Atlas of Inclusive Climate Actions

GREEN-INC

Working Package 4: Application and validation of ICA principles in the Urban Living Labs
Deliverable: Atlas of ICAs within the 4 ULLs to enable mutual learning

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DUT Driving Urban Transitions

GREEN-INC
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GRowing Effective & Equitable Nature-based Solutions through INClusive Climate Actions (www.green-inc.eu)

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This report presents results developed during the participatory mapping activities held in 4 Urban Living Labs (Brussels, Bucharest, Skellefteå, and Turin). The report collects the result as part of the deliverable 4.1. "Atlas of ICAs within the 4 ULLs to enable mutual learning". The activities were part of the project working package 4 "Application and validation of ICA principles in five Urban Living Labs".

Author
Andrea Aragone ---- andrea.aragone@ulb.be
Faculty of Architecture La Cambre Horta, Université Libre de Bruxelles
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Introduction

The Atlas of Inclusive Climate Actions (ICAs) consolidates and synthesizes the results of four co-design workshops carried out to activate **Urban Living Labs (ULLs) in four European cities: Brussels (Belgium), Bucharest (Romania), Skellefteå (Sweden), and Turin (Italy)**. These workshops constitute a key operational step in Work Package 4 (WP4), which aims to translate the project's analytical and conceptual frameworks (WP1-2-3) into situated, practice-oriented processes by engaging local actors around concrete spatial challenges. The Atlas brings together the outcomes of these workshops by documenting and comparing how Inclusive Climate Actions, and more specifically Inclusive Nature-based Solutions (INbS), are collectively envisioned, discussed, and negotiated in diverse urban contexts. Rather than proposing a single model or set of solutions, **the Atlas highlights how inclusivity in climate action emerges through context-based processes, actor configurations, and planning trajectories**, reflecting the broader ambition of GREEN-INC to bridge climate action and social justice.

Urban Living Labs: local contexts and shared characteristics

The four ULLs represent distinct urban, social, and institutional contexts, yet they share a number of common characteristics that guide their selection and comparative analysis. **First, all four ULLs are located in peripheral or marginalised urban areas** where vulnerable social groups are significantly represented. **Second, these areas are characterised by existing or potential socio-spatial inequalities**, often linked to housing conditions, access to public space, or exposure to environmental risks. **Third, each context presents opportunities for NbS implementations**, whether already planned, partially implemented, or still exploratory. Together, these shared conditions provide a common ground for examining how inclusive climate actions are developed in practice, while allowing for comparison across cases shaped by different planning cultures and institutional settings. The following sections briefly introduce each ULL and its specific local context.

ULL Brussels // CQD Villas de Ganshoren

ULL Brussels is located in the Villas de Ganshoren neighbourhood, in the northern part of the Brussels-Capital Region, within the municipality of Ganshoren. The area is predominantly composed of social housing towers and a limited number of row houses and is currently the focus of a Sustainable Neighbourhood Contract (Contrat de Quartier Durable – CQD). This regional urban planning instrument aims to regenerate disadvantaged neighbourhoods through integrated interventions on public spaces, facilities, housing stock, and socio-cohesion activities. ULL Brussels is closely aligned with the ongoing CQD process, with the explicit intention of supporting—rather than duplicating—the work of

municipal services, urban planners, and landscape architects involved in the development of a detailed masterplan for the area. Within this framework, the ULL focuses on strengthening citizen engagement to explore INbS strategies that can potentially support and enrich the work of the professionals involved.

ULL Bucharest // Tei Area

ULL Bucharest is situated in the north-eastern part of the city, within the Tei area, focusing on the Toboc, Plumbuita, Petricani, and Doamna Ghica districts. These districts are dense urban environments characterised by high unemployment rates and precarious living conditions; in particular, the Toboc district is largely inhabited by Roma communities. The Toboc area has developed largely informally along the Colentina Lakes, a former river system transformed into a sequence of artificial lake basins. No formal urban development project is currently in place, although there is growing interest in the area due to increasing pressure from new residential developments. These dynamics raise concerns regarding potential displacement, environmental degradation, and the erosion of existing social and ecological structures. In this context, ULL Bucharest serves as an exploratory space to collectively reflect on possible future trajectories, making visible both vulnerabilities and opportunities related to inclusive climate action.

ULL Skellefteå // Anderstorp District

ULL Skellefteå is located in the Anderstorp district, in the southern part of the municipality. Anderstorp is primarily composed of low-density social housing and is home to residents of diverse nationalities. At the outset of the GREEN-INC project, the district is expected to undergo significant residential densification as part of the Skellefteå 2030 vision, linked to anticipated growth associated with a large-scale electric battery production facility.
Although this development scenario is later revised following changes in industrial investment and employment projections, it strongly shapes the context in which the ULL is conceived and conducted. During the workshop, ULL Skellefteå focuses on discussing possible densification strategies while simultaneously exploring inclusive approaches to nature, particularly in and around Nallebjörnen Park, a central vegetated public space within Anderstorp. The workshop reflects on how urban growth, ecological considerations, and social inclusion are addressed together, even under conditions of uncertainty.

ULL Turin // Parco dell'Arrivore

ULL Turin is located in the northern part of the metropolitan area, within the Regio Parco district, near the confluence of the Stura and Po rivers. The area includes a series of parks adjacent to disadvantaged

neighbourhoods within Municipal District 6 (Circoscrizione 6). No formal urban transformation project is currently underway. Instead, the ULL responds to a strong interest from the municipality in better understanding possible transformation trajectories for the area, with the longer-term aim of catalysing additional funding for park development and regeneration. ULL Turin focuses in particular on the Parco dell'Arrivore, in close connection with community vegetable gardens, the non-profit organisation managing them (Rete ONG), and local residents. The area is already characterised by active community and social initiatives, making it a fertile ground for discussing INbS rooted in existing practices.

Aerial views of the 4 ULLs: Brussels, Bucharest, Turin, Skellefteå (clockwise)

Positioning and methodological approach of the ULL workshops

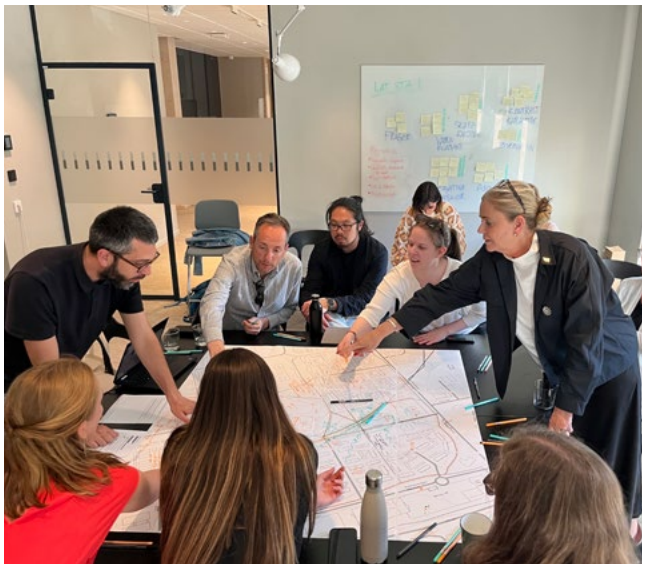
Across all four cases, the ULLs and associated workshops are conceived as supportive and capacity-building processes, primarily addressing municipal actors and public officials while actively involving other local stakeholders. Rather than positioning NbS solely as technical responses to environmental challenges, the workshops foreground their social, relational, and justice dimensions, in line with critical approaches to ICA and INbS (Cousins, 2021). Although the workshops

mainly support municipal plans and visions, they differ in their institutional positioning and planning phases. **In ULL Brussels and ULL Skellefteå, the work conducted in WP4 is directly aligned with existing urban planning instruments and strategic visions** (the CQD Villas de Ganshoren and Skellefteå 2030). **In ULL Bucharest and ULL Turin, by contrast, the ULLs operate in more exploratory contexts, aiming to strengthen shared understanding, develop new ideas, and catalyse institutional and political interest in disadvantaged urban areas**. Within these different contexts, three of the four workshops bring together participants from multiple domains, including public institutions, no-profit organizations and associations, professionals, academic actors, and individual citizens. The intention is to engage multi-target groups and to encourage cross-sectoral exchange. ULL Skellefteå represents a specific case: here, the workshop explicitly focuses on breaking silos between municipal departments, reflecting the project's role in supporting a municipal vision for newcomers linked to broader development trajectories.

An important methodological aspect concerns the degree of participation achieved through the workshops. In line with participatory planning literature, **the workshops correspond more closely to consultative and collaborative forms of engagement** than to fully participatory processes that enable long-term co-decision or empowerment (Geekiyanage et al., 2021). This positioning reflects both structural and practical constraints inherent to project-based ULL approaches, such as GREEN-INC. First, municipalities operate according to specific timelines and procedural requirements linked to ongoing plans and visions. Second, research activities follow different temporalities and mandates. Third, within GREEN-INC, the role of the ULLs is not to develop collective plans, but rather to support reflection, collective learning, and critical discussion on the inclusive dimensions of NbS, in order to sketch possible INbS. As a result, **the ULL workshops function as punctual yet structured interventions, which collectively analyse existing conditions, identify limitations of current NbS implementations in local contexts, and outline possible transformation trajectories**. Their primary contribution lies in introducing context-based parameters—social, environmental, institutional, and relational—that can inform the design and implementation of INbS across the four different urban contexts.

To operationalise this approach, four workshops are organised in the following sequence: ULL Skellefteå (11/06/2024), ULL Brussels (27/11/2024), ULL Turin (04/12/2024), and ULL Bucharest (18/02/2025). Each workshop involves up to ten participants, selected according to local needs and institutional configurations, and representing

institutional actors, associations, professionals, and contextual civil society actors, as defined in the common methodological framework. **The workshops rely on a participatory mapping setup, using a large-scale map placed at the centre of the table. Participants are invited to annotate the map directly, using three colour-coded markers**: green for environmental aspects, orange for social and societal dimensions, and black for other relevant elements (institutional, spatial, or programmatic). This hands-on tool supports shared discussion, encourages collective interpretation, and makes visible different forms of knowledge and perception.



ULL participatory workshops in Skellefteå (left) and Bucharest (right)

Each workshop lasts approximately two and a half hours and is structured around three main moments:

1. **Introduction and framing** (approx. 30 minutes): a presentation of the GREEN-INC project, its objectives and conceptual frameworks, followed by the introduction of ICAs and INbS to establish a shared language and mutual understanding among participants, as well as participant introductions.
2. **Co-analysis of the existing situation** (approx. 60 minutes): a collective exploration of the ULL context, guided by questions addressing environmental conditions, socio-economic dynamics, institutional arrangements, existing practices, issues, and potentials.
3. **Forward-looking discussion and design-oriented reflection** (approx. 60 minutes): a collective exploration of possible future trajectories based on INbS, building on the insights from the co-analysis to outline context-specific directions for more inclusive climate action.

Emerging insights from the ULL workshops

The Atlas of ICAs synthesizes the outcomes of the four ULL workshops by presenting, in a structured manner, the results of the analytical and forward-looking sections, and by outlining possible context-based INbS for each ULL. In this sense, the Atlas aims to show how inclusive climate action—understood not only as a set of results, but as a situated practice, of which the GREEN-INC workshops are themselves an expression—can generate collective outcomes within diverse urban contexts across Europe. Rather than presenting ready-made solutions, the Atlas foregrounds process-oriented learnings emerging from situated practices of co-analysis, discussion, and negotiation across the four cases. In this perspective, the workshops function as learning platforms, enabling collective reflection and knowledge exchange among participants. The following section briefly presents a set of emerging insights drawn from the consultative processes carried out within the four ULLs.

A first key contribution of the workshops lies in **highlighting the role of mapping as a mediating and enabling method**. Across the four ULLs, the use of collective mapping supports both inter-departmental dialogue—helping to bridge institutional silos—and multi-actor collaboration among administrative, professional, academic, and civic actors. By making spatial, social, and environmental dimensions visible simultaneously, mapping fosters mutual learning and supports reflection across different planning phases, even in contexts where projects are already partially defined. Concurrently, the workshops also show that **consensus is rarely achievable in complex urban transformation processes, and that collective processes unfold through negotiation**, the acknowledgement of conflicting interests, and the explicit recognition of trade-offs between social, environmental, and economic objectives. This insight shifts attention away from idealised participatory outcomes and towards more realistic understandings of planning as a process of balancing gains and losses among actors and uses.

Several ULL cases further reveal **how perceptions of scale strongly shape participation and engagement**. While systemic or abstract reasoning may not be intuitive for all participants, localized and tangible interventions tend to foster stronger involvement, particularly among residents. The workshops thus underline the importance of working at scales that are meaningful to participants, while situating local actions within broader planning and ecological frameworks. In this regard, design plays a key mediating role. Across all four ULLs, the workshops demonstrate **the potential of designing for and with nature, explicitly acknowledging other-than-human agencies, as a way to open up alternative urban solutions beyond conventional, technocratic**

approaches. This perspective reframes INbS not only as infrastructural or environmental devices, but as relational configurations that link ecological processes, social practices, and spatial transformations.

Another recurring insight concerns the **importance of building on local conditions and ongoing initiatives**. The workshops show that INbS gain relevance and legitimacy when they resonate with existing practices, actors, and trajectories, rather than being introduced as isolated or externally driven interventions. Leveraging what is already present supports synergies among actions and strengthens the contextual embedding of inclusive climate strategies. At the same time, the workshops point to **ambivalences related to resource reconfiguration**. While the reorganisation of financial, material, and organisational resources can enable new forms of entrepreneurship and innovation around INbS, it also carries the risk of superficial outcomes, including forms of green or nature washing. This tension highlights the need for critical reflection on how inclusivity and economic development are articulated in climate action agendas. Finally, long-term inclusivity also depends on the often-overlooked question of maintenance. Across all cases, **maintenance schemes emerge as a crucial component of inclusive urban environments**, as they shape accessibility, care, and durability over time. Closely related to this, the workshops show that **low-tech approaches to INbS can play an important role in facilitating appropriation, collective care, and community-based maintenance**, particularly in contexts where institutional or technical capacities are uneven.

Summary of emerging insights

1. **Mapping method supports both inter-departmental discussions**—bridging silos between departments—**and multi-actor collaborations**—linking administrative, professional, academic, and civic actors—across different planning phases, fostering mutual learning
2. **Consensus is rarely achievable**; instead, planning processes should aim to balance conflicting interests through negotiation and the recognition of trade-offs between benefits and losses
3. **Perceptions of scale differ among participants**; while systemic thinking may not be intuitive for all, localized and tangible actions can strengthen engagement—citizens tend to participate more actively as the scale of intervention becomes more concrete
4. **Designing for and with nature**, acknowledging other-than-human agencies, **can serve as a catalyst for alternative urban solutions** beyond conventional approaches
5. **Leveraging local conditions and ongoing initiatives is essential to enhance synergies among actions**, fostering the contextual relevance and integration of nature-based solutions
6. **Reconfiguration of resources plays a key role in enabling new forms of entrepreneurship**, though there remains a risk of generating superficial outcomes in forms of "green" employment (green/nature-washing)
7. **Maintenance schemes are essential components of inclusive urban environments**, as they determine the long-term accessibility and care of implemented solutions
8. **Inclusive Nature-based Solutions can often draw on low-tech approaches** that facilitate appropriation, collective care, and community-based maintenance

ULL Brussels // CQD Villas de Ganshoren

Location
Sustainable Neighbourhood Contract/Contrat de Quartier Durable (CQD) Villas de Ganshoren; Ganshoren municipality; Brussels-Capital Region

Date of participatory mapping workshop
27/11/2024

Diagnosis

District identity, uses, and community life

>The CQD Villas de Ganshoren is composed exclusively of social housing, mainly organised in residential towers and a limited number of row houses. The housing stock is managed by LoJeGa, a public-private social housing company operating in collaboration with the municipalities of Ganshoren and Jette.
>A high number of socio-cohesion activities and non-profit organisations operate within the CQD, including Croix Rouge, LISA asbl, Kangaroo, 3×20, a youth centre (maison des jeunes), street educators (éducateurs de rue), a social grocery store (épicerie sociale), an after-school homework (école de devoirs), a collective aromatic-plant garden (jardin aromatique), and the women's centre (maison des femmes).
>Despite this strong presence of socio-cohesion initiatives, mobilising inhabitants remains very challenging.
>Youth unemployment is particularly pronounced within the CQD Villas de Ganshoren.
>The neighbourhood lacks commercial activities, despite the presence of ground floors that could potentially host local services. As a result, residents must travel outside the area to access basic amenities.
>The football field located at the centre of the neighbourhood is a key element of local identity and is commonly referred to by residents as the "stade." Previously open and freely accessible, it is now fenced and managed by Ganshoren FC, with access limited to training hours and restricted periods during weekends.
>When accessible, the football field is predominantly used by boys, contributing to perceptions of exclusion among other user groups.
>The sports hall represents a major facility for the neighbourhood and the wider Brussels-Capital Region, attracting users from across the region.
>Several cat shelters are present within the neighbourhood.

Accessibility, mobility, and urban disconnection

>The CQD Villas de Ganshoren is perceived as disconnected from the surrounding municipalities of Ganshoren and Jette.
>The space between residential towers is very wide and open, reinforcing a sense of distance and limiting opportunities for everyday social interaction.
>Walkability within the neighbourhood is poor, due to the lack of sidewalks, the dominance of car-oriented infrastructure, and long distances between residential buildings and public facilities.
>A general sense of insecurity is reported along Avenue des Neuf Provinces and other main axes bordering the CQD.

>Public transport provision is limited, with only a small number of bus lines connecting the CQD to nearby urban centres and key destinations.
>Numerous underground parking facilities are underused, as access requires payment of a rental fee, while aboveground parking spaces are more affordable and widely available (blue zone).

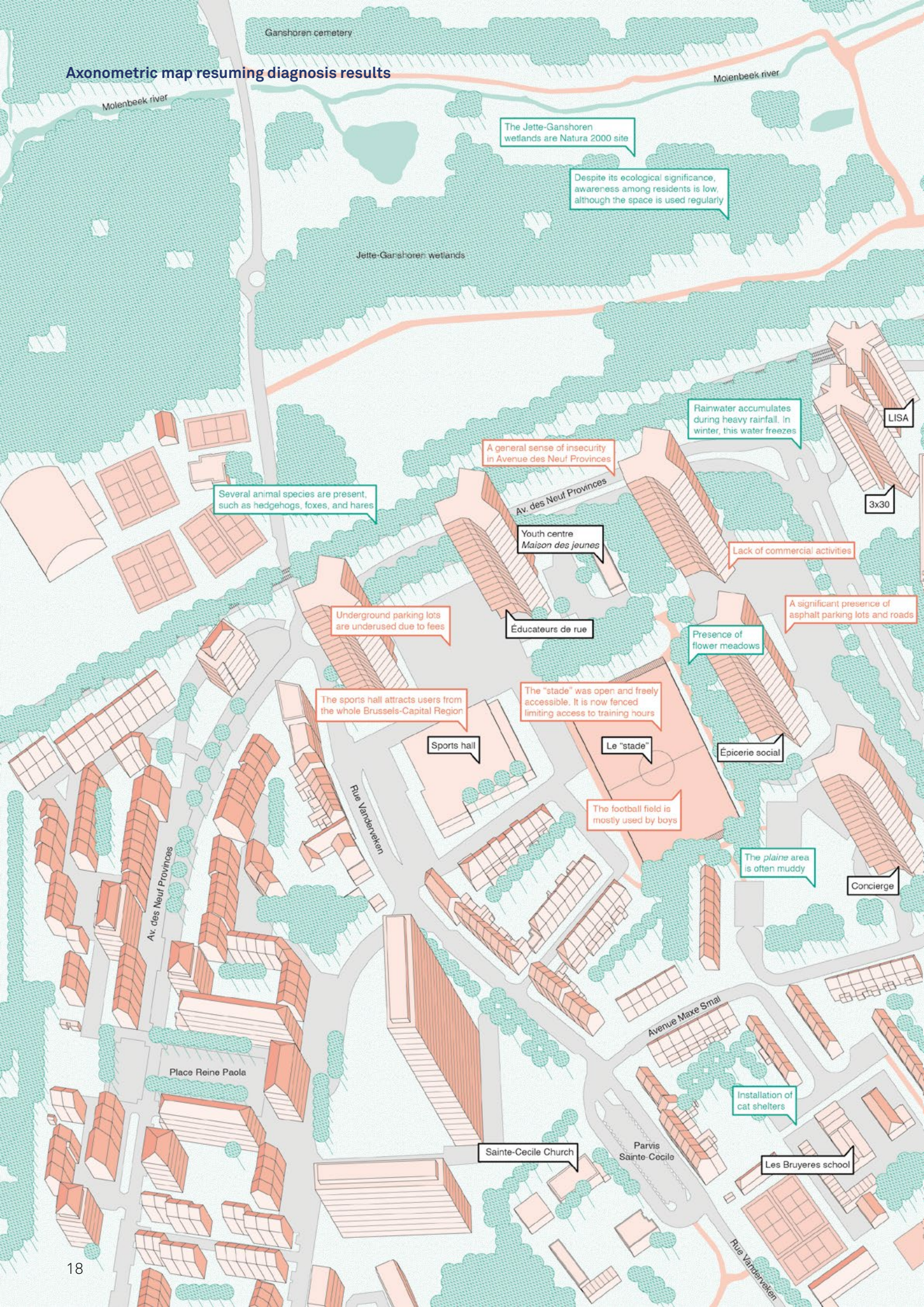
Environmental and ecological conditions

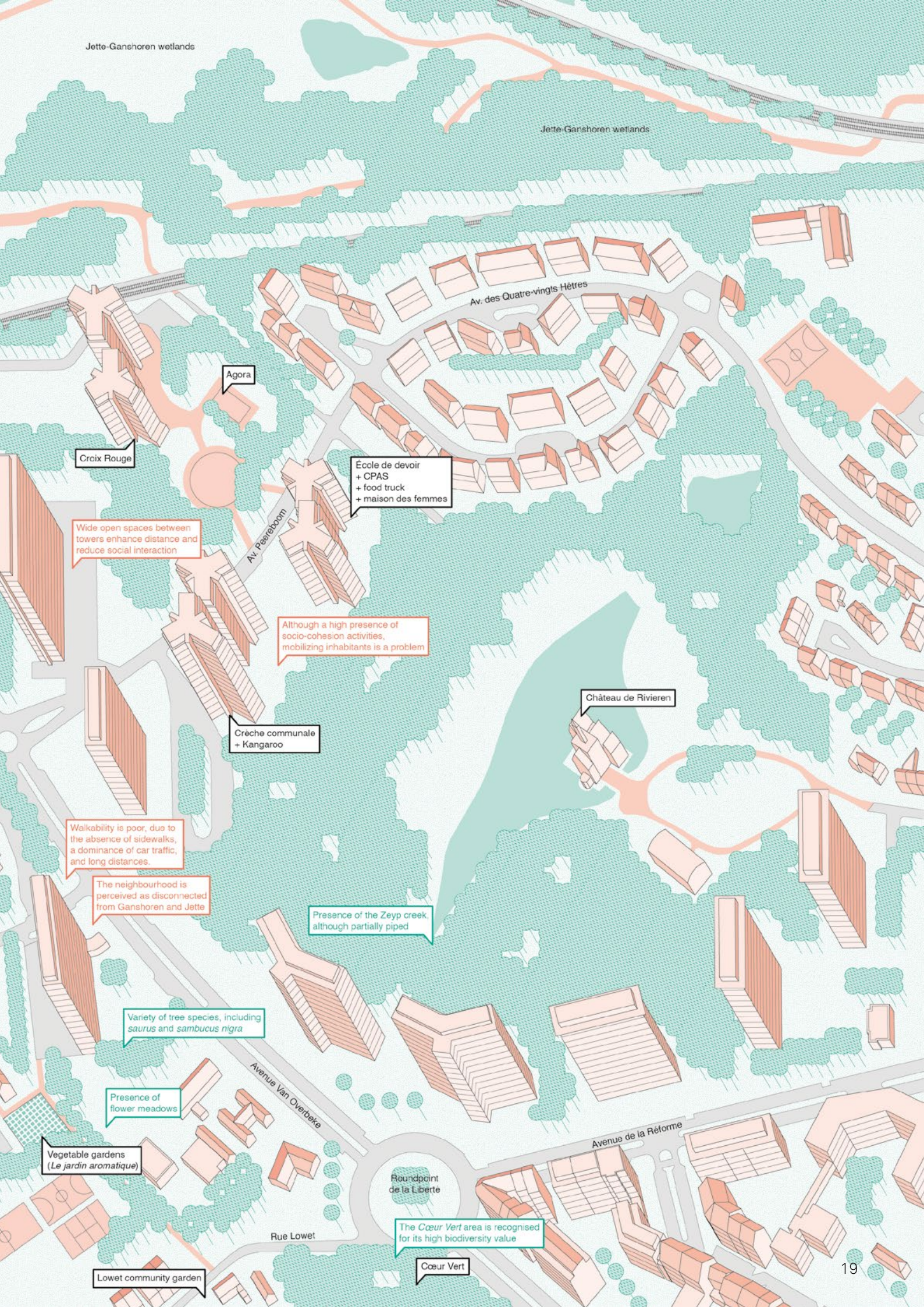
>The CQD Villas de Ganshoren is located within a broader ecological corridor of the Molenbeek valley.
>To the north, the neighbourhood borders the Jette-Ganshoren wetlands, a Natura 2000 site recognised for its high biodiversity value and considered a major ecological asset for the surrounding area.
>To the south, the Cœur Vert area and the Zeyp creek contribute to the ecological continuity of the site and are recognised for their significant biodiversity value.
>Although awareness of the Natura 2000 status of the Jette-Ganshoren wetlands among residents is low, the area is frequently used, particularly for walking and dog walking.
>Several animal species are present within the CQD, including hedgehogs, foxes, and hares.
>Tree diversity is particularly high along the peripheral and liminal edges of the neighbourhood, with species such as saurus and Sambucus nigra.
>The area is characterised by a strong presence of asphalted roads and parking lots, contributing to heat island effects during summer months.
>While large areas are sealed by asphalt, the neighbourhood also contains extensive lawns that are intensively mown and perceived as having low biodiversity.
>In some areas at the base of the residential towers, wildflower meadows have been introduced and are perceived positively by residents.

Hydrological dynamics and soil conditions

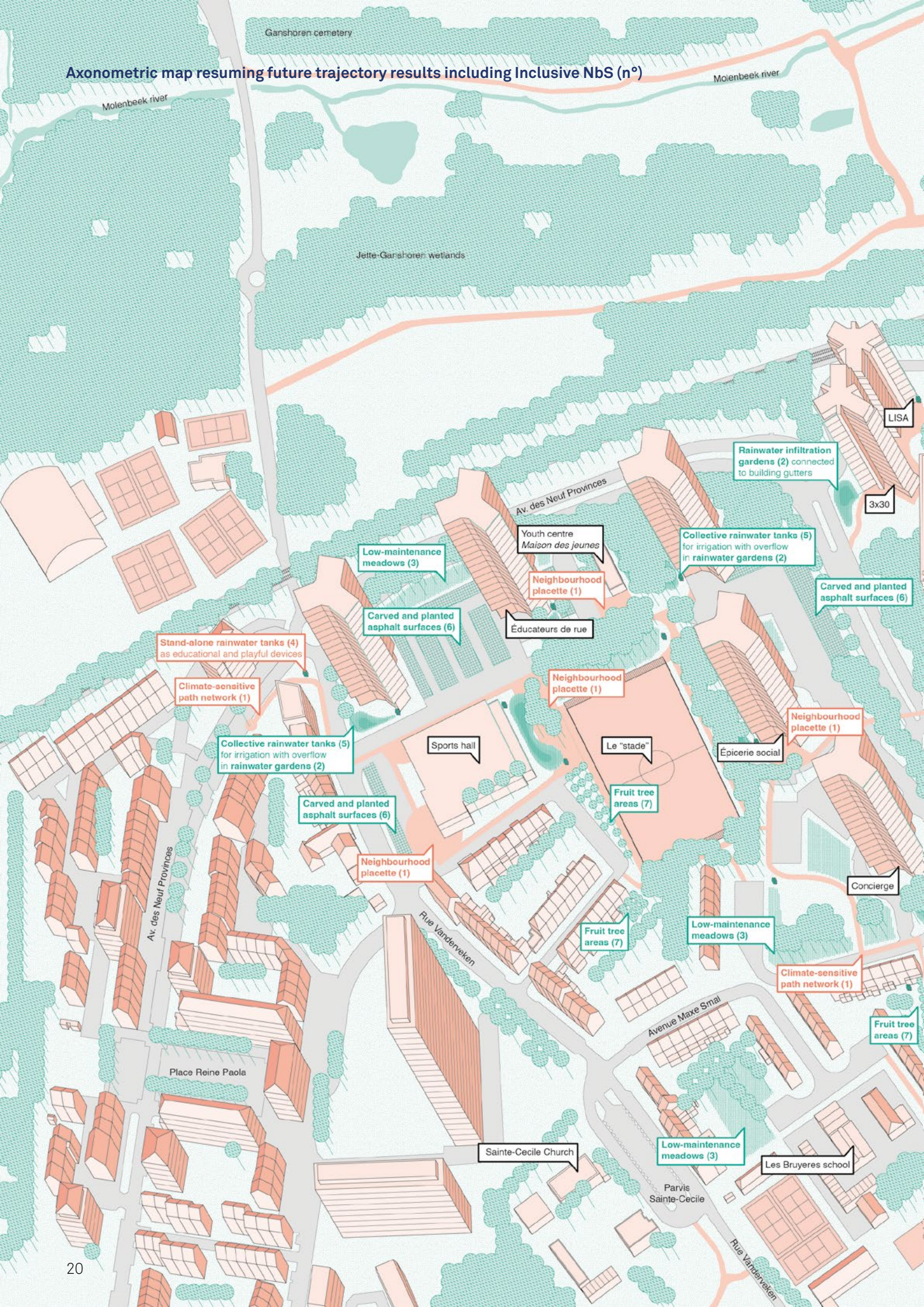
>The CQD Villas de Ganshoren is located on the upper part of the Molenbeek valley and is not directly affected by flooding.
>Rainwater accumulation occurs at the end of Avenue Van Overbeke, near Avenue des Neuf Provinces, due to topography and the steep road network. During winter, accumulated water freezes, causing safety issues for car traffic.
>The area known as the “plaine” frequently becomes muddy due to low soil permeability.
>The Zeyp creek runs along the southern edge of the CQD Villas de Ganshoren, partially piped before discharging into the pond of the Château de Rivieren.

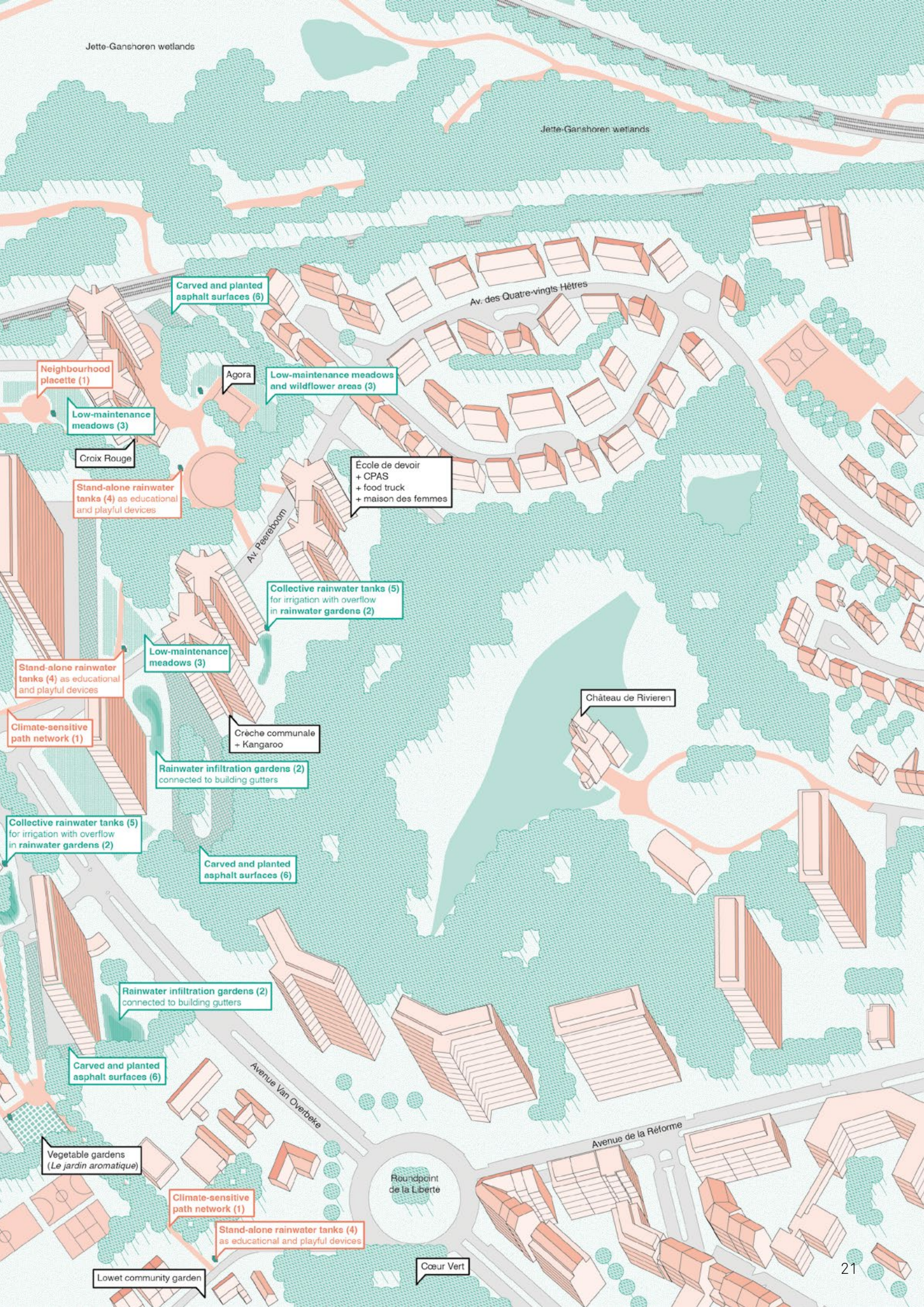
Axonometric map resuming diagnosis results




Jette-Ganshoren wetlands
Jette-Ganshoren wetlands
Av. des Quatre-vingts Hêtres
Agora
Croix Rouge
École de devoir
+ CPAS
+ food truck
+ maison des femmes
Av. Peereboom
Wide open spaces between towers enhance distance and reduce social interaction
Although a high presence of socio-cohesion activities, mobilizing inhabitants is a problem
Crèche communale
+ Kangaroo
Château de Rivieren
Walkability is poor, due to the absence of sidewalks, a dominance of car traffic, and long distances.
The neighbourhood is perceived as disconnected from Ganshoren and Jette
Presence of the Zeyp creek, although partially piped
Variety of tree species, including *saurus* and *sambucus nigra*
Avenue Van Overbeke
Presence of flower meadows
Vegetable gardens (*Le jardin aromatique*)
Avenue de la Réforme
Roundpoint de la Liberté
Rue Lowet
The *Cœur Vert* area is recognised for its high biodiversity value
Cœur Vert
Lowet community garden

Axonometric map resuming future trajectory results including Inclusive NbS (n°)




Jette-Ganshoren wetlands
Jette-Ganshoren wetlands
Av. des Quatre-vingts Hêtres
Carved and planted asphalt surfaces (6)
Neighbourhood placette (1)
Agora
Low-maintenance meadows and wildflower areas (3)
Low-maintenance meadows (3)
Croix Rouge
Stand-alone rainwater tanks (4) as educational and playful devices
École de devoir
+ CPAS
+ food truck
+ maison des femmes
Av. Peereboom
Collective rainwater tanks (5) for irrigation with overflow in rainwater gardens (2)
Low-maintenance meadows (3)
Stand-alone rainwater tanks (4) as educational and playful devices
Château de Rivieren
Climate-sensitive path network (1)
Crèche communale
+ Kangaroo
Rainwater infiltration gardens (2) connected to building gutters
Collective rainwater tanks (5) for irrigation with overflow in rainwater gardens (2)
Carved and planted asphalt surfaces (6)
Rainwater infiltration gardens (2) connected to building gutters
Carved and planted asphalt surfaces (6)
Avenue Van Overbeke
Avenue de la Réforme
Vegetable gardens
(Le jardin aromatique)
Roundpoint de la Liberté
Climate-sensitive path network (1)
Stand-alone rainwater tanks (4) as educational and playful devices
Lowet community garden
Cœur Vert

Future Trajectories

>A central focus of the co-design workshop concerned how design interventions could improve connectivity between the many socio-cohesion initiatives and physical spaces within the neighbourhood, while simultaneously addressing environmental challenges such as rainwater management and biodiversity. Participants recognised that, although numerous socio-cohesion programmes are already active in the CQD Villas de Ganshoren, the large and fragmented in-between spaces between residential towers limit movement, visibility, and everyday interaction. In response, the discussion centred on the development of an inclusive and climate-sensitive network of paths connecting key indoor and outdoor activity nodes, including the Croix Rouge, LISA asbl, 3×20, the women's centre (maison des femmes), the social grocery store (épicerie sociale), the collective aromatic-plant garden (jardin aromatique), the youth centre (maison des jeunes), and the street educators (éducateurs de rue). The proposed network combines the renovation of existing paths, improved signage, and the introduction of new connections. It is structured around two main axes: a north-south path linking the youth centre with the collective aromatic garden and Rue Lowet, and an east-west path connecting the agora to the sports centre and extending towards the Ganshoren-Sport bus stop along Avenue des Neuf Provinces. These two paths intersect at the plaine, forming a loop around the stade and the sports centre, which are envisioned as central collective spaces for neighbourhood life.

>Alongside the development of the path network, two overarching transformation strategies were discussed during the co-design workshop. These strategies operate at the scale of the CQD Villas de Ganshoren and build on existing spatial characteristics of the neighbourhood, namely the extensive presence of asphalted surfaces and the predominance of high-maintenance lawns. The two strategies were conceived as enabling frameworks to support the implementation of the proposed paths, particularly in areas where new connections are required. The first strategy involves incrementally reclaiming space from existing mineral surfaces—such as asphalt and concrete—in order to reduce impermeable areas and free up land for ecological and social uses (a "grignoter" approach). The second strategy focuses on initiating a process of low-intensity maintenance ("dés-entretenir") in selected lawn areas, allowing perennial vegetation to develop and gradually increase ecological value. Together, these strategies were discussed as flexible tools to identify locations for new paths and public spaces while simultaneously addressing environmental performance and landscape quality.

>Building on this path network as a spatial backbone, discussions explored how these connections could also support environmental transformations by integrating social and ecological functions. In this perspective, the paths were conceived not only as mobility infrastructures, but as catalysts for small-scale public spaces where social and environmental devices intersect. In proximity to existing socio-cohesion initiatives, the paths could incorporate collective amenities such as benches and tables for gatherings, alongside nature-based elements such as small rainwater infiltration gardens, low-maintenance wildflower meadows, or rainwater tanks. These micro-spaces would function as new placettes for meeting, resting, and engaging with nature. The discussion also raised the question of maintenance, proposing that existing socio-cohesion organisations could take on a role in managing and animating these spaces, thereby reinforcing local ownership and long-term care.

>Another important line of discussion concerned the extensive presence of lawns across the CQD Villas de Ganshoren, which require significant maintenance while offering limited ecological value. Participants reflected on the opportunity to rethink current maintenance practices by gradually transforming selected lawn areas into low-maintenance meadows. This shift was seen as a way to reduce maintenance efforts while enhancing biodiversity and improving the spatial quality of open areas. It was proposed to prioritise lawns located along the main paths, allowing these areas to function as testing grounds for new maintenance regimes and as visible examples of alternative landscape management approaches. Over time, these meadows could contribute to a more diverse and resilient landscape while supporting everyday uses.

>Finally, rainwater management emerged as a key opportunity to reimagine collective public spaces while improving environmental performance and well-being within the neighbourhood. This discussion was grounded in the observation that many of the rainwater downpipes along the façades of the residential towers are external and therefore relatively easy to disconnect. Participants explored the possibility of redirecting rainwater currently sent to the sewer system into public space through infiltration rainwater gardens integrated into the open spaces of the CQD Villas de Ganshoren. In this vision, rainwater is understood as a shared resource and a lever for spatial transformation. These interventions were discussed as complementary to the new path network and low-maintenance meadows. In addition, the disconnection of downpipes could support the installation of rainwater storage tanks, allowing collected water to be reused for irrigating meadows and planted areas during increasingly frequent summer droughts in the Brussels-Capital Region.

Inclusive Nature-Based Solutions

1. Climate-sensitive path network and neighbourhood placettes integrating social and biodiversity functions

This INbS proposes the development of a climate-sensitive network of paths and small placettes that builds on existing pedestrian routes while introducing new connections across the CQD Villas de Ganshoren. Existing paths are enhanced by reinforcing vegetation along one side and, where feasible, integrating shallow rainwater ditches along the opposite edge to intercept runoff and connect surrounding buildings to decentralised water management systems. New paths are implemented using materials recovered from desealed surfaces, in line with a gradual "grignoter" approach, while leaving edges unpaved to allow spontaneous vegetation to establish. Small placettes are strategically located near existing socio-cohesion initiatives, with functions tailored to local needs—such as seating, tables, or gathering spaces—so as to strengthen everyday use. These social devices are paired with nearby environmental elements, including rainwater gardens or meadow patches, encouraging collective care by local organisations and reinforcing the link between social life and ecological stewardship.

2. Rainwater infiltration gardens connected to building gutters

This INbS introduces a network of small rainwater infiltration gardens connected to the visible downpipes along the façades of the residential towers. By disconnecting selected gutters from the sewer system and redirecting rainwater into planted depressions within the open spaces, the intervention supports decentralised and integrated rainwater management while reducing pressure on existing sewer infrastructure. The gardens are planted with species tolerant to alternating wet and dry conditions, enhancing infiltration, evaporation, and biodiversity. Integrated into lawns, placettes, or along paths, these rainwater gardens also improve the spatial quality of collective spaces. Beyond their technical function, they make water flows visible and legible, reinforcing awareness of rainwater as a shared resource within the neighbourhood.

3. Low-maintenance flower meadows and wildflower areas along residential fronts and public open spaces

This intervention promotes the transition from intensively mown lawns to low-maintenance flower meadows and wildflower areas across selected open spaces of the CQD Villas de Ganshoren. Building on pilot experiences already positively perceived by residents, these meadows reduce maintenance requirements while enhancing biodiversity and landscape quality. Strategically placed along paths and in front of

ground-floor apartments, the meadows also function as soft buffers that increase privacy for residents. Planted with native grasses and flowering species, they support pollinators and contribute to a more diverse and resilient urban ecosystem. The management of these meadows can involve the non-profit organisation Jeunes Jardiniers, which already supports disadvantaged groups through training and employment in green maintenance. This INbS therefore links ecological management with social inclusion, while allowing the knowledge developed on-site to be replicated across other projects in the Brussels-Capital Region.

4. Distributed stand-alone rainwater tanks as educational and playful neighbourhood devices

This INbS introduces stand-alone rainwater tanks distributed across the CQD Villas de Ganshoren, positioned near key open spaces, paths, and collective gardens. These tanks collect rainwater for use in nearby vergers and the collective aromatic-plant garden, complementing the building-connected storage systems. Their strategic placement makes rainwater infrastructure visible within the neighbourhood, turning technical devices into tools for awareness and signage. Designed with a playful dimension, the tanks can also function as informal play or learning elements for children, supporting environmental education. By multiplying visible rainwater collection points, this intervention strengthens the perception of water as a shared resource and reinforces the identity of the CQD as a climate-adaptive and inclusive neighbourhood.

5. Collective rainwater tanks for irrigation and drought resilience

This INbS complements rainwater infiltration gardens by introducing rainwater storage tanks connected to selected building gutters. The tanks collect rainwater during wetter periods and make it available for irrigation during increasingly frequent summer droughts. Each tank is paired with a nearby rainwater infiltration garden, which receives overflow when storage capacity is exceeded, ensuring safe discharge and continuous infiltration. Stored water can be used to irrigate low-maintenance meadows, planted areas, and collective gardens within the CQD. By linking storage and infiltration, the system responds to seasonal variability while reinforcing resilience. The visibility of the tanks also supports awareness of water cycles and encourages careful water use at the neighbourhood scale.

6. Carved and planted asphalt surfaces through selective asphalt desealing in parking lot areas

This INbS focuses on selective desealing actions within existing asphalted surfaces, particularly parking lots and oversized paved areas

within the CQD Villas de Ganshoren. Rather than reducing parking capacity, the intervention introduces carved openings in the asphalt to improve rainwater infiltration and reduce surface runoff. Instead of removing entire surfaces and replacing them with new permeable pavements, the proposal modifies the existing asphalt slabs by carving them and filling the resulting voids with soil planted with native grasses. The resulting pattern of vegetated "veins" running through parking areas allows infiltration while maintaining vehicle accessibility. This approach reduces surface runoff, supports groundwater recharge, and improves microclimatic conditions, while recognising the functional importance of parking in this specific context. Excavated asphalt can be reused on-site as edging, seating, or ground-stabilisation elements for the new path network and placettes. Overall, the intervention contributes to reducing heat island effects, enhancing microclimatic comfort, and progressively reshaping the open spaces of the CQD without disrupting their everyday functions.

7. Fruit tree areas and fruit tree alleys for education and collective stewardship

The intervention proposes the introduction of fruit tree areas (vergers) and fruit tree alleys in locations currently occupied by low-value lawns and along selected segments of the new path network. Fruit trees add a productive layer to the open spaces of the CQD Villas de Ganshoren while improving shade, microclimate, and biodiversity. These plantings are conceived as educational and collective resources, particularly for nearby schools, supporting learning activities related to food production, seasonality, and food security. Management can build on the experience of the citizen group involved in the collective aromatic-plant garden (jardin aromatique), in collaboration with local non-profit organisations and the municipality. Through shared care and harvesting, fruit trees reinforce everyday presence in public space and contribute to social cohesion.

ULL Bucharest // Tei Area

Location
Toboc, Plumbuita, Petricani, Doamna Ghica districts;
Tei area; Sector 2; Bucharest

Date of participatory mapping workshop
18/02/2025

Diagnosis

District identities, uses and community life

>The Toboc district is perceived as unsafe and associated with a negative identity. Social issues include drug dealing, high unemployment, and a pronounced socio-economic divide with surrounding districts.
> A large portion of the building stock in Toboc district has developed as informal settlements without building permits.
>Existing social and educational initiatives are present in both Toboc and Plumbuita, but remain insufficient to meet local needs. For example, Atelier Sans Frontières promotes initiatives supporting employment opportunities for people with disabilities in Plumbuita district.
>The lake banks function as collective public spaces: barbecue activities take place mainly along Plumbuita Lake, while swimming and fishing occur primarily along Tei Lake, despite polluted water. Fishing along Petricani Meadows and lake is particularly common among residents of Toboc.
>Tei Park and Plumbuita Park are mainly used by families living in the immediate surroundings. Plumbuita Park has a more natural character, with running and cycling as its primary activities.
>At the northern edge of Plumbuita Park stands the Plumbuita Monastery, a site of historical interest protected by a no-build buffer zone.
>Local civic activities are carried out by citizen groups in Doamna Ghica district.

Accessibility and urban development pressures

>The whole Tei area experiences heavy traffic due to its proximity to the main highway access, particularly during rush hours.
>Asphalted surfaces are widespread and take different forms, enhancing the heat island effect: in Toboc and Plumbuita districts, most private open spaces consist of asphalted courtyards, while in Doamna Ghica district large areas are used as asphalted parking lots, reducing public space quality and permeability.
>Additional residential developments are planned in the Fabrica de Glucoza district, offering limited vegetated and public spaces.
>No designated buffer zone exists between new residential developments and the adjacent natural protected area of Petricani Meadows, placing additional pressure on local wildlife and wetland ecosystems.

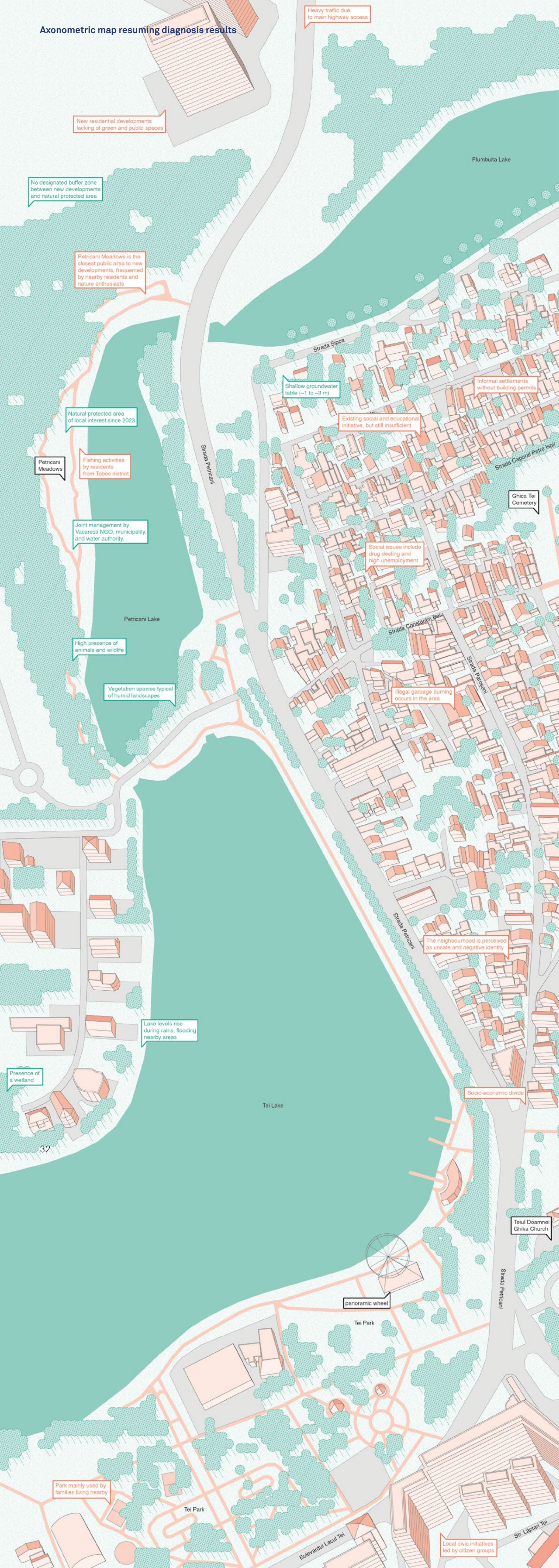
Hydrological and environmental dynamics

>High rainwater runoff occurs along the steep streets of the Tei district, increasing localised flooding at the lower ends of these streets, particularly near the lake banks.
>Lake levels rise during rainfall events, causing flooding in areas adjacent to the banks, especially in the Petricani and Toboc districts.
>The groundwater table is shallow—ranging from -1 to -3 metres—in the northern part of the Toboc district.
>A groundwater source is present along Plumbuita Lake, in proximity to the Teiul Doamnei Ghika Church.
>Illegal garbage burning occurs in parts of the Toboc district, contributing to environmental degradation.

Petricani Meadows

>Petricani Meadows has been designated as a natural protected area of local interest since 2023. Its management is shared between Vacaresti NGO, the municipality, and the water authority.
>The area is characterised by a wetland landscape with high biodiversity, alongside meadow zones that form part of the wider Petricani lake system.
>The natural protected area hosts a rich presence of wildlife and vegetation species characteristic of humid environments.
>Petricani Meadows is the closest public space to the new residential developments and is used mainly by nearby residents and nature enthusiasts who access the paths and trails within the area.

Axonometric map resuming diagnosis results



Lake levels rise during rains, flooding nearby areas

Strada Răul Colentina

Shallow groundwater table (–1 to –3 m)

High rainwater runoff along steep streets

Lake levels rise during rains, flooding nearby areas

Plumbuita Lake

Illegal garbage burning occurs in the area

Swimming occur despite polluted water

Strada Gimnaziu

High rainwater runoff along steep streets

Strada Soldat Ștefan Pascale

High rainwater runoff along steep streets

Informal settlements without building permits

Illegal garbage burning occurs in the area

No public access to the island

Plumbuita Monastery

Strada Gimnaziu

Social issues include drug dealing and high unemployment

Strada Steaua Roșie

Site of historical interest protected by a no-build buffer zone

The neighbourhood is perceived as unsafe and negative identity

Strada Constantin Beiu

Health care centre

High rainwater runoff along steep streets

Strada Ricinului

Plumbuita Park

Need to pump wastewater to main collector via pumping station

Atelier Sans Frontieres initiative to promote employment for people with disabilities

Lake bank important as collective public area, including barbeque

Strada Plumbuita

Strada Tămâioarei

Plumbuita Lake

Plumbuita Park has a natural character. Main activities include running and cycling

New development plan with 30% green spaces

Existing groundwater source

Ghica Tei Palace

Site of historical interest

Plumbuita Park

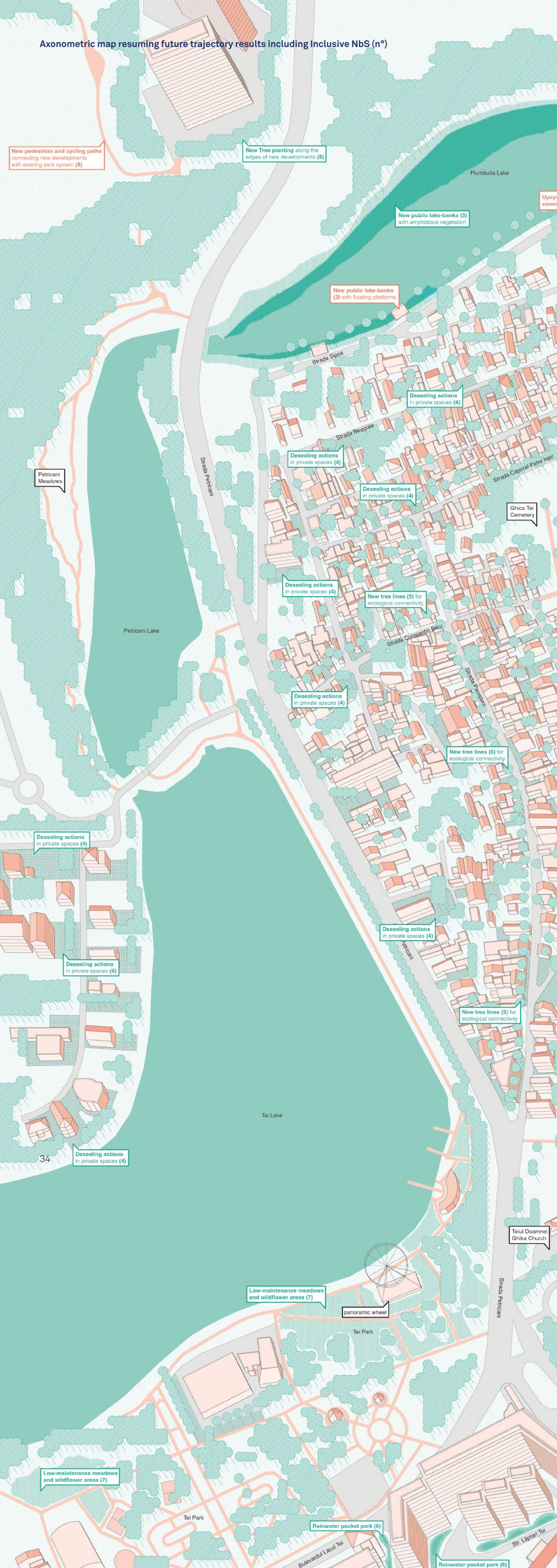
Plumbuita Park

Str. Doamna Ghica

Park mainly used by families living nearby

Extensive asphalted parking lot surfaces

Axonometric map resuming future trajectory results including Inclusive NbS (n°)



cling station and
unity house (1)

Strada Răul Colentina

Collection points with rainwater gardens (1)

Collection points with rainwater gardens (1)

Desealing actions in private spaces (4)

Plumbuita Lake

Ditches and wadies along steep roads (2)

Strada Gimnaziu

Collection points with rainwater gardens (1)

Desealing actions in private spaces (4)

Ditches and wadies along steep roads (2)

Strada Soldat Ștefan Pascale

Ditches and wadies along steep roads (2)

Desealing actions in private spaces (4)

Collection points with rainwater gardens (1)

Low-maintenance meadows and wildflower areas (7)

Plumbuita Monastery

Desealing actions in private spaces (4)

Strada Gimnaziu

Ditches and wadies along steep roads (2)

Collection points with rainwater gardens (1)

Strada Steaua Roșie

Ditches and wadies along steep roads (2)

Strada Constantin Beiu

Desealing actions in private spaces (4)

Collection points with rainwater gardens (1)

Desealing actions in private spaces (4)

New tree lines (5) for ecological connectivity

Strada Ricinului

Plumbuita Park

New public lake-banks (3) with amphibious vegetation

Desealing actions in private spaces (4)

Strada Tămâioarei

Strada Plumbuita

Desealing actions in private spaces (4)

Plumbuita Lake

Desealing actions in private spaces (4)

Desealing actions in private spaces (4)

New public lake-banks (3) with floating platforms

New tree lines (5) for ecological connectivity

Ghica Tei Palace

Desealing actions in private spaces (4)

Plumbuita Park

Plumbuita Park

Str. Doamna Ghica

Low-maintenance meadows and wildflower areas (7)

Future Trajectories

>A major concern emerging from the co-design workshop centred on how to combine environmental objectives with the socio-economic challenges experienced in the Toboc district. Participants discussed the need to identify opportunities for developing new forms of employment in order to tackle unemployment alongside garbage pollution and recurrent flooding, while also enhancing inclusivity and biodiversity. Building on existing socio-economic initiatives—such as the work of Atelier Sans Frontières—the proposal explores the potential to develop job opportunities for marginalized groups linked to the collection, treatment, and recycling of waste, as well as the maintenance of vegetated areas in parks and public spaces. One idea is to install new waste collection and treatment points in locations currently affected by high runoff from steep roads, allowing these interventions to be combined with integrated rainwater management solutions, such as rain gardens for runoff retention and treatment. Questions were raised regarding the feasibility and funding of such initiatives, and the discussion pointed to the possibility that, as socio-economic experimental activities, they could be supported through European funding schemes or research programmes, including Horizon Europe.

>Another line of discussion focused on how to enhance the public space qualities along the lake banks, where numerous spontaneous activities already take place. Participants reflected on the need to improve the safety and comfort of these spaces, particularly in relation to informal barbecue practices and gathering areas that currently lack adequate infrastructure. One proposal involves the installation of floating platforms that would function as accessible public platforms, providing safe and designated areas for collective activities at the water's edge. In parallel, the co-design scenario emphasised the renaturalisation of the lake banks through the introduction of amphibious vegetated species capable of improving water quality, supporting biodiversity, and offering a more resilient interface between land and water. These planted zones would not only contribute to ecological enhancement but also serve as a soft buffer that frames and supports human activities along the lakes, improving the overall landscape quality while reducing environmental pressures.

>Reducing the heat island effect in the Toboc, Plumbuita, and Petricani districts emerged as a central concern, given the extensive presence of impervious surfaces in private courtyards. Opportunities were identified to support the desealing of these areas through dedicated schemes aimed at replacing asphalted surfaces with permeable materials or

vegetated zones. In parallel, new tree plantations along roads and near the entrances of private houses were proposed to enhance shading and microclimatic comfort. These interventions would also contribute to reducing runoff generated by private spaces, thereby mitigating local flooding. Such measures would require forms of shared public-private management, as many of the targeted areas fall within private properties. Securing funding for these actions was recognised as a challenge, and participants noted that incentive-based mechanisms or support schemes could be explored, although their implementation may be complex.

>Improvements in meadow management were explored as a strategy to enhance biodiversity while opening new employment opportunities. The proposal centres on transitioning from high-maintenance grass areas to low-maintenance meadows and wildflower zones, introducing a more ecologically diverse and resilient landscape. This shift would require the development of new expertise in seasonal meadow care and differentiated mowing regimes. In turn, these practices could help address unemployment in the surrounding districts by prioritising the training and involvement of local residents in the maintenance of these ecological areas, linking environmental stewardship with socio-economic inclusion.

>Another important aspect concerned the pressures that the new developments in the Fabrica de Glucoza district may exert on the neighbouring areas. These developments were nevertheless viewed as an opportunity rather than a problem, as their construction could foster new forms of cooperation aimed at improving accessibility to the existing park system and strengthening the ecological connectivity of the broader Tei area. In this perspective, new pedestrian and cycling paths linking the Fabrica de Glucoza district to Petricani Meadows and Tei Park should be explored, alongside the introduction of additional tree plantations around the new residential units. Such interventions could enhance both local and supra-local ecological corridors, improve biodiversity, and contribute to a higher-quality public space network.

Inclusive Nature-Based Solutions

1. Upcycling station and collection points combined with rainwater gardens and community spaces

This intervention proposes the establishment of an upcycling station and a series of waste-collection points integrated with rainwater gardens and small public spaces at the base of the steep roads in the Toboc district, particularly on vacant plots along the lake banks where visibility and accessibility are high. These nodes function as hybrid infrastructures: on the one hand, they support circular practices such as sorting, repairing, and treating waste; on the other, they introduce nature-based stormwater management devices capable of retaining and filtering runoff from the surrounding slopes. The rainwater gardens are conceived as planted depressions using amphibious and drought-tolerant species, improving local biodiversity while reducing pressure on the existing drainage system. Around these gardens, small public spaces—such as shaded seating areas or playgrounds—can serve as meeting points for local residents, strengthening their role as social anchors within the Toboc district. The upcycling station offers opportunities for new community-based jobs, particularly for vulnerable groups, linking socio-economic development with environmental regeneration. Its management could be entrusted to local NGOs already active in the area, with initial funding secured through pilot initiatives supported by EU research and innovation programmes. The upcycling station may also host a community house for collective activities and gatherings. By clustering these functions in strategic locations, the proposal transforms underused plots into visible and productive assets that address pollution, runoff, unemployment, and public space quality simultaneously.

2. Ditches and wadies along steep roads

This intervention introduces a system of vegetated ditches and wadies along some steep streets of the Toboc district to reduce surface runoff and mitigate localised flooding at the base of the slopes. These linear systems are directly connected to the rainwater gardens proposed around the collection points, allowing the two INbS to function as a mutually reinforcing network. The ditches follow the natural topography, capturing and slowing water during rainfall events, while wadis—enlarged vegetated depressions—temporarily retain, and partially infiltrate, runoff before directing it toward the rainwater gardens. Both ditches and wadis are planted with species adapted to alternating wet-dry cycles, forming narrow ecological corridors that soften the hardscape and support local biodiversity. By reorganising parking layouts and reclaiming small strips of road edges, the proposal not only

improves drainage capacity but also enhances the spatial quality of the street environment. Together, the ditches and wadis form a continuous nature-based drainage infrastructure that visually and functionally reconnects the upper and lower parts of the district, providing cooler, greener, and more resilient streets while reducing pressure on the existing drainage system and adjacent public spaces.

3. New public lake-banks for humans and biodiversity

This intervention reimagines the lake banks, particularly where cul-de-sacs or stagnant water zones occur in Tei and Plumbuita lakes, as multifunctional socio-ecological lake banks edges. The proposal introduces amphibious vegetation and wetland patches fostering new habitats capable of improving water filtration and supporting biodiversity. In contrast, more accessible portions of the banks are structured as small public spaces equipped with floating platforms, seating areas, and designated barbecue zones, offering safe and comfortable locations for activities that already take place informally. By working with gradients—from wilder wetland zones to more open social terraces—the proposal frames human use alongside ecological regeneration rather than in competition with it. These hybrid lake bank spaces become key interfaces where recreation, biodiversity, and water management are jointly supported, reinforcing the identity of Tei and Plumbuita lakes as shared community landscapes.

4. Desealing actions in private spaces

This INbS supports the progressive desealing of private courtyards and open spaces across the Toboc, Plumbuita, and Petricani districts, where impervious surfaces are extensive and contribute to heat island effects and increased surface runoff. The intervention proposes incentive schemes and technical assistance for residents to remove asphalted surfaces and replace them with permeable materials, planted pockets, or small gardens. These actions help reduce local flood risk and improve microclimatic comfort while maintaining the existing domestic and productive uses of these spaces. By combining municipal guidance with voluntary private participation, the desealing initiative fosters shared responsibility for climate adaptation. Tailored workshops, demonstration projects, and partnerships with local NGOs could strengthen residents' capacity to implement these transformations. Over time, the cumulative effect of multiple small-scale desealing efforts contributes to a cooler, greener, and more porous urban fabric.

5. New tree lines in residential districts

This INbS introduces strategic tree planting along streets and open spaces in the Toboc and Plumbuita districts, forming linear ecological structures that strengthen connectivity across the neighbourhoods. The

plantations focus on streets that traverse the districts along their full length, linking parks and existing vegetated public spaces—such as the Ghica Tei cemetery—in order to connect major parks with fragmented green areas and reinforce links to key ecological hubs. Following this logic, priority streets include Strada Paroseni and Strada Constantin Beiu in the Toboc district, and Strada Tamâioarei in the Plumbuita district. Tree lines mitigate the urban heat island effect, provide shade for pedestrians, and enhance ecological connectivity even within dense residential environments. Species selection prioritises native and climate-resilient trees capable of supporting local fauna. Alongside their environmental benefits, continuous tree canopies strengthen neighbourhood identity and visual coherence. Over time, these green corridors support biodiversity, improve walkability, and encourage more sustainable mobility patterns.

6. Rainwater pocket parks via desealing actions in large residential blocks

Rainwater pocket parks transform large sealed areas around residential buildings into multifunctional stormwater and social spaces. By desealing asphalted surfaces and introducing shallow basins, dry ponds, and planted ditches, these parks temporarily retain rainwater before releasing it slowly through infiltration, evaporation, or transpiration. The planted depressions rely on species that tolerate fluctuating moisture levels, offering ecological value while helping to reduce runoff from rooftops and paved courtyards. At the same time, these pocket parks provide small-scale public amenities such as benches, play areas, or communal gardens, reclaiming residual spaces for everyday use. The intervention improves microclimatic comfort, increases groundwater recharge, and contributes to neighbourhood biodiversity. As highly replicable devices, rainwater pocket parks can be implemented sequentially across large residential blocks, forming a distributed network of climate-adaptive spaces throughout the district.

7. Low-maintenance flower meadows and wildflower areas

This INbS promotes the transition from high-maintenance lawns to low-maintenance meadows and wildflower areas within Tei and Plumbuita parks. These meadows support a wider range of pollinators, improve soil health, and contribute to a more diverse and self-sustaining ecosystem. The shift requires the development of new expertise in seasonal mowing and ecological maintenance, opening opportunities for local job formation and training programmes specifically addressed to vulnerable groups and unemployed residents. Such programmes can support the emergence of new professional profiles focused on ecological management, nature-based maintenance, and biodiversity stewardship. Beyond their ecological value, the meadows introduce

a more seasonal landscape experience, offering aesthetic and educational benefits to park users. Their presence can be paired with nature-based learning activities, fostering environmental awareness and encouraging stewardship among residents and visitors. Educational potential can be strengthened through interpretive signage or collaborations with local schools and NGOs. By combining ecological benefits with socio-economic opportunities, they function both as a biodiversity strategy and as a tool for empowering residents through shared care and green employment.

8. Enhanced accessibility and ecological connections between new residential developments, natural areas, and parks

This INbS focuses on strengthening spatial and ecological connections between the Fabrica de Glucoza district, Petricani Meadows, and Tei Park. As new residential developments increase pressure on surrounding ecosystems, compensatory strategies are proposed to enhance green connectivity and meet environmental standards. These include the implementation of new pedestrian and cycling paths that directly link emerging neighbourhoods to the existing park system, improving active mobility and access to nature. Complementing these slow-mobility connections, tree planting along the edges of new developments can be undertaken by private developers to support ecological corridors and provide shade, mitigating heat island effects and improving microclimatic conditions. Additional planting schemes can reinforce biodiversity by strengthening continuous tree ribbons leading toward the natural protected area of Petricani Meadows. Together, these interventions promote accessibility while ensuring that urban growth contributes to ecological enhancement rather than fragmentation.

ULL Skellefteå // Anderstorp District

Location
Nallebjörnen site; Anderstorp district; Skellefteå municipality

Date of participatory mapping workshop
11/06/2024

Diagnosis

District identity and housing

>The resident population of Anderstorp district is predominantly composed of low-income groups, including single young parents and young adults in their 30s, with a high proportion of residents with foreign backgrounds, representing over 130 nationalities.
>Housing in Anderstorp district mainly consists of social and affordable housing, with a large share of rental units.
>Rental prices have been increasing, adding pressure to already vulnerable households.
>High residential turnover is observed, as many residents do not remain in the district for long periods.
>The district is perceived as attractive to newcomers, largely due to the presence of vegetated public spaces, including Nallebjörnen park.
>Anderstorp district has been the subject of studies, masterplans, and visions for potential new housing developments, driven by the existing presence of public facilities, parks, good accessibility to the city centre, and favourable spatial conditions.
>The district hosts a high concentration of educational facilities, including pre-schools, primary schools, and a gymnasium.

Park uses and activities

>The primary users of Nallebjörnen park are residents of the Anderstorp district.
>The park is equipped with several public space amenities, including barbecue areas, pétanque courts, tennis courts, and sports fields.
>The park is intensively used throughout the year, supporting sports and outdoor activities in both summer, spring, autumn and winter seasons.
>Paths within and around the park are frequently used for dog walking.
>The central area of the park, dedicated to sports activities, is used for football, running, and athletics during summer and spring months, and for skiing and ice-skating during winter.
>Schools make regular use of the park for outdoor activities, with the gymnasium using the park during winter for skiing.
>The playground in the northern part of the park is a popular gathering space for young people; however, its use by teenagers contributes to perceptions of insecurity among other user groups.
>The area surrounding the football field is subject to various informal uses, such as illegal parking and school party gatherings.
>Parts of the park, particularly near the football field and the playground in the northern section, are perceived as unsafe due to drug dealing and vandalism affecting sports infrastructure.

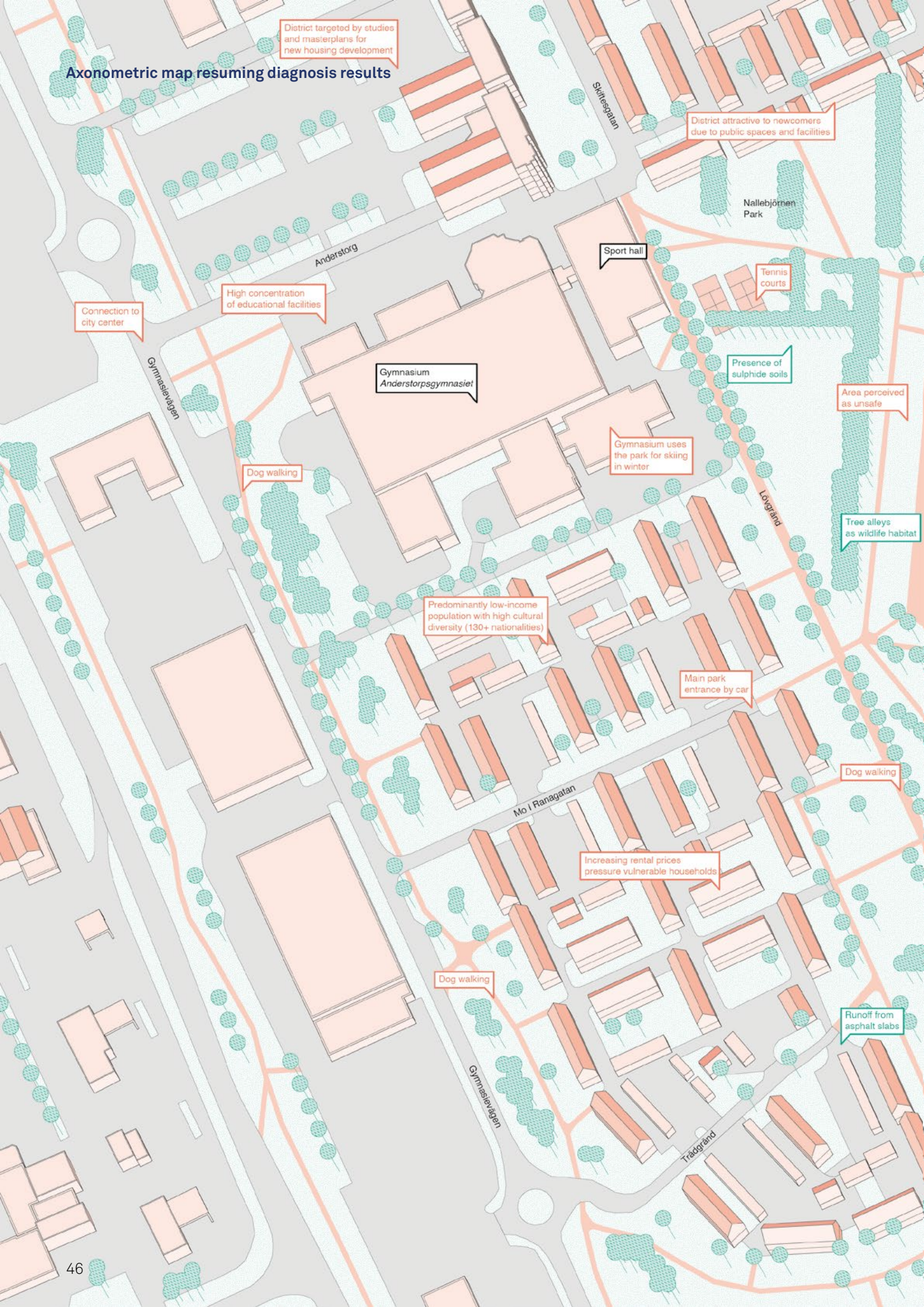
Environmental and ecological structures

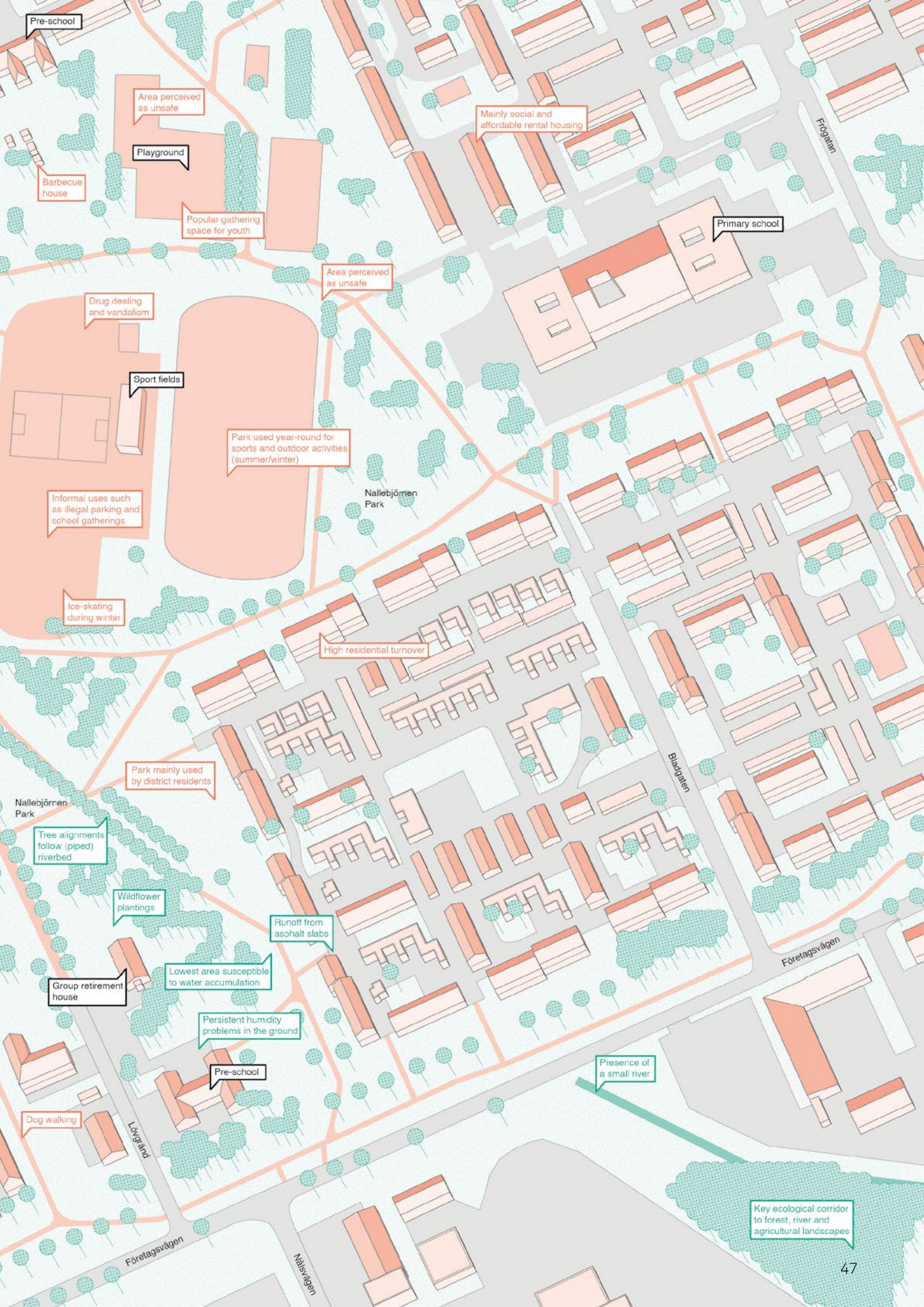
>Nallebjörnen park is directly connected to a broader forest, river and agricultural landscape to the south, which is perceived as a key ecological asset.
>This connection functions as an important ecological corridor, linking the park to larger natural systems beyond the district.
>Tree alleys within the park play a significant role in supporting birds and other animal species, contributing to the park's ecological value.
>An alignment of old trees traces the former course of a small river, forming a landscape element perceived as valuable.
>Wildflower plantings have been introduced near the group housing in the southern part of the park, enhancing local biodiversity and landscape quality while also providing visual buffering and privacy for residents.

Hydrological dynamics and ground conditions

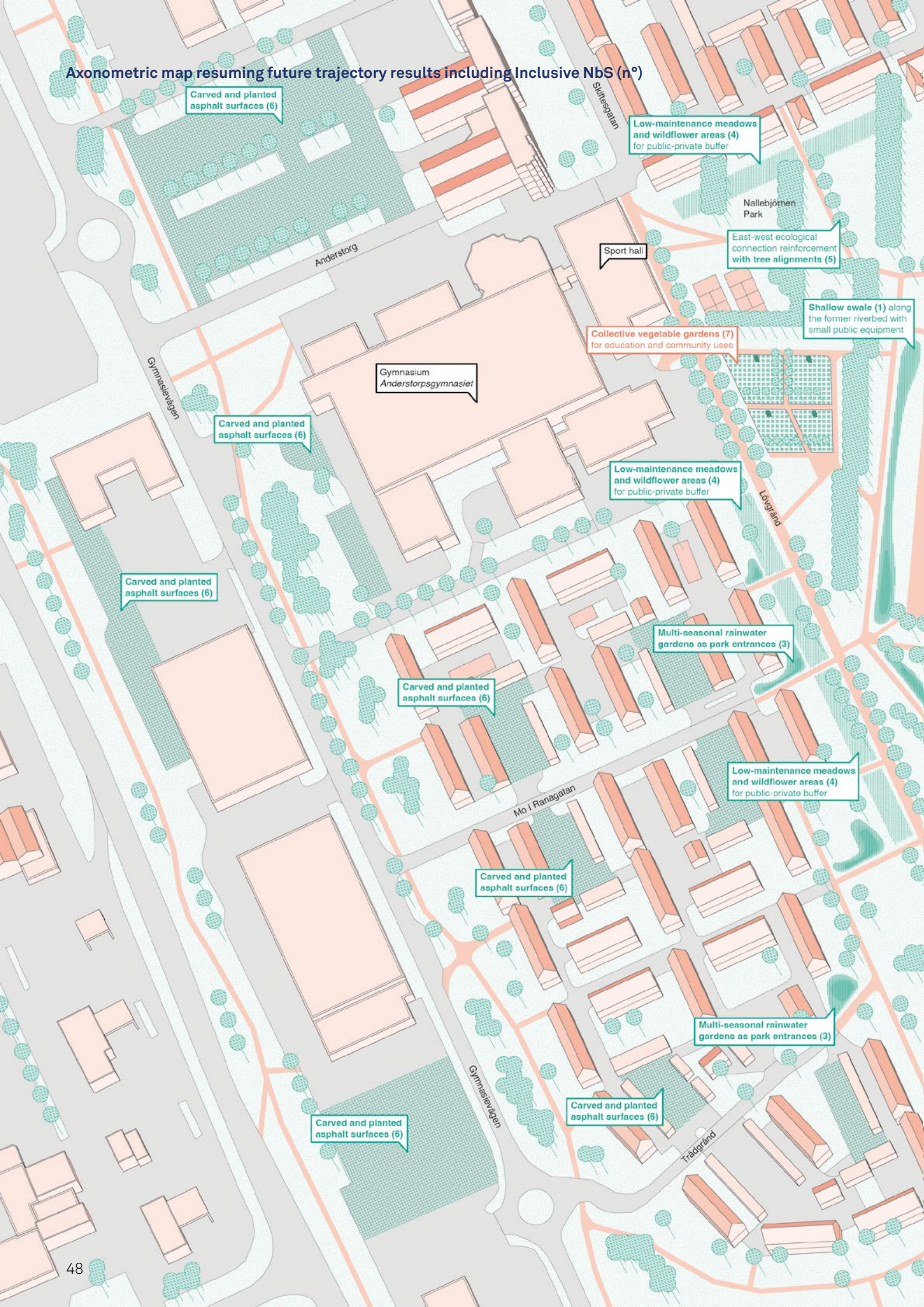
>A small river, a tributary of the Skellefteälven, crosses the park from south to north but currently runs underground through a piped system before joining the main river.
>The former riverbed remains legible in the landscape through an existing tree alignment and a slightly lower topography.
>Persistent humidity problems in the ground are observed in the southern part of the park, particularly near the pre-school area.
>This area corresponds to the lowest topographical point within the park, making it more susceptible to water accumulation and local flooding.
>Some areas of the park are characterised by the presence of sulphide soils.

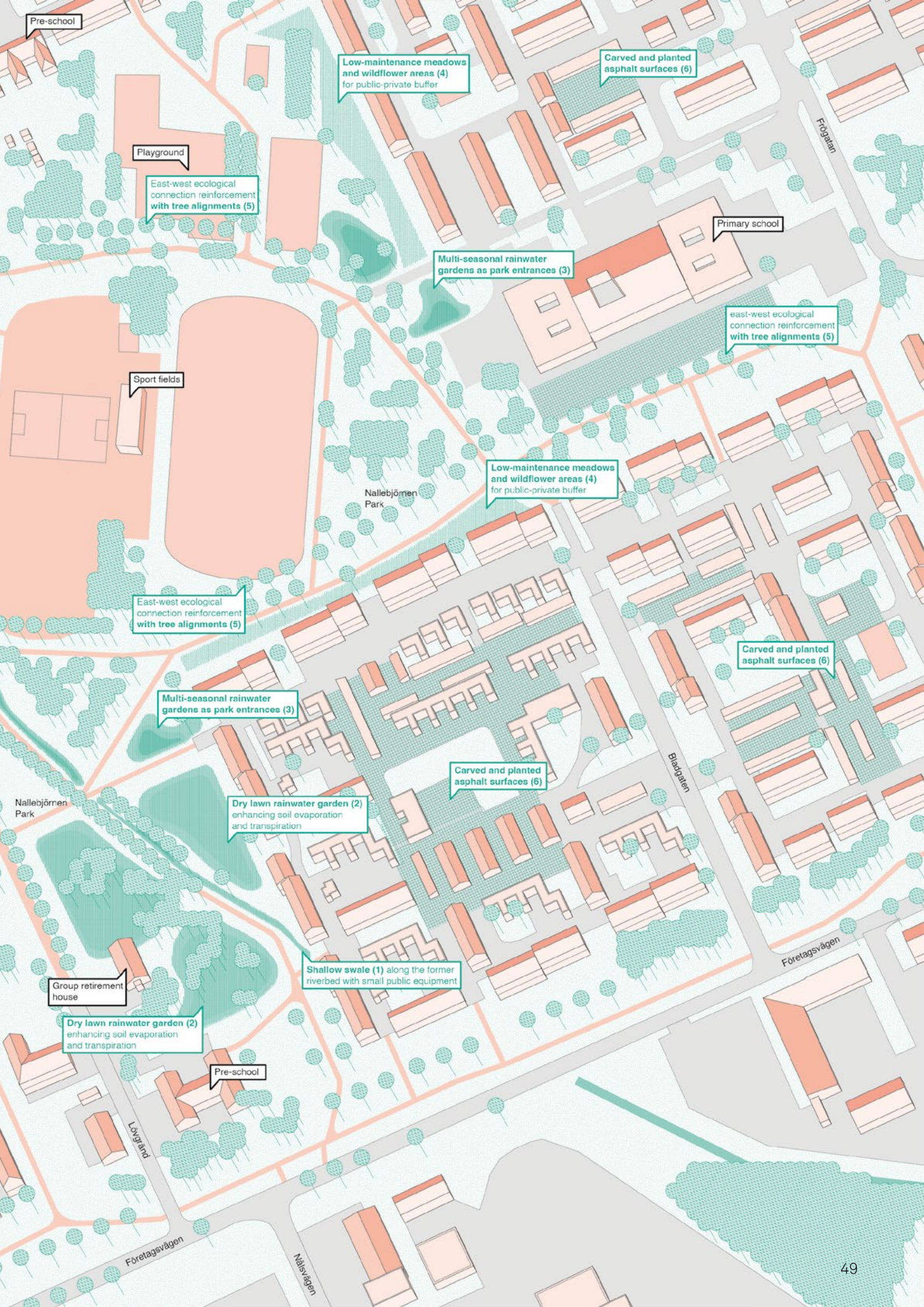
Axonometric map resuming diagnosis results




Pre-school
Area perceived as unsafe
Playground
Barbecue house
Popular gathering space for youth
Mainly social and affordable rental housing
Frögatan
Primary school
Area perceived as unsafe
Drug dealing and vandalism
Sport fields
Park used year-round for sports and outdoor activities (summer/winter)
Nallebjörnen Park
Informal uses such as illegal parking and school gatherings
Ice-skating during winter
High residential turnover
Bladgatan
Park mainly used by district residents
Nallebjörnen Park
Tree alignments follow (piped) riverbed
Wildflower plantings
Runoff from asphalt slabs
Företagsvägen
Lowest area susceptible to water accumulation
Group retirement house
Persistent humidity problems in the ground
Pre-school
Presence of a small river
Dog walking
Lövgränd
Key ecological corridor to forest, river and agricultural landscapes
Företagsvägen
Nålsvägen

Axonometric map resuming future trajectory results including Inclusive NbS (n°)




Pre-school
Low-maintenance meadows and wildflower areas (4) for public-private buffer
Carved and planted asphalt surfaces (6)
Frögatan
Playground
East-west ecological connection reinforcement with tree alignments (5)
Primary school
Multi-seasonal rainwater gardens as park entrances (3)
east-west ecological connection reinforcement with tree alignments (5)
Sport fields
Low-maintenance meadows and wildflower areas (4) for public-private buffer
Nallebjörnen Park
East-west ecological connection reinforcement with tree alignments (5)
Carved and planted asphalt surfaces (6)
Multi-seasonal rainwater gardens as park entrances (3)
Carved and planted asphalt surfaces (6)
Bladgatan
Nallebjörnen Park
Dry lawn rainwater garden (2) enhancing soil evaporation and transpiration
Företagsvägen
Shallow swale (1) along the former riverbed with small public equipment
Group retirement house
Dry lawn rainwater garden (2) enhancing soil evaporation and transpiration
Pre-school
Lövgränd
Företagsvägen
Nålsvägen

Future Trajectories

>A central issue addressed during the co-design workshop was how to balance the housing development objectives outlined in the municipal masterplan 2030[1] with the preservation of open public spaces and the need to respond to current local demands. In this context, the workshop aimed to facilitate dialogue between different municipal departments, particularly to align urban planning priorities—such as accommodating new housing while maintaining high-quality public spaces and facilities—with budgetary considerations, including the identification of public parcels suitable for development without requiring extensive new infrastructure connections. Initial discussions focused on a parcel located in a low-lying and humid area in the southern part of the Nallebjörnen park, which would have required relocating the existing pre-school and increasing soil levels to ensure adequate drainage. While this relocation could address the current humidity issues affecting the pre-school, concerns were raised about the potential increase in runoff toward the group housing area due to soil levelling and the introduction of new impervious surfaces. As a result, an alternative strategy was discussed, proposing to distribute new housing across two distinct parcels—one in the south-western area and one in the north-eastern part of the Nallebjörnen park. This approach would help balance the pressure generated by new residents across different areas, allow for a phased development strategy prioritising the south-eastern parcel, and preserve the park's primary north–south ecological connection.

>An opportunity to define a structural concept for the future design of public spaces emerged from the presence of a former river that today crosses Nallebjörnen park entirely underground, flowing from south to north through a culvert. Traces of this former river remain legible in the micro-topography of the park, which is lower in proximity to the culvert. This lower section is also perceived as more humid and appears to collect runoff from surrounding residential areas, where large asphalted surfaces—particularly parking lots—dominate. Within the co-design vision, this condition was reinterpreted as an asset rather than a constraint, leading to the idea of transforming this linear depression into a shallow swale or wadi running along existing pathways and echoing the former river course. Such a nature-based structure would support integrated stormwater management and biodiversity enhancement while reinforcing ecological continuity across the park. Extending from the southern forested area—where the river still runs in the open—towards the northern edge closer to the main river, this linear intervention could strengthen ecological connections at the Anderstorp district scale. At the same time, the swale could

accommodate small-scale public uses, such as seating elements or punctual sport equipment, combining hydrological function with everyday recreational activities.

>Another line of discussion focused on how to address the persistent humidity issues observed around the pre-school area. This question emerged in relation to the co-design intention to explore alternatives to relocating the pre-school, particularly in light of the revised options for new housing development parcels. The issue was closely connected to the concept of the shallow swale running through the park, as both addressed integrated stormwater management strategies capable of handling runoff from surrounding impervious surfaces. In this context, an opportunity was identified in reshaping the ground through shallow depressions designed as rainwater gardens, planted with local perennial species capable of seasonal flowering after winter. These species would support evaporation and transpiration processes, contributing to water regulation while enhancing landscape quality. In parallel, smaller rainwater gardens could be strategically positioned along the edges of residential impervious areas, improving park entrances while functioning as spaces for snow storage during winter and runoff retention during rainfall events. Questions regarding the long-term management of these rainwater gardens were raised, with particular attention given to the selection of low-maintenance plant species suitable for local climatic conditions.

>Beyond integrated stormwater management and ecological connectivity, issues related to perceptions of insecurity within the park also emerged, although they could not be fully addressed through explicit design interventions during the workshop. In this context, the discussion highlighted potential opportunities linked to the presence of educational facilities in the Anderstorp district and the proximity of unfenced private gardens bordering Nallebjörnen park. These conditions were seen as a basis for strengthening everyday presence and collective use of the park. In particular, participants reflected on the potential to introduce additional shared spaces that schools could use for activities related to biodiversity awareness and food production. One specific area, currently used as a lawn near the nearby gymnasium, was identified as a suitable location for accommodating new educational functions, such as vegetable gardens and fruit trees, directly connected to school programmes. Such uses were discussed as a way to reinforce everyday occupation of the park, foster learning through practice, and indirectly contribute to a greater sense of safety through regular and diverse presence.

[1] At the time of the co-design workshop, the district of Anderstorp was expected to undergo a significant process of residential densification in order to accommodate workers associated with the industrial facility for electric battery production. Following the downsizing and revision of the industrial development and hiring plans, this scenario is no longer applicable. Nevertheless, the vision discussed during the co-design workshop was deliberately developed independently of this assumption, focusing instead on current spatial conditions and the needs of existing residents, while maintaining a long-term perspective on potential future densification strategies.

Inclusive Nature-Based Solutions

1. Shallow swale along the former riverbed as a public space equipment

This INbS proposes the transformation of area of the former riverbed—currently running underground across Nallebjörnen park—into a shallow swale that intertwines stormwater management with everyday public use. Following the historical south-north course of the river, the swale is designed as a continuous, gently shaped depression capable of collecting, slowing, and infiltrating runoff from surrounding impervious surfaces. Integrated with the existing path network, the swale widens at key points, allowing for landscape enlargements that enhance spatial quality and ecological value. At these intersections, paths are also expanded to accommodate punctual equipment and facilities, such as small sport elements, seating, or informal gathering spaces. In this way, hydrological infrastructure and public space mutually reinforce each other: water becomes a visible and legible element of the park, while the shallow swale strengthens ecological connectivity between the southern forested areas and the northern section of the park closer to the main river system. The intervention supports biodiversity, improves microclimatic comfort, and provides a clear spatial structure around which the future organisation of the park can evolve.

2. Dry lawn rainwater garden around the pre-school and group housing

This intervention addresses the persistent humidity issues surrounding the pre-school by reconfiguring adjacent open areas into a dry lawn functioning as a rainwater garden. Rather than relying on hard drainage solutions, the proposal introduces a gently lowered and planted surface capable of enhancing soil evaporation and transpiration, allowing water to be temporarily stored and gradually released. The dry lawn is planted with resilient, low-maintenance species adapted to seasonal variation and northern climatic conditions. Beyond its hydrological role, this space supports everyday uses linked to the pre-school and nearby group housing, offering an open and flexible outdoor environment for play and learning for pupils, and gatherings for the elderly people of the group housing. By combining water regulation with educational and social functions, the intervention transforms a problematic area into an asset that supports both environmental performance and daily life.

3. Multi-seasonal rainwater gardens as park entrances

This INbS introduces a series of multi-seasonal rainwater gardens strategically positioned at the edges of Nallebjörnen park, where residential neighbourhoods with extensive impervious surfaces meet

the park landscape. These rainwater gardens function as threshold spaces that intercept runoff during heavy rainfall events and store snow during winter, enabling controlled melting and reducing pressure on downstream areas. Designed as planted depressions with species tolerant to fluctuating moisture levels, the rainwater gardens operate throughout the year, responding to both snowmelt and rainfall. At the same time, they enhance the spatial quality and legibility of park entrances, marking access points with distinctive landscape features. By combining hydrological performance with improved accessibility and visual identity, these rainwater gardens reinforce the relationship between the park and surrounding residential areas while supporting climate adaptation across seasons.

4. Low-maintenance flower meadows and wildflower areas adjacent to private gardens

This intervention proposes the introduction of low-maintenance meadows along the edges of private gardens and semi-private spaces bordering the park, with the aim of increasing privacy for residents while softening the transition between private and public areas. These meadows function as buffer zones that provide shading, support biodiversity, and reduce the need for intensive lawn maintenance. In this sense, the INbS promotes a shift from high-maintenance lawns to low-maintenance meadows and wildflower areas planted with native grasses and flowering species. This transition requires the development of new expertise in seasonal mowing and ecological maintenance, which can be partially entrusted to residents, fostering a sense of stewardship and shared responsibility for nearby green spaces. The meadows support a wider range of pollinators, improve soil health, and contribute to a more diverse and self-sustaining ecosystem. By integrating ecological functions into everyday residential environments, this intervention enhances biodiversity while reinforcing connections between private and public landscapes.

5. New tree alignments and woodland densification within the park

This INbS introduces new tree alignments and selective densification within Nallebjörnen park to reinforce ecological connectivity and spatial diversity. While the existing south-north tree structure follows the former river corridor, new plantations are oriented primarily east-west, establishing complementary ecological links across the park. This cross-structure strengthens habitat continuity for birds and other species, enhances shade, and improves resilience to climate stress. Species selection prioritises native and climate-adapted trees capable of supporting local biodiversity. Over time, these layered tree structures contribute to a more complex and legible park landscape, reinforcing the park's role as an ecological connector within the broader district.

6. Carved and planted asphalt surfaces in residential parking areas

This INbS focuses on selective desealing actions within parking areas in residential zones surrounding the park. Rather than removing entire surfaces and adding for instance permeable surfaces, the proposal is to modify the existing surface by carving the existing asphalt slabs, then fill these voids with soil planted with native grasses and wildflowers. The resulting pattern of vegetated "veins" through the parking areas and courtyards allows infiltration while maintaining vehicle accessibility. This solution gives particular attention to managing muddy conditions during snowmelt periods by concentrating permeable surfaces in zones dedicated to parking and circulation, in order not to disrupt accessibility and everyday uses in front of houses. This approach reduces surface runoff, supports groundwater recharge, and improves microclimatic conditions, while recognising the functional importance of parking in this particular residential contexts. By balancing permeability and usability, the intervention contributes to climate adaptation without compromising everyday mobility. Implementation can be coordinated collectively by multi-property ownership groups as well as by social housing companies.

7. Collective vegetable gardens and fruit tree alleys for education and community uses

This INbS proposes the introduction of collective vegetable gardens and fruit tree alleys in proximity to the gymnasium, building on the strong presence of educational facilities in the district. The vegetable gardens are conceived as shared spaces that support both school programmes and community use, enabling learning activities related to food production, ecology, and seasonal cycles. Fruit trees planted along paths and garden edges provide shade, structure, and edible resources, while reinforcing collective stewardship. Collective rainwater storage tanks are installed to support sustainable irrigation practices within the vegetable garden area. Rainwater is harvested and stored for use in watering the garden plots, reducing dependence on current potable water and increasing resilience to periods of drought. Residents are encouraged to participate in the maintenance and use of the vegetable gardens, strengthening everyday presence in the park and fostering social interaction across age groups. By combining educational, social, and ecological functions, this intervention contributes to inclusivity, biodiversity, and a stronger sense of collective ownership of the park.

ULL Turin // Parco dell’Arrivore

Location
Parco dell’Arrivore; Regio Parco district; Circoscrizione 6; Turin municipality; Città metropolitana di Torino

Date of participatory mapping workshop
04/12/2024

Diagnosis

Park identity and uses

>The park lacks a strong identity and it is predominantly associated with a negative reputation.
>Visitors experience a sense of insecurity, both inside the park and when crossing through it.
>Poor illumination contributes to safety concerns, especially at evening and night.
>Primary activities include dog walking, small gatherings, and jogging.
>Limited recreational opportunities for children, mostly concentrated in the designated playground area.
>A significant presence of the South American community, particularly around the small lake, where barbecuing is a common activity.
>Vegetable gardens (Orti) play a vital role in the park function.
>Informal vegetable gardens have developed along the Stura riverbanks, possibly linked to the Chinese community.
>Two buildings of architectural and historical significance contribute to the park identity: the Cascina and the Torre dell'Orologio, which are privately owned.

Accessibility and mobility

>Access to the park is challenging due to heavy traffic on surrounding roads, particularly Via Sandro Botticelli.
>Entrances, especially along Strada di Settimo, are not clearly visible or inviting.
>The park is poorly connected to adjacent public parks, Parco della Confluenza and Parco Stura Nord.
>Safe pedestrian and cycling connections between Parco della Confluenza and Parco dell'Arrivore are lacking, discouraging movement between them. Many visitors from Parco della Confluenza do not cross Strada di Settimo to access Parco dell'Arrivore.
>Limited parking availability makes access difficult for visitors from outside the neighbourhood.
>Pathways are not well-maintained.
>A former quarry site within the park may require soil remediation due to potential contamination.

Environmental dynamics

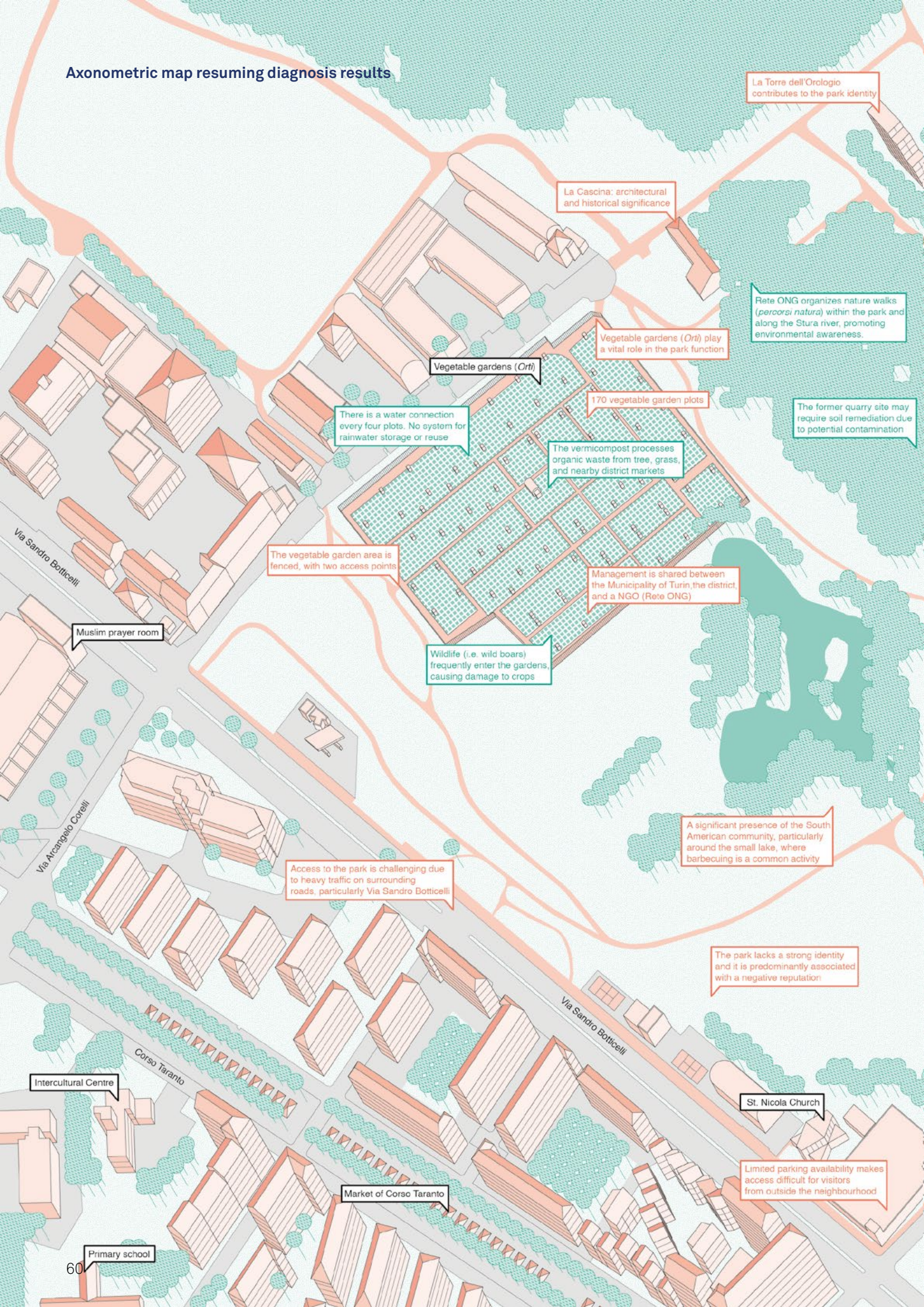
>Riparian vegetation is present along the Stura riverbanks.
>Invasive plant species have colonized areas of the former quarry, possibly spreading from informal vegetable gardens.
>A meadow and wildflower area are located in the southern part of the park, near Parco Stura Nord.

>The park experiences increasingly intense rainfall during spring and summer.
>Rete ONG organizes nature walks (percorsi natura) within the park and along the Stura river, promoting environmental awareness.

Vegetable Gardens

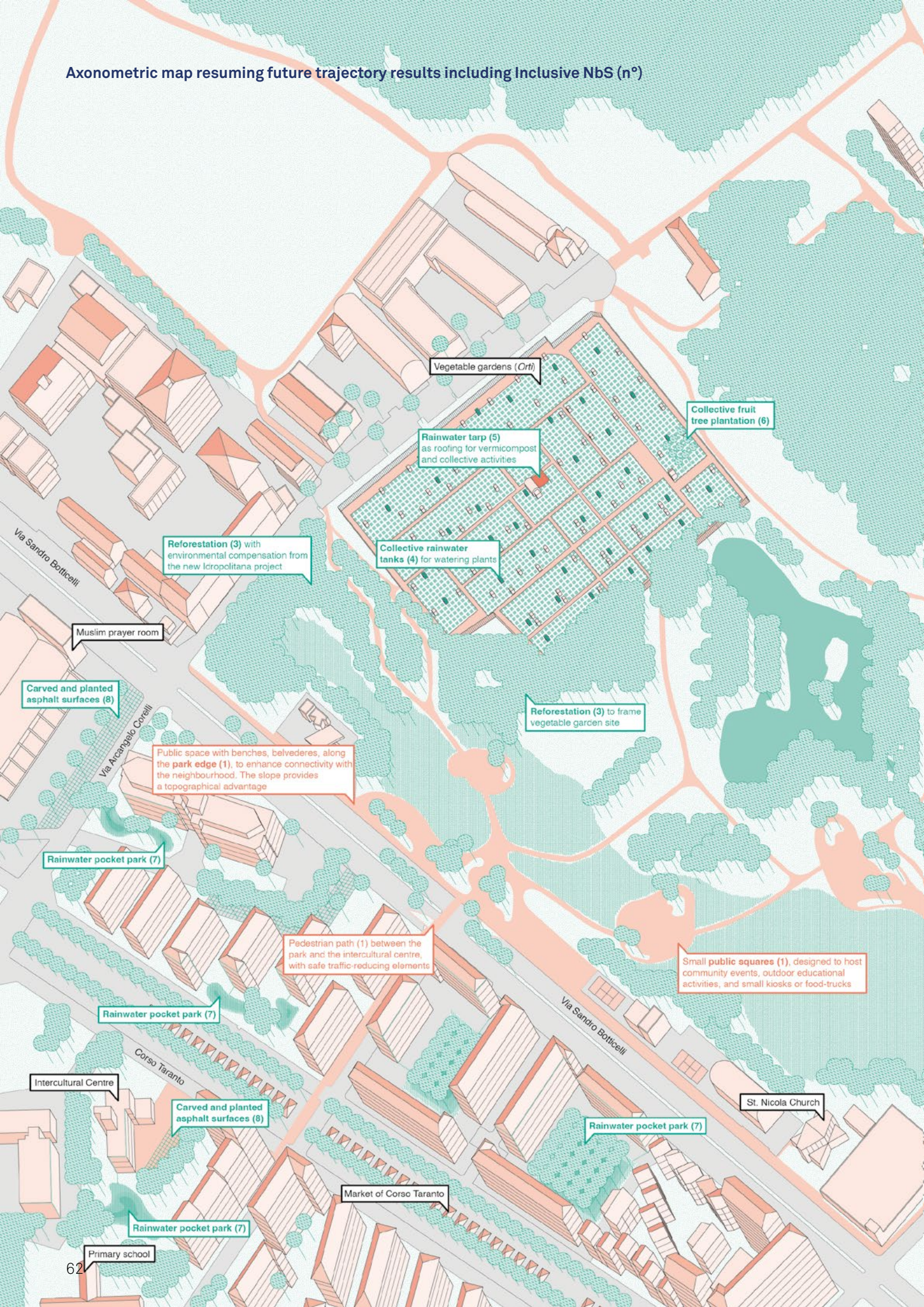
>The park contains 170 vegetable garden plots, structured with a governance model (president, vice-president, and three commissioners, elected every five years). A general assembly is held monthly.
>Management is shared between the Municipality of Turin (Comune di Torino), District 6 (Circoscrizione 6), and a non-profit association (Rete ONG).
>The vegetable garden area is fenced, with two access points.
>A vermicompost (lombricoltura) site is centrally located within the vegetable gardens. This experimental project, led by Rete ONG in collaboration with the gardeners, has significant potential. It processes organic waste from tree pruning, grass mowing, and nearby district markets (delivered by Eco dale Città).
>The vermicompost site requires covering to prevent heat stress from affecting compost production.
>There is a water connection for watering plants approximately every four plots. There is no system for rainwater storage or reuse.
>Wildlife, particularly blackbirds and wild boars, frequently enter the gardens, causing damage to crops.

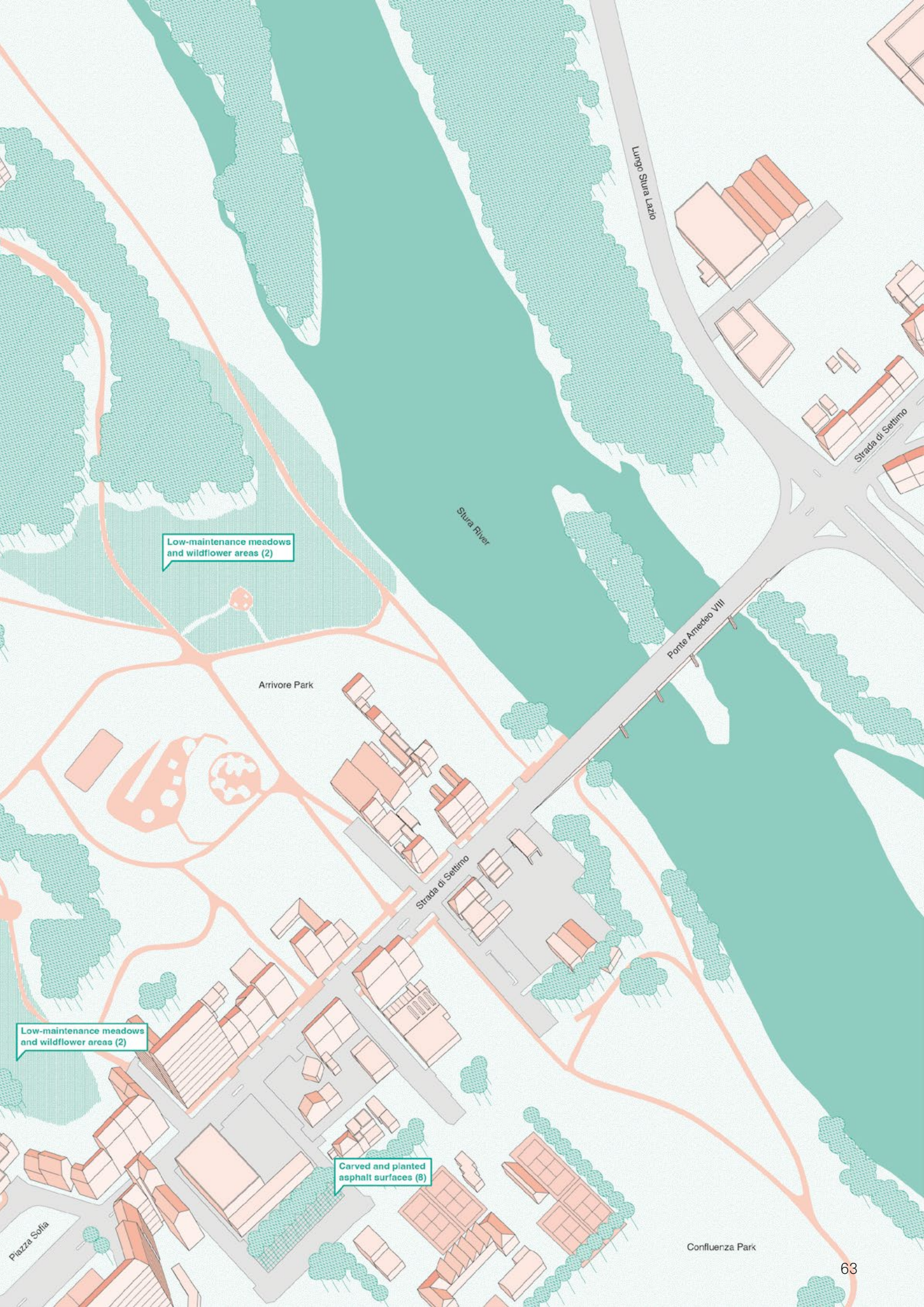
Axonometric map resuming diagnosis results




Meadows and wildflower areas are important for biodiversity
Riparian vegetation is present along the Stura riverbanks
Lungo Stura Lazio
Invasive plant species have colonized areas of the former cuarry, possibly spreading from informal vegetable gardens
Informal vegetable gardens have developed along the Stura riverbanks, possibly linked to the Chinese community
Strada di Settimo
Stura River
Visitors experience a sense of insecurity, both inside the park and when crossing through it
Increasingly intense rainfall during spring and summer
Ponte Amedeo VIII
Pathways are not well-maintained
Primary activities include dog walking, small gatherings, and jogging
Arrivore Park
Safe pedestrian and cycling connections between Parco della Confluenza and Parco dell'Arrivore are lacking, discouraging movement between them
Limited recreational opportunities for children, mostly concentrated in the designated playground area
Many visitors from Parco della Confluenza do not cross to access Parco dell'Arrivore
Poor illumination contributes to safety concerns, especially at evening and night
Strada di Settimo
Entrances, especially along Strada di Settimo, are not clearly visible or inviting
Piazza Sofia
Confluenza Park

Axonometric map resuming future trajectory results including Inclusive NbS (n°)




Lungo Stura Lazio
Strada di Settimo
Stura River
Low-maintenance meadows and wildflower areas (2)
Ponte Amedeo VIII
Arrivore Park
Strada di Settimo
Low-maintenance meadows and wildflower areas (2)
Carved and planted asphalt surfaces (8)
Piazza Sofia
Confluenza Park

Future Trajectories

>Discussion on how to possibly transform the Parco dell'Arrivore challenges the difficulties in securing budget for the actual transformation of the park. One potential source of funding discussed during the co-design workshop is environmental compensation (*compensazioni ambientali*) from the new Idropolitana project (a planned municipal sewer network). This idea remains speculative and requires further verification. Additionally, environmental compensation can only fund certain types of interventions, such as reforestation and tree-planting initiatives, rather than covering the full scope of proposed transformations.

>The primary focus of the co-design scenario centered on reimagining the park edge along Via Sandro Botticelli, a long stretch of land running from San Nicola Church and the Padel site (Piazza Sofia side) to the gas station (Strada dell'Arrivore side). This area has a topographical advantage, as the natural slope provides an opportunity to enhance connectivity between Via Sandro Botticelli (upper level) and Parco dell'Arrivore (lower level), improving access for residents of Regio Parco. The upper-level strip along Via Sandro Botticelli (approximately 20 meters wide) could be activated with benches, widened pathways, and belvederes, encouraging people to engage with the park, even passively, by offering viewpoints over the landscape. The lower section at the base of the slope could be transformed into a small public square, designed to host community events, outdoor educational activities, and small kiosks or foodtruck vendors. Accesses and a network of pathways should be designed to facilitate movement between the two levels, enhancing connectivity and accessibility. This intervention is envisioned as a starting point for the broader transformation of the park.

>Improvements in meadow management were also explored as a strategy to enhance biodiversity. A key proposal is to transition from high-maintenance (i.e. mowed grass) to low-maintenance meadows and wildflower areas, introducing a more ecologically diverse and resilient landscape. This shift would require alignment with the municipal Green Space Maintenance Plan (*Piano Manutenzione Spazi Verdi*) to ensure feasibility.

>New tree plantations are proposed in the area between the Idropolitana construction site and the vegetable gardens. This initiative aims to achieve multiple objectives. First, it would reinforce the park ecological connectivity, linking the vegetation of the former quarry to the trees surrounding the small lake. Additionally, the strategic placement

of trees would help visually integrate the vegetable gardens into the broader landscape, softening the impact of their fence and improving the overall spatial quality of the park.

Inclusive Nature-Based Solutions

1. Park edge and public squares

The intervention is designed to improve accessibility between the Regio Parco district—particularly the social housing blocks and the Intercultural Centre—and Parco dell'Arrivore. It includes a prominent feature on the upper level along Via Sandro Botticelli: a large belvedere that takes advantage of the topography to offer elevated views over the landscape. Shaded areas and permeable surfaces help regulate temperature and improve stormwater infiltration, while inviting public spaces support informal gatherings and intergenerational use. Below, a series of small public spaces are proposed at the lower level, strategically located to maintain visual and physical connections with the upper edge. The lower section at the base of the slope is envisioned as a series of public spaces that could accommodate community events, outdoor educational activities, and temporary uses such as food trucks or kiosks. This dual-level configuration aims to enhance safety, foster a stronger sense of connection, and encourage residents to actively engage with the park. In addition to this new public space configurations, the system of public spaces can be also extended up to the Intercultural center, enhancing and securing connections for pedestrians, while reinforcing links with the natural walks organized by Rete ONG.

2. Low-maintenance flower meadows and wildflower areas

This INbS improves meadow management practices concurrently enhancing biodiversity. This proposal is based on the shift in current management practices from high-maintenance (i.e. mowed grass) to low-maintenance meadows and wildflower areas, supporting a more ecologically diverse and resilient landscape. This shift requires alignment with the municipal Green Space Maintenance Plan (Piano Manutenzione Spazi Verdi) to ensure feasibility. Low-maintenance flower meadows and wildflower areas support a wider range of pollinators, improve soil health, and contribute to a more diverse and self-sustaining ecosystem. This INbS opens opportunities for the introduction of new green jobs. Training programmes could be developed to support the emergence of new professional profiles focused on ecological management, nature-based maintenance, and biodiversity stewardship. Beyond their ecological value, these meadows contribute to a more seasonal landscape experience, offering aesthetic and educational benefits to park users. Their presence can also be paired with nature-based learning activities, helping to foster environmental awareness and stewardship among residents and visitors.

3. Reforestation

New tree plantations are proposed in the area between the Idropolitana construction site and the vegetable gardens. This initiative aims to achieve multiple objectives. First, it reinforces the park ecological connectivity, linking the vegetation of the former quarry to the trees surrounding the small lake. This expanded canopy supports habitat continuity and increase biodiversity. Additionally, the strategic placement of trees helps visually integrate the vegetable gardens into the broader landscape, softening the impact of their fence and improving the overall spatial quality of the park. The trees contribute to microclimatic regulation, offering shade, reducing surface temperatures, and mitigating the urban heat island effect.

4. Collective rainwater tanks

This INbS proposes the installation of collective rainwater storage tanks to support sustainable irrigation practices within the vegetable garden area. Rainwater is harvested and stored for use in watering the garden plots, reducing dependence on current potable water and increasing resilience to periods of drought. The proposed model suggests placing one tank for every two to three plots, facilitating shared use while keeping costs manageable. This decentralised, small-scale system promotes collective ownership and encourages collaborative maintenance practices among gardeners. Collective rainwater tank reinforces community bonds by fostering shared responsibility and enhancing a sense of stewardship over the infrastructure. Collective rainwater tank is a low-tech device that can be easily set up, replicated and maintained.

5. Rainwater tarp and collective space

This intervention proposes the installation of a rainwater tarp to provide shade and weather protection for the vermicomposting site located within the vegetable garden area. By reducing exposure to direct sunlight, the tarp helps regulate temperature conditions and prevents heat stress, thereby improving composting efficiency and ensuring year-round functionality. In addition to shading, the tarp can be designed to capture and redirect rainwater in to a storage tank, contributing to on-site water management. The structure can also be imagined as a device to support small gatherings, gardener meetings, educational workshops, or maintenance activities under shelter. Beyond its technical role, the collective tarp could strengthen community ownership of the composting project, highlighting the social and ecological value of decentralised waste processing and rainwater reuse within an urban agriculture context.

6. Collective fruit tree plantation

This INbS proposes the introduction of collective fruit tree plantations in an underused area adjacent to a collective building that currently hosts shared spaces for small gatherings. The fruit trees are conceived as a complementary productive layer to the existing vegetable garden plots, extending food production through seasonal species while improving microclimatic conditions and biodiversity. Managed collectively by the gardeners, the trees rely on shared responsibility to ensure their long-term care, health, and productivity. Harvested fruits can be distributed among participants, processed collectively into small-scale products such as jams, or donated to non-profit organisations supporting food security initiatives, including those addressing the needs of migrant communities. Tree provision and initial planting could be supported by the municipality, under the coordination and supervision of the non-profit organisation responsible for managing the vegetable gardens. Beyond their productive function, the fruit trees enrich the ecological value of the garden, enhance shade and soil conditions, and reinforce a sense of collective stewardship and community identity within the park.

7. Rainwater pocket park

Rainwater pocket parks are small-scale public spaces designed to serve dual purposes: managing stormwater and supporting community life. These multifunctional areas are conceived to temporarily detain rainwater and gradually release it through infiltration, evaporation, and transpiration. Typically consisting of shallow basins, dry ponds, and planted ditches, they incorporate a variety of both humid- and drought-tolerant plant species to respond dynamically to changing water conditions. These systems are designed to collect runoff from the roofs of adjacent buildings and redirect it safely into the public realm. In parallel, they offer spaces for everyday activities—integrating seating, tables, small playgrounds, or even petanque courts. In this way, rainwater becomes a generative element for reimagining underused or residual spaces, many of which are currently dominated by asphalt and parking. By replacing sealed surfaces with vegetated, permeable ground, these interventions contribute to urban cooling, groundwater recharge, and climate adaptation. At the same time, they reclaim valuable public space for collective use, reinforcing the social and ecological functions of the neighbourhood.

8. Carved and planted asphalt surfaces

This intervention transforms parking lots and asphalted courtyards into permeable, biodiverse spaces—without adding new repaving. Rather than removing entire surfaces and adding for instance permeable surfaces, the proposal is to modify the existing surface by carving the existing asphalt slabs, then fill these voids with soil planted with

native grasses and wildflowers. The excavated asphalt is not discarded: broken fragments are repurposed on-site as bench seats, edging or low walls, minimizing embodied-carbon impacts and giving new life to these materials. The resulting pattern of vegetated “veins” through the parking areas and courtyards not only recharges groundwater and mitigates run-off, but also softens the hardscape texture and reinforce microhabitats for pollinators and soil fauna. These modified spaces can still keep the same function, as for example parking lots. Beyond its environmental function, asphalt desealing and planting is designed as a community action. The municipality can host “desealing days,” inviting neighbours to help break asphalt surfaces, mix substrates and plant pocket meadows under the guidance of local NGOs.

Annex // Partecipatory mapping results

ULL Brussels // CQD Villas de Ganshoren
27/11/2024

ULL Bucharest // Tei Area
18/02/2025

ULL Skellefteå // Anderstorp District
11/06/2024

ULL Turin // Parco dell'Arrivore
04/12/2024

GREEN-INC

Working Package 4: Application and validation of ICA principles in the Urban Living Labs

Deliverable: Atlas of ICAs within the 4 ULLs to enable mutual learning

2025

DUT Driving Urban Transitions