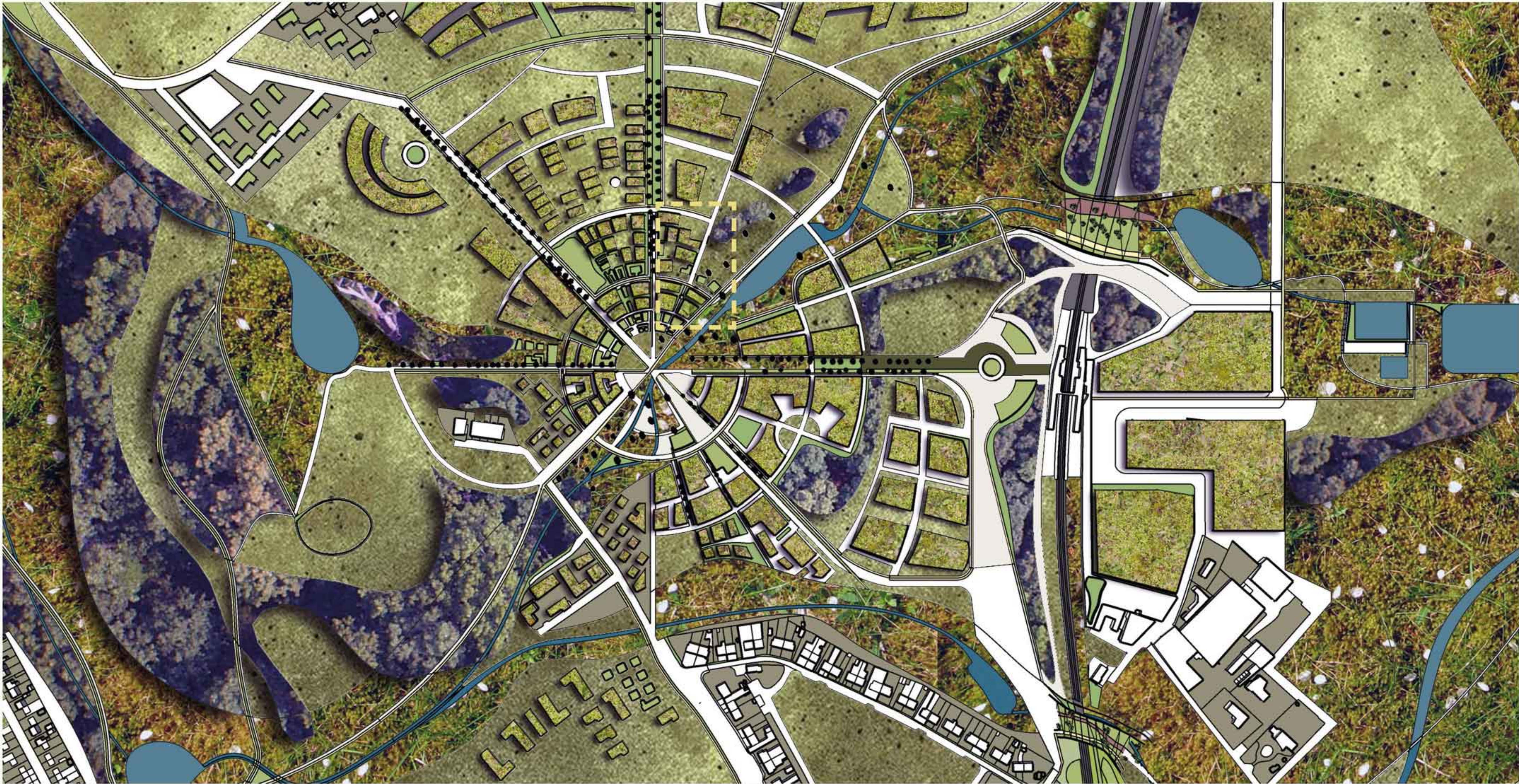


Shawfair

The Community Network: A Landscape-led Framework for Living

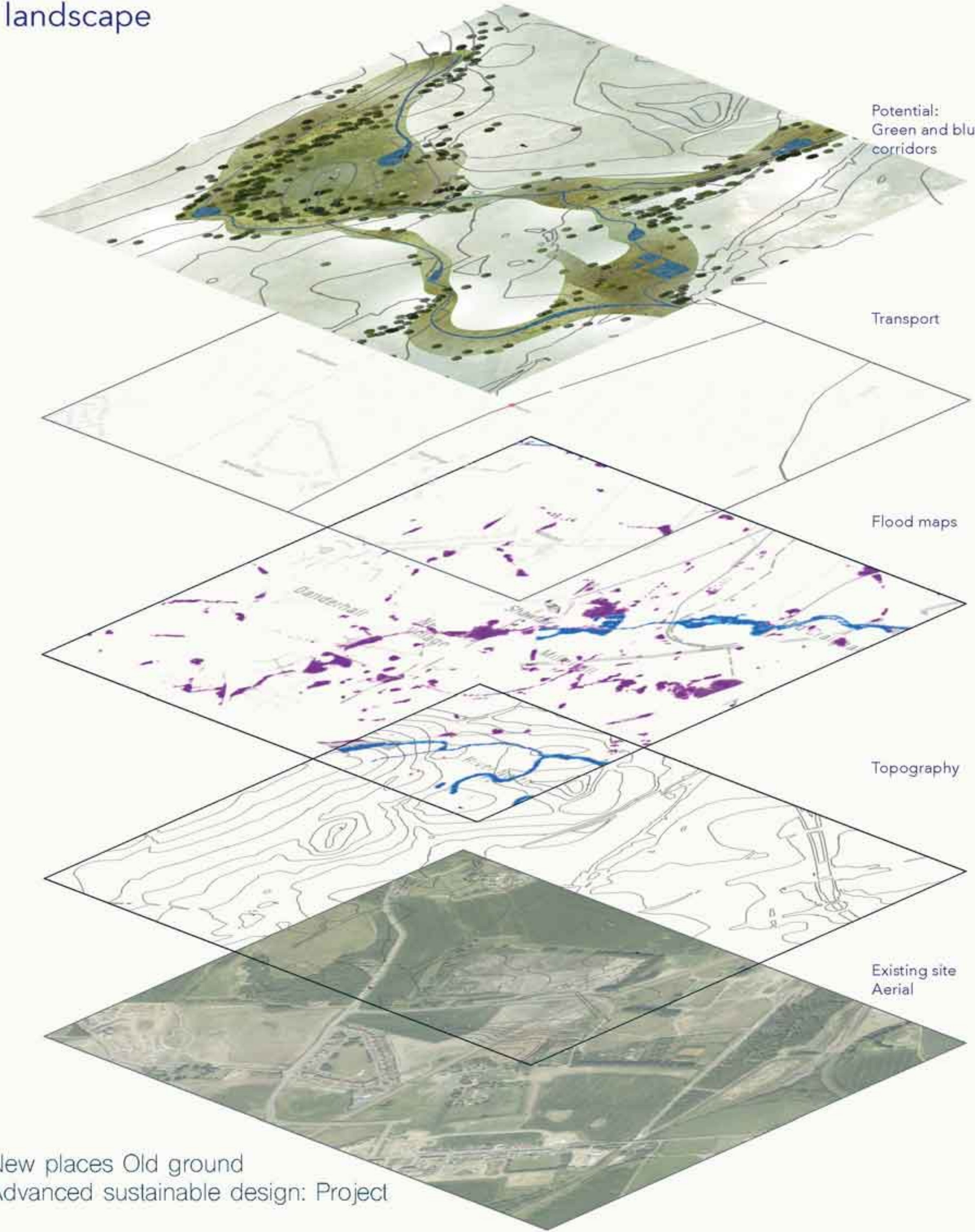
Brief:

The project utilises the landscape as a framework for planned and strategic development, for the community of Shawfair. Beginning with the landscape allows for a sustainable and local settlement that meets the needs of people, whilst having a contribution to the local ecology and surrounding environment over time. Increasing density, walk-ability and constant access to natural + green spaces are crucial parts of the design hypothesis working with the existing landscape features, geology and processes. Mitigating local environmental challenges and promoting biodiversity. Providing a landscape-based framework for development seeks to enhance the physical connections of people, integrations with the natural environment and create a settlement that is based around public transport, connections to surrounding areas and reducing the impact on the environment locally as well as globally.



1:500 (A1) Masterplan

Existing layers of the landscape



New places Old ground
Advanced sustainable design: Project

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Problems and solutions

- * Reducing the dependency on the car - Improving public transport, developing cycling routes and walk-ability providing comfortable and accessible spaces for walking for all age groups and abilities
- * The lack of connectivity between people and their surroundings - Creating a series of green corridors connecting people to nature, local amenities, community /cultural sites and surrounding towns and ecological sites
- * Addressing the current system for development in Midlothian - Providing a flexible but dense residential and commercial area in the town centre that provides a sense of place and community through the proximity of living, natural and working spaces. Designing a strategy that can be phased over time to support a growing community and greater adaptability.

Objectives:

This project aims to re-mediate the landscape of Shawfair as a framework for regeneration and growth.

Using the landscape as a means of improving existing and providing new connections between people, nature and their surrounding settlements through creating 'green corridors and waterways'.

These corridors in the short term will serve as re-mediating forms and connecting routes improving the existing contaminated coal mining sites at the centre of Shawfair. In the long term these will have the ability to evolve and grow with the changing needs of Shawfair and the wider region.

Having a phased development in the project will ensure a time-based strategy that seeks meaningful development of the land, infrastructure and ecology that meets sustainable frameworks.

Using a phased approach allows for design flexibility and adaptability moving into future phases and climatic changes.

Existing site conditions



The existing state of the site has historic connections with coal mining and agriculture forming the basis of the landscape strategy, re-mediating the contaminated / scarred landscape and finding new forms of landscape for agricultural purposes and creating a place for living.

Areas of heritage and opportunities



5 Materials and resources

Using the heritage and existing materials on site will enable the connections to the site's history whilst finding use of local materials such as re-use of steel and old rubble for supporting the new habitats. This reduces the carbon footprint of importing materials and creates an efficient use of resources.

Areas of topographical interest and water way creation



3 Water efficiency and sanitation

Identifies in the research and layering phase the site has some issues with surface water flooding and river flooding, examining the topography of the site and existing bodies of water allows for the creation of new water-ways that manage the flows of water around the site and create new habitats.

Green corridors established around water-ways



4 Connectivity to nature and environment

The new water networks create the footprint for the 'green corridors' these aim to remediate the existing landscape providing new habitats and improving the conditions of the soils and water from previous mining activities. The green corridors are also free from cars and provide important pedestrian and cycle routes around the local parts of the site and the wider region. This improves connections of the people living in the area to both the natural environment and other settlements.

Water meadows and tree planting for biodiversity



2 Biodiversity and Life on Land

Extending the habitat around the water ways to create water-meadows and natural flood plains will greatly increase the species diversity and ecology of the site. This will also serve a purpose for the infrastructure of the site with natural methods to prevent flooding in the long-term. This area provides an important site for people to protect and take part in over time, engaging the local communities with issues of ecology and sustainable attitudes.

Infrastructure and the built form constructed around the landscape framework



6 Connectivity, location and transport

7 Integrative process

1 Sustainable site and community

Once the landscape has been established, the settlement can form around the green corridors and water-ways providing the people living there with the opportunities to constantly interact with nature. The routes and transport systems are also based on the green networks and frameworks integrating the landscape and human forms of infrastructure.

3D visualisation of above masterplan (looking South)



Town centre - Standard conditions

Community activities and the drainage area for the street rain garden run-off. The extensive trees and planting of the green corridor moving through the town centre provide habitat areas for recreation and allow for the water to move freely through the blue network established in Shawfair.



3D visualisation of above masterplan (looking East)



Town centre: Wet conditions

Town centre designed to manage surface run-off and excess water in more extreme weather and climate events, the island around the gap in the swales purposefully floods and the surrounding buildings and key routes are protected.



The Community Network: Micro-territories and habitats

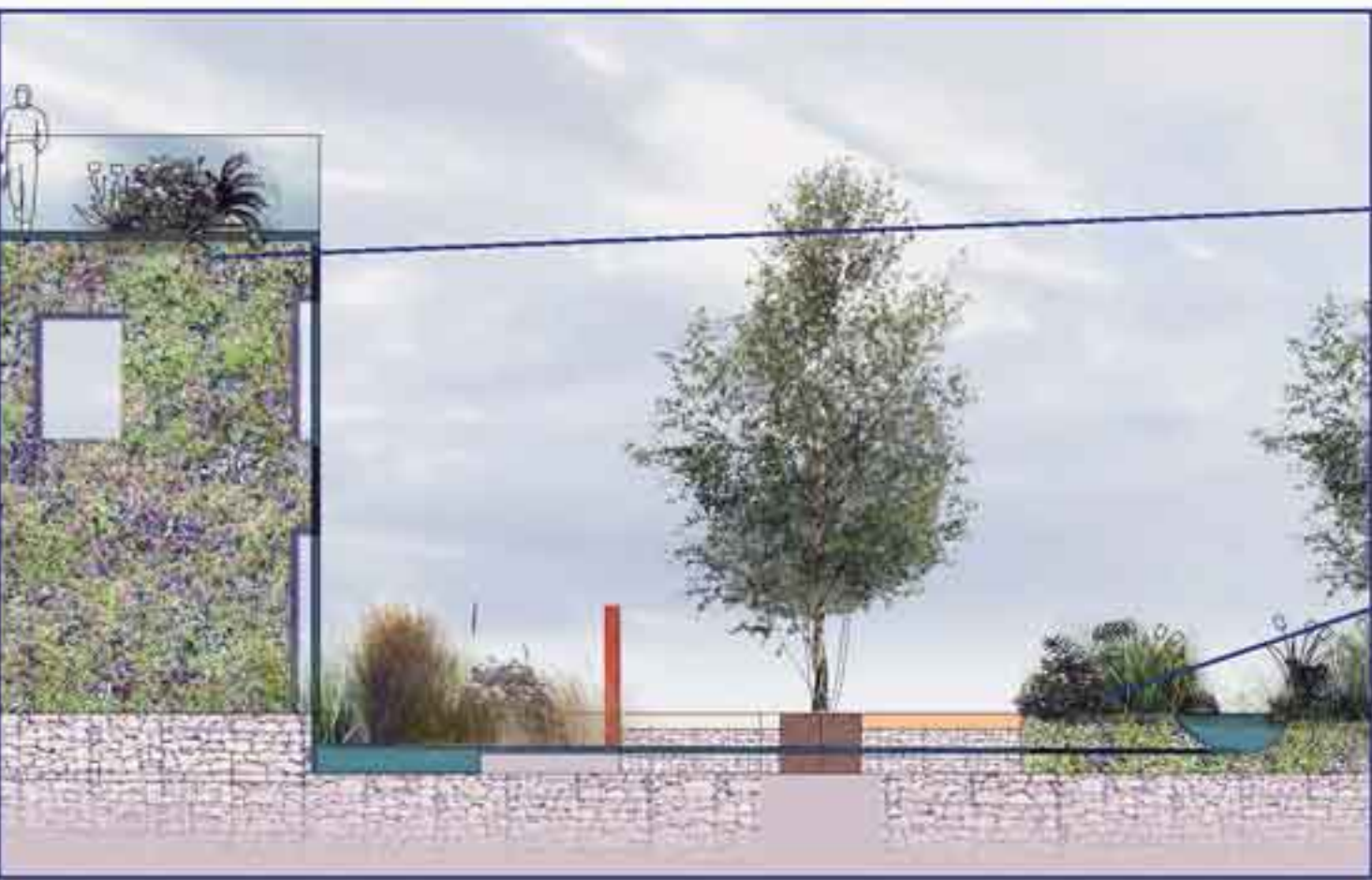


Key space typologies across the site

Rain gardens and green corridors



Green roofs and built infrastructure



Water meadows: flux



Materials palette: Hard-scape and Soft-scape

Pollinator strategy

The pollinator strategy planting will be used throughout the site but predominantly in the protected and natural areas of the site, this will include ornamental plants and herbs that flower year-round providing a source of nutrients for insects. Species include:

Bluebell, Bugle, Comfrey/Hellebores, Lungwort, Spring-flowering heather and Alliums. Chosen based on the Scottish pollinator strategy as a range of native species.



Sedum green roofs will be used for the majority of new buildings on the site along with green walls this enables a continuation of the landscape even over the built form. This not only replaces the space taken up by the buildings but should further enhance the biodiversity of the species range on the site.

Species of Flowering trees and shrubs will be used in the wider streets and around the street-swales. The species range is made up of hard wearing species and native species which are suitable for a busy street environment including:

Berberis, Blackhorn, Broom, Crab apple, Forsythia, Hawthorn, Rowan, Buddleia, Bramble, Cotoneaster, Honeysuckle.

Sedum based green roof



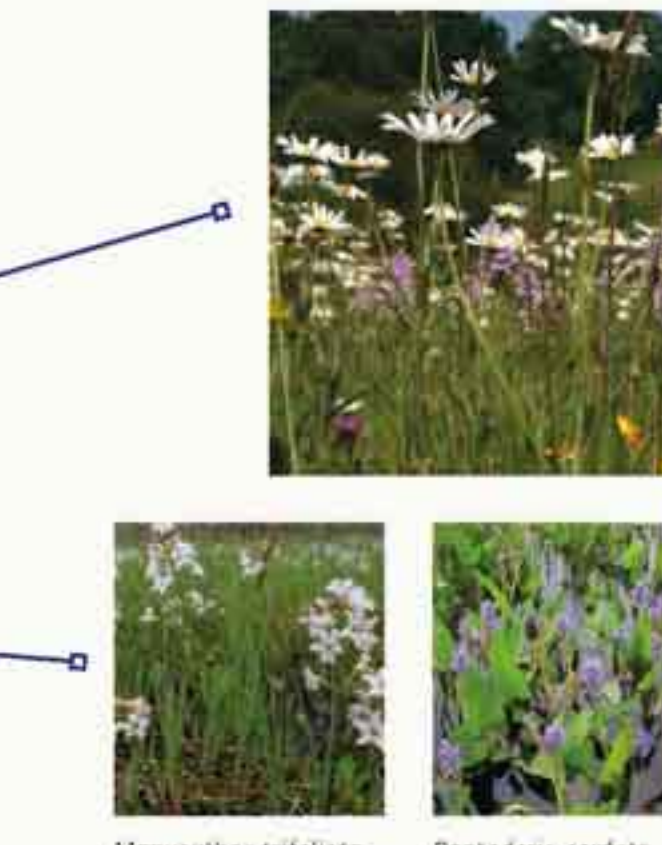
Planted green wall



The wetland and wild-flower planting makes up most of the protected and natural areas. These are designed to deal with fluctuations in water levels, mitigate flooding and provide seasonal interest for biodiversity and recreation. A range of native species and water purifying species have been selected that include:

Cowslip, Dandelion, Deadnettle/Bird's foot trefoil, Clovers, Devil's Bit, Scabious, Geranium, Knapweed, Ox-eyedaisy, Speedwell, Thistle, Vetch, Yarrow, Yellow Rattle, Autumn hawkbit, Clovers, Vetch

Native wild-flower meadow



Native wild-flower meadow



Materiality

Hardscape

The materials palette selected is reflective of the context of the site using existing materials to construct and give character to the new landscape and urban fabric of Shawfair.

The recycled wood and steel can be used for creating intriguing street-scapes and significantly reduce the need for importing materials. The steel use of weathered steel also links to the former context of coal mining on the site and being able to re-use those materials anew.



Trees

The planting palette is designed for both continuing the existing species selection on the site, including the silver birch trees already present in the forest to the East part of the site.

The additions include tree species suitable for street planting and species more restricted in height to prevent over-shading of the surrounding buildings. For the planting more wetland and rain garden species more suitable for planting along the new street and restored habitats.

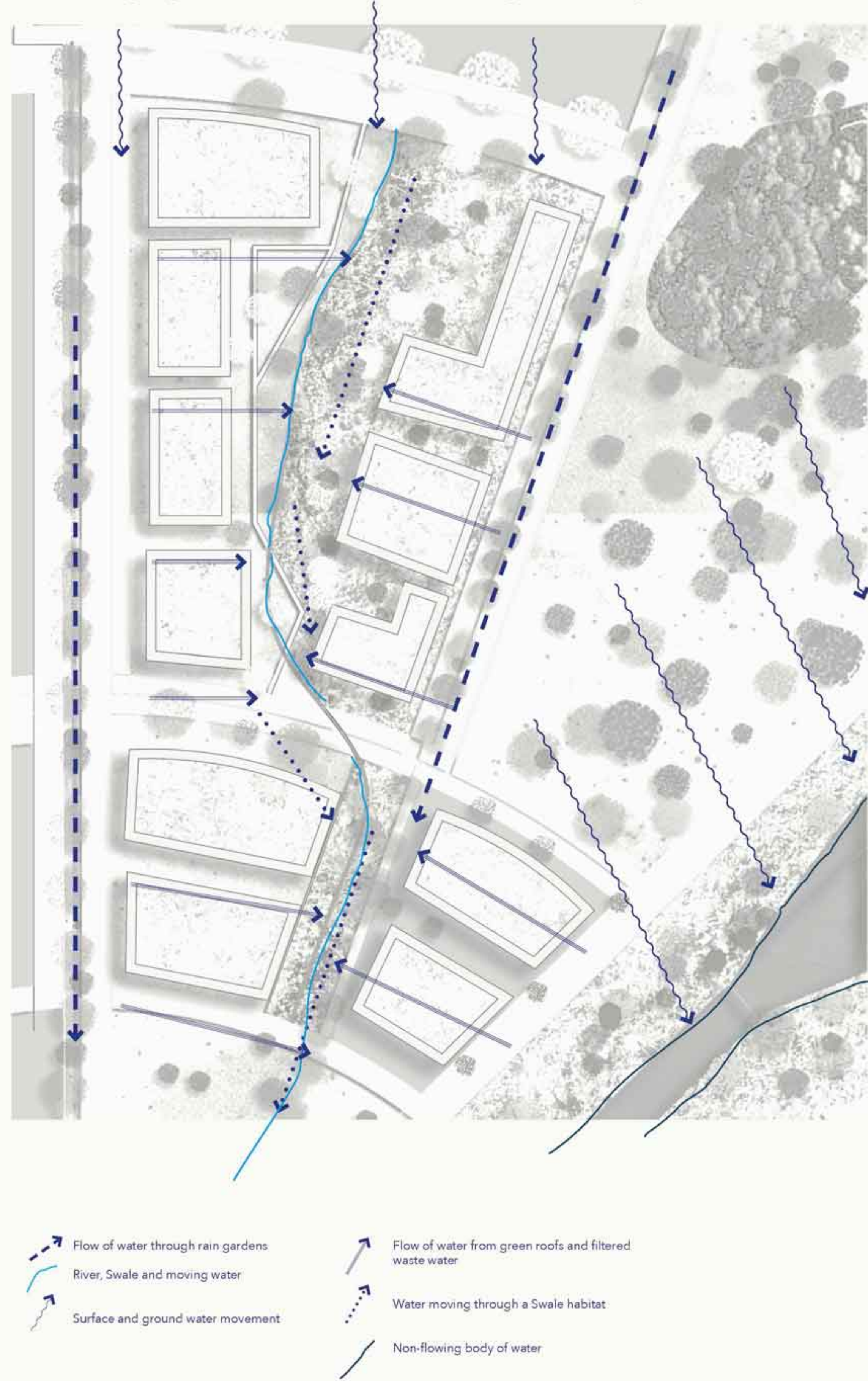


Planting

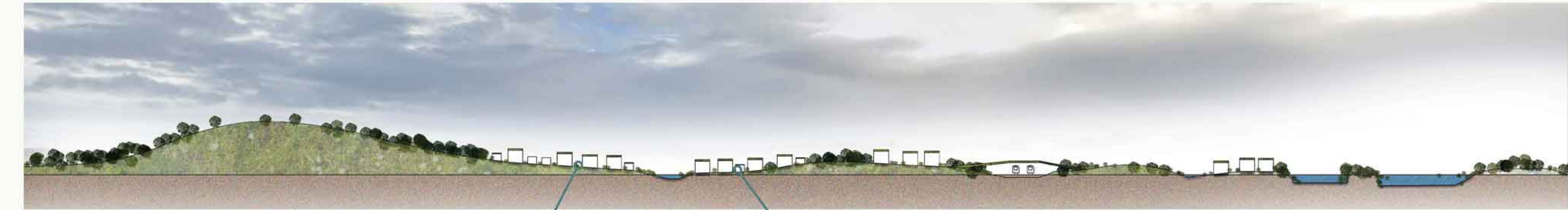
The species selected are also part of the Scottish biodiversity and pollinator strategy providing a diverse range of flowering and groups of plants to provide for the insects and bees on the site.



Blue and grey water movement through built-up areas

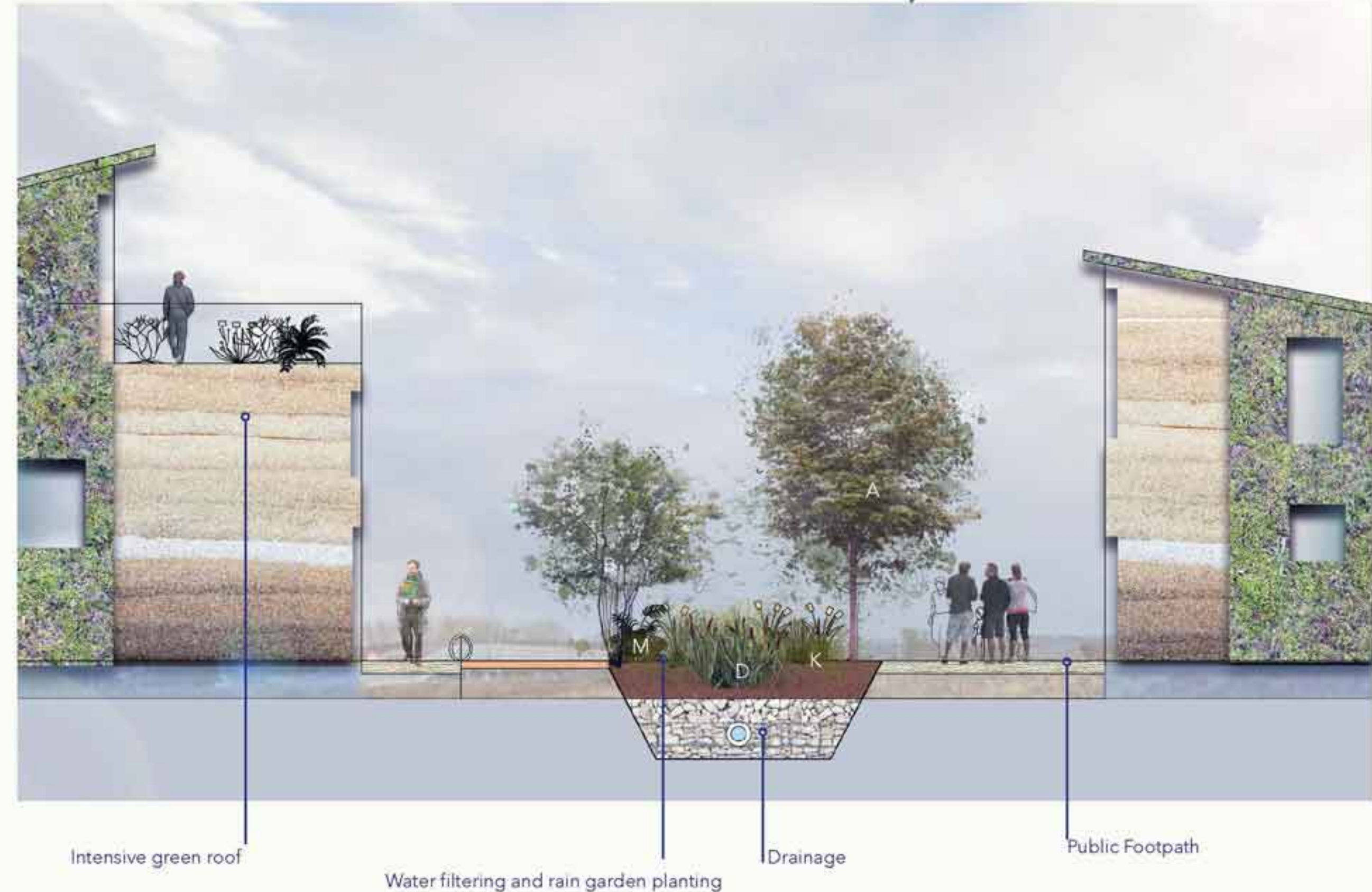


Section across the site



The community Network: Person

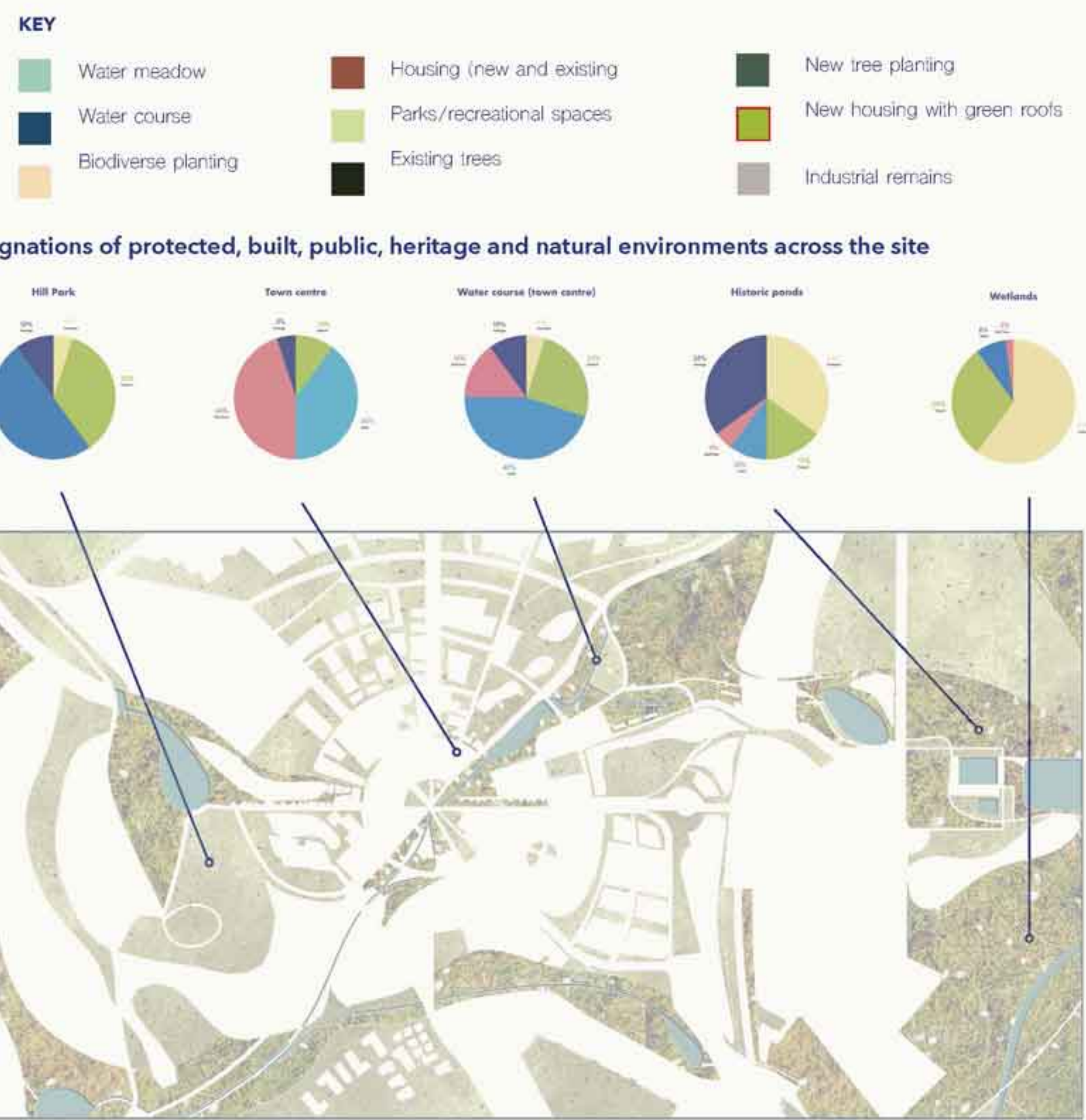
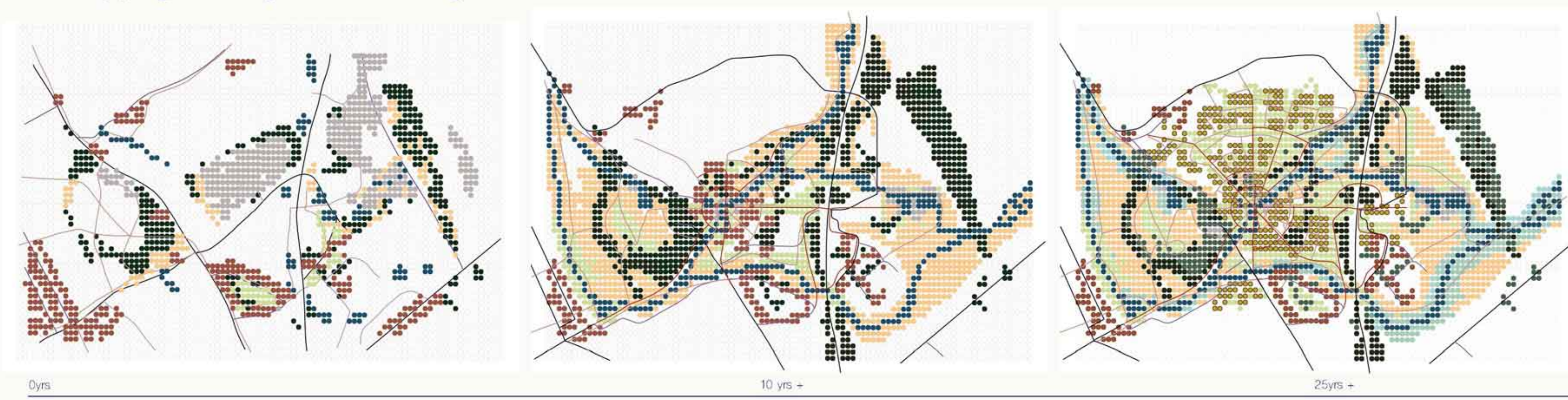
Bio-swale Street-scape: Dry conditions (Summer)



Bio-swale Streetscape: Wet conditions (Autumn/Winter)



Data Mapping and Projected site changes over time



Space use and distribution of activity across the site

