

## URBAN FORESTS AND NATURE-BASED SOLUTIONS



### KEY POINTS

- Green space is getting increasing attention in building resilient cities
- A new understanding of urban forests emerges, incorporating all vegetation and its supporting structures in cities
- The multiple benefits of urban forests gain increasing recognition and use by various local actors
- Rethinking green space in cities calls for new governance modes, more collaboration and responsibility over a common resource
- This is shown by nature-based solutions from Australia, Greece, Germany, Spain and Sweden

### ABOUT THE PROJECT

NATURE-based URban innoVATION is a 4-year project involving 14 institutions across Europe in the fields of urban development, geography, innovation studies and economics. We are creating a step-change in how we understand and use nature-based solutions for sustainable urbanisation.





### Urban Forests: Stories and Solutions

Although cities worldwide increasingly regard vegetation as critical infrastructure providing health and well-being benefits for communities and a connection to nature difficult to find in urban areas, challenges to implementation and upscaling remain.

Urban forest is an emerging concept which not only incorporates trees, but other vegetation in streets, parks, plazas, river embankments, wetlands, railway corridors, community gardens, and on buildings as well as the soil and water that supports them. Urban forests have been around for generations, but only recently, in light of population growth, densification and climate extremes, have they become valued for more than aesthetics and recreation. The five nature-based solutions (NBS) highlighted here show that benefits of urban forests span environmental, economic, cultural and political domains, and are increasingly recognised as an argument to persuade and engage local actors to work with and expand urban vegetation. The NBS also show that the legal status and ownership of green spaces define their future. Creating resilient and sustainable urban landscapes that provide healthy and enjoyable places for people to live and work requires rethinking the role of green infrastructure. Nature-based solutions must include strong visions and strategic target-oriented planning, coupled with new governing modes and partnerships, often reallocating and sharing responsibilities with private actors.



### Malmö: Tree Strategy

The Tree Strategy under development in Malmö is an innovative municipal planning document outlining concrete actions toward a vision of the city becoming one of the biggest botanical gardens in the world while improving health and well-being.

The city of Malmö has extreme weather, residential densification and a lack of sufficient green spaces and biodiversity. The Tree Strategy, through conserving and creating urban greenery, aims to create a comfortable climate and establish conditions to improve the citizens' physical and mental health while preserving the city's cultural history. Recognizing the need for a multidisciplinary collaboration when working with urban green space, the strategy calls for new governance practices, inter-departmental collaboration, concrete and manageable targets, timelines, and costs and responsibilities shared with relevant actors, including major landowners. ***"If politicians want to have an attractive city, trees are important, but trees are also important in creating a sustainable city ... The challenge is to put it into concrete goals ... The Tree Strategy does that..."***<sup>1</sup> Concrete targets are linked to specific budgets making the strategy more transparent and interpretable for the different actors. Some of these targets in a five year timeframe include planting 1,000 trees annually in public spaces, planting 50 new tree species annually, and revitalizing 20% of trees over 70 years old. The Tree Strategy holds great learning potential about governance practices and managing shared responsibility over the common resources.



### Melbourne: Urban Forest Fund

The Urban Forest Fund, as part of a comprehensive and integrated climate governance approach, is a key initiative to address sustainability challenges in the City of Melbourne through supporting greening of privately-owned land.

The Urban Forest Fund is a timely response to the city's challenges: heavy rains, floods, heatwaves, droughts and strong population growth. In the past decade, the City of Melbourne has worked with a variety of innovative policy initiatives to increase its residents' quality of life. Many of these initiatives address greening of public spaces (e.g. Urban Forest Strategy, Open Space Strategy), however very few focus on the private realm, which today comprises of 75% of the city's land area. The Urban Forest Fund (2017-2021), a public-private partnership, aims to vegetate privately-owned land by providing 50% financial support to (a) new green spaces, (b) tree planting, (c) green roofs and walls, (d) water-sensitive urban design projects and (e) below-ground soil condition improvements for healthy vegetation. The Fund currently has AUS\$1.2 million in seed funding and through contributions from private actors it aims to grow to \$10 million. If today's AUS\$1 million is matched with an equivalent private donation, 6,000 m<sup>2</sup> of green roofs, 4,600 m<sup>2</sup> of green facades, 900 m<sup>2</sup> of green walls, and 4,000 street trees (1,000 more than are now planted annually) can be implemented.<sup>2</sup> ***"The establishment of an Urban Forest Fund by the City of Melbourne is an exciting and progressive step toward securing a green and climate-ready future for Melbourne."***<sup>3</sup>



### Barcelona: Collserola Mountain – urban park or natural space?

The development process of the protection plan for Barcelona's peri-urban natural park brings some key insights on how to regulate and manage the use of green amenities in rapid urbanisation.

Collserola, since 2010 a natural park, is the biggest forested area (8,400 ha) in the hilly northern fringes of Barcelona and the city's most accessible green area. Despite its legal status as a protected area ('natural park'), the surrounding urban context and the increasing number of visitors call for more consideration of its social uses. A Special Protection Plan for the Collserola Natural Park was initiated in 2012 to preserve biodiversity while providing ecosystem services in a highly urbanized neighbourhood – 1,970 park hectares border the city. The Park is envisioned as an open space offering multiple activities resulting in social and economic benefits, such as accessibility, recreational and agricultural activities, while protecting the environment, preserving biodiversity, and creating ecological connectivity. ***"This requires a process for a special protection plan. The existing Special Protection Plan in force concerns an urban park. It is purely urban. The other has to be mixed. Urban and environmental; or linked to the natural environment."***<sup>4</sup> When approved, the Plan will be an exemplar of how to develop a regulatory framework (in a participative fashion), and how to set priorities and consider often conflicting interests of nature conservation, urban planning, land-use management, agro-ecology and agro-tourism.



### Leipzig: Concept for more street-side trees

Recognising its “responsibility for the future”, and failing to fulfil the EU targets on ambient air quality, Leipzig develops an integrated plan for more trees.

In the context of densification and intense motorized vehicle use leading to the loss of greenery and poor ambient air quality, coupled with weather extremes and controversial regional policies, governmental and non-governmental actors re-focused on trees. ***“The City has different obligations to care for its trees. With respect to the law (esp. protection of species), the services for the public (esp. health), to social association and to economy...”***<sup>5</sup> Despite previous municipal tree planting programmes – e.g. *Baumstarke Stadt*, in which 5,000 trees have been planted since 1997 – treeless streetscapes have become increasingly common in Leipzig. This concern has been taken up by an environmental NGO, who initiated tree planting campaigns and collaborated with the City of Leipzig to successfully ensure an annual target of 1,000 trees planted in the city’s new Air Quality Plan (2008). The NGO’s most recent initiative, *“Straßenbaumkonzept”*, promotes tree planting, protection and maintenance through an increased budget and increased internal and external stakeholder collaboration. Once approved, the concept will provide crucial learning for collaborative planning to increase the numbers of urban trees.



### Athens: The Hellenikon Metropolitan Park – a lost opportunity?

Global investors promise to create Europe’s largest park as a part of a new development project, providing Athens with a much-needed ecological boost.

***“The land of the ex-airport is to be mainly used for the creation of a metropolitan green zone.”***<sup>6</sup> Despite the cited ecological ambition, due to economic and political circumstances, when the former Hellenikon Airport and its waterfront was capitalized to help Greece recover from the economic crisis (2011), investors allocated only one third of the total development area (6,000,000 m<sup>2</sup>) for green space. Compromising its potential to improve the meagre green area available to Athenians - 0.97 m<sup>2</sup>/person (the minimum level recommended by WHO is 9 m<sup>2</sup>/person<sup>7</sup>) and contradicting existing principles and decrees<sup>8</sup>, the Law of Hellenikon establishes new conditions for urban development, among others allowing grey development in green spaces and coastal areas. The area’s Integrated Development Plan (2017) promises biodiverse greenery with forest patches, high-quality multifunctional spaces, ecosystem protection and enhancement, and a sustainable water management system. The 25 year, €8 billion investment holds learning potential on governance practices and how private promises for NBS and its multiple benefits for the common good play out in new developments.

<sup>1</sup> Delshammar, Malmö City, 2017; <sup>2</sup> Australian Design Review, 2017; <sup>3</sup> Chief executive, Nursery & Garden Industry, Victoria, 2017; <sup>4</sup> Representative of the Platform for the defence of Collserola, 2017; <sup>5</sup> NGO representative, 2017; <sup>6</sup> Law 233/1995; <sup>7</sup> UN, 2012; <sup>8</sup> Master Plan for Athens, 1985; Presidential decree for coast protection, 2004; Photo credit: Urban Forest Strategy, Melbourne, 2012; Malmö City, 2017.