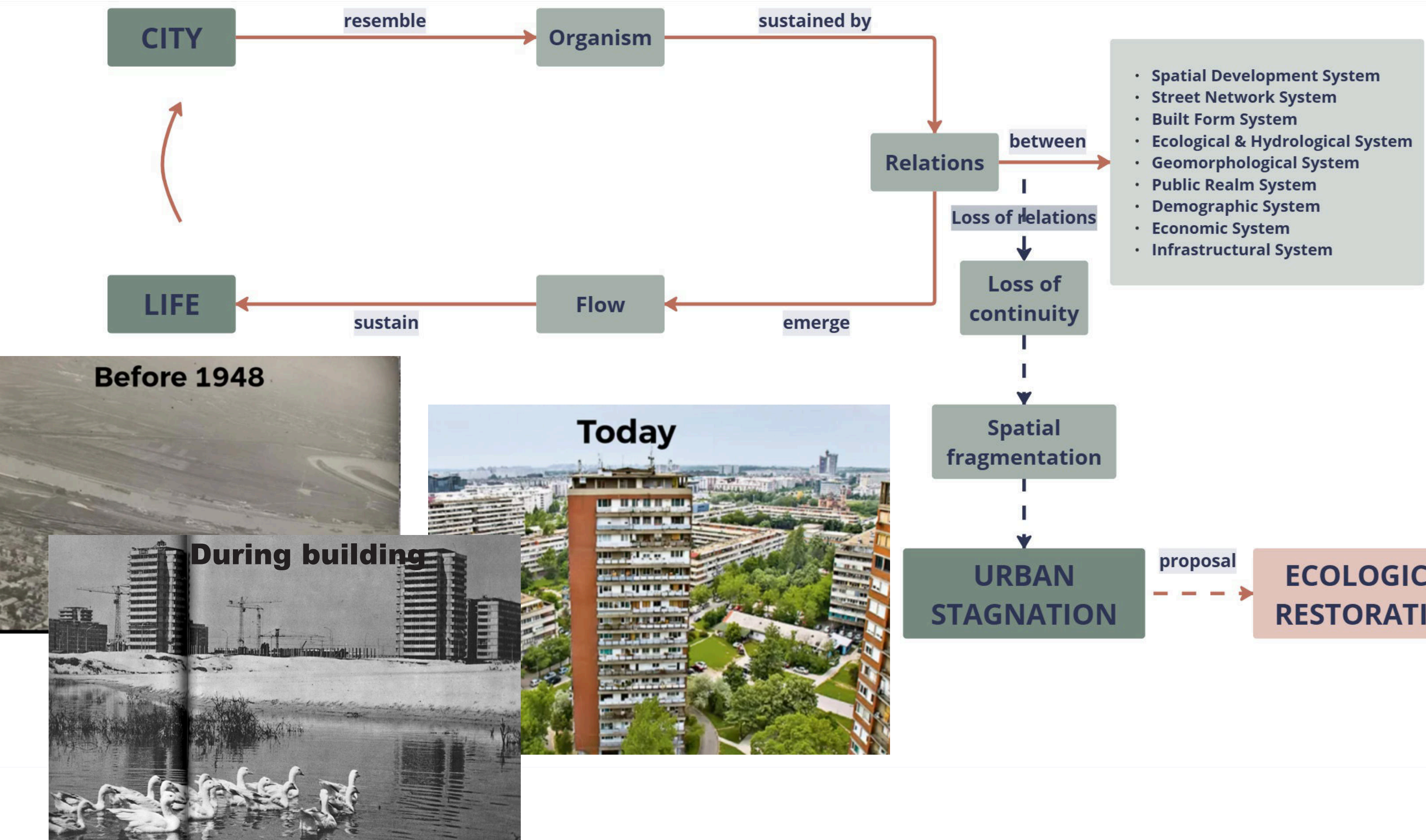
While Belgrade's historical fabric maintains an **organic relationship with its topography and water**, New Belgrade has **lost its ecological and social continuity** due to the **fragmentation created by its modernist grid plan**. The analyses identify that the **disconnection between systems** leads to **urban stagnation and limits the emergence of urban life**.



Where the River Activates - Ecological Restoration of Urban Systems in New Belgrade

3 Conceptual Framework

3.1 Concept



Ecological restoration is proposed as the primary strategy **to overcome the urban stagnation** resulting from the systemic fragmentation of New Belgrade's urban networks. Historically, this area was **a dynamic marshland defined by a symbiotic relationship with nature**; however, despite being bordered by two rivers, this **ecological connection is now lost** within the city's rigid fabric. By **reintroducing hydrological and biological cycles**, this approach treats the city **not as a static collection of blocks, but as a living organism** requiring the active circulation of nature to function. Restoration is thus a necessary structural intervention to **re-establish the metabolic flows essential for a lively urban environment**.

the process of assisting the recovery of ecosystems that have been degraded, damaged, or destroyed by human activities or natural disturbances

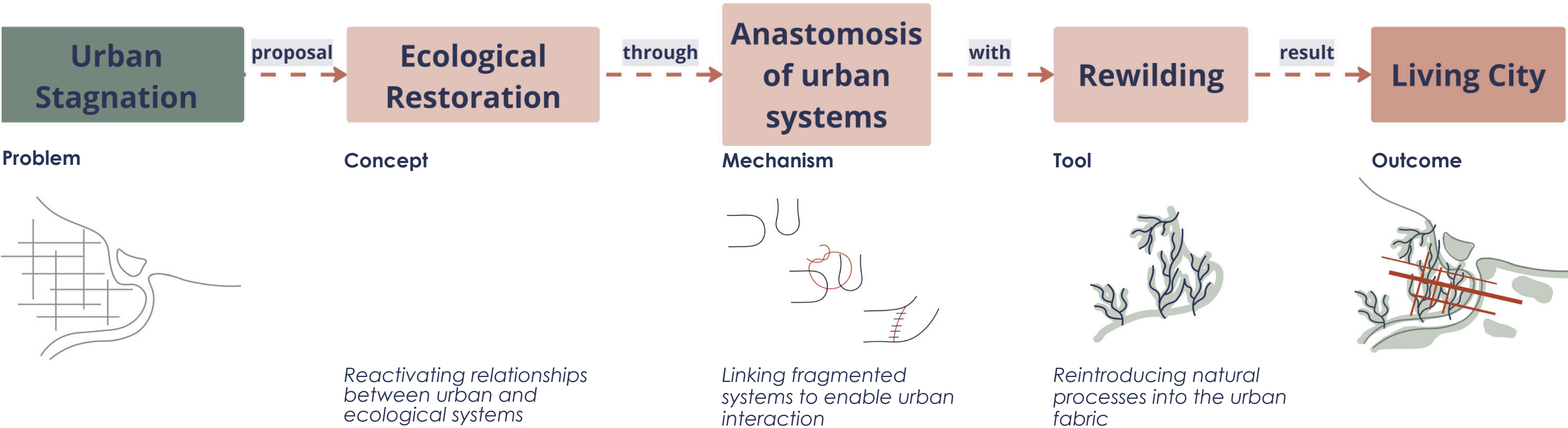
Where the River Activates - Ecological Restoration of Urban Systems in New Belgrade

3 Conceptual Framework

3.2 Vision

This project frames **ecological restoration** as a catalyst for **activating urban life in New Belgrade**. Through **rewilding strategies and urban anastomosis**, the river operates as an active system that **enables interaction, restores continuity, and transforms spatial stagnation into dynamic urban flow**.

“A city that circulates.
A city that breathes.
A city that sustains life.”



3 Conceptual Framework

3.3 System-based Strategies & 1/10.000 Conceptual Plan

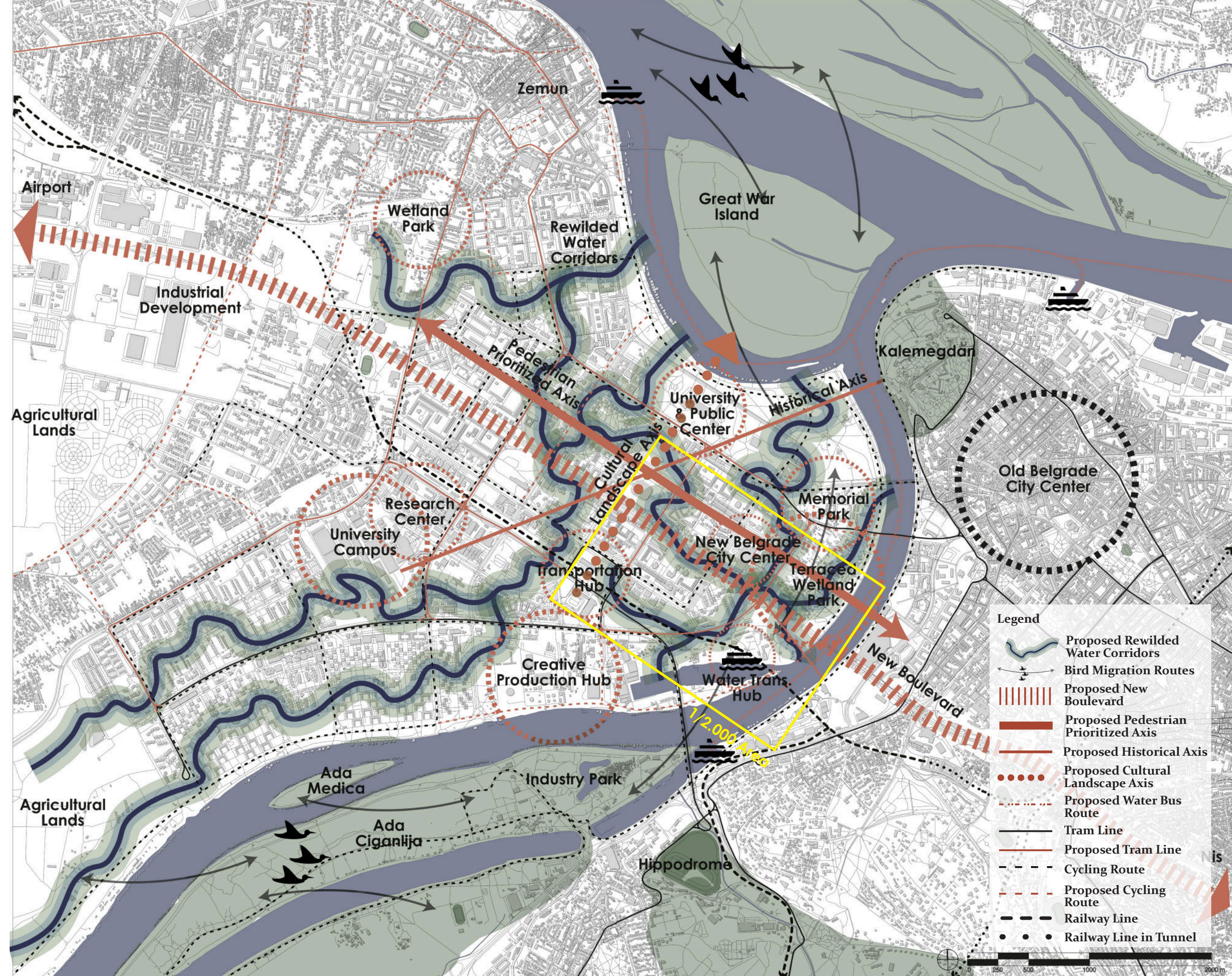
- * Opening **rewilded water corridors**
- * Enhancing water **retention and infiltration** systems
- * Creating **seasonal flood landscapes**
- * Integrating **blue infrastructure** with public space

- * **Narrowing** vehicular roads
- * **Prioritizing pedestrian** movement
- * Creating **continuous cycling** network
- * **Reorganizing tram** infrastructure
- * Introducing **water-based transportation**
- * **Elevating railway line**



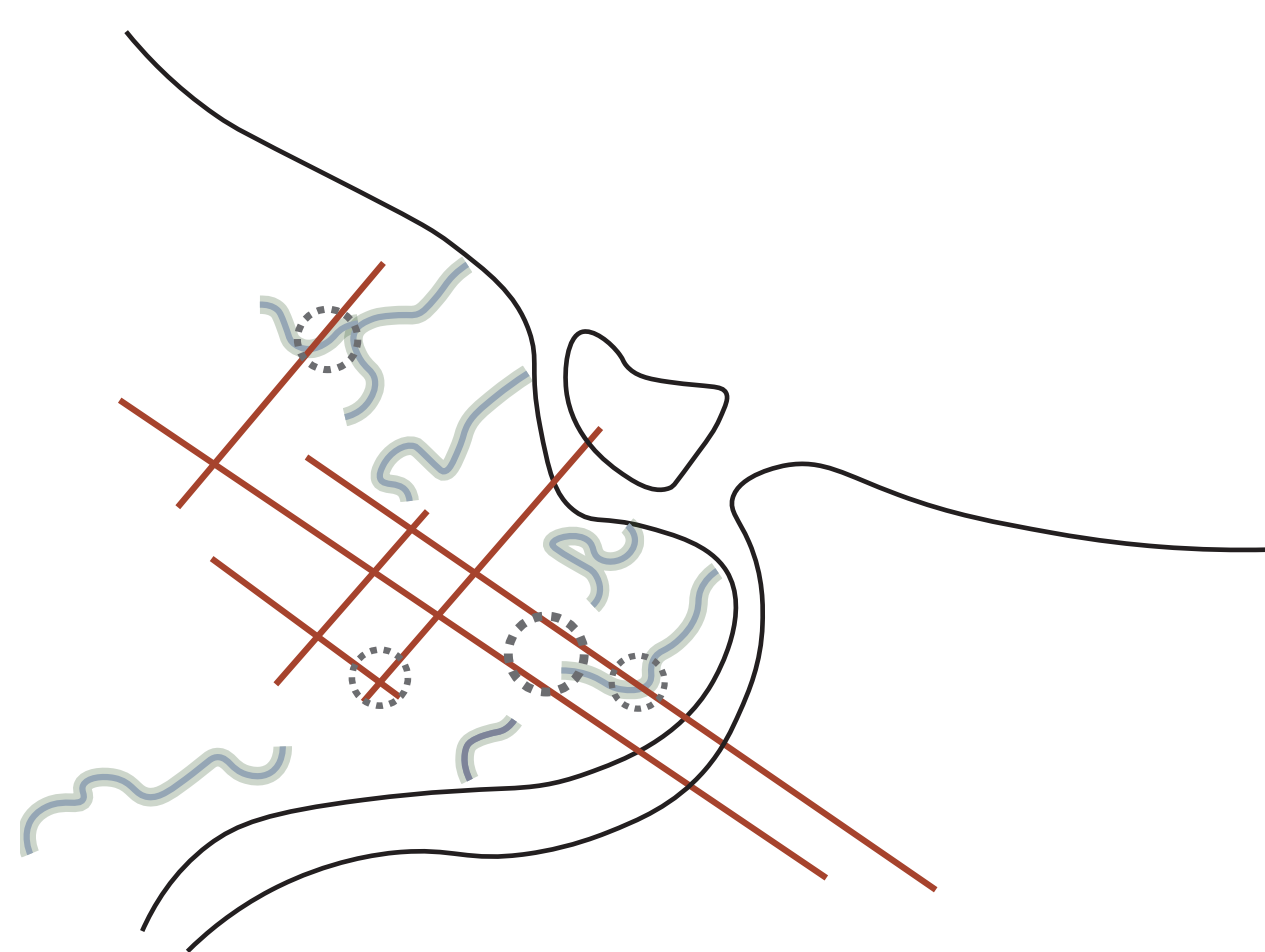
- * **Activating street edges** through mixed-use
- * Designing **diverse public spaces**
- * Creating **multi-scalar gathering** spaces
- * Integrating **public spaces with water**
- * Creating **semi-public courtyards**

- * Creating continuous **ecological corridors**
- * Designing **sequences of parks along water**
- * Establishing **stepping stone** habitats
- * Introducing **floodable wetlands**
- * Planting **native vegetation**
- * Increasing **soil permeability**
- * Enhancing **urban biodiversity**



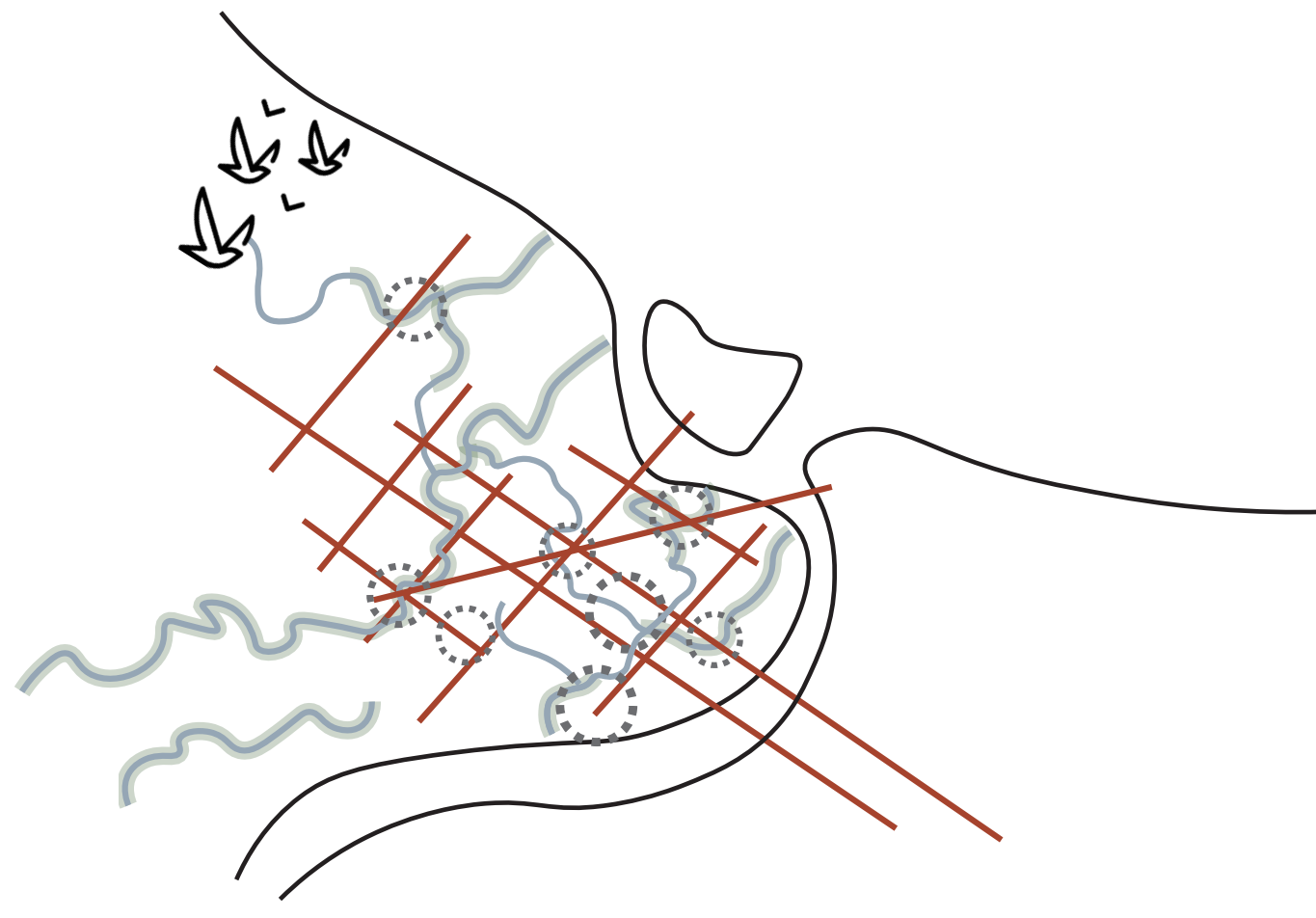
3 Conceptual Framework

3.4 Urban Transformation Timeline



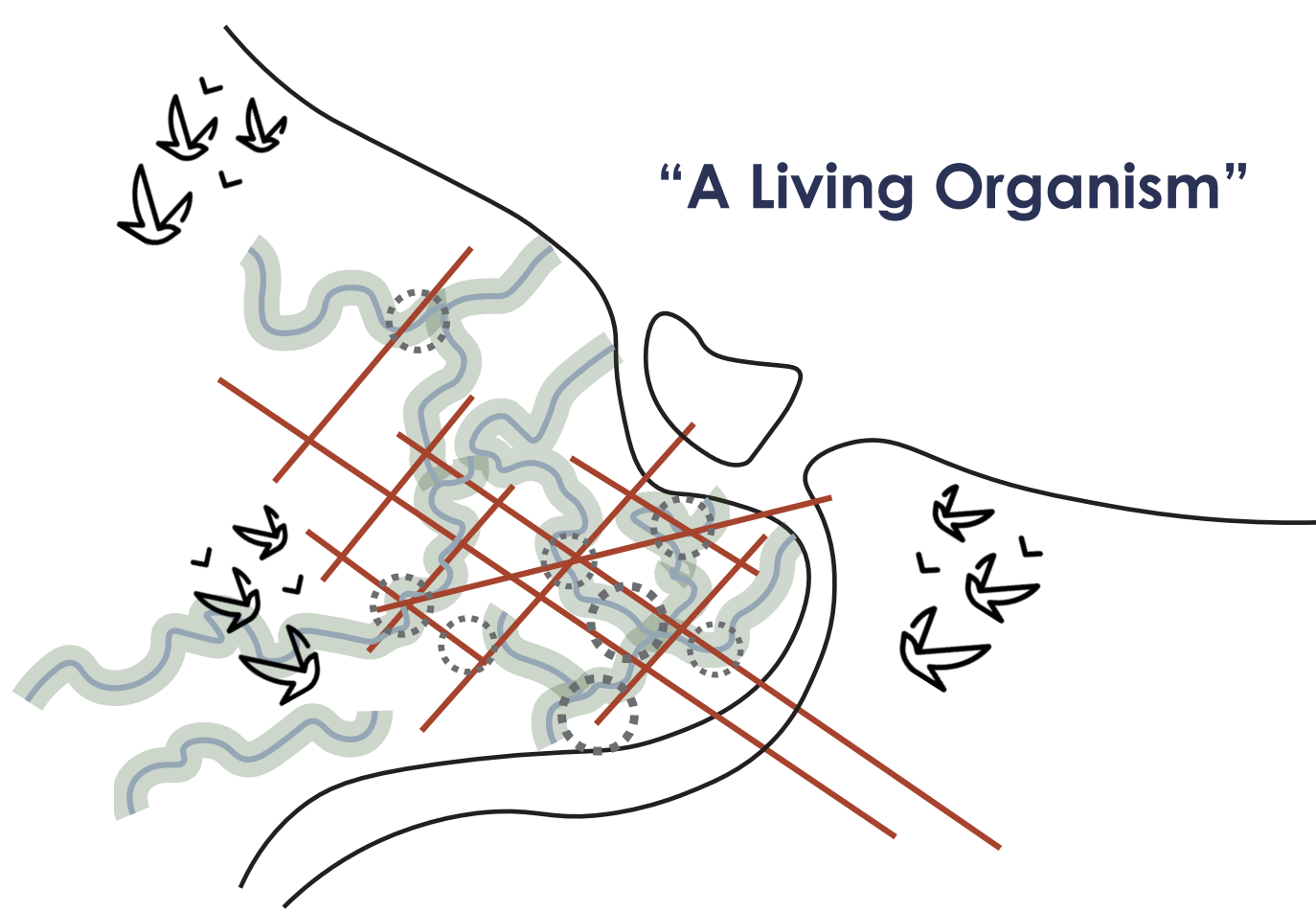
0-5 Years

- * Introducing pilot ecological interventions
- * Opening rewilded water corridors according to old waterways and topography
- * Narrowing roads and reducing vehicular dominance
- * Activating selected public spaces and street edges



10-20 Years

- * Expanding and connecting ecological corridors
- * Strengthening water networks and floodable landscapes
- * Establishing continuous pedestrian and cycling systems
- * Intensifying public life along integrated urban systems
- * Bringing wildlife along the riverfront



20-50 Years

- * Achieving a continuous ecological and hydrological network
- * Fully integrated urban systems operating together
- * Establishing a resilient and adaptive urban environment
- * Embedding natural processes into everyday urban life
- * Supporting biodiversity and long-term ecological balance

This is a detailed urban planning map of New Belgrade, showing a grid of streets, parks, schools, hospitals, and cultural centers. The map includes labels for various landmarks such as the Arena, Belgrade Culture Center, and New Belgrade Beach. A scale bar and north arrow are located in the bottom right corner.

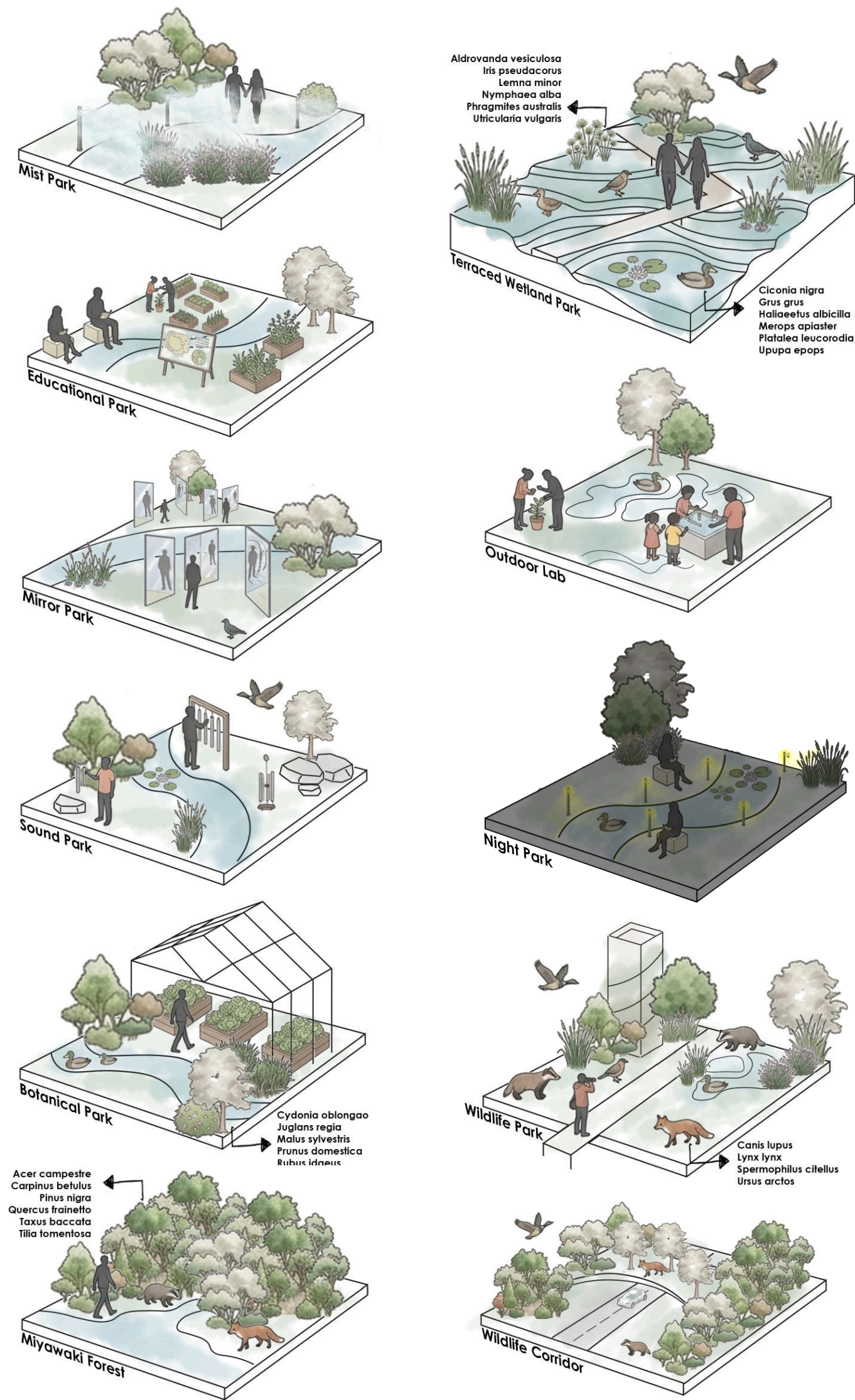
Key Landmarks and Features:

- Cultural and Educational:** City Library, St. Simeon Church, High School, Study Center, Secondary School, Community Center, Educational Park, Central Market, Kindergarten, Public Library, Cinema, Public Education Center, Museum of Yugoslav Architecture, War Museum, Memorial Lawn, Memorial Grove, Open Air Exhibition, Museum of Natural Life, Belgrade Culture Center, Auditorium, Sava Center (Fairground), Healthy Living Center, Botanical Park, Water & Climate Research Center, Water Education Center, Outdoor Lab, Sports Park, Music House, Gendarmerie.
- Health and Social:** Hospital, Youth Center, Nursery, Wildlife Park, Diving Club, Pijaca.
- Recreation and Nature:** Mist Park, Yoga Meadow, Festival Lawn, Edible Garden, Healing Garden, Sound Park, Terraced Wetland Park, Mirror Park, Night Park, New Belgrade Beach, Marina, Sailing Club.
- Infrastructure:** Arena, Railway Station, Bus Terminal, New Belgrade Port.

The map also shows a network of roads, a river, and various green spaces. A scale bar indicates distances up to 400 meters, and a north arrow is present in the bottom right corner.

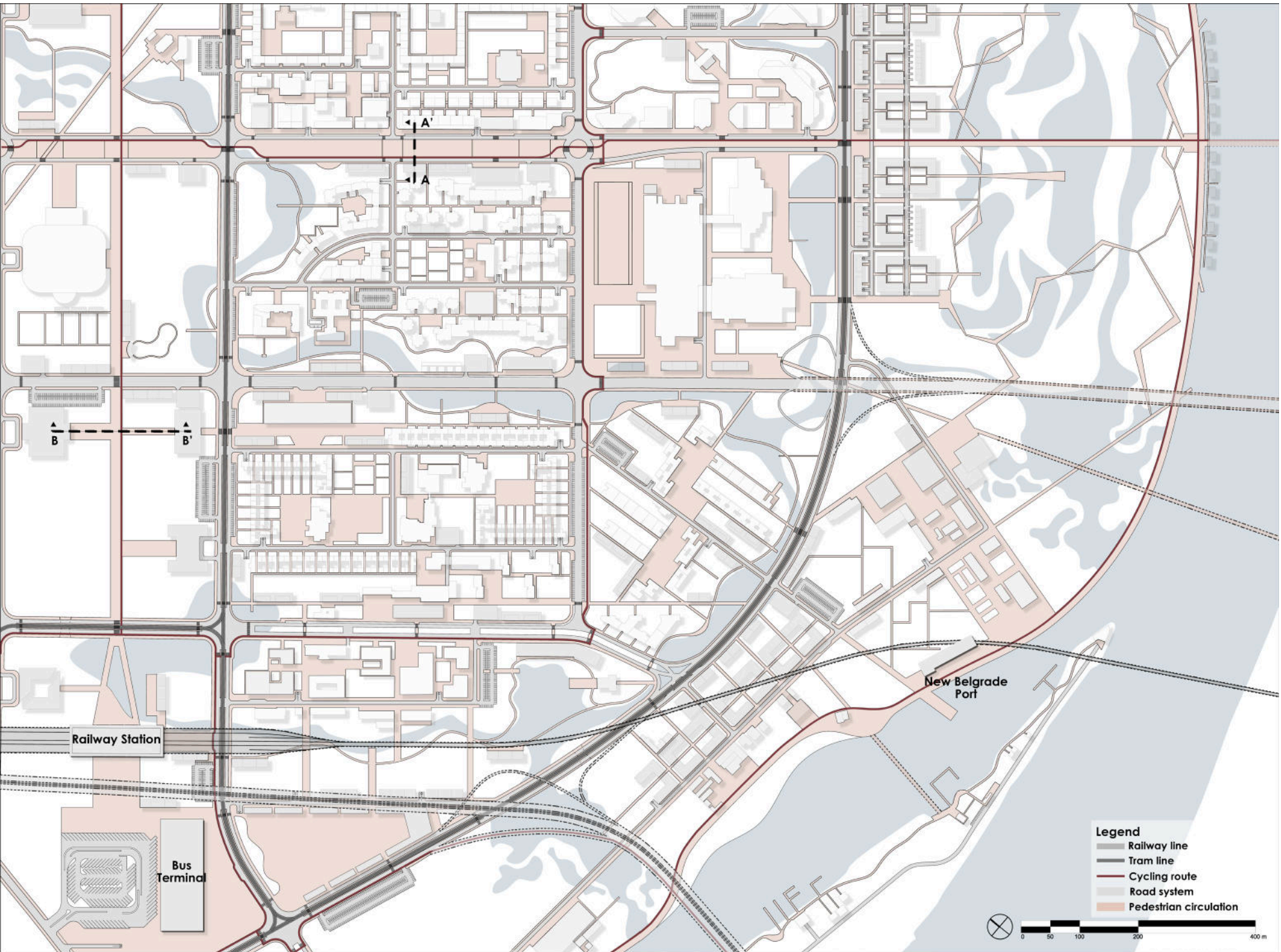
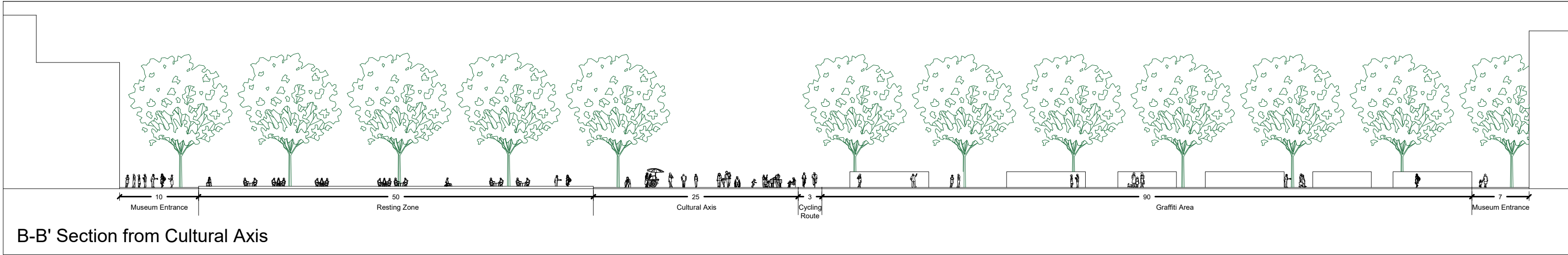
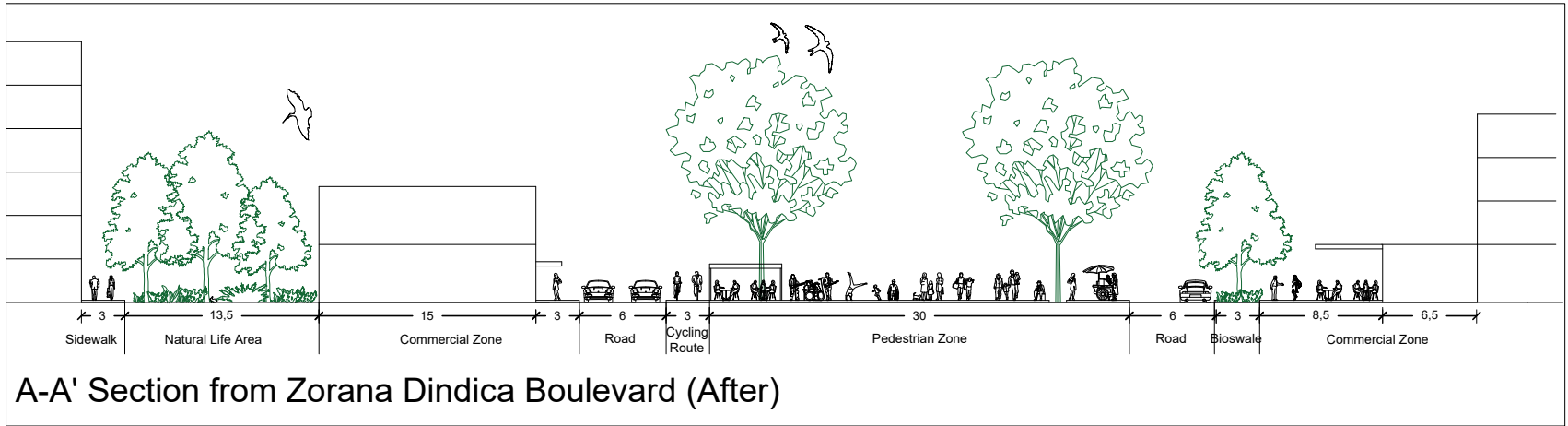
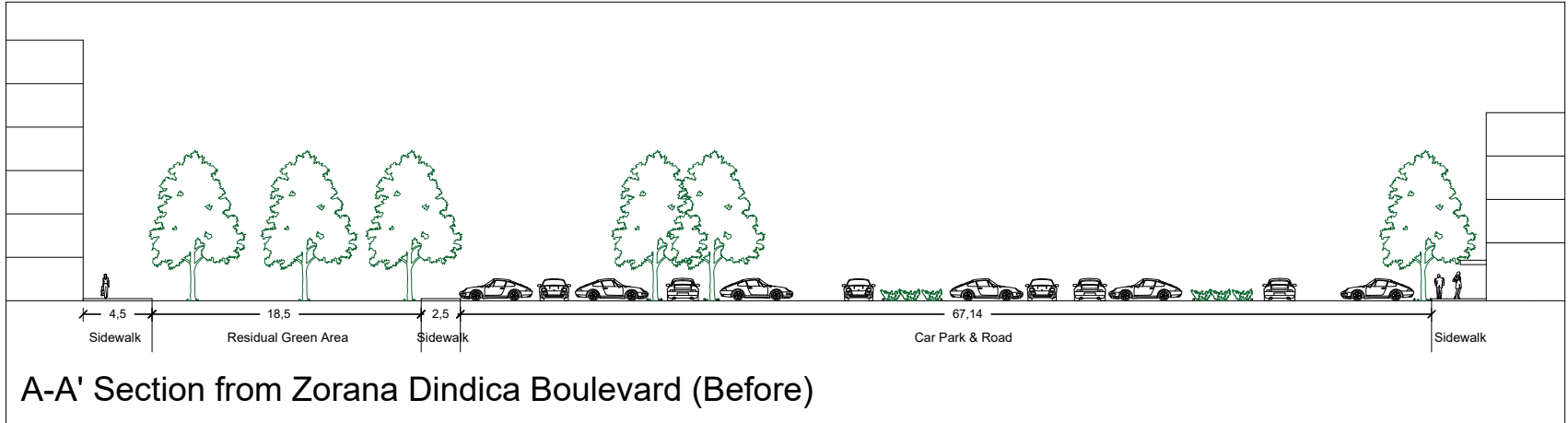
4 Plans & Details

4.1.1 1/2.000 Master Plan / Blue & Green Network



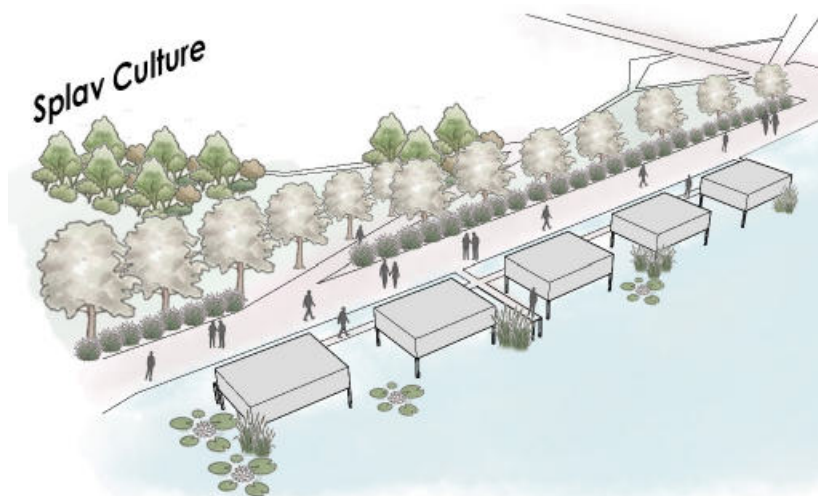
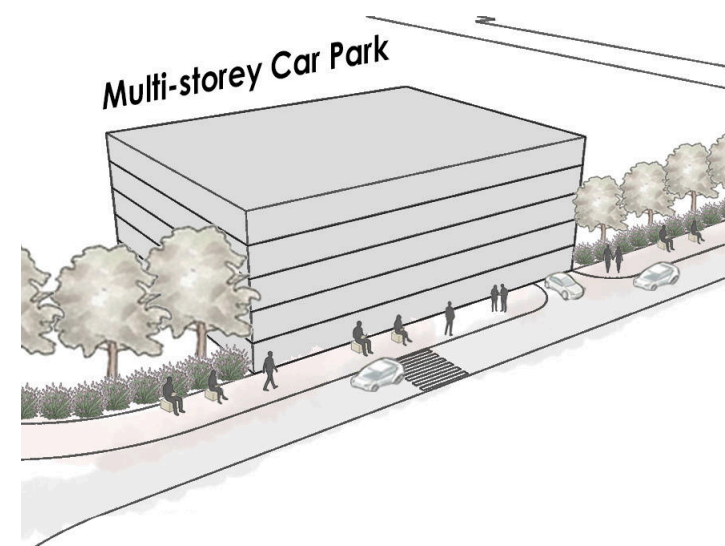
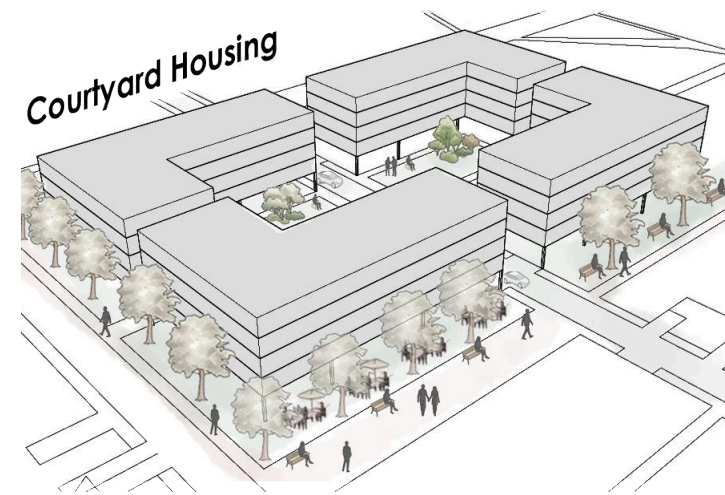
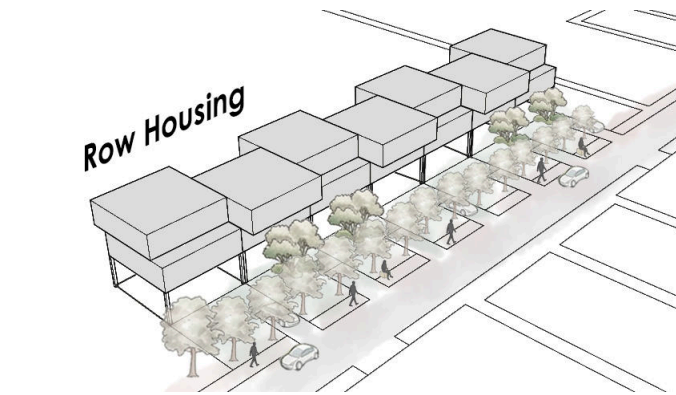
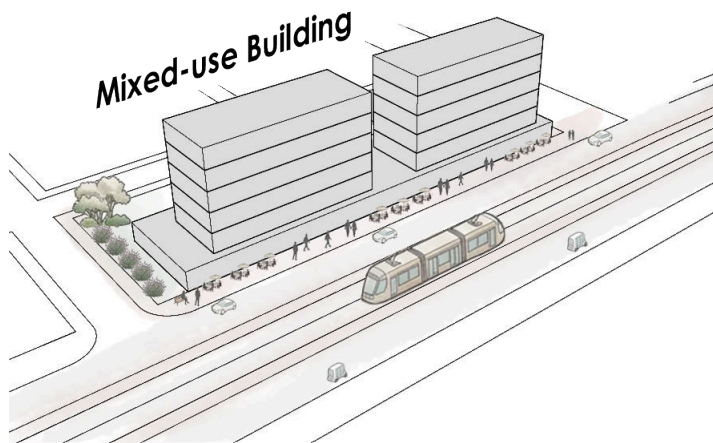
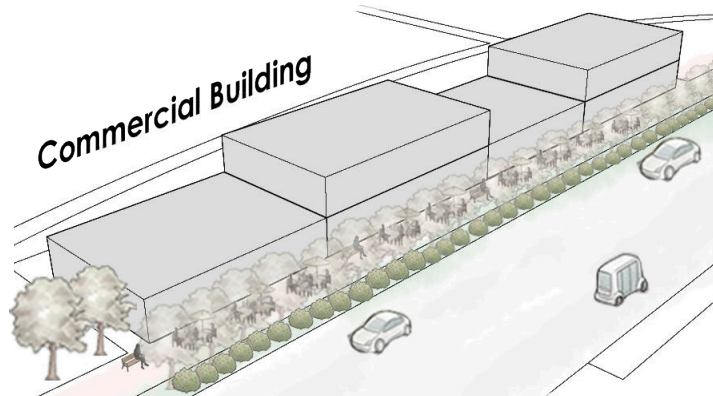
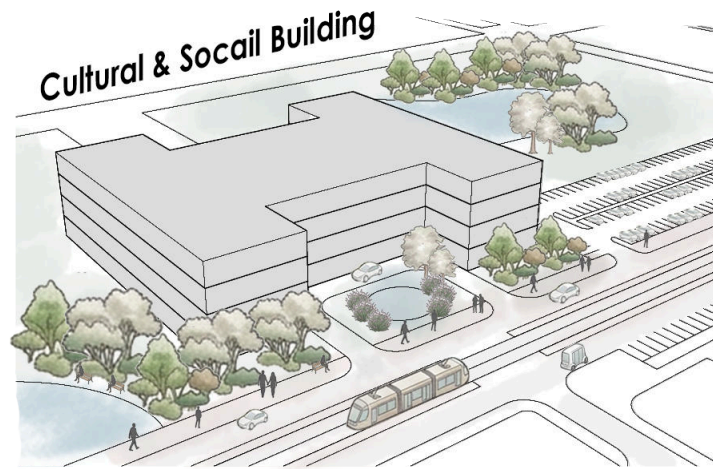
The blue-green strategies re-establishes New Belgrade's ecological integrity by **integrating a water system that functions as a continuous metabolic system**. By introducing **rewilded water corridors** according to old waterways and topography and articulating green public spaces, the design **enhances soil permeability, manages seasonal flood risks, and creates stepping-stone habitats** for local and migratory biodiversity. This network **transforms the riverfront from a dormant edge into an active, life-sustaining infrastructure** that breathes with the city.

The circulation and transportation strategy shifts New Belgrade’s priority **from vehicle-oriented transit to human-scale movement** by reconfiguring the existing rigid grid. Key interventions include **narrowing vehicular boulevards, elevating railway and some road barriers, increasing tram lines and introducing water-based transportation** to create a multi-modal, interconnected flow. By **prioritizing pedestrian-friendly axes, connecting them with courtyards and continuous cycling routes**, the design creates a permeable environment that **supports spontaneous social interaction and everyday urban vitality**.



4 Plans & Details

4.1.3 1/2.000 Master Plan / Built Environment



The built environment strategy repairs the urban fabric by introducing **a finer-grained typology that bridges the gap between modernist blocks and active public space**. By incorporating **mixed-use developments, perimeter-aligned street edges, and adaptable community facilities**, the design establishes a strong, clearly defined **relationship between built form and public realm**. This approach moves beyond the previous freestanding block model, **creating a vibrant, high-density environment where architecture serves as a catalyst for community life and spatial definition**.

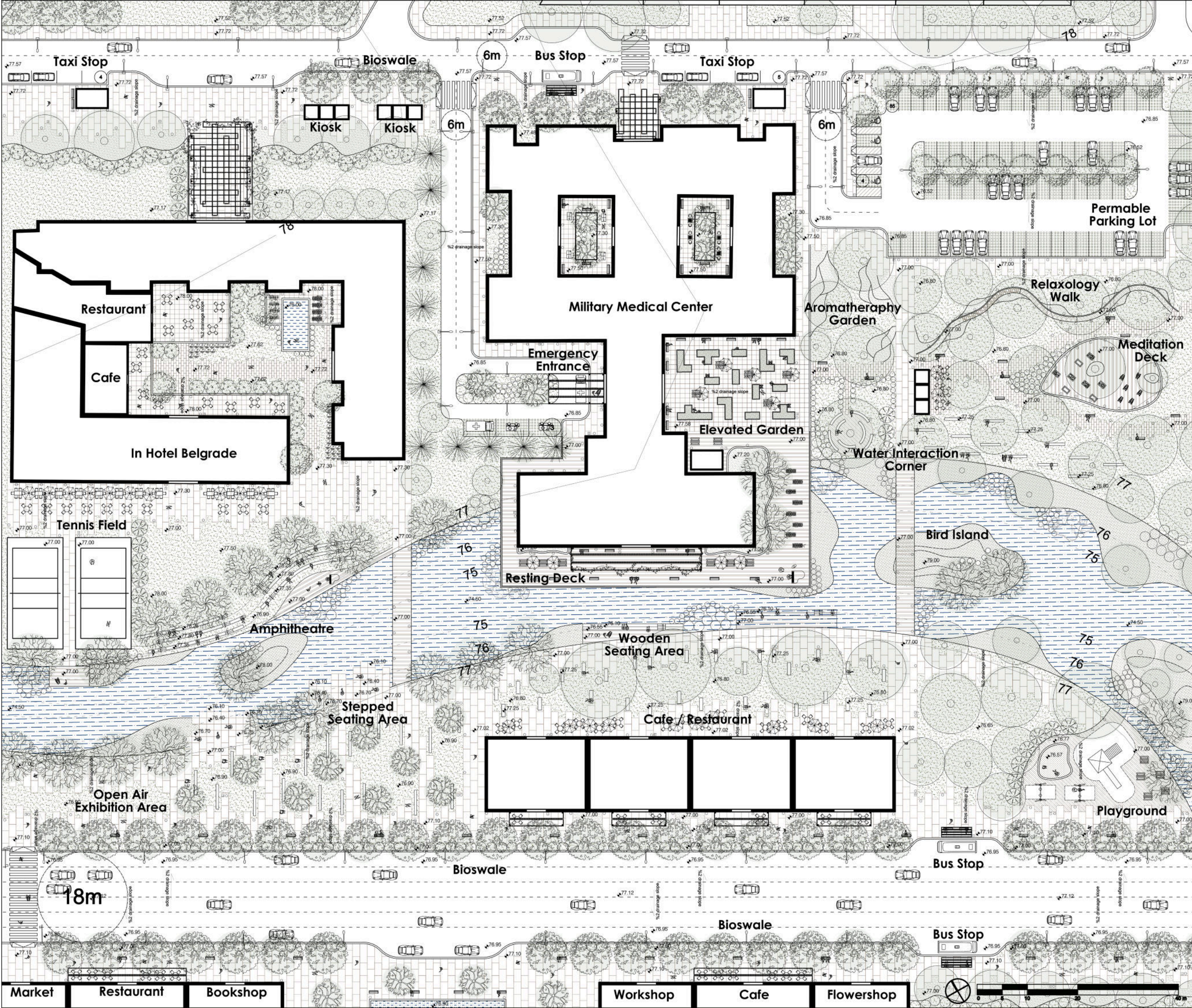
4 Plans & Details

4.1.4 1/2.000 Master Plan with 1/200 Area



4 Plans & Details

4.2 1/200 Plan



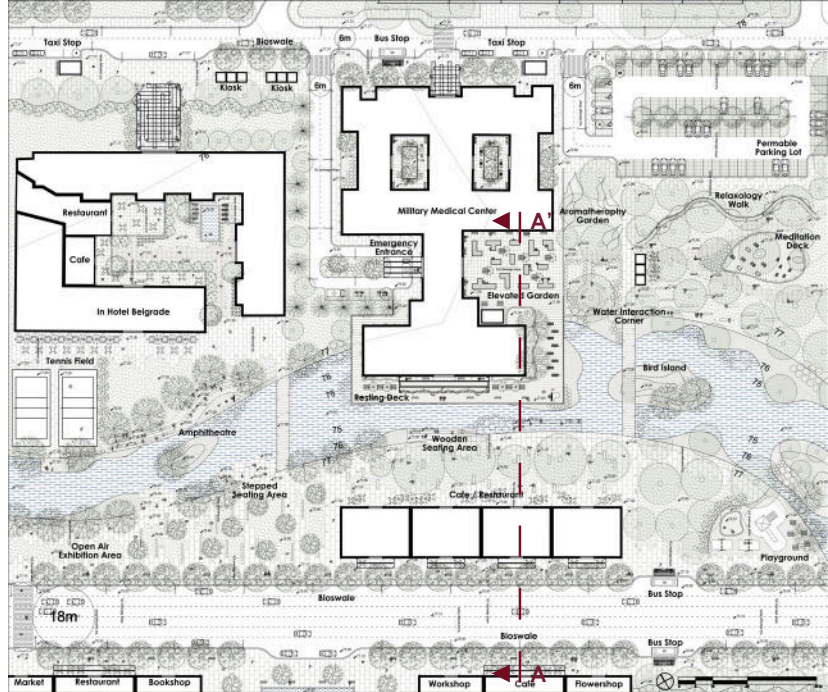
The 1/200 plan translates larger-scale objectives into a human-centered public realm where **the river and city life converge**. The design displays the master plan strategies by **weaving newly established rewilded water corridors into the existing hotel and hospital complex**, turning previously isolated edges into **active social interfaces**. By replacing vehicular dominance with **permeable landscapes**, the interventions **transforms New Belgrade's stagnant urban life into a vibrant environment that thrives alongside natural processes**.

STRUCTURAL ELEMENTS & URBAN FURNITURE		
Symbol	ID	Item
	PV1	Basalt Stone Paving (150x250x8 cm) RAL 7040
	PV2	Basalt Stone Paving (50x100x8 cm) RAL 7040
	PV3	Concrete Paving (100x100x8 cm) RAL7042
	PV4	Permeable Paving (20x20x8 cm) RAL7035
	PV5	Engineered Wood Fiber
	PV6	Iroko Timber Deck
	PV7	Washed Play Sand
	E1	Slotted Concrete Curb (20x30x15 cm) RAL7042
	E2	Iroko Timber Curb (20x30x15 cm)
	L1	Post Top Luminaire (H:4 m)
	L2	Roadway Lighting (H:6 m)
	L3	Traffic Signal (H:6 m)
	F1	Timber Park Bench
	F2	Timber Picnic Table with Integrated Benches
	F3	Precast Concrete Seating Unit
	F4	Custom Cast-in-Place Concrete Seating Steps
	F5	Custom Iroko Seating Steps
	F6	Custom Cast-in-Place Concrete Seating Unit
	F7	Circular Cafe Table with 4 Chairs
	F8	Rectangular Dining Table with 6 Chairs
	F9	Wooden Sunbed
	F10	Chess Table
	F11	Parasol
	F12	Concrete Exhibition Wall (200x 500x50 cm)
	F13	Concrete Litter Bin
	F14	Timber Garden Bed
	F15	Timber Pergola
	F16	Stainless Steel Railing
	F17	Timber Bird Perch
	WF1	Swimming Pool (10x5x2 m)
	WF2	Shallow Reflecting Pool (25x8x0.2 m)

PLANTING LIST							
DECIDUOUS TREES							
PLANT #	SYMBOL	BOTANICAL NAME	ENGLISH NAME	HEIGHT (m)	SPREAD (m)	TRUNK Ø (cm)	
ACECA		Acer campestre	Field maple	8-12	6	60-100	
BETPE		Betula pendula	Silver birch	15-20	5	40-55	
SALBA		Salix babingtonia	Weeping willow	10-15	10	40-60	
TILTO		Tilia tomentosa	Silver linden	20-25	9	1-2	
EXTR		Existing trees					
CONIFEROUS TREES							
PLANT #	SYMBOL	BOTANICAL NAME	ENGLISH NAME	HEIGHT (m)	SPREAD (m)	TRUNK Ø (cm)	
PRPI		Pinus pinaster	Martime pine	20-35	6	1-2	
SHRUBS							
PLANT #	SYMBOL	BOTANICAL NAME	ENGLISH NAME	HEIGHT (m)	SPREAD (m)	TRUNK Ø (cm)	
CORMA		Cornus mas	European cornel	4-8	3	20-40	
HYOMA		Hydrangea macrophylla	Mophead Hydrangea	1-2	1		
LAVAN		Lavandula angustifolia	English lavender	40-60	1		
PHOFR		Photinia x fraseri	Red robin	3-5	3		
SALRO		Salvia rosmarinus	Rosemary	1-1.5	2	3-4	
GROUNDCOVERS							
PLANT #	SYMBOL	BOTANICAL NAME	ENGLISH NAME	HEIGHT (cm)	SPREAD (cm)		
CAROS		Carex obovata	Japanese sedge	20-40	30		
ECHPU		Echinacea purpurea	Coneflower	60-120	40		Groundcover mixture Thymus vulgaris 1/40 Carex obovata 1/20 Lamium hybridum 1/20 Echinacea purpurea 1/10
LAMHY		Lamium hybridum	Dead-nettle	15-25	30		
THYVU		Thymus vulgaris	Common thyme	15-30	30		
LOUPE		Lotus Personea	Perennial ryegrass	3-5	20		
RIPARIAN PLANTS							
PLANT #	SYMBOL	BOTANICAL NAME	ENGLISH NAME	HEIGHT (m)	SPREAD (m)		
IRPS		Iris pseudacorus	Yellow flag iris	1-1.5	1		
LYISA		Lythrum salicaria	Purple loosestrife	1-1.5	1		
SCLA		Scirpus lacustris	Lakeshore bulrush	1-3	2		
PHRAU		Phragmites australis	Common reed	2-4			Riparian mixture Phragmites australis 1/50 Typha latifolia 1/50
THYLA		Typha latifolia	Cattail	1-5.3			
CLIMBING PLANTS							
PLANT #	SYMBOL	BOTANICAL NAME	ENGLISH NAME	HEIGHT (m)	SPREAD (m)	TRUNK Ø (cm)	
WISS		Wisteria sinensis	Chinese Wisteria	10-20	10	20-40	
ANNUAL PLANTS							
PLANT #	SYMBOL	BOTANICAL NAME	ENGLISH NAME	HEIGHT (cm)	SPREAD (cm)		
CAPAN		Capsicum annuum	Pepper	40-80	30		
FRANI		Fragaria x ananassa	Strawberry	15-25	30		
LACSA		Lactuca sativa	Lettuce	20-30	20		
OCBA		Ocimum basilicum	Basil	30-50	20		
PETOR		Petroselinum crispum	Parsley	20-40	20		
SOLLY		Solanum lycopersicum	Tomato	60-100	50		

4 Plans & Details

4.2.1 1/200 Section











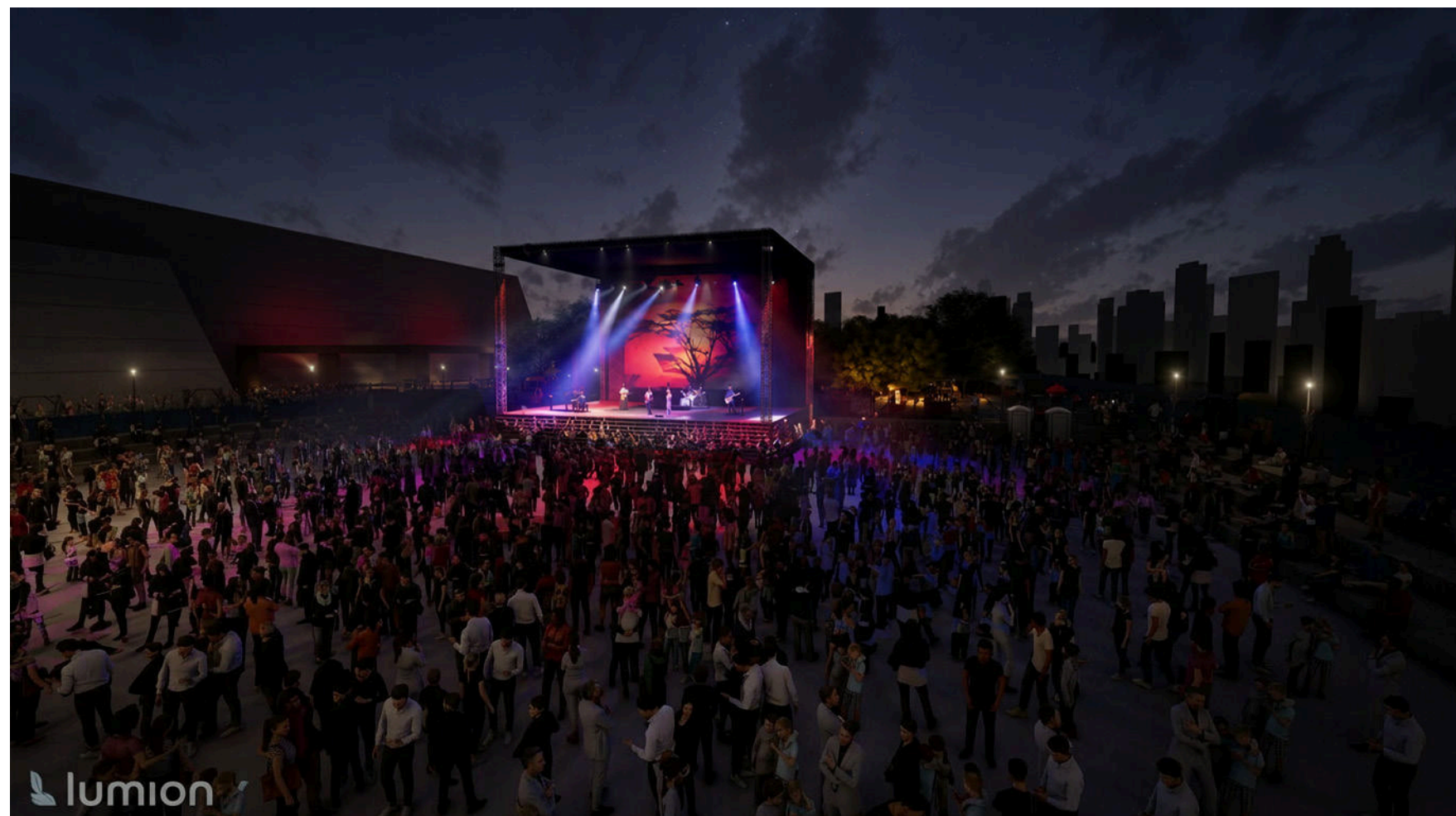




View from New Belgrade Water Square (Winter)



View from New Belgrade Water Square (Spring)



View from New Belgrade Water Square (Summer)



View from New Belgrade Water Square (Fall)

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