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INFRA BLUE

Blue Infraestructure. A natural, social and cultural device to enhance urban potential.



D2.1 Landscapes state of play for Torino, Lisbon and Belgrade

27/11/2023

D2.1 Practice based mutual learning analysis

Deliverable No.	D2.1
Deliverable Title	**Landscapes state of play for Torino, Lisbon and Belgrade**
Work-Package	WP2
Due Date	October 2023
Submission Date	
Dissemination Level	PU
Deliverable Lead	Lisboa E-Nova
Authors	Lisboa E-Nova Torino Urban Lab KC Grad N. Mitrovic, MSc Arch, junior researcher Univeristy of Belgrade, Faculty of Architecture
Contact	Lisboa E-Nova - ruimendes@lisboaenova.org
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This project has received funding from the European Union's Creative Europe Programme (CREA) under grant agreement 101099961.

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About Infrablue

At a time when environmental emergencies have become the order of the day on the political agendas of cities and governmental bodies at various territorial scales, it seems useful to take a fresh look at the heritage - natural, cultural and socio-economic – represented by 'blue infrastructures' within urbanised territories, and at the potential they express.

The aim of this project is therefore to identify in each of the represented cities - Torino, Belgrade and Lisbon - a critical, unresolved place crossed by water that poses complex challenges to cities, but at the same time offers great opportunities for urban regeneration. Three waterways to be considered as effective natural devices for rebalancing the environment, reconstructing ecological corridors that go beyond the urban scale, aiming at wider territorial networks. Social devices, because they reconnect different communities that frequent those places, encouraging exchange and contamination. Cultural devices, because they contribute to the strengthening of their identity, the stratification of collective memory and the sense of belonging of people who frequent them, building cultural heritage. In other words, valuable resources that are able to embody and reaffirm the principles of beauty, sustainability and inclusiveness at the core of the New European Bauhaus.

Reaffirming the urban potential of such territories means, in the first instance, to systemize the knowledge of places and delve into their specificities, resources and criticalities. Secondly, to promote and trigger their reactivation through small ground actions co-designed and co-produced with local communities. In a continuous exchange among partner cities to share methods, criticalities, opportunities and lessons learnt. With the aim of offering local administrations and stakeholders a solid, documented and field-tested contribution to the possible launch of policies and plans for the enhancement of these water landscapes.

Vision

Highlight the role of blue infrastructure as an activator of social and cultural development, as well as a fundamental element in the production of ecosystem services.

TORINO URBAN LAB

LISBOA e·nova
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Introduction

In this document the project partners capture and analyse the cities the current situation based on the available data on historical and present water sources and resources, usages and customs of the pilot areas.

This activity is intended not only to compile and organise existing information, but also to discover and collect 'hidden' traditions and practices. An emphasis is also given to the integration and accessibility of data. This is particularly important since the identified opportunities for development and exploitation should be aligned with cross-cutting goals of sustainability and cultural heritage preservation. The aim is to help overcome barriers, improve synergies and increase business value and to support innovative solutions, e.g. developing physical or digital tools that improve attractiveness. This collaborative environment will enhance innovative solutions and bring value added to cultural initiatives.

The data and information collected is compiled and made publicly available in repositories existing in each of the cities.

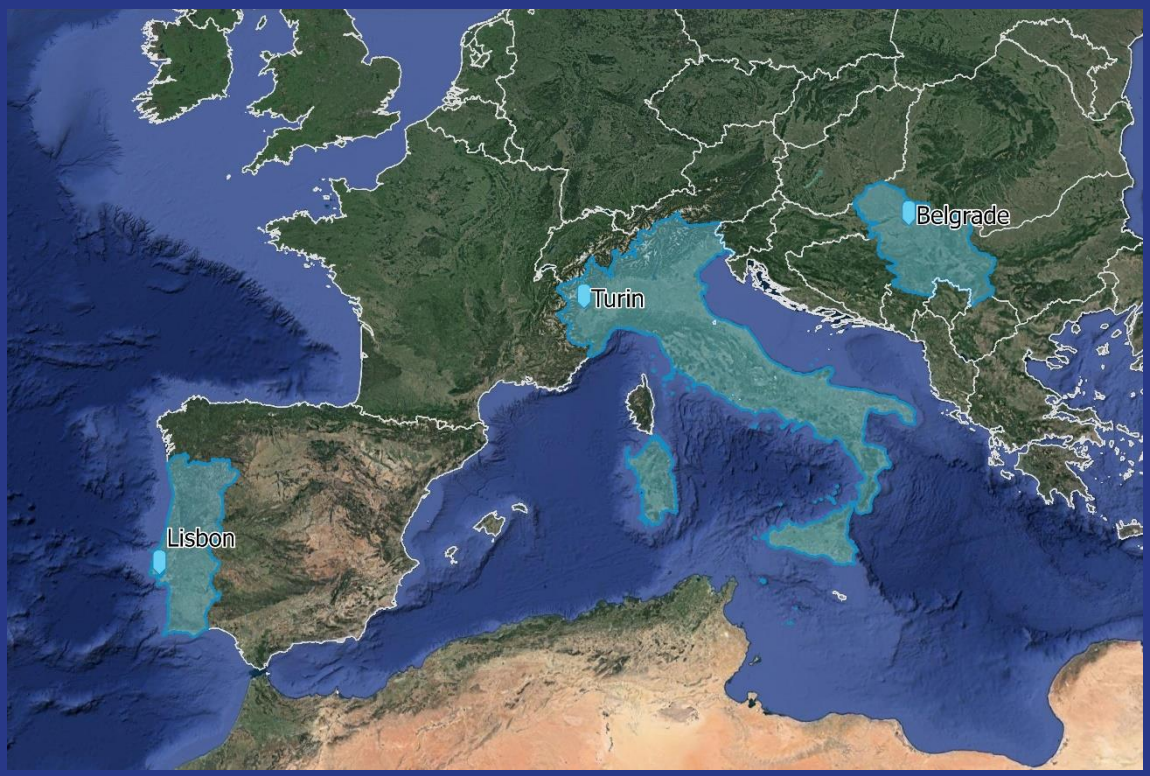
Based on this data, the partnership will make a baseline analysis of the potential scenarios of the co-creation/co-design of the cultural activities in the three cities' areas.

"You can't really know where you are going until you know where you have been"

Maya Angelou, American poet

City-specific insights

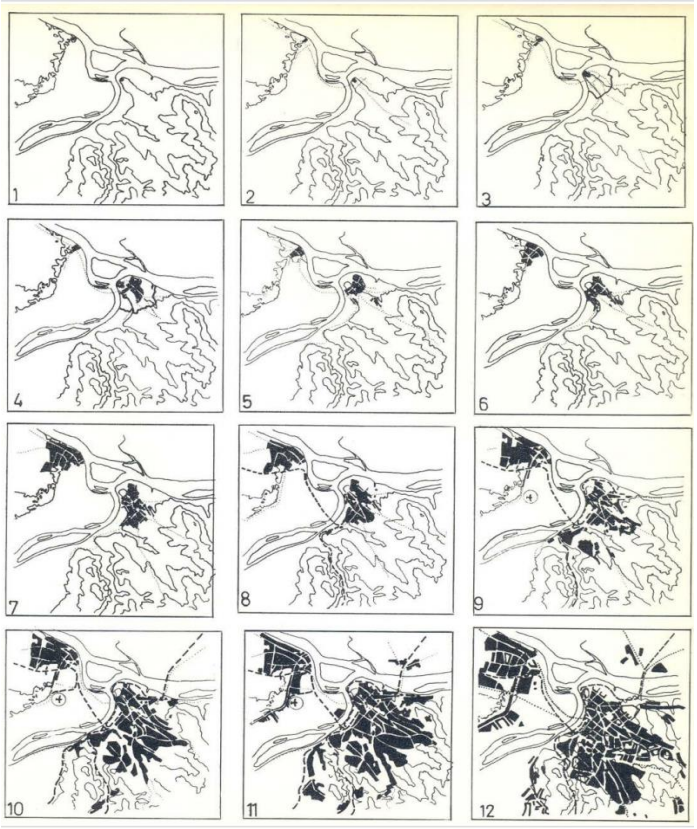
This chapter aims to present a general description of Belgrade, Lisbon and Turin, in order to provide knowledge about the context of each city.



Map with the three partner cities

Belgrade

Belgrade, known as the 'White City', is the capital and largest city of Serbia, with 360 km^2 and its metropolitan area covering 3222 km^2. It is located at the confluence of the Danube and Sava rivers, in the north-central part of the country. The population of the Belgrade metropolitan area is 1.7 million people. It is one of the major cities of Southeast Europe and the third most populous city on the Danube River.



Source: "Urbanism of Belgrade - the history and present time (20th century)", publication, College of civil Engineering and Geodesy, Belgrade, 2019

The first settlements on the spot of today's city of Belgrade date from the 3rd century BC. A natural hill on the right bank of the Danube (150 metres high) was an excellent strategic point, from which the large alluvial plains and the confluence of Sava and Danube rivers could be observed and controlled.

Although the first settlers were tribes of Celtic and Thracian origin, the city established itself in the 3rd century AD as a predominantly Roman military fort and stronghold called "Singidunum". It served as a gateway to the important Roman provinces of the East and Southeast Europe.

In the 7th century AD, it became the fortified border town of the Byzantine Empire. The position of Belgrade at the utmost northern edges of firstly the Byzantine Empire, and later Serbian mediaeval kingdom, defined it as a military border town prone to attacks from various armies, and not a particularly attractive place to live. In the 14th century it was destroyed, completely by Hungarian forces, then rebuilt,

and in the 16th century destroyed again, this time by Ottoman armies on their way to conquer Europe. For the majority of the 16th and 17th centuries Belgrade was just a dreary outpost of the Ottoman Empire. After a period of "changing balances of power" between the Turkish and Austrian forces, the city became an Austrian border town in 1717. For a short period of time, trade and most important, the formation of busy Danube River ports emerged. According to the "Belgrade Treaty" of 1739. Sava and Danube rivers were established as the official border between the Ottoman and Austrian Empires, and the importance of Belgrade both as a military and a trade post increased.

19th century Belgrade - Source: "Urbanism of Belgrade - the history and present time", publication, College of civil Engineering and Geodesy, Belgrade, 2019

At the end of the 17th century the city was part of the Ottoman Empire once again, and stayed in Turkish hands until 1807, when it finally became part of Serbia.

The 19th century was a period of intensive modernization. The First regulatory and urban plans emerged, aimed to get rid of the "oriental" character of Belgrade with its labyrinth of winding streets and dead-end alleys, and became a "Western" city of straight lines and broad boulevards.

20th century marked the further rapid growth of the city. After the Second World War, the city expanded in western direction, and the Modernist "New Belgrade" was created over the course of several decades. At the beginning of the 21st century, Belgrade reached more than 1.2 million inhabitants.

Nowadays, according to Belgrade Master Plan, the area of the former Danube Port is seen as a major redevelopment area with "mix commercial, recreational and residential use", and as an extension of the historic Old City.

The detailed land use plan of the central urban zones (General Regulation Plan) presents the re-parcellation of the Danube Port Area into a mixed use, (commercial and residential) and "production area", although for this "production" area there are several real-estate development plans proposing uses other than production, namely mixed commercial and residential uses.

According to this plan, the old railway tracks which were serving the Danube port are removed, since they are not effectively in use anymore. This decision has led to the development of the so-called Linear Park project - a 5 km long green beltway along the right banks of Sava and Danube River, on top of the former railway tracks and infrastructure. The plan is responsive to the immediate need for more greenery and open, public recreational areas along the waterfront.

Belgrade Linear Park Masterplan, source BEOLAND

Linear Park should bring better accessibility to the Danube port area and Danube waterfront and connect it with the historical Dorcol neighborhood, which lies on the northern side of the area. Due to the city' intention to maximize commercial redevelopment of the former Danube industrial zone, the Linear Park is quite limited at many of the important points of connection with the rest of the city and reduced to the few pathways of the former railway corridor, only several meters wide, lowering the overall quality of planned public space.

The "Belgrade Shipyards'' and "Belgrade Port" plans for these two areas propose in total new housing units for at least 90.000 people, and in total some new 4M m^2 of built-up space and a total plan surface is 96 ha.

Major environmental problems of Belgrade:

- Air pollution (from traffic, but also from energy and heat infrastructures e.g. coal-based power plants)
- High noise levels (especially in the inner city)
- Soil degradation and illegal/informal settlements
- Unregulated waste dump sites
- Insufficient sewage and industrial wastewater management infrastructure - both urban rivers in the city are highly polluted as a result of it.
- Some of the major urban roads and boulevards are used for the transportation of dangerous goods.
- Loss of green areas due to hyper-intense urbanization, especially in the inner city and along the urban waterfronts
- Urban Heat Islands.

Strategies for mitigating and adapting to climate change, Sustainable Energy and Climate Action Plans, Neighbourhood Climate Action Plans and such plans do not exist, and the practice has not yet been developed.

Lisbon

Lisbon is a historic city, with a strong memory. It is vibrant, modern and an innovative European capital that thrives with life. It is one of the most western capital cities of Europe, covering 85 km^2 of land territory and hosting 545 thousand residents, representing 5% of the Portugal's population, which almost doubles every day with the commuting population.

The Portuguese capital has a history of kings, people, discoveries, tragedies and reconstructions, including several names. Lisbon had the presence of the Phoenicians who named it *'Alis Ubbo'*, which means 'safe port', posteriorly the Romans gave the name of *'Olisipo'* and later the Moors of *'Al Uxbuna'*, whose presence introduced changes in the city, through consolidation and expansion of its ancient defensive walls. In 1147 it was conquered by D. Afonso Henriques, the Portuguese king, an achievement that became known as the *'Cerco de Lisboa'* (Siege of Lisbon).

With more than 20 centuries of history, the Portuguese capital also is intimately related with its strategic location next to the Tagus Estuary, where the river finds de sea. The Tagus is the biggest river in the Iberian Peninsula and also has the biggest Estuary in Europe. This relationship is so evident since most of the captions and illustrations of Lisbon are taken from the Estuary, which surrounds the city, gives the light, horizon, timeless stories, sea and World.

With the sun almost always present, its unique beauty and architectural singularity are acclaimed across borders. Rich in monuments, typical neighborhoods, riverside, Fado houses, parks, gardens and viewpoints, Lisbon has several possibilities to discover, visit and enjoy its vast natural, historical and

"Logo a abrir, apareces-me pousada sobre o Tejo como uma cidade de navegar."

"As soon as it opens, you appear to me perched on the Tagus like a sailing city."

José Cardoso Pires "Lisboa-Livro de Bordo – Vozes, Olhares e Memorações" (1998)

cultural heritage aspects of the city. The Tourism sector is also very important for the city, since the metropolitan area of Lisboa welcomed around 8,2 million tourists in 2019.

The dimension of people reaching the city, to live, to work or to visit and the environmental pressure it causes also highlights the need for a wiser and more sustainable city and Lisbon has that commitment, while also improving its liveability for the citizens.

A proof of this commitment in this matter was Lisbon becoming European Green Capital in 2020 with the motto “choose to evolve”, largely thanks to the path that has been made in sustainable policies and results achieved. This results are being monitored in several environmental dimensions, namely energy, water, wastewater, waste, GHG and mobility can be visualized publicly via an Observatory (https://observatorios-lisboa.pt/en/index.html).

In terms of sustainable policies, Lisbon stablished climate plans and targets, being one of the 100 ‘Cities Mission’, having the target of achieving climate neutrality in 2030. Reinforcing this commitment Lisbon as recently signed the Climate City Contract to go further in tackling the global challenge of climate change.

Also visioning an environmentally sustainable city that promotes well-being and quality of life, social cohesion and inclusion, prosperity shared, job creation, innovation and entrepreneurship.

These policies are obviously related to water and consequently the water supply of the City of Lisbon.

Maresias
Lisbon and the Tagus:
On the lyrical profile fly sailboats,
Where I stow a few remainders of anxiety;
And on the quay, the cranes and the freighters
Are a practical and virile reality.
It's a lie, perhaps, to sign this poem with my name:
it was the Tagus that made it...
It smells of seaweed, salt and sea air.
/ António Manuel Couto Viana, “Miradouro” in Sossego da Hora

Turin

Torino is the historic capital of Piemonte, one of Italy's richest regions, and its strategic location as a gateway between Northern Europe, the Alps, the rest of Italy and further West made it both powerful and vulnerable. During the Middle Ages and Renaissance, the House of Savoy took over the government of Piemonte, eventually making Torino the capital of Savoy, a kingdom spanning the Alpine divide. Its trade, banking and early industries all made Torino a rich city in a rich region. It was also a springboard for civil society, for political and economic alliances, and for the early building of railways. By the mid-nineteenth century, it was a base for the Italian reunification movement, making it the first capital of a united Italy in 1861.

The municipal government, with support from the city polytechnic and its engineers, developed hydro-electric power from the nearby Alps. The local engineering skills and legacy of wealth fostered the ambition to develop an auto-industry. Local investors and entrepreneurs pooled their resources to find the Fabbrica Italiana Automobili Torino (FIAT) in 1899. The path-breaking factory, inspired by Henry Ford's Detroit model, led to the city's population growing by nearly 50 per cent in the following 15 years, while the exploding working population of the Fiat factories multiplied five-fold, and was packed into crowded slums. Most early immigrants came from the countryside and mountain valleys surrounding Torino. After the Second World War, immigrants were mainly from Southern Italy and Sicily, one of Italy's poorest regions.

Turin developed as a Fordist city in the early twentieth century, which meant a shift from a service-based economy to an industry-based one. In the vein of many Fordist economies Turin's economy relies heavily upon its automotive and aerospace industries. Despite the general decline of the automotive industry since the oil crisis of 1973, the city still relies heavily upon its automotive industry. Since before the second world war, the automotive industry has been the largest employer in the city, and almost all exports from Turin are manufactured goods.

From the 1980s, Turin diversified its economy and is shifting back towards a service economy. Tech and innovation industries are booming in Turin, which was ranked third in number of innovative startups and firms in the information-tech sector and has some of the most patent applications to the European Patent Office of any city.

On 1995, the approval of the General Master Plan for the City of Torino marks the start of a season of profound renewal of the city identified for decades as the Italian factory city. Among one of the most interesting things that were then approved, it is important to underline here the project “Turin City of Water”, approved in 1993 by the Municipality of Turin which envisages the recovery of the river banks in a single 70 km river park, with a surface area of 17 million square meters. The intervention connects the four Turin rivers (Po, Dora Riparia, Stura, Sangone) to create a continuous system of river parks connected by networks of pedestrian, cycle, nature and educational paths, with the protection and valorisation, for each watercourse, of its environmental and architectural peculiarities. Subsequently opening up to the territorial scale, the project envisages the creation of a transition strip between the city parks of the central urban area and the extensive hilly and peripheral ones, up to the regional parks of the peri-urban strip, connected via the Green Crown with the agricultural and forestry of the foothill valleys.

On June 1999, the IOC (International Olympic Committee) declared Turin - a candidate together with the city of Sion, in Switzerland - to be the site of the XX Winter Olympic Games in 2006. From this date the city was involved in an ambitious transformation plan which did not it involves only urban sports facilities, but the city as a whole. Among the main urban interventions carried out on the occasion of the XX Olympic Winter Games are the first section of the first metro line; the redevelopment of the Olympic Stadium area; the construction of the Olympic arch, which connects the MOI village to the Lingotto commercial area. The start of work on some transformation areas along the Spina (the main axis that cross the city in a vertical way) is also part of the Turin 2006 works. The interventions do not only concern winter sports facilities, but already existing sports facilities in the city are overhauled - an event that is unprecedented in Turin.

Nowadays, a process of environmental requalification and urban regeneration is taking place in different areas and neighbourhoods, through many actions that aim at contrasting the main critical issues related to the climate change, such as Nature Based Solutions and innovative drainage systems, both in green and grey areas.

Insights from the Pilots

This chapter aims to focus on the selected pilot areas, in order to provide a deeper characterization of the pilots, main challenges and key stakeholders.

Danube Port, Belgrade

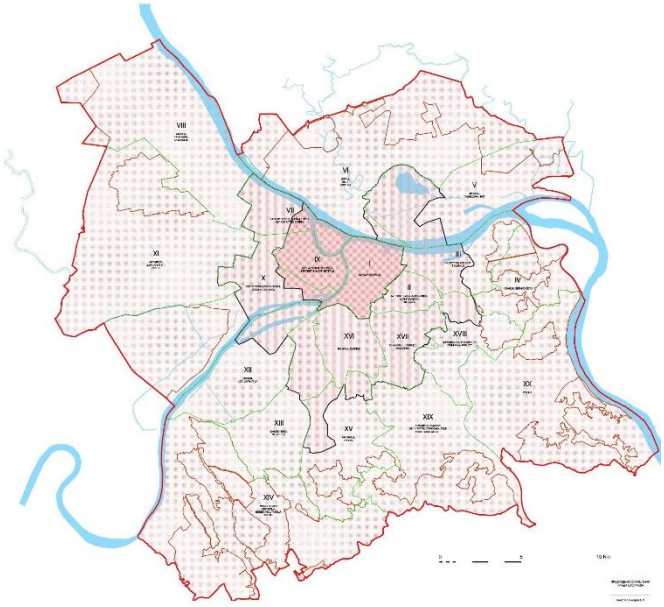
After the 1st World War, the Danube port and Danube Industrial zone have been planned in detail. The railway connection of the port has been established, different kinds of industries (mostly metal works), storages (for raw materials like grain or coal) and trade facilities flourished. During the 1930s of the 20th century, the urban plans of Belgrade gave the Danube the character of a major industrial zone and transportation waterway. Although the banks of the Sava River were similar in character, the plans aimed to expand the city on the west side and transform Sava as an “urban waterfront” with predominantly leisure character.

The period after the Second World War was marked with the rapid growth of the city, and creation of the Modernist “New Belgrade” city on the west side. The industrial zone of Danube remained important, combining large production halls, goods storages, river ships maintenance port, customs facility and logistic centres.

The zone reached its peak in activities during the 1960’s. Since the 1980’s and early 1990’s the Danube port area declined rapidly in its activities, and by the beginning of the 21st century many buildings and facilities were simply abandoned.

According to the General Regulation Plan of the City of Belgrade, the areas where the most significant transformations are expected are the area of the Port of Belgrade and its surroundings and the area of the Sava Amphitheater. Instead of transport and economic activities, these areas should become future city centres. The port of "Belgrade" is an economic site of great importance for the city. Due to its location in thevery centre of Belgrade, this zone is in conflict with other city functions and this problem has not been adequately resolved so far.

The zone is well equipped with infrastructure. Within this area, in addition to economic and storage capacities, over time, several production companies have installed there. It is planned to gradually move the performance of Port activities from this zone to the newly selected location after the analysis through study and technical documentation. Until the port is completely moved from this position, the port activity will continue to be carried out at the existing location.



General Regulation Plan of Belgrade (City of Belgrade)

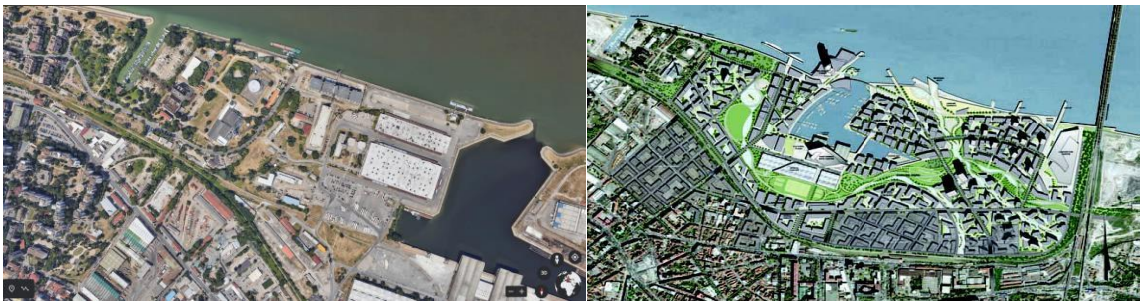
According to the General Regulation Plan of the City of Belgrade, the Port is part of Zone 1 - Center of Belgrade. The zone is characterised by a matrix of compact blocks with fully formed regulation of streets and buildings, subdivision and edge construction. The number of floors of the buildings ranges from approximately 3 floors up to 7 floors high, depending on the time of creation of objects. The average height is about 24 metres.

The occupancy index on the plot is up to 60% and in the central zone up to 70%, indicating these areas as high-density built-up zones.

The percentage of free and green areas on the plot is min. 40%, and in the central zone 30% / the minimum percentage of green areas in direct contact with the ground is 10%.

Danube Port Area Development Challenges

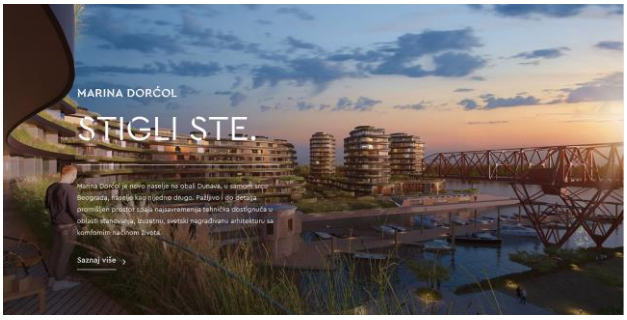
Similar to other urban capitals of the post-socialist countries, the shift from the centralised to liberal market had a great effect on how various Belgrade city areas' have been developed. Since the 80's the traditional, centralised plan economy ways of urban planning, design and research mechanisms have gradually weakened, not being able to cope with the rush of "new market economy", and new, "Western ways" of investment in urban development.



Belgrade Danube waterfront Masterplan, source Belgrade Danube Port

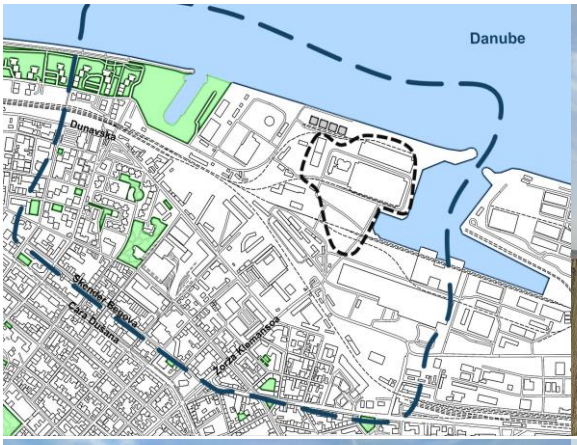
As in other cities in the Balkans region, the international developers have been offering commercial development projects to the city's elected officials, praying on publicly owned land or publicly owned companies, offering in return typical liberal economy aesthetics and context-free, formulaic high rise and cheap box-like shopping malls architecture. Since 2008 even more pressure has been applied to the city officials to speed up the re-development of non-functional industrial areas, and the former Danube Port

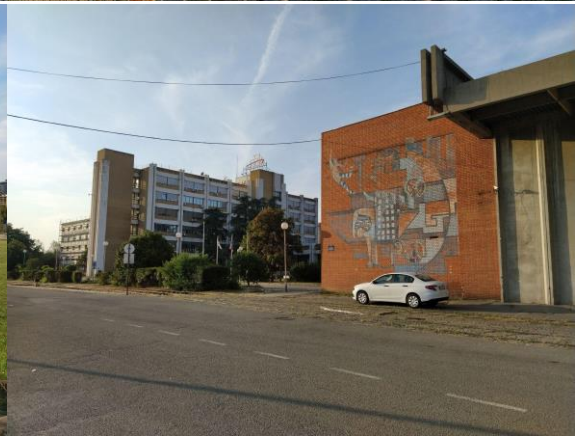
seemed like an ideal candidate for large scale commercialisation, considering the potential values it had: a river itself, and a central position in the city.



Current proposal for the Dorcol Marina exclusive neighbourhood, incorporating the protected old structures of the electrical power plant.

However, proposals like this were not being grounded in the proper analyses of the local market demands, or how they fit in the long-term city plans. The Danube Port Area experienced (just like other attractive locations) neglect and the lack of good urban policies and adequate land management instruments, resulting in inconsistent masterplans which foster social and urban divides.

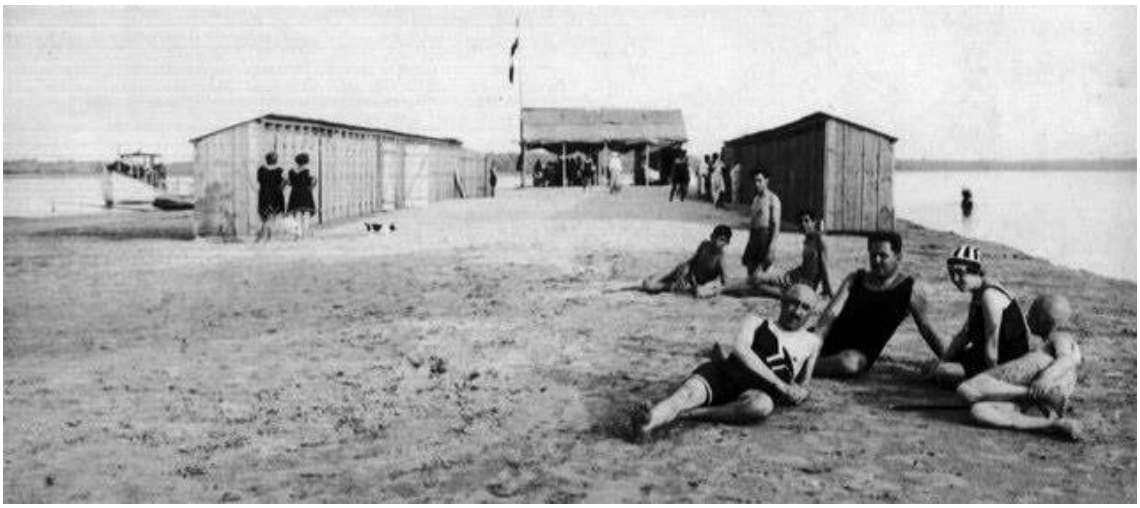




Belgrade Riverfronts Beach Culture - typical for Sava River, but Danube also had similar "urban beaches", although a bit further down the river. The first beaches were open in 1907. The last of these city-specific recreational public spaces, often with swimming pools floating in the river waters, were closed in the 60s of the 20th century.

Photographs: Sava River Beaches, 1950's and Danube Bela Stena Beach, 1907.

source: Black and White Belgrade



Top 5 things to know

1. HISTORY: In the periods of industrialization and modernization this area has been radically changed from a recreational and public realm with calm beaches on the Danube River to a big industrial area with silos, railway, powerplant and port.
2. ECOLOGY: The location is part of the coastal system and confluence of Sava and Danube rivers, with an area called Čaplja, and the Great War Island, both of which are extremely rich in flora and fauna. During winter, the Danube does not freeze, making it a surface that hosts a large number of birds.
3. NEIGHBOURHOOD: The location is surrounded by diverse settlements, ranging from traditional to modernist. Particularly noteworthy is Dorćol, which features a unique combination of buildings from the 18th, 19th, and 20th centuries within a rectangular matrix. This area reflects the specific historical development of the community in the neighbourhood.
4. DANUBE: The location is situated alongside the significant waterway Rhine-Main-Danube and is also an integral part of a broader cultural connection with the Danube area.
5. URBAN DEVELOPMENT: Urban development is predetermined by the Linear Park project as well as planning documents that designate the port area as a zone undergoing significant future transformation. Oldest part of the city, where historically the city has its foundations.

Main Challenges

The pilot area covers the right bank of Danube which was formerly the Danube Port industrial zone.

The neighbourhood in direct vicinity (the backdrop of the area) is the “Donji Dorcol” neighbourhood. The neighbourhood shows great variety in building typologies, from “town houses”, to smaller informal structures, from post-war social housing large blocks to new upscale, gated communities’ development. Overall, it has the look and feel of an intense mix between old and new, dilapidated and modern, often next to each other. Its rich cultural heritage and identity originates from the fact that the neighbourhood always had a strong “popular” character, partly because of its proximity to the Danube, its industrial port and factories.

Cultural mosaic of Donji Dorcol, (source: Studija Superblok, Prostoroz)

Danube Port Area industrial development was initiated by building the city’s first electric power plant in 1892, (“Snaga i Svetlost”) The area was connected with the main railway station on the Sava riverside with tracks along the Dunavska Street. Main industrial activities in the area were granaries, textiles, wood processing, metal processing and chemical industries, with the city’s main abattoir also located on the right side of Danube and connected with its own railway tracks. The railway connections laid out by the end of 19th century have however cut-off the Danube Port from its surrounding neighbourhood of Donji Dorcol.

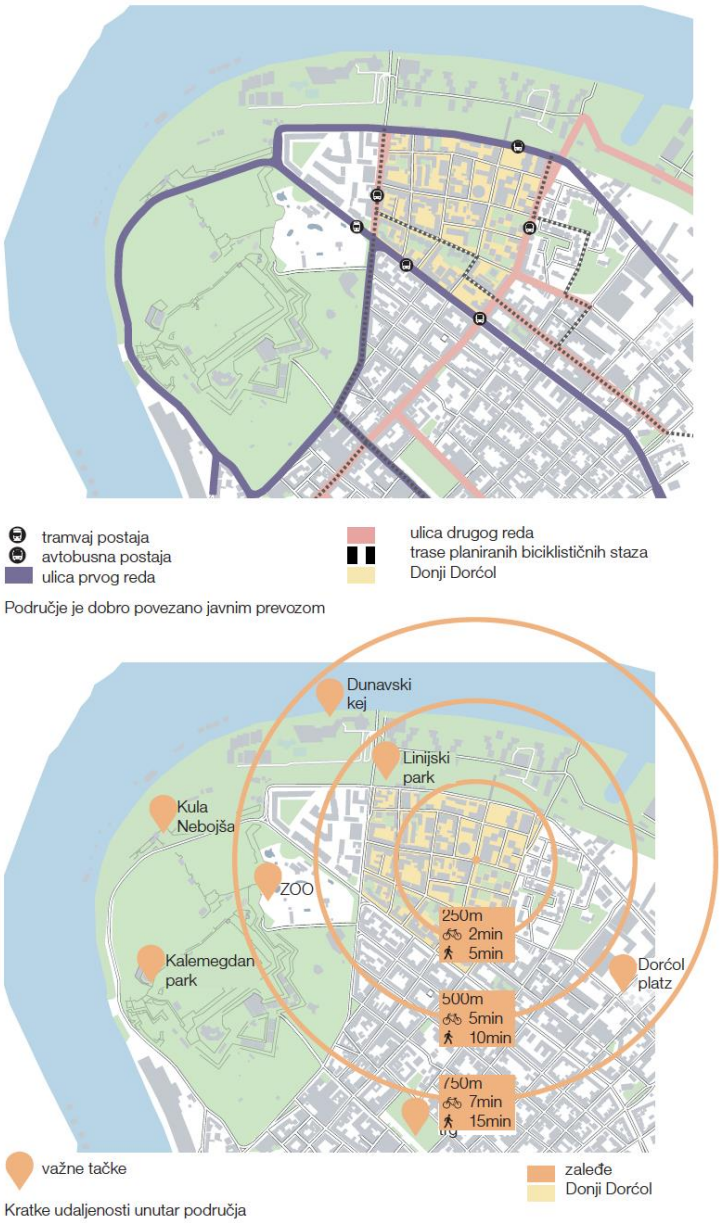
Further intensification of industrial production at the Danube Port happened after the 2nd World War. In 1969 the old power plant with its characteristic “iron bridge” was closed and abandoned, and next to it a new one was built.

Until 2021, the area was officially labelled as “industrial use area”, although it was not active as such since early 2000. In the early 2000, many of the bankrupt and dysfunctional industrial buildings, warehouses, storages and other facilities were privatized. Once privatised, most of the buildings have been left empty on purpose, waiting for the possibility to redevelop the valuable waterfront land into high-density, highly lucrative housing apartments and retail units.

In the Belgrade General Masterplan from 2021, the function and land use of the area was changed entirely from industrial to “mixed use” one, without any special regards to industrial heritage objects.

However, several of the industrial heritage objects have been temporarily occupied by different artistic and creative enterprises, on a temporary basis. The presence of these activities is keeping the area alive and popular, a place to be at the river and enjoy it.

The physical connectivity of the Danube Port with the neighbourhood and general accessibility to that part of Danube waterfront is still a challenge, since the old rail infrastructure and busy drive-through transit streets are still forming a barrier for pedestrians and people living nearby.



Good public transport connections, with rectangular grid of secondary streets of Donji Dorcol (source: Studija Superblok, Prostoroz)

Throughout the centuries of urban development, the main urban core of the city of Belgrade was situated at the top of a natural hill, above the Sava and Danube rivers. The riverbanks had little to no settlements, since the living conditions nearby the waters were far from ideal – the riverbanks were prone to natural seasonal flooding, with high groundwater levels and swamps. Some of the areas were used for small agriculture, or as smaller riverports.

With the period of intensive industrialisation in the second half of the 19th century, riverbanks started to develop its trade and port function, and along with it industrial functions as well. Large warehouses and storages were built directly at the river sides, mostly for storing and transporting raw materials up and down the Danube: coal, iron, grain, salt, wood. City’s first large abattoir was situated at the Danube, as well as metal and woodworks factories.

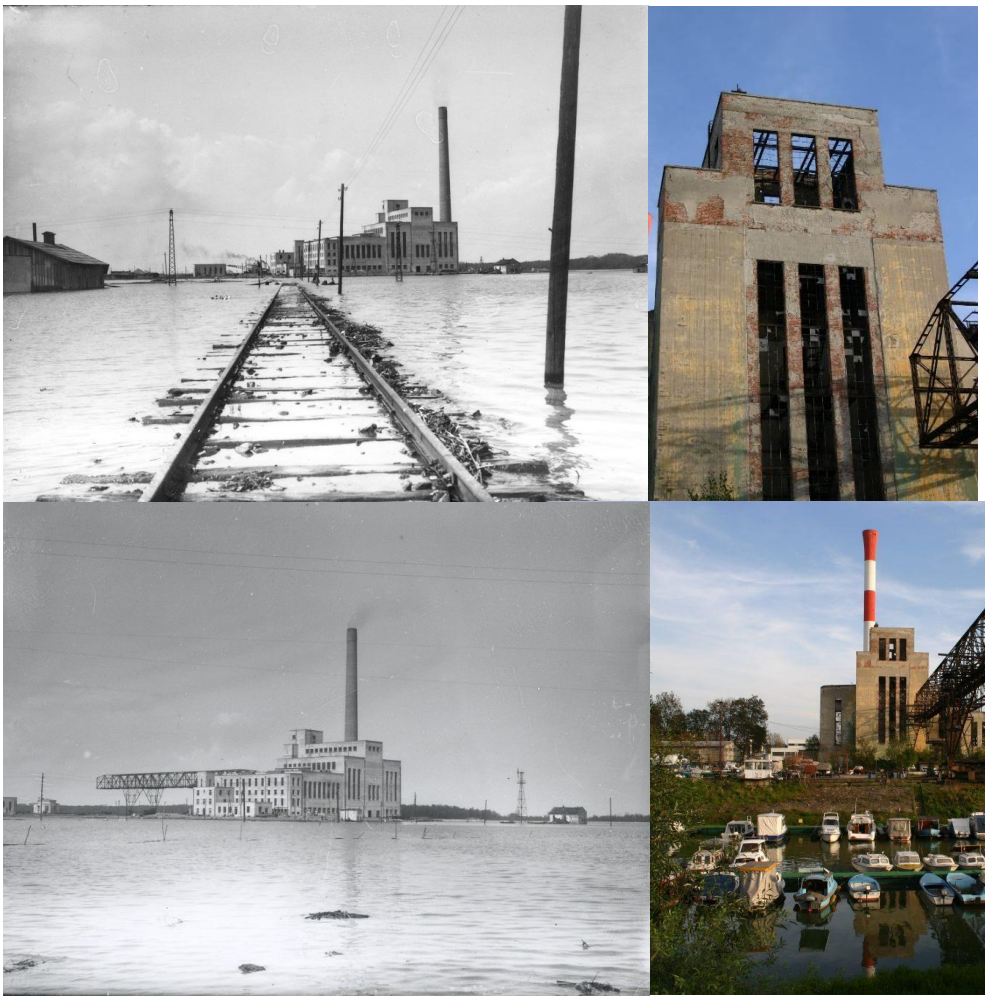
After the 1st World War, large port infrastructures and production areas started to emerge, with living quarters for the workers in their vicinity. These quarters were merging with the small agricultural plots and farmer’s houses, making up the folksy patchwork of different blocks and styles in the so-called “Lower Dorcol” neighbourhood. The urban culture of the “Lower Dorcol” with its shabby 1 storey housing was distinctively different from the “Upper Dorcol” one, positioned on the slopes of the Danube hillsides. “Upper Dorcol” side was clearly more urban, with

rectangular blocks and streets, beautifully decorated, 3 or 4 storeys high “civic buildings” and appartement houses in the so-called “Vienna” or “Paris” styles. Before the 2nd World War, the Lower Dorcol area had a strong and vivid Jewish community.

Industrial Cultural Heritage

There are several landmarks of the industrial heritage present at the pilot location which contribute to its specific character and uniqueness: the great grain silo (Silos) old electric power plant with its iron crane (Snaga i Svetlost) and several concrete warehouses in brutalistic style.

“Snaga and Svetlost”old power plant was first of its kind in the city, built in the early 1930 by a Swiss electrical company, as a part of its concession to supply the city with electricity. The power plant was connected with the railway tracks to the other parts of the Danube port, but as the photos from that area show, the area was still prone to flooding, due to insufficient dykes and waterworks on the Danube side. The railway tracks along Sava and Danube have been characteristic for the city’s riverfront area for many decades, forming a strong physical barrier between the industrial areas and the living quarters. The railway served mostly for freight and cargo train transit, carrying goods from the west side of the country to the northeast and southeast. This has strongly contributed to the certain “unattractiveness” of the Danube side, having the reputation of being an industrial area and therefore not easy to access the river, with surrounding neighbourhoods full of “dark” streets and “rough life”.



Historical and present images of the “Snaga i Svetlost” energy powerplant

https://beogradskonasledje.rs/izdvajamo/termoelektrana-snaga-i-svetlost-2

Priority needs

- Better connection with the surroundings, better accessibility.
- Restoration of nature and green riverfront landscape.
- Keep the area attractive to visit by supporting various local initiatives.
- Offer better access to the riverfront, stimulate the use of the riverfront as cultural and recreational space in the densely built part of Belgrade's old inner city.

Hopes

- To keep its open character and profit from the future Belgrade's "Linear Park" development and re-connection of the river and the city.
- Become a showcase of how artistic interventions and placemaking can bring new values along the waterfront and make it more accessible and attractive for communities surrounding it

Fears

- Demolition of further abandonment of the industrial heritage and "privatization" of the river waterfront
- Loss of natural features and vegetation
- Definitive loss of water resources still existing underground

Key stakeholders

The 'main' stakeholders are typically those defined as high influence and importance, and where relationships are in place and well maintained. This forms a starting point for this exercise i.e. an initial awareness of stakeholder to bring on board at different stages of the project. The ultimate aim is to have all stakeholders influence the project at different phases so they can have an opportunity to feed in and participate in the co-creation process (even those who are hard to reach).

Key stakeholders	
Culture and Tourism	Dorcol Platz Cultural Centre / O3one Art Space Gaia Foundation Belgrade boat tour Rodić Gastrošor - food court Kocka - creative education 2000late/Hangar Beograd Club Museum of Science and Technology Dorćol Cultural Centre Dorćolsko narodno pozorište Kosmodrom Jewish Cultural Centre Supernatural Association Miljenko Dereta Civic Space
Public service (government)	Port of Belgrade - Cargo centre Customs Office Beograd (Carinarnica Beograd) Dunav Electrical Power Plant Precious Metals Institute
Social (schools, kindergartens, library)	Vrtić Lipa OŠ Braća Baruh OŠ Vlada Aksentijević Elektrotehnička škola Stari grad Tehnička škola Drvo-art Prva gimnazija Sportska gimnazija Biblioteka Jovan Popovic

Colina do Castelo, Lisbon

Colina do Castelo (Castle Hill) spreads on the slope between the Tagus riverfront and São Jorge Castle. Although it does not correspond to an administrative designation, it comprises today seven distinct neighbourhoods: Alfama, Mouraria, São Vicente, Castelo, Sé, Intendente and Graça. This area includes some of the main touristic and historic locations of the city, and it is known for its generational and cultural diversity, its morphology due to its maze-like narrow streets, as well as its wide richness of culture and traditions, such as Fado Music and “Santos Populares” celebrations.

There are three logical reasons for this area was chosen to be the foundation of the City: hill, port and water.

A hill since militarily it’s easier to defend and additionally a marine trail, that helped the defence of the West side of the hill.

Its natural port, which is the best for refuelling boats that trade between the North Sea and the Mediterranean and ended up being strategic during the 16th century in the time of discoveries.

And finally, the most important, the presence of water and its abundant availability from the springs in this area, that resulted from the geological fault, which conducts the fresh and thermal waters up to the surface.

Additionally, there was a marine stream of the Tagus Estuary that entered the downtown area in the west side of the Castle Hill, which was also another defensive barrier. This marine stream was fed by two watercourses: Valverde, which still runs today, properly channelled under Rua das Portas de Santo Antão, and Arroios, which roughly followed the route of the current Avenida Almirante Reis and Rua da Palma. These two watercourses were of great importance in the agricultural production of the peri-urban area of Lisbon, as they were structured around these watercourses, along the valleys that both shaped, places with conditions for the practice of intensive agriculture based on irrigated systems, which were probably established there at least from the 10th century onwards.

Over the centuries, man has conquered the waters of the Tagus and considering that the progressive silting of the estuary has been recorded since imperial Roman times, it is quite likely that there were important areas dedicated to intensive agriculture near these streams from that time onwards.

The stream indelibly marked the urban shape of the western suburbs until the great urban reform that occurred after the 1755 earthquake, as can be seen by simply observing any of the plans that represent the urban form of this part of the city prior to that great natural disaster.

Along history, this area has seen many changes caused by natural disasters or by the social and economic dynamics, creating a very diverse urban landscape.

Lisbon has always been a city of culture, rich in historical heritage and a meeting point for diverse cultures and peoples. The seven neighbourhoods of Colina do Castelo assume a key role in this context of regeneration, as they are the historical and cultural heart of the city. They are to a large extent the ones that give the city of Lisbon its unique characteristics and identity. In this context, their cultural-led urban regeneration is vital for the sustainable development of the whole city.

Cities are living and changing organisms and they need to preserve the past but must evolve as well and this area is no exception.

Top 5 things to know

1. Oldest part of the city, where historically the city has its foundations.
2. Many changes caused by natural disasters or by the social and economic dynamics, creating a very diverse urban landscape.
3. Known for its generational and cultural diversity, as well as its wide richness of culture and traditions, such as Fado Music and “Santos Populares” celebrations.
4. Once again become the cradle of new ideas, of innovative, creative and disruptive initiatives rooted in cultural heritage.
5. The urbanisation of the last century has strongly modified the landscape, reducing the existing water resources.

Main Challenges

Historically, Lisbon was supplied by groundwater captured by wells, galleries and springs. The city relied mainly on this water supply since its foundation until the 18th century, with construction of the water Aqueduct, bringing water from outside the city. This leads us and highlights the importance of this natural and cultural heritage, the *'invisible waters'*.

It is still possible today to find several archaeological remains related to the management and supply of water resources, dated back to the Roman Lisbon located in the Castle Hill area and the riverfront. Therefore, an important part of the historical and cultural heritage of the Castel Hill is revealed in its waters.

The urbanisation of the last century has strongly modified the landscape, reducing the existing historical water resources. Fieldworks have demonstrated that important assets like wells and springs are being lost, since building owners are not seeing any advantages in keeping these infrastructures. As a consequence, the still existing infrastructures are being more and more abandoned or demolished and, with these, a set of practices and a cultural heritage of great value are being gradually lost. Currently, the vast majority of these water resources are 'hidden', being its uses as well as the interaction between the urban environment and the water cycle lost over the last centuries and currently poorly understood. Therefore, with this area undergoing a fast process of changing, losing its traditional practices, there is an urgent need to record the intangible cultural aspects related to the 'invisible waters'.

It is well known that water is an essential resource for humanity. Its availability, management and distribution over time have moulded the territory and cities in particular. Societies have an intimate relationship with water, so deep in the modern world and of total dependence on these hidden currents that run under the floor and into our taps.

In urban environments, we are so used to the presence and ease of access to water that we only realise its importance and value when we lack it. Cities and the water sector are now facing much more complex challenges that are inextricably linked to climate change, which is why their resilience to increasingly extreme weather events is crucial.

In a context of increasingly frequent droughts, the efficient use of water in cities has become essential to mitigate the pressure on water reserves and guarantee a resilient water supply. This need highlights the urgency of (re)thinking and transforming the way we use and manage water.

Therefore, it is important to highlight the role that these invisible waters have played in the City of Lisbon, namely in supplying and serving the city's citizens, which was an important milestone in the history of its existence, supply is the most important aspect.

Currently these waters are not being used, because its role ended up being extinguished with the evolution itself, but since it determined the existence of the city, it's crucial to replenish its presence and narrate what its existence was as a key to preserve this heritage in the cultural, environmental, and social dimensions.

It is then crucial to discover, produce and organise disperse fragmented information from different sources, collect testimonies about usages and customs, related to water uses, enhance the capacity of local cultural and creative sectors by promoting a cultural heritage led regeneration and use innovation and creativity as a catalyst to nurture talents, to innovate, to prosper and to generate jobs and growth and finally to create awareness and enhance the access to this natural and cultural heritage for those who live and visit Lisbon. All contributing to increase the value of cultural heritage and, in particular, of historic 'invisible waters'.

Therefore, the INFRABLUE project expects to contribute to reverse trends of abandonment, neglect and unresolved areas of historic, natural and cultural heritage through innovative and creative developments as main driver.

INFRABLUE Priority needs

- Use of the water and structures
- Revitalization of structures and public spaces
- Dissemination of the 'invisible waters' heritage
- Preservation of the memories, identity and legacy of this area
- Gentrification
- Ageing population and loss of memories
- Sharp decline of local population
- Tourism pressure
- Need of a multidisciplinary teamwork for the future of the city
- Level of involvement delivered by the stakeholders

Hopes

- Historical water infrastructures preservation
- Reactivation of water springs
- Use the 'invisible waters' in the non-potable urban needs
- Sustainable use without implying degradation
- Public awareness of the value of water and its preservation
- Geothermal exploitation
- Governance policies preserve cultural heritage memories
- Creative and innovative ways of experiencing and appropriating public spaces

Fears

- Definitive loss of water resources still existing underground
- No political will to value these 'invisible waters'
- Loss of the local identity
- Degradation of buildings and public spaces
- Urban regeneration that erases the cultural heritage
- Historic center becoming a massive seasonal and depersonalized tourist attraction
- Mischaracterization of real estate assets and public spaces
- Lack of social cohesion

Key stakeholders

The 'main' stakeholders are typically those defined as high influence and importance, and where relationships are in place and well maintained. This forms a starting point for this exercise i.e. an initial awareness of stakeholder to bring on board at different stages of the project. The ultimate aim is to have all stakeholders influence the project at different phases so they can have an opportunity to feed in and participate in the co-creation process (even those who are hard to reach).

Key stakeholders	
Local administrative authority	Municipality of Lisbon • Municipal Directorate of Culture • Municipal Directorate for the Environment, Green Structure, Climate and Energy Lisbon Parishes • Parish of Arroios • Parish of Santa Maria Maior • Parish of São Vicente
Municipal company	EGEAC - Equipment Management and Cultural Entertainment Company
Water supply company and Museum	EPAL - Empresa Portuguesa das Águas Livres
R&D Centres	CERIS - Civil Engineering Research and Innovation for Sustainability
National authorities	APA - Portuguese Environmental Agency DGPC - Directorate General for Cultural Heritage

Stura Riverpond, Turin

The pilot area is located by the right bank of the Stura River, near the confluence with the Po River, on the northern border of the city. It is intended as the entire green ridge that extends between Strada Settimo and Corso Giulio Cesare, made up of the Arrivore Park and Stura Park - is part of the ridge that extends in the northern quadrant of the city of Turin. This area of the city, located in the District 6, is characterized by an urban fabric with mixed residential and industrial use. The current planning tools have designated the Park as a non-buildable service area, providing for development that respects the environmental value of the site.

Historically, an ancient Roman road, from Balon (Borgo Dora) substantially coinciding with the routes of the current corso Giulio Cesare and more minor roads, arrived in strada dell'Arrivore, at the end of which, up to the middle from the 12th century, the Roman wooden bridge over the Stura stream was still in use. Once this bridge collapsed, the stream was crossed by a ferry, which was served by the monks of the nearby Abbadia di San Giacomo di Ponte Stura. The communication route maintained its importance until 1874, the year of construction of the Amedeo VIII bridge, which by connecting the regions of Barca and the Regio Parco, determined the movement of traffic on the new and much more comfortable road axis, with the consequent fall in disuse of the ferry. Around the middle of the 18th century, the old Rivore farmhouse was owned by the Falchero, a family which, in the area between the future Barriera di Milano neighbourhood and the Abbadia di Stura, held vast land holdings and various farmhouses. As regards the name of the place in a map preserved in the State Archives, we read: "Ripa of considerable height commonly called the Rivor and then Cascina del sig. Falker".

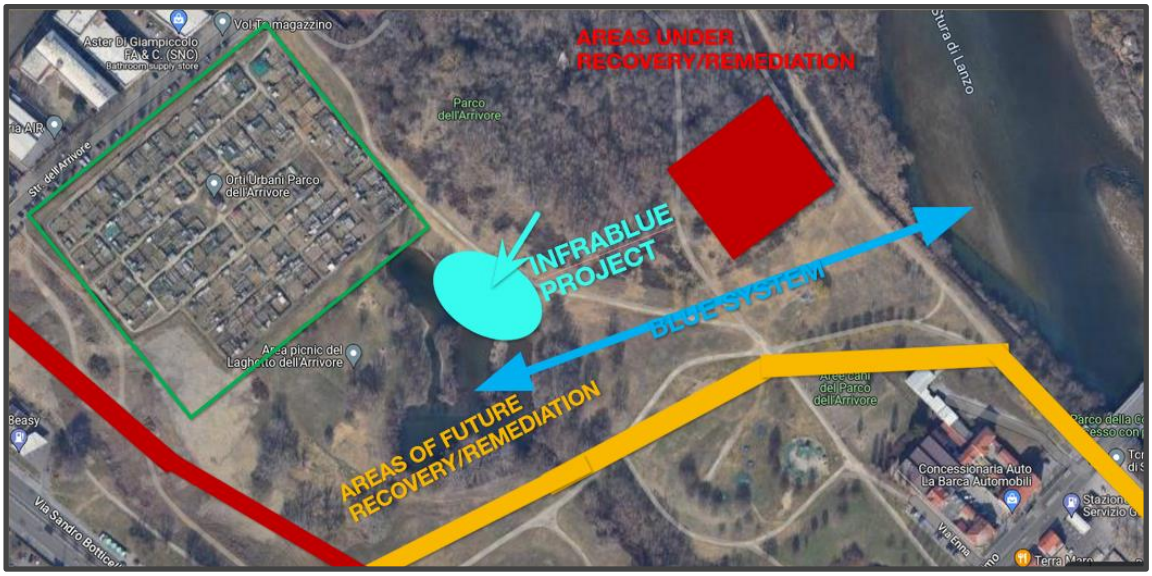
Until the mid-1960s of the last century, the land under the escarpment of via Botticelli was cultivated with cereals and fodder, while the banks of the Stura, the beach of the Barriera di Milano and Regio Parco, were destinations for Sunday outings, which it favoured the emergence of local initiatives for refreshments and restaurants. Other craft activities linked to the use of the soil and water also joined: washermen and sand-makers. Subsequently, the activities were completely transformed and intensive use of the Stura basin began with the creation of numerous quarries, which was followed by chaotic industrialization. Still visible is the dredge system through which inert materials were extracted from the bed of the stream for construction and road paving.

Since the Arrivore park area is very wide, after many site inspections, it was possible to define the waterpond close to the river Stura as the main point of interest for the Infrablue project. It fits the project for more than one reason. Firstly, it creates a direct connection between the two water pivotal points of the park, so that the project area itself will end lying among blue spaces (infra-blue). Secondly, the picnic area near the waterpond, where the main creative experiences will likely take place, is very close to the gardeners' allotments. This may help with the reciprocal benefits that could be developed through the project.

Top 5 things to know

1. Urban gardens: it is the place where retired gardeners spend their time. More than 170 allotments are granted by city concession to citizens. It may be considered the only one garrison of the park Arrivore, and thus it has a very important role in defining the outputs of the Infrablue project in Torino.
2. Former toxic park: Arrivore park has been distinguished for being a park related to drug dealing and use for many years. Fifteen years ago, the Municipality decided to intervene with projects aimed at the redevelopment and regeneration of the park. Nonetheless, its history still may interfere in giving to the park the recognition it deserves.
3. Northern limen: located in the very northern section of the city of Torino, it divides the suburbs with the very outskirts of northern Torino;
4. Stura di Lanzo basin: River Stura passes through different neighbourhoods characterised by social and economic inequalities;
5. Former quarries: once a wasteland exploited for mining, today the area of Arrivore park and the whole Stura basin is under a process of recovery. Specifically, the waterpond that is the main element of the project, was born after a quarry, and today it represents an unicum in the park

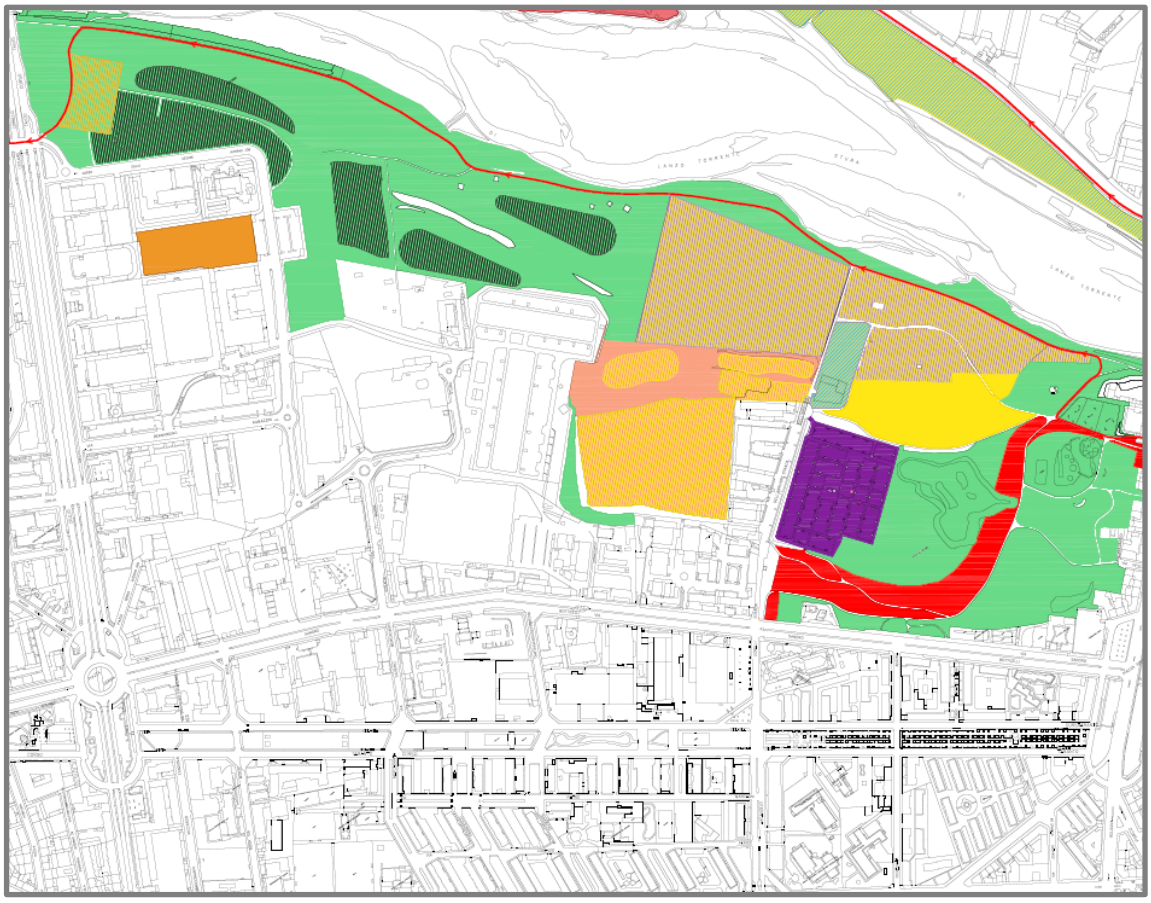
Main Challenges



The progressive abandonment, due to exhaustion, of the aggregate quarries, was followed by a greater degradation of the area and the banks which favoured the consequent settlement of illegal activities. In the early eighties of the twentieth century, the district 6, with the associations and citizens of the neighbourhood, thanks to the collaboration of the Alpine Brigade Taurinense, started the cleaning of the Confluence area, then occupied by managers, sewage collection tanks. It is the first step towards the establishment of the park, along the entire Turin stretch of the banks of the Stura. The recovery of the green area, which began in the 1980s, is part of the wider project of Turin City of Waters. To achieve it, a long and patient work was carried out on the territory, aimed at enhancing its natural and historical potential, to which the positive synergies activated with schools and between different sectors of the Municipality of Turin contributed through the 'Sustainable city' laboratory.

As today, the area is inhomogeneous from several standpoints: properties (public, private, in transition), programs (remediations, mining activities, residential, agricultural., etc…), surfaces (farmland, quarry lakes, renaturalized areas, riparian zones). It is a large urban void, the interface between the last parts of the consolidated city to the south and the suburban space to the north, combining environmental risks and great potential for redevelopment. The Stura River area still has a predominantly industrial function but, in the past, it was an agricultural area of some importance, as can be seen from the historic farmsteads that still exist. With regard to the transformation, the potential of this place is different: the wide spaces allow the creation of diversified functions and activities, while the proximity to the Stura River and the naturalness of the area allow a development of biodiversity that is difficult to find in a big city like Turin.

The administration's vision is to transform this area from a symbol of environmental degradation into an environmental resource of the highest value. To imagine and realize an area able to give multiple ecosystem services, be an ecological reference point and give back to the citizens the possibility to enjoy the area. From this point of view, it is interesting to underline how the Infrablue project could support the creation of a space that goes toward this goal, enhancing the use of the space for those who usually do not frequent the park, especially families, youngsters and children.



INFRABLUE priority needs

- To trigger the knowledge of the forgotten places and their potentials.
- To help reactivating such places as ecological, social and cultural devices.
- To bring people to experience the park through new tools, such as creative and artistic, related to the importance of the biodiversity of the park.

Hopes

- To renew the area for the leisure use of citizens and for scientists and researchers of biodiversity. The water pond could be an attractor not only for those who already are using the park for other activities, but also for school, research and leisure experiences. Artistic and creative installation could permit to experience the area in a renovated way, able to define the waterpond as an unicum, not only for the Arrivore park, but for the Torino park system as a whole.

Fears

- There could be a difficulty to reach the area since it is located in the very northern part of the city. That is why the project is intended for citizens living, studying or working in the surroundings. Moreover, the place could need a restoration process if not also disinfestation of mosquitoes or other endemic species.
- Since the area is located in a shaded place and being the park, a location known for several different uses from different users, there could be a security risk. It is mandatory to not create a closed space but to widen as much as possible the area of intervention.

Key stakeholders

The ‘main’ stakeholders are typically those defined as high influence and importance, and where relationships are in place and well maintained. This forms a starting point for this exercise (i.e. an initial awareness of stakeholder to bring on board at different stages of the project).

The ultimate aim is to have all stakeholders influence the project at different phases so they can have an opportunity to feed in and participate in the co-creation process (even those who are hard to reach). Here, stakeholders from public, private and non-profit organisations are listed.

Key stakeholders	
Local administrative authority	Municipality of Turin Circoscrizione 6 (district 6) Parco dell’Arrivore
Energy System	Terna S.p.A. Transmission system operator Terna Factory
Universities	IUSTO University Politecnico di Torino – Villard
Gardens	Municipal gardens Spontaneous gardens – Chinese community
Cultural and Sports hubs	Il Piccolo Cinema – cultural acknowledged hub Intercultural Center Padel club Botticelli
Association	Re.Te Ong Association Progetto S.L.I.P. Scuole Tecniche San Carlo Association Co.Pro.Ma. Association
National authority	INPS
Industry	Cartier Factory IVECO/FPT
Accommodation	Novotel Hotel

Pilots Characteristics

This chapter aims to present a general description of the Belgrade, Lisbon and Turin, in order to provide knowledge about the context of each city.

Danube Port, Belgrade

Landscape

Danube - water levels

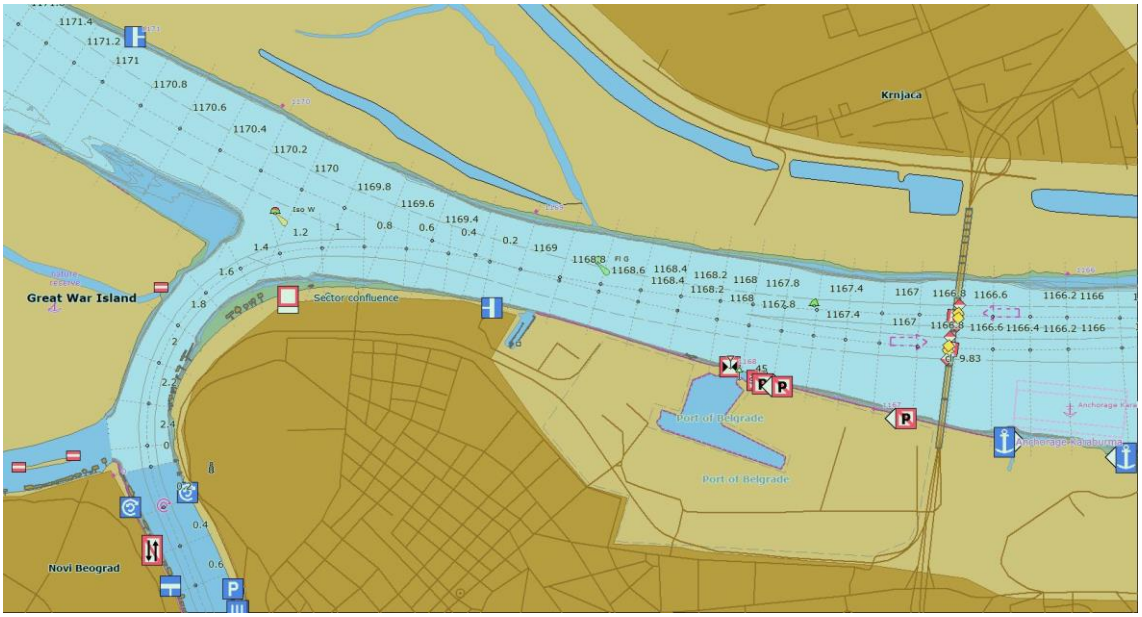
According to the Master Plan Belgrade, the established criteria for the flood protection system of the banks of the Sava, Danube and Tamis in the area of Belgrade from the influence of hydro power plant "Đerdap" in operating conditions for elevations of 69.5m above sea level and higher are the probability of occurrence once in a hundred years (Q1%). With the additional height providing protection for a return period of 500 to 1,000 years (Q0.2%-Q0.1%). The relevant calculation level at the mouth is 76.00 m above sea level. The overhang above the authoritative high water level for defensive embankments next to the Danube is 1.5 m - 1.7 m. For quay walls, the protective height ranges from 0.5 m to 1.2 m.

According to the Republic Hydrometeorological Institute, there is a weekly water level forecast. The measurement is made at the entrance of the Danube to Belgrade (Zemun). The limit of regular defence is 550 cm and the limit of emergency defence is 650 cm.

(https://www.hidmet.gov.rs/latin/prognoza/prognoza_voda.php)

Also, according to the data of mentioned Institute, there are shown *water level change diagram for a multi-year period with a level diagram for the current year*, which has been close to the medium level. (https://www.hidmet.gov.rs/latin/hidrologija/izvestajne/prognoza.php?hm_id=42045)

According to the Directorate for Inland Waterways (within the Ministry of Construction, Transport and Infrastructure), this area of Port of Belgrade is part of a waterway on the Danube.



http://www.plovput.gov.rs/main

The width of the Danube at the location is 550-600m, while the width of the waterway is about 300m.

General remark: presented data on the water resources come from the national level surveys, and from various national level relevant institutions. City of Belgrade itself and especially the local governments of the municipalities of Stari Grad and Palilula (where the pilot location lies) rarely conduct local environmental research, relying on the national level institutions to gather data. The relevant "fine grain" data is difficult to find and mostly the "cross-sectoral" and qualitative research on smaller city districts levels or topics is done by independent professional associations and think-tanks, whose publications are cited in this report.

Water quality of the Danube

According to the data of the Environmental Protection Agency (part of Ministry of Environmental Protection), water sampling for the determination of general physical and chemical quality indicators is carried out once a week, on Wednesdays, while sampling for the purposes of determining the content of priority, priority hazardous and other polluting substances is carried out according to the dynamics defined for supervisory and operational monitoring stations. The results of physical and chemical analyses are published on the website once a month. (http://sepa.gov.rs/index.php?menu=305&id=8020&akcija=showExternal)

There are no sampling points at the Port of Belgrade itself. The closest point is Zemun, and the most important part of results of physical and chemical analysis of surface water from that point are done in these categories:

1. General physical and chemical indicators, 2. Temperature, 3. Particles, 4. Oxygen parameters, 5. Carbonates, alkalinity and acidity, 6. pH, electrical conductivity, dissolved ions,7. Nitrogen and its compounds, 8. Phosphorus and its compounds, 9. Cations, 10. Anions, 11. Organic determinants-sum

By analysing the obtained values of physical and chemical parameters, they were within the limits of the prescribed values. The detailed result could be found on this link:

http://sepa.gov.rs/download/kvbg/izvestajAktuelni.pdf

Flora and fauna of the Danube

The plant and animal world (flora and fauna) of the Danube is extremely rich, especially in the part along Serbia, where there is enormous potential for the development of tourism.

There is a variety of flora and fauna in the Belgrade area, where there is a special exotic oasis of two Ratna islands, surrounded by the water surface of the confluence of the Sava and the Danube, within easy reach of the heart of Belgrade. The preservation and ecological plasticity of the heath and water vegetation, which is most often referred to as thickets, underbrushes and ponds, and the large surrounding water surface favours the nutrition, retention and reproduction of many animal species. Because of all that, but also because of the relative peace and isolation of the island, the most beautiful and interesting visitors of the island's inhabitants are ***birds***. Their presence is determined by the variety of habitats suitable for them and the season. The Small War Island is completely overgrown with white willow and creepers. In the warm season, herons nest on it - ***little and night egrets, and little herons***. There are also small cormorants. One of their refuges in this part of the Pannonian Plain is the Little War Island. During the winter, over 500 of these birds can be seen here diligently drying and cleaning their feathers in preparation for hunting. ***In addition to small cormorants, a large number of coots, wild ducks, mallards, red-headed ducks, great cormorants, and several species of gulls and grebes winter on and around the island.*** There are several different vegetative zones dominated by ***acacia*** on the Great War Island (area 1.5 km^2). During the spring, in the reed area along the coast of Great War Island, the beauty of the flowers of the ***white water lily*** and especially the ***water) meadow buttercup (***, which gives the canal the appearance of a luxurious meadow, comes to the fore. ***Mammals on the island include water voles, forest and yellow-headed mice, and sometimes otters***. In total, about 130 species of birds have been recorded, of which about 40 nests on the island itself. Almost 97% of all recorded species are classified in various categories of danger, most of them are permanently protected by law, and some are permanent members of the red book not only of Serbia, but of Europe, even the world. ***Blue-bellied, marsh and great tit birds, woodpeckers, great, small and Syrian, green and grey warblers, vugs, reed warblers, pond hens, red herons, coots, nightingales, blackbirds, robins, grebes, swallows, nightingales, flycatchers, finches, gannets, larks, farts, seagulls, peregrine falcons, harriers, white-fronted eagles, wild ducks, mallards, spoonbills and many others***.

The Danube is of great importance in winter when it happens to be the only unfrozen surface in this part of Europe. Its water surface is so huge that it cools very slowly, and movement and mixing prevent the surface layers from freezing quickly. This is a fact of enormous importance for the survival of its inhabitants, not only of the tiny living creatures, but also of the people who have always lived on its shores. The example of water birds is particularly interesting, in this place you can count over 5,000 specimens of the mentioned birds and some other species.


Images of view on Danube from pilot site

The built environment

Images of immediate surroundings of Danube port, typical neighbourhood building structures and street typologies.

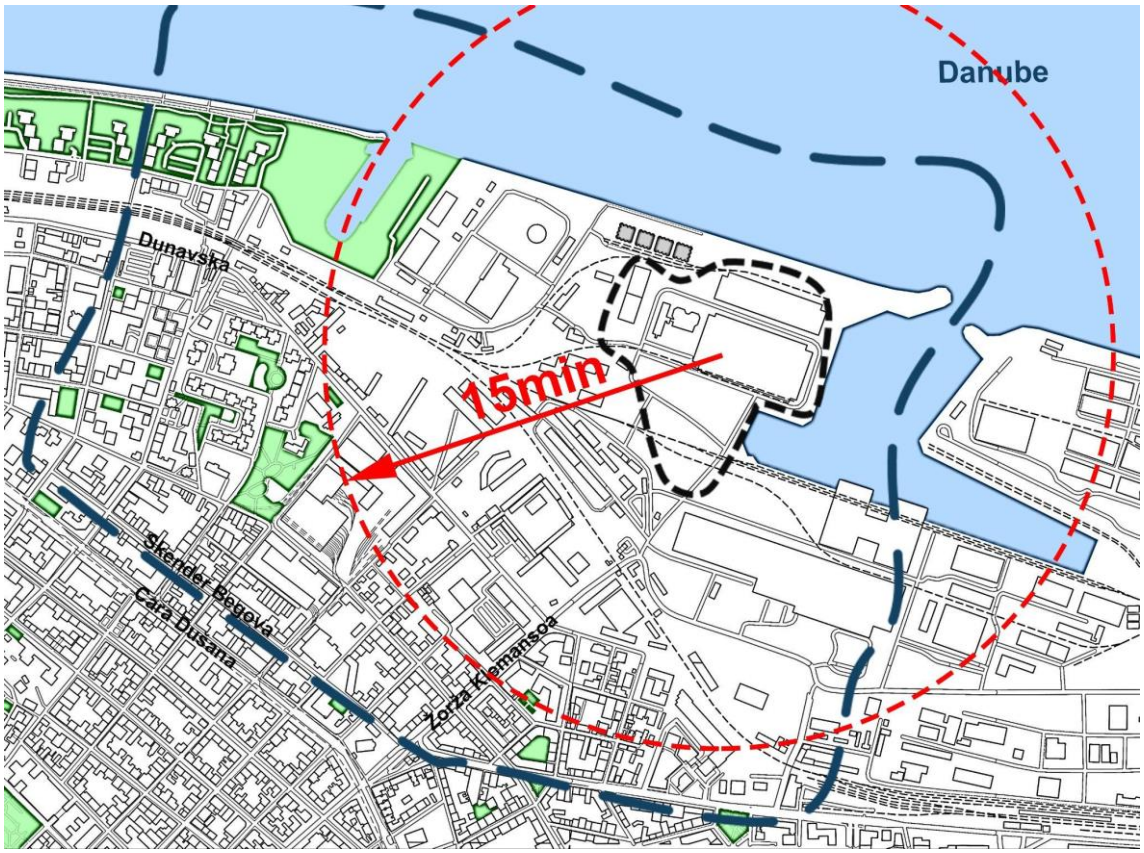
The photos showcase 2 typical building typologies of the area: the pre-WW2 structures, mostly low rise up to max 3 storeys high, in traditional closed, rectangular blocks, and post-WW2 mass-housing structures in open Modernist style blocks. The mass-housing structures are build on the Danube waterfront in a park-like setting, with a lot if green spaces and a lineair park promenade on top of the river protection dyke.

Old power plant “Snaga i svetlost”

Old Grain Silos at the Danube waterfront, currently a cultural hotspot of the whole area.

The immediate public space at pilot location has a strong industrial and informal character. The spaces have been planned as part of the industrial infrastructure and utilities, and just recently they have been opened to the public. The green areas are sporadic and mostly unplanned. Since the area has not been in industrial use for many decades now, the green surfaces have naturally expanded, however, hard surfaces and big scale buildings still dominate publicly accessible areas.

The street structure in the surrounding neighbourhood consists usually of narrow one-way streets, with distinctive green corners. This typical structure of the neighbourhood has been under pressure of encroaching car parking as a result of higher car ownership and car-dependence of the people living in the surrounding neighbourhoods.



The pilot location is not so easily accessible for pedestrians, although it is only within 15 minutes' walk from the surrounding neighbourhood. The main barriers are the main thoroughfare, the Dunavska street, with its heavily loaded truck traffic. Other barriers are large hard surfaces without any protection from the wind, rain or sun. The public lighting is scarce at the location. Some of the areas are not accessible at all, protected by fences.

Environmental and Climate conditions

Winds

According to the ***Environmental Atlas of Belgrade*** made by the *Institute for Public Health,* there are five topoclimatic zones. For every zone, there is a mean annual ***wind rose***.

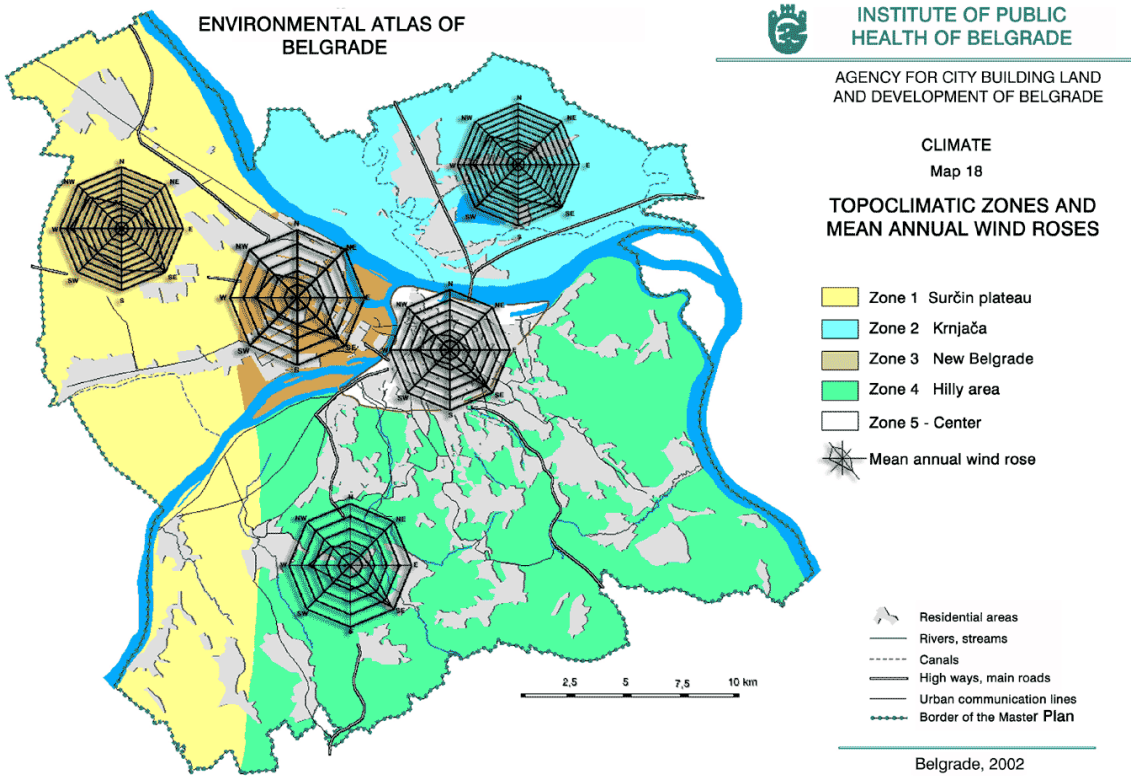
The most dominant wind is *southeast* in the entire territory of Belgrade, including in the location itself.

https://www.zdravlje.org.rs/ekoatlas/04e.htm

http://www.ekoregistar.sepa.gov.rs/ekoloski-atlas-beograda-6

Also, according to data of relative wind fractions by direction and silence in parts per mille and average wind speed in m/s for period 1981-2010 (source: Republic Hydrometeorological Institute), there is defined annual wind rose for Belgrade:

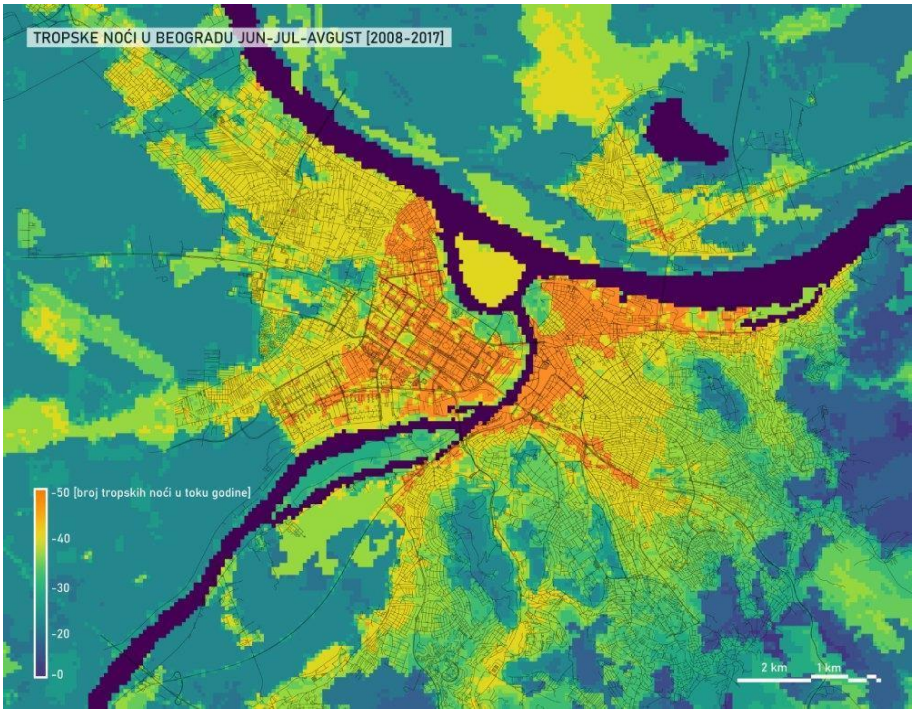
https://www.hidmet.gov.rs/latin/meteorologija/stanica_sr.php?moss_id=13274



Urban heat island data

Website and non-profit project *Klima101* trying to raise awareness and educate the local population about the causes, consequences and dangers that threaten climate change, as well as ways to solve this problem.

On the macro and micro plan maps, there is shown the number of tropical nights in the Belgrade area for the period from 2008 to 2017. The area of the Port of Belgrade is marked with an orange-yellowish color (extremely unfavorable) with an average number of between 40 and 50 nights for this period. The main reason for the unfavorable result is the proximity of the urban fabric, which is constantly heated.



https://klima101.rs/toplotna-ostrva-u-beogradu-tropske-noci/

Air pollution data

According to the website ***Beoeko*** of the *Institute for Public Health*, there are shown average values for a period of 30 days from one point within a wider location (Bulevar Despota Stefana).

Institute for Public Health Dr. Milan Jovanović Batut (abb. ***Batut***) gives us data on an annual basis, so for Belgrade in 2021 we have a mean annual value of 25.35 µg/m3 for PM 2.5 particles in the air, which is higher than the annual average proposed by the WHO (World Health Organization) - 10 µg/m3 for PM 2.5.

http://www.beoeko.com/?lang=rs

https://www.batut.org.rs/index.php?content=1413

Local Community

According to the data of the *Statistical Office of the Republic of Serbia* for 2022 for the municipality of *Stari Grad*, the social demographic structure is as follows:

- 45,000 inhabitants live in the municipality
- 55% of the population are women, and 45% are men
- the majority of residents are aged 40-44 (8.3%)
- the age categories 35-39, 45-49 and 70-74 dominate, which means that in addition to the working-age population, there is also an old retired population

It can be said that the structure of the population in the surrounding settlements of the Port of Belgrade is similar. It has an estimated population of 10,000.

https://data.stat.gov.rs/Home/Result/18010602?languageCode=en-US

In terms of the economic profile, for the Municipality of *Stari Grad* there are:

According to the data of the *Statistical Office of the Republic of Serbia* for 2022 for the municipality of *Stari Grad*, the economic profile is as follows:

- total registered employment is about 21,200
- registered employment is about 45% for women, and 50% for men; total employment is 47%
- Average monthly earnings for the year by municipality is analysed
- Average net earnings [RSD] is 126162 (about 1.075,80 EUR)
- Average gross earnings [RSD] is 171492 (about 1462.34 EUR)

https://data.stat.gov.rs/Home/Result/24021105?languageCode=en-US

https://data.stat.gov.rs/Home/Result/2403040403?languageCode=en-US

The innovation and entrepreneurship ecosystem is strongly driven by creative industries, tourism and services. The creative industries have been promoted and supported by grants of the “Serbia Innovates” and “Serbia Creates” national programs.

The following are good examples of typical cultural and social innovative services and products in the area:

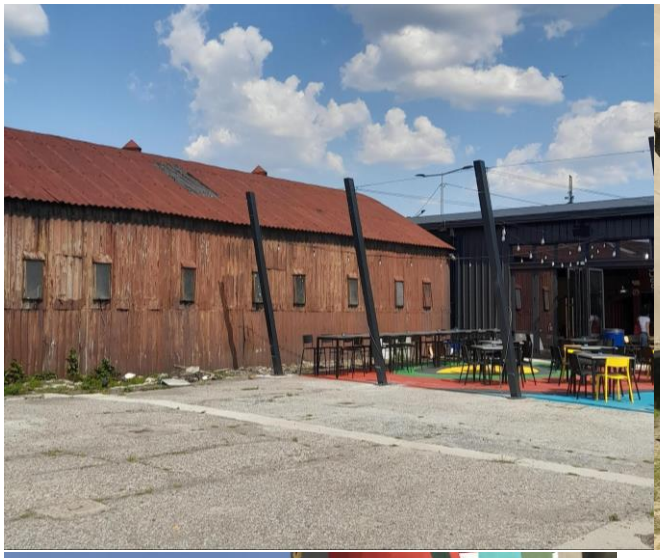
Gaia pokret is an important stakeholder who transformed abandoned Silos to attractive touristic and artistic locations on the Danube.

Dorcol Platz a commune for artists of various profiles, as well as various cultural and artistic programs.

Prostor Miljenko Dereta is important for the local community in order to create space for work, interaction and cooperation of activists, informal and formal groups and associations.

Cyber: FEW GOOD MEN (production of movies) is one of local economies and digital production.

Gastrosor: “Food Culture” court



photos of the main creative industries and services in the area: Gaia Foundation, Gastrosor and the co-working space currently under development

The area hosts a variety of local community associations, most of them informal groups advocating for different interests, (such as clean air, better and safer streets, more playgrounds) or acting as small cultural associations (in the fields of performing arts, literature, music)

Main formal NGO stakeholders, interested in preservation and development of the blue-green infrastructures of the neighborhood bordering the Danube Waterfront:

- Dorcol Neighbours Association / “Komsije sa Dorcola”
- Supernatural

Colina do Castelo, Lisbon

Landscape

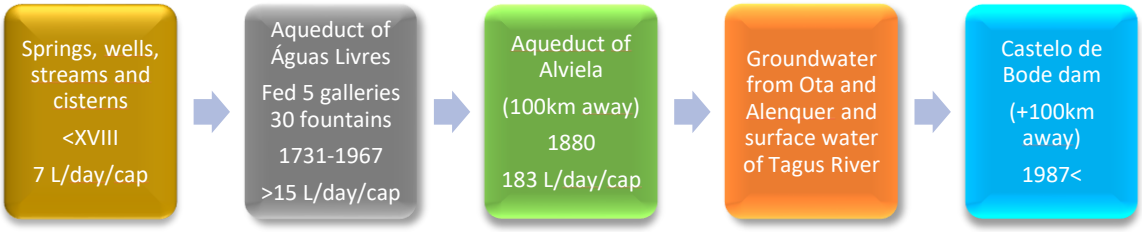
The water supply to Lisbon is closely linked to the city's history and the water resources available in this pilot area were the main reason for this area to be the foundation of the city, nowadays called the *'invisible waters'*.

Chafariz d'el Rei - Source: Toponímia de Lisboa (José Vicente CML)

The City of Lisbon always had great importance throughout its history and the city's activity was also necessarily based on the resources of water supply to the population.

There is very varied hydrogeology, but productive in terms of springs and sources that over the years have guaranteed water supply to the populations since ancient times until the 18th century. Which was then complemented with the famous

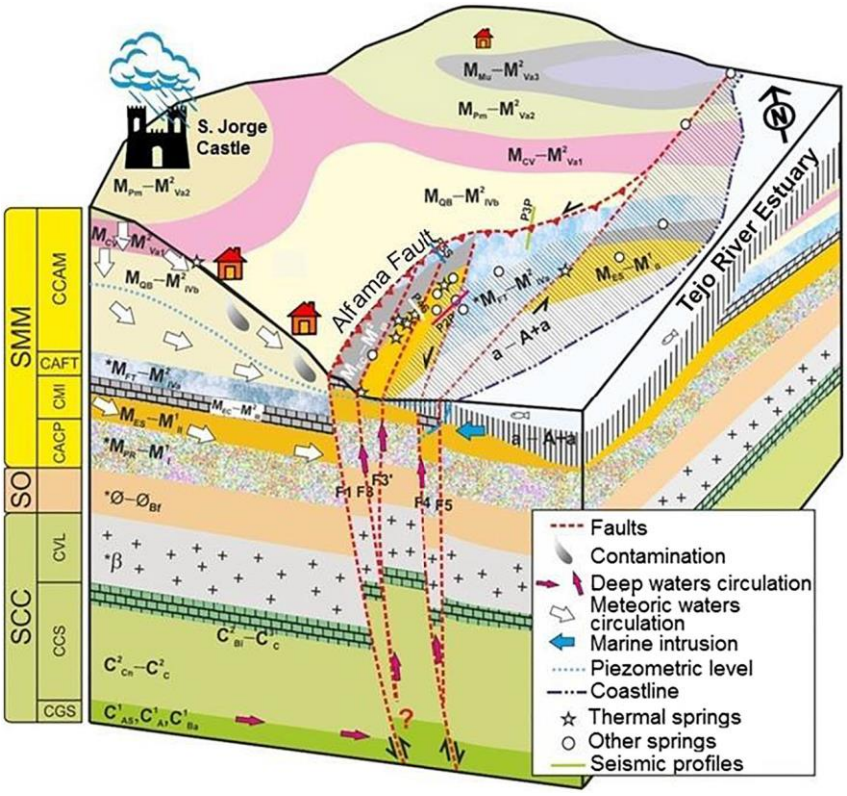
aqueduct network, that comes from nearby cities and ends in the *Águas Livres* aqueduct in the *Alcântara* valley. Later in the 19th century, the water supply had a game changer with the *Alviela* Aqueduct and more recently the main supply that brings water 100km away from the Castelo de Bode Reservoir.



Evolution of the water sources supplying the Lisbon city and the availability of water per capita

Lisbon has been changing, like many cities, and the city's land use pattern, with the increasing urbanization and a change in land use, has also led to a change in the water cycle, especially the underground water cycle in Lisbon. Today this is recognized as a mistake in Lisbon and as in all large cities in the world, which suffered from the same development problem.

This change is very relevant since the reason for the abundancy of water, including thermal water, in Alfama neighbourhood, it's the combination of the infiltration of rainwater in the top of the Castle hill and north slope, with the geological fault in the south side of this hill, provoking the water to ascend to the surface creating springs.



Conceptual hydrogeological 3D model of Alfama region (Elsa Ramalho et all; "Alfama Springs, Lisbon, Portugal: Cultural Geoheritage Throughout the Centuries")

The urban water cycle is once again at the heart of sustainable development, not only at the scale of the country, of a river basin, but also of cities.

Since Roman times, the importance of the City of Lisbon, confirmed by its status as a municipality, certainly justified the introduction of a water supply system, widely distributed throughout its urban fabric.

Conduits fed several public fountains and supplied bathhouses and thermal establishments, in this context the city would not dispense the practice of bathing, a fundamental reference in Roman society, a custom that marked the border between daily activity and the period of idleness and distinguishing the more civilized world from the barbarian.

In this way, the construction of structures for capturing, conserving and conveying water constituted, like Rome, a determining reference in the urban center with municipal status.

It is important to highlight the role that fountains played in the city of Lisbon, namely in supplying and serving the city's citizens, it is an important milestone in the history of its existence, water supply is the most important aspect.

The origin of the word cistern from Latin 'cisterna'

A word that keeps its origin in Portuguese language

The water supply had such an importance it needed to be regulated in specific points, since it was also a source of conflicts among the people who made use of them, happening fights, injuries and even deaths. In 1551, for the *Chafariz D'El Rey*, the most important fountain of the city, it was developed a municipal posture to regulate the several spouts of this fountain. This defined one spout for slaves, one for moors, tow spouts for white men and white women, one for black and Indian women and finally one for white girls. This regulation has been forgotten and although several others were created, there is no other regulation still today revoking it.

Cistern of Chafariz Del Rei – Source: Toponímia de Lisboa (José Vicente CML)

Associated to the fountains, existed also an economic linked to the water supply by water carrier companies, whose walked throughout the city selling water to the residents.

Along with the material availability of the water, traditionally the immaterial aspect of the water was also important. It was believed that the water of some of the springs had therapeutic virtues, by the secular imaginary and religious imaginary, mainly believing it was good for the eyes and stomach.

Where so many water carriers,

so many black men, so many black women,

galicians, goats, mice

the fourth of water sustains.

/ Afonso Álvares (1626) about Chafariz D'El Rey

Nowadays, these fountains are not so fundamental, because this role ended up being extinguished with evolution itself, but reporting its physical presence and narrating what its existence was. For that, there is the need to collect and organize disperse fragmented information from different sources.

There are three main sources that were used which are a survey that listed all the fountains, sprouts and public wells from 1851, another source from 1940 to 1942 by the Water Supply entity of Lisbon, done during the 2nd World War as a precaution to list all the sources of water in Lisbon in case of war emergency and finally a recent mapping done by the Lisbon Municipality.

Source: Grupo de Estudos Olisiponenses and Museu da Água

Characterization sheet of a listed cistern – Museu da Água

Largo do Chafariz de Dentro (1929) - Unidentified photographer, in Arquivo do Jornal O Século

The research was focused in the 'invisible waters' which can be categorized in fresh and thermal springs, cisterns, wells, fountains, etc. All the information collected from the different sources were crossed to validate common data and add new one. The blue infrastructures collected were then mapped and characterized and

this information was turned public, possible to be seen in a platform already existent, that presents several topics of information about the Castle Hill.

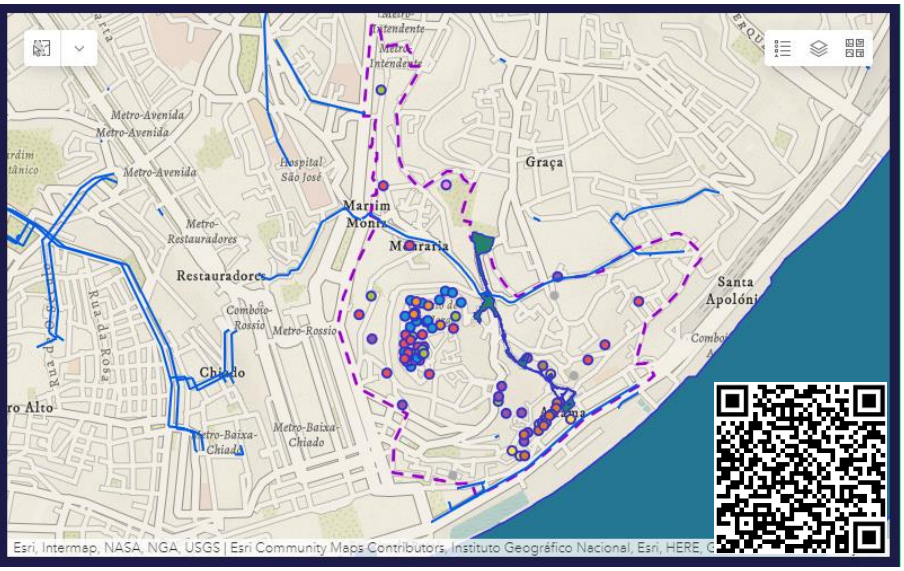
This data collection and mapping intents to be used in a creatively and innovative way to glimpse what could be the future of these 'invisible waters', in order to create awareness and enhance the access to this cultural heritage for those who live and visit Lisbon.

All contributing to increase the value of cultural heritage and, in particular, of historic water infrastructures of the 'invisible waters'.

Tejo

Aqui e além em Lisboa – quando vamos
Com pressa ou distraídos pelas ruas
Ao virar da esquina de súbito avistamos
Irisado o Tejo:
Então se tornam
Leve o nosso corpo e a alma alada
/Sophia de Mello Breyner Andresen
(1994), in Obra Poética, 2011

Lagos 14	Bebedouros 1
Poços 7	Chafariz 11
Reservatórios 7	Fontanários 24
Tanques 16	Fontes 1
Fonte de águas termais 12	



The built environment

Under an almost always blue sky, the light of Lisbon colors the roofs, streets, houses, windows and green corners in a variety of tones and colors, which have been chosen as motives for filming and photo sessions. Alongside the old part of the city, with a very rich heritage, Lisbon is also a modern city that has been renewed with new cultural and leisure proposals. Therefore, a city of history and culture, in constant movement, between streets and alleys rises from the river to the castle and follows the Tagus.

Images of Lisbon and Topographic plan of the ruined City of Lisbon and also according to the new alignment (João Pedro Ribeiro, 1949; Original engraving of Eugénio dos Santos e Carlos Mardel, 18th century) – Source: GEO - Gabinete de Estudos Olisiponenses

Even despite the enormous earthquake in 1755, that devastated the city, followed by a tsunami and later consumed by fires, the Castle Hill was the area that keep the urban design least changed. This continuity of the urban design, despite the catastrophe, since the Castle Hill area remained identical, is a characteristic that differentiates it from the rest of the city. There are still slightly traces of Roman influence in the urban structure, that tried to obey the rule of the regular grid cut by the cardo (a path that ran between the cardinal points North and South) and the *decumanus* (axis that intersected in the centre of the previous one, but in the East-West direction). However, the origin of the city determines its development, which in this case could not be much very flexible to impose this rule.

The reconstruction of the city had a strict urban planning, that apart from the main square, have privileged allotments of buildings mostly without private open areas and privileging the linearity of the streets, also not having much public space, apart from the surroundings of churches.

At that time, the king D. José I, would move to the downtown of the city and was followed by many of the bourgeois, inclusively to the Castel Hill. With the occupation of this area by people with greater economic wealth that required their own water source, it is believed what this led to the construction of more wells and cisterns.

More recently, the urbanisation of the last century has strongly modified the landscape, reducing the existing water resources. Fieldworks have demonstrated that important assets like wells and springs are being lost, since building owners are not seeing any advantages in keeping these infrastructures. As a consequence, the still existing infrastructures are being more and more abandoned or demolished and, with these, a set of practices and a cultural heritage of great value are being gradually lost. Currently, the vast majority of these

water resources are 'hidden', being its uses as well as the interaction between the urban environment and the water cycle lost over the last centuries and currently poorly understood. Most of these blue infrastructures, especially wells and cisterns, are located inside private buildings, which difficult the access and verification if these still exist. This makes even more evident the need for mapping and investigation to highlight the preservation of these invisible waters.

Being a city built on hills, from the various viewpoints, installed at the highest points, it is possible to enjoy stunning views. Highlights include the *S. Jorge* Castle, from where it's possible to see the ships on their crossing to the south bank, the *25 de Abril* bridge, squares, convents green parks, among other points in the city.

In the Castle Hill area the public space is reduced, since this was a consolidated and dense area of buildings. The existing open areas nowadays were forced, during the last centuries, several demolitions have occurred and that was the only way to increase public space.

In the sixties, there was a "Castle Hill Beautification Commission" whose purpose was to install fountains all over the Castle Hill area, using elements recovered from the 17th century, previous to the earthquake that destroyed the city. Despite this recreation tried to be realistic, especially in the locations, these water elements were already supplied by tap water, not making use of the local ground waters. Apart from the difference in historical and heritage value and also from the main purpose of beautify the city, these elements were also important, since they bring and reinforce the symbolism of running water in the city, reminding the moors traditions and presence of running water in the courtyards, gardens and oasis.

Environmental and Climate conditions

The existence of the Tagus River and its rich estuary, the Monsanto Forest Park and the proximity to the sea are also decisive for the city's climate and environmental conditions.

The presence of the Tagus River accompanies us throughout the visit, as we discover the riverfront, its port area, and the streets full of the history of its people and the most notable events that shaped the "face" of this city.

The City of Lisbon is tackling specific challenges to become more water wise, focusing on the distance from freshwater sources, the need to increase urban green areas, climate change, growing population and economy.

There is a detail plan for the Castle Hill which is under development and the Municipal Master Plan provides some insights on this topic with several thematic maps with information related to the environmental risks and conditions.

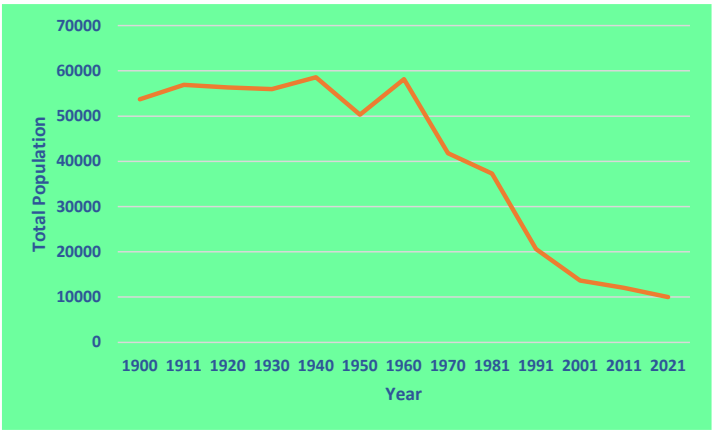
Analysing the information already mapped, there is to highlight that the Castle Hill area is short in terms of ecological structure, apart from the specific area inside the Castle. In terms of heat island, the granularity is coarse, but even so it is important to highlight the potential of high intensity of heat island, apart from the castle itself. Since this area is a hill, the surroundings, the bottom of the slopes have high vulnerability to floods. Finally, this is also an area of high seismic risk, since the geological fault of Lisbon it's located in this area.

More information can be found in the GIS Web platform of Lisbon (https://websig.cm-lisboa.pt/).

Local Community

Social demographic and economic profile

During centuries, the population was mainly composed by stevedores, fishermen and fishmongers. However, due to economic reasons, it has changed significantly over the last decades. Historically, its population came from an important rural exodus during the middle of the last century. This rural origin is clearly embodied in a particular way of life, characterized by strong neighbourly relations and a sense of solidarity, reproducing the practices of the population origins. Mostly, between the end of the 70's and the early 90's, the district went through difficulties related to lack of employment and to consumption and sale of drugs, which explains the current generational gap. Nowadays, it is well reflected the aging population that remains in the neighbourhood, maintaining active commercial establishments, such as *tascas*, small restaurants and *fado* houses.



The population in this area has been in decline since then. After the 60's, the development of other neighbourhoods in Lisbon and its surroundings, offering better life quality and lower costs, started to become appealing to the population that, at the time, lived mainly in this area.

Currently, the refurbishment policy moved to the forefront of priorities and significant improvements are being made. However, despite the boost of this activity, some considerable challenges have risen during the last years. Since then, houses with higher architectural value attracted new lifestyles, changing the social economic profile. The Castle Hill area has become more expensive, attracting new residents, mostly from high and upper middle classes. In practice, mirroring many other cities, it has conducted the district to a "gentrification" process. Throughout its history, the concept of gentrification has been studied mainly in relation to the built environment in general, mainly households and dwellings. However, in this specific case, the gentrification is quite particular and part of the urban context of Alfama: it combines zones in full revitalization alongside with others in decline, with highly important public infrastructures, both from social and cultural perspectives.

The real estate speculation, mostly linked to the tourism activities, is currently contributing to desertification. In fact, in recent years, there has been a considerable shift from what local housing practices were - housing rental - to new business models – based mostly on local housing and Airbnb.

Stura Riverpond, Turin

Landscape

Turin has an extraordinary heritage of green infrastructure, made up of rivers, parks, hills and vegetable gardens that shape the identity of the city and the quality of living in the city; in particular, it has an urban green system that is extensive, widespread and very diversified, capable of satisfying the needs of citizens and capable of producing ecosystem services that provide important community benefits. 37% of the city's surface area, corresponding to approximately 48 km2, consists of public and private green areas with over 55 m2 of green space per inhabitant. Of these 48 km2 of green surface, 36% is classified as green space for recreational, social and sporting activities and over 90% of the population manages to achieve one within 5 minutes walk from their home, an enviable standard compared to many European cities.

The area of confluence between the Po River and the Stura di Lanzo stream is characterized by the presence of a flat sector that is wedged between the incisions of the two waterways. The sector in question is located at an altitude of approximately 212-

210 meters above sea level and is separated by an escarpment with a height of approximately 10 m (along which Corso Botticelli is approximately located) from a surface at a higher altitude (about 220 meters above sea level) on which another urbanized area is located, that of Piazza Sofia.

On the banks of the Stura there are some of the few remaining portions of the lowland forest that grew along the stream before the environmental changes linked to the anthropization of the area greatly limited its extension. The various wetlands that dot the area host marsh ecosystems that have also become rather rare in the surrounding area; among the characteristic plant species we can mention those belonging to the Cyperus, Carex, Potamogeton and Typha genera. Also interesting is the presence of a very rare fern in Piedmont, Matteuccia struthiopteris. The stream is also home to various animal species including the now very rare freshwater crayfish. More than one hundred different species of birds have also been reported in the area, including birds of prey such as the buzzard and osprey and aquatic birds such as the wild goose and coot. It is in fact an important spot for activities such as bird watching.

The built environment

The whole park is mostly defined as a public space. Anyway, there are some locations that belongs to privates, such as the territory where the iconic tower lies, in the middle of Arrivore Park (the so called “Torre del Rivore”). The construction, abandoned for decades, was the main building of the gravel and sand excavation complex used to build many buildings in Turin after the Second World War.

The following image shows the properties typology. In green the ones that belong to the Municipality, in red the ones that are still private. As it is possible to understand, most of the territory is owned by the city’s administration. Of the considered area, it is important to underline that the built environment is almost nil,

and that the majority of the area of interest is composed by the park itself, with its stream, forest and pathways that cross it all along its entire length.

Close to the water pond, located in the south-east part of the considered area, there is a public pic-nic spot, with wooden benches and tables, that could be one of the landmarks when starting with the implementation of the project. Not far from it there is a children's playground, managed by the Municipality as well.

Environmental and Climate conditions

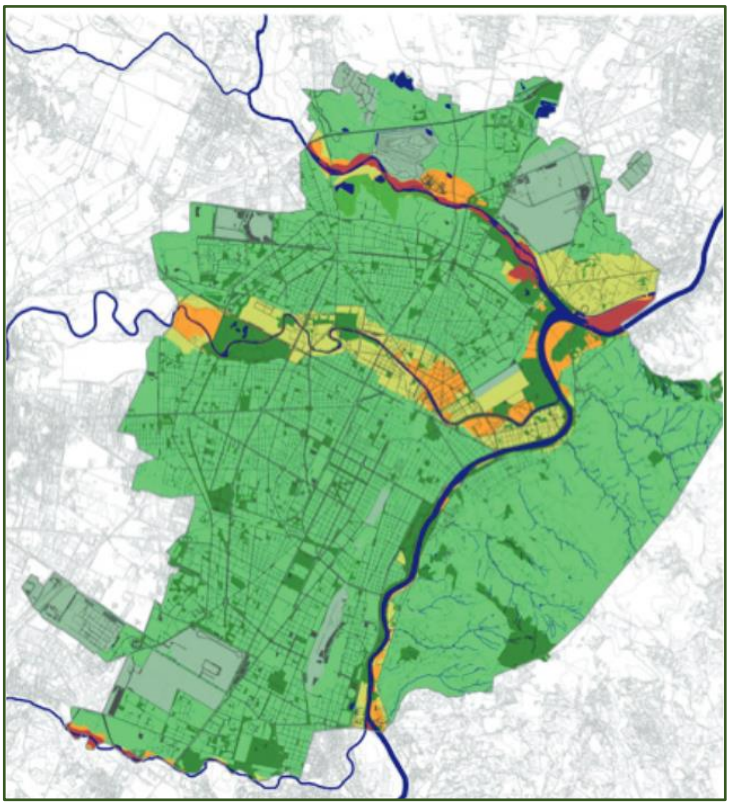
The plain stretch of the basin, relating to the river region between Lanzo Torinese and the confluence with the Po river, up to the urban area of Turin, is characterized by a settlement structure located at a certain distance from the river, in close relation to the strongly torrential character of the watercourse, characterized by notable autumn and spring floods and by a riverbed that is less affected than the surrounding territories, significantly disturbed by activities extraction carried out in the past directly in the riverbed. The territory surrounding the river region, in the most upstream part, still has characteristics partially connected to the agricultural use of the land, with a fair number of rural nuclei and complexes within it, while downstream, up to the gates of the city, these characteristics appear to be partly compromised by ongoing environmental degradation phenomena.

Downstream from the town of Venaria Reale, up to the confluence with the river Po in Turin, the river region is characterized by the presence of vast areas in an advanced state of hydrogeological instability and a high degree of water pollution, but also by a widespread presence of environmental detractors (municipal landfill of solid urban waste, industrial waste incinerator, small activities such as car wreckers, urban gardens, unauthorized landfills, etc.), often close to built-up areas.

In the river basin the long-term average rainfall varies from 900 mm/year in the plains to 1,400 mm/year. The terminal section upstream and in correspondence with the urban crossing of Turin shows greater problems connected, in addition to the previously mentioned instability phenomena, also to potential flooding which, although limited, affects settlements and a fairly complex infrastructural system; this condition of risk of flooding also remains in the urban crossing section, where the phenomena of morphological instability are modest, due to the high degree of artificialization of the riverbed.

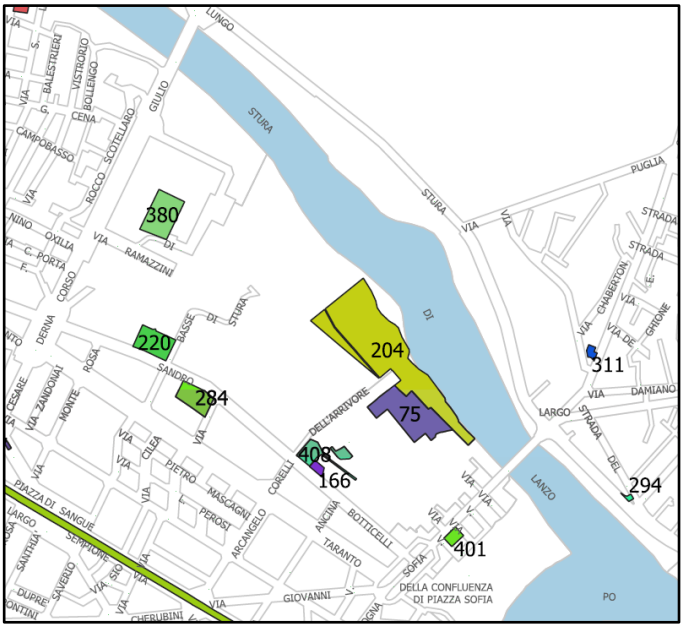
Since Turin is crossed by 4 important waterways (Po, Dora Riparia, Stura and Sangone), the city area is vulnerable to the risk of flooding. The definition of floodable areas in Italy (and therefore also in Turin) is based on the indications given by the Directive Floods 2007/60/EC, which determines a methodological framework for the assessment and management of flood risk, providing for the mapping of the hazard for risk determination among the phases of activity. In Turin, an area of approximately 35 km2 is affected by the risk of flooding, in particular:

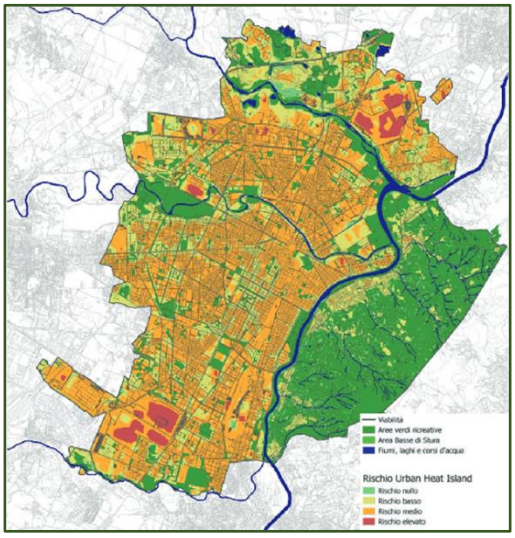
- 60% of this surface falls in an area with a low risk of flooding, for a total of 21 km^2.
- 29% fall in an area with a medium risk of flooding, for a total of 10 km^2.
- 11% falls in an area with a high risk of flooding, for a total of 4 km^2.



The analysis of rainfall data carried out by Arpa Piemonte has highlighted an increase in the frequency of days with intense rainfall and a trend towards an increase in the phenomenon is expected in the coming decades, which could aggravate the hydraulic and hydrogeological risk problems already present in the Turin area.

At an infrastructural level, there is a work of fundamental importance already ongoing, such as the new median collector (a 14 km work in the Turin area, valuable for the city and for 20 metropolitan municipalities located in the south, and which is part of the Area Investment Plan), which has as its main aim precisely that of disposing of the high hydraulic overload, especially in municipalities with a mixed network, caused by climatic variations with a notable increase of mixed waters and first rain. This intervention, managed by SMAT (Turin Metropolitan Water Company), will dig all around the waterpond and the stream Stura during the following years (number 166 of the image). Among the main aspects that is fundamental to take into account when defining the Arrivore Park, there are in fact the procedures of quenching and tempering that are undergoing since the first years of the 21st century. Core drilling analysis showed that the soil of many parts of the area are deeply polluted. This is important because the biodiversity of the place must be correlated with this problematic factor, thus it is important to understand whether the area has suffered biodiversity loss over time.



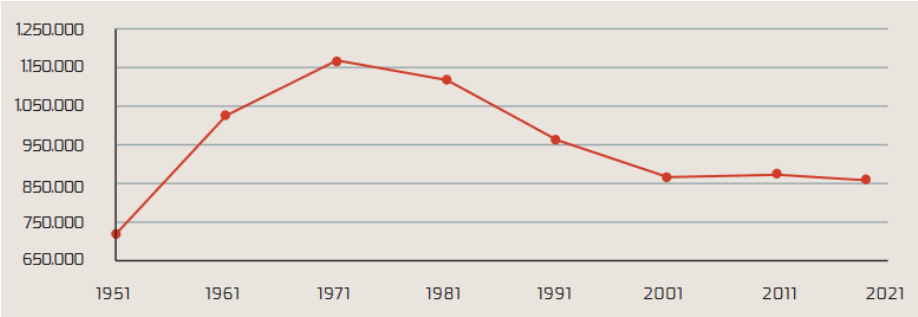


Moreover, since there is the presence of the Terna SPA (the largest independent electricity transmission network operator in Europe), the Regional Environmental Protection Agency noticed the possibility of electromagnetic pollution when getting closer to the electric pylons located in the middle of the park.

Finally, as it is possible to notice from the image on the left, the area of Stura stream near the confluence with Po River, one of the main climate change risks of Torino, the heat island, is mostly non-existent. This should be assessed as an attractive factor both for the population living in the surroundings and for those who live in the city centre.

Local Community

Social demographic and economic profile



Data show how the city of Torino is decreasing in population. The trend, that started after the de-industrialization, is going on still today. Anyway, most of the neighbourhoods that are affected by this phenomenon are located in the south area of the city. For what concern the project, Arrivore Park lies in the middle of three different northern neighbourhoods of Torino, located in the north. Close to the Barriera di Milano neighbourhood, the sum of the population located in Regio Parco, Barriera di Stura/Rebaudengo, Barca/Bertolla/Abbadia di Stura reach roughly 30.000 inhabitants. It is around 3.5% of the whole population of Torino (840.000, 2022).

All the neighbourhoods are part of VI District, one of the eight districts of Torino. Its territory covers an area of 22 square km; it develops in the northern area and is the largest and most populous in the city (106,578 inhabitants as of 2009). Over the last hundred years, it has undergone many transformations: from the first immigration of the twentieth century to industrialization and subsequent deindustrialization, up to the current urban regeneration project Barriera C'entro. This urban project, with the route of Line 2 of the Metro and the transformation of approximately one million square meters of abandoned areas into new buildings and green spaces, will change the face of the entire northern area (Spina 4, Sempione-Gottardo, Scalo Vanchiglia). The district is made up of neighborhoods that are very different from each other in terms of history, typology and historical-cultural characteristics.

For decades, the northern part of the city, where the pilot project is taking place, has been a region where most of migrants from all over the world would find their home. It is, in this sense, very rich in terms of multiculturalism. Also, Barriera di Milano is the youngest neighbourhood of the whole city. Even if it does not directly touch the pilot area, it is close enough to be taken into account.

From an economic point of view, there are different vocations when looking at the Arrivore Park: southern-east area is mostly residential, while in the northern-west area industrial plants and quarries are the main operators. It is thus very much polarized, but it must be assessed that it is not a rich area in terms of wealth per capita. The main actors are IVECO (Industrial Vehicles Corporation), that designs and builds light, medium and heavy commercial vehicles, quarry/construction site vehicles, city and intercity buses and special vehicles for applications such as firefighting, off-road missions, defense and civil protection. It possesses a very large plant on the left side of Stura di Lanzo that divides with the FPT Industrial, a multinational designer and manufacturer of transmissions, axles, diesel and petrol engines. Other notable companies include Cartier and many cars dealership, so that this area od Torino can still be considered to have an automotive vocation.

Moving to the south-eastern area, the population lives mostly in public housing. Being a peripherical and residential area, the economic fabric is made up almost exclusively of supermarkets.

Compared to Barriera di Milano, Regio Parco does not have an equally structured associative fabric. Still, non-profit organizations work in different fields to empower vulnerable groups, mainly made up of migrants and low-income people. Some of them, anyway, with an artistic and creative goal, such as Progetto S.L.I.P. and Scuole Tecniche San Carlo.

Among the most important projects and plans that have been designed by the Municipality of Torino, the Metropolitan City (which comprises the first belt outside of the City Administration) and the Piemonte Region, and that have a direct impact on the area of interest, the area:

- Climate action plan – Reforestation and renaturation programs:
    - Urban and peri-urban forest in metropolitan Cities – City of Turin + Metropolitan City [+10.000 trees, 2022]
    - Multifunctional redevelopment of the park for the enhancement of green ecosystem services in urban areas. Pilot Area of the regional project “Urban Forestry” - City of Turin + Region of Piedmont [2021]
- River contract of the basin of the Stura di Lanzo stream – Metropolitan City + Region of Piedmont [October 2021].
- Basse di Stura plan – with Recovery Funds, reclamation of AMIAT landfill area.
- Climate resilience plan [2020].
- Idropolitan manifold - SMAT [140m €].
- Arrivore LabPark - Administration, non-profit organisations (together with Urban Lab) and Polytechnic of Torino.

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