ECOSCAPES
LANDSCAPE ARCHITECTURE



NATURE BASED SOLUTIONS

BUDAPEST 2026

COOLING HAVENS

Co-funded by the European Union

EUROPEAN URBAN INITIATIVE

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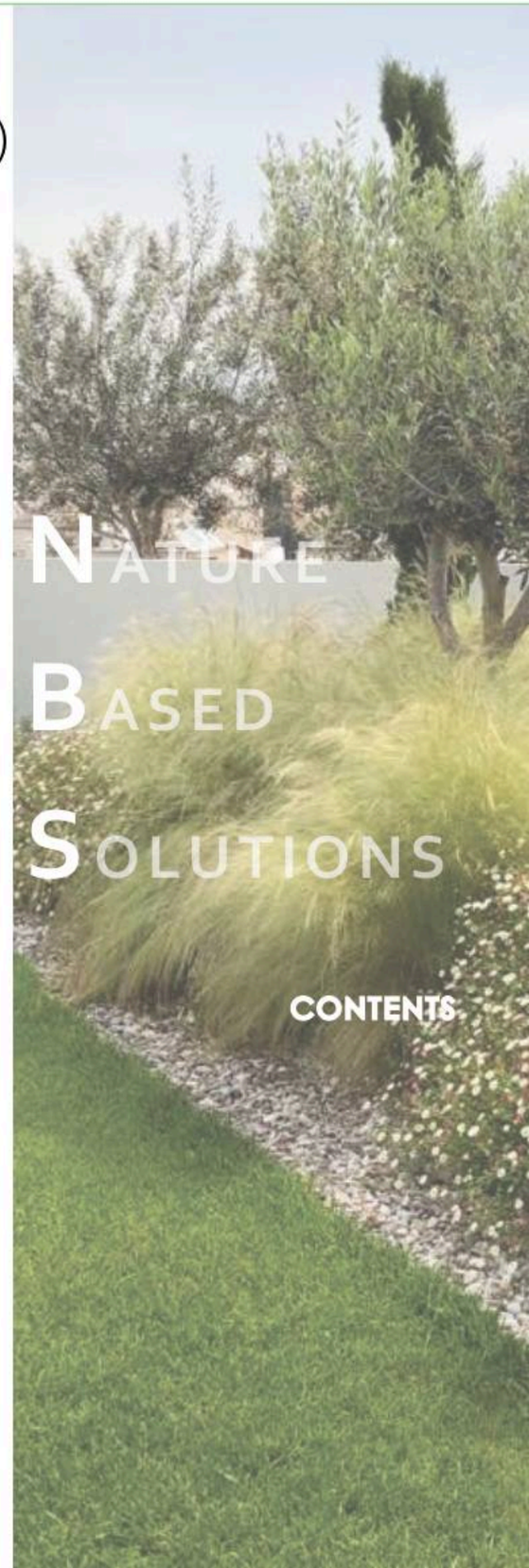
- **INTRODUCTION** TO NATURE BASED SOLUTIONS (NBS)
  - NBS & BLUE-GREEN INFRASTRUCTURE
  - BENEFITS OF NBS
- **OUR APPROACH & STRATEGIES**
  - COMMUNITY ENGAGEMENT
  - INSTITUTIONAL COLLABORATION
  - DESIGN PRINCIPLES
- **OUR EXAMPLES OF NBS**
  - RAIN GARDEN
  - BIOSWALE
  - TREE PLANTING
  - RETENTION POND



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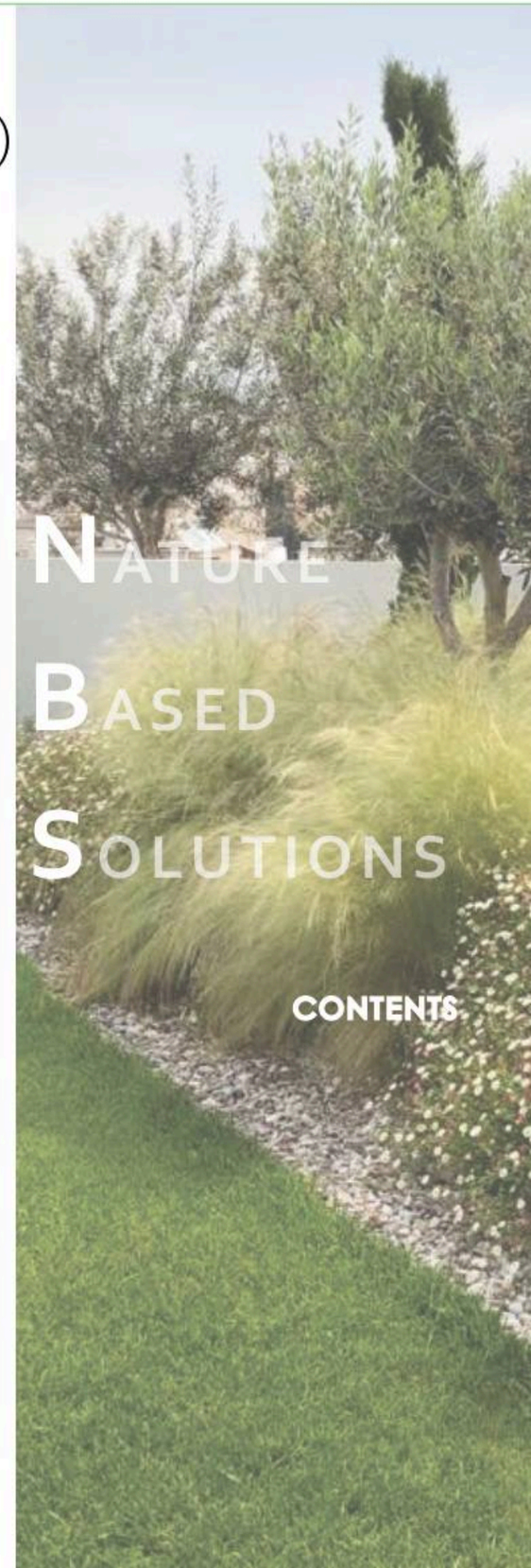

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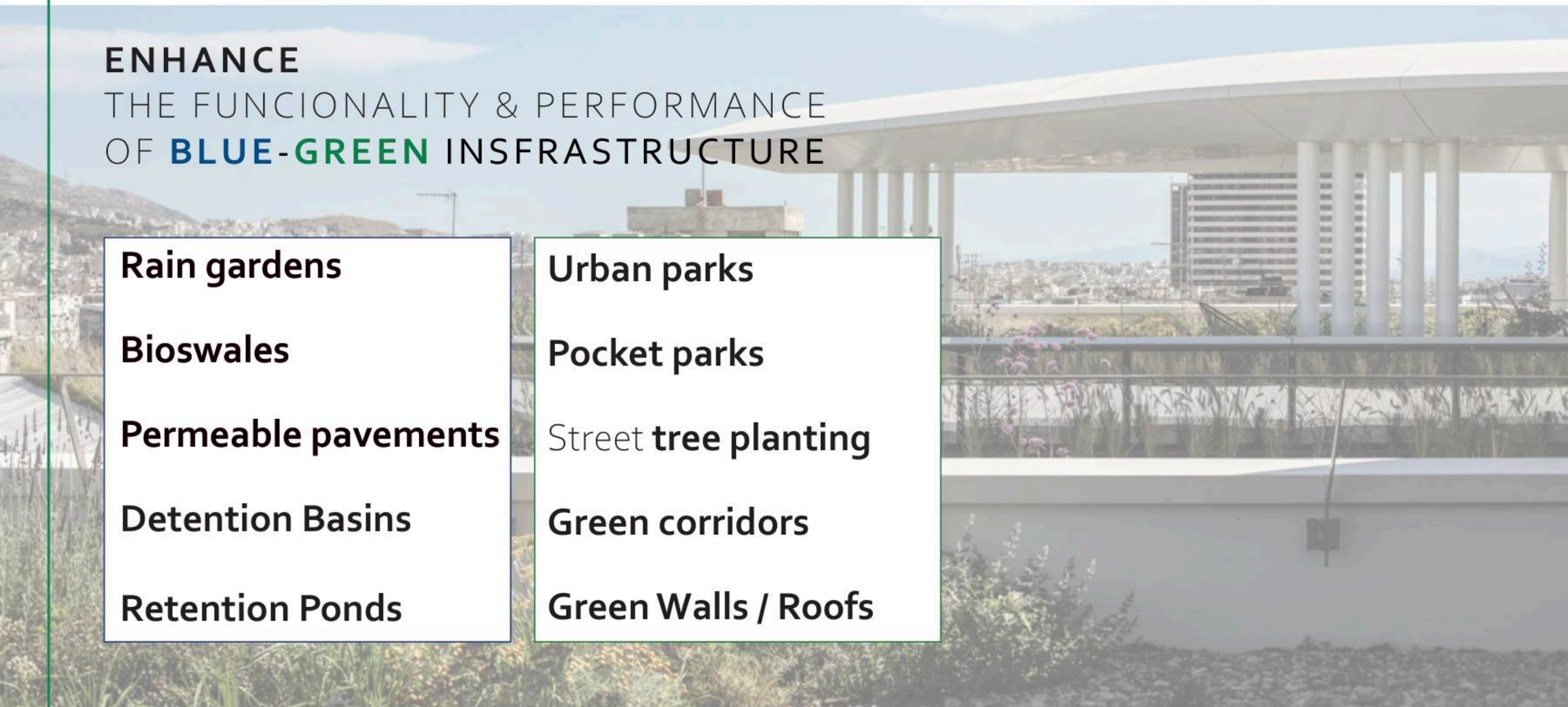
NATURE BASED SOLUTIONS
& URBAN LANDSCAPE



ENHANCE
THE FUNCIONALITY & PERFORMANCE
OF **BLUE-GREEN** INSFRASTRUCTURE

- **Rain gardens**
- **Bioswales**
- **Permeable pavements**
- **Detention Basins**
- **Retention Ponds**
- **Urban parks**
- **Pocket parks**
- Street **tree planting**
- **Green corridors**
- **Green Walls / Roofs**

BY INTEGRATING INTO URBAN LANDSCAPE DESIGN
ECOLOGICAL PROCESSES & ECOSYSTEM-BASED APPROACHES

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BENEFITS OF NATURE BASED SOLUTIONS
IN URBAN LANDSCAPES

Stormwater management



Microclimate regulation





Enhancement of biodiversity



Social and recreational benefits

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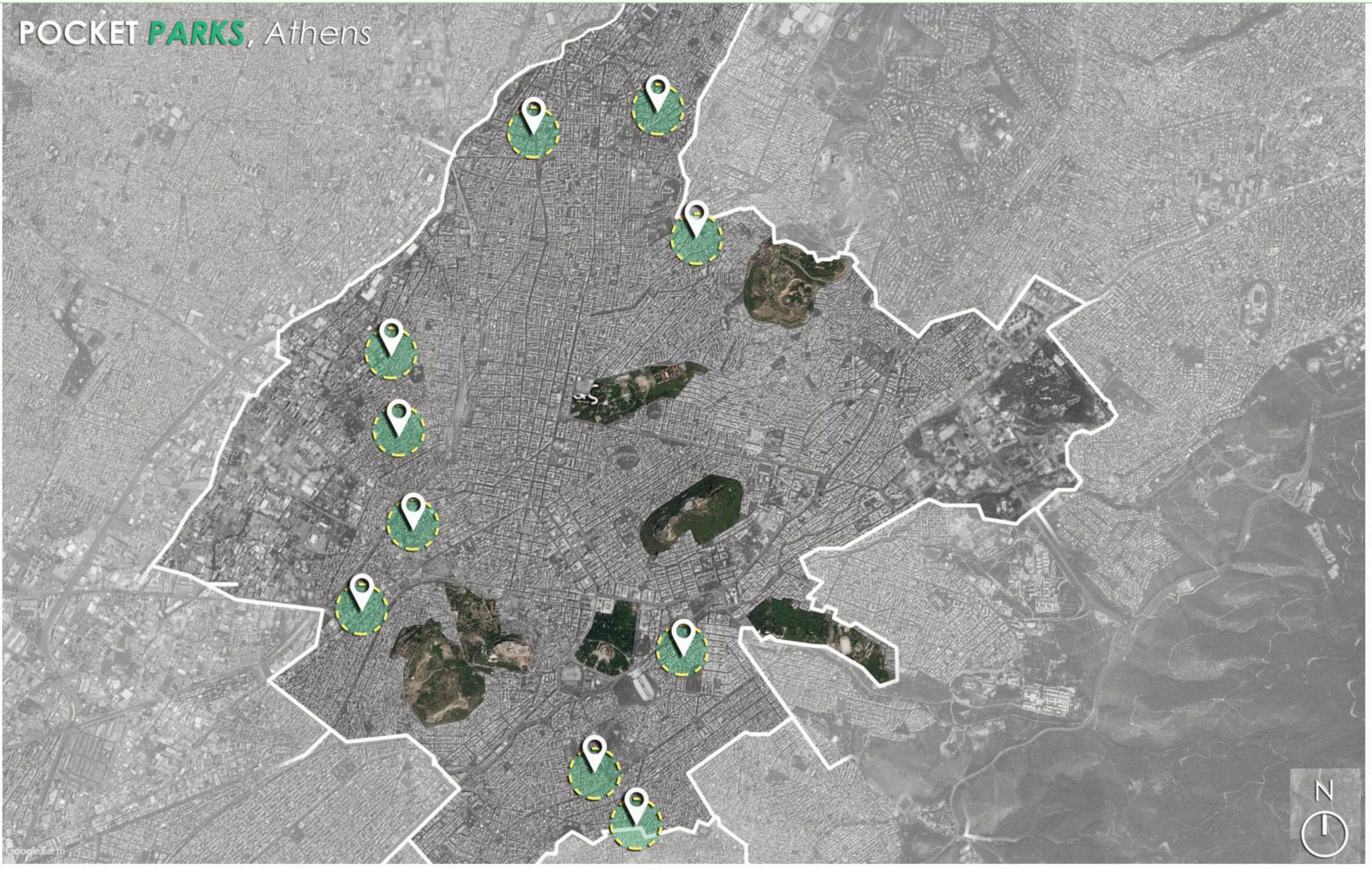
POCKET *PARKS*, Athens



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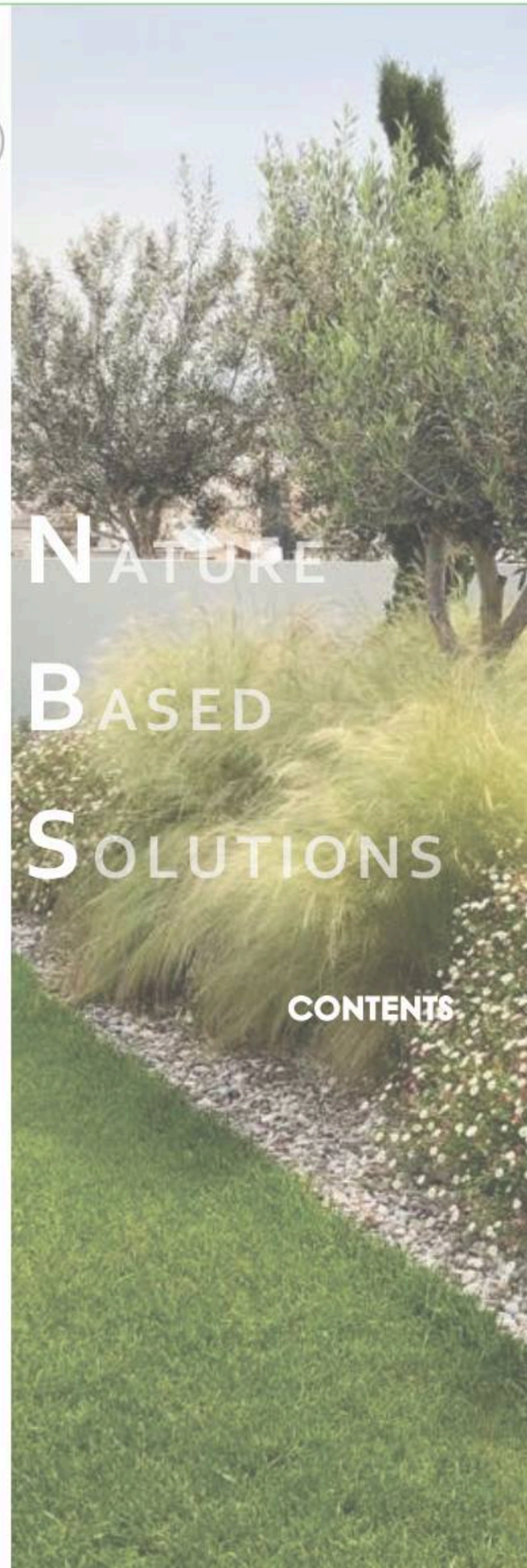

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AN INTERACTIVE CO-DESIGN PROCESS

3 CIRCLES OF COMMUNITY CONSULTATION







Cooling Havens, Athens (2025) by Ecoscapes

COMMUNITY PRIORITIES, CONCERNS & EXPECTATIONS

- Lighting & Safety
- Shade & Thermal Comfort
- Cooling & Climate Resilience
- Preservation of Local Character
- Retention & Protection of Existing Vegetation
- Concerns Regarding Water Features
- Open Dialogue & Active Listening
- Clear Responses to Questions & Concerns

INSTITUTIONAL COLLABORATION
DURING LANDSCAPE ARCHITECTURE DESIGN PROCESS



Fix Park, Athens (2021) by Ecoscapes

WORKING WITH MUNICIPALITIES & PUBLIC AUTHORITIES

- Resources
- Information
- Implementation
- Maintenance

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ECOLOGICAL | SOCIAL | PERCEPTUAL
LANDSCAPE ARCHITECTURE ANALYSIS

THROUGH: • Analysis - Research - Drawing

• On-Site Observation, Documentation & Mapping







Fix Park, Athens (2021) by Ecoscapes

PRESERVATION OF EXISTING VEGETATION

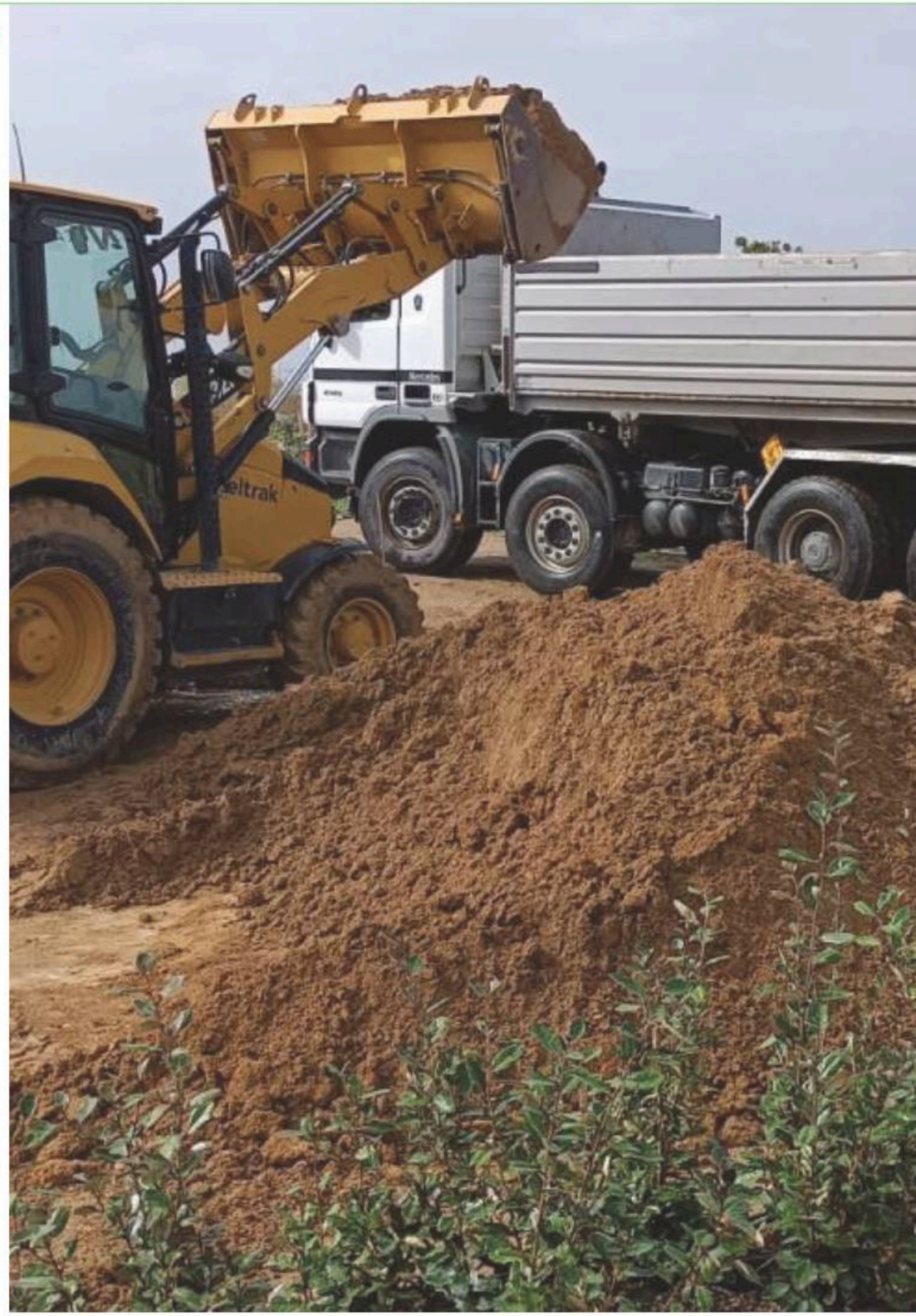
REINFORCEMENT OF VALUABLE SITE FEATURES

DESIGN BASED ON THE NEEDS OF THE SITE

SOIL PRESERVATION & IMPROVEMENT

FIELDWORK PROCESS

- Removal of the upper 10 cm of soil
- Deep soil loosening and aeration to a depth of 30 cm
- Incorporation of soil amendments
  – compost, pumice stone, sandsoil
- Addition of new topsoil to the final 10–20 cm layer
- Protection of existing tree root zones
- Reuse of excavated soil on site, where suitable



Private redidence, Naxos (2025) by Ecoscapes

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RESILIENT & BIODIVERSITY-DRIVEN **PLANTING**

- **Preserve & Enhance Existing Vegetation**
  Retain existing planting and improve its long-term health and maintenance.

- **Strengthen the Understory**
  Increase planting density and diversity at the understory level.

- **Select for Long-Term Resilience**
  Use a carefully considered plant palette adapted to site conditions, maintenance capacity and long-term sustainability. The use of **native plant species** is important for maintaining the stability of ecosystems.

- **Seasonal Colour & Biodiversity**
  Introduce seasonal plants and perennials to enhance biodiversity, visual interest and the **community's experience** of the space.W



Proposal for *Ano Patisia Park* by Ecoscapes developed as part *of Cooling Heavens*

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REDUCED WATER CONSUMPTION

LIMITED USE OF TURF

We use drought-tolerant, warm-season varieties to reduce irrigation demand, in targeted areas where turf is needed.

AUTOMATIC IRRIGATION SYSTEM

- **Irrigation pipes and sprinklers/drip lines** that distribute water.
- **Controllers** that manage when and how long irrigation operates.
- **Rain Sensors** that prevent irrigation during rainfall and reduce water waste.
- **Weather Stations** that adapt irrigation to real-time weather and site conditions.









Fix Park, Athens (2021) by Ecoscapes

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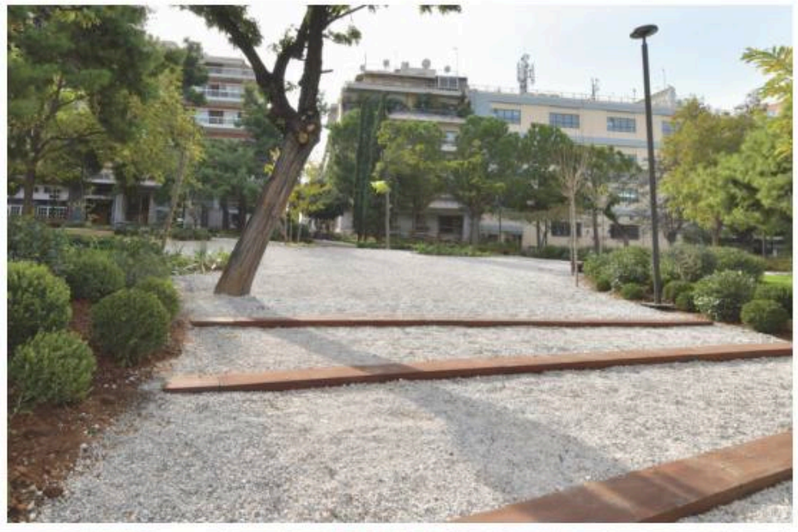
LIMITED USE OF NON-POROUS MATERIALS

Non-porous surfaces prevent rainwater from reaching the ground and disrupt habitat areas.







Japanese Garden, Athens (2021) by Ecoscapes



Pocket Park, Athens (2021) by Ecoscapes



Mariannas Bardinogianni Park, Athens (2025) by Ecoscapes

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URBAN FURNITURE

Refurbish Existing Furniture

Existing urban furniture and site elements are refurbished and upgraded where possible, extending their lifespan and reducing material waste.

Integration of Art

Integrating art into the landscape design strengthens local identity and creates meaningful, engaging public spaces.

Recycling

Placing recycling bins where trash cans are located encourages them to recycle plastic, paper, and glass waste.

Urban furniture made from sustainable materials

Artificial elements, including park benches, can be made from durable, recyclable materials.





Fix Park, Athens (2021) by Ecoscapes

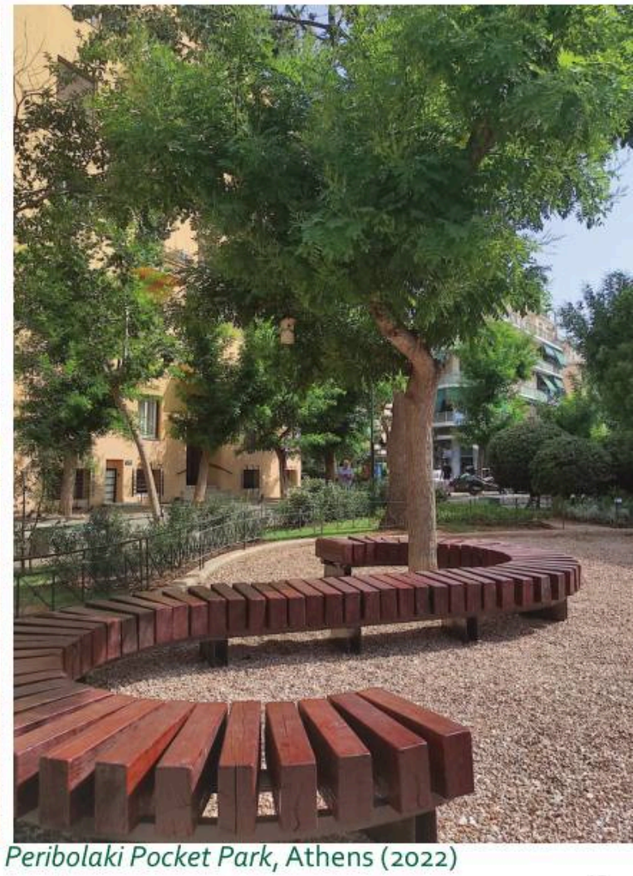


Kolonos Pocket Park, Athens (2021) by Ecoscapes





Mariannas Bardinogianni Park Athens (2025) by Ecoscapes



Peribolaki Pocket Park, Athens (2022) by Ecoscapes

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Installation of nesting sites for insects and birds

Incorporation of the needs of urban wildlife insects and birds into the design of urban open spaces. Enhancement of biodiversity.

Urban Elements for Social Engagement

Lighting, water features and activity-oriented furniture enhance the use of public space, foster social interaction and support ecological awareness.















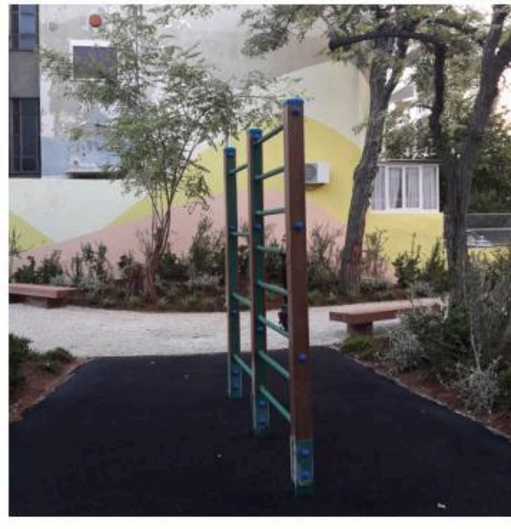

Various *Pocket Parks* (2020-) by Ecoscapes

Installation of nesting sites for insects and birds
Incorporation of the needs of urban wildlife insects and birds into the design of urban open spaces. Enhancement of biodiversity.

Urban Elements for Social Engagement
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River West, Athens (2021), by Ecoscapes

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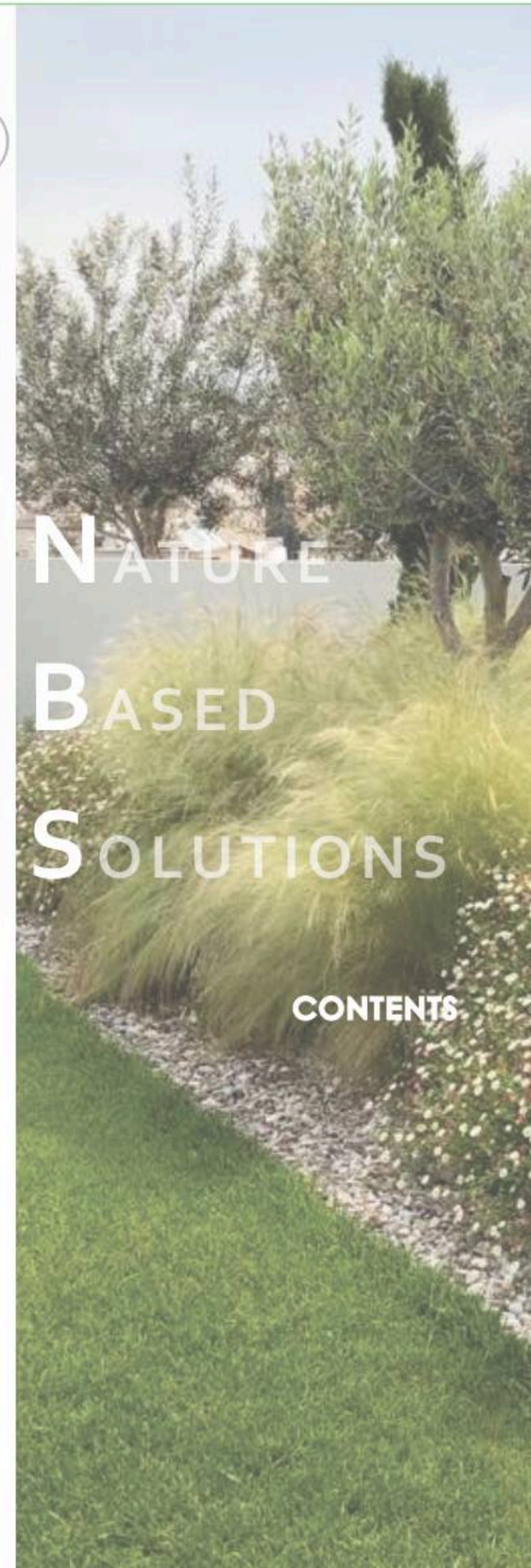

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RAIN GARDEN

Stormwater Management

1. Drainage grate
2. Bioswale
3. Rain garden

Enhancement of biodiversity

4. Sensory garden - Polinator garden

Microclimate regulation

5. Micro forest

Social and recreational benefits

6. Urban furniture - benches & seating



Agios Nikolaos grove, Athens (December 2024 – May 2028)

- **Existing Runoff & Erosion**

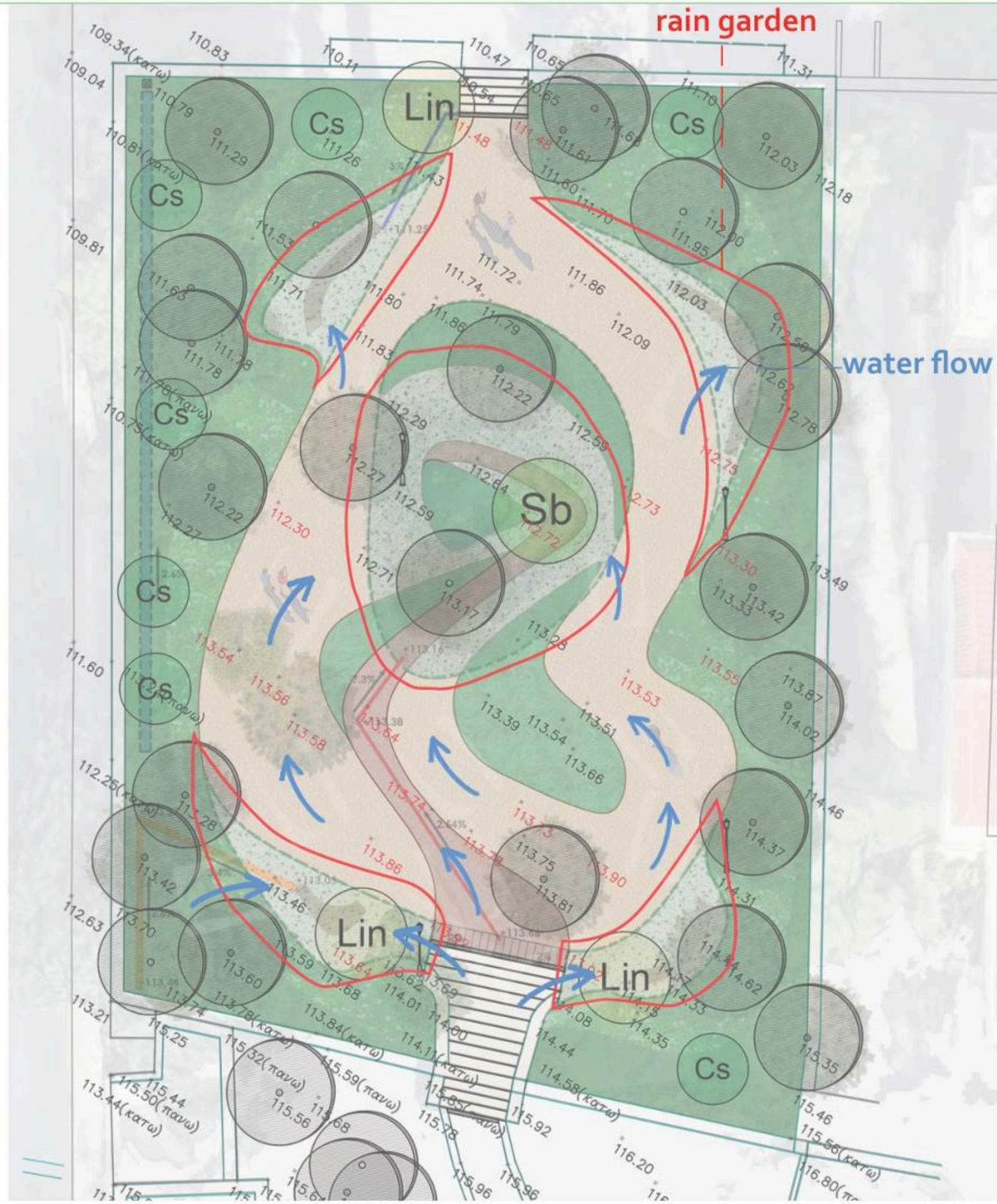
  Upstream runoff from the surrounding areas currently enters the site as surface flow, causing significant axial erosion, particularly at the marble staircase.

- **Rain gardens as NBS**

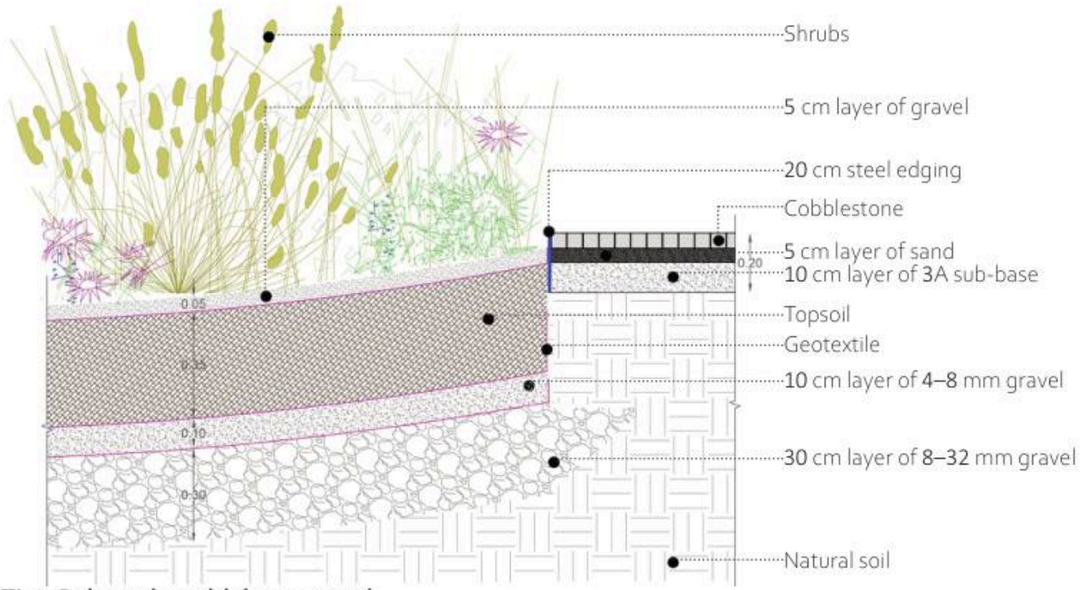
  The proposed drainage system redirects runoff sub-surface into rain gardens, where it is distributed, infiltrated and temporarily stored.

- **Retention, Delay & Controlled Overflow**

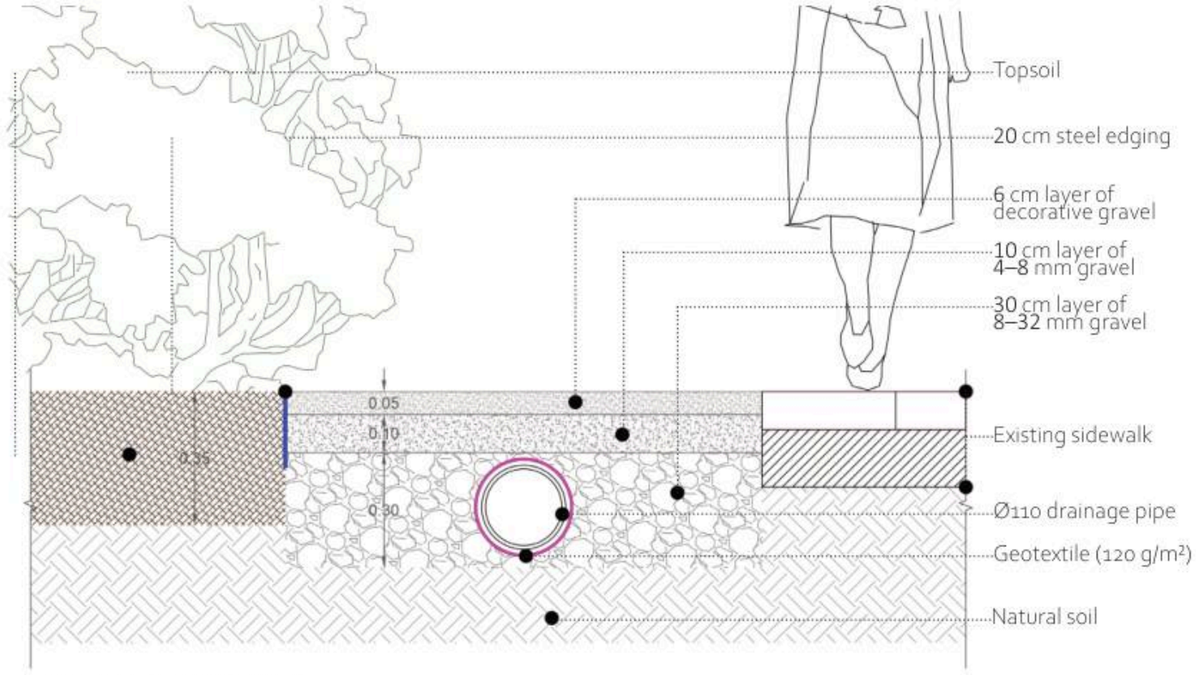
  Rain gardens and gravel surfaces retain and slow stormwater, reducing peak flows and providing controlled overflow to the existing drainage network during prolonged rainfall events.



Agios Nikolaos grove, Athens (December 2024 – May 2028)



DTL 2: Raingarden with loose gravel



DTL 3: Drainage channel



Agios Nikolaos grove, Athens (December 2024 – May 2028)

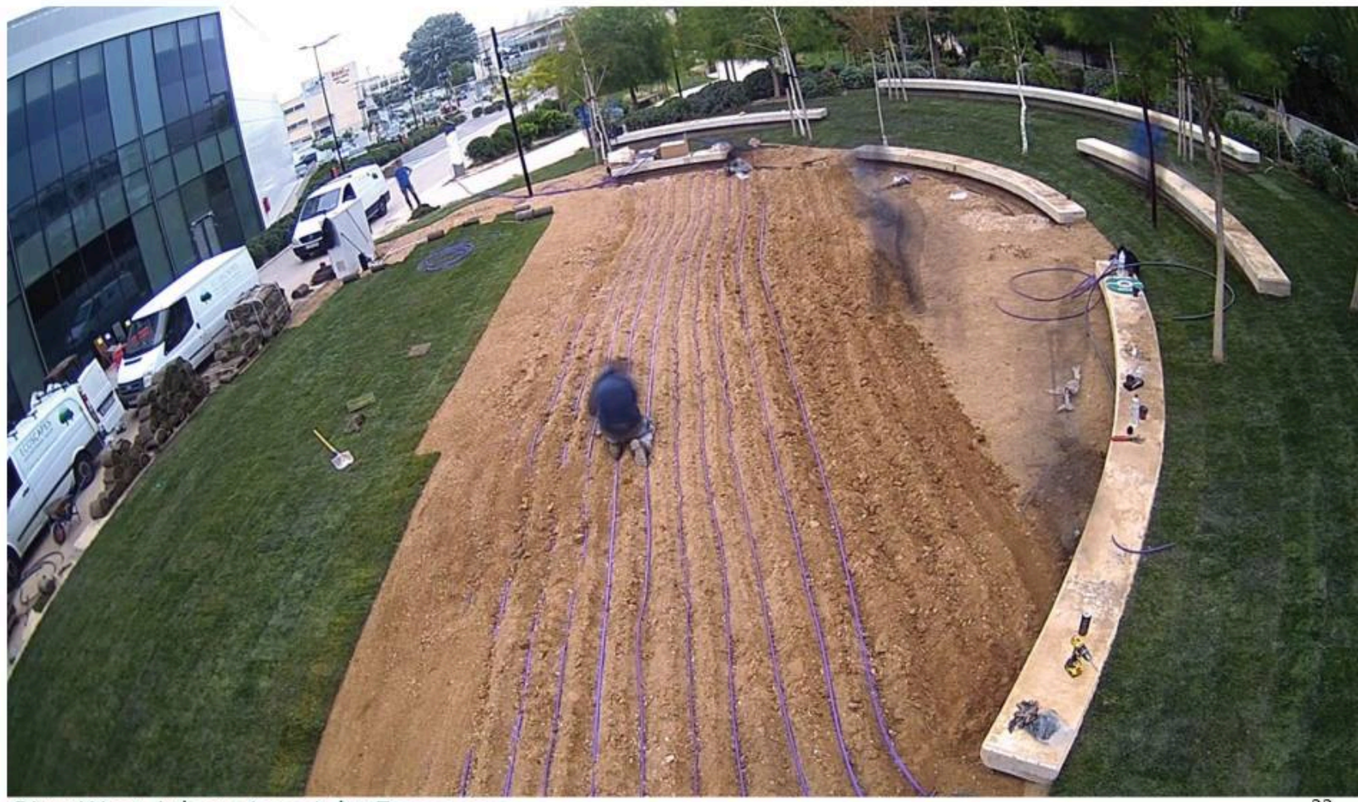
- Installation of a **network of infiltration pits** (0.40x 0.40 m) and a **central collection pit** (4.00 × 4.00 × 2.00 m) extending through the compacted, impermeable sub-base to promote infiltration into the natural soil.

- Infiltration pits are covered with a **grate** and **geotextile** to allow water infiltration while **preventing soil entry**.

- The **pits** are **hydraulically connected** to form a stormwater drainage network.

- **Excess stormwater is collected in the central pit** and discharged by an automatic float-controlled stormwater pump.





River West, Athens (2021), by Ecoscapes

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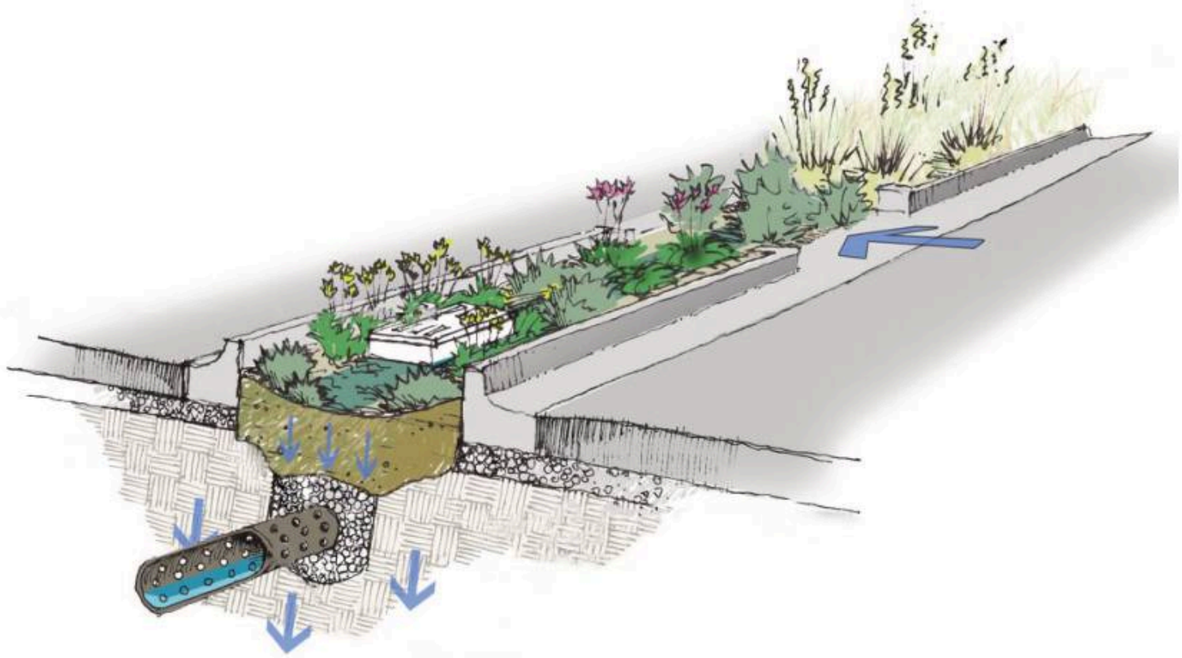
BIOSWALE & TREE PLANTING









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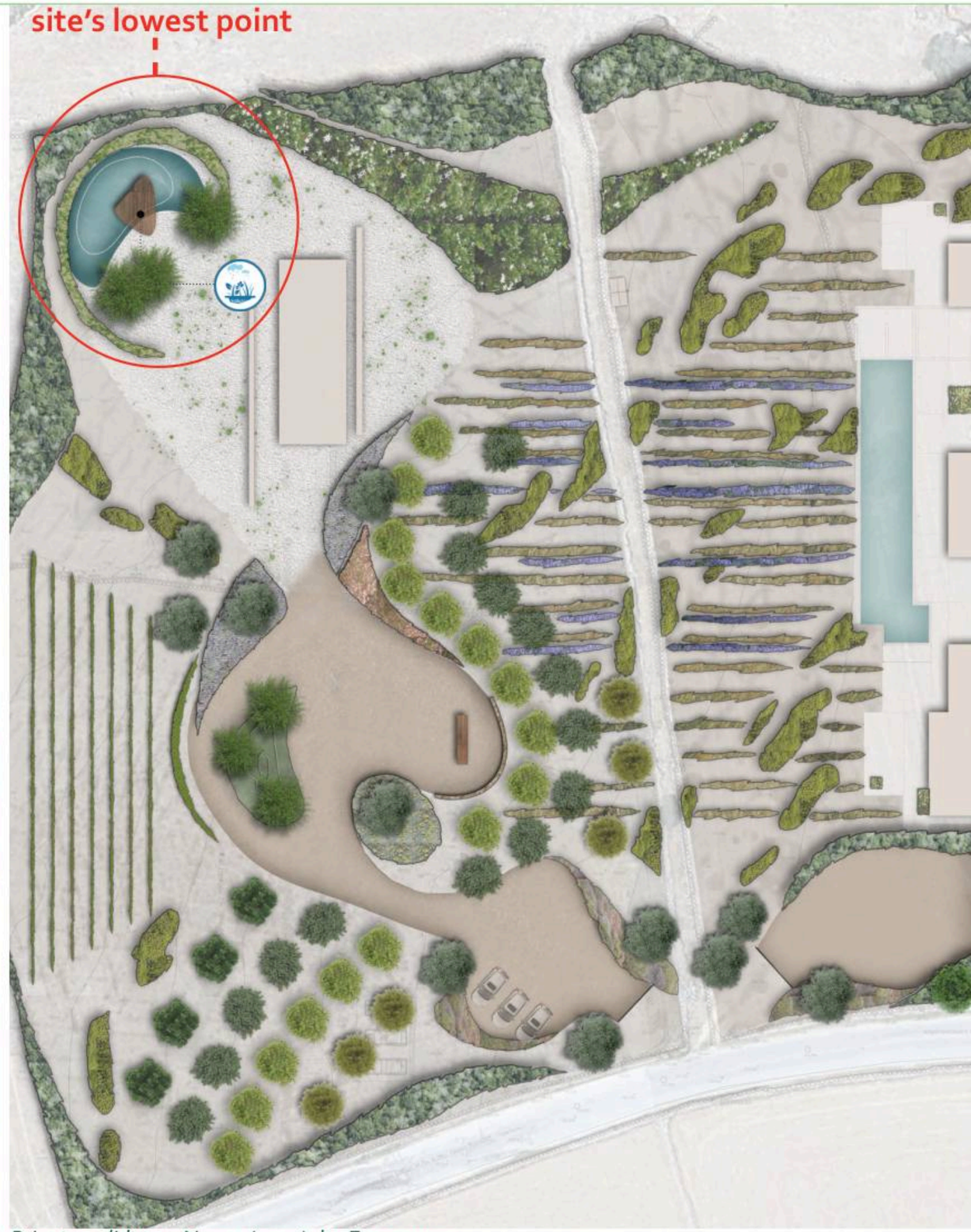
RETENTION POND

Lake with fluctuating water level







Private redidence, Naxos (2025), by Ecoscapes

PERMEABLE PAVEMENTS

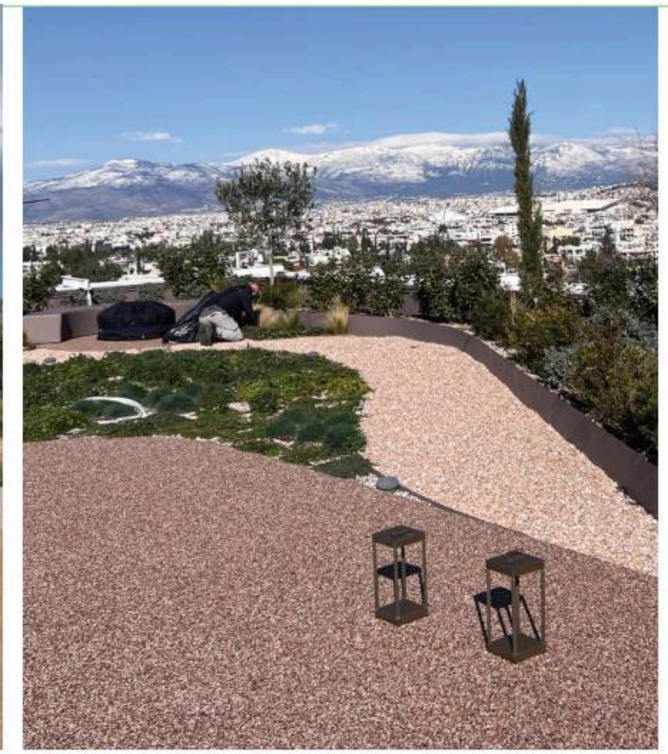






Pocket Park, Athens (2021) by Ecoscapes









Office Building Rooftop, Athens (2024) by Ecoscapes

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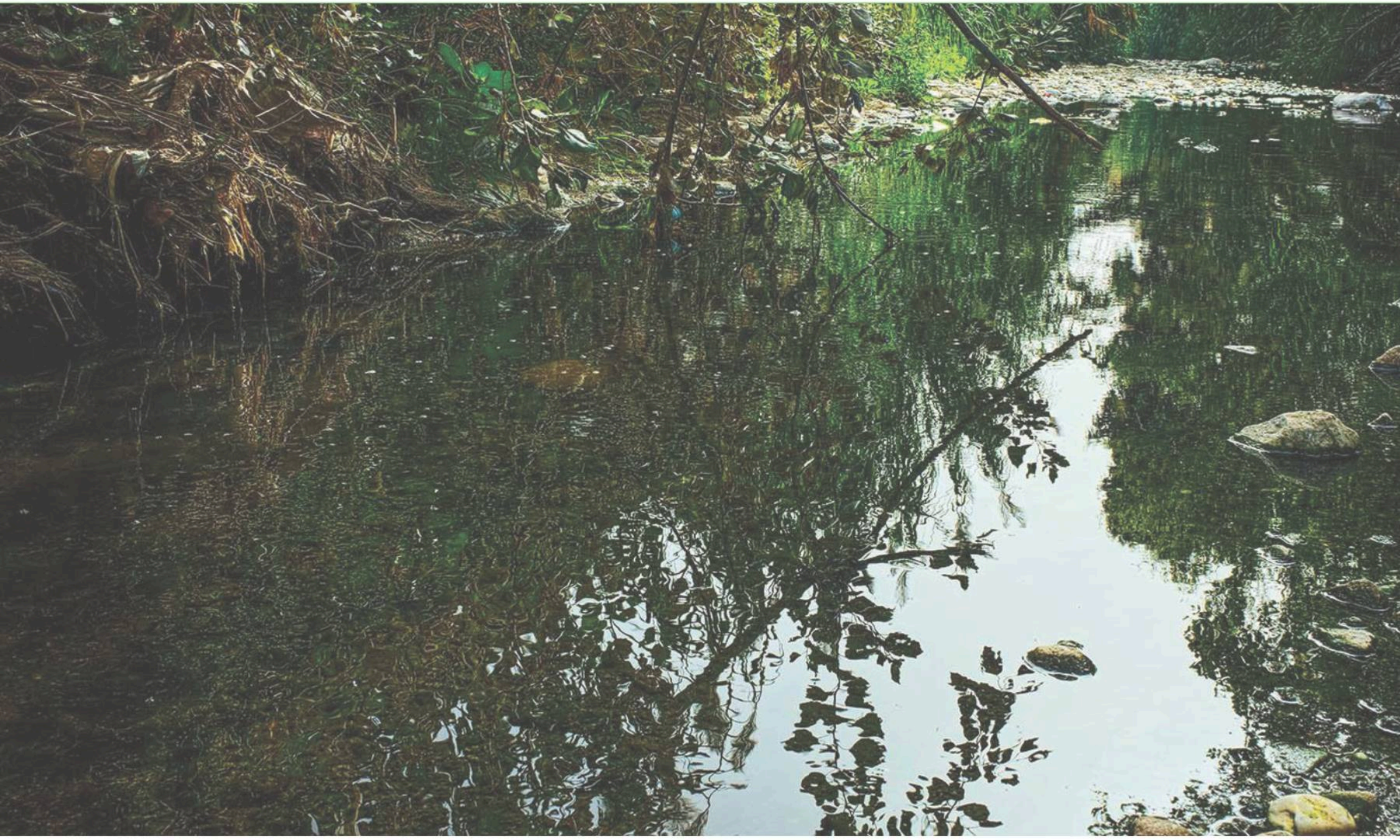

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