

Building With Water. Mapping Portugal's port cities and water heritage An invitation

Carola Hein, UNESCO Chair Water, Ports and Historic Cities, Leiden-Delft-Erasmus universities





Building with Water. Mapping Portugal's port cities and water heritage

- Mapping Matters!
- Building with Water: Connecting the Dots...
- World Inventory + Urban Heritage Atlas+ World Heritage Canopy

Examples from Paris and Amsterdam

A call for Mapping Portugal's port cities and water heritage

- Building Bridges for Resilient Communities and Protection of World Heritage

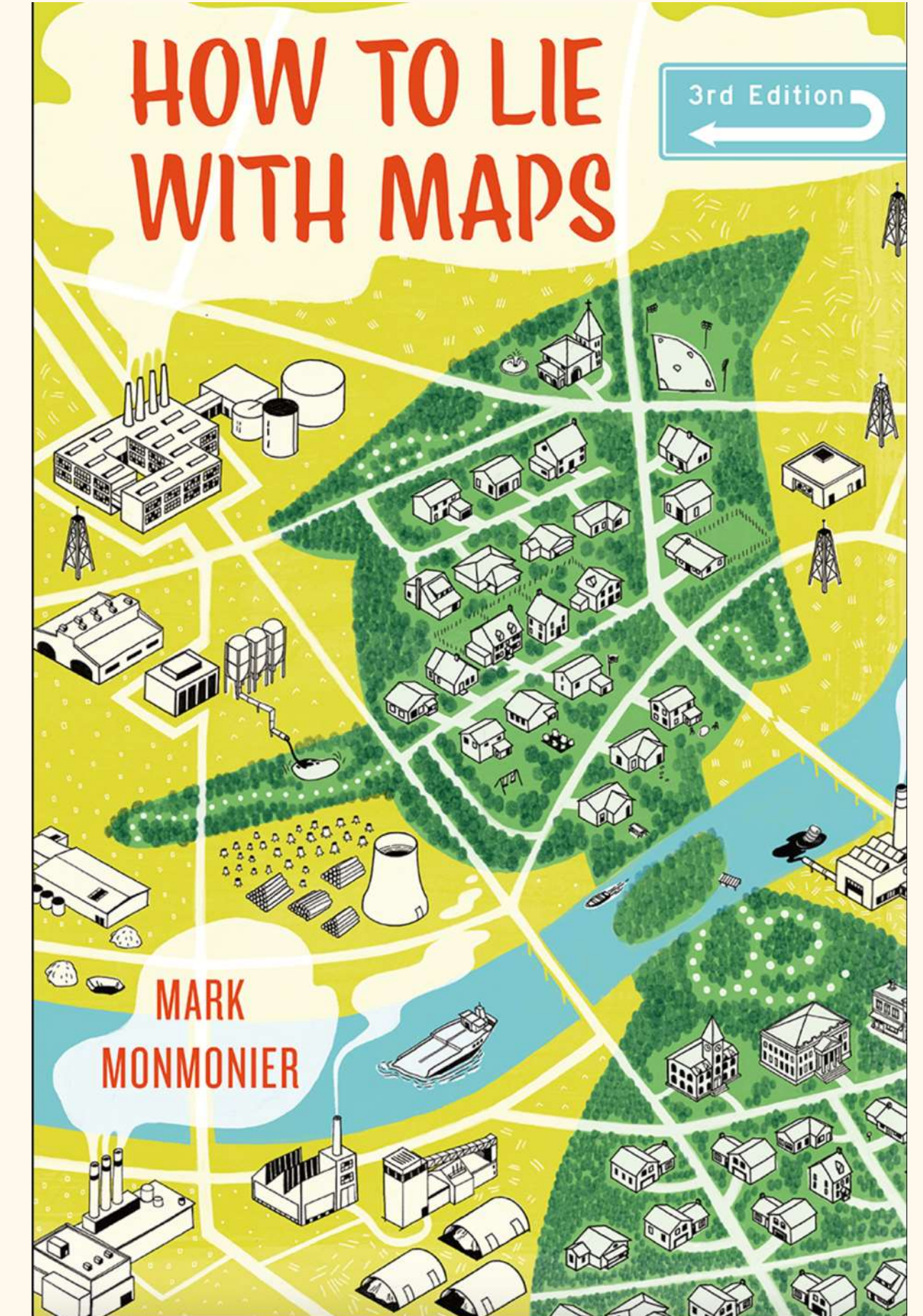
Mapping as Gap-Finder: Geddes, Tyrwhitt, and the Comparative Spatial Analysis of Port City Regions

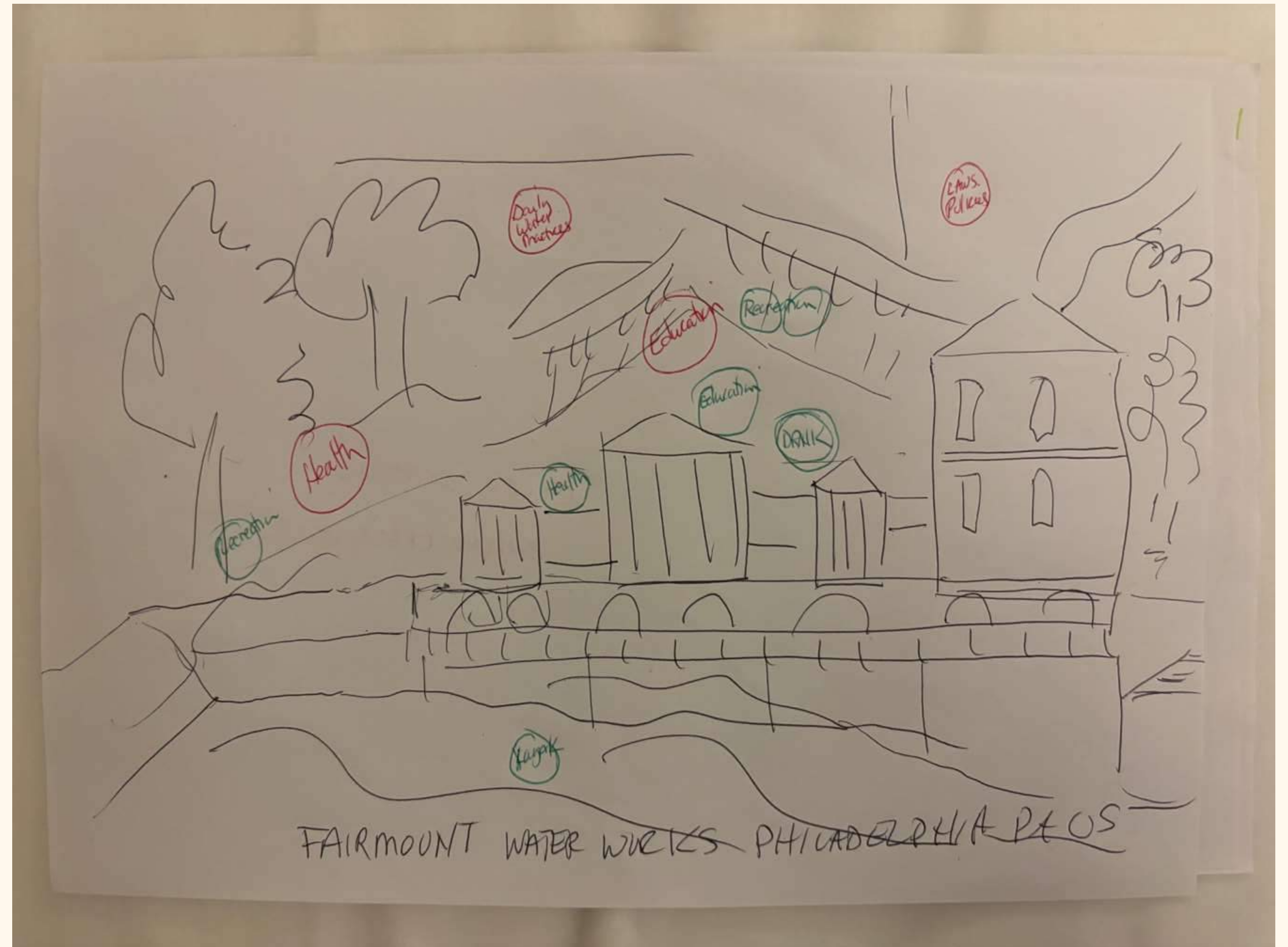
June 2020 · *Urban Planning* 5(2):152

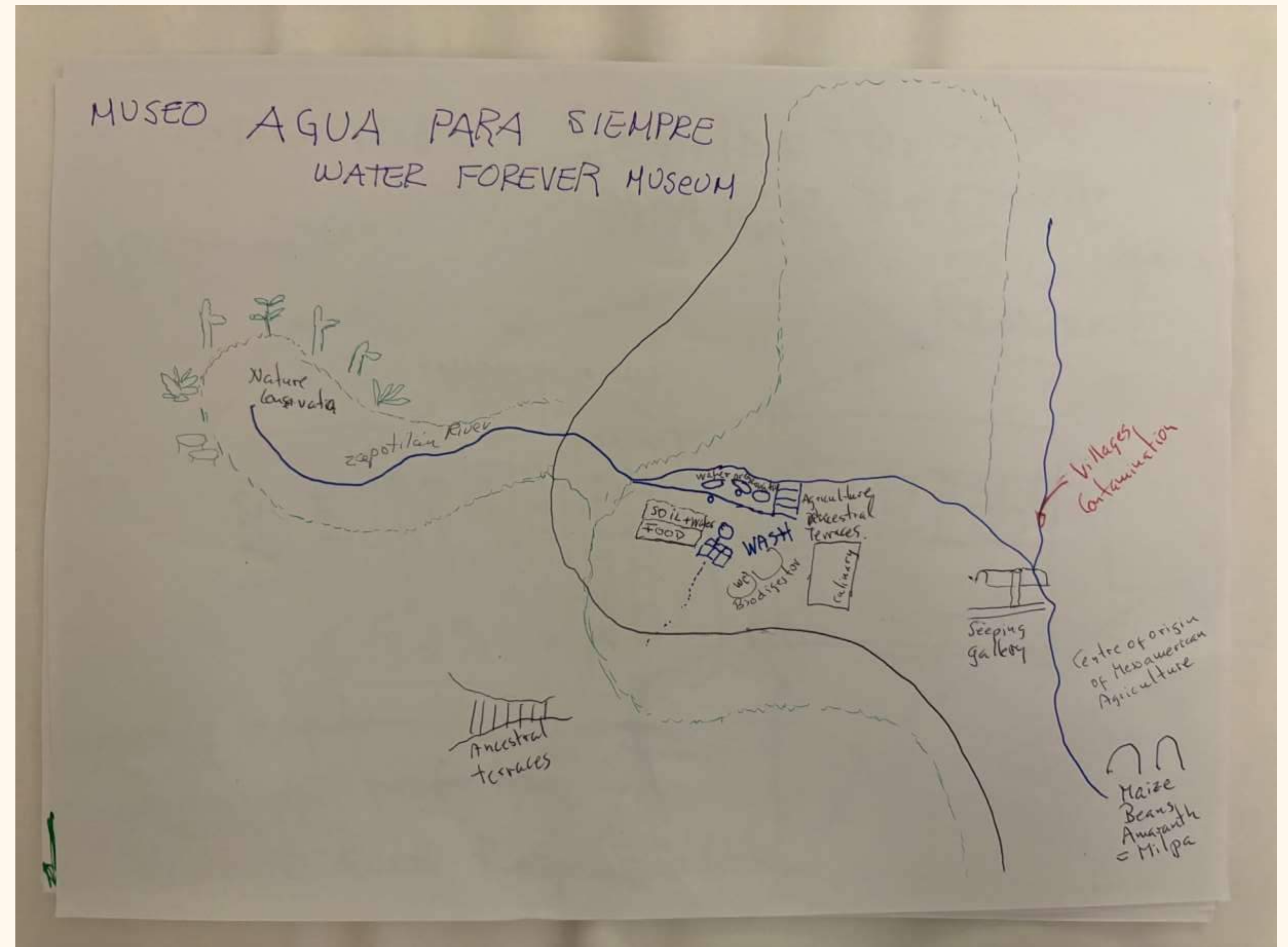
DOI: [10.17645/up.v5i2.2803](https://doi.org/10.17645/up.v5i2.2803)

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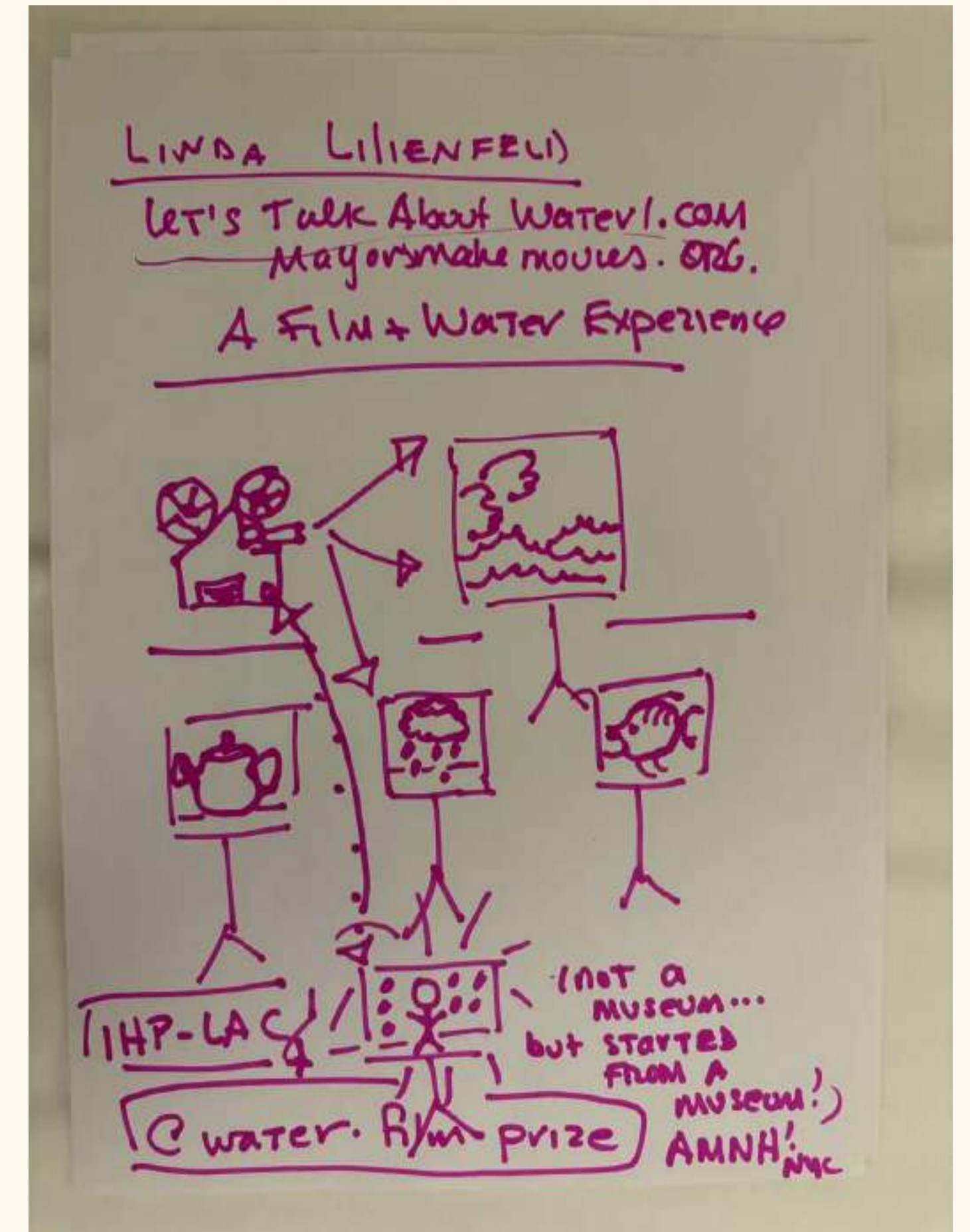
Carola Hein · Yvonne van Mil



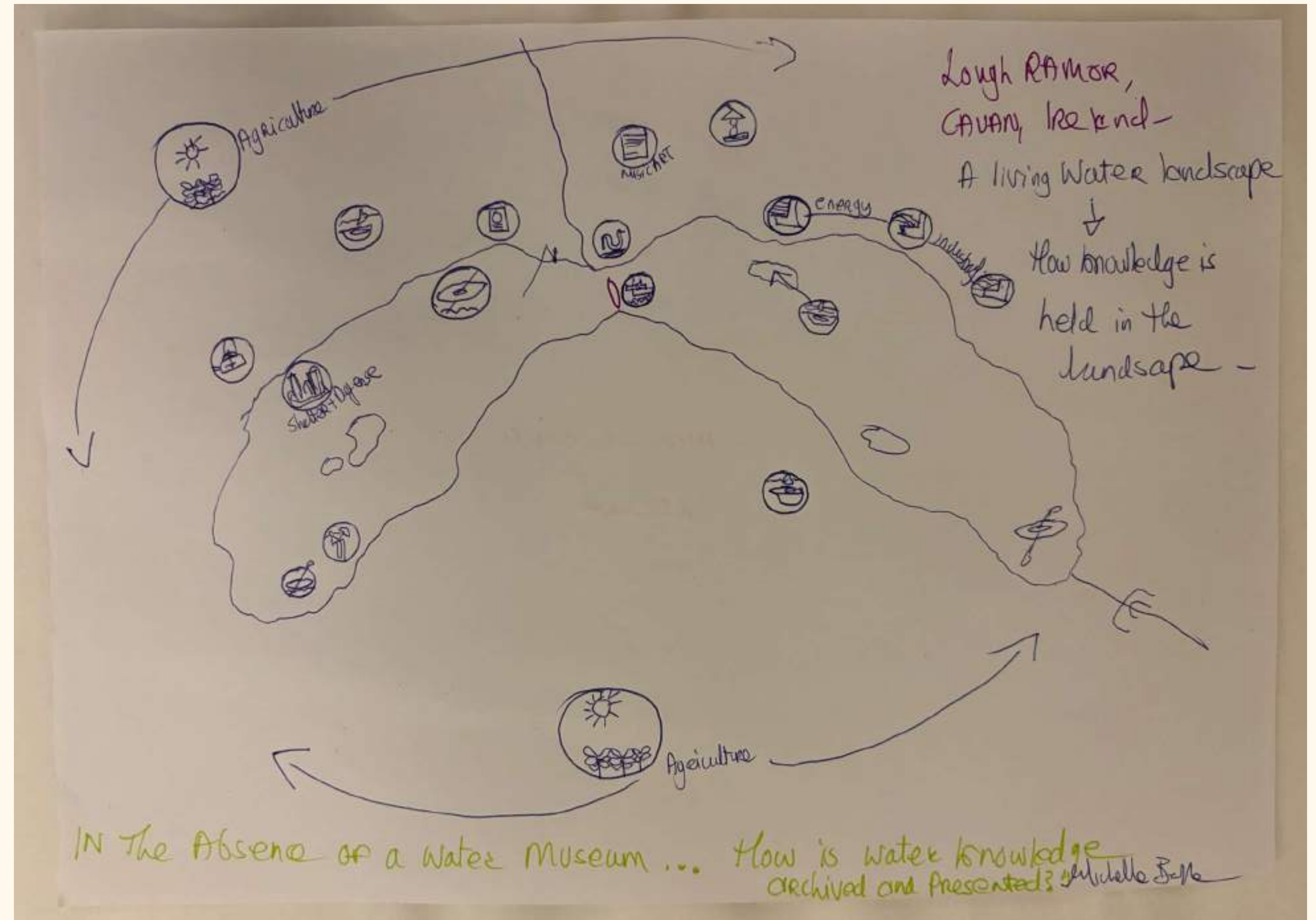




Mapping Workshop Wamunet 2024



Mapping Workshop Wamunet 2024



The goal of the World Inventory of water museums, interpretation centres, ecomuseums, and extended museums is to **collect new data and information** on the main features, collections (physical and digital), and activities of museums and institutions worldwide.

A **practical Toolkit** has been designed to facilitate a 2-step implementation process of the World Inventory at regional and national level, which is as follows:

1 – identification of relevant water-related museums, information centres, and cultural landscapes by means of a specific taxonomy (1st step), and

2 – compilation of additional information on existing institutions as regards their collections, management structures, activities, and projects through a questionnaire (2nd step).

The Toolkit will enable National IHP Committees, universities, and research centres to produce inventories at regional and national levels.



WATER MUSEUMS
GLOBAL NETWORK

unesco
Intergovernmental
Hydrological Programme

NETHERLANDS NATIONAL
IHP-HWRP COMMITTEE

**TOWARDS A WORLD INVENTORY
OF WATER MUSEUMS**

A CALL INVOLVING NATIONAL IHP COMMITTEES AND TRANSDISCIPLINARY
POOLS OF EXPERTS TO IDENTIFY WATER MUSEUMS, INTERPRETATION
CENTRES, ECO-MUSEUMS, EXTENDED MUSEUMS, WATER LEGACIES,
AND WATERSCAPES WORLDWIDE

Resolution n. XXIV-7 of the Intergovernmental Council of UNESCO-IHP
titled "UNESCO-IHP in support of developing
the Global Network of Water Museums (WAMU-NET)"

DOWNLOAD THE TOOLKIT FOR THE TWO-STEP IMPLEMENTATION @

<https://www.watermuseums.net/world-inventory/>



Blue Papers
2023 (Vol. 2 No. 1), 112-123
10.58981/bluepapers.2023.1.11

Toward a World Inventory of Water-Related Museums, Heritage Assets and Values to Promote Sustainability Education

Eriberto Eulisse
Global Network of Water Museums

Two resolutions of UNESCO-IHP (2018 and 2021) have highlighted the importance of fostering water sustainability education through networked water museums and developing a world inventory (WIN) of these institutions. To achieve this goal, the Global Network of Water Museums has developed a methodology to initiate a worldwide census of water museums, interpretation centers and water-related heritage values. The benefits of adopting a common methodology are clear. By using a transnational toolkit it will be possible to highlight the large variety of valuable aquatic heritages and the paradigmatic models of human coexistence with water environments worldwide. All institutions involved in implementing the WIN at the regional and national level will be empowered to communicate and target the SDGs and provide inspiration through the use of holistic approaches and good practices inherited from our "watery past" to better plan future resilience.



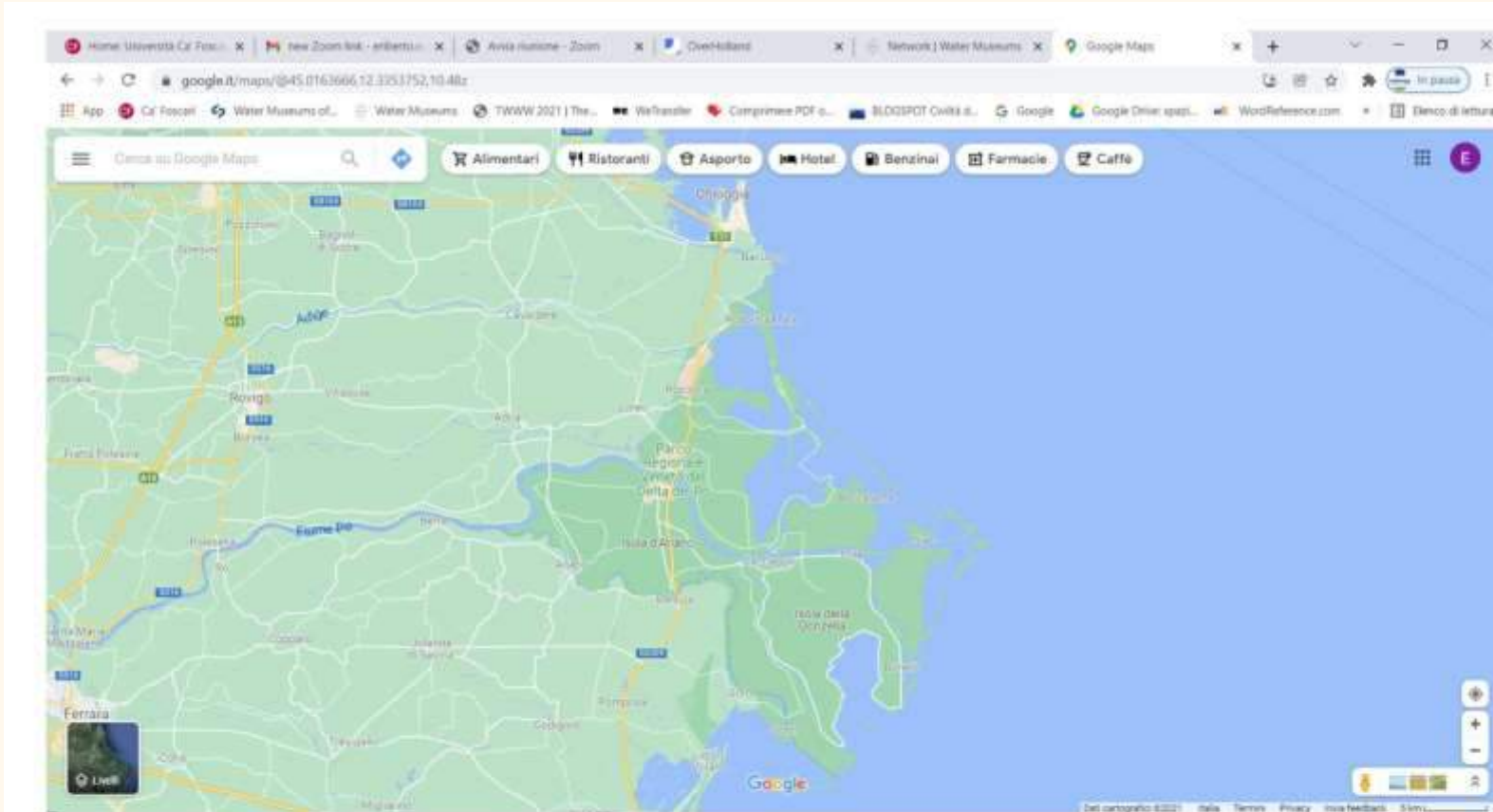
KEY THEMES



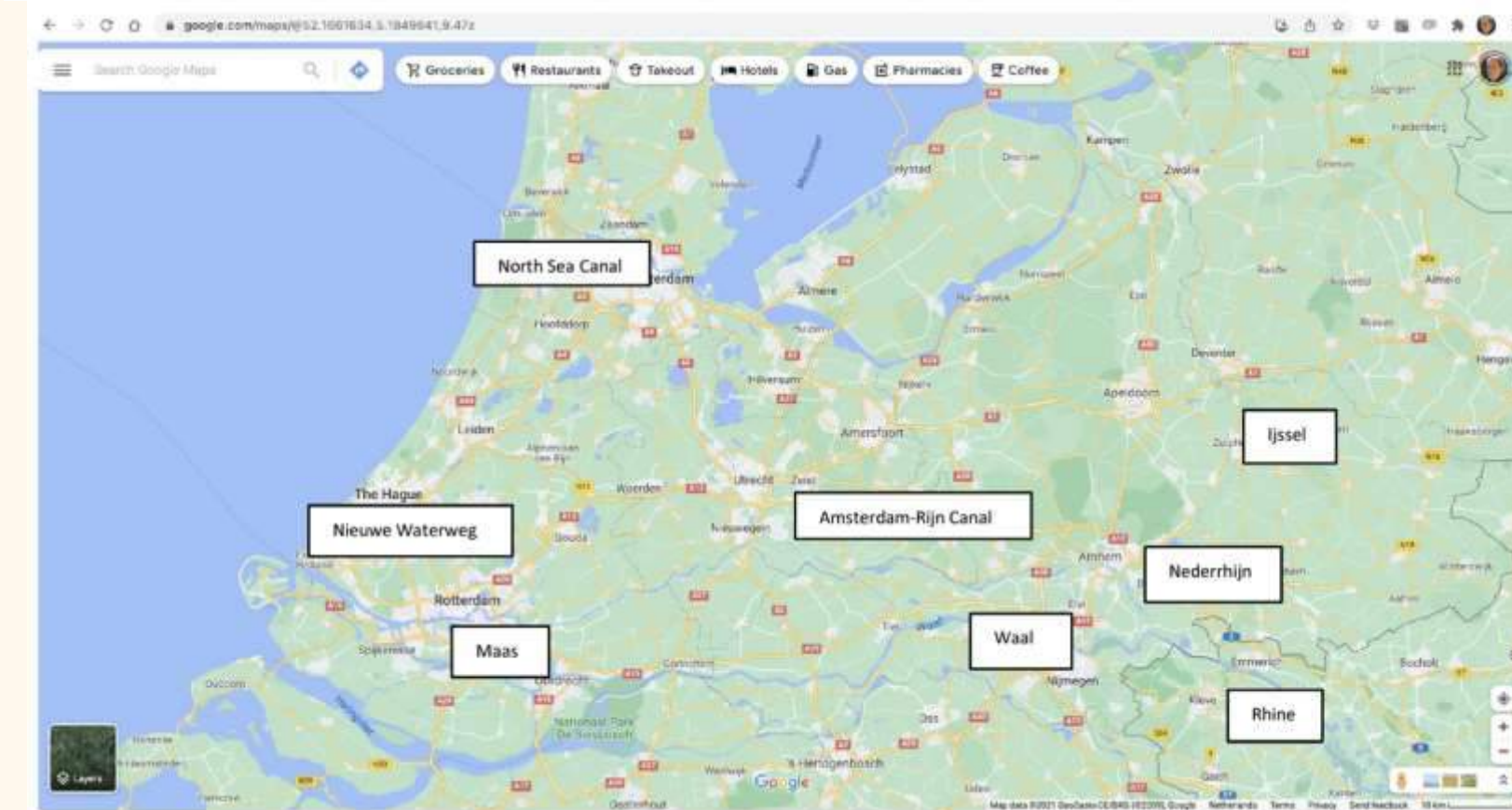
APPLICATION OF THE TAXONOMY TO THE RHIN DELTA AREA (NL)

Museum/Site Name + short caption (max 40 words)	Type	Description (max 100 words)	Sources
1. Aquarama An educational and interactive water exhibition where you come into contact with many different aspects of water	1. MUCD 2. IDEM 3. CLAS 4. AHCC 5. INLW 6. SASD	<i>Aquarama is a water exhibit where one can discover a wide variety of aspects about water, including sewage, wastewater treatment and water safety. The exhibition also addresses the cultural-historical heritage by highlighting the importance of water in the context of the Drecht cities (Drechtsteden), a number of cities bordering each other in the Dutch delta.</i>	https://www.watermuseum.nl/aquarama
2. Biesbosch Museum eiland The history of how the Netherlands has dealt with water over the centuries	1. MUCD 2. IDEM 3. CLAS 4. AHCC 5. INLW 6. SASD	<i>This museum is located in the heart of the Biesbosch, one of the last extensive freshwater tidal wetlands in Northwestern Europe. It provides information on how the Netherlands has struggled with water as well as exploited its opportunities over the centuries. In the permanent exhibition visitors discover how the freshwater tidal area was created after the Saint Elisabeth flood of 1421. The exhibition discusses nature, the inhabitants, their economic activity, and their crafts.</i>	https://biesboschmuseum.nl/
3. Broekerveiling Water Museum The first and last sail-through vegetable auction in the world	1. MUCD 2. IDEM 3. CLAS 4. AHCC 5. INLW 6. SASD	<i>The Broekerveiling Water Museum showcases the story of an area that was once made up of over 25,000 islands in North Holland. The first and last sail-through vegetable auction house in the world was located among these islands. In 1973, it became a museum, where both this unique auction method, as well as the horticultural practices of the last century in the region are exhibited.</i>	https://broekerveiling.nl/en
4. Haarlemmermeer Museum de Cruquius The museum that tells the story about the history and development of the Haarlemmermeer	1. MUCD 2. IDEM 3. CLAS 4. AHCC 5. INLW 6. SASD	<i>The Haarlemmermeer, a municipality in a polder reclaimed from an area of lakes, had a unique and productive function for cities such as Leiden, Haarlem and other large cities between the 17th and early 19th century. The risk of flooding outweighed the gains from the water, and in 1836 the decision was taken to start reclamation of the area. This museum tells the story of the Haarlemmermeer land reclamation works.</i>	https://www.haarlemmermeermuseum.nl/en
5. Koele Wateren An exhibition of paintings featuring water in the Gouda Museum	1. MUCD 2. IDEM 3. CLAS 4. AHCC 5. INLW 6. SASD	<i>In the Cool Waters (Koele Wateren) exhibition, 38 paintings are on display that have water as the main theme. This selection of 4 centuries of art includes works by great artists such as Jan van Goyen, Hendrik Willem Mesdag and Isaac Israels. In addition to showing how water has been a friend and enemy in the Netherlands, the aim of the exhibition is also to create awareness for the rise in sea level, by means of a short film.</i>	https://www.museumgouda.nl/nl/ruimte-zien/tenkoonste-lijnen/34/koele-wateren
6. Maas Binnenvaartmuseum Exhibition about the largest inland port in the Netherlands, which shows the history of inland and recreational shipping that took place via Maasbracht	1. MUCD 2. IDEM 3. CLAS 4. AHCC 5. INLW 6. SASD	<i>The Maas Inland Navigation Museum (Maas Binnenvaartmuseum), located along the Maasbracht harbour, aims to communicate the history and different aspects of Maasbracht's inland navigation in an educational way. One of the historical moments that the museum exhibits is the attack of September 30, 1944, which destroyed 240 ships in the harbor. Another theme is sand and gravel extraction, an important economic activity in the region, which has also acquired great cultural importance over the years.</i>	https://www.maasbinnenvaartmuseum.nl/

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The map shows the extension of the Italian case study "Po Delta", that is located immediately south of the Lagoon of Venice. The Po Delta considered here includes the dark green area and extends up to the cities of Rovigo, Chioggia, and Ferrara with their surrounding plains. The total area considered extends for approx. 1.000 square kilometers (in dark green: 400 square/km).




World Inventory of Water Museums, Interpretation Centres, Eco-museums, Extended Museums, and Water-related Cultural Landscape



Pilot case studies

The Italian case study: the Po Delta region

The Dutch case study: the Rhin Delta region



whc.unesco.org/en/activities/1211/&msg=login_success


unesco World Heritage Convention

UNESCO Urban Heritage Atlas

A tool for managing urban heritage


This is:

- An atlas of the World's historic cities and settlements
- A technical aid for implementing the 2011 HUL Recommendation
- A platform for cultural mapping and urban heritage
- A resource for education, capacity-building, and participation

 **unesco** World Heritage Convention


Atlas of historic cities and settlements

Browse:




Ancient Ksour of Ouadane, Chinguetti, Tichitt and Oualata, Mauritania
Africa, Arab States

[Read more](#)



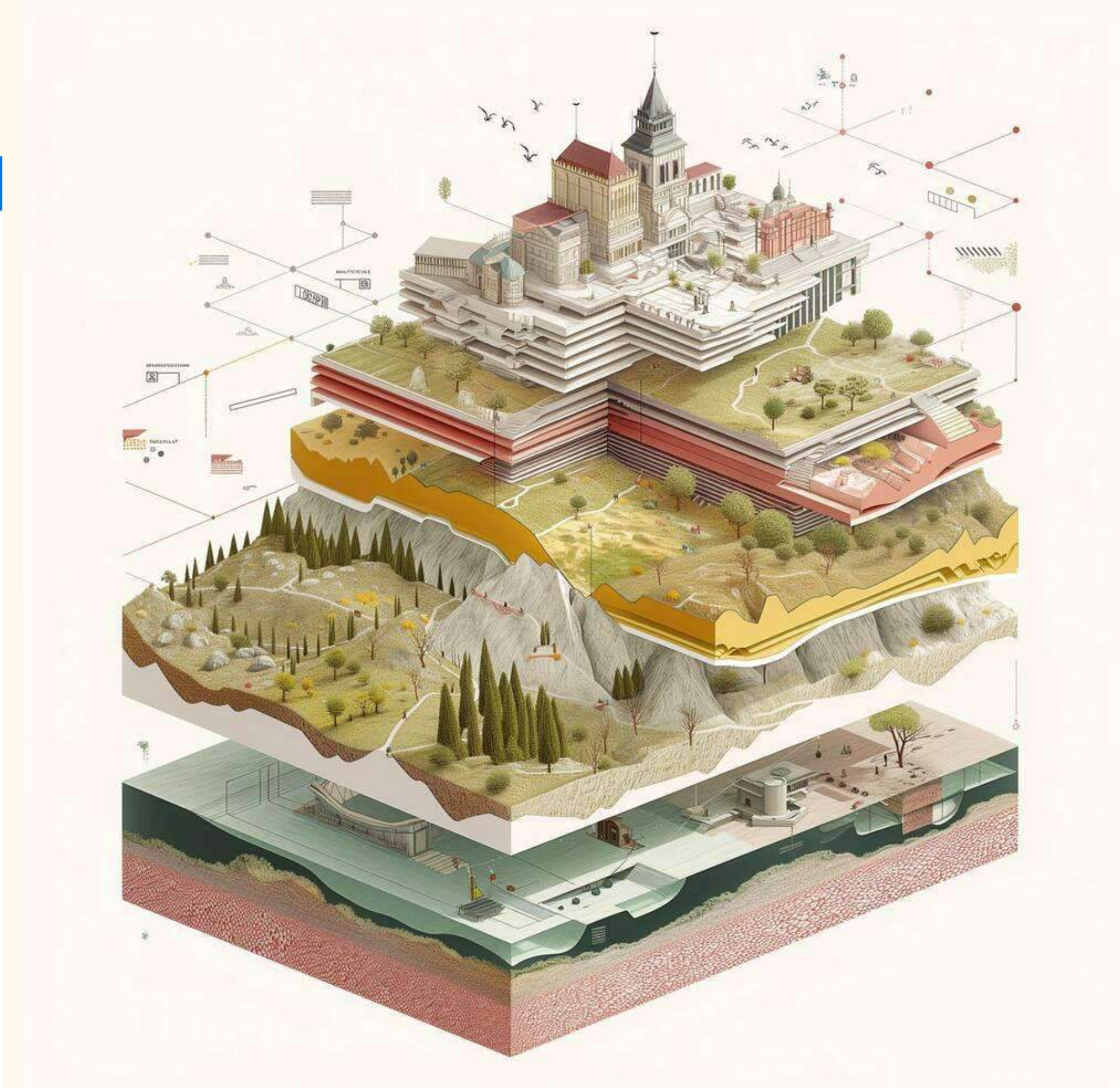
Asmara: A Modernist African City, Eritrea
Africa

[Read more](#)



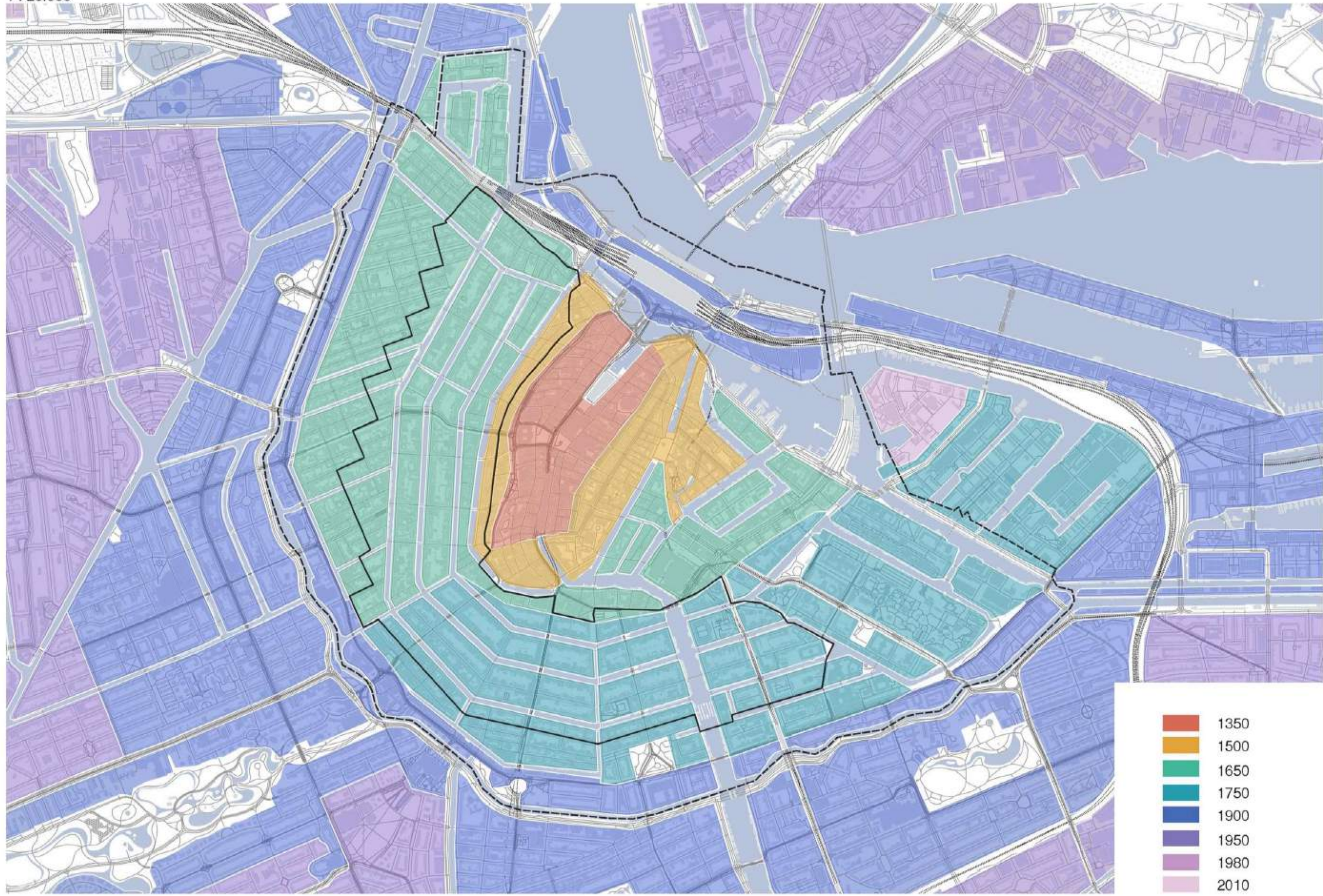
Historic Centre of Cordoba, Spain
Europe

[Read more](#)



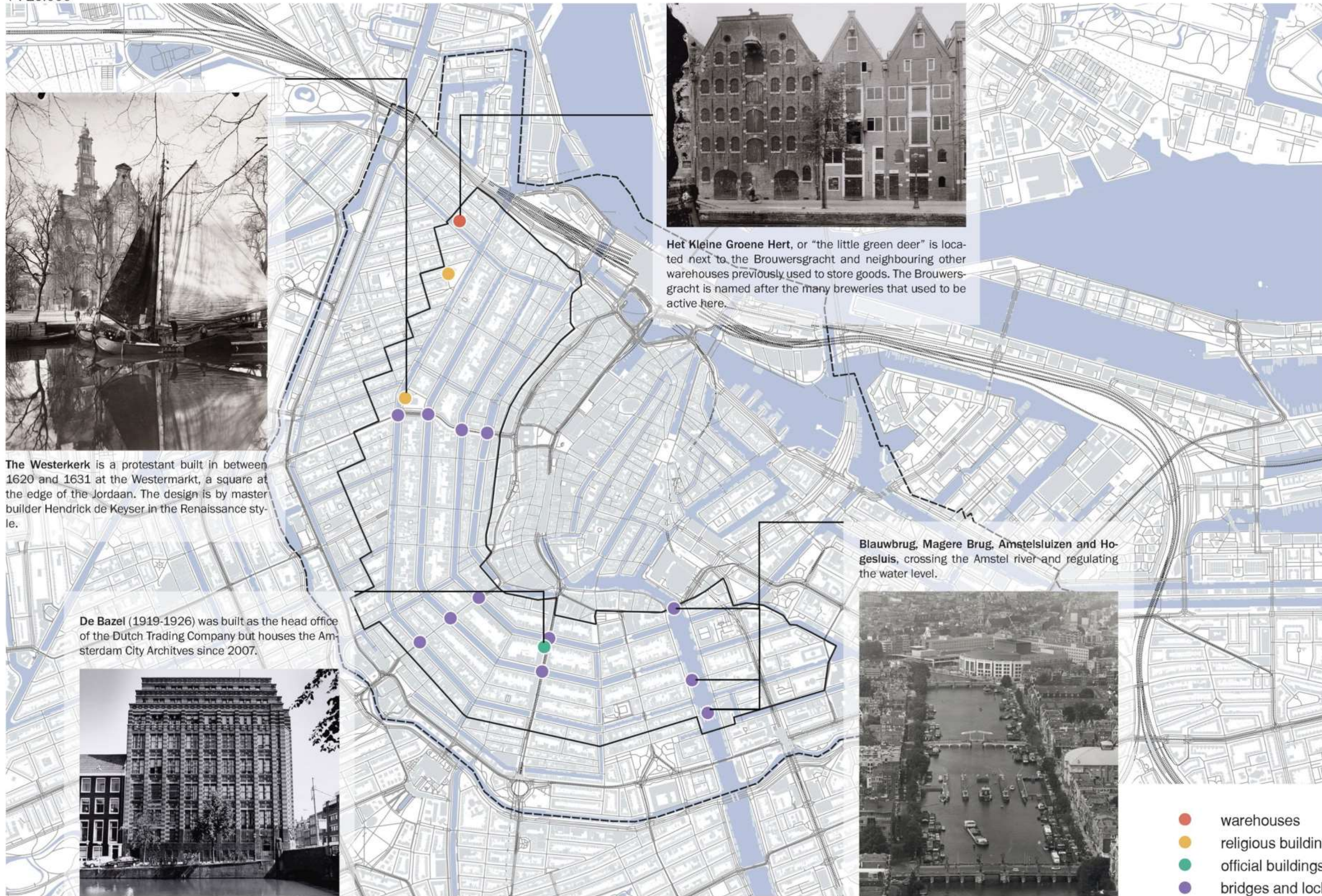
vi - AMS urban development

1 : 25.000



x - AMS architectural attributes

1 : 25,000



Source of the photo's: Amsterdam city archives



Blauwbrug: The Blauwbrug (1883) in Amsterdam is a fixed bridge in Amsterdam city centre. It connects Amstelstraat and Waterloo plein, spanning the Amstel River.

Future Contributions:

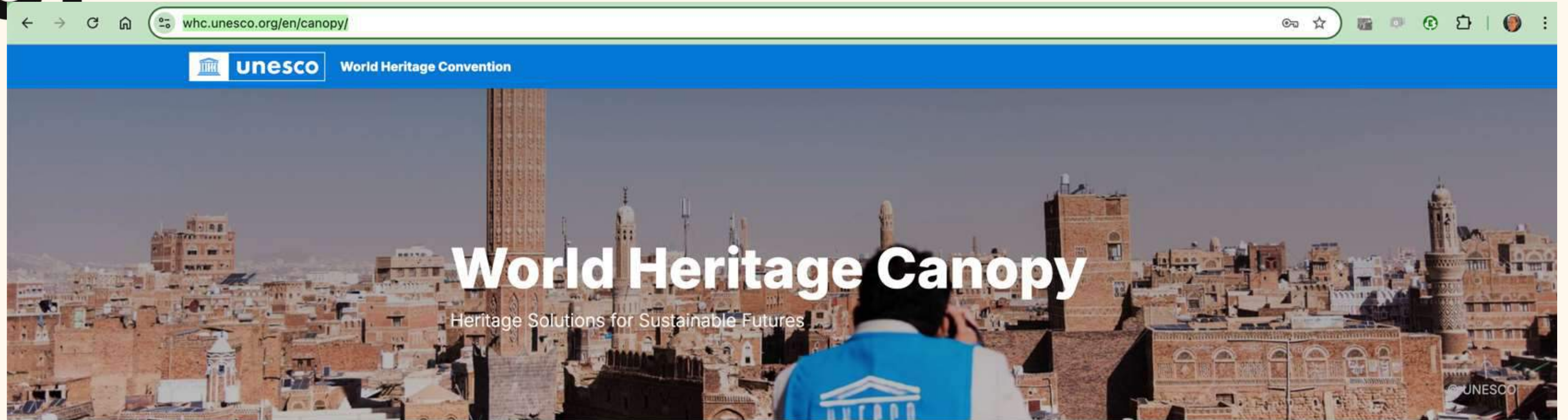
Paris

Nzulezu

We are looking for
contributions from
around the world.
c.m.hein@tudelft.nl



Lead: Yvonne van Mil, TU Delft





Promoting climate change adaptation and mitigation in Lamu Old Town (Kenya)

Lamu Old Town faces multiple threats from climate change, energy needs and rapid social and economic transformation. The Lamu Old town management plan and the Lamu Municipality Waste Management Policy focused on ...



Integrating cultural and natural heritage values in urban development processes in Lyon (France)

The 2019 urban plan aims to protect cultural and natural heritage values and their attributes through specific planning tools, such as green and blue infrastructure planning and the development of heritage ...



Building climate change resilience and adaptation of the Belize Barrier Reef Reserve System (Belize)

The Belize Barrier Reef Reserve System is facing multiple impacts of climate change such as coral bleaching, more severe storms, and rising sea levels. The Resilient Reefs Initiative is focused on building Belize's ...



Balancing development and conservation in Grand-Bassam (Côte d'Ivoire)

The inscription of the Historic Town of Grand-Bassam on the World Heritage List has provided new opportunities to promote sustainable development in the city. From the creation of a local World Heritage management ...



Promoting traditional environmental knowledge in the M'Zab Valley (Algeria)

The traditional settlements of the M'Zab valley were adapted to their environment and climate. Floodable areas were occupied only by temporary structures and not by dwellings. Water infrastructure was a core ...



Improving water availability and sustainability by reviving traditional water systems in Bengaluru (India)

The Million wells for Bengaluru campaign is an initiative to build one million shallow wells using traditional well-digging techniques. The initiative for the revival of traditional water systems integrates ...



Preventing climate-related impacts in the Chan Chan Archaeological Zone (Peru)

After Chan Chan was placed on the List of World Heritage in Danger, a disaster risk reduction plan was developed and integrated with heritage management mechanisms. The plan provided valuable strategies for ...



Reintroduction of hydropower in the mills district of the Town of Bamberg (Germany)

The installation of a new water turbine at the site of the former water mills in the Town of Bamberg follows traditional water practices while respecting the Outstanding Universal Value of the property. The new ...



World Heritage Cities > UNESCO Urban Heritage Atlas: Cultural mapping of historic cities and settlements
> Ahmedabad (India)

"The walled city of Ahmadabad, founded by Sultan Ahmad Shah in the 15th century, on the eastern bank of the Sabarmati river, presents a rich architectural heritage from the sultanate period, notably the Bhadra citadel, the walls and gates of the Fort city and numerous mosques and tombs as well as important Hindu and Jain temples of later periods. The urban fabric is made up of densely-packed traditional houses (pols) in gated traditional streets (puras) with characteristic features such as bird feeders, public wells and religious institutions. The city continued to flourish as the capital of the State of Gujarat for six centuries, up to the present."


— Statement of Outstanding Universal Value (SOUV)

The screenshot shows a web browser window with the URL whc.unesco.org/en/canopy/bamberg2/. The page features the UNESCO logo and 'World Heritage Convention' text. A navigation menu includes 'Our expertise', 'The List', 'Activities', 'Partnerships', and 'Publications'. The main content area has a blue background with the following text:

Home > Climate change case studies
> Bamberg (Germany)

Reintroduction of hydropower in the mills district of the Town of Bamberg (Germany)

The installation of a new water turbine at the site of the former water mills in the Old Town of Bamberg follows traditional water practices while respecting the Outstanding Universal Value of the property. The new building also hosts the World Heritage visitor centre.

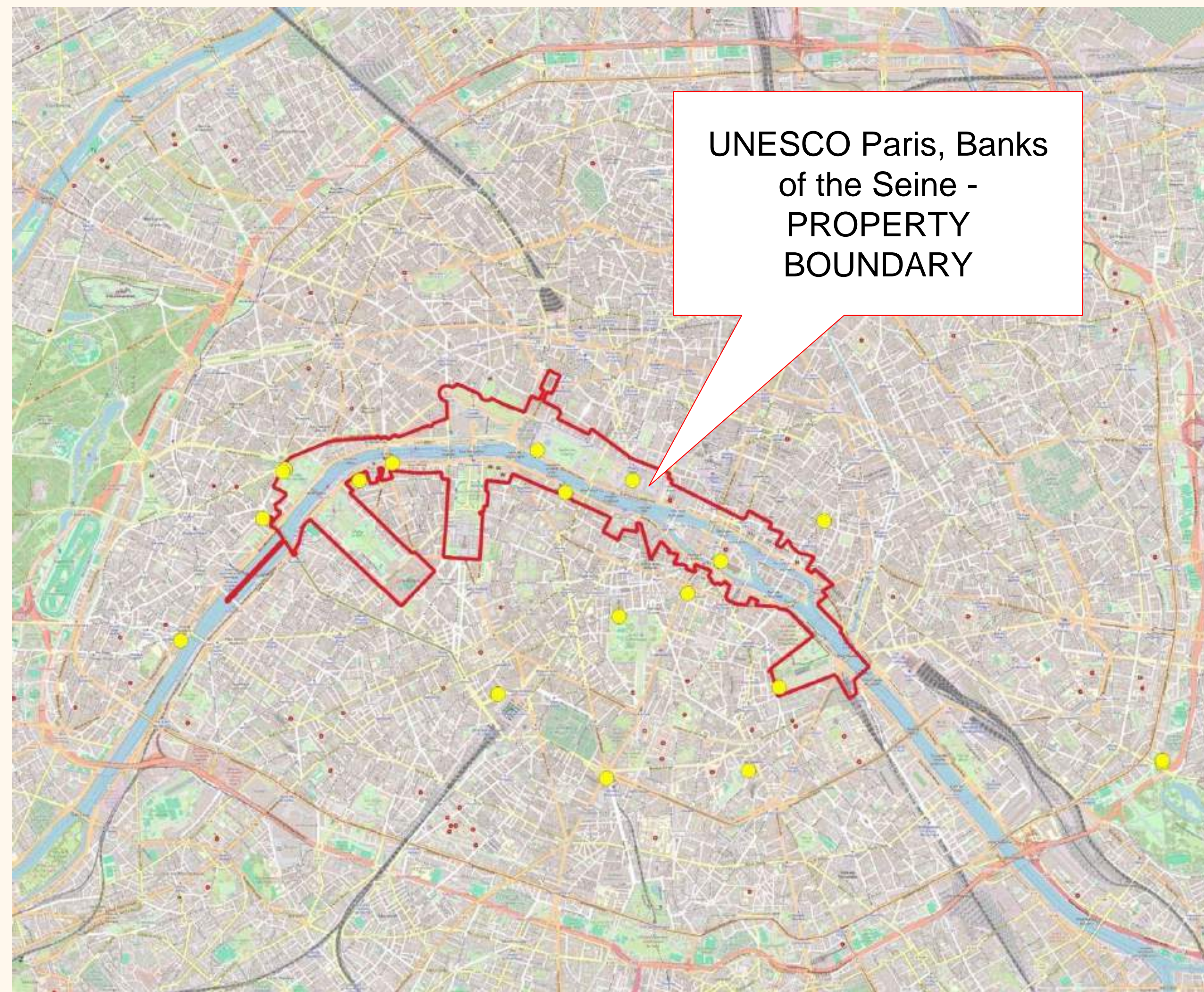


About Bamberg

World Inventory + World Heritage Atlas: Paris

Water-related musea and potential new partners in water storytelling:

Within UNESCO property	8
Paris (in total)	21

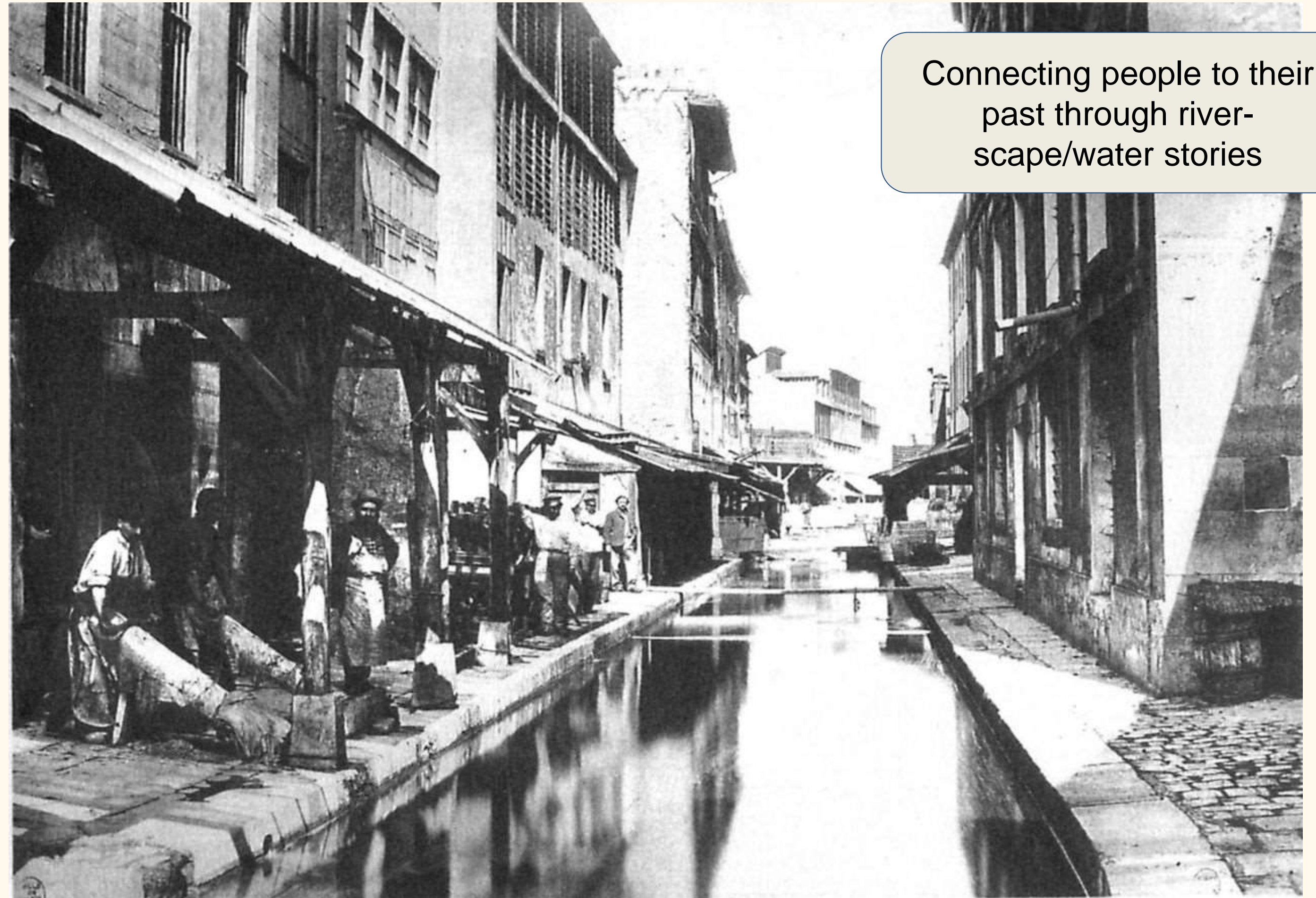
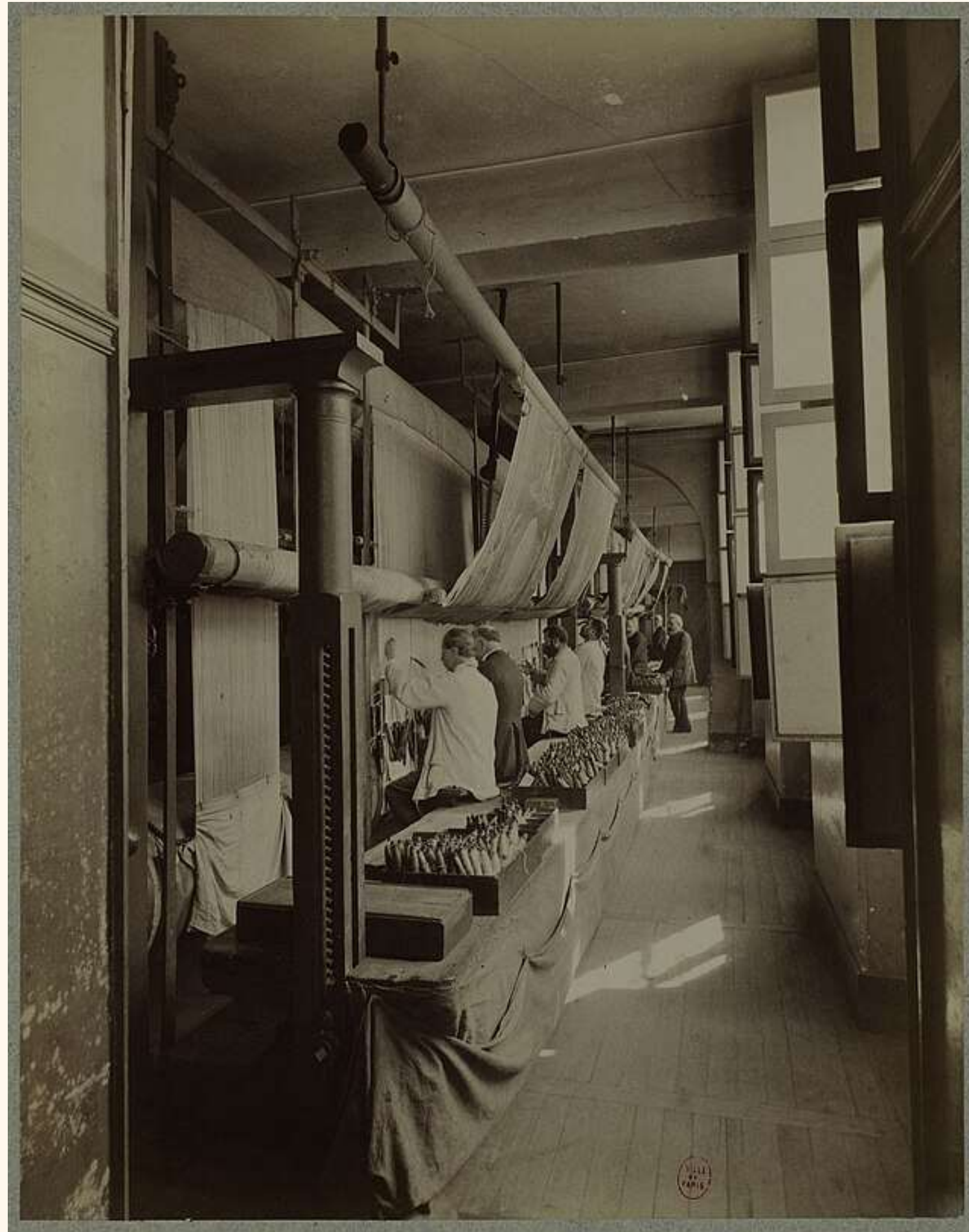


Scale 1:50,000

Musee des Egouts de Paris: Wamunet Member in World Heritage city



Musée des Gobelins: Rediscovering hidden waters

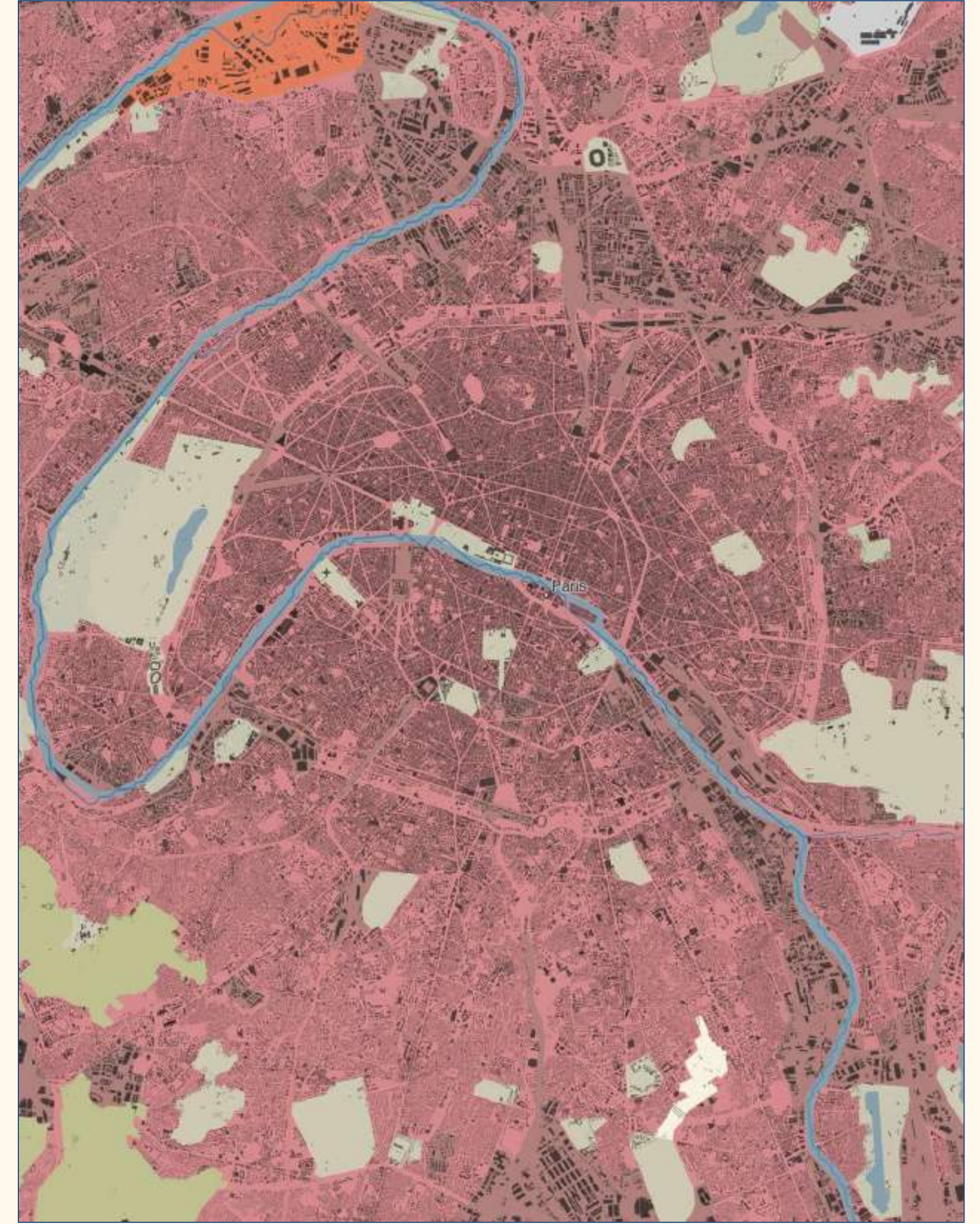


Connecting people to their past through river-scape/water stories





1 to 450,000

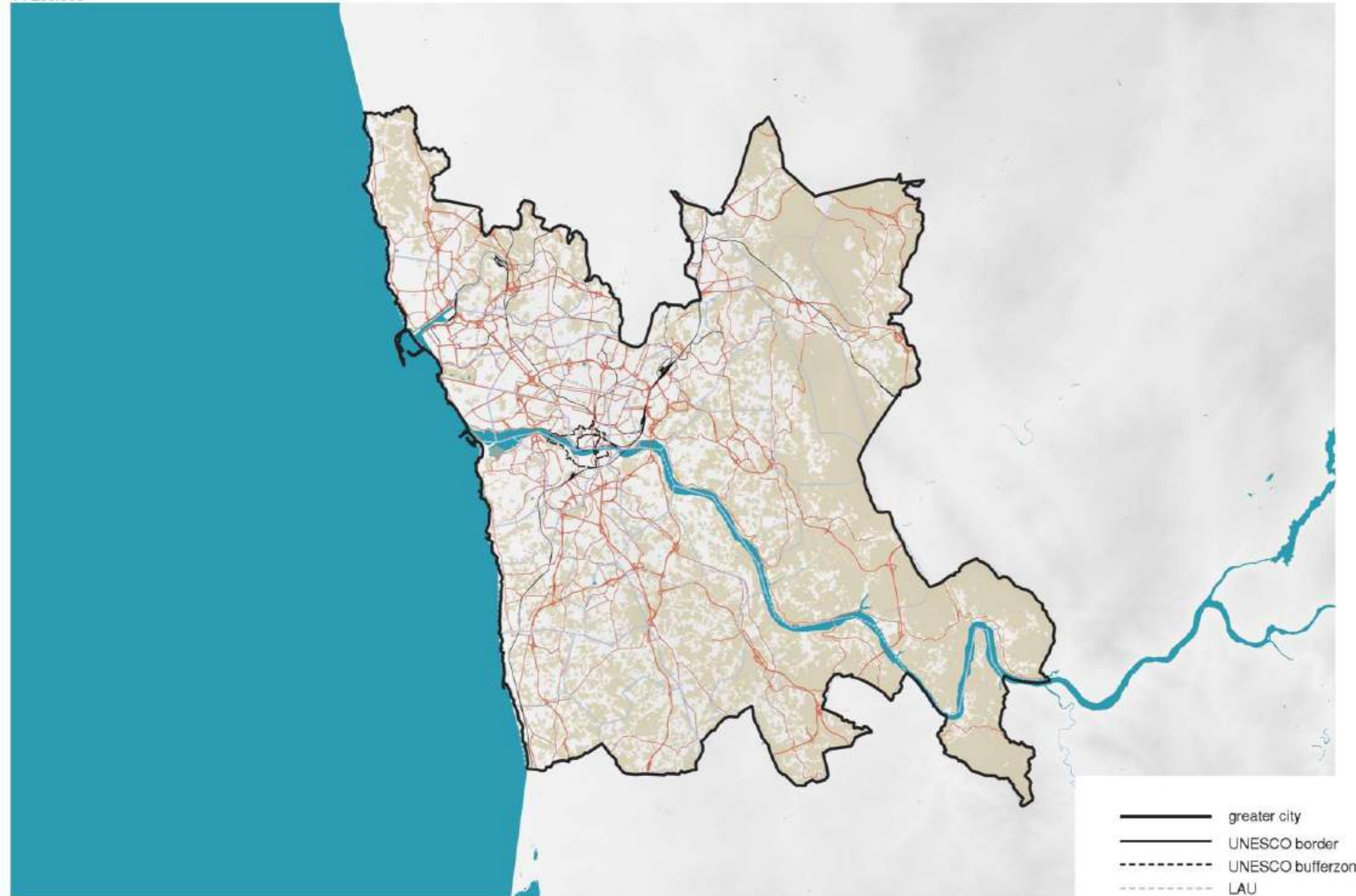


1 to 150,000

Paris Olympics: Swimmable Seine

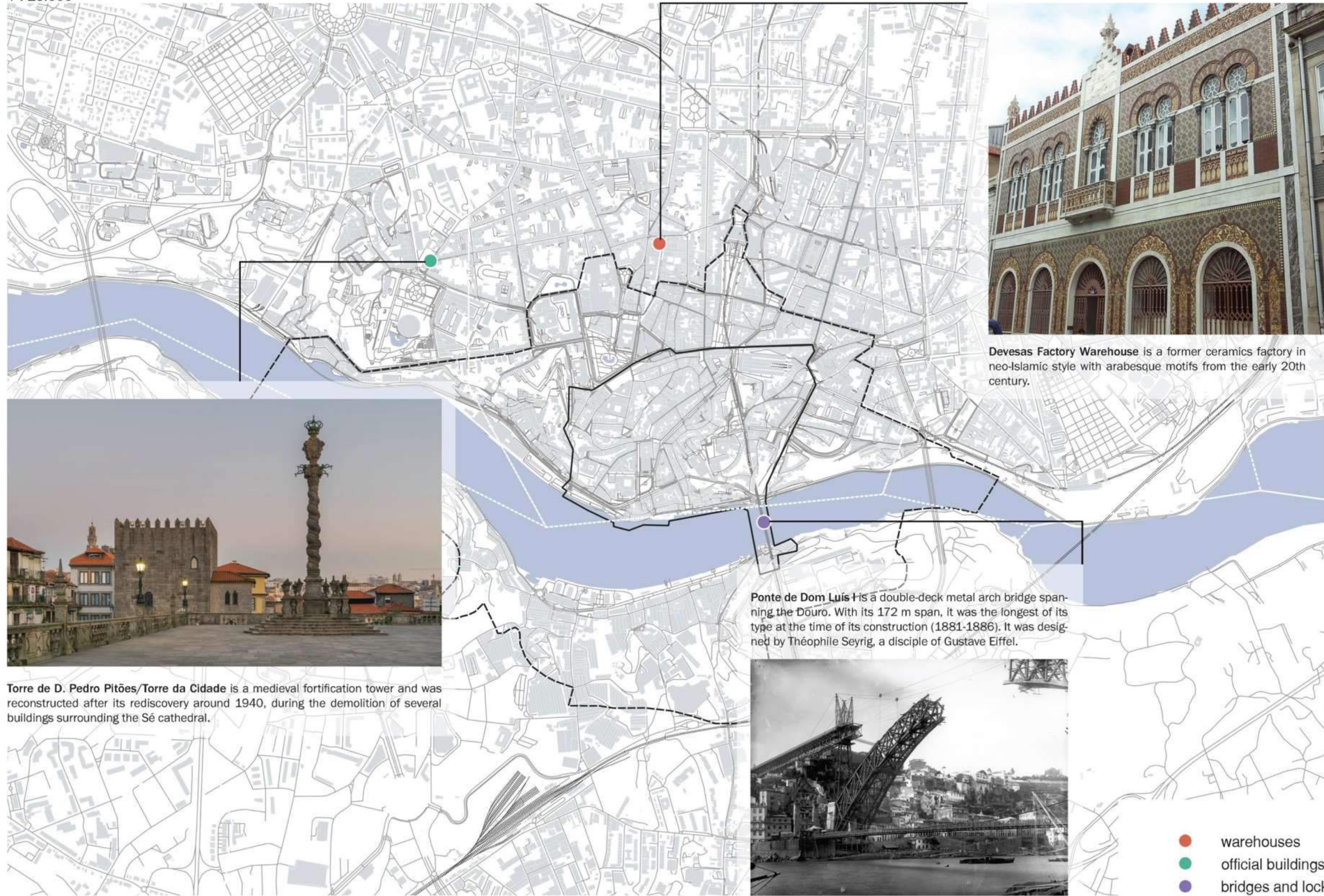


ii - POR city and surroundings
1 : 200.000



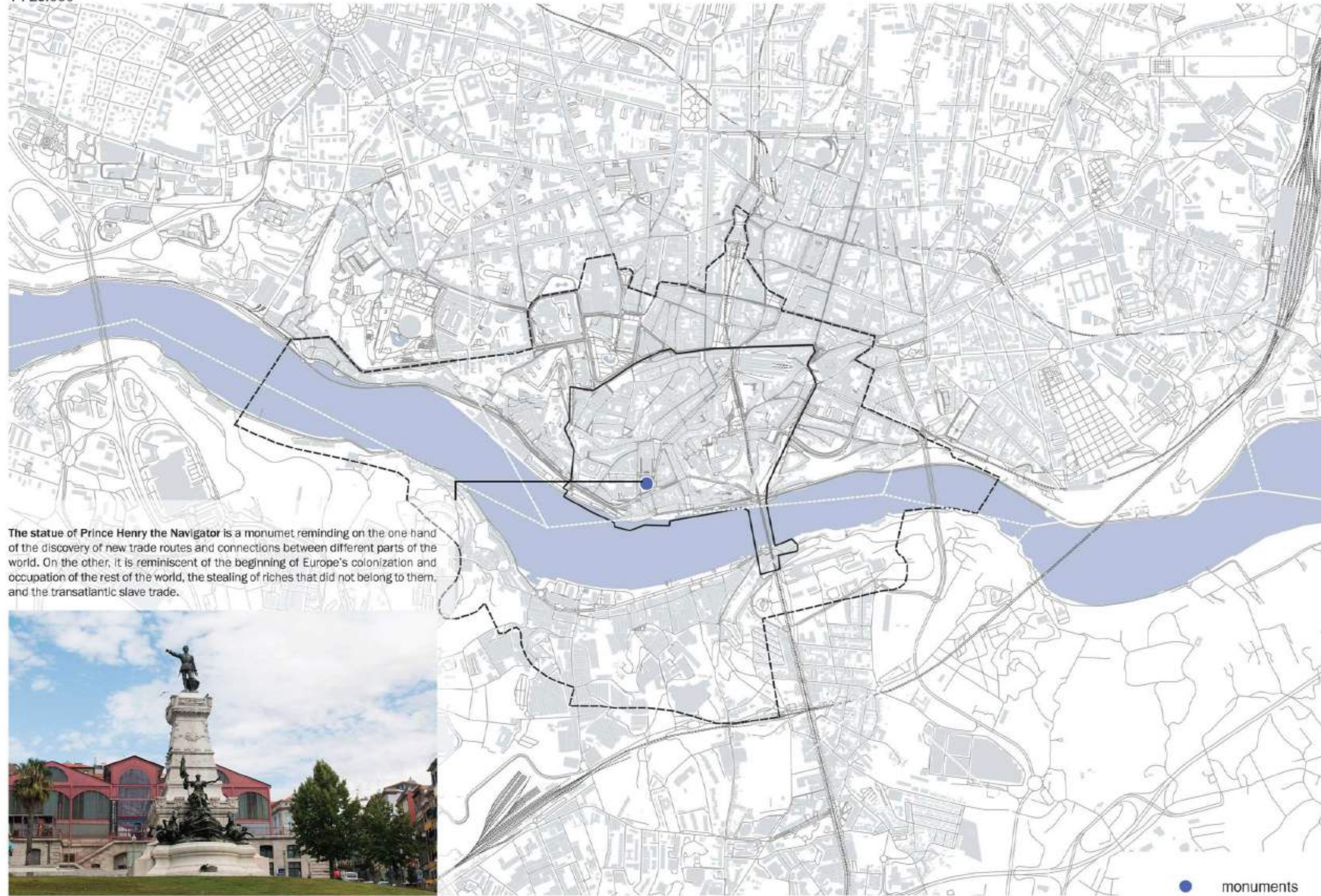
x - POR architectural attributes

1 : 25.000



Source of the photo's: Wikimedia Commons

xi - POR intangible heritage
1 : 25.000

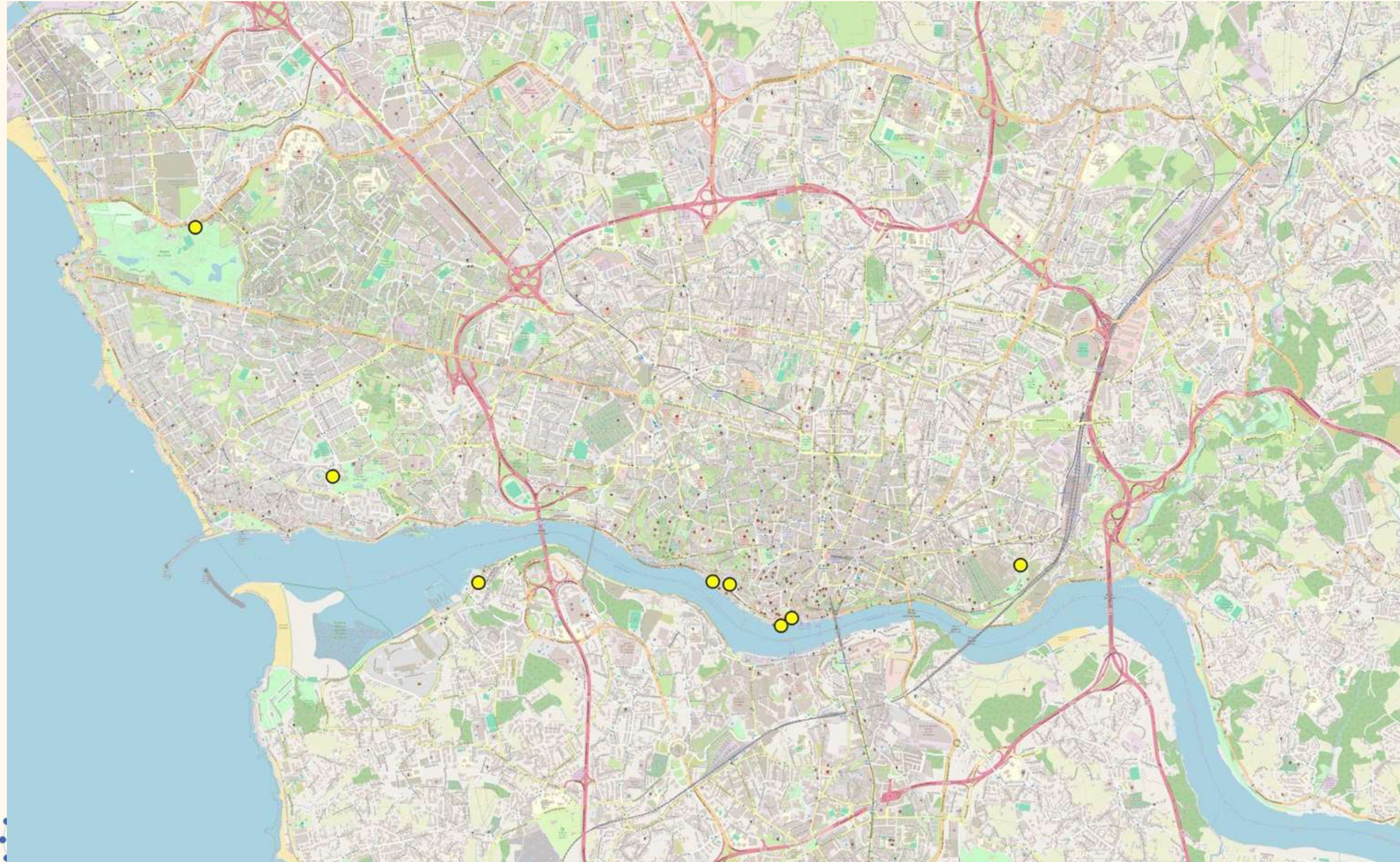


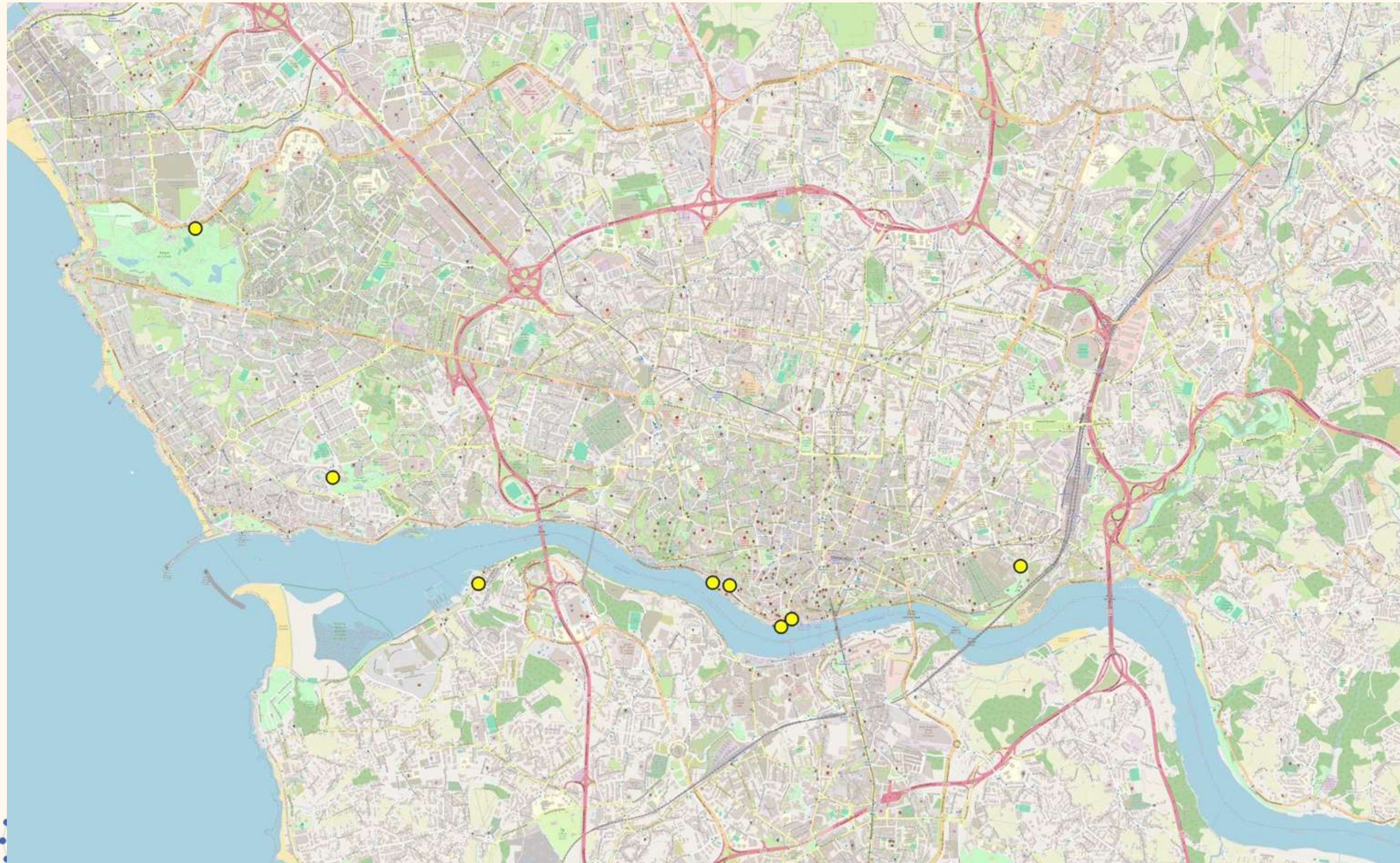
The statue of Prince Henry the Navigator is a monument reminding on the one hand of the discovery of new trade routes and connections between different parts of the world. On the other, it is reminiscent of the beginning of Europe's colonization and occupation of the rest of the world, the stealing of riches that did not belong to them, and the transatlantic slave trade.



wamunet - Wamunet Taxonomy

Museum/Site Name + short caption (max 40 words)	Type	Description (max 100 words)	Sources
PORTO AND ITS VICINITY			
Parque Patrimonial das Águas (Water Heritage Park) - part of WAMU-NET network	1. MUCD 2. IDEM 3. WASH 4. ANTE 5. INTL 6. GOOD	Showcases Porto's water-related facilities and networks. It highlights the city's historical water infrastructure, including supply systems and water cycle management. The park combines documentary evidence with physical structures, offering insights into Porto's water heritage challenges and solutions over time.	https://www.watermuseums.net/network/parque-patrimonial-das-aguas/
Pavilhão da Água (Water Pavilion)	1. MUCD 2. IDEM 3. WASH 4. ANTE 5. INTL 6. GOOD	An interactive museum educating visitors about the water cycle from river source to ocean. It addresses water-related challenges through hands-on exhibits demonstrating water properties, emphasizing the importance of water conservation and management in the region.	https://pavilhaodaagua.pt/
Museo do Vinho do Porto (Port Wine Museum)	1. MUCD 2. IDEM 3. WASH 4. ANTE 5. INTL 6. GOOD	This museum, formerly focused on Port wine, now extends its program to study the Douro River and region. It explores the complex relationship between the river, land, and people, highlighting the Douro's role in shaping the region's culture and economy.	
Museu do Porto – Reservatório (Porto Museum - Reservoir)	1. MUCD 2. IDEM 3. WASH 4. ANTE 5. INTL 6. GOOD	Housed in a former water reservoir, it presents Porto's history, including its relationship with the Douro River. It showcases archaeological finds and artefacts related to the city's water heritage, illustrating how water infrastructure has shaped Porto's development.	https://museudoporto.pt/en/estacao/reservoir/
Afurada Heritage Interpretive Center	1. MUCD 2. IDEM 3. WASH 4. ANTE 5. INTL 6. GOOD	The centre showcases the natural and cultural heritage of Afurada, a traditional fishing village, and the Douro estuary. It offers a permanent exhibition and local documentation centre, highlighting the community's deep connection to the river and sea. The museum explores the fishing traditions, boat-building techniques, and the culture of Afurada's residents. It addresses the challenges the fishing community faces, like changing river conditions, environmental concerns, and the preservation of traditional livelihoods in a modernizing world.	?
Porto Legends Museum	1. MUCD 2. IDEM 3. WASH 4. ANTE 5. INTL 6. GOOD	Located in the historic Customs House tunnels, offers an immersive multimedia experience showcasing Porto's rich history and legends. While not exclusively focused on water heritage, it presents 10 important Porto legends through advanced audiovisual technology. Some stories presented in the museum touch on the city's maritime past and its relationship with the Douro River, given Porto's strong connection to water. The museum's setting in a waterfront building further emphasizes this link.	?
World of Discoveries	1. MUCD 2. IDEM 3. WASH 4. ANTE 5. INTL 6. GOOD	World of Discoveries is an interactive museum in Porto's Miragaia district, near the Douro River. It highlights Portugal's maritime history and the Age of Exploration through 20 themed exhibitions, life-size recreations, and interactive displays. A key feature is a boat ride simulating environments from Africa to Brazil. While not solely focused on local water heritage, it emphasizes Porto's significance as a maritime center.	?
Casa do Infante (Prince's House)	1. MUCD 2. IDEM 3. WASH 4. ANTE 5. INTL	Infant's House, part of Porto's City Museum network, is the birthplace of Prince Henry the Navigator. It showcases Porto's maritime history and its role in Portuguese discoveries and highlights the city's connection to the Douro River and Atlantic Ocean, offering insights into Porto's development as a maritime center.	?





Themes present :

- Water infrastructure
- Water cycle
- Water conservation
- River-human relations
- Traditional industries
- Maritime history

Themes to elaborate further:

- Climate change
- Groundwater

wamu-
net



Douro River Basin Water Musea and (World) Heritage Properties



Farolim de Felgueiras: Lighthouse

Douro River Basin Water Musea and (World) Heritage Properties

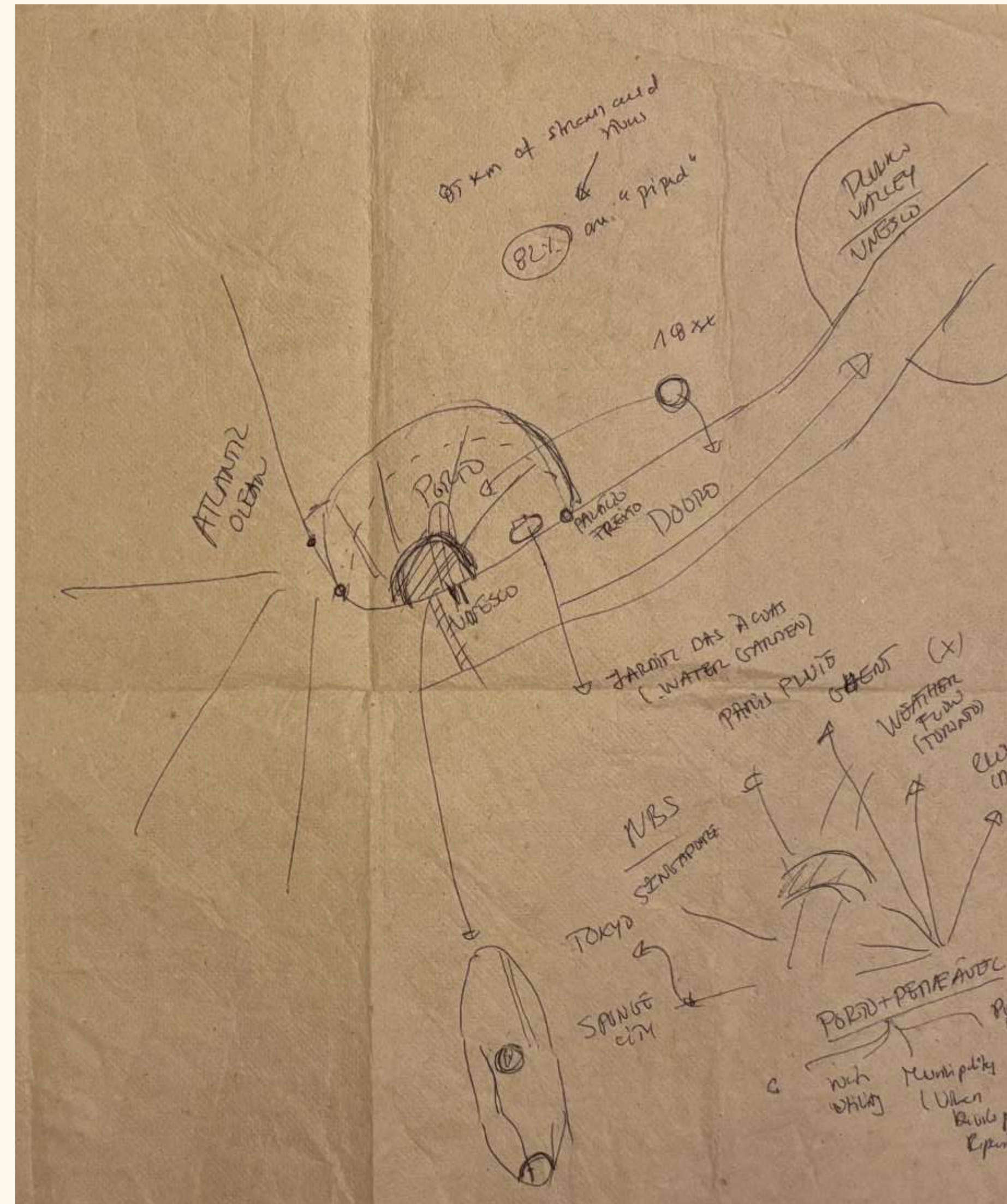




Alfandego do Porto



Francisco Restivo @ Porto 2018



Alto Douro Wine Region

Portugal

2013

2012

All

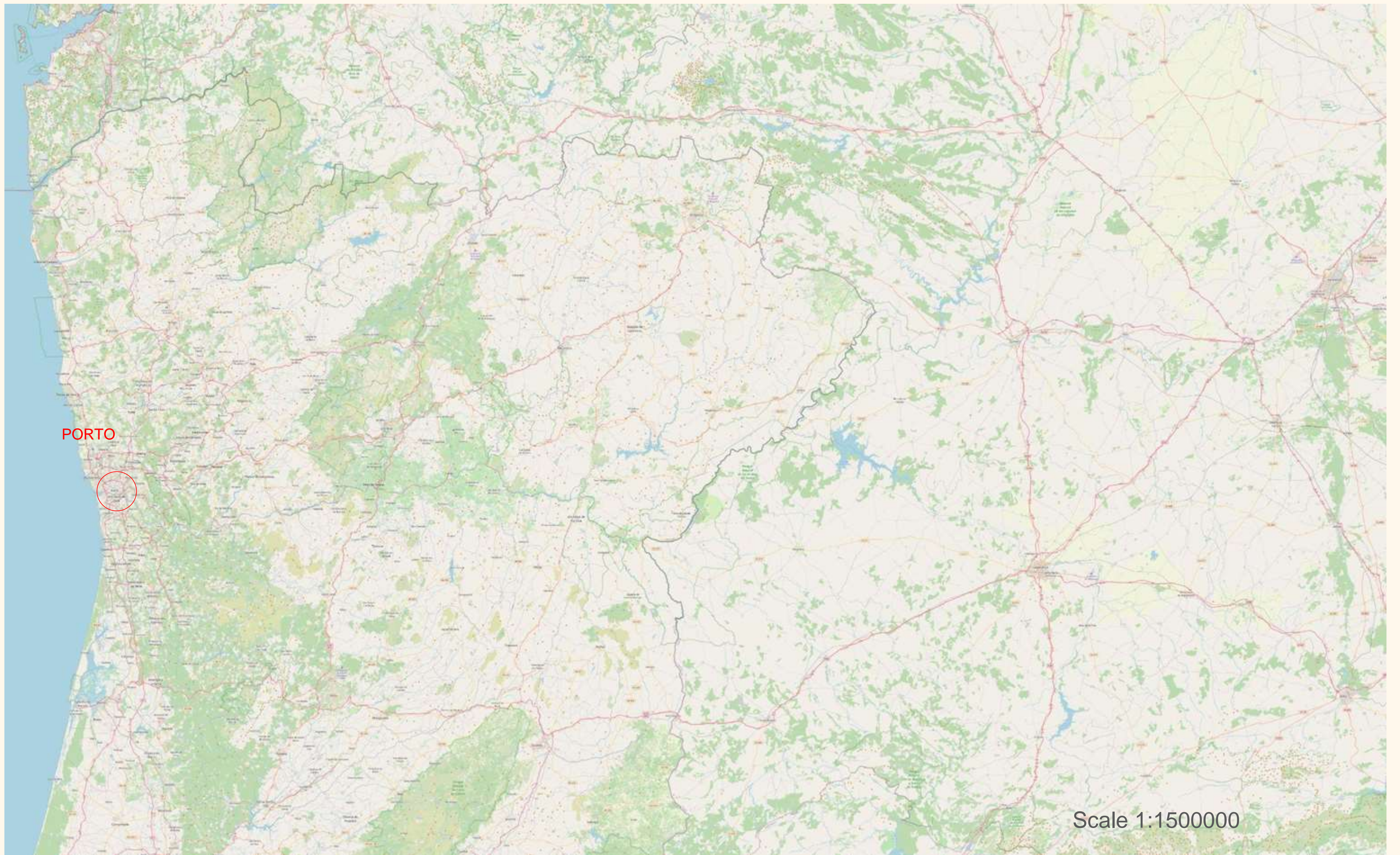
Factors affecting the property in 2013*

- Management systems/ management plan
- Water infrastructure



41 Wamunet Members are in World Heritage Cities

TE.AM Intern.I Study Center for Territory and Environment	Italy	Naples	Y
University of Udine	Italy	Udine	Y
Y-40 The Deep Joy and SpA	Italy	Montegrotto	Y
Milan Water Plant (Centrale dell'Acqua Milano)	Italy	Milan	Y
MUMAC Multimedia Museum of Campania's Waters	Italy	Sant'Anastasia (NA)	Y
The Valley of Mills, Castelnuovo Magra	Italy	La Spezia	Y
Water Palace / Apulian Aqueduct	Italy	Bari	Y
Federalberghi Terme	Italy	Rome	Y
Water Museum of Ohrid	Macedonia	Ohrid	Y
GHAJN-National Conservation Awareness Centre	Malta	Rabat	Y
Museo del Agua "Agua para siempre"	Mexico	Tehuacan	Y
Museo Interactivo del Agua "Iurhekua"	Mexico	Uruapan	Y
Musée 'Mohammed VI' de la Civilisation de l'Eau au Maroc	Morocco	Marrakesh	Y
IHP-HWRP Netherlands National Committee	Netherlands	Delft	Y
Biesbosch MuseumEiland	Netherlands	Werkendam	Y
Haarlemmermeermuseum De Cruquius	Netherlands	Cruquius	Y
Water Museum Den Bosch/Kring Vrienden van 's-Hertogenbosch	Netherlands	Den Bosch	Y
Broekerveiling Water Museum	Netherlands	Broek op Langedijk	Y
IHE Delft, Unesco C2C	Netherlands	Delft	Y
Nederlands Watermuseum	Netherlands	Arnhem	Y
Museum Geelvinck	Netherlands	Heerde	Y
Museu da Agua	Portugal	Lisbon	Y
Parque das Águas, Águas e Energia do Porto	Portugal	Porto	Y
Kahramaa Water Awareness Park	Qatar	Doha	Y
Casa Apei / House of Water	Romania	Tîrgu-Mureş	Y
Water Museum "Leonida Truta"	Romania	Cluji-Napoca	Y
Aquatim	Romania	Timisoara	Y
The Nile Institute	Rwanda	Murambi	Y
The Posavje Museum Brežice	Slovenia	Brežice	Y
Tribunal de les Aigües de la Vega de Valencia	Spain	Valencia	Y
AGBAR Museu de les Aigües	Spain	Cornellà de Llobregat	Y
Museu de l'aigua i el Tèxtil	Spain	Manresa	Y
Museos de Mequinenza	Spain	Zaragoza	Y
Isum Istanbul Su Müzesi	Turkey	Istanbul	Y
Museum of Water	UK	London/travelling	Y
OSE Water Museum	Uruguay	Montevideo	Y
Keepers of the Waters	USA	New York	Y
Green Earth Alliance	USA	Delray Beach	Y
I am Water	USA	New York	Y
Catskill Water Discovery Center	USA	New York	Y
Fairmount Water Works Interpretive Center	USA	Philadelphia	Y



PORTO

Scale 1:1500000

Douro River Basin Water Musea and (World) Heritage Properties



Tools used in the preparation and upkeep of the hillside wine terraces



View of the River Douro from the museum terrace



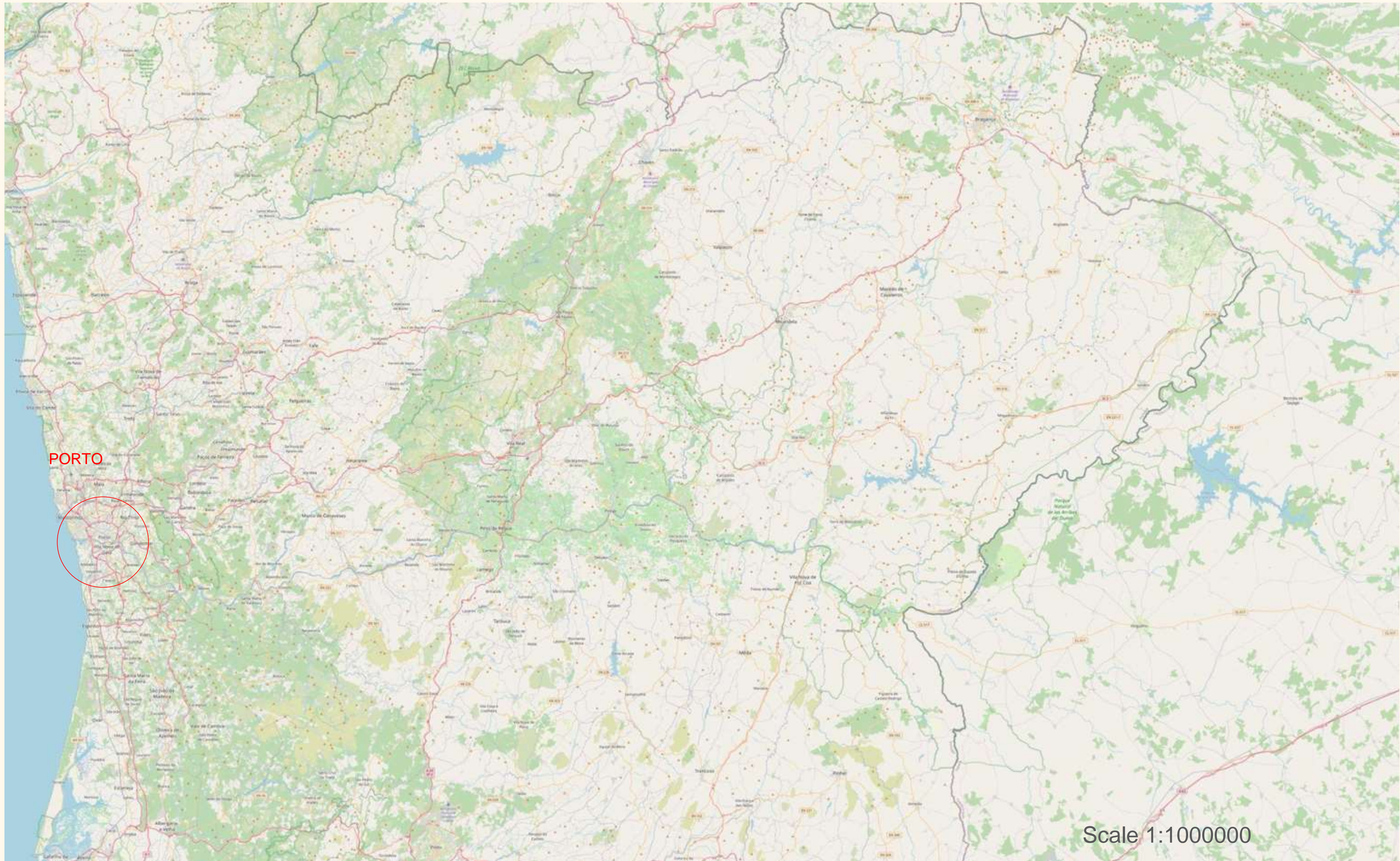
Museu do Douro, Peso da Régua

Douro River Basin Water Musea and (World) Heritage Properties



Water-related challenges in Porto and its vicinity

- Stream degradation: more than 75% of the streams and rivers in Porto have been enclosed by pipes due to urban pressures, including infrastructure development and tourism. This has led to significant degradation of the city's ecosystems and water resources.
- Climate change impacts: like urban flooding - Porto faces an increased risk of urban flooding due to climate change. The city is implementing strategies to improve hydraulic drainage conditions and increase permeable surfaces to mitigate this risk; extreme temperatures - rising temperatures associated with climate change are putting additional stress on water resources and urban ecosystems.
- Groundwater challenges: including nitrate contamination exceeding safe levels in nearly one-third of samples, saltwater intrusion in coastal areas due to excessive extraction, and microbial pollution from urban and agricultural sources.
- Infrastructure Inefficiencies: approximately 30% of tap water in Portugal seeps into the ground unused due to outdated supply networks, this is most likely the case also in historical city of Porto.



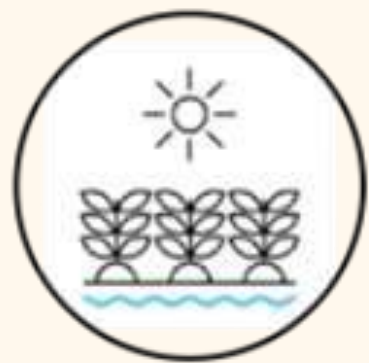
PORTO

Scale 1:1000000

Tangible



Drinking



Agriculture and Irrigation



Drainage and Sewage



Food from Water Bodies



Shelter and Defense



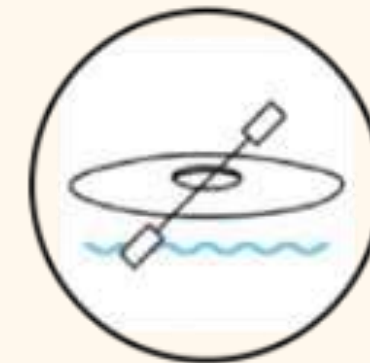
Health



Energy/ Industry



Transport



Places of Leisure



Place of Worship

Intangible



Daily Water Practices



Recreation



Rites and Rituals



Language / Idioms



Laws and Policies



Institutions



Education



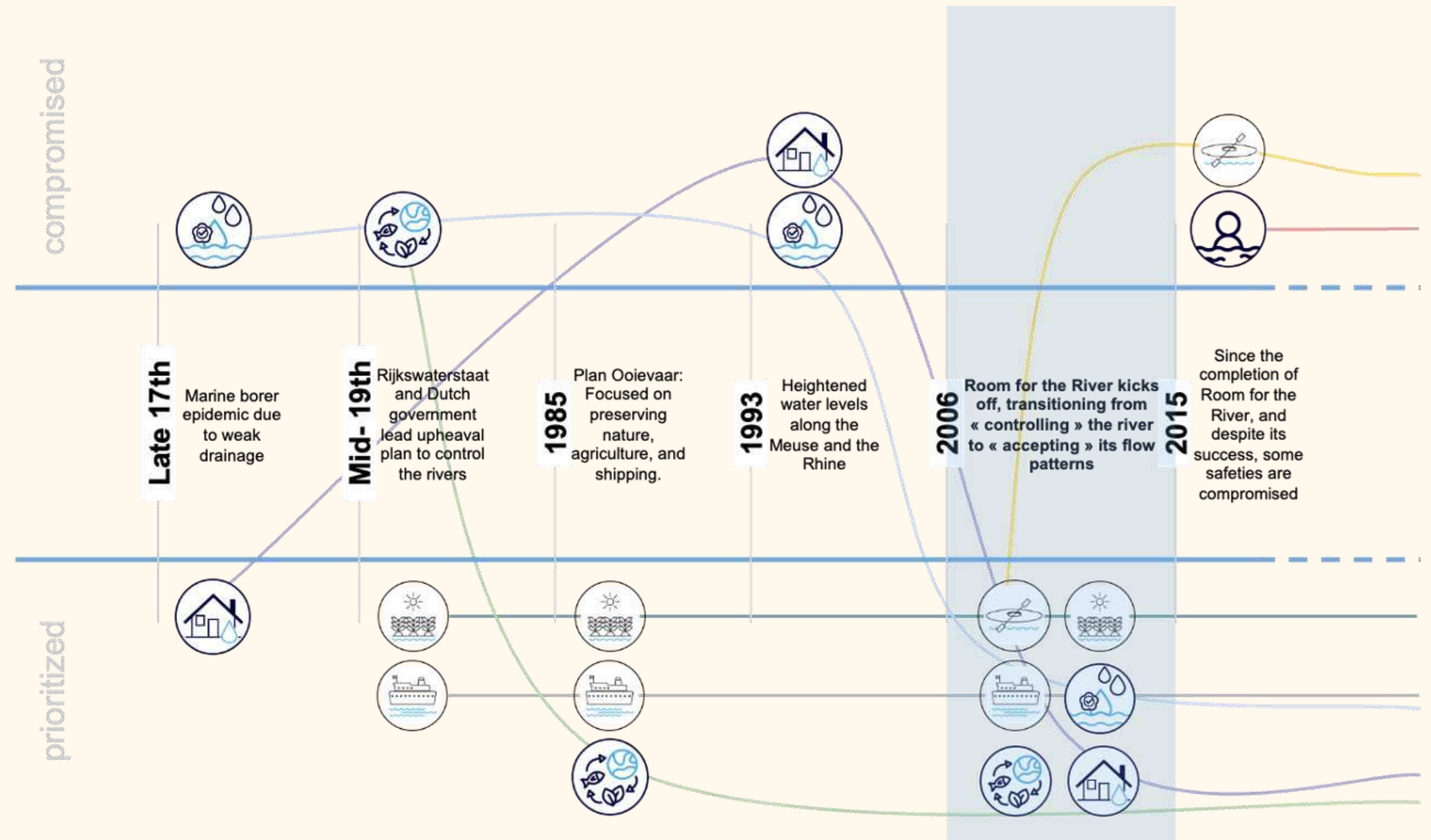
Preservation, Adaptation, Reuse



Music, Arts and Dance

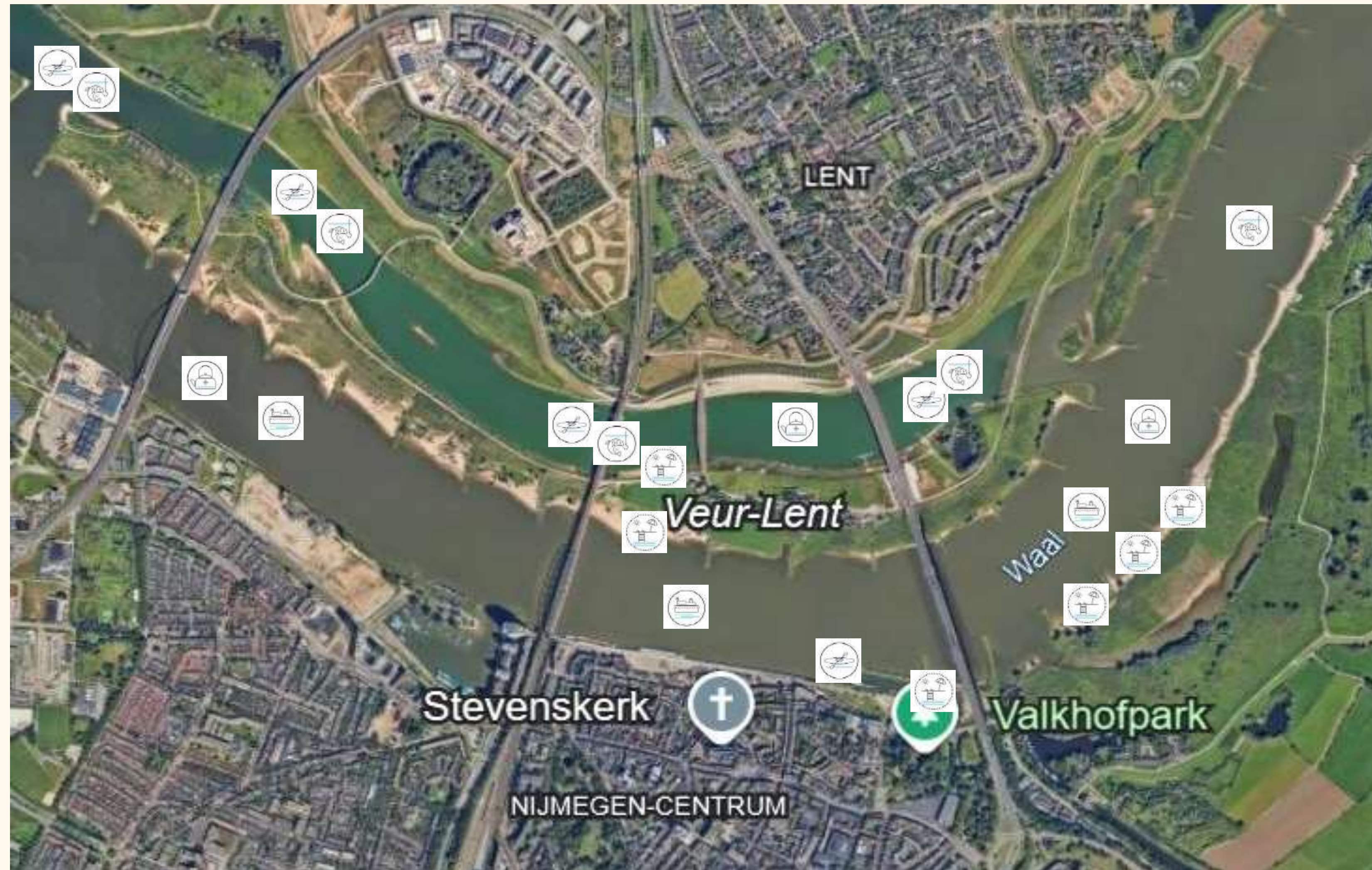


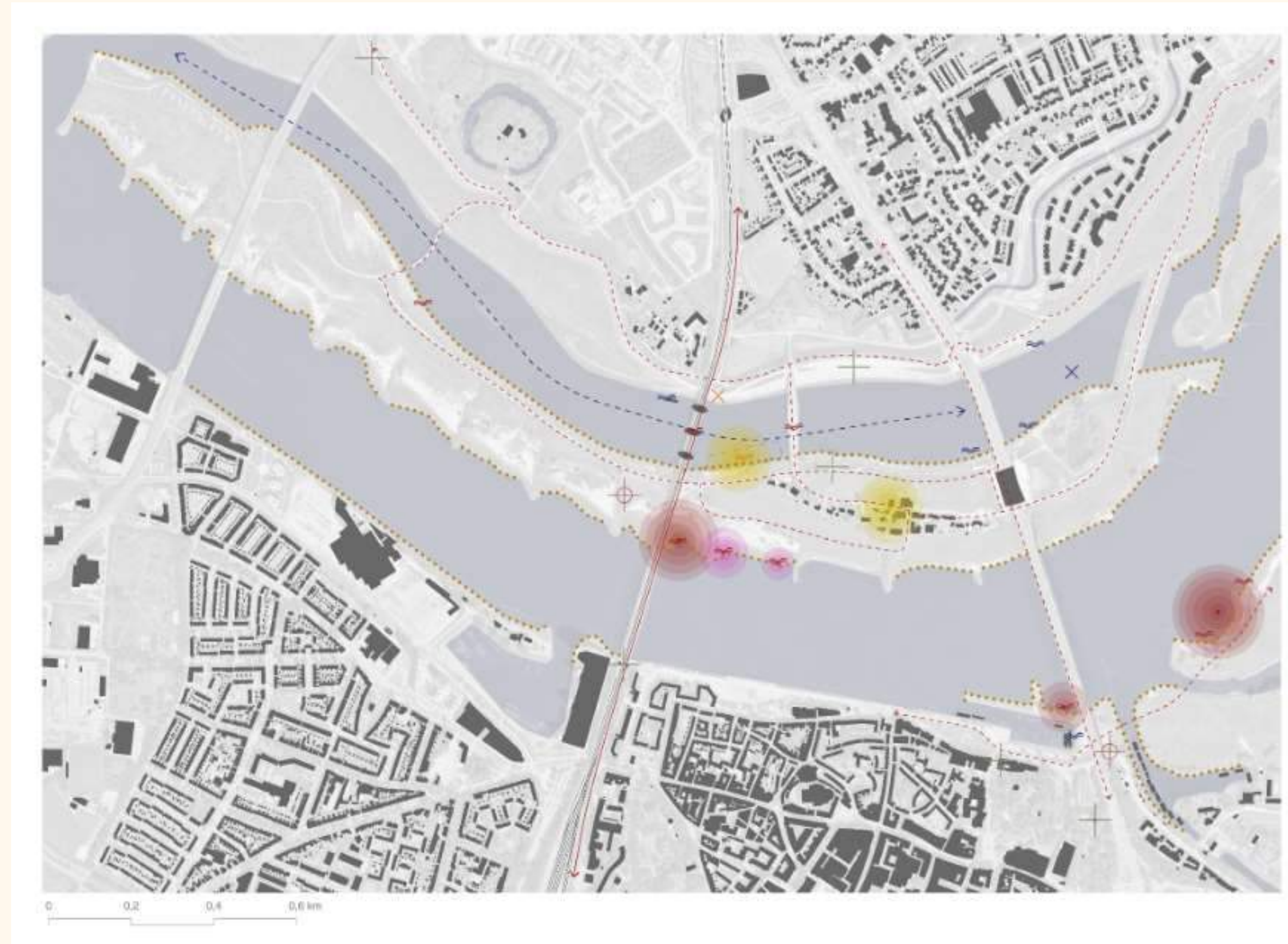
Festivals and Ceremonies



Combine and Analyse

... and they offer valuable visualisations to reflect and discuss upon conflicting uses of the space.





- Water bodies
- Built environment
- Designated access to water bodies for swimming purposes
- Access to water bodies for recreational purposes
- Spontaneous access to water bodies
- Sandy water front
- Recreational routes
- Main route connecting Nijmegen-Lant to the Spiegelwaal
- Rowing route
- Gathering hotspot - Young adults
- Gathering hotspot - Families
- Gathering hotspot - Couples
- Point of interest - Landmark
- Point of interest - Event area
- Point of interest - Sailboat
- Point of interest - Outdoor gym equipment

The Dutch Water Defense Line: Water and Heritage A Value Case Approach



Blue Papers 2024 (Vol. 3 No. 1), pp 140–51
10.58981/bluepapers.2024.1.11
Received: 04 April 2024; Accepted: 16 April 2024; Published: 06 May 2024.

The New Dutch Water Defense Line (Nieuwe Waterlinie): Preserving Historical Qualities in a Context of Very High Spatial Pressure

Eric Luiten and Lea Kayrouz
Delft University of Technology

The Dutch Water Defense Line (Hollandse Waterlinie) is a historic defense system in the Netherlands that integrates innovative flood defense mechanisms with the country's lowland topography across a 200 km span. Despite its effectiveness during periods of conflict, technological advancements rendered the defense system obsolete, letting it fall into a state of neglect. The Waterline laid dormant for a few decades until a revitalization effort began in 2001 – a multi-stakeholder endeavor encompassing heritage preservation, nature conservation and spatial development (UNESCO n.d.). In a densely inhabited area, multi-level collaborations were needed to identify new ways to connect water management and heritage preservation. Collaborative efforts among governmental bodies, local communities and private enterprise facilitated the repurposing of historical forts into venues for cultural activities, tourism, farming and hospitality. The successful revitalization of the Dutch Waterline serves as a compelling example of the value case methodology we promote in the course Water Systems Design: Learning from the Past for Resilient Water Futures. It is an example where heritage preservation is intricately linked with economic development, environmental sustainability and social well-being. As a model for eco- and hydro-systemic thinking, the Dutch Waterline offers valuable lessons for designing resilient water futures and nurturing sustainable landscapes.

Keywords: value case, ecosystemic thinking, multi-actor, heritage, stakeholders



KEY THEMES



< Fig. 1 View of the Waterline model at the Waterline Museum at Fort Vechten (Source: Lea Kayrouz, 2023).

The Dutch Water Defense Line: Water and Heritage A Value Case Approach



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Received: 01 February 2024, Accepted: 15 April 2024, Published: 06 May 2024

From Landmarks to Watermarks: Water Towers as Hidden Signs of Water through the Value Case of Ourinhos, Brazil

Rodrigo Lilla Manzione
School of Sciences, Technology and Education, São Paulo State University

This contribution explores the case of Ourinhos, Brazil, through a value case approach. The findings are based on the author's work in the professional education course Water System Design: Learning from the Past for Resilient Water Futures, offered by the UNESCO Chair Water, Ports and Historic Cities team based at TU Delft. Following the methodology of the course, the author identified water towers as key elements of transformation and developed the concept of watermarks. Following a brief investigation of history, heritage and context, the article examines the potential of water towers to act as watermarks for educational and professional institutions present in the region. Drawing on pop culture among the city's young people, the article proposes making the Ourinhos Water Tower a recognizable watermark of the city, a place worth visiting and engaging with. The plan includes people from a variety of backgrounds, interests, ages and perceptions who can join forces to develop powerful solutions to water challenges.

Keywords: water tower, heritage, SDGs, values, watermarks



KEY THEMES




< Fig. 1 The Water Tower of Ourinhos (Source: Mônica Clauser Leite de Souza Manzione, 2023).

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Blue Papers
A Journal for Empowering Water and Heritage
for Sustainable Development

Water in all its forms is key to human survival and well-being. Humans have created intricate and ingenious solutions to survive and thrive in difficult and complex territories, and adapt to changes in social and environmental conditions. Remnants of past practices, structures and objects are still with us – in the built environment, in our institutions, in our ways of living and in our languages. Sometimes we call these objects and practices heritage, but more often they are so much a part of our everyday lives that we take them for granted.



Students take an afternoon stroll in the early evening at the site of the Dutch Fort, Sri Lanka by Quaresima, 2019





Vol. 3 No. 1 (2024)

Water & Heritage for Sustainable Development

📅 Published: 2024-05-06

↓ [PDF](#)

Announcements

Special Issue on Water Management in World Heritage Sites at a Time of Climate Change– Call for Papers

📅 2024-08-27

Water is the ultimate link between the local and global dimensions of World Heritage sites and between their past,



A mapping methodology for comparative analysis of water-related heritage

Based on the UNESCO Historic Urban Landscape approach



Dataset of water-related World Heritage sites based on terms or words.

Dai, T., Hein, C. M., & Baciú, D. C. (2021). Heritage Words: Exploring Port City Terms . European Journal of Creative Practices in Cities and Landscapes (CPCL), 4(2).



UNESCO
■ UNESCO water-related sites
● UNESCO heritage sites

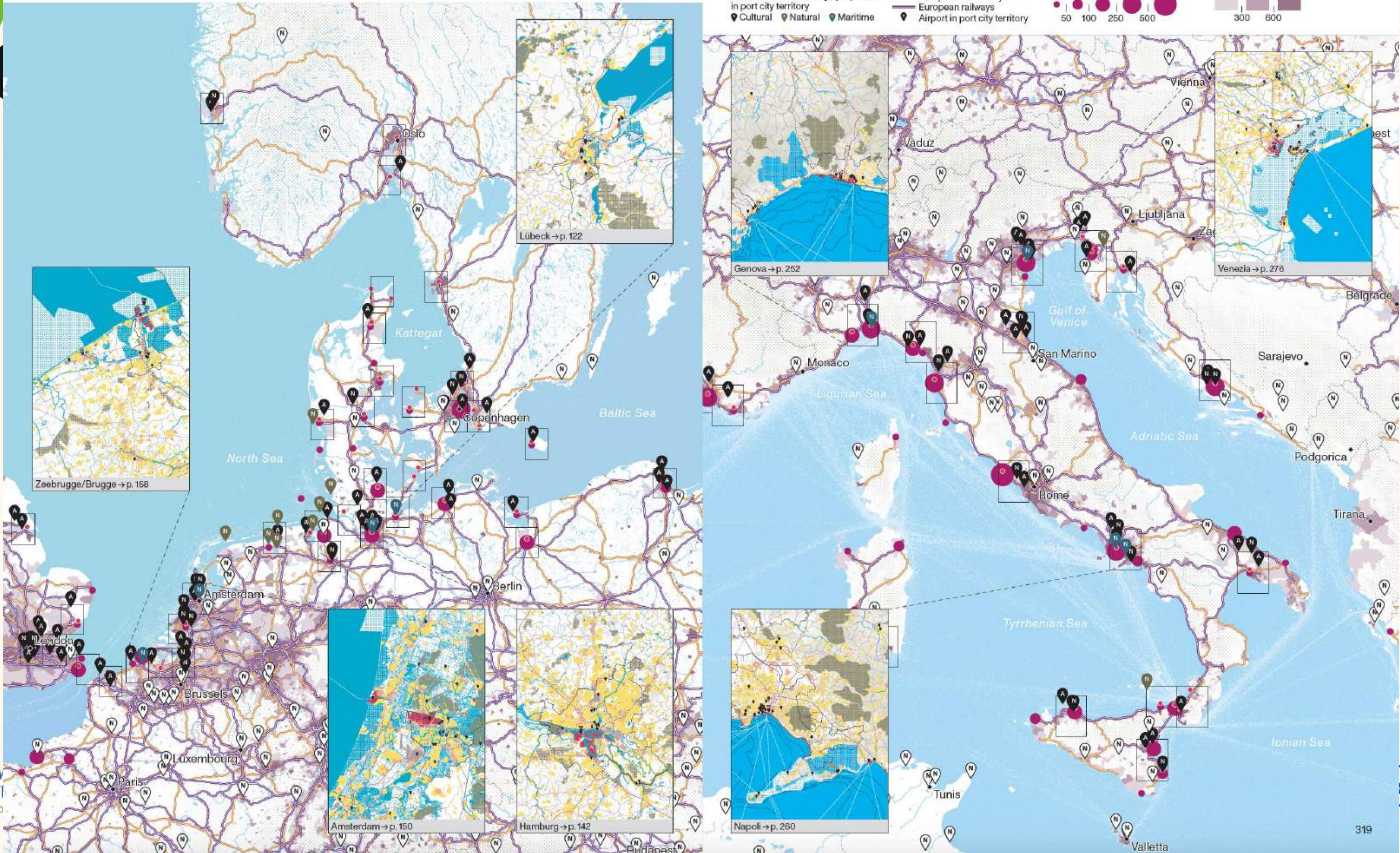
European Port City Territories and UNESCO World Heritage Properties

UNESCO World Heritage properties
 Europe
 UNESCO World Heritage properties
 in port city territory
 Cultural Natural Maritime

Density leisure vessels
 from 1 to 3 million
 European motorways
 European railways
 Airport in port city territory

Total number of cruise
 ship calls/year
 50 100 250 500

Population density LAU
 population/km²
 300 600



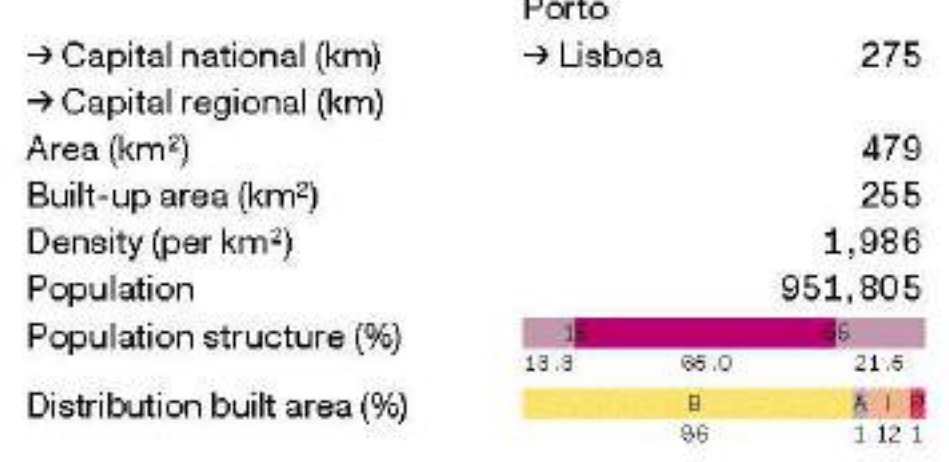
LEI Leixões (Porto), PT

Douro River

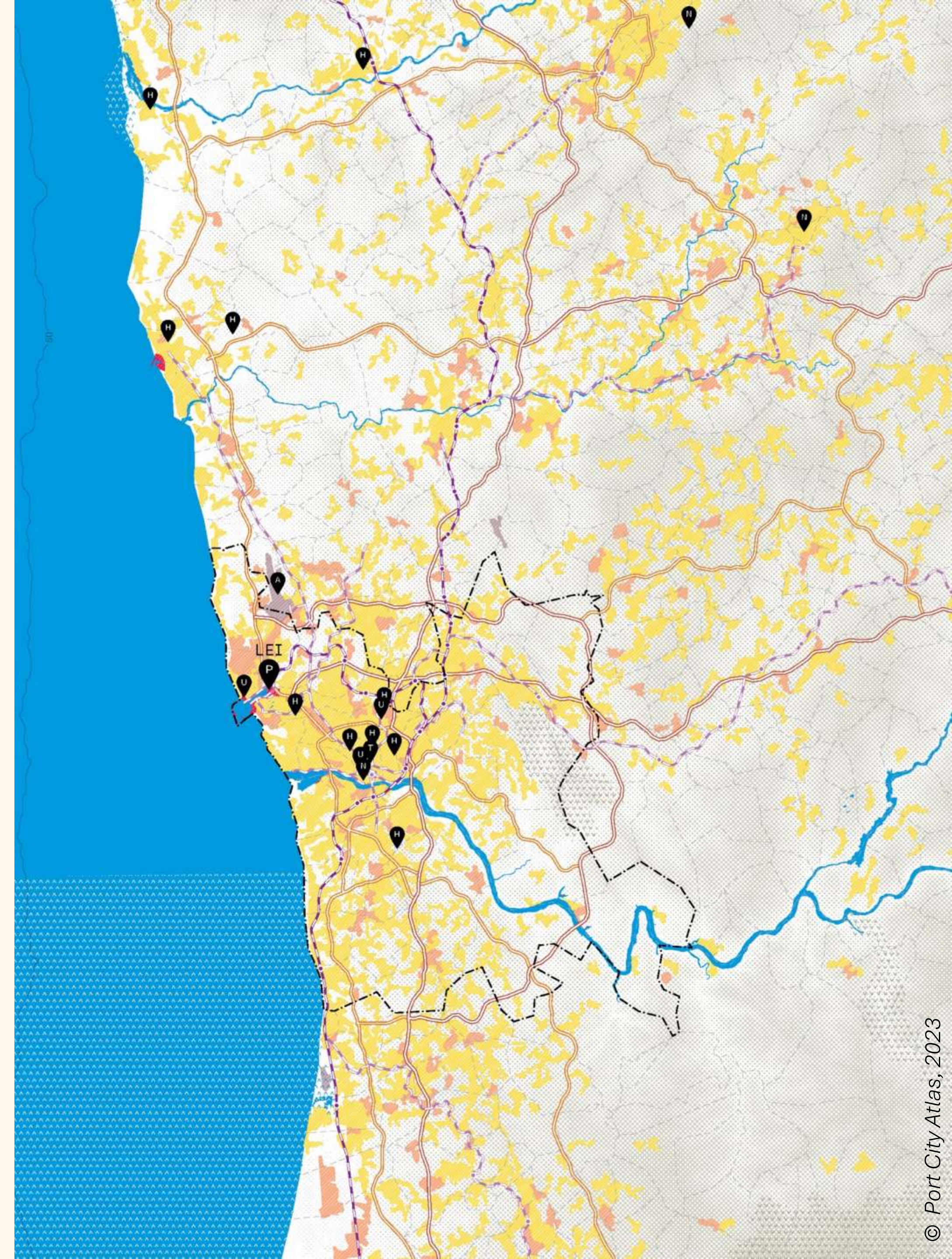
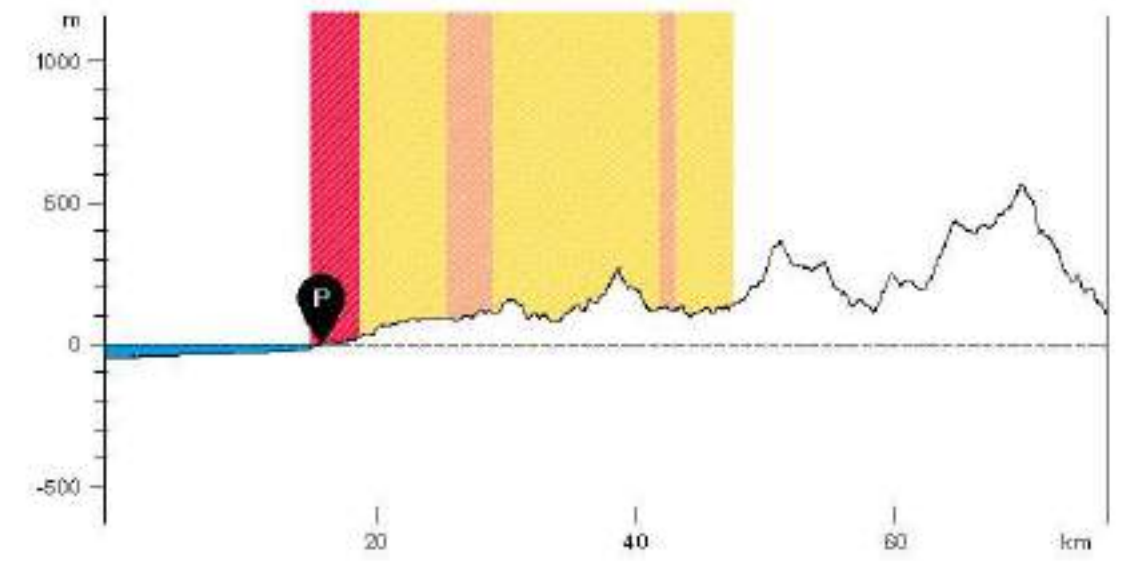
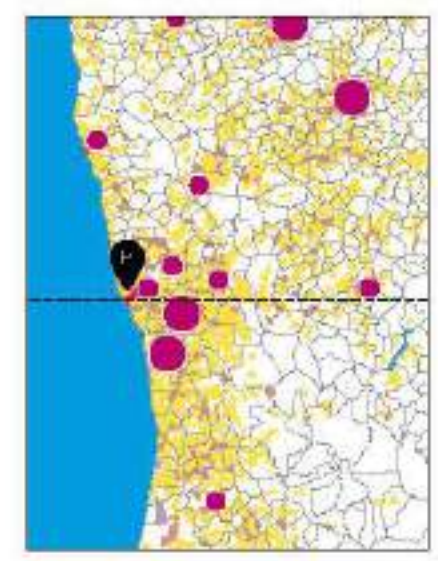
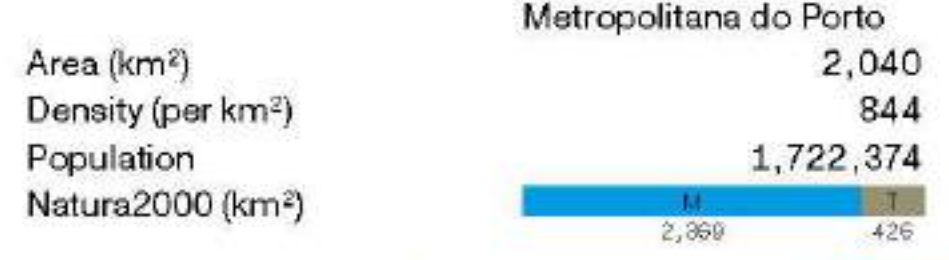
PORT



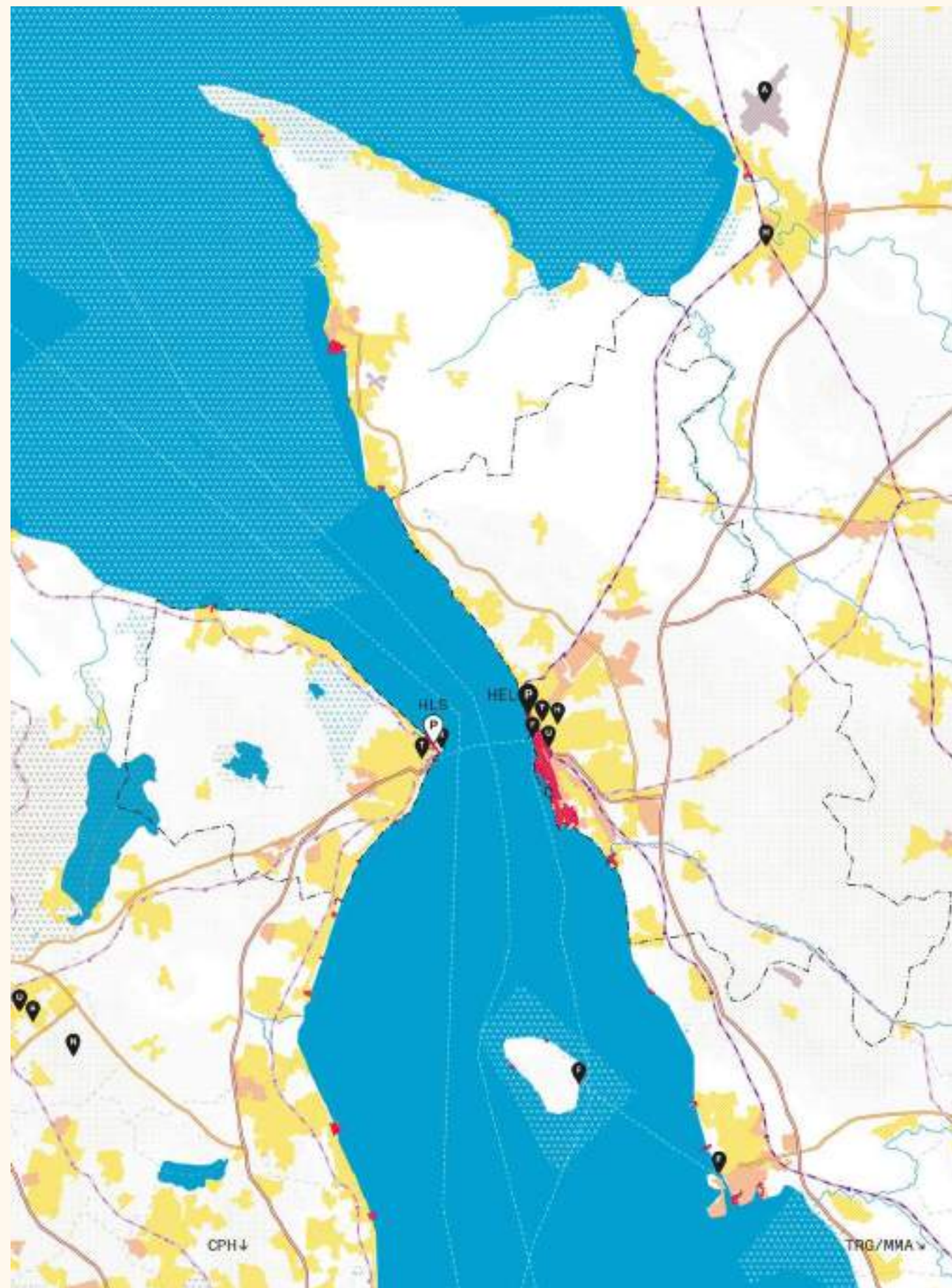
CITY



TERRITORY



Water Views from Portugal



Lisbon



PORTO



1. History as **Mirror** for Water System Thinking
2. The Past as **Foundation** for Future Development
3. Heritage Identification and **Protection**





What is
Water & Heritage?

Everyday water practices

e.g., Drinking, bathing, washing, cooking, recreation, festivals, rituals



Professional interaction with water

e.g., Water management, architecture, urbanism, infrastructure, engineering



Maritime and marine practices

e.g., Shipping, energy, fluvial, maritime, marine, underwater activities



Human interaction with water systems at the landscape scale

e.g., Migration, urbanization, communication



Water cycle

e.g., Natural processes of saline and fresh water in oceans, lakes, rivers, ice, glaciers, moisture, groundwater



Example of Activating the SDGs

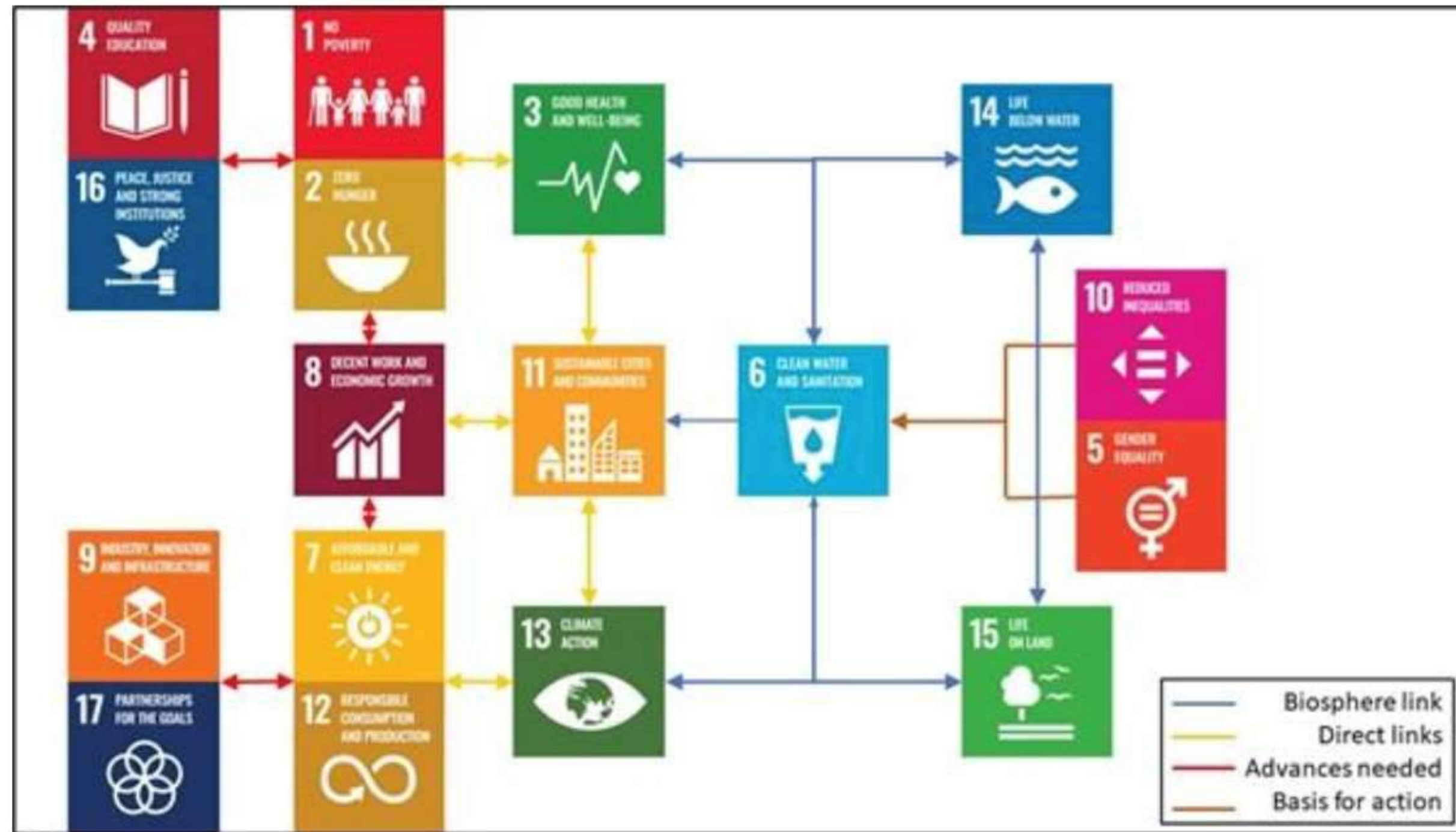
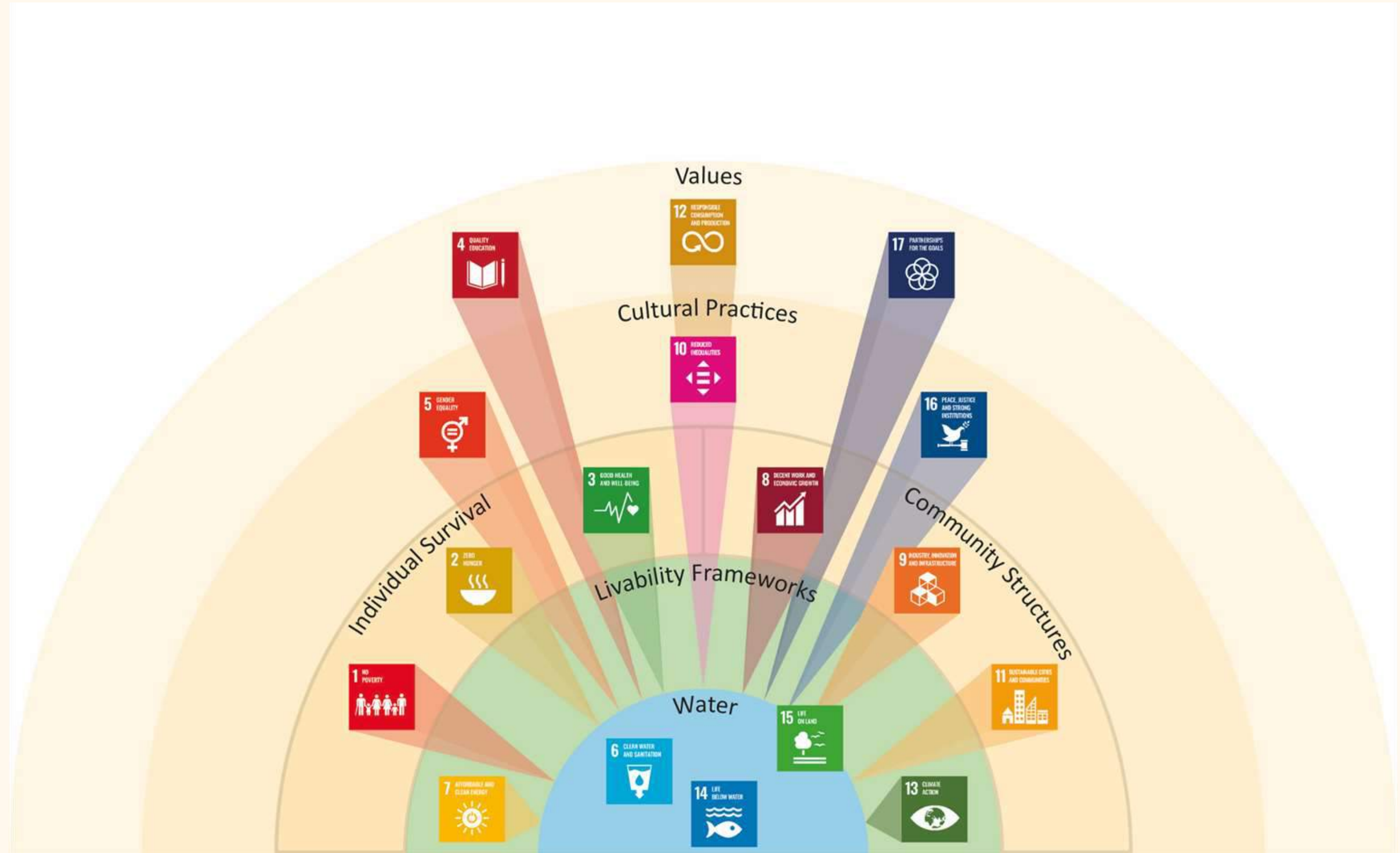
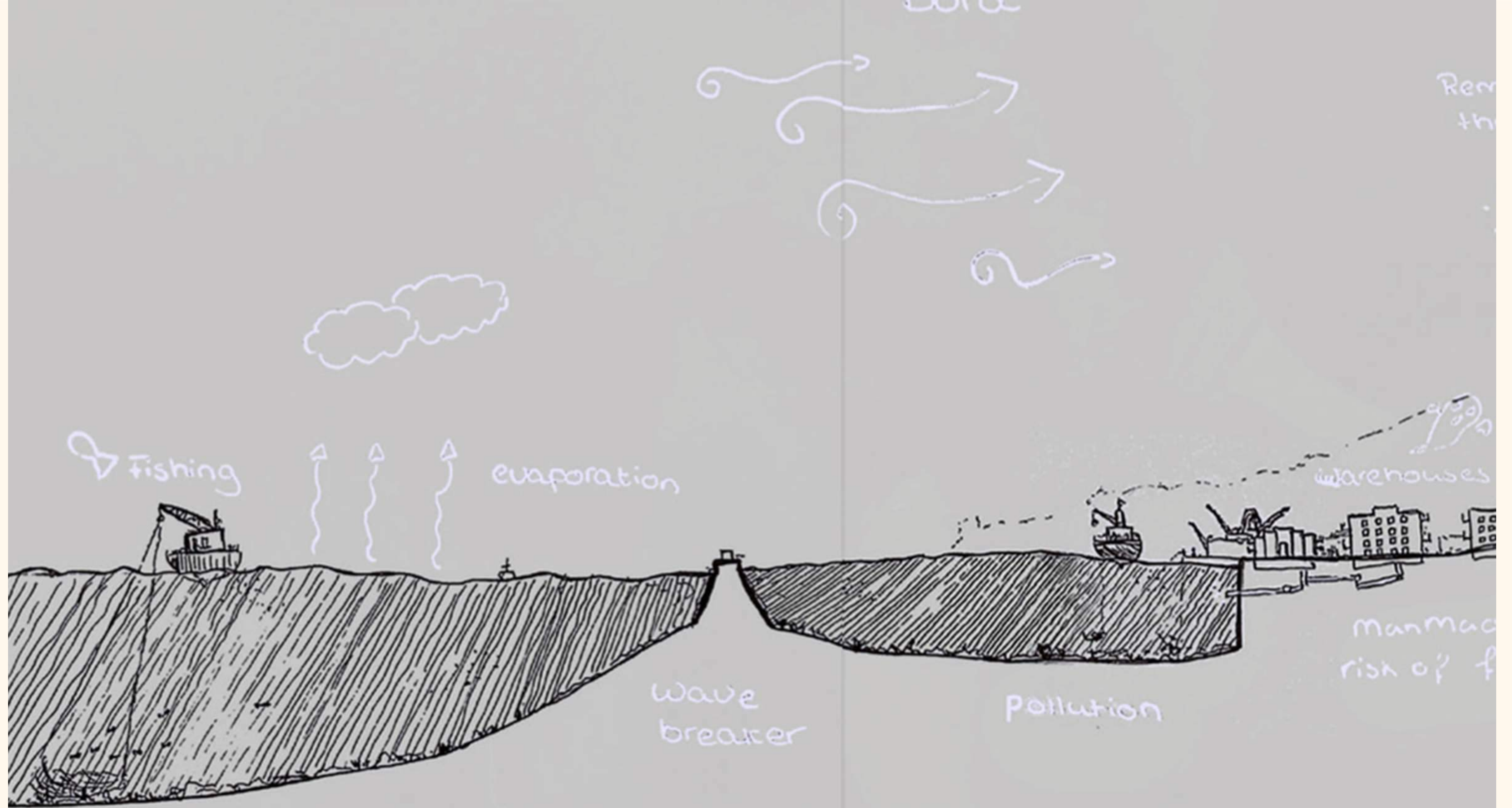
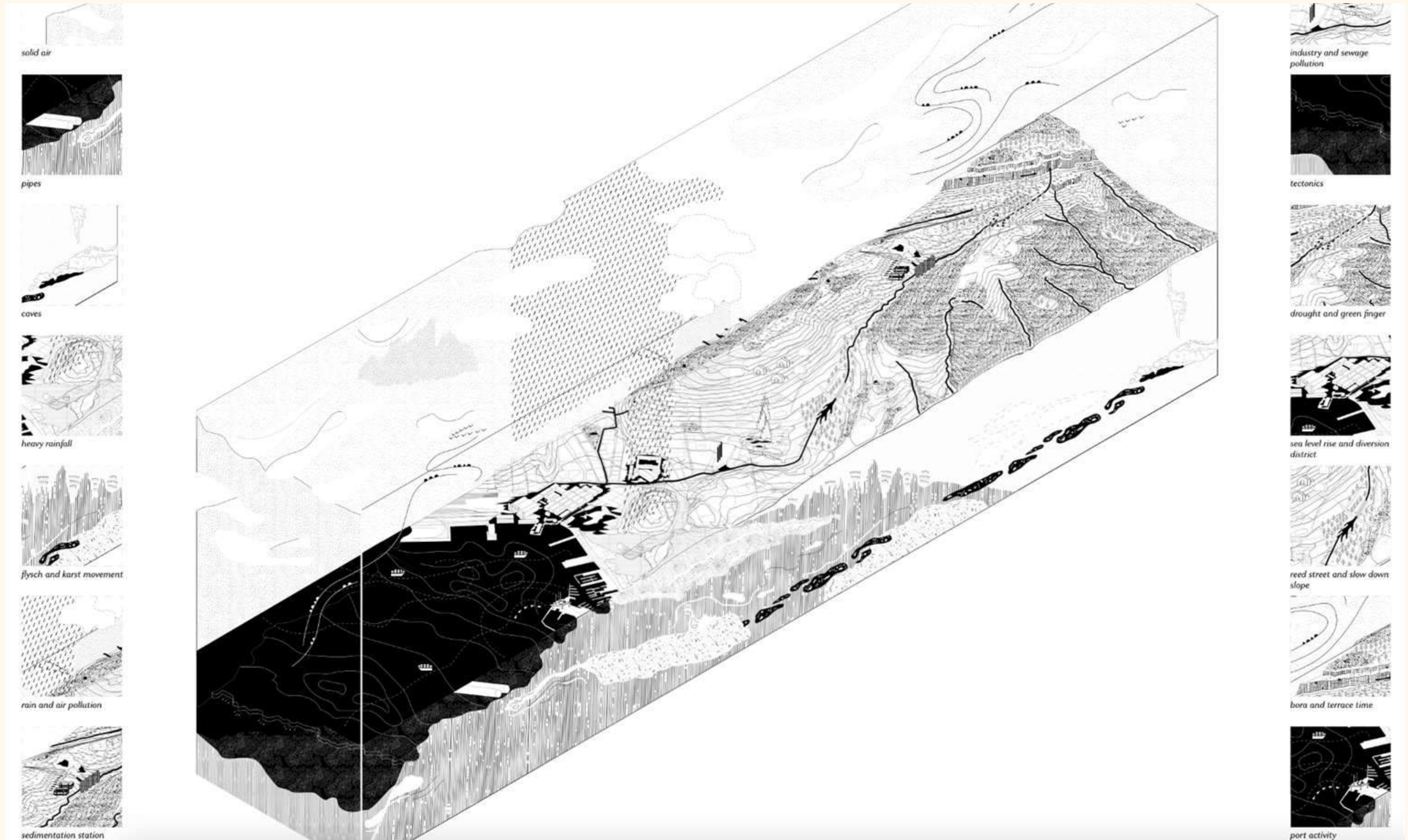


Fig. 2 Strategy to connect the SDGs to water values in the Ourinhos study case (Elaboration: Rodrigo Lilla Manzione, 2024).





wamu- net



@ Studio TU Delft, 202223, Urban Archipelago Afra Knaap, Augusta Fiseryte, Fons van de Ven, Niké te Brinke, Paula von Zeska de Toledo, Raf van Oosterhout, Sue Vern Lai and Winnie van de Sande



Changing Minds: Towards Water-Based Architecture and Public Space for the Future Urban Archipelago

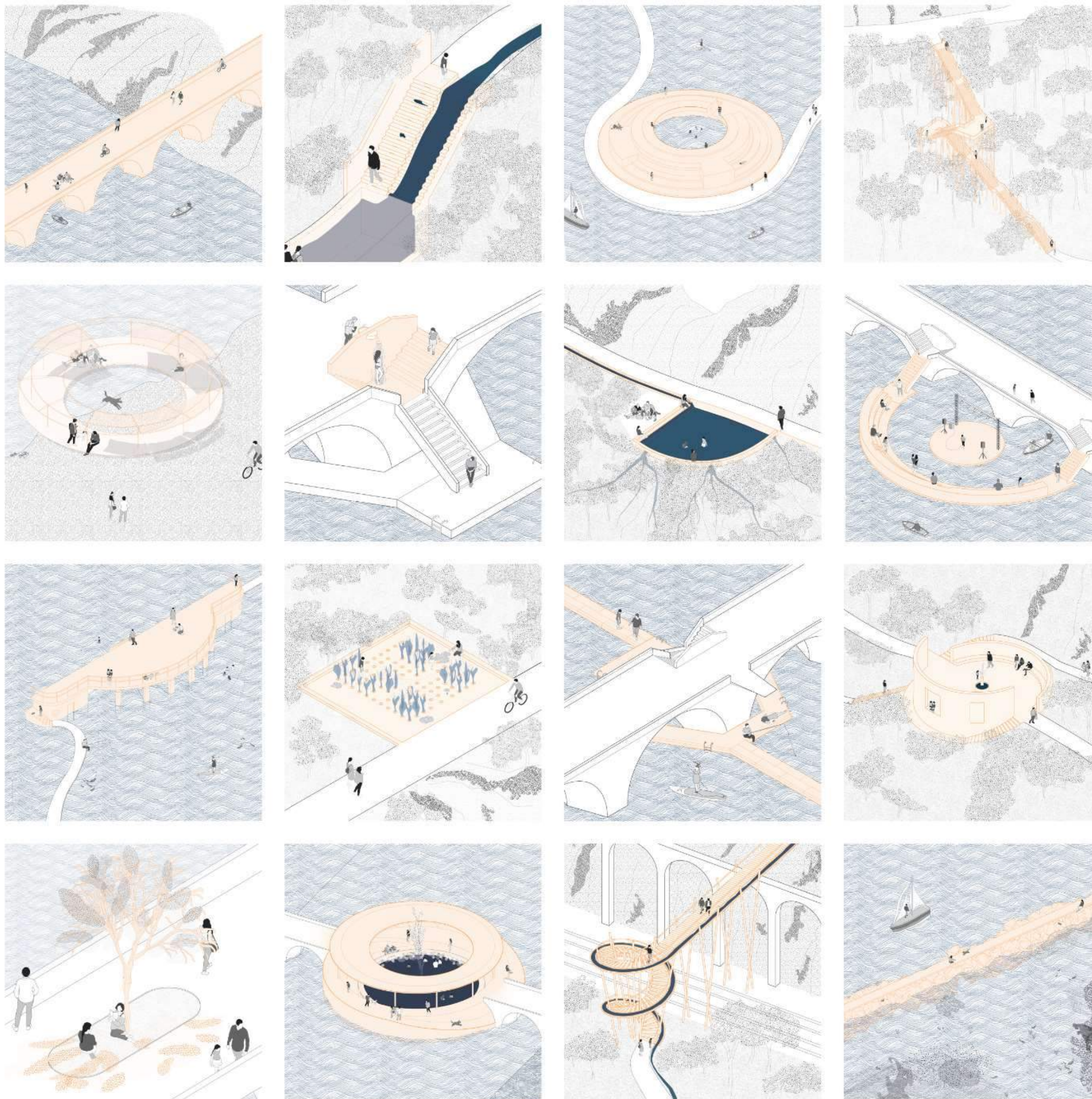
20 May 2023

Carola Hein, Maurice Hartevelt, Paolo De Martino, John Hanna, Muamer Tabakovic, and Carlien Donkor



Trieste exhibition stand at Nieuwe Instituut (Source: Carola Hein)

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2, du 21 au 26 mars 202



Image



Conclusion: Call for Collaboration

- Conceptualize the connection between water and heritage and climate change
- Connect mapping methodologies to create shared narratives
Cross World Inventory, UNESCO World Heritage Atlas, Canopy
- Offer Blue Papers as a place to collect diverse approaches of shared interest water,
history, heritage, culture, sustainable development, climate change

Thank you!
Carola Hein c.m.hein@tudelft.nl



Carola Hein
Professor and Head of the Chair History of
Architecture and Urban Planning, TU Delft



Commitments

- Advancing analytical approaches on water systems through time and space
- Empowering diverse stakeholders to rely on historic knowledge and traditional wisdom
- Providing a platform for free exchange of knowledge, experience and data
- Promoting open access courses that disseminate new methodologies
- Facilitating capacity building through professional education courses
- Developing serious games and digital tools for broad outreach to diverse communities
- Activating networks and evaluate impact
- Leveraging the power of academic research and institutions