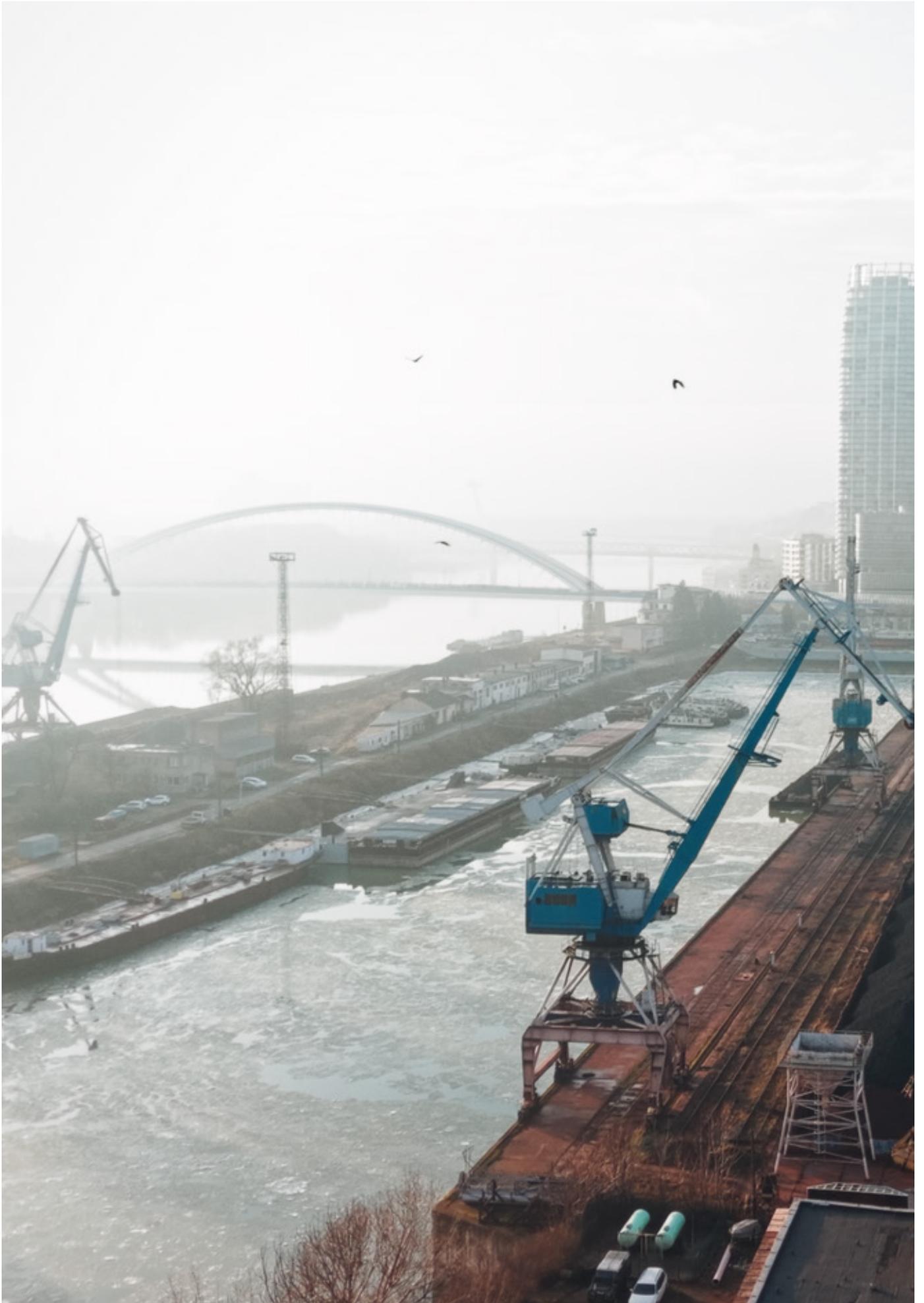


Masterplanning competition brief

Winter Harbour Bratislava

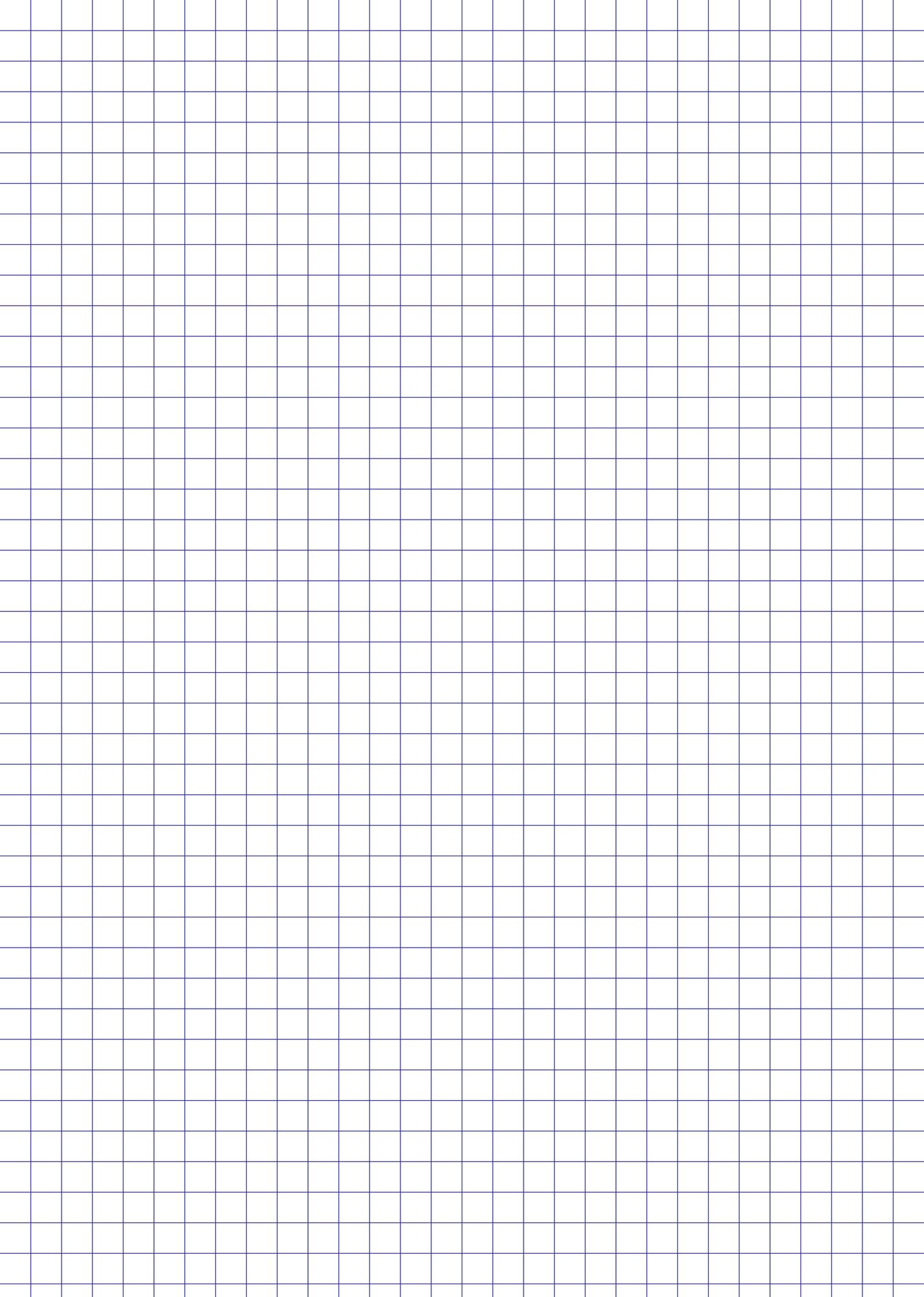


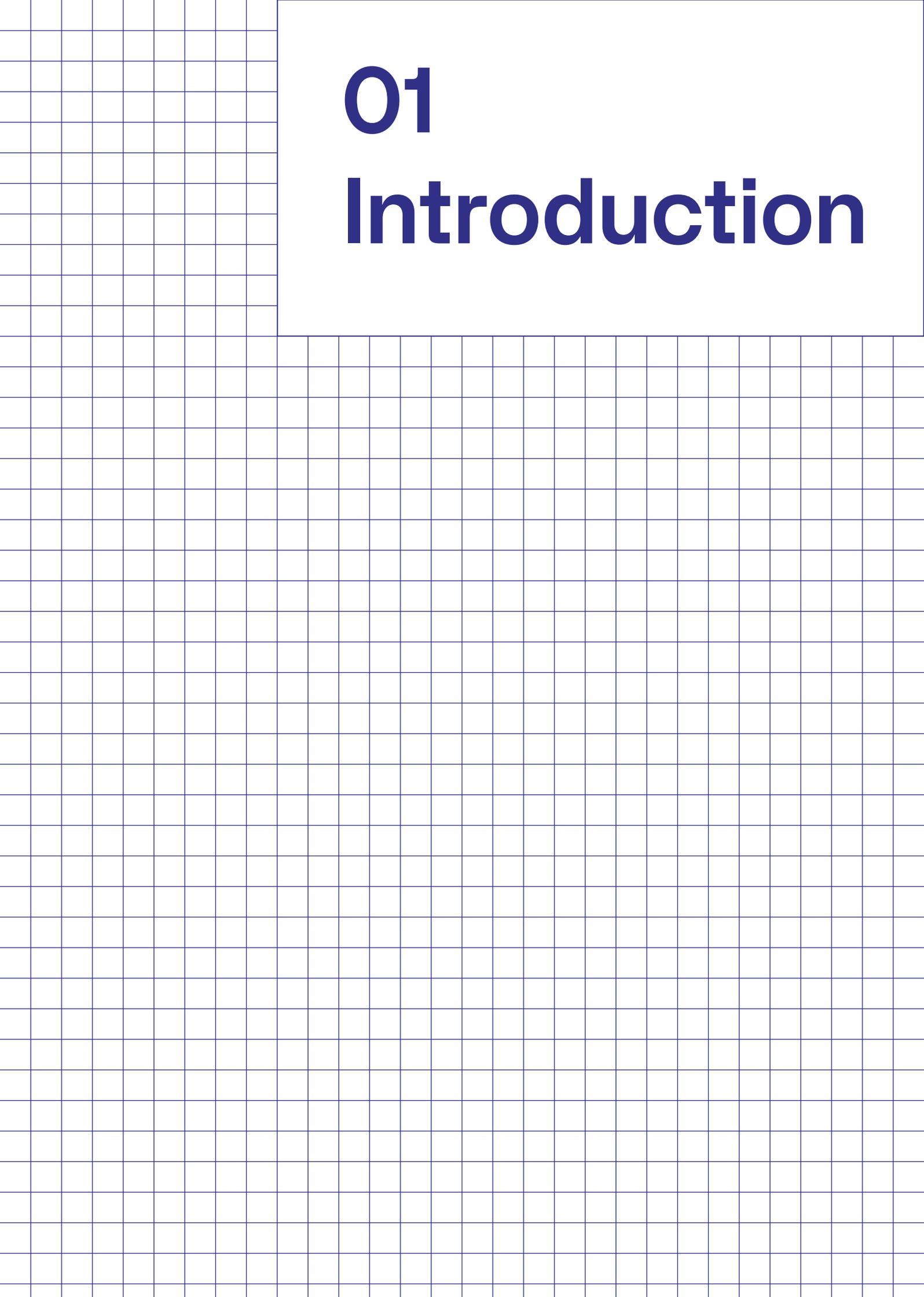




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01

Introduction

1.a. Opening remarks

Peter Gero

Guarantor of the Winter Harbour redevelopment Vision

The new Winter Harbour – as an urban structure – represents the transformation of an industrial area into a lively part of the city with mixed central functions, such as culture, sports, various types of housing, job opportunities, and other functions generated by the creative development of this area.

The overall goal is to create a new urban whole in Bratislava. In a logical sequence of steps, the construction of the Karloveské rameno, River Park, Vydrica, and Eurovea embankments reflects the current development of the city on the right bank of the Danube – an attractive space with a new character for Bratislava as a city on the Danube River.

A unique intention, a unique space, and a unique interplay of actors directly necessitate a unique opening for creativity. The genius of professional creative engagement – creation from the experiential fluidum of existing projects of a similar character – and the connection with the specific unique space of the Winter Harbour: traces of industrial use, connections with the city – the basis of diversity and genius loci.

Matej Danóci

general director of Public Ports (Verejné prístavy a.s.)

The decision to concentrate shipping capacities to the Pálenisko zone and free up the Winter Port area for further urban development was a strategic decision by the state, an investment in Bratislava's future and, at the same time, a major commitment to the city, its history and its inhabitants. Today, this area represents a barrier between the city and the Danube, but in the future it could become a place where the river once again naturally connects with everyday life in Bratislava. We therefore call on the participating teams to approach their designs with respect for the industrial heritage of the harbour, its technical nature and the values that this place embodies. The development of the area must be compatible with the relocation of port functions to the Pálenisko zone, which will continue to be a functional port in the immediate vicinity of the new city district. Our ambition is not to suppress these values, but to transform them into a modern urban district that respects history while clearly looking to the future.

We also expect a competition design that can transform the area into an open, lively, and multifunctional urban district with high-quality public spaces and a strong relationship to the water.

Our ambition is to create a framework for long-term and sustainable development, an area that will be climate-resilient, technically feasible, and economically viable, but at the same time humane and inclusive. We are looking for a solution that combines public interest with high urban quality and brings Bratislava a new district to be proud of.



1.b. Subject of the competition

The subject of the competition is an **urban design proposal for the transformation of the Winter Harbour area**, which represents a unique opportunity to create a lively urban quarter on the banks of the **Danube River**.

The aim is to transform a currently closed and mono-functional active logistics area for freight transport and material transshipment into an **open, lively and compact urban district directly on the banks of the Danube**. We are looking for a design based on the principles of the **15-minute city**, with priority given to pedestrian traffic, high-quality public spaces and blue-green infrastructure.

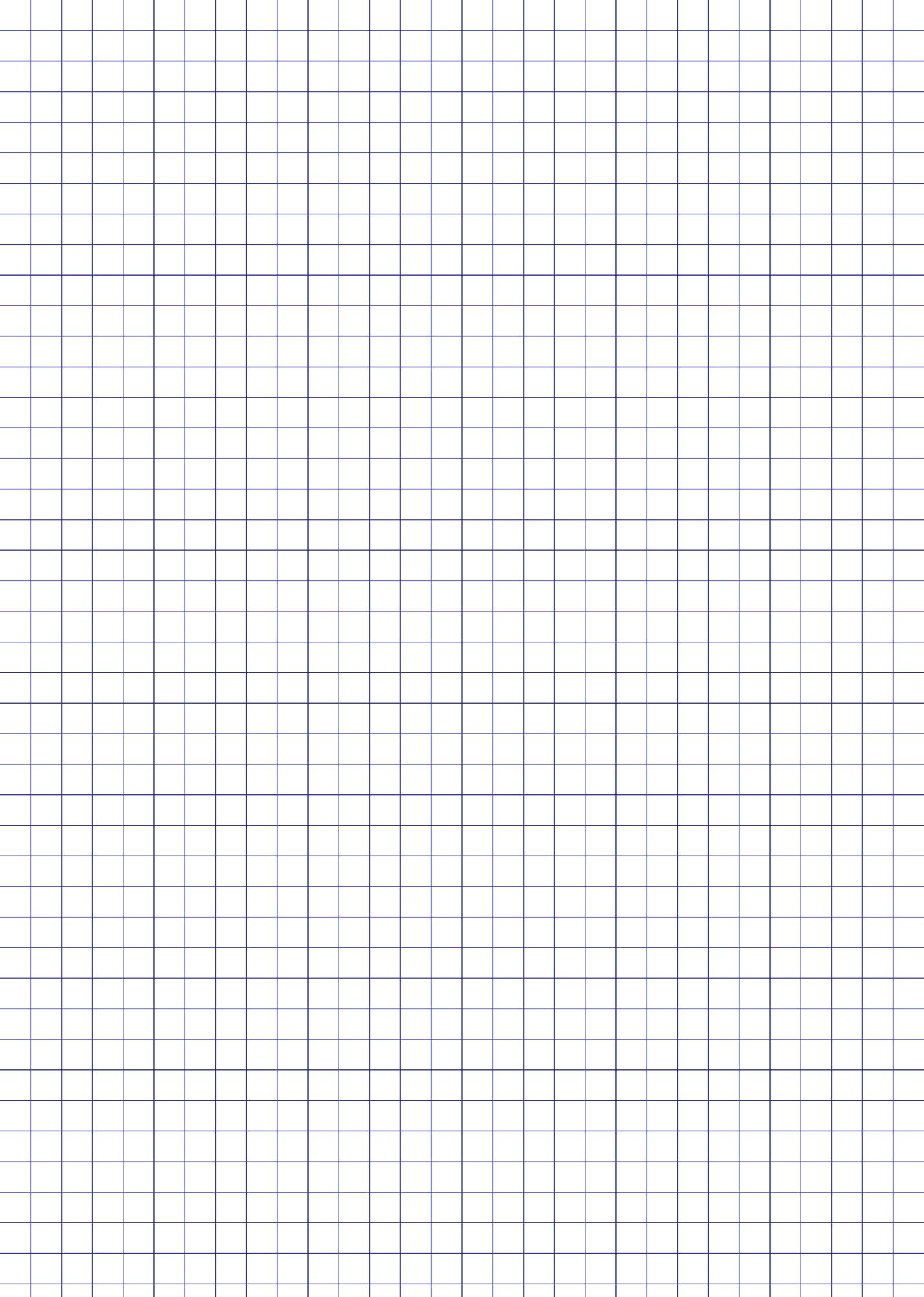
With an area of around **65 hectares**, the Winter Harbour is one of the last **large transformation areas in contact with the centre of Bratislava**. The design

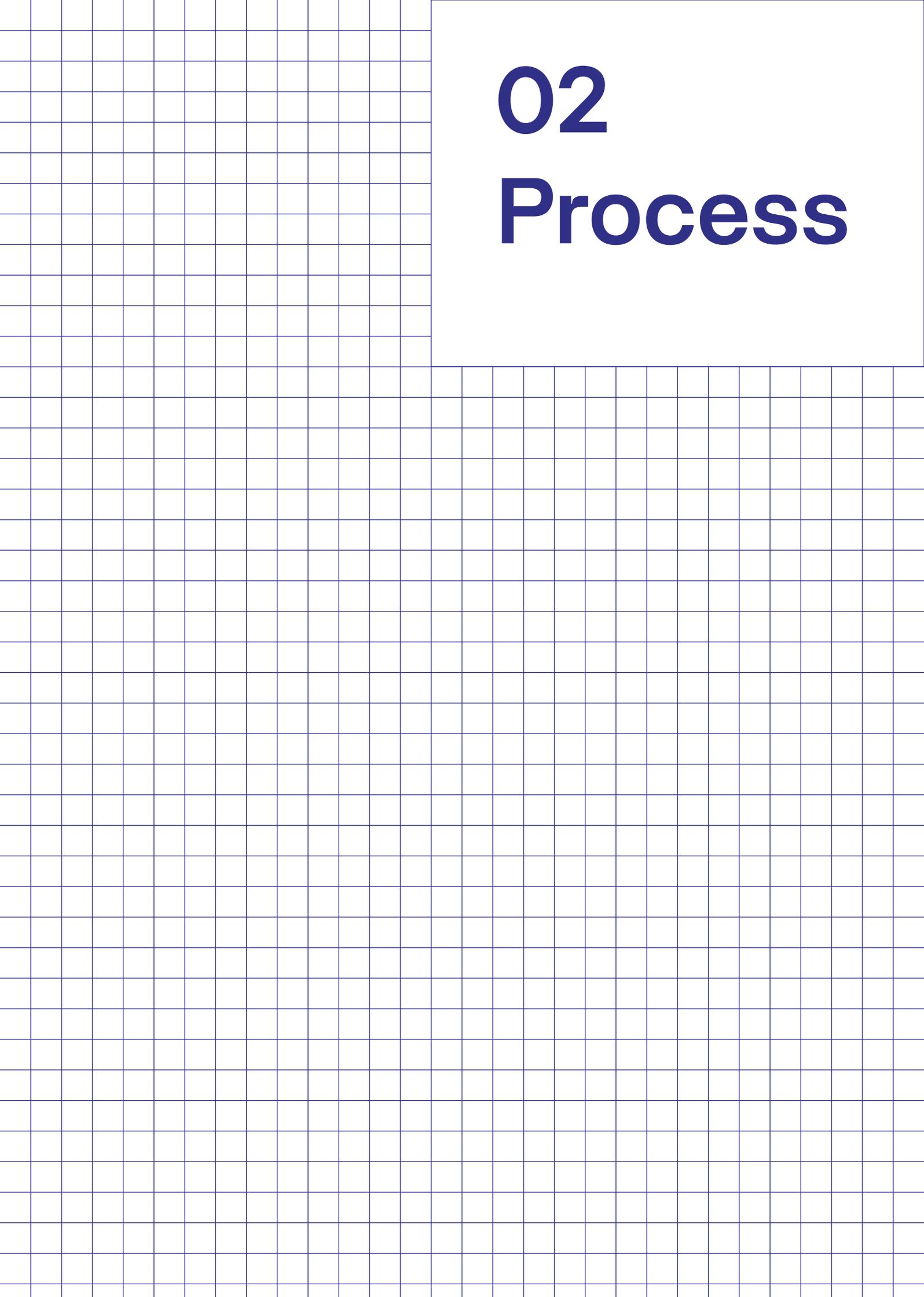
should build on the harbour's program by including passenger transport and an urban marina so that the Winter Harbour, currently perceived as an infrastructure enclave, becomes a unique point of contact between the city and the river.

The competition has been announced with the aim of obtaining a design that most convincingly **embodies the public interest** and fully **activates the potential of the area**. The winning design should provide a robust urban framework (Masterplan) that not only determines the spatial layout but also sets **binding principles and quality standards** for the long-term sustainable development of this location.

1.c. The Winter Harbour should be:

- ① **Part of the expanded city centre**, redefining Bratislava's relationship with the Danube River. The water of the river and harbour basins will become the basis of spatial composition, initiating the creation of year-round public spaces connecting urban life, culture and recreation.
- ② **A zone with a functionally diversified structure** based on layering of programme, with majority of housing.
- ③ **A zone with an urban block structure** that clearly defines a legible hierarchy of spaces – from city streets and waterfront promenades, through semi-public inner blocks, to private zones.
- ④ **An area with a city-appropriate urban density** that reflects its exclusive central location, while respecting the human scale and environmental limits of the area.
- ⑤ **An open and inclusive neighbourhood** with a high degree of pedestrian permeability, without physical barriers, smoothly connected to the surrounding urban fabric.
- ⑥ **A 15-minute city**, where every day needs are accessible on foot, with an emphasis on the accessibility of services at ground level.
- ⑦ **An example of the synergy between technical flood protection infrastructure** and the architecture of public spaces, where the flood protection strategy is integrated directly into the design of the riverside promenades and the ground floor without creating visual or physical barriers to the river.
- ⑧ **A place with a specific character and identity (genius loci)** that respects the historical memory of the site and creatively builds on it using contemporary means. Industrial artefacts – cranes, railways, halls and portals – should be integrated or reinterpreted in the new design.
- ⑨ **A climate-resilient district** that uses blue-green infrastructure to mitigate the heat island effect, to manage rainwater and to support urban biodiversity.
- ①⑩ **Compatible with the relocation of the port to the Pálenisko zone**, which will continue to be full of active industrial activity.





02

Process

2.a. Process

The announcement of the urban design competition for the Winter Harbour is the result of a strategic agreement and coordinated approach by key stakeholders:

Verejné prístavy, a. s. (Public Ports Company, announcer and owner)

The Public Ports as the majority owner of the land and technical infrastructure manages the area, operating under the Ministry of transport. They have initiated this process following a strategic decision to consolidate the cargo port and relocate all operations to the Pálenisko Port complex. The successful property settlement created the conditions for the release of the Winter Harbour site for a new urban function. The Public Ports company will be the key player in the future of the Winter Harbour and will be the client for processes after the competition.

Bratislava, the Capital City of the Slovakia (announcer and planning authority):

For the city, this process represents the fulfilment of the long-term concept for the development of the Danube embankment ("Bratislava – a city on the river"), within which the Winter Harbour represents a key development segment. The city is involved in the process as the spatial planning authority, which will incorporate the results of the competition into following agreements on the development of the area.

Metropolitan Institute of Bratislava, MIB, (competition organiser and expert guarantor)

MIB acts as an expert partner in the process, guaranteeing the quality of the competition process, the protection of the public interest and the continuity of urban planning principles.

The competition's aim is to find a multidisciplinary team with experts in urban planning, landscape, flood protection and public space that will create a comprehensive **Masterplan** that will serve as a strategic framework for the transformation of the area. It will become a binding basis for **coordinating subsequent investment processes**, developing follow-up urban planning and architectural studies, and organising partial architectural competitions. These competitions will focus on **the architectural design** of key buildings – accents and landmarks that will shape the new silhouette and identity of the waterfront.

The resulting Masterplan will also serve as a **detailed regulatory framework** for the transformation, defining the spatial structure, volume limits and functional use. This way, it will establish clear rules for cooperation with developers and for property transactions, **ensuring transparency, investment predictability, continuity of quality and long-term sustainability** of development.

Diagram 1: Winter Harbour transformation process



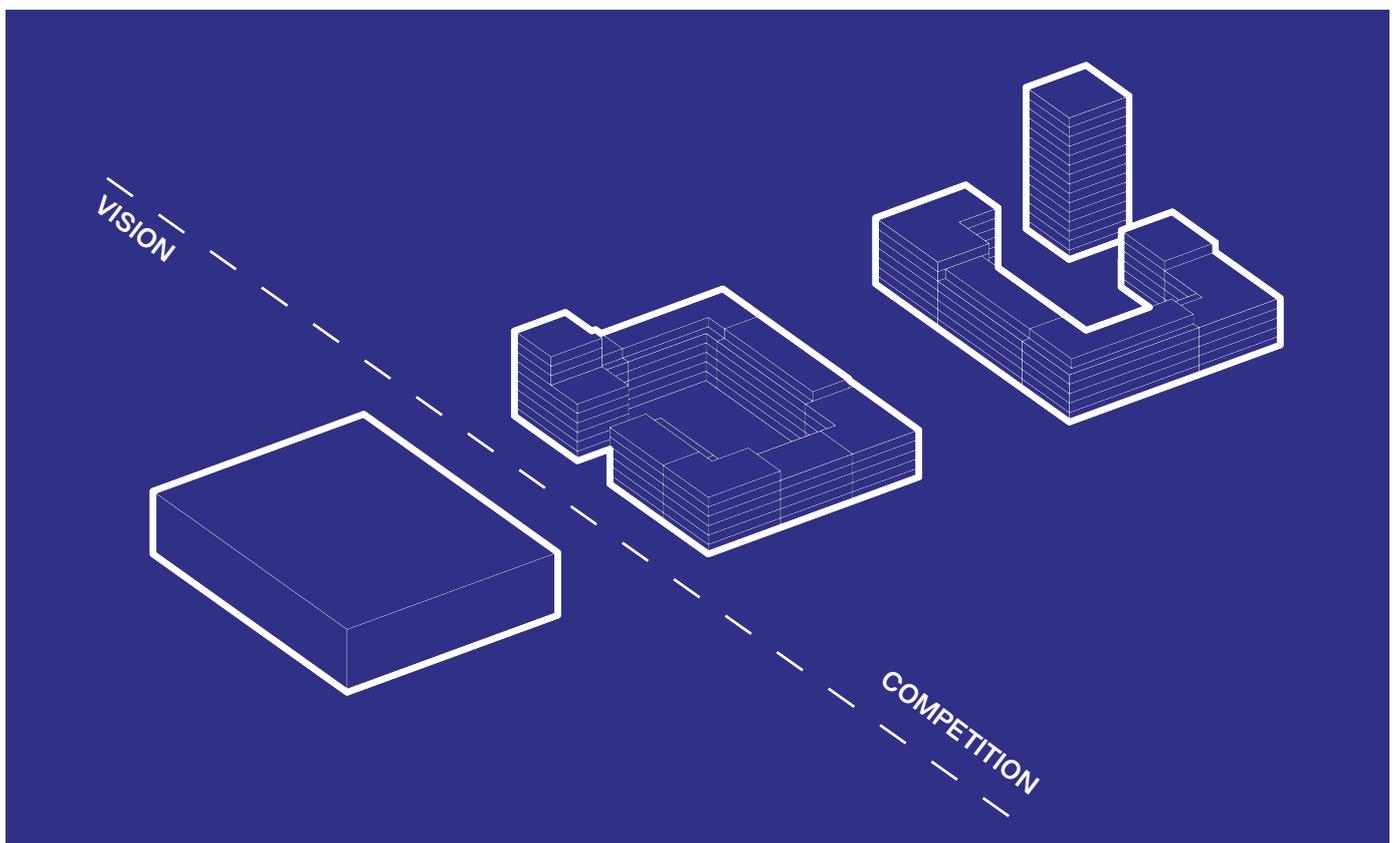
2.b. Winter Harbour Redevelopment Vision

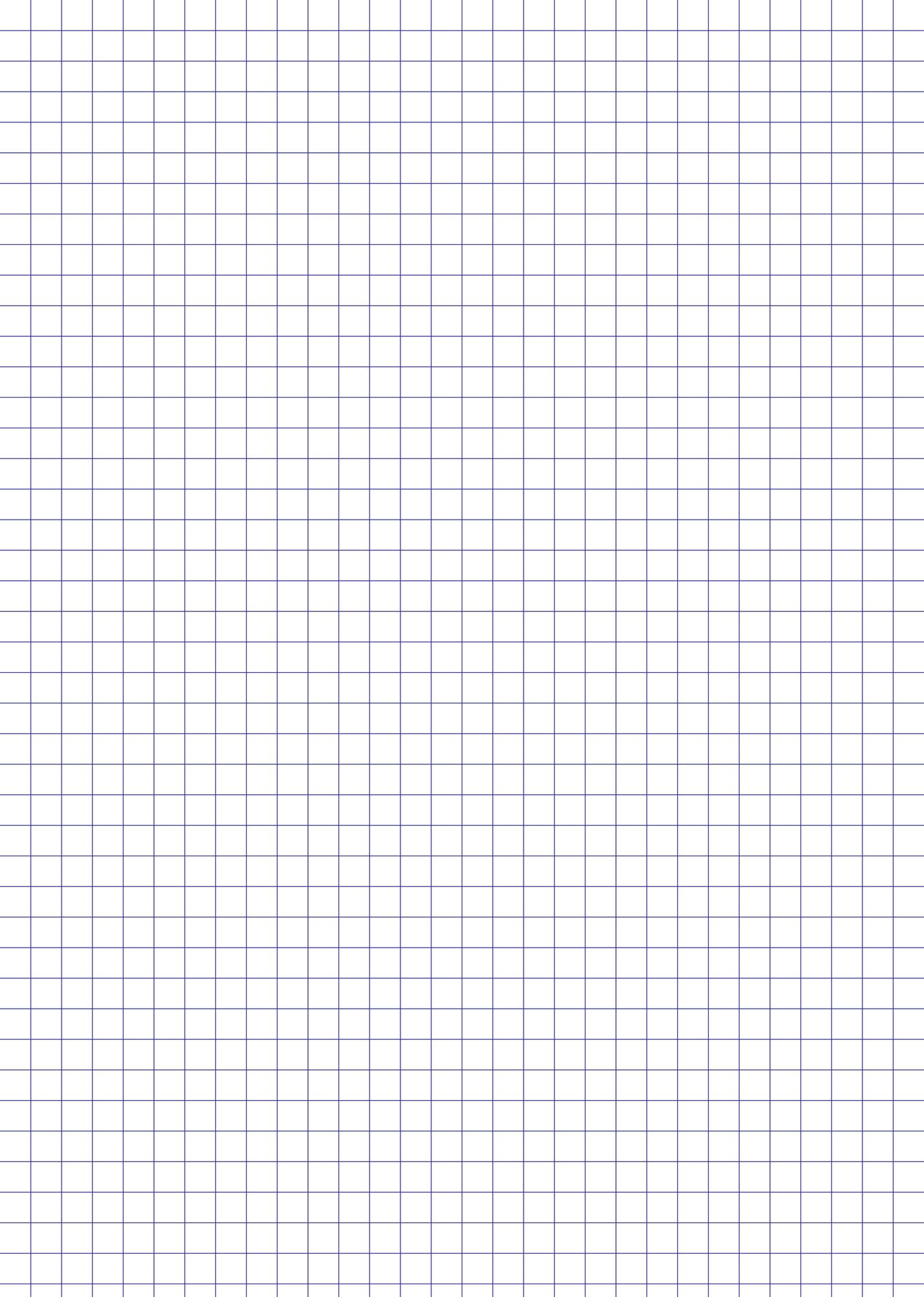
The competition was preceded by the preparation of the **Winter Harbour redevelopment Vision** created by the Bratislava Metropolitan Institute at the initiative of Public Ports. This document examined the **technical and economic feasibility of the transformation**, defined spatial limits, and formulated binding urban planning principles and limits. The Vision focused on integrating this area into broader urban and landscape connections and created an expert basis for the competition brief. The Vision also includes a **detailed spatial design**, which was meant to verify the application of the principles in the site, as a proof of concept.

The urban planning principles from the Vision were transferred to the competition brief, so **it is not necessary to study the full scope of the Vision** in order to participate in this competition. The binding principles and limits from the Vision thus represent the conceptual framework for the competition designs.

The entire Redevelopment Vision is available at <https://mib.sk/bratislava-ma-viziu-premeny-zimneho-pristavu-dalsim-krokom-je-medzinarodna-sutaz/> and a [GIS application](#).

Diagram 2: Difference in the level of detail between the Vision and the Competition outcomes





03

Basic

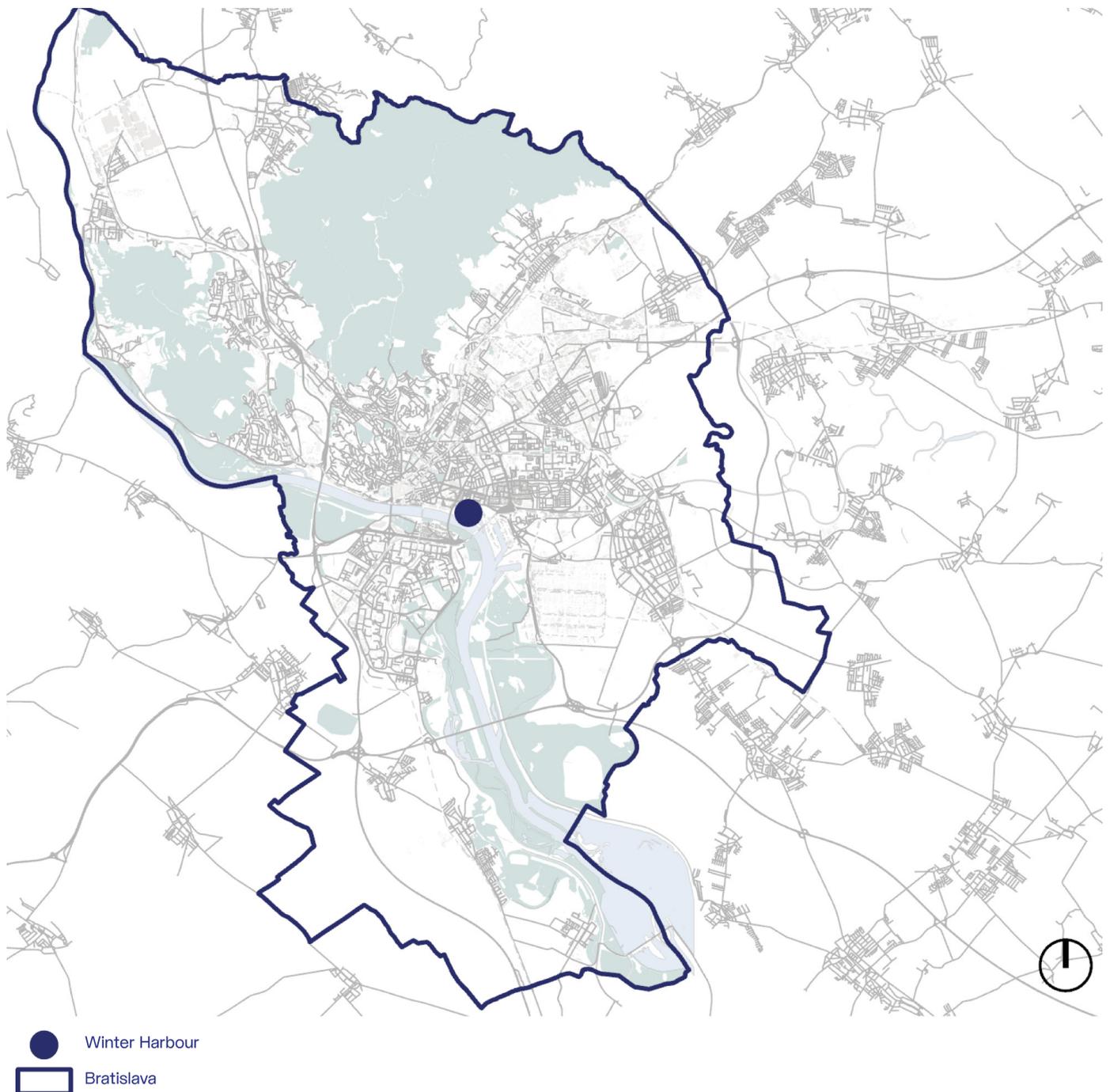
information

3.a. Location in the city

Bratislava is a Central European border metropolis at the intersection of Austria and Hungary. The Winter Harbour has an exposed position along the main course of the Danube, at the junction of two major European transport corridors – the Rhine-Danube and the Baltic-Adriatic. The location has exceptional

potential due to its proximity to the river and its direct connection to the developing city centre (Eurovea II, Chalupkova, Klingerka, Nivy zones).

Diagram 3: Winter Harbour in the context of Bratislava



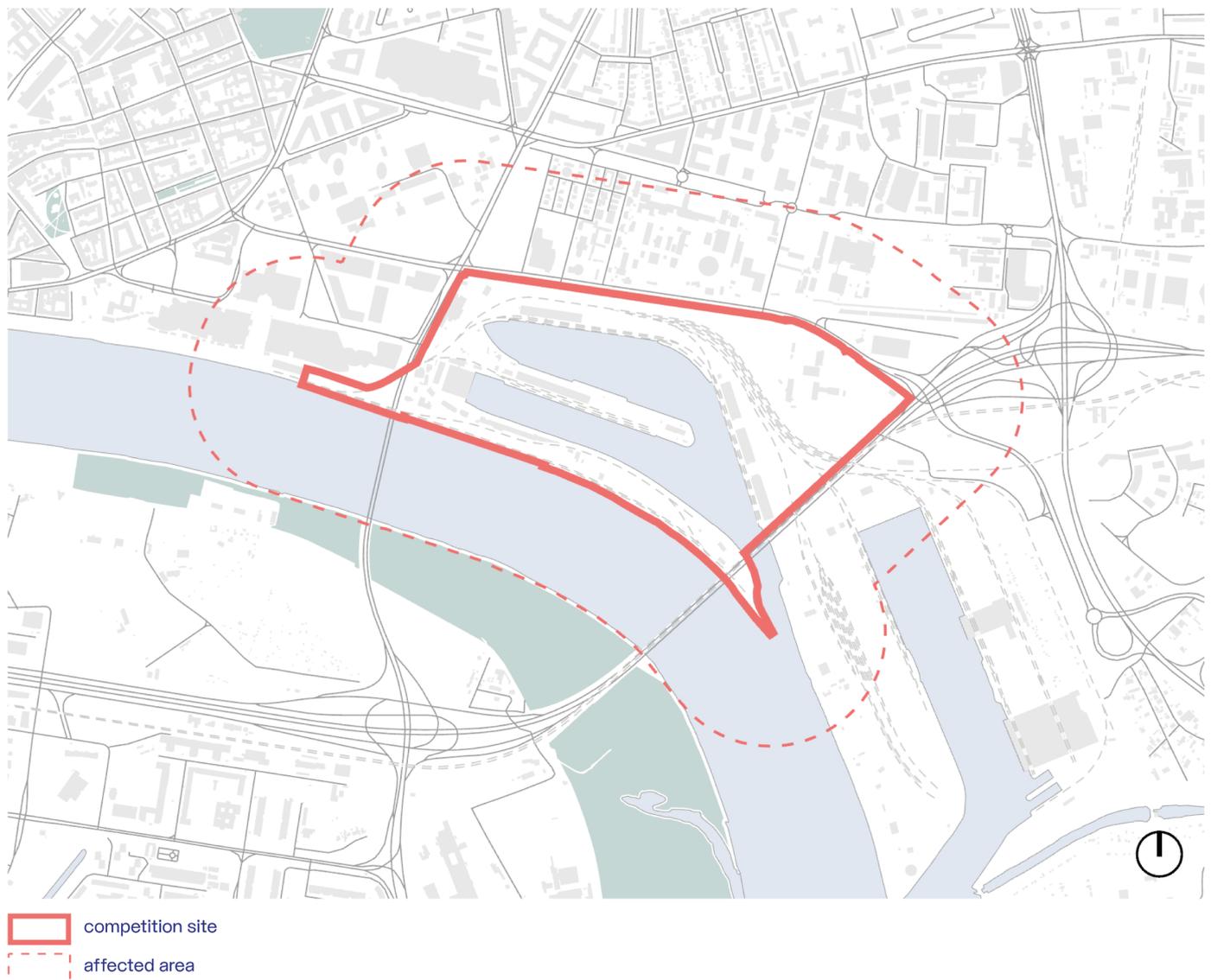
3.b. Competition site and affected area

The **competition site** is defined by the transport corridor of Prístavná and Košická streets, the Apollo Bridge, the Port Bridge (Prístavný) and the Danube River. Of the total of **64.5 ha**, **45.03 ha** is land, with the remainder being water of **harbour basins**.

The **affected area** represents a space for the conceptual overlap of competition proposals. The implementation of modifications in this area will depend on the cooperation of third parties and future external investments, therefore they should not determine the feasibility and functionality of the proposal for the

competition site. Competition proposals may modify the affected area with the aim of better integrating the new neighbourhood. Among other things, modifications to the profile of Prístavná Street and the area under the Apollo Bridge are assumed to ensure a smooth connection to the embankment in front of Eurovea.

Diagram 4: Delineation of the competition site and of the affected area



3.c. Ownership and administration

Of the total area **64.5 ha**, the main landowner with a **93.1%** share of the competition site is the Public Ports company - Verejné prístavy a.s. (100% owned by the Slovak Republic), owning **60 ha**. The state owns an additional **1.2 ha (1.9%)**. The share of the capital city of Bratislava represents **2.3%** of the competition site (**1.5 ha**). Private owners account for **2.7%** of the entire area in question, covering **1.7 ha**.

In the envisioned final state, public infrastructure and spaces of city-wide significance will be managed by the capital city of Bratislava. Semi-public and public spaces of local importance will be managed by the site owner. The proposal should take this division into account when planning access, connections and the hierarchy of public spaces in order to ensure their long-term functional coherence and sustainability.

Diagram 5: Ownership in the competition site



3.d. Development around the site

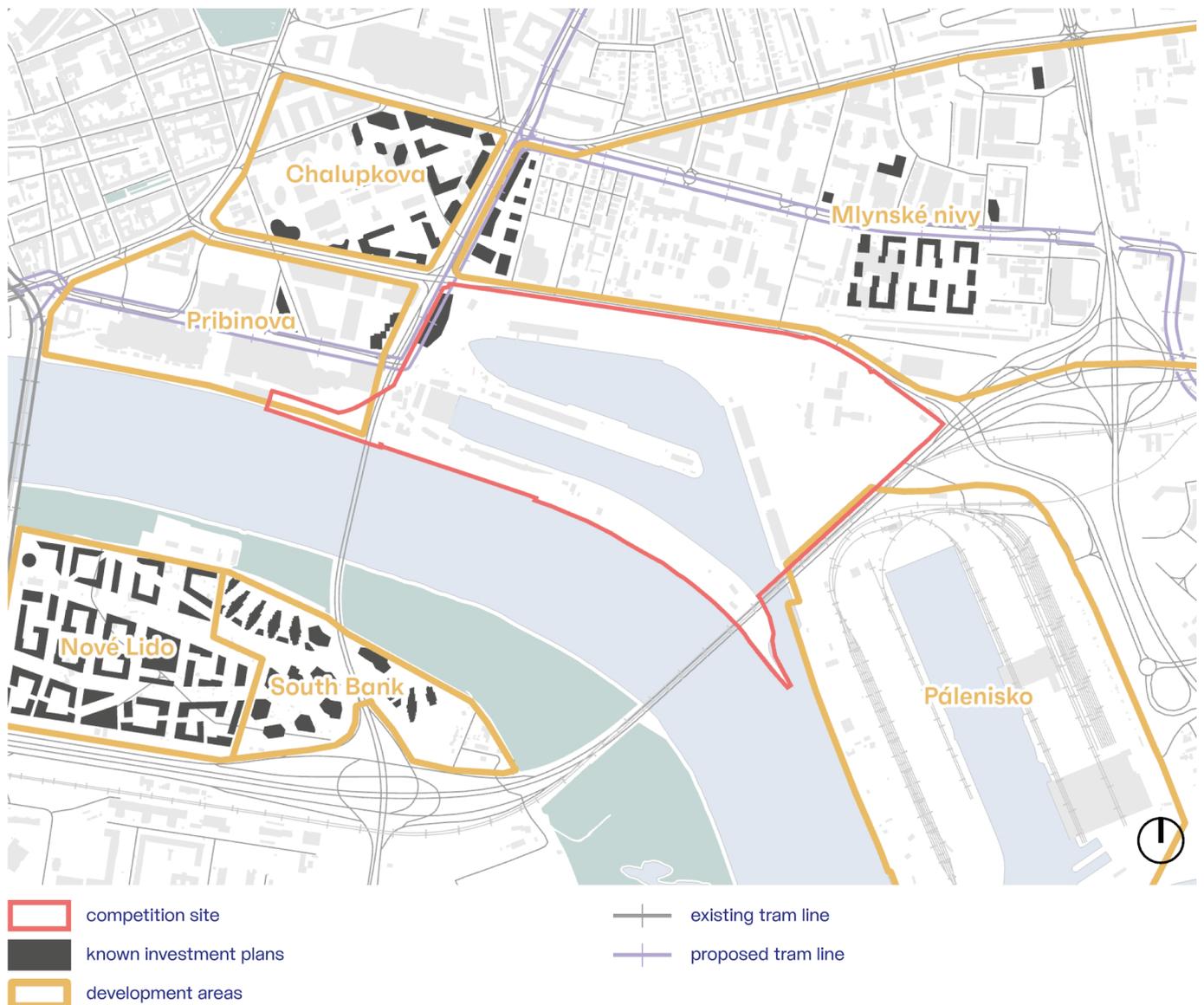
There are several projects in the vicinity of the Winter Harbour that will be completed or substantially developed by 2030:

- **Pribinova – Košická tram line:** Proposed along the north-western border of the competition site. It will significantly improve transport services for the Winter Harbour area and provide a connection to the central and peripheral parts of the city.
- **Mlynské Nivy Transformation Zone:** North of the Winter Harbour is an area undergoing intensive transformation into a multifunctional urban district

in accordance with the Mlynské Nivy urban study.

- **Pálenisko Port:** The area southeast of the Winter Harbour, behind the Port Bridge, is a promising area for the gradual intensification of transshipment capacity. There are plans to relocate equipment and infrastructure from the Winter Harbour to Pálenisko.
- **Chalupkova/Pribinova zones:** The existing and developing buildings of Bratislava's downtown are in the northwest and on the adjacent left bank of the Danube.

Diagram 6: Development around the site



- **Right Bank of the Danube (Nové Lido and South Bank):** Development plans for the Nové Lido and South Bank zones are planned on the opposite right bank. Together with the Pribinova and Chalupkova zones, these are part of the planned new city centre.
- **"Needle":** The planned investment project is set to become the tallest building in Bratislava. With a proposed height of 220 metres, it will surpass the current Eurovea Tower (168 m).

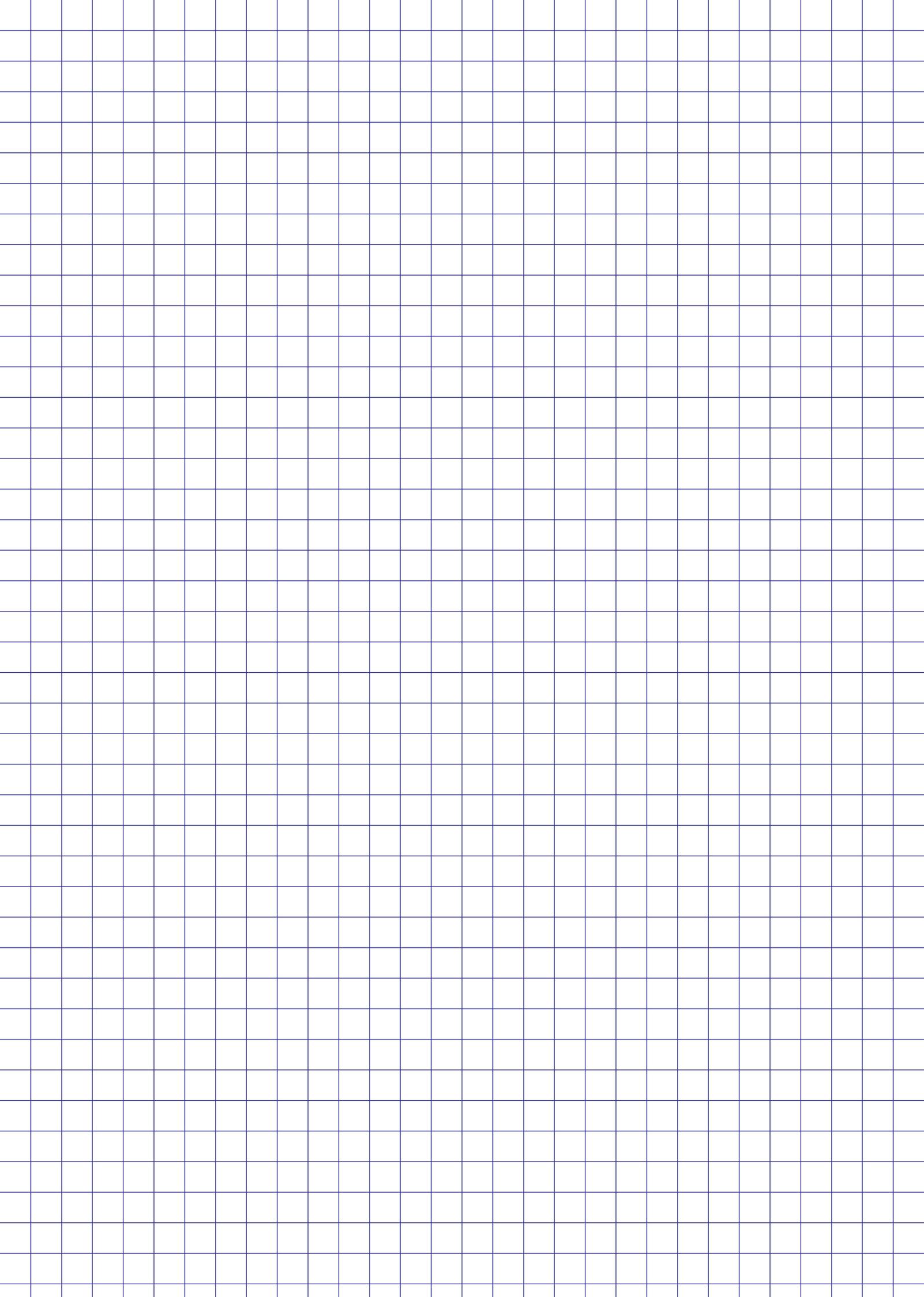
3.e. Phasing

The proposed phasing of construction must guarantee a logical, technically feasible and economically sustainable transformation of the area. It should consider the following principles:

- To facilitate the phasing process, it is advisable to divide the territory **into sectors (A–F)**. The construction process should be designed in such a way as to create **coherent and functional urban units**, not isolated fragments of development.
- The development of the area should proceed in a **logical spatial sequence**, ideally from the existing city centre and the Eurovea zone towards the harbour basin and further east. This will ensure the smooth "stitching" of the new area with the existing urban structure.
- In accordance with the Winter Harbour redevelopment Vision, a prerequisite for any construction in the harbour is the prior or simultaneous implementation of **technical flood protection measures**.
- The construction of **technical and transport infrastructure** (including utility networks and engineering services, roads, and public spaces) must **precede** or run in parallel with the construction of buildings. The aim is to ensure that, by the time the buildings are put into operation, the zone is **fully served by transport and connected to high-quality public space**.

Figure 1: View of Winter Harbour with downtown and Bratislava Castle in the Background





04

**Character
of the site**

Figure 2: Harbour basins, Apollo bridge, downtown in the background



Figure 3 & 4: Cranes with new developments on Mlynské nivy and the Eurovea Tower with Bratislava Castle in the background

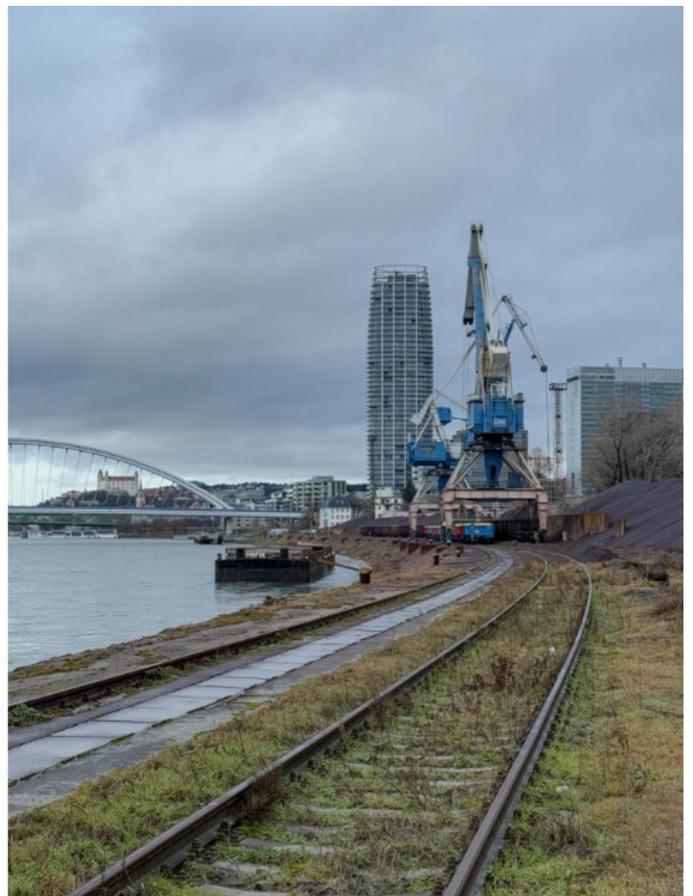


Figure 5 & 6: Pelletised iron ore, Skypark development in the background, ships in the southern basin



Figure 7: Existing industrial elements in the Winter Harbour – gantry cranes



Figure 8: Existing industrial elements in the Winter Harbour – pelitised iron ore, port cranes and railway tracks



4.a. Winter Harbour character

The Winter Harbour area is a unique urban phenomenon in Bratislava, with a distinctive industrial genius loci. Its character is determined by the **historic harbour basins**, as well as a **collection of technical monuments, buildings and original warehouse buildings**.

The site has a **specific linear and fragmented structure**, determined by alternating **water areas** and narrow, **elongated strips of land**. The character of the **embankment edges** is variable – it combines original, natural sloping banks with almost direct contact with the water and technical vertical harbour walls (retaining walls), which are still used for logistics today. The area is **exposed to flooding** in extreme hydrological situations.

The current **rail spur** used for cargo handling **will not be retained** within the competition site, which is currently used for cargo transshipment. This function, along with the necessary infrastructure, will be moved to the **Pálenisko area of the port**. Even after the transformation of the Winter Harbour, the transshipment of cargo and bulk materials will continue in the immediate vicinity of the area, which will have a significant impact on its immediate surroundings. Another significant limiting factor in terms of noise is the existing railway line running under the Port Bridge.

4.b. Principles of developing the character

This area is characterised by an extraordinary concentration of **heritage values** – from the urban structure, through the architecture of listed buildings, to the layer of technical artefacts and works of art in public spaces. The aim of the transformation is to integrate this tangible evidence of the past into the new spatial identity of the neighbourhood and to interpret them creatively.

- **Urban scale:** The area has been preserved as a legible whole in its original functional complexity (from housing in the Boatmen's House to the maintenance and repairs of ships). The linear connection of the waterfront edge, which connected (also by rail) today's passenger port, Warehouse No. 7, the Boatmen's House and the technical infrastructure, is significant.
- **The silhouette of the harbour** forms the urban value of the space. The harbour enters the city skyline from several distant views, which when approaching the city from the south is characterised by the castle, the tower of St. Martin's Cathedral, the Carpathian Mountains, the water basins and the cranes in the Winter Harbour. The design must take into account:

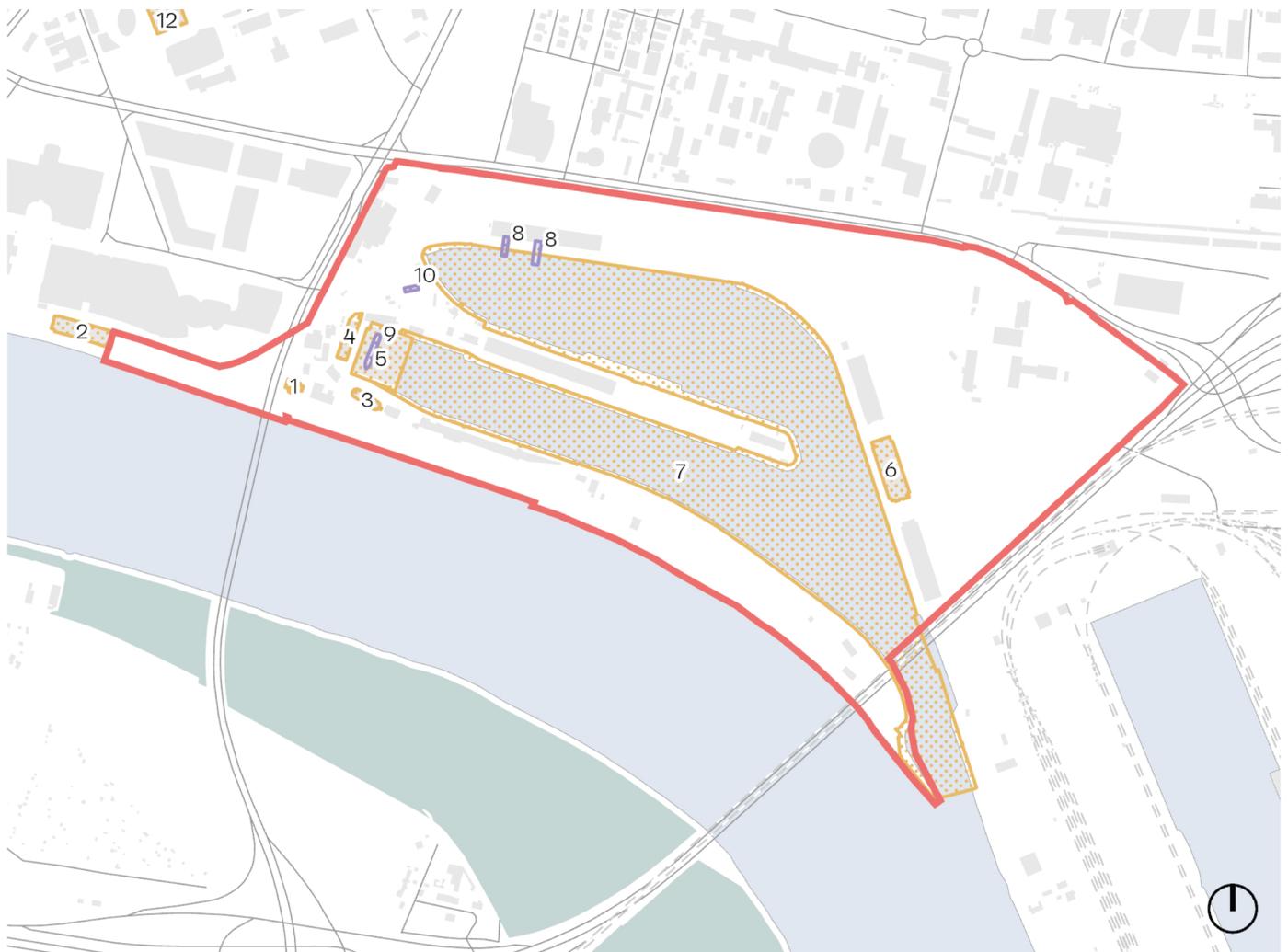
- **Distant views of this area from the Apollo Bridge and from the water**, in which the historic buildings of the Boatmen's House and the Pumping Station should be clearly visible, as well as the presence of the harbour pools and technical equipment (cranes, transshipment points). This requirement is based on the city zoning plan.
- From Warehouse no. 17, a **visual connection with the Boat lift and Boat workshop**, behind which the silhouette of the castle can be seen.
- A challenge in integrating preserved buildings is the **conflict with flood protection requirements**, specifically the global raising of the ground level. This intervention creates the risk of the original buildings being "drowned" by the new public space and distanced from the water level.

National Cultural monuments

- Immovable national cultural monuments, listed buildings, must be preserved

- Any development proposal that affects listed buildings or their protective buffer zone must demonstrate a sensitive approach to the heritage value and historic quality of the site. The final design is subject to approval by the Regional Monument Office.
- **Protective buffer:** The statutory protective buffer within a radius of **10 m** from the monument does not constitute a building restriction. It is possible to place and design new structures in this area, but it is necessary to ensure a sensitive architectural and spatial design.
- When designing new buildings, it must be taken into account that listed buildings should have a **dominant visual position** in the space so that their monument and urban values remain legible.
- **Boat workshop and Boat lift:** It is possible to consider adapting the Boat workshop for cultural use, for example as a museum of water transport. The programme of the building must be operationally and visually connected to the main public space that will be created between the Boat workshop and the Boat lift. The Boat workshop building can be sensitively extended or raised, provided that its heritage values are preserved.

Diagram 7: National cultural monuments and collection objects



- competition site
- national cultural monuments
- movable monuments and collection artifacts

- | | |
|-------------------------------|----------------------------------------|
| 1. WASTEWATER PUMPING STATION | 6. PORT WAREHOUSE NO. 17 |
| 2. WAREHOUSE NO. 7 | 7. HARBOUR |
| 3. BOATMEN'S HOUSE | 8. TWO GANTRY CRANES NO. 15 AND NO. 16 |
| 4. BOAT WORKSHOP | 9. TUGBOAT ŠTUREC |
| 5. BOAT LIFT | 10. TUGBOAT ZVOLEN |

Movable monuments

- Protected historical cranes and listed vessels should be integrated into future public spaces as bearers of the identity of the place. Their relocation to the Pálenisko port and further use for logistical purposes is not under consideration. The cranes can be moved to a more appropriate location, for example to create a composition in relation with the Warehouse No. 17. The same applies to the modern cranes currently in use.

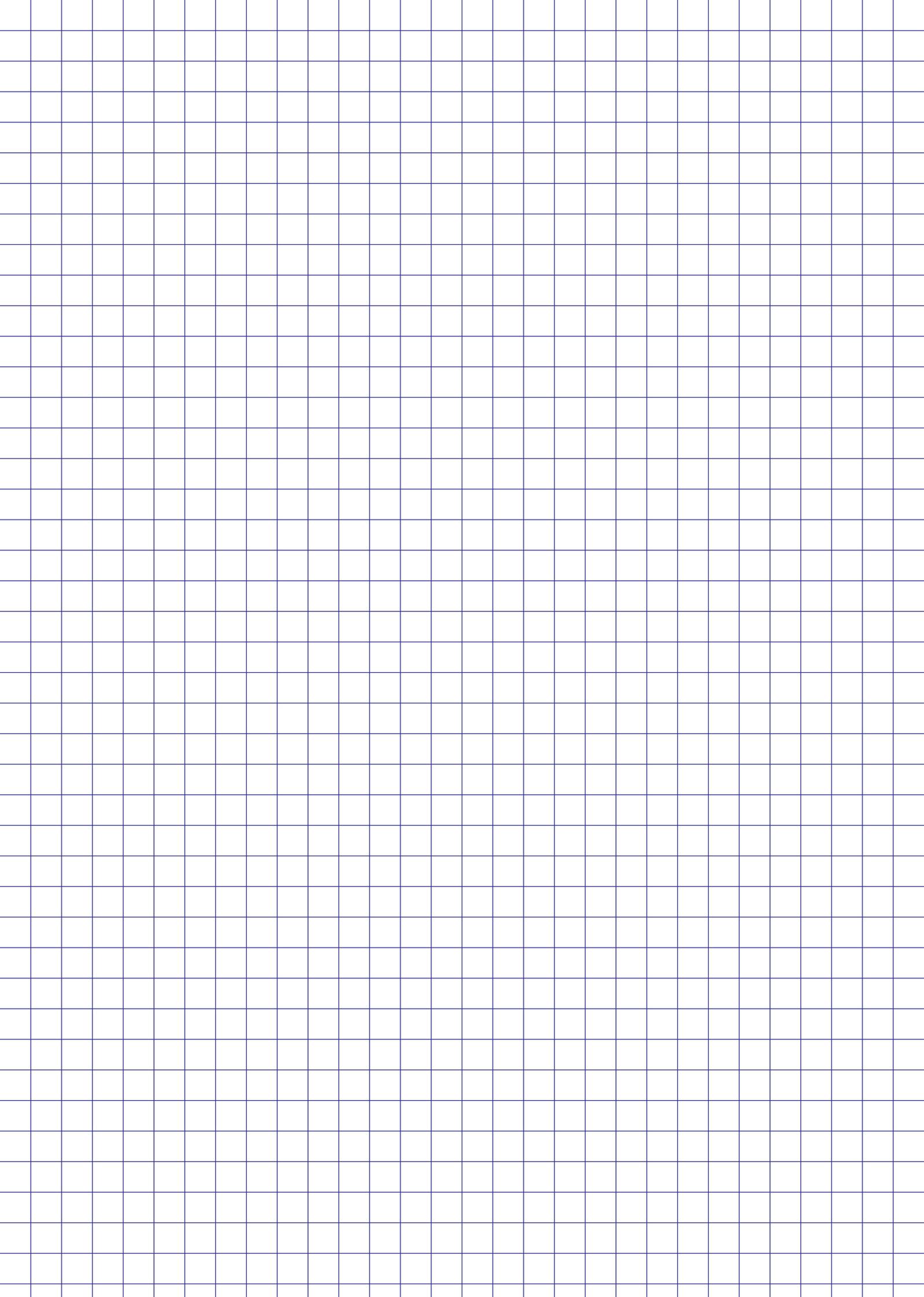
Harbour basins:

- The basins are the most spatially significant and historically valuable element of the Winter Harbour. They are a complex technical work defined by harbour walls, railway lines and preserved "technical fittings" of the embankment (bollards, mooring fixtures, ladders, ramps).
- **Unchanging geometry:** The floor plan and surface configuration of the basins are fixed and unchangeable. Preserving the original outline of the water areas is a fundamental principle of monument protection of the urban structure.
- **Reversible elements:** It is allowed to insert new, light and reversible structures (floating piers, pontoons, docks) onto the water surface, which will enable the use of the water without permanently interfering with its geometry.
- **Contact with the water (edge treatment):** In prominent locations directly connected to key public spaces, it is possible—within a limited scope—to consider lowering the ground level and introducing stepped seating or terraces for recreational use.

Art in the Winter Harbour

There are several works of art in the area, which have a direct link to the site. It is necessary that they also have a dignified place in the design. Technically, their relocation is possible, but given the size of some of them, it may be technically and financially complicated. In the event of relocation, the design of the new installation must be handled sensitively and, in accordance with the provisions of the Copyright Act (No. 185/2015 Coll.), the author must be informed of the intention to permanently relocate the work in sufficient advance.

- The works Foundation Stone and Ribbon of Friendship were part of the artistic design of the Port bridge, so it is appropriate to propose their placement in their current locations.
- The work Monument to fallen sailors meets the criteria for a war grave under Act No. 130/2005, so its relocation is not desirable and is subject to the approval of the Ministry of the Interior.



05

**Public
space**

5.a. Public space principles

Proposals should elevate landscape as the catalyst for the project's spatial logic, transforming the Winter Harbour into a vital urban realm defined by the contrast between industrial monumentality and an inclusive human scale. Central to this vision is the 'city at eye level,' where the pedestrian experience drives the aesthetic and functional programme across three urban scales: the city, the neighbourhood, and the building.

The aim is a permeable, climate-resilient, and socially inclusive environment that maximises contact with the water. By harmonizing these scales, the project serves as a strategic springboard for Bratislava's waterfronts—moving beyond local intervention to holistically enlarge the city's public and cultural values and setting a new benchmark for the capital's relationship with its river.

The design is expected to incorporate **industrial elements and preserved artefacts** (rails, cranes) directly into the public space.

- A reference site coverage ratio is set for the mainland of the area:
 - **built-up areas (40%),**
 - **public spaces (40%),**
 - **semi-public/semi-private spaces (20%).**
- The structure of public spaces consists of city streets with active ground floors, **residential streets with calmed traffic, and central spaces**, all of which are interconnected by elements of blue-green infrastructure.
- The design of public spaces must ensure **permeability and smooth movement** throughout the area while maintaining the intimacy of the inner blocks.
- The priority is to create **strong links to the surrounding urban structure** and eliminate visual barriers; the priority is natural orientation within the area.

- In addition to commercial operations, the design is required to integrate so-called "**third places**" into the public space – non-commercial zones for leisure, community activities and sports.
- When designing **active ground floors**, reflect the frequency of pedestrian traffic in the street according to its hierarchy.

Key public spaces

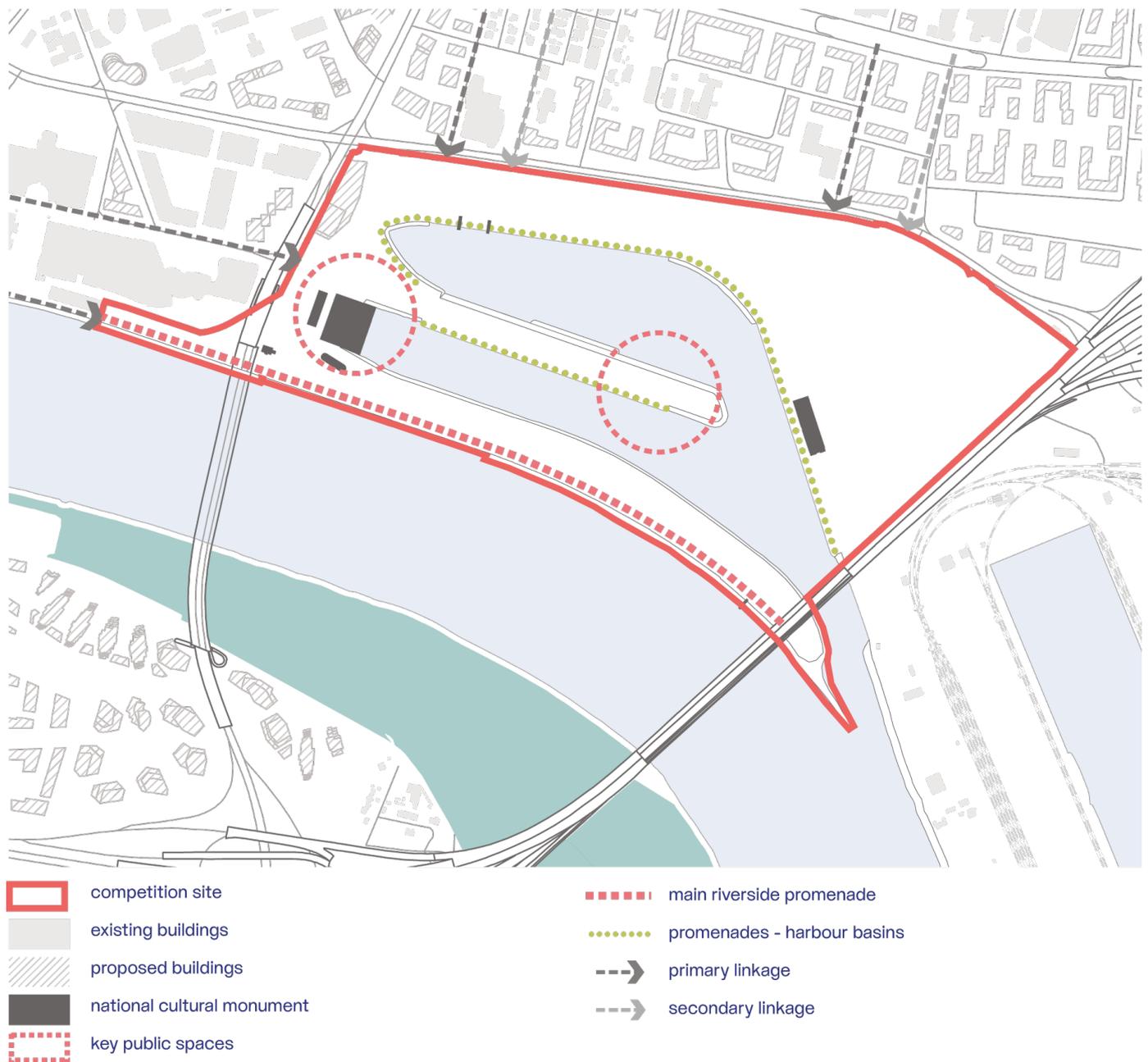
Three basic requirements are defined for key public spaces. (These spaces will be the subject of a follow-up contract from the competition):

- Design of the **main square, preferably located near the Boat lift** in the western part of the southern basin.
- Location of a **central public space at the end of the middle peninsula** (sector B) in connection with the proposed architectural and massing landmark.
- Location of the **main riverside promenade** along the main course of the Danube River which will complement the existing line of public spaces along the river

Secondary public space

- **Promenades are also proposed in contact with the harbour basins**, the extent and location of which is up to the competition designs. The key value of the promenades is their immediate contact with the river.
- A design of **smaller squares** is expected in the site, among others it is necessary to design **local nodes** in the proximity of listed buildings and civic amenities.

Diagram 8: Composition of public spaces

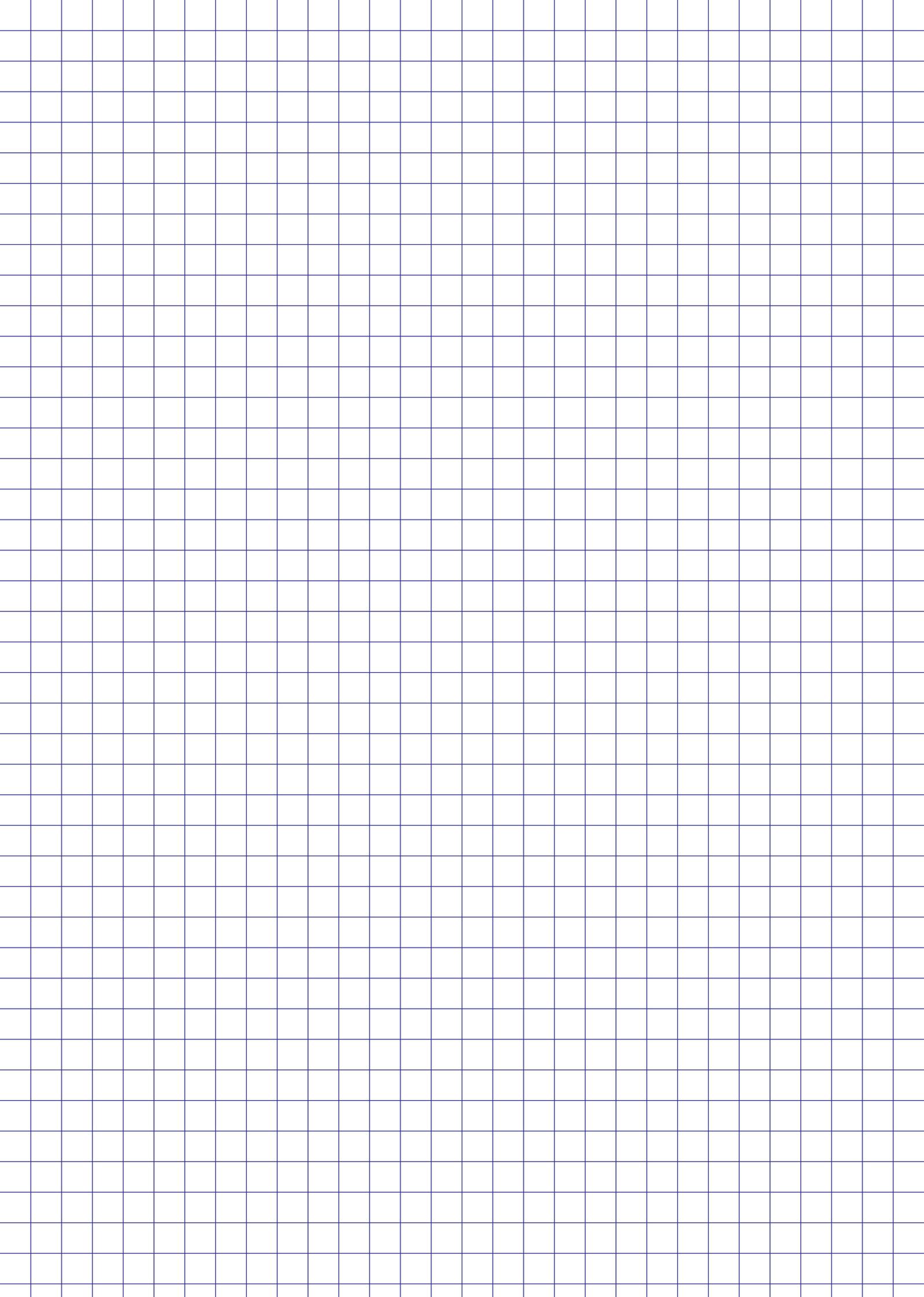


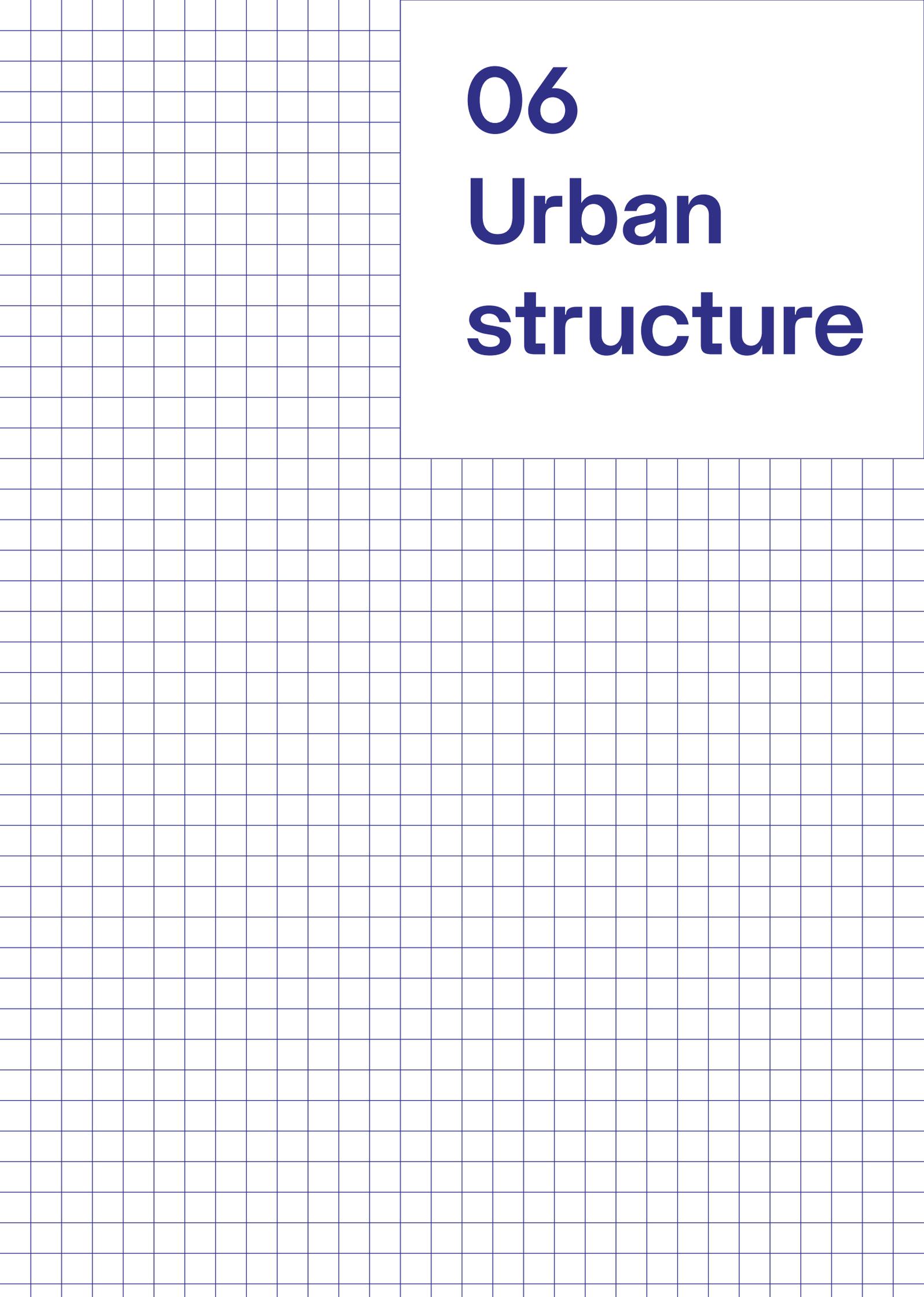
Waterfront edges:

- The edges of the harbour basins are listed monuments. When creating public space, the interventions listed in Chapter 4 are permitted.
- Another limitation for the creation of public spaces is the height difference between the normal level of the Danube and the reference terrain (more in Chapter 11).

Water surface:

- The activation of the water surface is required, through creating a series of recreational areas directly on it, a place for lingering. The proposal should ensure the functional use of water in the form of floating piers, pontoons, urban spas or cultural stages on the water, which will become destinations in the area.





06 Urban structure

6.a. Urban composition and spatial structure

The competition proposal must define a clear spatial logic and hierarchy which will create a legible urban complex that responds to the phenomenon of water and the historical footprint of the area.

- **Spatial framework and axes:** Composition of the site is defined primarily by the axis extending from Pribinova Street (west-east direction) and Plynárenská Street (north-south direction). Secondary compositional links and key connections to the city are represented by the extensions of Plátennícka and Sukennicka Streets.
- **Building structure and views:** The design requires to implement primarily a compact block structure that clearly defines the street spaces. However, the buildings must not create a visual barrier – emphasis is placed on perforation of the mass and preservation of views.
- **Architectural and massing landmark:** The end of the extended Pribinova Street at the tip of the central peninsula is intended as a space for an architecturally and spatially distinctive urban landmark. This building and its surroundings are to fulfil the role of a compositional culmination of the main urban axis, of an orientation point and a new social centre of the embankment and the adjacent zone.
- **Height zoning and overall massing gradation:** The design must principally respect the predominant building heights established for each sector (not to be understood as maximum heights), while allowing for local height accents. The overall massing and building heights should gradually increase towards the pivotal junction of Košická – Landererova – Prístavná.
- **Integration and interconnection:** It is necessary to react to the current spatial segregation of individual parts of the territory (southern and central peninsula vs. the rest of the territory). The design should physically connect them into a functioning urban whole. The creation of a circular system is required, which will enable smooth movement and interconnection of the entire area, in the form of bridges and footbridges for cyclists and pedestrians.
- **Heritage cluster:** A cultural function is required to be located in the current heritage cluster area connected to the southern pool (see chapter 7).
- **Promenade—main stream:** The main riverside promenade is a binding compositional feature (see chapter 6).
- **Connection to the water and the riverside promenade:** It is essential to ensure direct physical access to the harbour basins and promenades. At the same time, the composition of the development must naturally guide visitors to the mainstream of the Danube and the main riverside promenade.

Diagram 9: Urban composition



- | | | | |
|-------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------|---------------------------|
|  | competition site |  | primary composition axis |
|  | urban character of existing buildings |  | primary linkage |
|  | national cultural monument |  | secondary linkage |
|  | national cultural monument - Boat lift |  | city-wide height landmark |
|  | architectural and massing landmark |  | composition node |
|  | circulation loop | | |

6.b. Division into sectors

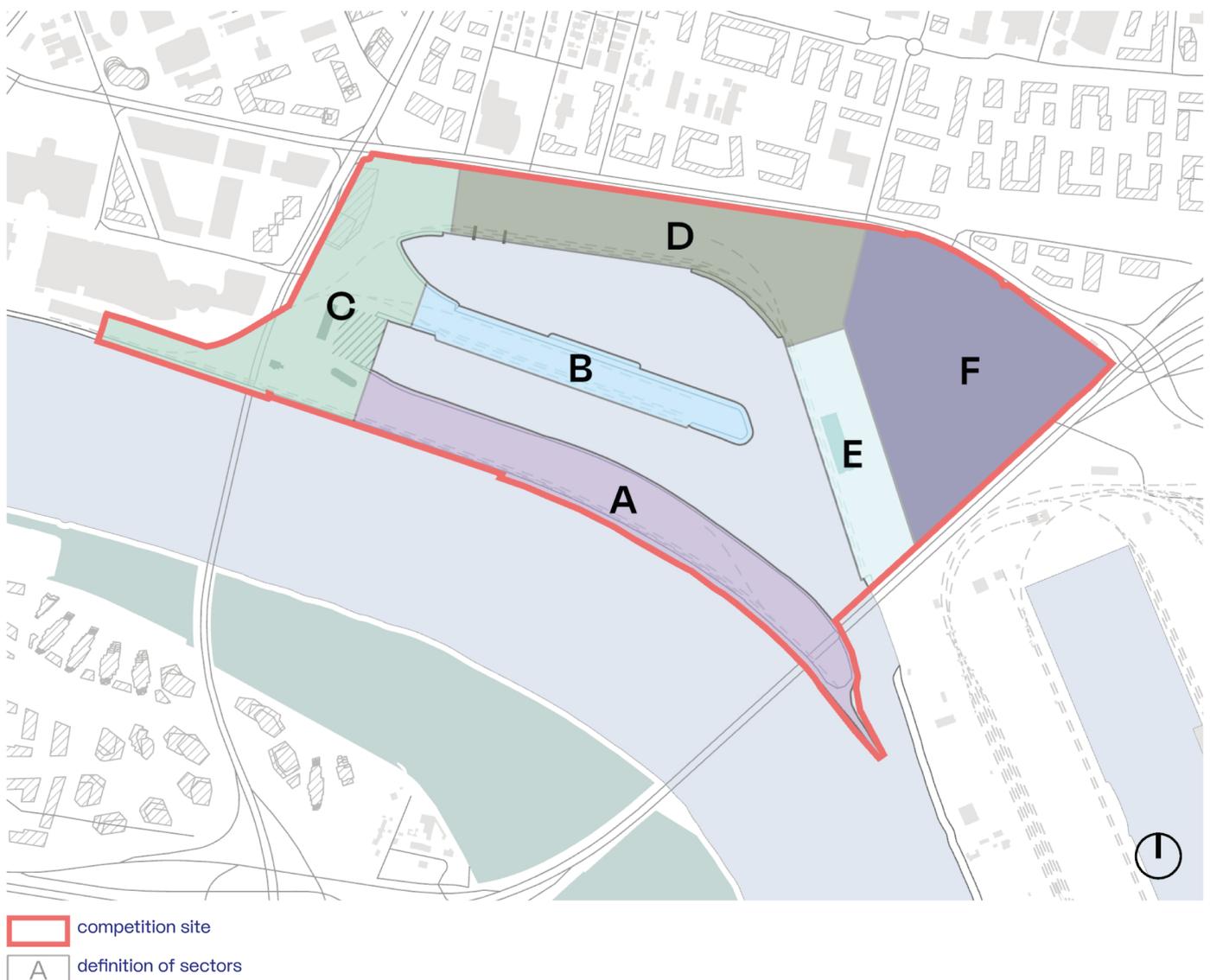
When preparing the competition proposal, it is recommended to base it on the **division of the territory into sectors**.

The binding parameters are: **sum of the gross floor areas for the entire area, the prevailing number of storeys allocated to individual sectors and height limits for accents and dominants**. The boundaries of the

sectors can be adjusted in response to the proposed urban design, while respecting the basic urban planning principles of the given sector.

The competition proposals will show **the gross floor area and the ratio of functions for individual sectors**, but the key factor is **compliance with the brief in the overall balances for the entire project area**.

Diagram 10: Division into sectors



6.c. Spatial regulation

The competition objective is to propose an optimal distribution of building volumes. The result should be a **compact urban environment**, the scale of which is adequate to its significant waterfront location and proximity to the central urban zone.

When shaping the panorama of Bratislava in the broader city centre zone, it is necessary to apply the principle of **height gradation** in response to the current homogeneous height of buildings with the so-called wall effect. A hierarchical composition is preferred, in which **local accents and city-wide landmarks** are visible above the basic level of buildings.

It is necessary to work with two levels of heights:

- **Basic building level:** To form a compact block structure, the prevailing number of storeys (set at 5 to 8 above-ground storeys).
- **Local accents and landmarks:** Local accents and landmarks are allowed in individual city blocks, with specified height limits for individual sectors.

Spatial regulation for the competition is determined by two key parameters:

- **Maximum gross floor area (GFA):** Determined as the total sum for the entire competition site. The competition design will propose the optimal distribution of this volume across the individual sectors so that the sum of the GFA for the sectors does not exceed the total limit.
- **Prevailing number of storeys:** It is set indicatively for individual sectors and equals the number of floors predominant in a building block and sector.

Capacity limits (GFA)

Within the mainland part of the competition site (45.03 ha), **capacity limits are set for the gross floor area** of above-ground floors:

- Minimum volume: **950,000 m² GFA.**
- Maximum permissible volume: **1,040,000 m² GFA.**

Competition proposals may work with numbers within this range. The possibility of utilising the capacity towards the upper limit (up to 1,040,000 m²) is conditional on maintaining the logic of public spaces and demonstrating the spatial capacity for such intensity. The value of 1,040,000 m² GFA represents an **insurmountable upper limit** (binding maximum). The goal is to find the optimal balance between building density and the quality of the urban environment.

Prevailing number of storeys

- Proposed buildings may **locally exceed** from the specified prevailing number of storeys by a **maximum of 1 floor**, if this contributes to the plasticity of the street front and the rhythm of the development. There is **no limit to the downward deviation** from the prevailing floor number.
- This number does **not include local height accents and landmarks** that deliberately exceed this basic level.
- The number of floors includes **all above-ground floors** from the lowest contact of the building with the ground.
- The 1st floor (ground floor) is counted as one floor if its structural height does not exceed **4.5 m**. Above 4.5 m, it is counted as 2 floors (or proportionally according to height).
- **Attics and recessed** floors are included in the total number if their usable area exceeds 50% of the floor area of a standard typical floor.
- **Technological structures** (HVAC, lift machine rooms) are not included in the floor area if they are used exclusively for the technical operation of the building and do not exceed 30% of the roof area.

Chart 1: Indicative predominant floor numbers and limits for accents and landmarks

Sector	Prevailing number of storeys	Limits for accents and landmarks
A	5 storeys	no accents
B	6 storeys	30 m
C	8 storeys	not set
D	8 storeys.	60 m
E	5 storeys	no accents
F	7 storeys.	45 m

Landmarks and accents

Limits are defined for individual sectors for high-rise accents and landmarks:

- **Sector C – north (high-rise cluster):** In the northern part of the sector, the competition proposals can work with several high-rise buildings (even over 90 m). As part of the compositional gradation of the area, the proposal can examine the location of a new city-wide height landmark in the focal point of Košická – Landererova – Prístavná, where there is **no height limit**.
- **Sector D** – northern part of the competition site: Area for the placement of local accents up to a maximum relative height of **60 m**.
- **Sector F** – eastern part of the competition site: Area for the placement of lower accents up to a maximum relative height of **45 m**.
- **Sector B:** It is possible to examine the height of a proposed architectural landmark at **30 m**.
- **No height** accents are expected in **Sectors E and A**.

When placing high landmarks (over 90 m) in the area, a mandatory distance of at least **100 m** from the embankment edge of the **main course of Danube** applies.

For any other development in contact with the free flow of the Danube, a building line of at least **30 m from the embankment edge** is specified.

Within the protection zones of Bratislava Airport, a general height limit of **300 m above sea level** – approx. 168 m above ground level – is defined. Exceeding this limit is permissible but is subject to an exemption from the relevant aviation authority. Competition designs in exposed locations may explore the possibility of vertical growth above this level to create a new vertical focal point (apex) and a legible city skyline.

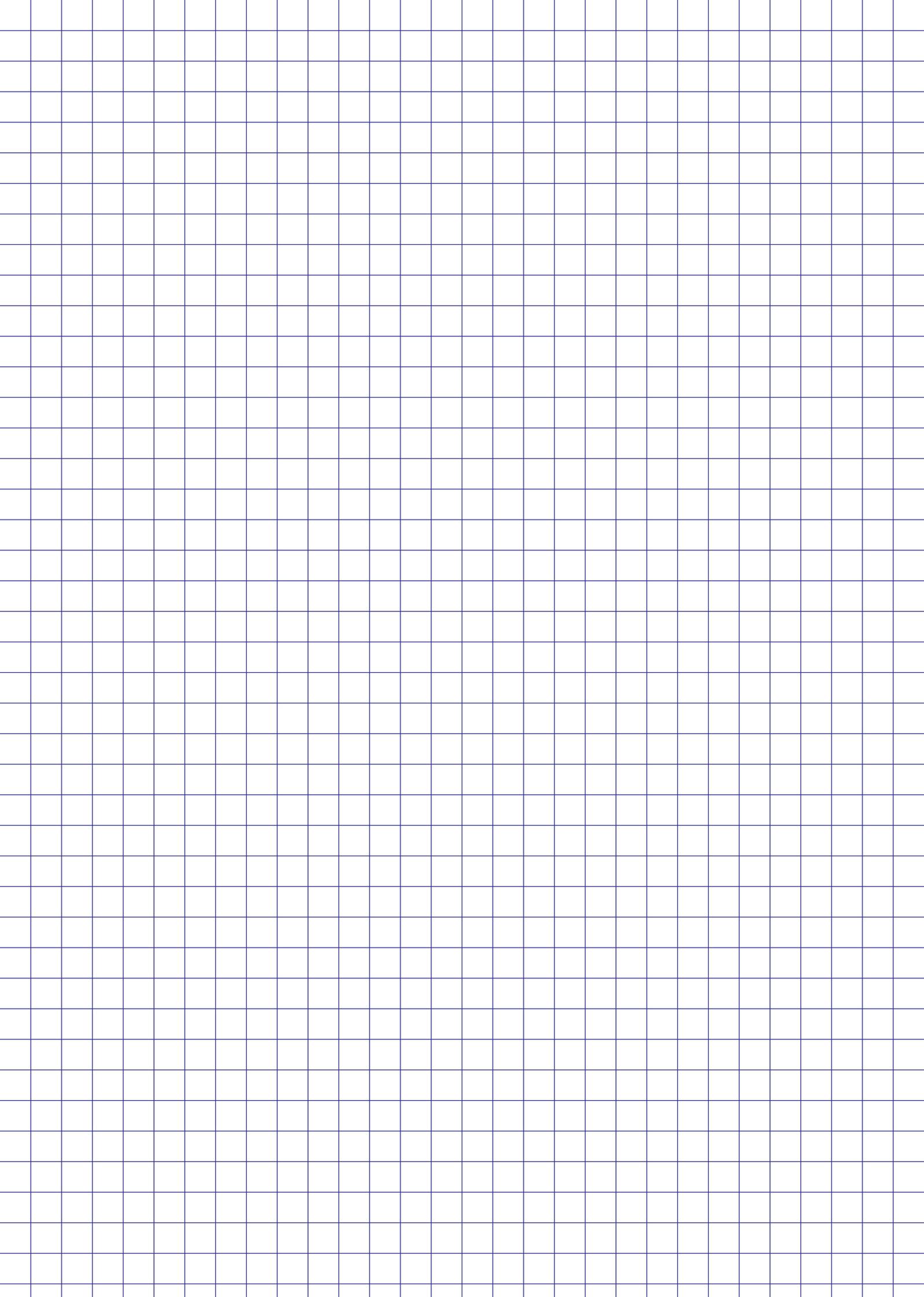
When designing high-rise buildings, it will be necessary to assess their impact on the entire city and proceed with the design in accordance with the Zoning plan for high rise buildings in the capital city of Bratislava (UŠ výškového zónovania hl. m. SR Bratislavy). The location and height of individual buildings will be reviewed after the competition in terms of the impact of the proposed composition on the cityscape from vantage points offering a static view (Bratislava Castle – SE and E terraces, Stráže, Tyršovo nábrežie, Nové Lido, Stará vinárska) from buildings (Michalská veža, UFO lookout, Kamzík tower) as well as from bridges (SNP bridge, Old bridge, Apollo Bridge, Port Bridge) and from the perspective of dynamic perception of the city skyline at the entrances to the city along the Danube (from Austria and Hungary) and motorway access roads.

6.d. Daylight parameters and block structure

In the Slovak context, lighting norms are a significant factor limiting urban structure. To ensure the feasibility of the design in subsequent phases, it is necessary to respect the requirements for sunlight (STN 73 4301) and daylight (STN 73 0580). When designing the geometry of blocks, lighting conditions must be taken into account for the comfort of residents, especially when locating school, and kindergarden and senior residences infrastructure.

In order to balance the desired urban density and quality of street space while complying with hygiene standards, it is advisable to apply the following principles:

- Into the lower floors (especially the 1st and 2nd floors) in shady locations of the street profile integrating civic amenities, administration or commerce, which have lower insolation requirements.
- Recessing the upper floors is used to reduce the shading angle for the opposite façade, which maximises the number of floors while maintaining the lighting comfort of the street.



07

Programme

7.a. Functional and amenity framework

The aim is to create a compact, functionally hybrid urban structure based on the principle of vertical layering of functions, not just their spatial distribution. The resulting design must prevent the creation of monofunctional zones and define a balanced relationship between the city-wide significance of the location and the quality of the residential environment. The ambition is to ensure all-day urban vitality through the integration of housing, work and recreation.

- The overall distribution of functions for the area is set at a ratio of **70% housing and 30% civic amenities**. This is a binding parameter resulting from the Winter Harbour Redevelopment Vision.
- In accordance with the Bratislava City Regulatory Plan, **civic amenities are defined as** facilities and areas intended to meet the needs of the public, particularly in the areas of education and upbringing, social services, healthcare, culture, churches, public administration, public administration, commerce, recreation, sports, tourism, and non-manufacturing services.
- Proposals are encouraged to **integrate innovative housing typologies**, including student housing, temporary / short-stay units, and shared living concepts (co-living, baugruppen).
- The **civic amenities** for the site need to be designed with two levels in mind:
 - **City-wide and supra-city significance:** Commercial and non-commercial amenities generating job opportunities and visitor traffic to the zone (administration, culture, services).
 - **Local significance:** A functional mix is required with a dominant representation of housing, principally, residential buildings must have an active ground floor (shops, services, restaurants).

- A **zonal park** is planned for the site in the form of the **main riverside promenade** along the main course of the Danube. It is required to also design a network of **smaller local parks** in the north-eastern and western parts of the site (see Chapter 8).
- It is necessary to design the **recreational use** of the **waterfront edges and water areas** of the basins (see Chapter 7).
- In accordance with binding spatial planning regulation (UPNR), it is necessary to integrate the function of a **passenger port (public transport terminal, excursion boat berths) and a recreational boat harbour (city marina)** into the area.

A functional distinction between the two harbour basins is required:

- **1)** basin primarily for the **city marina and recreational boating** (with marina facilities and services located in adjacent sectors).
- **2)** basin primarily for **soft forms of recreation, water sports and swimming** (with elements for direct contact with water – pontoons, floating piers).

The following principles for amenities in the site were determined based on the Winter Harbour Redevelopment Vision:

7.b. Schools and school facilities

In the competition site, **design kindergartens within walking distances of 400 m** and a **primary school within optimal walking distance** from the entire site (reference radius for an elementary school is 700 m).

- It is recommended to design facilities integrated **into urban blocks**, not stand-alone complexes. Schools should apply vertical layering of its functions within the school block and their outdoor spaces should be used outside of regular teaching hours and therefore be part of the overall urban structure.
- Approximately **four four-class nursery schools and one 36-class elementary school**. The proposal should allow for the use of school facilities (e.g., gyms) by the public after school hours.
- The operation of the currently operating **student housing** of the University of Economics with a capacity of at least 89 beds should be retained on the site. Relocation of this use to a new building is necessary.

7.c. Sport

In addition to connecting to existing sports routes, the new section of the waterfront should also offer opportunities for sports activities that reflect the unique character of the area.

- A key requirement is to ensure the continuity of supra-regional cycle routes – integrating the EuroVelo 6 international cycle route (Danube Route) in the form of a safe and attractive passage through the Winter Harbour.
- Sports facilities should be designed as multifunctional areas integrated into the urban environment.
- it is recommended to provide space for various **seasonal activities** (training, community events, temporary summer/winter areas),
- A barrier-free spatial layout is required, connected to surrounding functions, while minimising conflicts between different types of users.
- The space should be accessible to a **wide range of users** - children, young people, seniors, amateurs and professionals.
- A multi-purpose sports hall with a capacity of 500-600 spectators is envisaged.
- It is recommended to focus on three main areas:
 - **water sports** – direct use of the river and its banks for canoeing, kayaking, paddleboarding or community water activities (swimming in the Danube is recommended only with technical separation and water filtration in the pool). The use of the water surface should reflect seasonality, with the potential for winter use (e.g. public skating) in favourable climatic conditions.
 - **running and cycling routes** – integration into the street network and waterfront promenades, connection to the wider urban context and cycle route system.
 - **sports zones in public spaces** – multifunctional areas that encourage spontaneous activity by residents and visitors.
- **Recreational use:** The proposal may include examination of possibilities for low-speed individual boating and water sports (kayaks, paddleboards). The intent is to make the water accessible for active recreation while respecting operational safety.

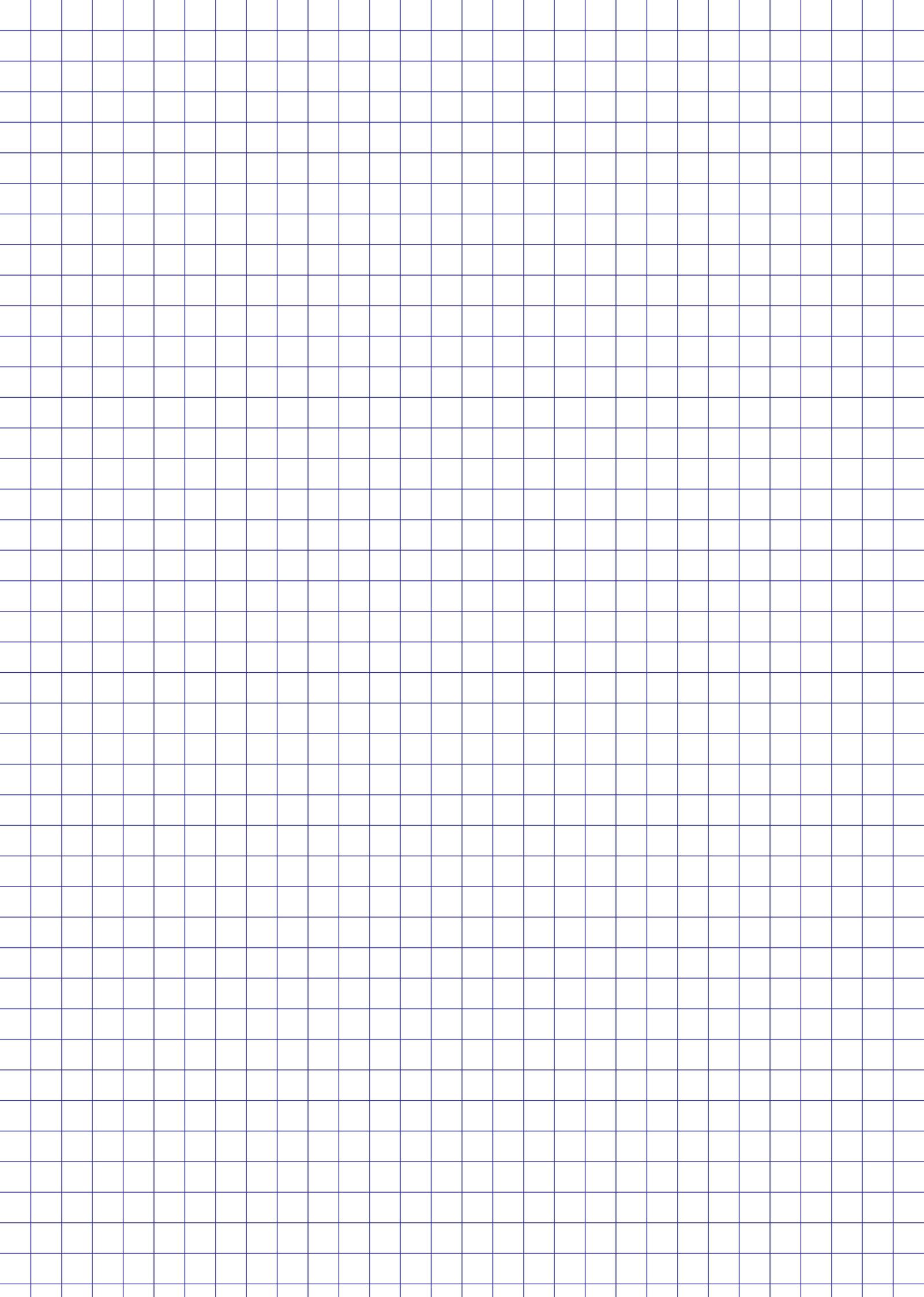
7.d. Culture

The proposal should define an **adaptable spatial framework and a variable layout concept** for cultural infrastructure. The aim is to create **hybrid cultural volumes integrating mutually complementary functions**.

- **Cultural-creative HUB** – for Sector C requirement is stated for a design of a multifunctional cultural-community centre. It has the potential to integrate functions such as contemporary dance and movement theatre, exhibition spaces for visual arts, and a small concert hall. At the same time, it should provide the necessary facilities in the form of rehearsal rooms, studios and co-working spaces for creative industries, start-ups and the non-profit sector. It is also recommended to consider community functions such as a leisure centre offering after-school activities for children and activities for seniors.
- **Architectural and massing landmark (Sector B)** – in the prominent eastern part of the central tip, it is desirable to locate significant architectural and massing landmark – a spatially significant accent. It should integrate a cultural function with a complementary functional mix of facilities and services. The specific cultural function (library, multifunctional hall or other) has not been determined. It will be the subject of expert discussion following the competition.
- **Museum of Water (Boat) Transport** – it is necessary to examine the suitable spatial location of the museum, preferably in direct connection with the National Cultural Monuments (NKP) Boat Lift and Boat Workshop. This functional whole could include a proposal for an open-air exhibition for large collection items (the Zvolen, Šturec and Meteor vessels).
- It is also worth to consider cultural use in the form of an art and music school (ZUŠ).

7.e. Healthcare and social care

- It is required to design healthcare and social care facilities that can respond flexibly to demographic changes and current needs
- It is recommended that **outpatient clinics** be located primarily on the ground floor or lower floors and close to public transport stops.
- It is recommended that **social care** facilities be integrated into the residential environment, close to green space clusters, shops and public services, and with good public transport connections.
- Consider locating **two facilities for seniors integrated** into the residential environment and **one specialised facility** with a total capacity of approximately 50 places.



08

Mobility and transport

8.a. Mobility and transport framework

Specific factors for the mobility design are the presence of the Danube River, spatial constraints (reduced accessibility) of the southern and central peninsula, and direct connections to the surrounding area and the city centre.

The basic conceptual principle is the promotion and **preference of sustainable mobility**. This primarily involves good accessibility of public transport, the growth of a sufficient network of high-quality pedestrian and cycling infrastructure, various forms of calming individual car traffic within and on the outskirts of the site, and the promotion of shared mobility and electromobility.

Requirements for transport and mobility solutions in the competition site:

- respond to links to the surrounding area and their **interconnection**
- take into account the relocated railway siding outside the competition site
- check **access points to the area** at key locations
- introduce a "**low traffic zone**" with dominance of cycling and walking (especially on peninsulas)
- **calm individual car traffic** and prevent unwanted transit
- **reduce static traffic**, minimise parking spaces on the ground in street space
- support the construction of **parking garages** and their possible integration with public amenities
- focus on increasing the **supply and accessibility of public transport**, propose its appropriate form and possible locations of stops
- prefer active mobility, **continuous and safe movement of pedestrians and cyclists**

- ensure a high degree of **connectivity and pedestrian accessibility** to basic needs in the area
- propose **connections between individual sectors via the harbour basins**
- define the **hierarchy and typology of individual streets**
- propose **suitable modification/extension of Prístavná Street**, which is already heavily congested with individual car traffic

Street typology from a mobility perspective

The competition expects a design and spatial elaboration of street typology:

- **Urban street:** A profile with clearly defined main and secondary traffic areas (separate motor traffic) and a strip of street furniture and greenery that preserves the character of a calming zone with an emphasis on safety. For this type of street, it is possible to consider public transport bus routes and short-term parking.
- **Residential street:** A profile in shared space mode with limited motor vehicle access, with physical preference given to pedestrians and cyclists. This type is suitable primarily for residential blocks and along the edges of swimming pools. Emphasis on soft edges – transition zones between the façade and the street, e.g. in the form of front gardens.
- **Pedestrian street:** Also consider profiles that exclude motor vehicle traffic except for emergency services.

8.b. Pedestrian and bicycle mobility

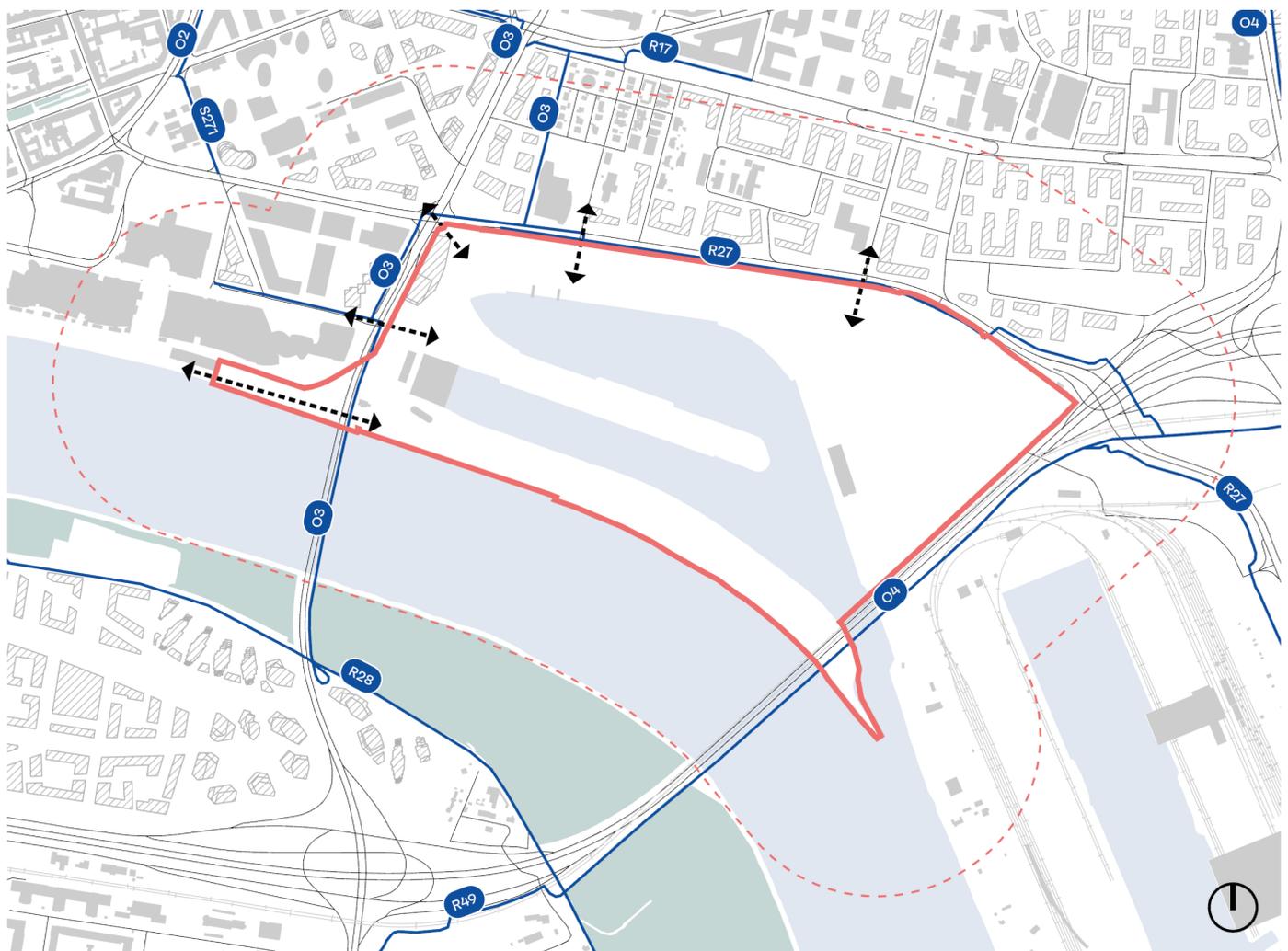
The pedestrian and cycling infrastructure network for the Winter Harbour must be designed in sufficient quality and density. The design must take into account the needs of the most vulnerable road users.

An important element is the creation of **pedestrian and cyclist bridges** that will connect the parts of the Winter Harbour separated by the harbour basins. A strong presence of pedestrian movement is expected along the **edges of the basins**, where it is **appropriate to place buildings with active ground floors**, as well as to propose a city marina and a promenade.

It is necessary to create and maintain key pedestrian connections between the site and the wider area:

- **to the promenade along Eurovea II**, running along the Danube River,
- **from Pribinova Street**, with the pedestrian route preferably leading through the central peninsula of the Winter Harbour,
- **to public transport stops** in the vicinity of the Lan-dererova-Košická intersection,
- **the northern part of the competition site** with the Mlynské nivy area (Plätennicka and Plynárenská streets).

Diagram 11: Pedestrian connections and cycle path network



 competition site

 affected area

 existing cycling infrastructure

 important linkage

 existing buildings

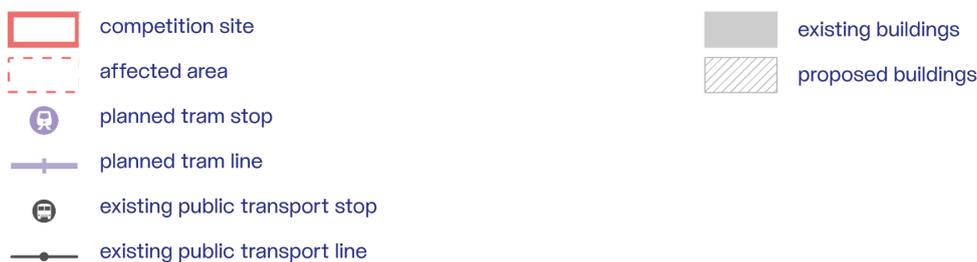
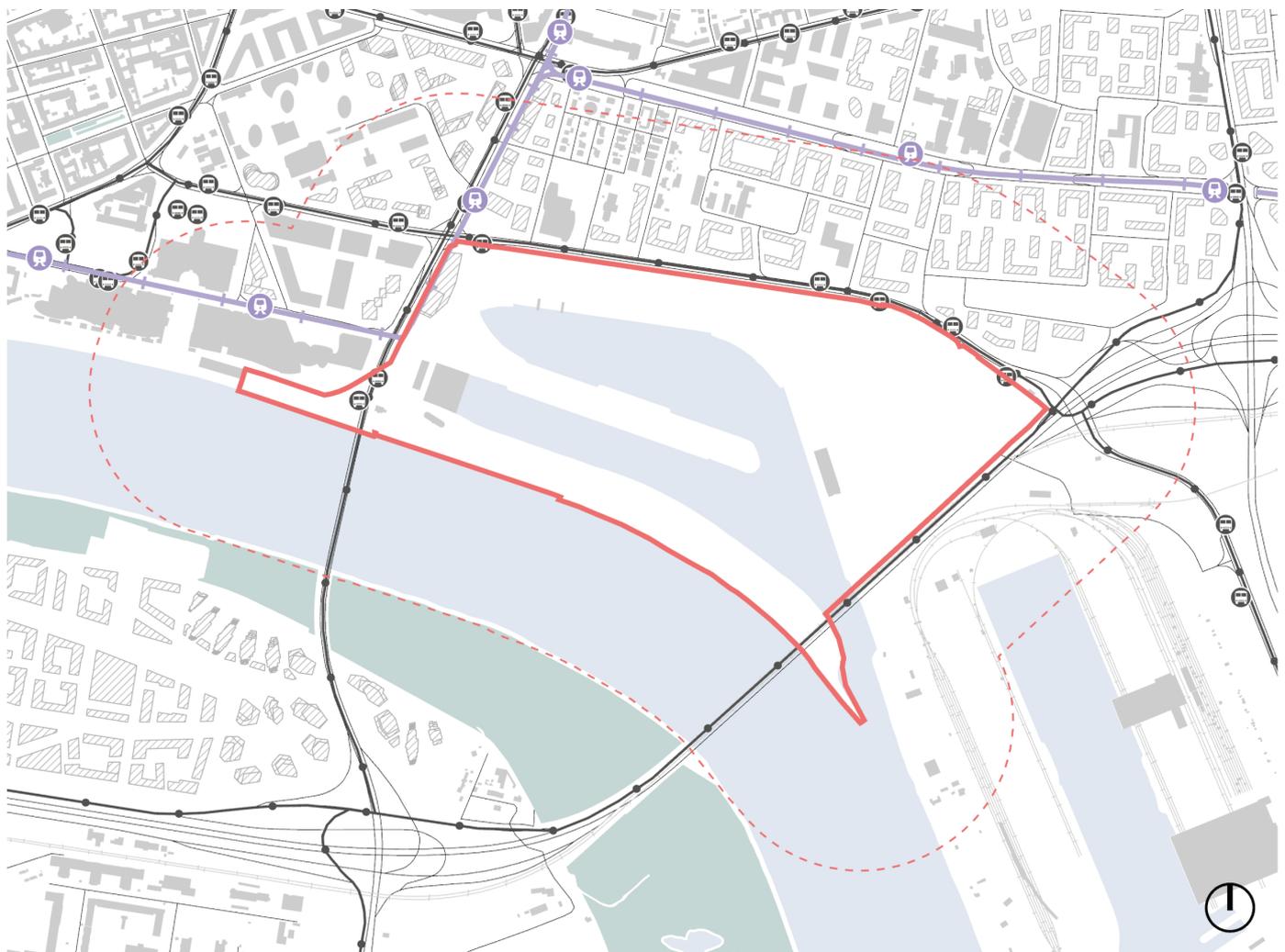
 proposed buildings

Cycle paths need to be connected to the existing cycle circuits and radials **O3, O4 and R27**.

- A design for cycle paths should follow the main pedestrian routes in major streets.
- Design sufficient space for parking bicycles and other micro-mobility vehicles. This is particular-

ly important at key points, such as the transport hub at the Košická intersection, high-traffic public transport stops, car parks, P+R car parks, or important cultural buildings and recreational areas.

Diagram 12: Existing and planned public transport network



8.c. Public transport

Two tram lines are planned in the vicinity of the competition site, which the proposal needs to connect to. **The proposed Pribinova – Košická tram line** runs along the western boundary of the site, near the Apollo Bridge. **The proposed Podunajské Biskupice – Vra-kuňa tram line** passes through the Mlynské nivy area, north of the Winter Harbour. Once completed, the port will be within walking distance of stops on the main public transport network, ensuring improved access to the city centre as well as to other parts of the city.

Other **public transport modes** (buses) are preferably to be located in the northern and eastern parts of the

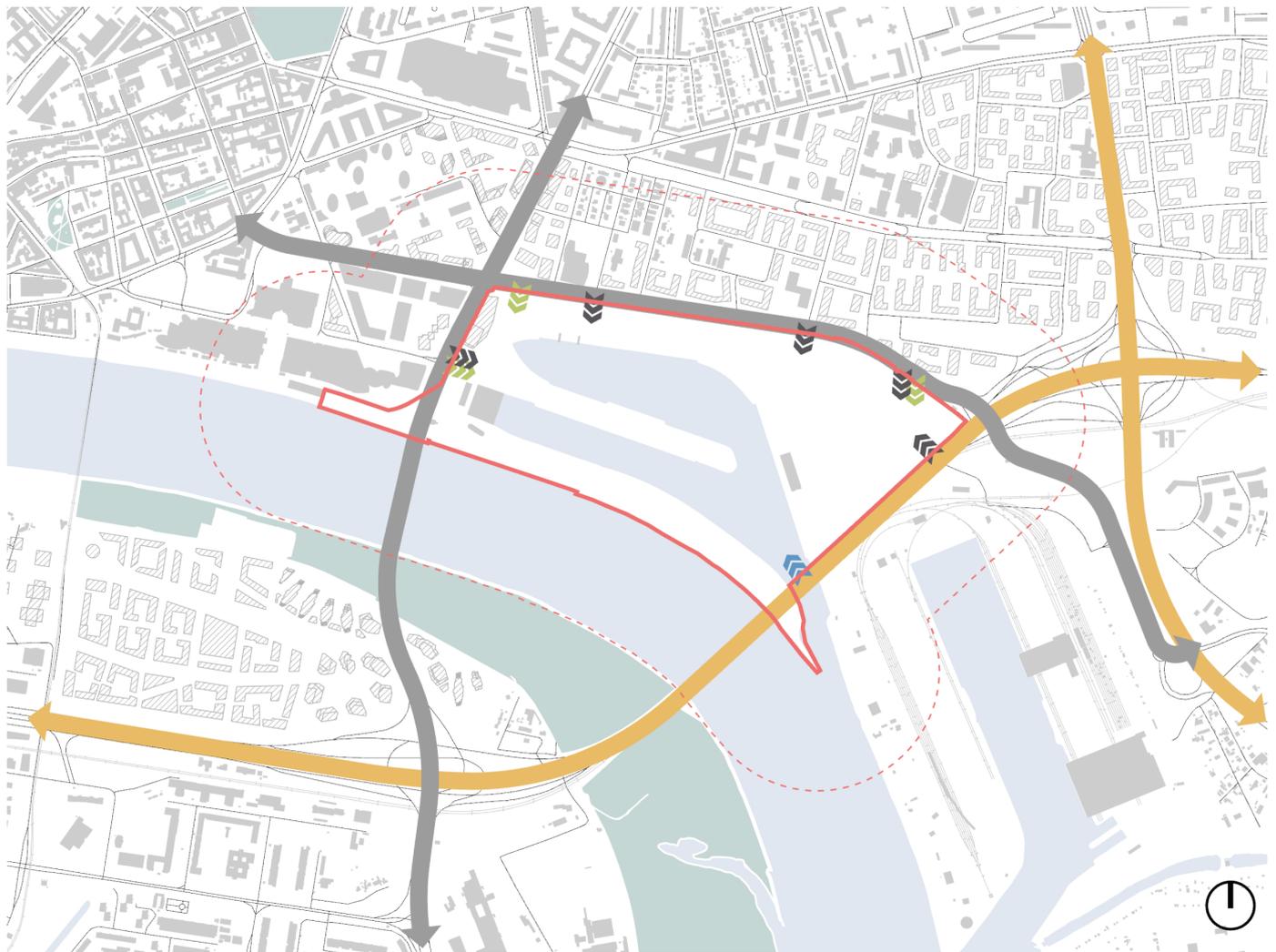
competition site. When placing bus stops, a **walking distance of 500 m** must be taken into account.

Due to high volumes of private car traffic and frequent congestion on Prístavná Street, it is advisable **to retain a spatial reserve for the bus lane**. These may be implemented either as regular segregated lanes along the sides of the street, or as a separate segregated corridor in the middle of the street for Bus Rapid Transit (BRT) systems. In the long term, the land reserve is also intended for the examination and possible implementation of a tram line along Prístavná Street.

8.d. Connections to the existing road network

- For the proper functioning of transport in the Winter Harbour, it is necessary to connect to the higher-level road network:
 - **the D1 motorway** at the south and east of the competition site (part of the E 58)
 - **the R7 expressway**, which begins with the E 58 motorway feeder road in the east (part of the E 575)
 - multi-lane local collector roads **Prístavná and Košická, including the Apollo Bridge**.
- The **entry point to the site from Prístavná Street** is expected to be the main one for car traffic. Prístavná is a 4-lane local collector road with high traffic intensity.
- As a secondary entry point to the site, it is recommended to use the eastern **connection through the Pálenisko port**, with a connection to the existing traffic light intersection, after meeting the conditions for the construction of a new traffic light.
- As a secondary entrance to the area, it is recommended to use the **eastern connection through the Pálenisko port area**, with a connection to the existing traffic light intersection, after fulfilling the condition of a grade-separated crossing over the railway line to Pálenisko.
- Another connection is also possible from **the west side from Pribinova Street**, which should primarily serve pedestrians and cyclists.

Diagram 13: Higher-level road infrastructure in contact with the Winter Harbour competition site



- competition site
 - affected area
 - highway and expressway
 - Košická street, Prístavná street, Apollo
 - existing buildings
 - proposed buildings
- Entry points to the site
- motorised transport
 - cycling transport
 - boat transport

8.e. Static transport

Traffic calming is also pursued through the reduction of static traffic.

- The proposal has to design **long-term parking** spaces for residents as well as **short-term parking** spaces for visitors and employees.
- The design should verify the static transport requirements by applying **the reference conditions of 1 parking space per 100 m² of gross floor area for residential use and 1 parking space per 60 m² of gross floor area for civic amenities**, including employees and visitors.
- Consider only a minimum number of parking spaces **on the surface, less than 10% of the total number**, which should be exclusively designated for short-term parking, majority of parking capacities should be placed in parking hubs or underground.

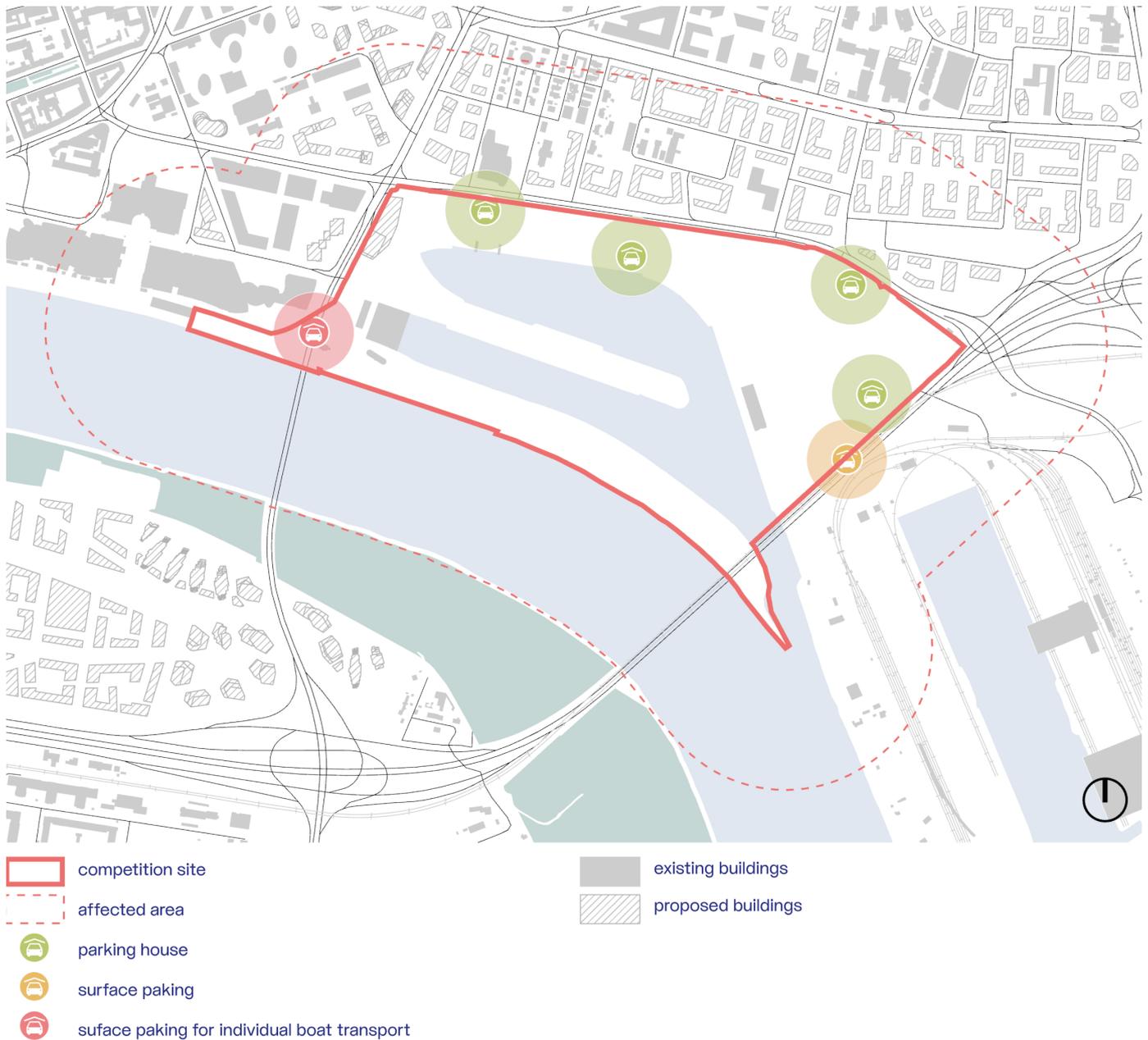
- The majority of parking space-capacities should be placed **in above-ground parking garages or transport hubs** in the peripheral parts of the competition site, with direct access from the higher-level road network and the possibility of integrating multiple functions within the building.

It is desirable to explore the possibility of locating **multi-storey car park buildings (parking Hubs) in the vicinity of Prístavný Bridge or Prístavná Street** with good accessibility and direct connections to the D1 and R7 motorways, or to propose alternative solutions. The area near Prístavný Bridge is currently affected **by traffic noise**, which significantly limits the possible functional use of these locations. It is therefore recommended to design the car park in such a way that it deflects traffic noise from Prístavný Bridge. When designing car parks, it is also necessary to consider their possible future **conversion to another function**.

8.f. Logistics and waste collection

The design should take into account the methods of transporting goods, supplies and courier services so that **larger trucks are not required to drive to their final destination**. An environmentally friendly and space-saving method of distributing commodities is preferred. One option is to design a **distribution hub** in a suitable location with transshipment of goods to smaller vehicles, electric cars or cargo bikes. Similarly, **waste management** also needs to be addressed in the design, i.e. locating a waste management hub in the site.

Diagram 14: Approximate location of parking lots and parking garages



8.g. Boat transport

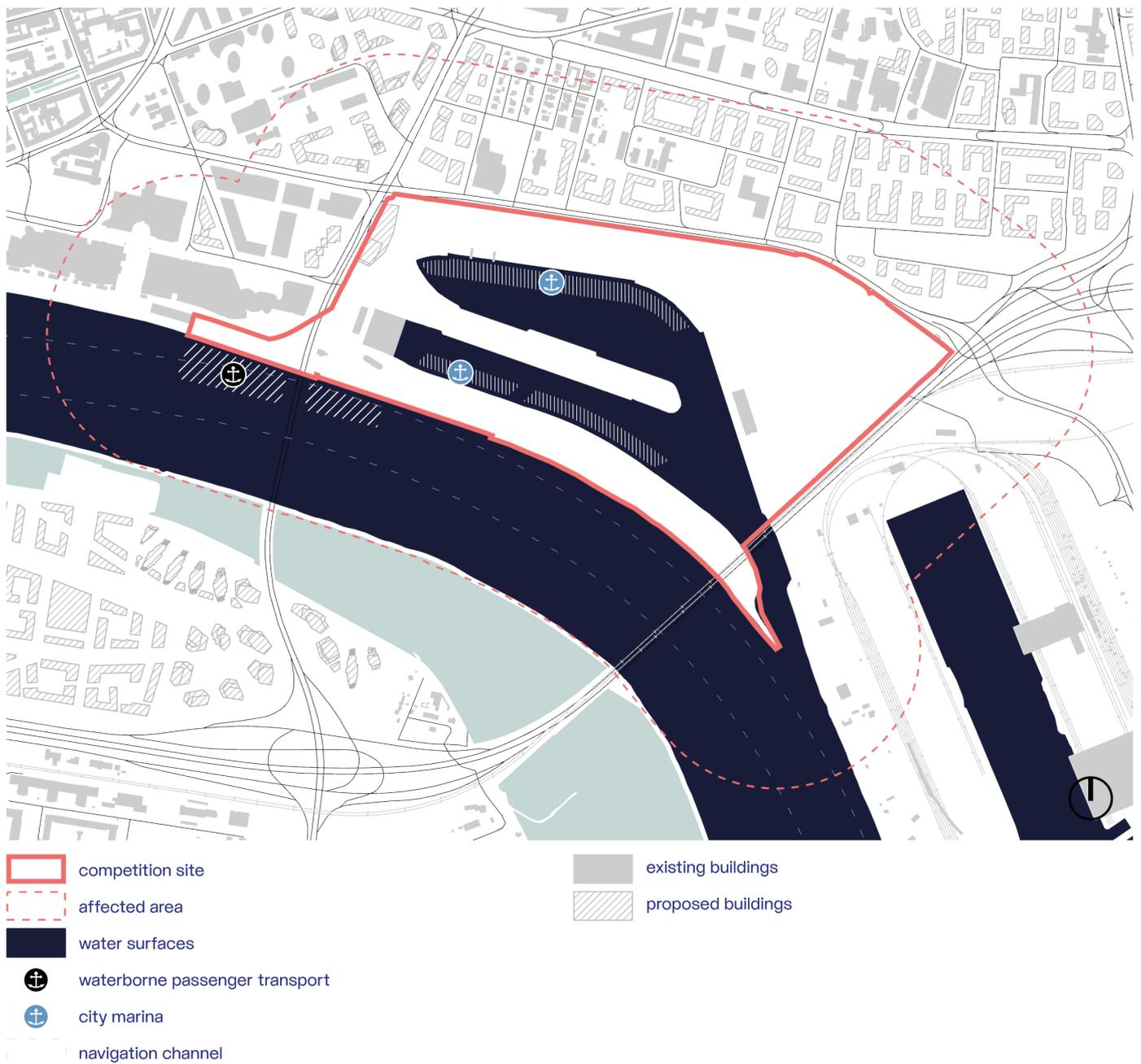
One of the key elements in the redevelopment of this area is the expansion of Bratislava's passenger shipping capacity through the construction of infrastructure for **international and domestic passenger ships** (abbreviated as "LOD") and a **city marina**.

The construction of such infrastructure also requires other elements, such as a **LOD terminal, administra-**

tive facilities, sufficient technical infrastructure (e.g. pontoons for cruise ships and the city marina, provision of electricity, etc.) and sufficient **parking capacity, including for tourist buses, etc.**

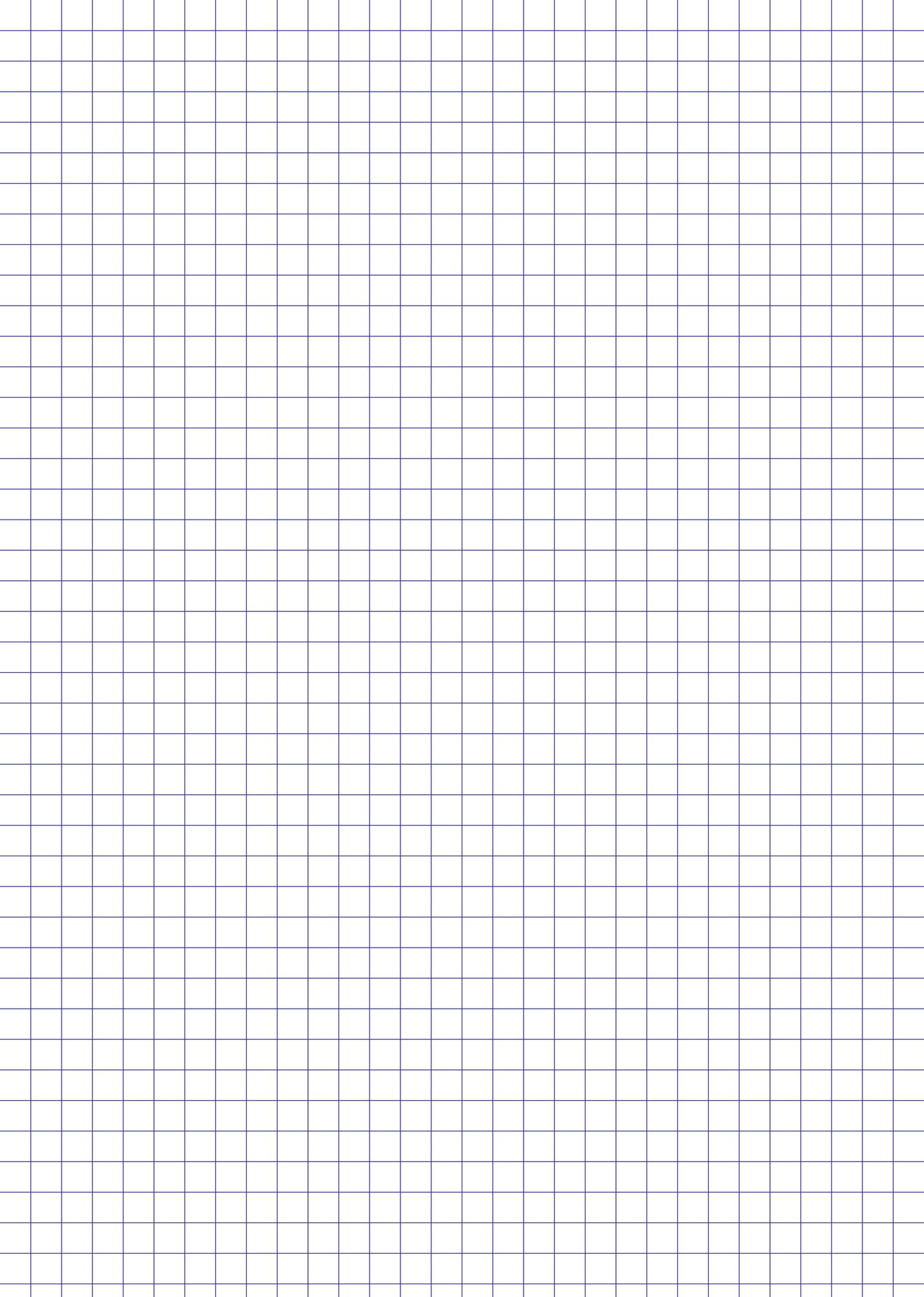
- It is recommended that the **LOD terminal and administrative facilities** be designed as a separate building, close to the pontoons or LOD mooring.

Diagram 15: Passenger boat transport and city marina



- Mooring for passenger cruise ships should be designed on the **main course of the Danube** (in front of and behind the Apollo Bridge), and one of the **harbour basins** can be used for the city marina.
- **Parking capacity** in connection with the LOD was designed in the Vision of Harbour Redevelopment under the Apollo Bridge, but the competition may

consider other locations. It is important to ensure a short distance and the safety of passengers between the moored boats, the LOD terminal, and the parking lot itself.



09

Blue-green infrastructure

9.a. Blue-green infrastructure framework

By exploring the ecological values and opportunities of the site, the design should foster a holistic approach in which landscape and urban ecology are an integral part of the masterplan. The goal is a symbiosis where the built environment and living ecosystems amplify one another, ensuring long-term climate resilience and creating a vibrant, sustainable, and ecologically functional neighbourhood. This integrated approach must also be reflected in the design approach to the scale and character of public space.

An important task is the restoration of the site's biodiversity and the remediation of the land. The design should create conditions for diverse ecosystems, including wetlands, retention landscape features, ecological corridors, and areas for natural succession processes that support a wide variety of plant and animal species. The proposal should demonstrate that ecological values are a central quality of the masterplan.

The green-blue infrastructure proposal must be based on nature-inspired solutions and integrate the three basic pillars of climate resilience:

- **Rainwater management:** water retention, infiltration, slowing down runoff, which reduces the demands on the sewerage network.
- **Microclimate improvement:** reducing the urban heat island effect through shading by mature trees and evapotranspiration.
- **Promoting biodiversity:** creating ecologically valuable areas, protecting existing mature green-ery and creating green corridors.

The goal is to ensure sufficient **quantity and quality of green infrastructure fundamental elements** (parks) as well as **within public spaces**, with an emphasis on accessibility and interconnectivity of green-blue infrastructure elements.

- The **creation of parks** within the competition site is proposed, with the **waterfront promenade playing a key role**.
- The establishment of **green corridors** is proposed, connecting isolated green areas and biotopes and providing benefits for pedestrians and cyclists.

- In the harbour area, it is advisable to work with **extensive lines of mature tree vegetation**, and to extend the **riparian vegetation along the Danube River** in the southern part of the area.
- In terms of **species composition**:
 - take into account biodiversity and climate-resistant, extensive forms of greenery, flowering meadows, green roofs, etc.
 - give preference to planting native tree species suitable for the local microclimate
 - use naturally occurring vegetation to prevent wind and water erosion

Blue infrastructure

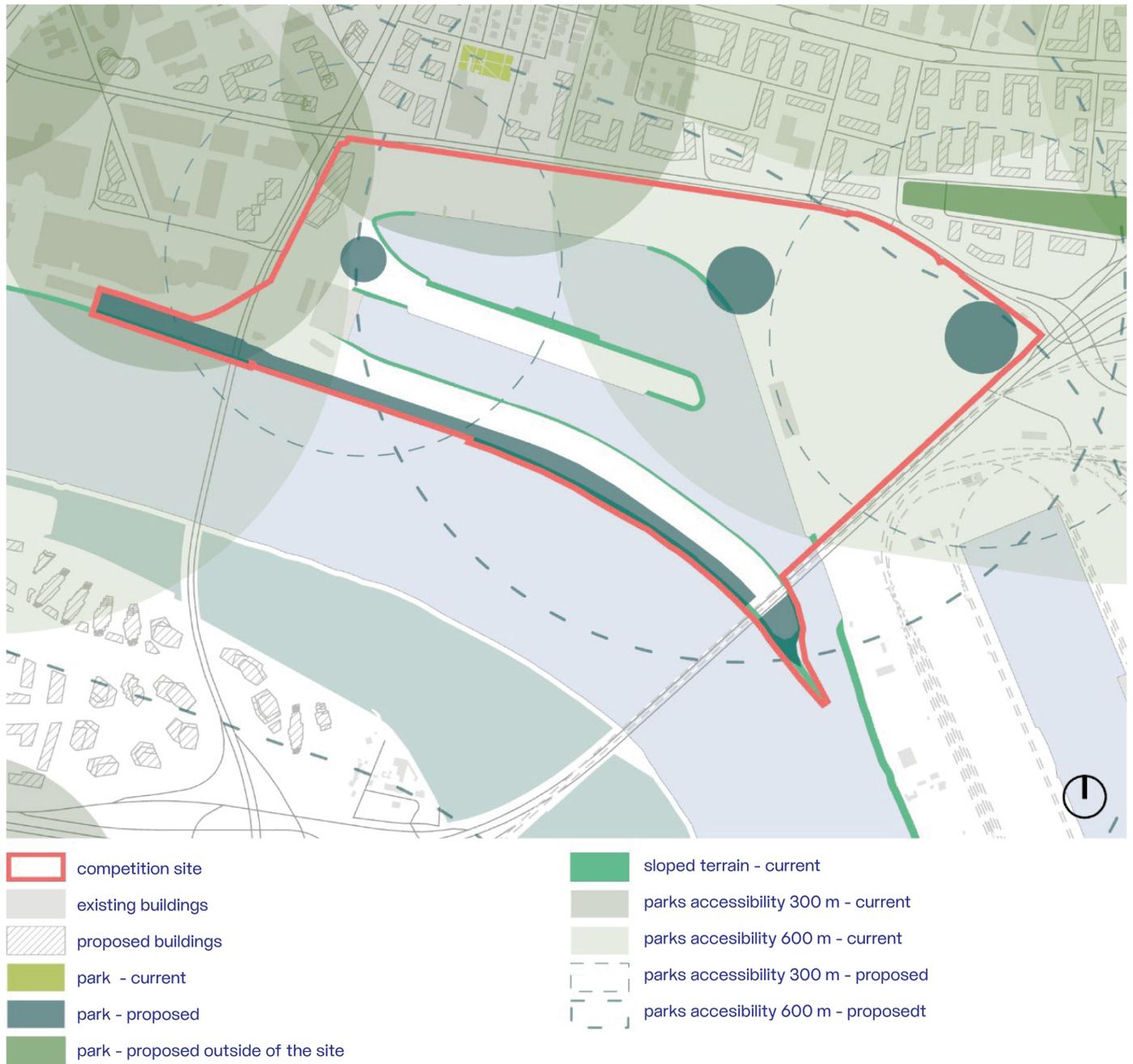
The Winter Harbour area is a **floodplain**, so it is necessary to adapt to the risks associated with major floods (Q_{1000}) – see Chapter 10. Emphasis is therefore placed on **water drainage of the area, collection and use of rainwater, and flood protection**.

- It is crucial that rainwater in the area is **absorbed locally and that excess water is retained in accumulation/retention structures** and only minimally drained into the sewer system (e.g. rainwater ponds, retention ditches, depressions).
- The area needs to be adapted to flooding, using spaces and elements that can be **temporarily flooded**.

Urbanised city environment

- Green-blue infrastructure elements should be incorporated into all forms of public space.
- On paved areas of squares, rainwater should be collected in retention tanks.
- For tree lines along roads, use permeable surfaces at the tree trunks.

Diagram 16: Blue-green infrastructure framework



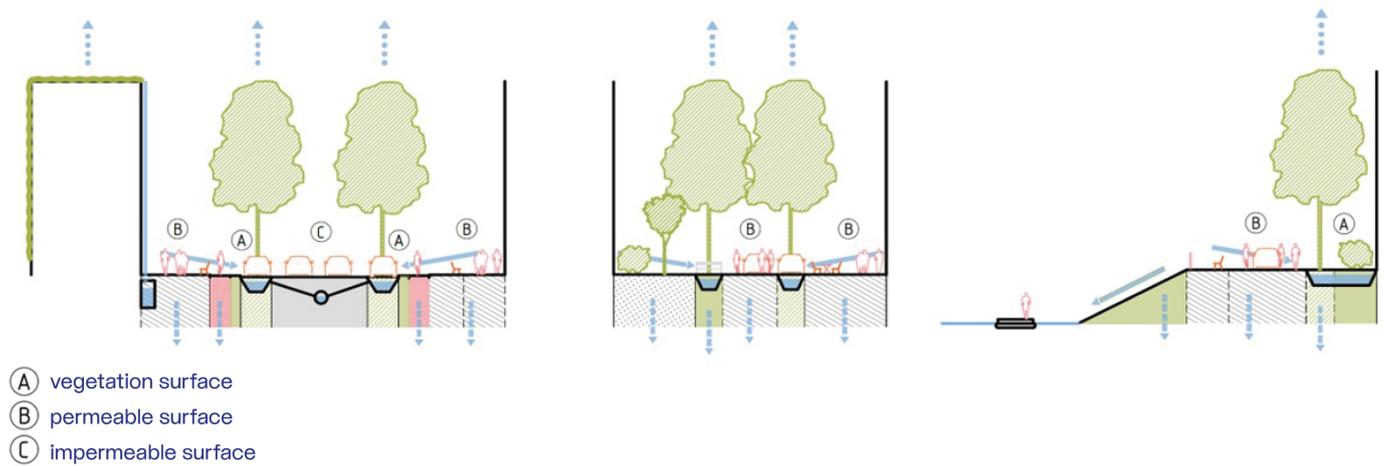
Waterfront and embankments

- It is advisable to preserve riparian vegetation and support the development of **riparian vegetation**.
- Use primarily natural local vegetation material to **reinforce slopes**.
- Prioritise the reinforcement of slope sections above the 90-day flow level (Q90d) **with vegetation or combined reinforcement types**.
- Create wetlands and flooded areas based on the principle of **dry polders**.

Transport space

- When designing the width of the street profile, consider space for the integration of green infrastructure and water retention measures.
- It is desirable to build car parks and parking spaces from semi-permeable/permeable materials.

Diagram 17: Blue-green and water management measures in selected street profiles from the redevelopment vision



Park areas

- In parks, **maximise the proportion of unpaved surfaces and vegetation cover** that can cope with torrential rain, occasional flooding, as well as longer periods of drought and heat waves. It is appropriate to integrate flood protection into parks by creating the possibility of temporary flooding.
- Give preference to native, long-lived tree species and climate-resistant vegetation.**
- Parks should be classified into **zonal parks, local parks and smaller neighbourhood parks**, evenly distributed throughout the area in order to maintain pedestrian accessibility.
- An extension of the existing main riverbank corridor of linear vegetation along the Danube River is proposed to form of an attractive and multifunctional promenade, with an estimated area of **4.6 ha** and the character of a **zonal park**.
- In sector D**, it is appropriate to locate a **zonal park**. The location of the park must be designed in relation to accessibility in the sector and microclimatic function. The possibility of merging with another park area or another location for the park is permitted, provided that the cooling effect, accessibility and ecological connectivity are maximised.
- In addition to zonal parks, it is advisable to create **at least two local parks in sectors C and F**. There is potentially **promising mature vegetation** here, and its integration into the proposed green areas is desirable.

Park dimensions

In the Winter Harbour Redevelopment Vision, the total park areas for individual sectors have been determined for the site. In the competition, they are to be considered a reference for further work.

Chart 2: Reference park areas division

zonal park (m ²)	local park (m ²)	total park areas (m ²)
46 400 (A, C)*	11 400 (F)	
10 600 (D)	4 500 (C)	
		72 900

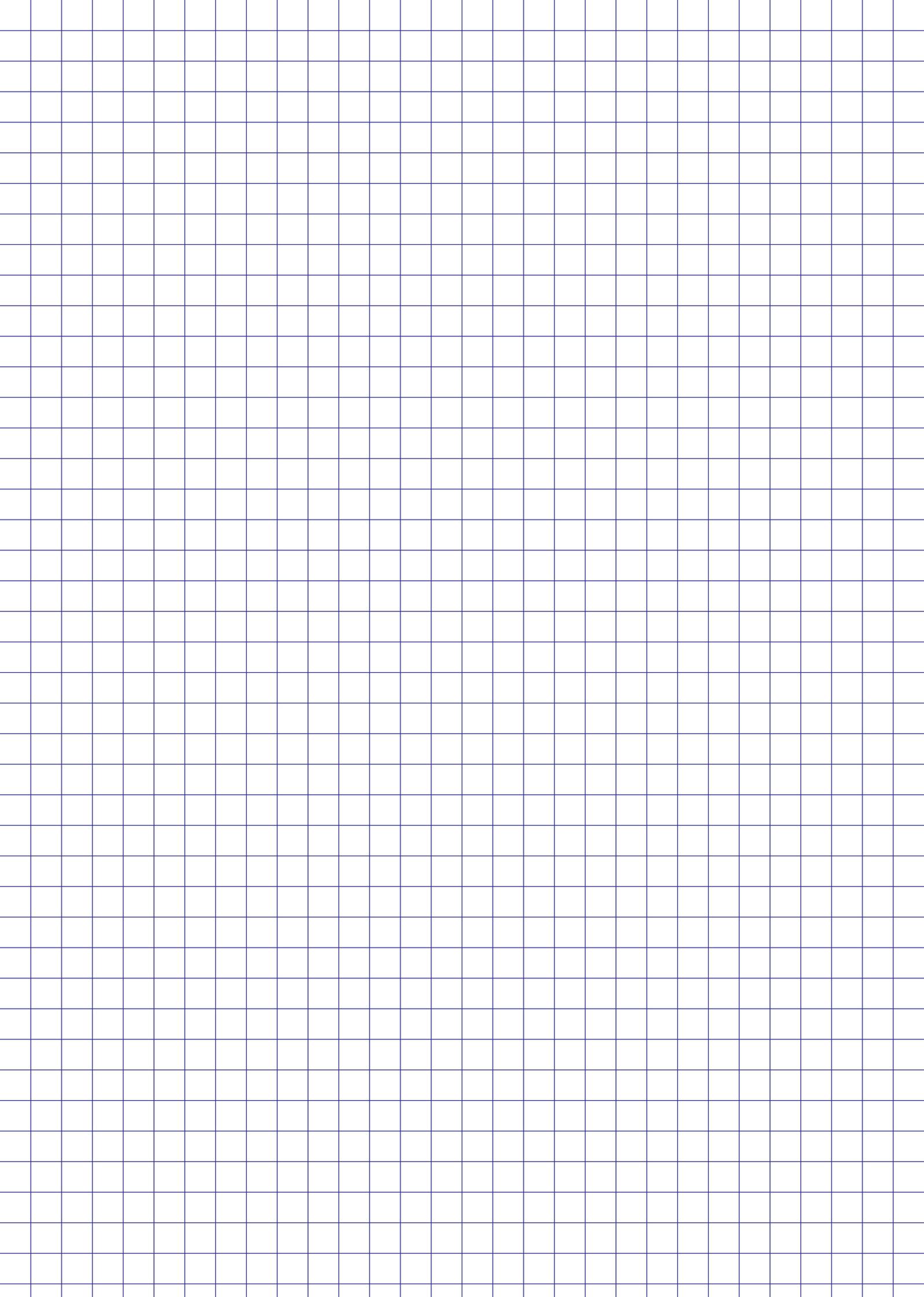
* sector designation (A, C, D, F)

** The values given are rounded to the nearest hundred square metres. Accuracy ± 100 m²

Application of Ecoindex

After the competition, the winning design will be finalised in accordance with the Ecoindex methodology. The methodology sets out the following binding requirements for the competition design:

- At least **35% of the total undeveloped land area must be greenery.**
 - Of this, at **least 40%** of greenery must be on **natural terrain/embankments** and a **maximum of 60% on structures.**
- A reference for the portion of **green roofs** (extensive/intensive) has been set at 50 % of the total roof area of buildings.
- Minimum share of **permeable surfaces** in undeveloped areas: **50%.**
- **Reduction of paved areas:** A maximum of 20% of the calculated green areas may consist of roads and car parks (e.g. grass pavers), the rest must consist of full-fledged vegetation.
- The design must work with the principle that at least 70% of precipitation from paved areas will be actively utilised (infiltration, retention, recycling).



10 Flood protection

10.a. Flood protection principles

The urban redevelopment of the Winter Harbour is fundamentally determined by its location in the active floodplain of the Danube river. This factor dictates the spatial configuration, morphology of the buildings and character of public spaces.

Compliance with the established **flood protection strategy is therefore a basic prerequisite for the feasibility of any urban intervention.** Flood protection should not be seen merely as an additional technical measure, but as the primary framework for the physical form of the new neighbourhood.

The competition should design an integrated solution that ensures the protection of new buildings to the Q_{1000} level (thousand-year flood). The application of the principle of controlled inundation and controlled flooding of selected areas is permissible, but individual sectors and building blocks must be served by transport and pedestrian traffic **exclusively from a safe level Q_{1000}** .

- The design must also demonstrate **hydraulic neutrality** – the technical measures must not adversely affect drainage conditions or increase the flood level in the wider context (especially in contact with the Old Town Conservation Area).
- Flood protection must in line with the blue-green infrastructure solution.

- Technical protective elements (embankments, lines of temporary barriers) must not create spatial barriers within the site. Their organic integration into the public space and landscape architecture is required.

Design parameters

The basis for the design of terrain modifications and levelling is the results of hydraulic modelling (DHI s.r.o.). Given the **forecast impacts of climate change**, it is necessary to consider an **increase in flow by a safety margin of 20%**. The competition design should take this scenario into account and demonstrate the spatial reserve and adaptability of the proposal. Confirmation of the application of this increase and its precise technical parameters will be verified after the competition. Chart 3 summarises the key levels of the Danube and their relationship to the reference terrain.

Street typology of waterfront public spaces:

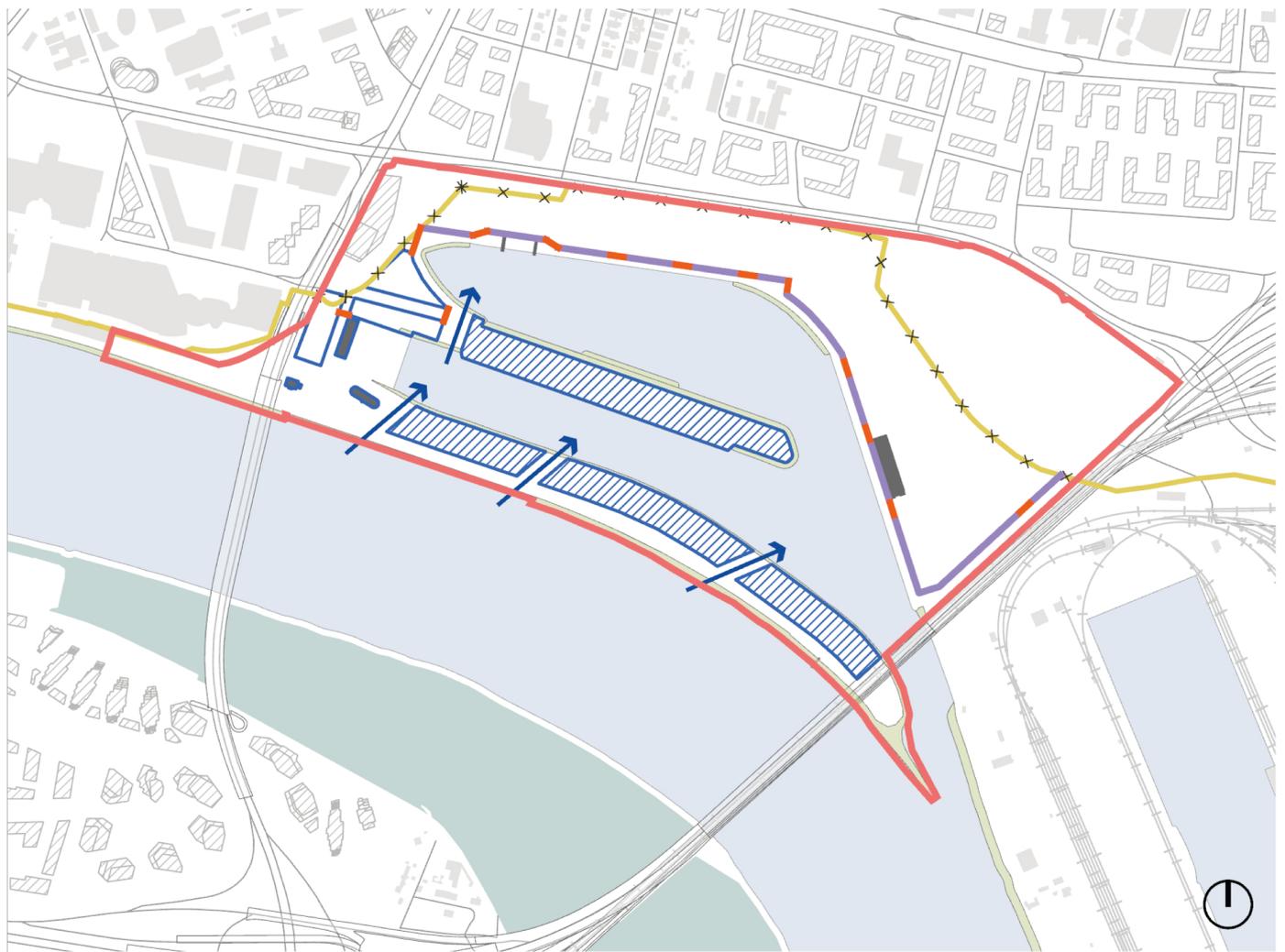
As part of the Winter Harbour Redevelopment Vision, the profiles of the waterfront promenades (Types 1A, 1B and 1C) were verified in view of technical limits of flood protection. It is essential that the competition design for the waterfronts is based on defined principles and provides a solution that respects the safety, technical and spatial requirements of the site.

Chart 3: Reference height levels and protection parameters from the Winter Harbour Redevelopment Vision:

Parameter/Scenario	Elevation (meters above sea level Bpv)	Difference from normal level (m)	Required height of protection above ground (m)*
Minimum level (dry conditions)	130,2	–	–
Normal level (average condition)	131,9	–	–
Reference terrain (sector B)	136,2	+ 4,30	–
Q_{100} (100-year flood)	137,6	+ 5,70	+ 1,40
Q_{1000} (1000-year flood)	138,8	+ 6,90	+ 2,60
$Q_{1000} + 20\%$ (climate reserve)	139,7	+ 7,80	+ 3,50

*Note: The "Required height of protection above ground level" is relative to the reference height of land in Sector B (136.2 m above sea level). As the height of the terrain in the area varies, the actual height of the embankment will differ locally.

Diagram 18: Reference technical scenario for flood protection



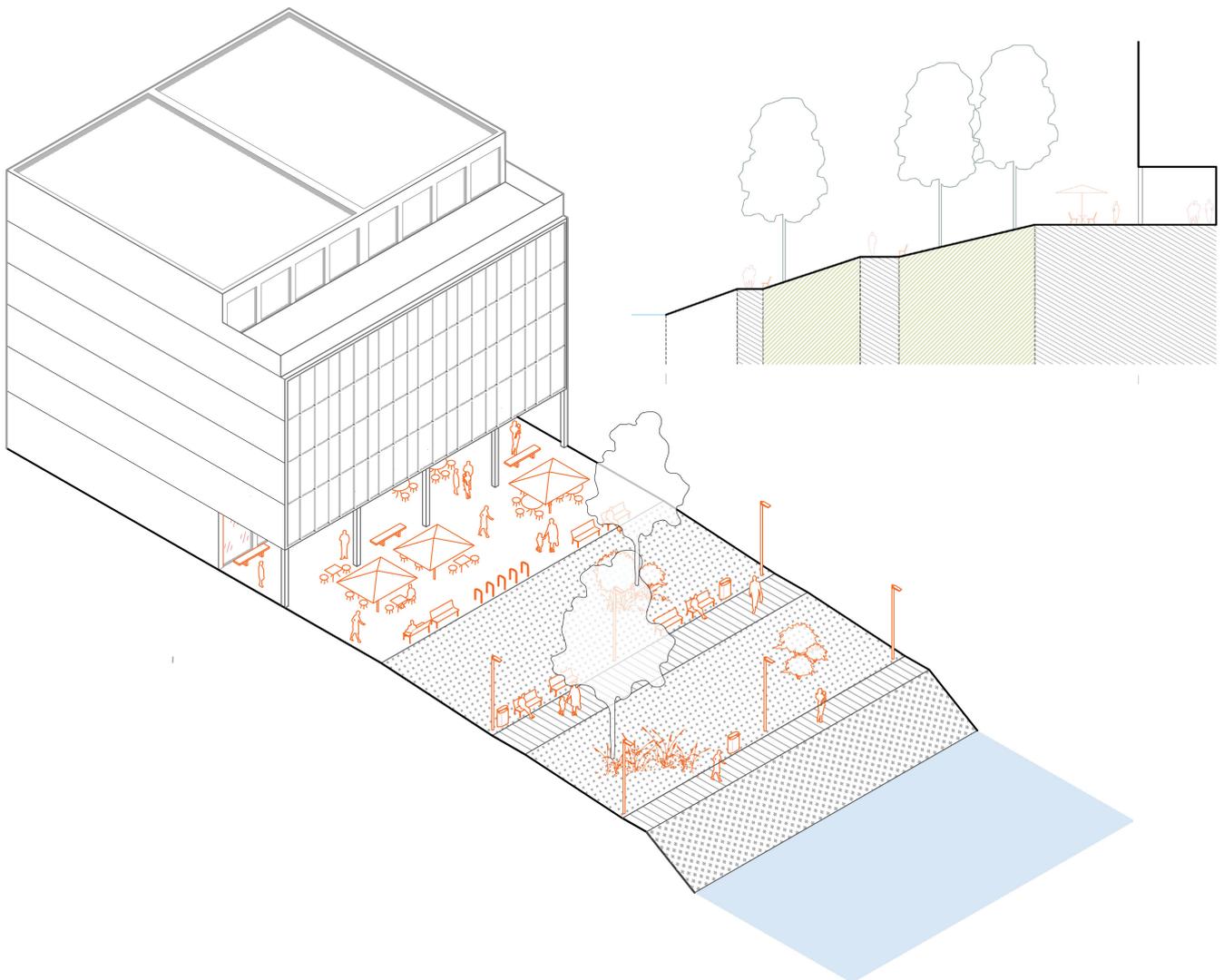
- | | | | |
|-------------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------|
|  | competition site |  | spatial flood protection - embankment crest |
|  | existing buildings |  | flood protection line - current |
|  | proposed buildings |  | flood protection line - to be removed |
|  | national cultural monument |  | flood protection - building facade |
|  | sloped terrain - currently |  | flood protection - mobile wall |
|  | flood protection integrated into buildings | | direction of flow in the water corridor |
|  | priestorová protipovodňová ochrana - zemný násyp | | |

1 A: Embankment Street - Promenade

- Location: along the main course of the Danube
- Two-level profile offering contact with the river while maintaining Q_{1000} protection:
 - **Upper level (Promenade – Q_{1000} embankment):** Main communication axis with an active ground floor and amenities located on the embankment crest (at the level of Q_{1000} flood protection), fully functional even during flood conditions. The main pedestrian, transport and cycle routes are located on this level.
 - **Lower level (flooded public space):** A recreational space in direct contact with the water level (harbour basins), accessible to pedestrians and cyclists. All elements (greenery, furniture, sur-faces, possible seasonal ground floor) must be flood-resilient against periodic flooding and the facades of buildings must be equipped with technical security measures (flood gates).

Figure 9: Embankment street - Promenade 1A (main course of the Danube – inundation zone, two level profile)

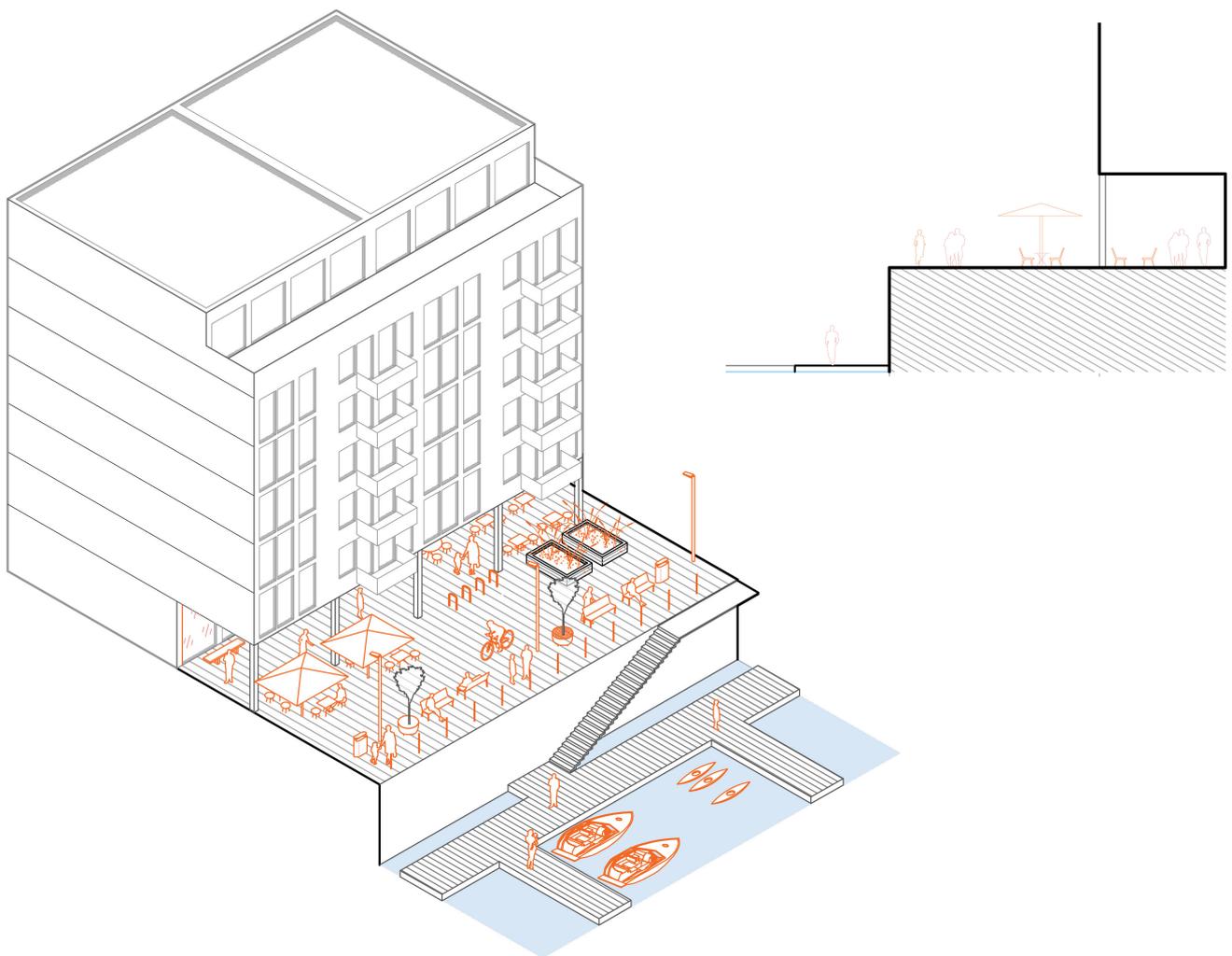
*this picture does not show the upper level promenade



1 B: Harbour promenade on an elevated level (earth dike)

- Location: Most of sector B
- Public space located on the embankment crest at a **safe height**. Contact with water is ensured by **local interruptions** in the embankment crest with steps, ghats, ramps and lowered terraces.
- **Full movement of pedestrians and cyclists and functioning of services even during floods.**

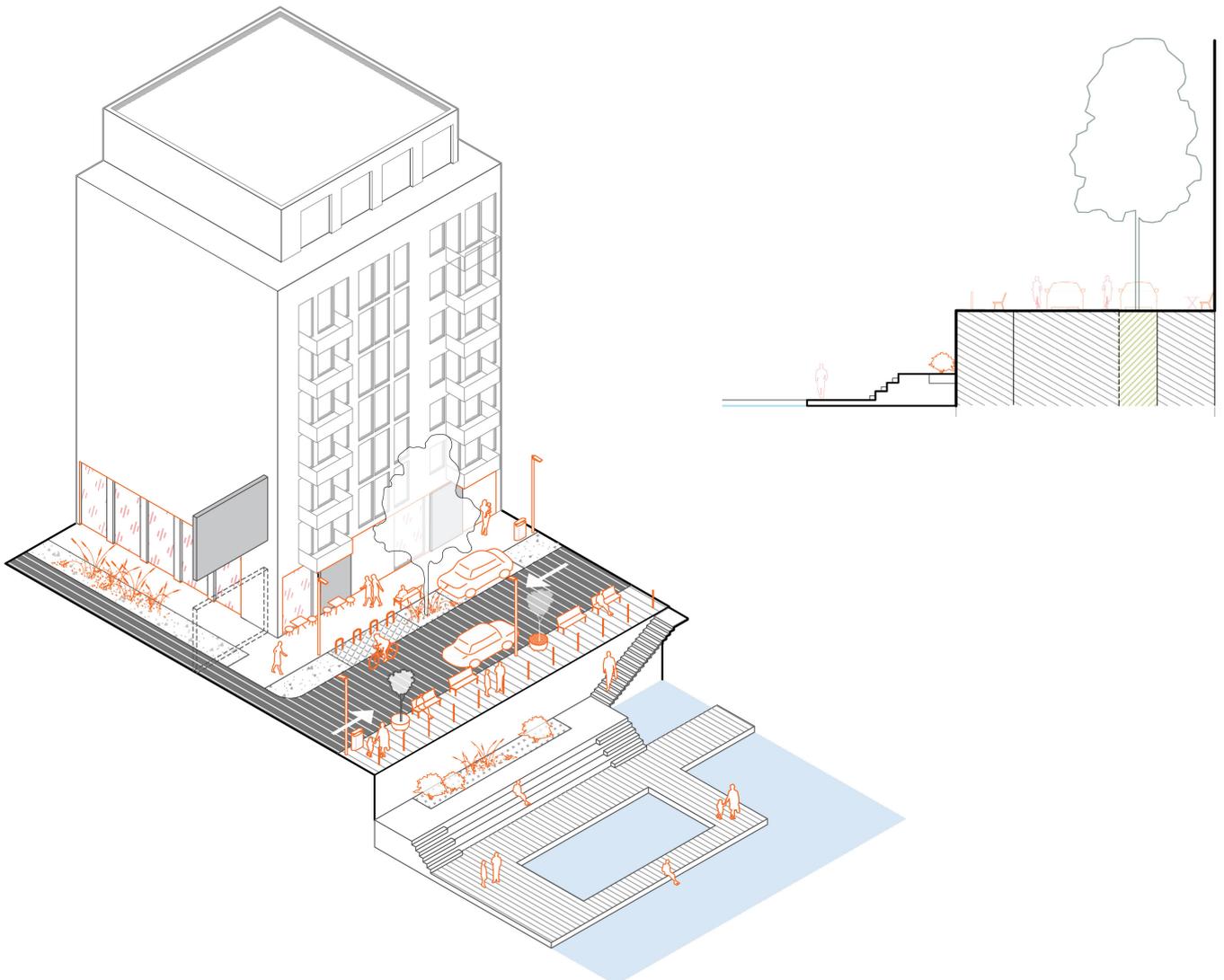
Figure 10: Port promenade on an elevated level embankment crest – 1B



1C: Harbour promenade at flood level

- Location: northern edge of the northern basin (contact with the city block).
- Promenade at the original (flood) level of the terrain, allowing direct contact with the water.
- Operation and movement:
 - Normal conditions: Connection between the active parterre and the promenade.
 - During flooding: The area is inaccessible and movement is redirected. The flood line is shifted to the edge of the development (mobile walls in the streets, waterproof ground floor, integrated flood gates)

Figure 11: Harbour promenade at flood level – 1C



10.b. Technical solution by sector

Sector A:

The technical design is differentiated according to contact with the watercourse.

In contact with the harbour basin (inland): The protection system consists of a **line of embankment crest** raised to level Q_{1000} . The line is located inland of the sector in contact with the harbour basin, running **approximately along its longitudinal axis**, parallel to the edge of the basin.

- To ensure **controlled flooding**, the continuity of the embankment is interrupted in three places by **flow corridors (width approx. 30–40 m)**. The ground level in these corridors and in areas in front of the embankment crest (towards the basin) is at the original level.

Embankment zone (main stream of the Danube): A two-level profile of type 1A Embankment Street - Promenade is applied at the line of contact with the main stream.

The lower level of the promenade (flood zone) is in direct contact with the river and is periodically flooded. The upper level (Q_{1000} dam) is on an **embankment crest**, with the main public space and protected buildings.

Sector B:

The technical design includes the excavation of a **new canal** (width approx. 30 m) connecting the southern and northern basins.

To ensure transport services and protect buildings, **the terrain (embankment crest) for the central part of the area is raised to level Q_{1000}** .

The layout for the embankment corresponds to Type 1B (raised level), with the possibility of local application of Type 1C (flood level) in the promenade areas.

- The main urbanised structure is protected. In the promenade at the original level, part of the public space is flooded.

Sector C:

Northern part (high-rise cluster) and connection to Sector B: **The terrain is raised to level Q_{1000}** , ensuring the protection of the main buildings and smooth urban continuity with the new quarter on the pen-insula (Profile Type 1B).

Southern part (listed buildings): Due to the fixed height of the existing historical buildings (Warehouse No. 7, Boat workshop), **the terrain is not raised**. These buildings are protected individually, while respecting their monument value.

Sectors D and E:

In these sectors, the **original terrain level** and contact between the buildings and the water surface are preserved.

Technical design: The flood protection is shifted to the line of buildings. It is solved by a combination of **building facade protection** (integrated flood gates) and a system of **mobile barriers installed in the spaces between blocks**.

The embankment layout is Type 1C (flood level).

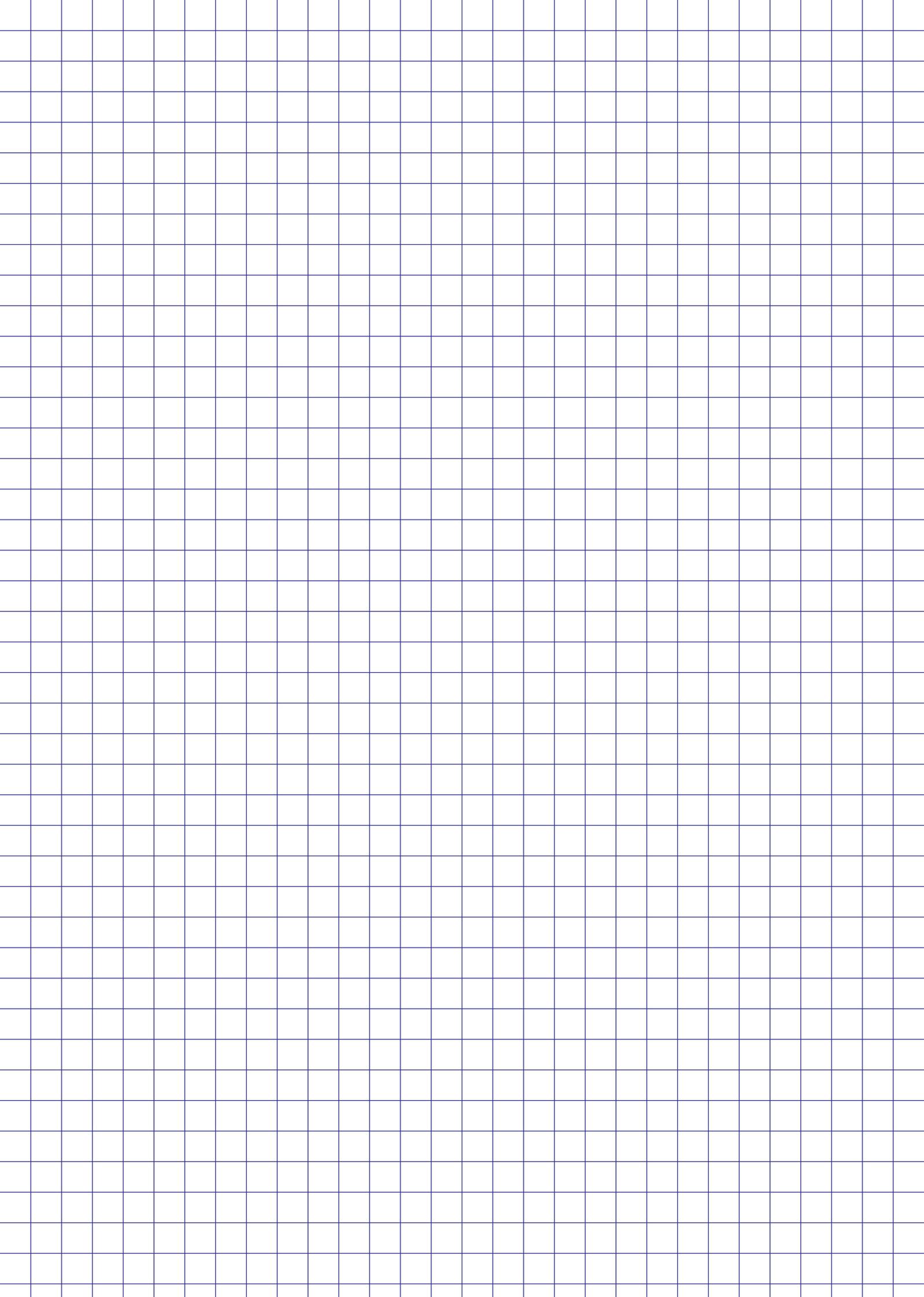
- The public space in front of the protection line is a flood zone. During floods, it is flooded and inaccessible, and pedestrian traffic is diverted inland.

Sector F:

The existing flood protection line in this sector is being relocated closer to the **edge of the North Basin**. The original earth dike is removed.

Technical design: The area is protected along **the line of buildings** by a combination of facade protection and mobile barriers, while the public space in front of this line remains in flood zone mode.

The embankment layout corresponds to Type 1C (flood level).



11

Energy

concept

11.a. Energy strategy concept

In this competition, the chapter on technical infrastructure listed in the *Analytics section is provided primarily for information purposes. The limiting factors for the design are the protective buffers of the technical infrastructure networks, especially at the contact edges of the competition site with its surroundings.

The energy concept for the district should aim for parameters of a carbon-neutral to carbon-positive district. When working with construction resources, it is necessary to apply the principles of material efficiency and circular economy. The future use of gas is excluded for the area.

Energy strategy concept

It is essential to design land development in accordance with future construction requirements – with the EPBD (Energy Performance of Buildings Directive) and EED (Energy Efficiency Directive) guidelines.

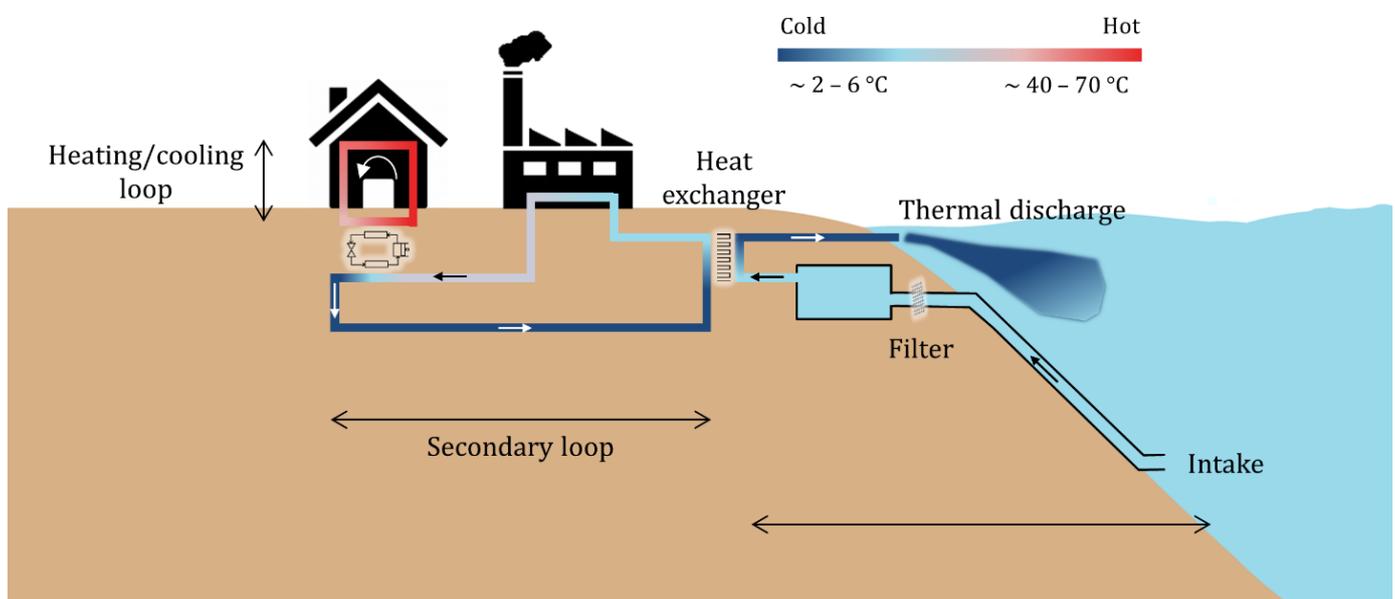
From 2030, new buildings must meet the standard of zero local emissions, with their entire energy needs (heating and cooling) covered exclusively by renewable or low-carbon sources.

This area contains an existing district heating system, which is considered efficient under the current operating conditions.

Local 5G district heating system using the thermal potential of the Danube

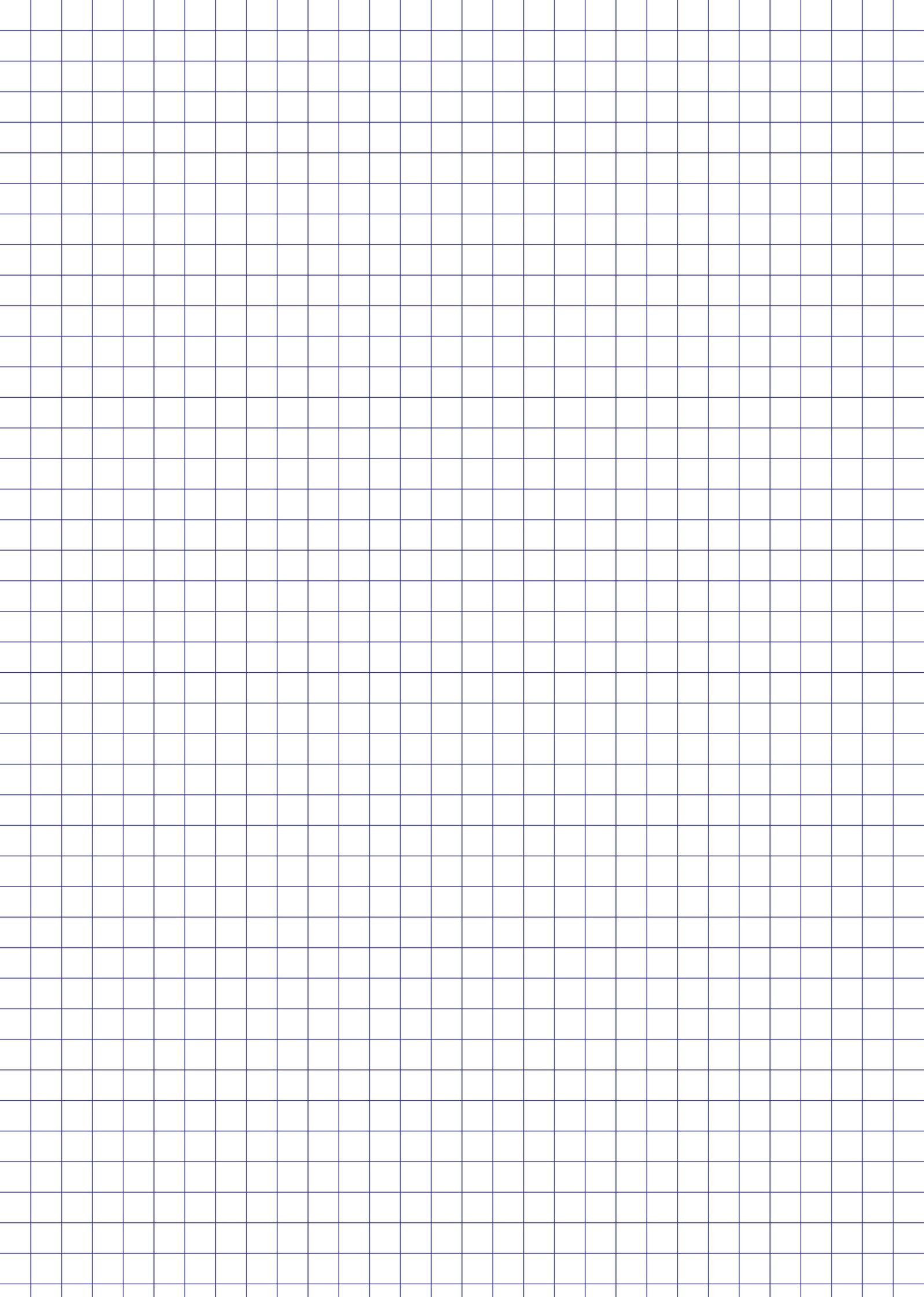
- For a sustainable supply of heat and cooling to buildings, it is recommended to build a separate 5th generation low-temperature district heating system (5GDHC) using renewable and local sources.
- In the Winter Harbour zone, there is an opportunity to consider using water from the Danube for water-water heat pumps either for individual sectors or to build a centralised heat and cooling system (CZT) for the entire zone. Consider building a separate 5th generation (5G) district heating and cooling system for the entire zone. The solution requires land reserves for the location of district heating and cooling technology and the construction of heat and cooling distribution networks.
- The solution of a centralised heat and cooling system can mirror the phasing of the area's construction development by sector. This could be a combination of water-water heat pumps and photovoltaic systems, which is a mix that supports the creation of energy communities.

Figure 12: Use of a water-water heat pump from surface water sources, Source: Eawag – aquatic research, 2019



Renewable energy sources

These will be proposed on an architectural scale; for information purposes only, we state in the competition that all new residential and non-residential buildings must be equipped with appropriate solar energy devices in order to maximise the energy independence of the new district and the consumption of electricity produced in the zone.

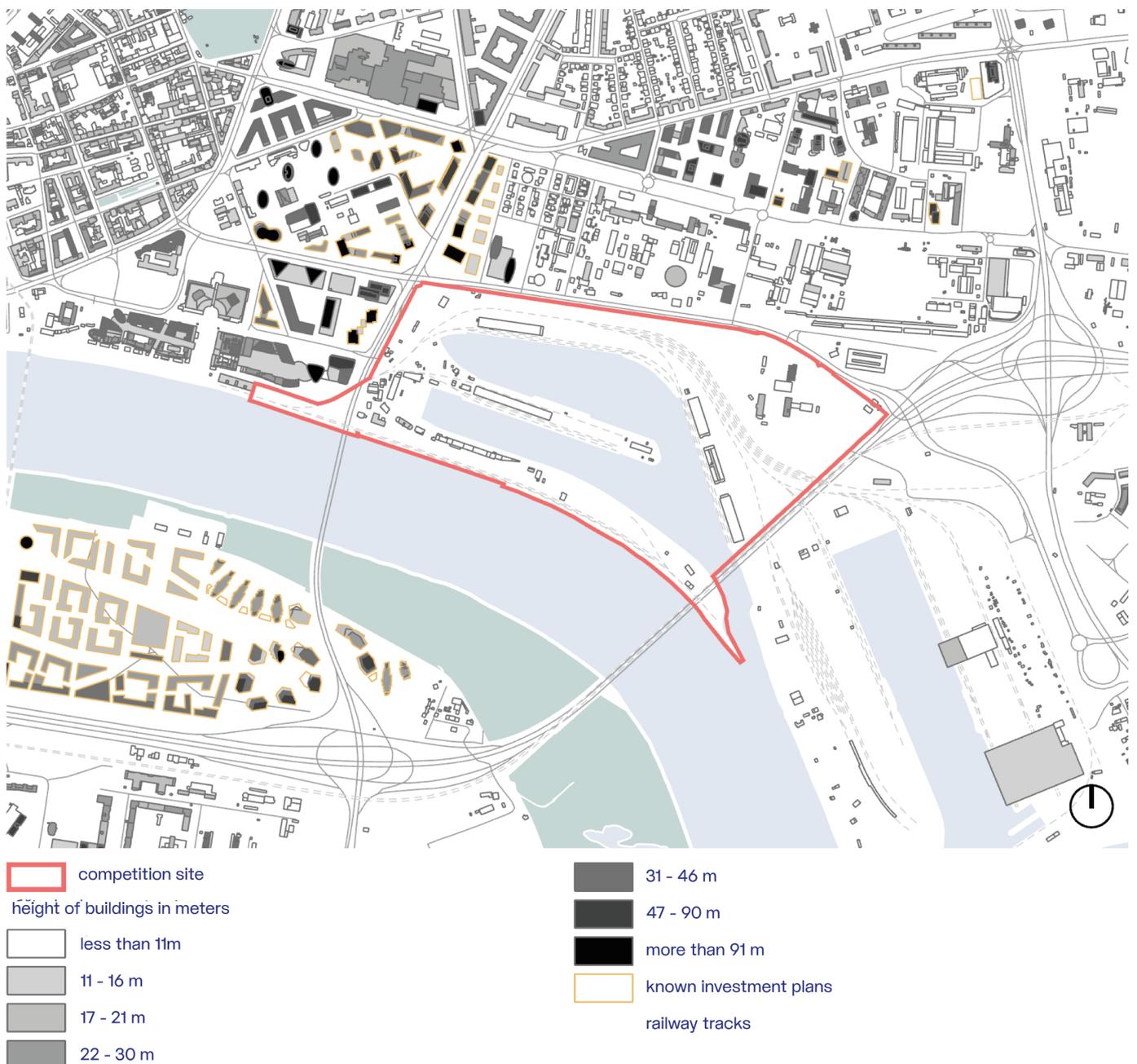


***Analytical information**

*4.a. Current structures in the harbour

The site contains one- to two-storey warehouse buildings, mainly on the waterfront edges in contact with the harbour basins. In the western part, there are four-storey administrative buildings, and in the north-eastern sector, there are six-storey administrative buildings and a twelve-storey dormitory building.

Diagram 19: Height and volume composition of buildings



*4.b. History of the harbour

The creation of the Winter Harbour is a result of the regulation of the Danube River between 1886 and 1896. The creation of a stable navigation corridor and the reinforcement of the banks defined the new shape of the embankment, which created the technical conditions for the start of port construction in 1897. This made Bratislava an important logistics hub in what was then the Kingdom of Hungary, with the port developing in close connection to the industrialisation of the adjacent areas and the development of the railway.

In the interwar period and during the Slovak State, the port reached its peak in terms of both built form and function, serving not only technical but also a societal purpose. From 1923, the "Oriental Markets" were held here. At that time, the port formed a single entity with the city, connected by a network of railway sidings linking ships, warehouses and factories. This historical trace of the railway tracks, partially preserved among others in the section from Warehouse No. 7.

The main function of the port was to anchor ships, because unlike the main course of the Danube, the water in the Winter harbour did not freeze. The presence of ships is therefore a natural feature of the area, with a mooring capacity of up to 200 vessels. Other functions were also related to the presence of ships, such

as repairs in the Boat workshop, facilities for sailors and administration.

The history of the area is also marked by its military past, which has left traces and environmental limitations in the area. During World War I, the area was part of a defensive line and later a naval base. The strategic importance of the port led to Allied bombing during World War II and the subsequent placement of explosive systems in the water. These did not detonate, and the ammunition probably remains stored under the water. The probable presence of unexploded ammunition at the bottom of the basins thus represents a safety and technical limitation that will need to be addressed when working on modifying the bottom or constructing buildings in the water area. However, it does not pose an acute risk, and no restrictions or threats have been identified in operation to date.

The post-war period brought infrastructure reconstruction, with a turning point coming in 1975–1983 with the construction of the new, more modern Pálenisko Port. The shift in key logistics operations and the overall decline in the importance of river transport after 1989 led to a gradual decline in activities at the Winter Harbour. Currently, both freight and passenger river transport are showing a renewed upward trend.

Figure 13: Harbour in 1945, Pavol Poljak, Source: Web Umenia https://www.webumenia.sk/dielo/SVK:SNG.UP-DK_2549



*4.c. Cultural monuments, collections

1. Wastewater pumping station from 1904 – 1905 with technical equipment

The building, which dates back to the construction of Bratislava's first sewerage system (designed by Frigyes Riedl and built by Pittel & Brausewetter), is a valuable example of historic functional architecture with preserved technological equipment.

Figure 14: Pumping station



2. Warehouse No. 7 from 1921 – 1922

It represents advanced architecture of utility buildings with valuable material and spatial expression, preserved layout and partially tectonic division of the façade. It is located outside the competition site, connected to the area by a railway siding.

3. Boatmen's House from 1940 – 1942

An important work of functionalism by architect Július Lehocký (built by Zaťko). The building is characterised by a dynamic material composition with rounded corners and a raised central part in the stairwell, creating a viewing tower. It housed boatmen and ship captains.

Figure 15: Historical photo of Warehouse No.7, Source: Register modernej architektúry <https://register-architektury.sk/sk/objekt/188-sklad-c-7>



Figure 16: Boatmen's House



4. Boat workshop from 1943 – 1944

The **Boat workshop** is an example of industrial hall architecture using a reinforced concrete skeleton, which enabled a large, uninterrupted, well-lit space of the workshop. It represents the industrial hall-type architecture of the 1940s. A bridge crane is installed inside, which is necessary for working with ships and parts.

5. Boat lift from 1930s

The **Boat lift** forms a functional whole with the Boat workshop. Its horizontal manipulation system consists of ropes, rope winches with transmission, a crane track, deeply embedded tracks for wedge trolleys, and an engine room with a control room. It is still fully operational today and, together with the bridge crane in the workshop, represents the cutting-edge technology of its time. Currently, the Tugboat Šturec is placed on it.

Figure 17: Boat workshop and boat lift



6. Port warehouse No. 17 from 1928 – 29

The linear, expressively simple structure of the warehouse demonstrates the use of a groundbreaking technical solution involving mushroom ceilings, which significantly influenced the dimensions of the warehouse building.

Figure 18: Warehouse No.17



7. Harbour from 1897 – 1901

The harbour structures have been preserved in their original layout with recognisable newer modifications. All their components used for mooring ships and handling goods are a valuable part of the site. The implementation process is technically valuable, since it required advanced solutions for foundations on unstable Danube alluvial deposits, work below the water level and unification of the embankment edge.

Figure 19: North basin of Winter harbour



8. Two gantry cranes No. 15 a No. 16 from 1970s Movable monuments

Two gantry cranes (manufactured by Kráľovopolská strojárna Brno) are movable cultural monuments of technical value. The silhouette of the port is also complemented by visually iconic Ganz cranes, which are not listed monuments.

Figure 20: Dva portálove žeriavy



9. Tugboat Šturec

Movable monument

Weighs approximately 330 tones (59 meters long and 9 meters wide). Placing it by itself on water is not possible due to the current technical state of the boat.

Figure 21: The Šturec tugboat pulled up on the Boat lift



Figure 22: Tugboat Zvolen



*4.d. Art objects

1. Monument to Fallen sailors in World War II

Vladimír Popovič, 1972, GPS: 48.138746219147805, 17.129370966408345, <https://pam.epocha.sk/pamatniky-bratislava/ruzinov-vrakuna-pod-biskupice/padlym-namornikom-v-2-svetovej-vojne-areal-pristavu>

The sculpture is located on a hill in front of the Transport Authority building. Stairs that lead to it from the Danube embankment, and it is also clearly visible from the river. It consists of a concrete stele in the shape of waves and an iron anchor. The concrete pedestal bears the inscription "To the workers who died in the fight against fascism and in the performance of their duties" and the stele bears the inscription "In memory".

Figure 23: Memorial to Fallen Sailors in World War II



2. Foundation stone of the Dukla Heroes Bridge

Vladimír Durbák, 1978, GPS: 48.140638, 17.144974, <https://umeniemesta.sk/diela/recwGp2Xo7IzxxzKSl>

The original name of the Port Bridge was Dukla Heroes Bridge (until 1992). The foundation stone of the bridge bears this name and represents the symbolic beginning of its construction. Above is a five-pointed star, which is a reference to the symbolism of the political regime at the time.

Figure 24: Foundation stone of the Dukla Heroes Bridge



Figure 25: Ribbon of Friendship



3. Ribbon of Friendship

Ladislav Snopek, Ladislava Snopeková, Ladislav Beisetzer, Juraj Jakubík, Juraj Šimek, 1985, GPS: 48.140638, 17.144974, <https://umeniemesta.sk/diela/rec-7j7QUssMD4mvzC>

This monumental concrete work with reliefs on both sides forms a symbolic gate for visitors to pass through, symbolising friendship between nations. The reliefs are complemented by iconography of the Danube, the sun, girls, sailors and Bratislava Castle. The work was created in connection with the Dukla Heroes Bridge and was complemented by simple landscaping.

4. Return

Emil Venkov – 1985, GPS: 48.1398460, 17.1438940,
<https://umeniemesta.sk/diela/recTYeiWKMZeC2BJX>

The work is located in front of the port's administrative building. It consists of a composition of three bent concrete "slabs" standing in a gravel symbolic riverbed surrounded by two concrete waves. On the front side, the relief depicts sailors greeting women. On the back side is the port's logo with an anchor and a five-pointed star.

Figure 26: Return



*6.a. Population and building density

The density of residential development in central locations in Bratislava is **100–125 flats/ha**, which, with an average occupancy rate of **2.0 inhabitants per flat**, corresponds to **200–250 inhabitants/ha**. A decline in demography is expected to lower occupancy to **1.6 inhabitants per flat**. Given the exceptional location potential and urban character of the Winter Harbour, a higher intensity of use is assumed for the area.

The target population density is assumed at **260 inhabitants/ha** (at occupancy of 1.6 inhabitants/flat) – **325 inhabitants/ha** (at occupancy of 2.0 inhabitants/flat). Converted to housing units, this represents a density of approximately **160–165 flats/ha**. The above density parameters apply to the **mainland** of the site (approx. 45.03 ha).

Note: The projected age and gender structure, as well as the economic activity of the future population (see Chart 4), is derived from relevant data from the Census of Population, Houses and Flats (SODB 2021) at the level of the relevant Basic Settlement Unit (ZSJ).

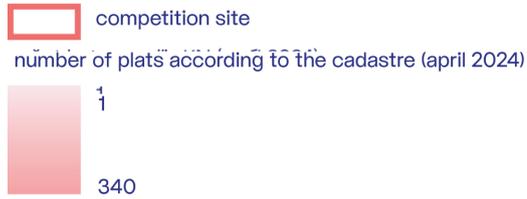
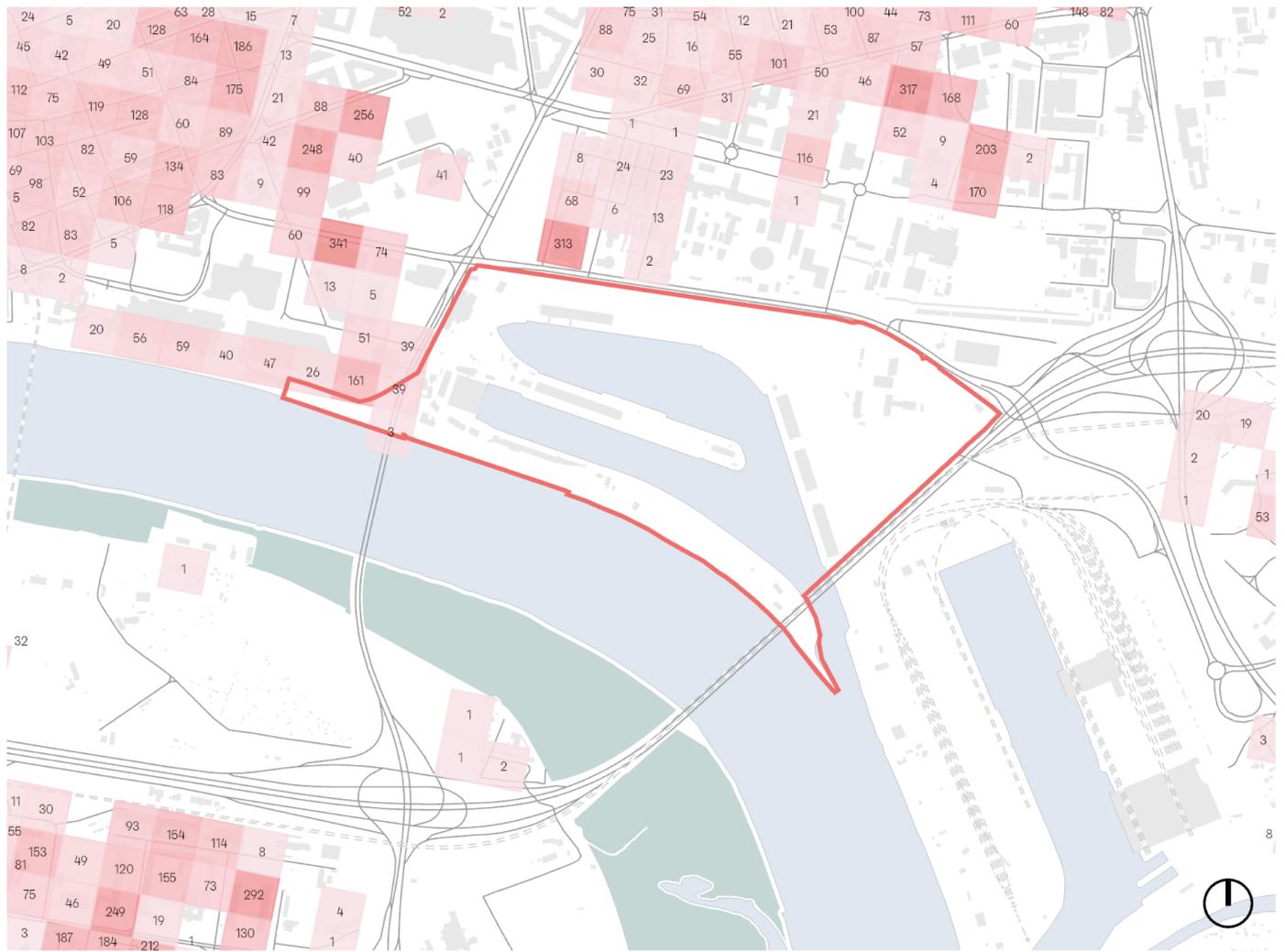
Chart 4: Estimated age and gender structure and economically active population of the competition site

flats occupancy	number of inhabitants	men	women	age 0 – 14	age 15 – 64	age 65+	ekonomically active popul.
1,60	11718	6 477	5 241	2 011	8 946	761	6 494
2,00	14 648	8 097	6 551	2 514	11 182	951	8 117

Source: Winter Harbour Redevelopment Vision, 2026

*Due to rounding of values in the calculation, a deviation of +/- 1 inhabitant is possible.

Diagram 20: Distribution and density of flats in a 100x100 m (1 ha) square grid



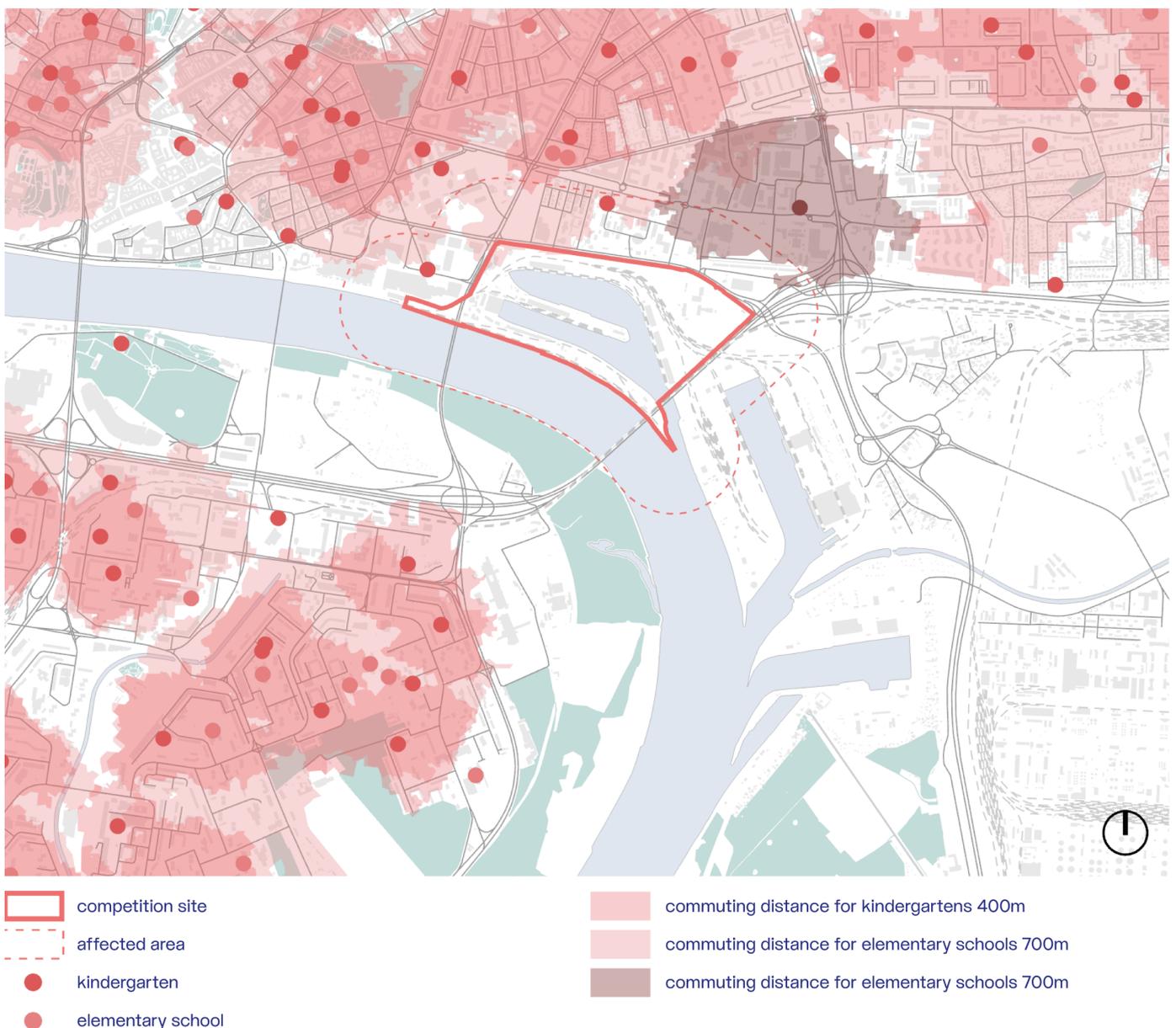
*the number represents the number of flats and the density of flats per 1 ha

*7. Amenities in the site

*7.a. Schools and school facilities

There are no kindergartens or elementary schools in the area that are within the commuting distance from the residential areas. The only primary school within walking distance of the site is Elementary school Košická, which is currently at full capacity.

Diagram 21: Coverage of the area by nursery and primary schools and their commuting distances*



* State, private and church schools are shown; commuting distances are shown on the diagram only for state schools

*7.b. Sport

In the competition site, there are two tennis courts with artificial grass surfaces under the Port Bridge. In addition, there are three other tennis courts on Mlynské Nivy Street, but according to data from the Strava mobile application, they are not in use. In the wider area, the sports infrastructure is mainly covered by children's playgrounds, school sports facilities and built-in fitness centres. In the southern part of the area, there is the AŠK Inter Bratislava Canoe Club and the ŠSK Slovnafť Shooting Range, and on the opposite side of the Danube, there is a fishing area, the Dunajčik Water Sports Club and the Kamzík Danube Club. Next to them is the Police Sports Centre.

Both sides of the river, the embankment, the dam and the cycle paths, are intensively used for running and cycling. Data from the Strava app confirms this – among the busiest sections for running and cycling are the routes around the Winter Harbour, namely the Apollo Bridge, the Petržalka embankment, the Old Bridge and the cycle path on Prístavná Street. The difference in the wider area is particularly noticeable on the embankment near the Eurovea development, which is used only for running (there is no space for cycling) along the embankment to the Lafranconi Bridge.

Diagram 22: Coverage of the area with sports facilities and equipment

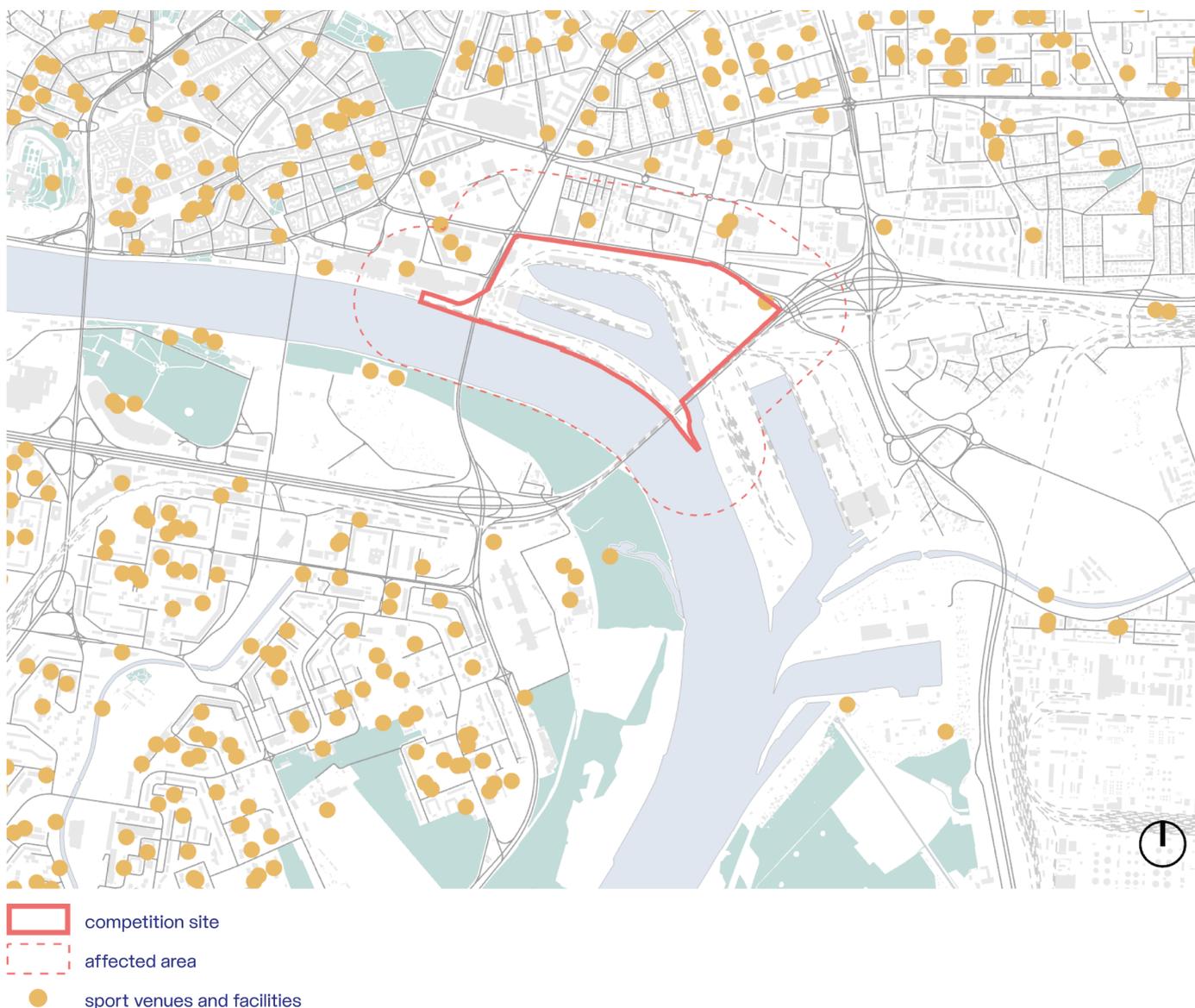


Diagram 23: Heatmaps of water sports (source: Strava)



Diagram 24: Heatmap of cycling (source: Strava)



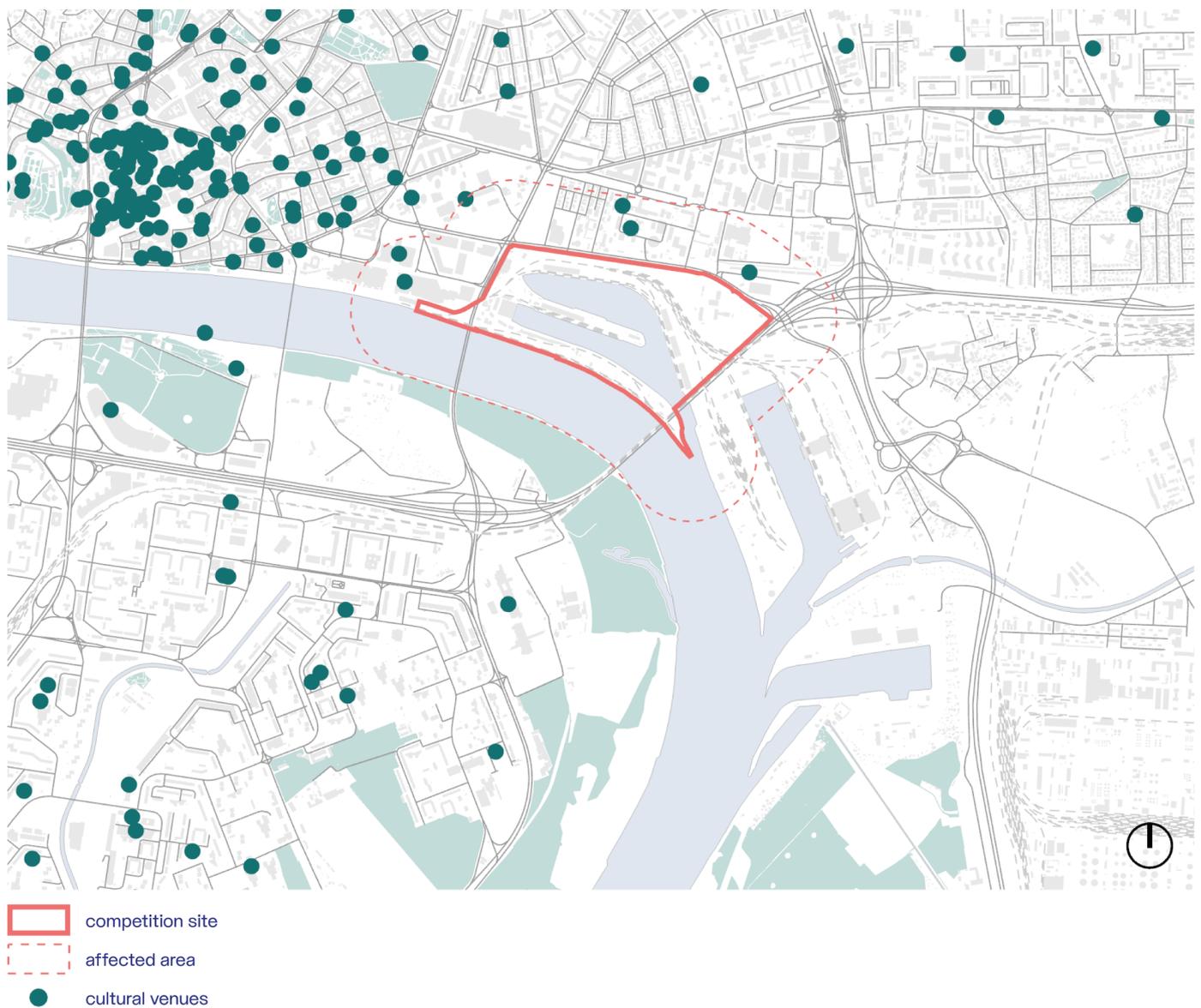
Diagram 25: Heatmap of running (source: Strava)



*7c Cultúra

There are no cultural facilities in the competition site . The Slovak Gas Company Gallery and the Slovak Gas Museum are located in the wider area. On Prístavná Street, the space in a row of prefabricated garages is used to organise underground concerts. Concerts and a summer programme are regularly organised on Tyršovo nábrežie. The Arena Theatre is located on the right bank of the Danube, while the Slovak National Theatre and the Meteorit International Theatre are located on the left bank. Naturally, the area around the historic centre and the Old Town in general is covered with cultural facilities disproportionately more than the rest of the city

Diagram 26: Coverage of the area with cultural facilities

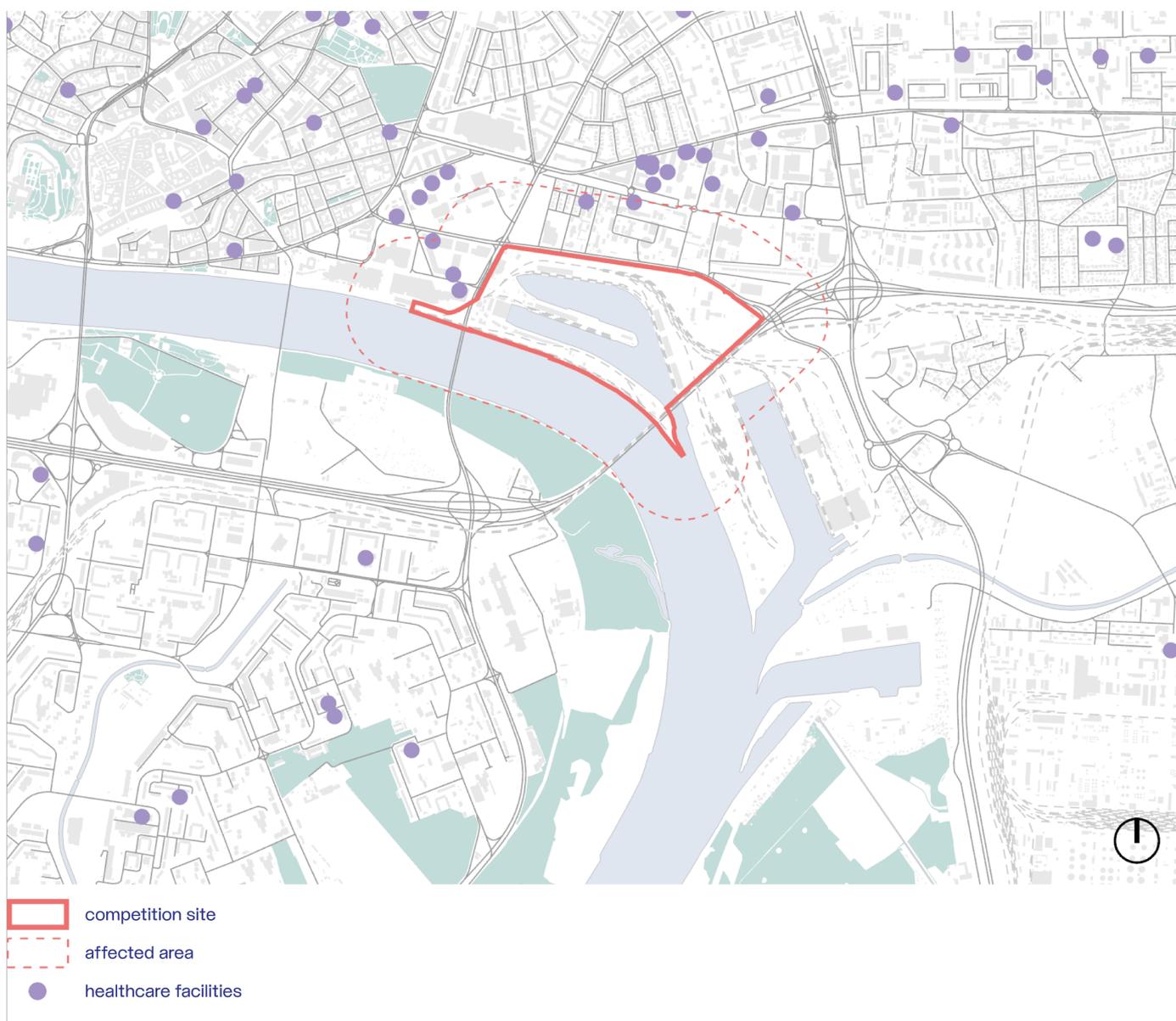


*7d Healthcare and social care

There are no healthcare facilities in the competition site. In the wider area, there are 128 medical positions in 26 healthcare facilities providing outpatient care. They are mainly concentrated in the northern part of the Sky Park residential complex and in the area around the Apollo Business Centre and Bratislava Business Centre administrative complexes (Schema 60). The largest facility, with 24 specialisations and 45 doctors, is the private Poliklinika in the Eurovea complex. In the north-east of the competition site, there is a specialised hospital on Hraničná Street – the Centre for the Treatment of Drug Addiction.

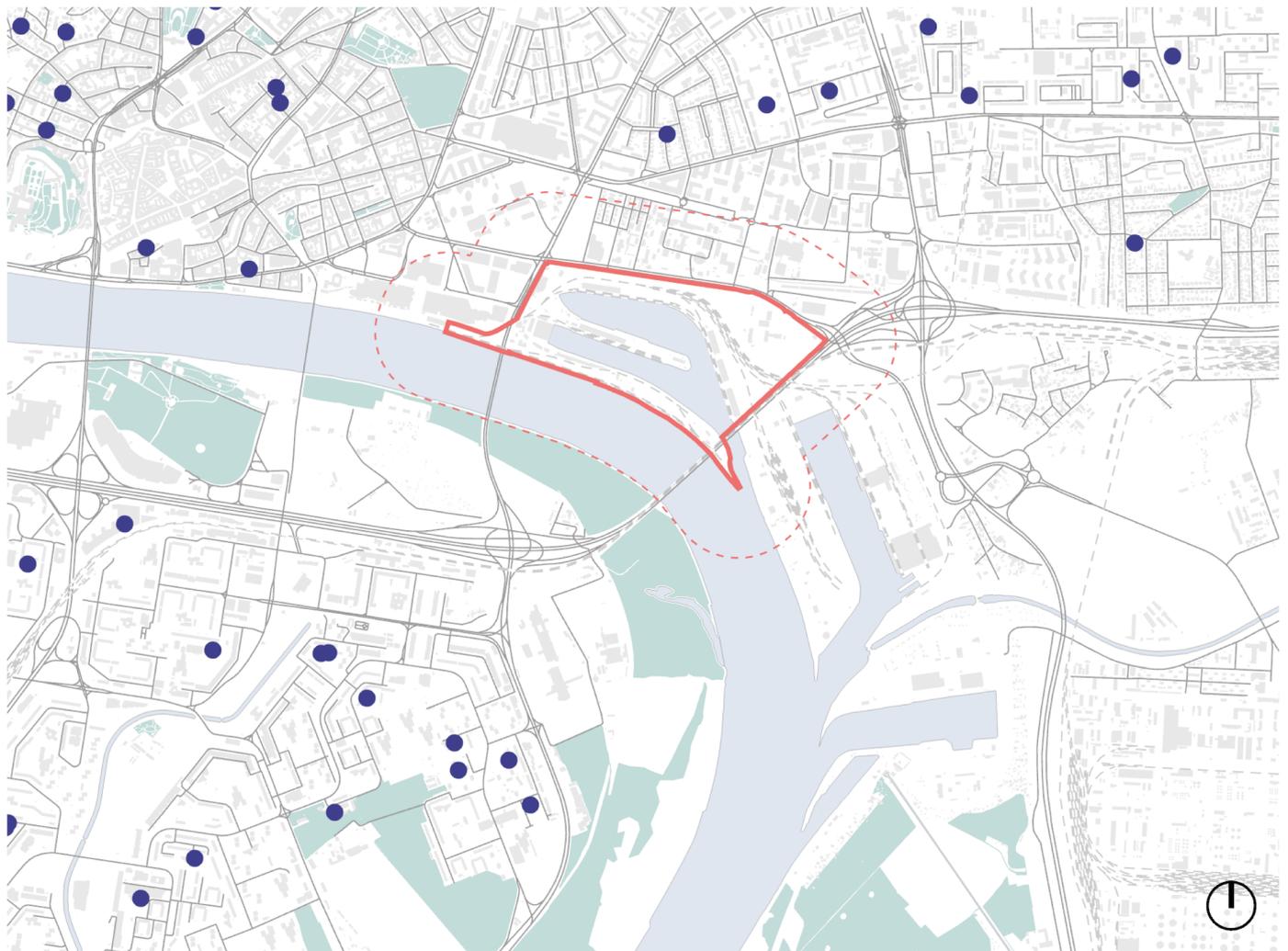
There are no social care facilities in the competition site or in the wider area .

Diagram 27: Coverage of the area by healthcare facilities



* The competition site and the wider area have been updated; facilities beyond the boundaries of the competition site are taken from the Health Care Unit, 2014

Diagram 28: Coverage of the area by social care facilities



-  competition site
-  affected area
-  social care facilities

*8 Transport

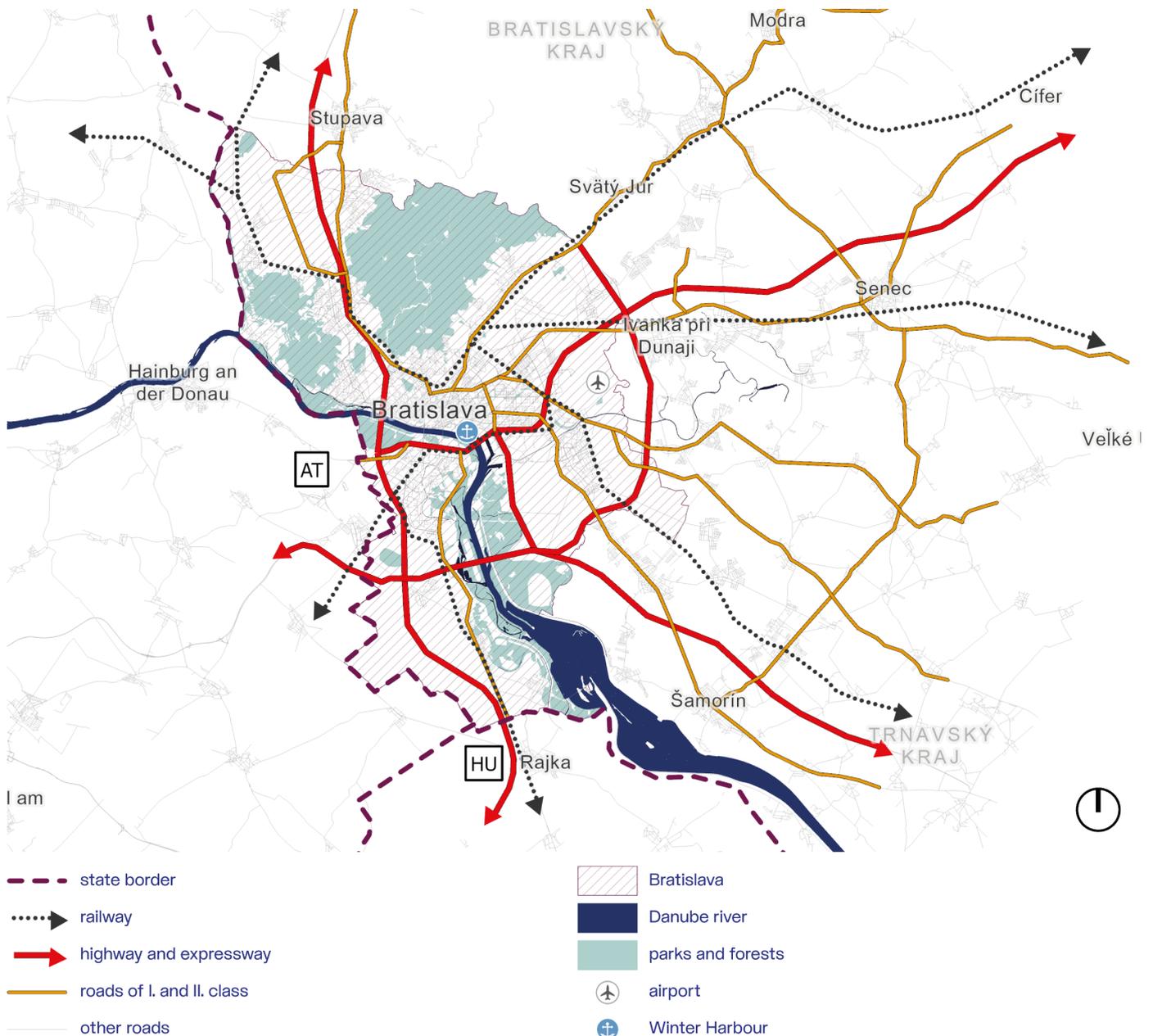
*8.a. Region scale

Bratislava is an important transport hub that is part of two transport corridors of the TEN-T (Trans-European Transport Network). In addition to the connections to Vienna and Budapest, the main transport routes are considered to be the northern route to the Czech Republic, the north-western route connecting Bratislava with the city of Trnava, and the southern route to Dunajská Streda.

The higher-level road network consists of the D1 motorway running east-west, the D2 motorway running

north, the R7 expressway running south, and the D4 city bypass. The railway infrastructure, which plays an important role in daily commuting from the surrounding region, is defined by the same development directions. From the point of view of freight transport and tourism, river transport is also important, as the Danube is one of the most important shipping routes in Europe and part of the Rhine-Danube corridor connecting the North Sea and the Black Sea. In the eastern part of the city, there is the M. R. Štefánik International Airport, which handles both passenger and cargo air transport.

Diagram 29: Existing transport infrastructure in the wider Bratislava area



*9 Blue-green infrastructure of the site

Broader and environmental links:

There are no legally protected natural features in the competition site. In the wider vicinity, there are important structures that form the city-wide framework of green infrastructure:

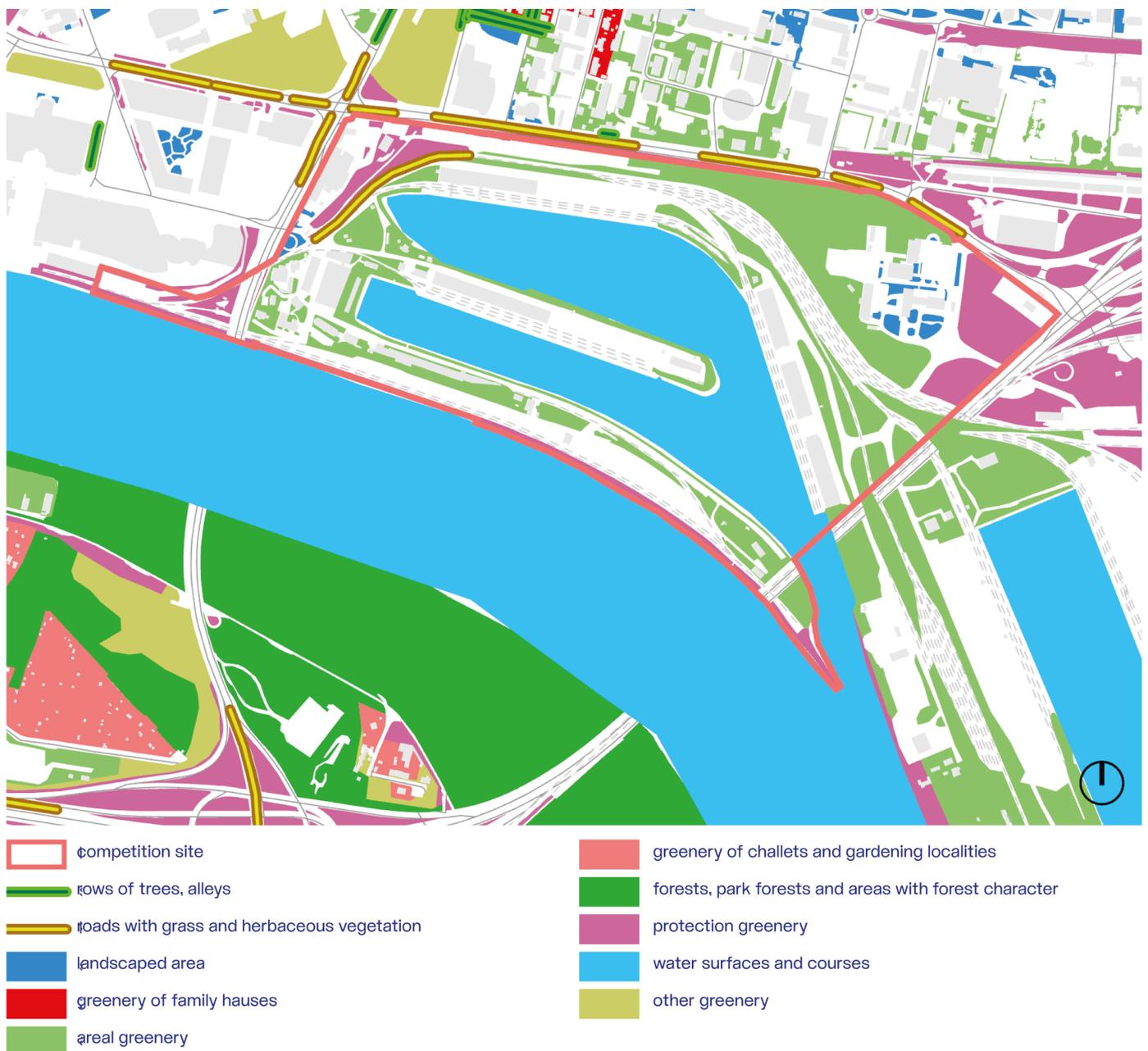
- Fragments of **riparian forest ecosystems** and associated grasslands around the Danube and Little Danube rivers (Danube Floodplains and Soví les Protected Landscape Areas).

- **Urban greenery areas:** Sad Janka Kráľa and park areas on Vajanského nábřeží.

Balance of areas in the project area:

- Total area of the competition site: **64.53 ha**.
- Green areas: **18.16 ha (28.14%)**
- Watercourses and water areas: **19.27 ha (29.86%)**

Diagram 30: Green-blue infrastructure – competition site



Green space structure:

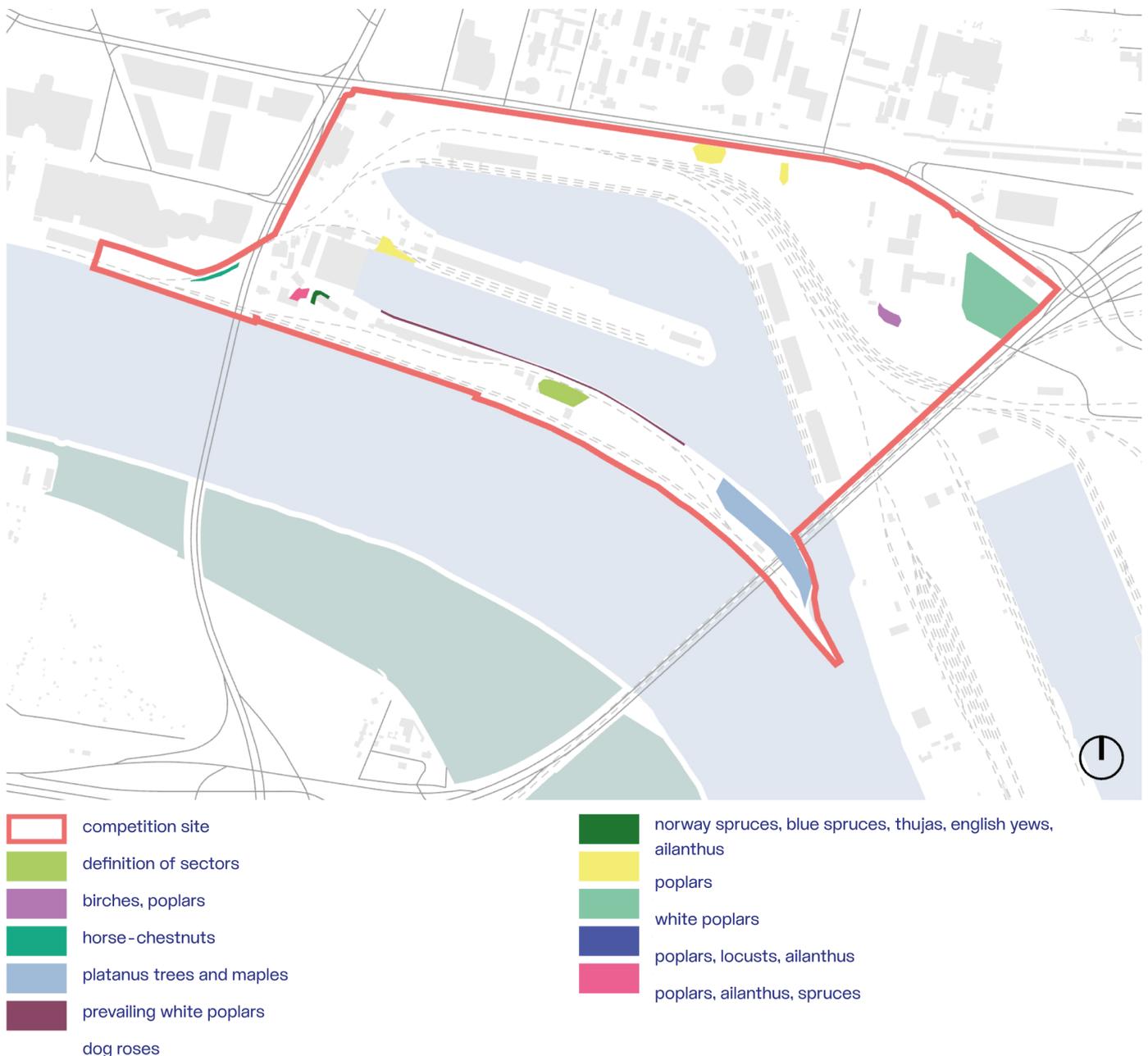
- Green areas have low and medium horticultural value,
 - **19.84%** consists of site greenery
 - **7.53%** is protective greenery
 - **0.76%** landscaped areas
- In addition, there are linear elements in the area (grass and herb strips along roads).

Existing vegetation

The existing vegetation and its condition reflect the intensive use of the Winter Harbour as a cargo port. This is also related to the **low proportion of tree veg-**

etation. Ruderal and self-seeded vegetation is also present on embankments and banks of basins. These are mostly scattered trees or self-sown trees that have grown in less maintained parts of the harbour. The dominant tree species in the harbour area are white poplar and black poplar. Most of the area is covered by herbaceous vegetation and common syn-anthropogenic species. Currently, there are only traces of the dominant tree species characteristic of floodplain forests in the area, but invasive species and species with invasive potential are also present.

Diagram 31: Sectors for botanical survey focusing on areas with woody plants and trees



*11 Technical infrastructure of the site

*11.a. Gas supply

The future use of gas is excluded for the area. A PN 4.0 MPa and DN 300 mm high-pressure gas pipeline connecting the SPP complex and Prístavný most crosses Prístavná Street and its route extends into the competition site in sector F. In the northern part of sector F, in the section from Prístavný Bridge, it is necessary to consider relocating the existing VTL gas pipeline DN500 PN 4.0Pa, which runs south and north of Prístavná Street. The relocation should be considered in the area along the southern edge of Prístavná Street to Plynárenská Street, where it will run along the northern edge to the SPP complex, where it will connect to the existing transfer regulating station of the SPP complex.

*11.b. Water supply

In terms of drinking water supply, it is proposed to extend the public water supply network with new DN 200 feeders (distribution branches), which will be connected to the existing water mains running around the perimeter of the competition site.

*11.c. Sewerage

There are fragments of rainwater and site drainage in the port area. The Winter Harbour area belongs to the A collector basin, which runs along the western side of Košická Street. There is no public sewerage system directly on Prístavná Street. There is a sewage pumping station on the south-western edge of the Winter Harbour. The pumping station itself is a national cultural monument, which must be respected and protected in the area.

Rainwater in the area from buildings and surface runoff must be managed primarily at the point of origin by drainage (with pre-treatment) outside the public sewerage system, by designing suitable retention and infiltration facilities, or by using rainwater for irrigation and firefighting purposes.

*11.d. Electricity supply

- At the level of the 22 kV high-voltage distribution network, the area is supplied with electricity via cable lines. Individual consumers are supplied via electrical substations and a low-voltage distribution network in cable form. The competition site has a 22/0.4 kV electrical substation connected by a 22 kV cable line to other substations outside the competition site.
- In the area, it is necessary to connect individual sectors and their building blocks to the existing and newly designed 22 kV high-voltage network with the construction of separate electrical substations for individual building blocks. The design must also take into account the electricity supply in relation to the demands of the city marina and passenger shipping.

Requirements for the subsequent development of the area after the competition:

- extension of the 22 kV high-voltage network in the area,
- construction of new 22/0.4 kV transformer stations
- reservation of space for the location of TS within the urban structure (inner blocks, parterre of administrative buildings, underground spaces).

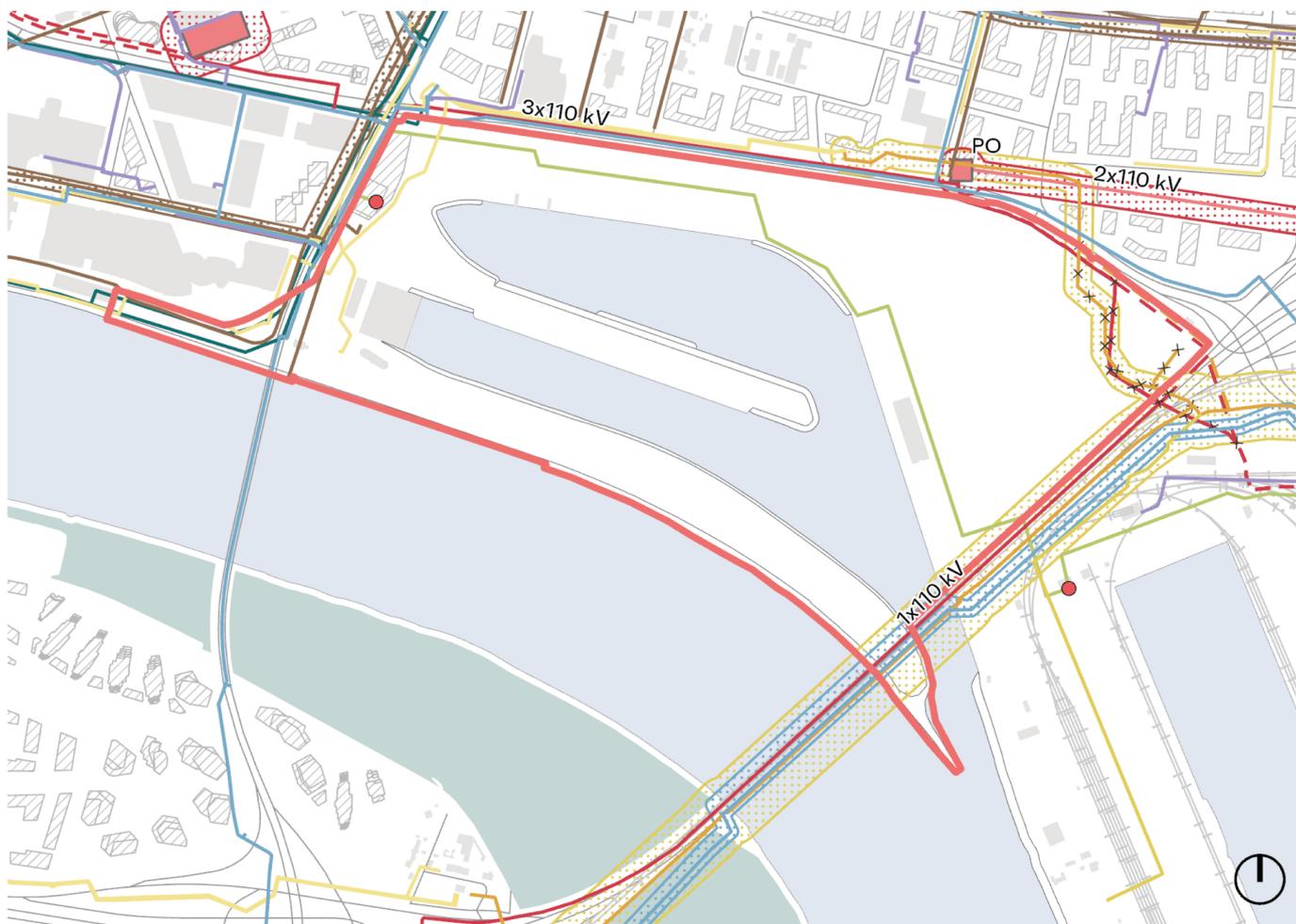
At the level of the 110kV very-high-voltage power line, it is necessary to consider relocating the existing line (in the direction of Petržalka), which passes through the north-eastern part of the competition site, to a location along Prístavná Street. Similarly, consider relocating the 110 kV very-high-voltage line proposed in the city's urban plan (in the direction of Podunajské Biskupice) to a location near Prístavná Street.

*11.e. Collectors and telecommunications

Along the eastern side of Košická Street, there is a collector in which the technical infrastructure's pipe-lines and cables (except for sewage) are stored, which can be connected to the design by extending the route to the competition site.

In the area of the Winter Harbour zone, it is possible to construct a new public electronic communications network (VEKS) as part of the technical equipment of the area, namely its underground networks connected to the existing cable route running along the western side of Košická Street, as well as above-ground base station structures.

Diagram 32: Technické vybavenie územia







All images and diagrams are from Metropolitan Institute of Bratislava's sources (own processing, mostly as part of the preparation of the Vision for the Redevelopment of the Winter Harbour), unless otherwise stated.

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