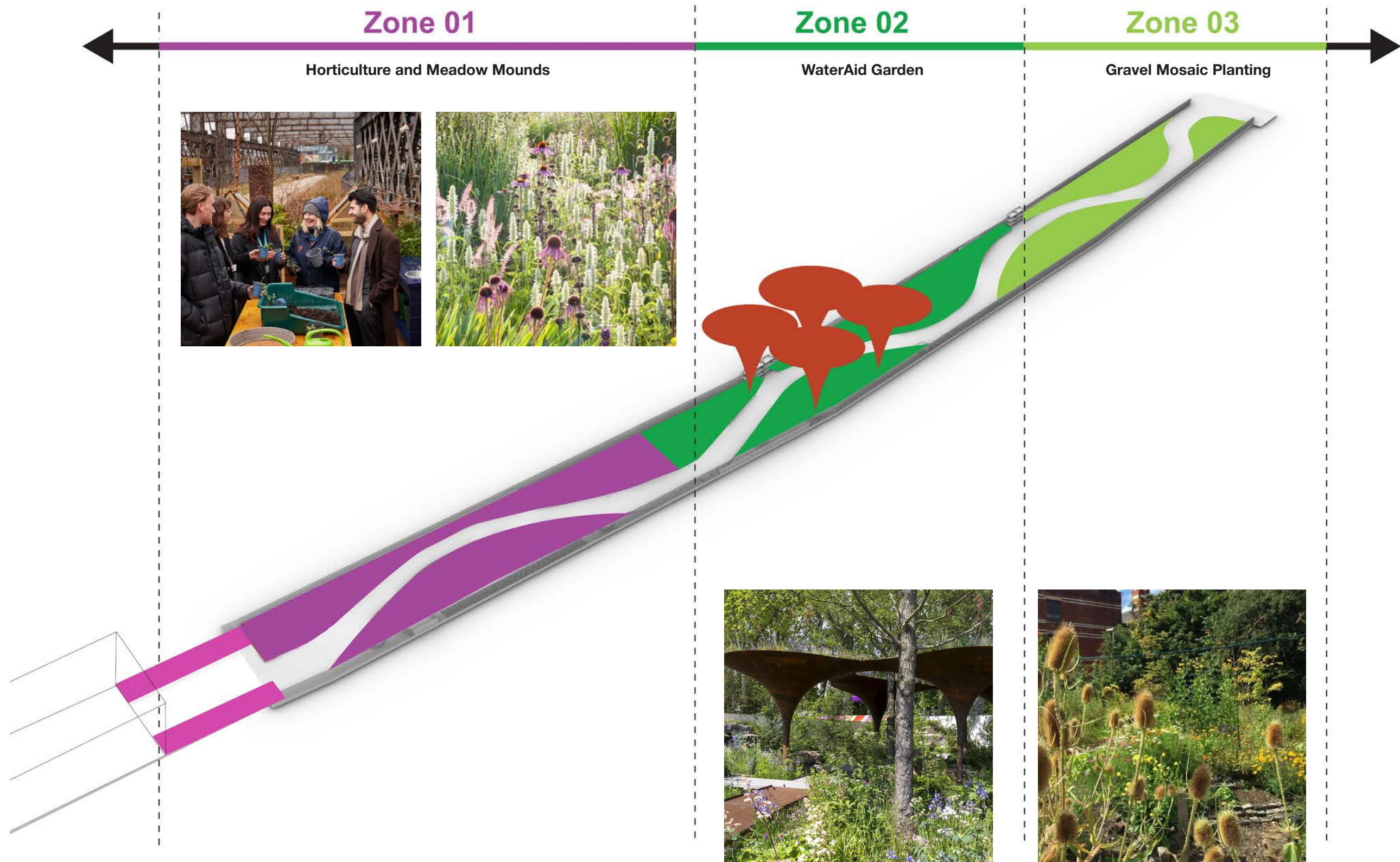


05 LANDSCAPE STRATEGY

Planting zones



05 LANDSCAPE STRATEGY

Zone 01 | Horticulture and Meadow Mounds

Horticulture

A 'live' working space for growing plants / composting / tool storage, water storage will be created next to the central exhibition building, using rain-water harvesting from the roof and canopy of the building. This is where the National Trust can engage with the community in horticultural activities, and to have an operational area to help maintain the gardens as they grow, with a greenhouse and tool shed.

Meadow Mounds

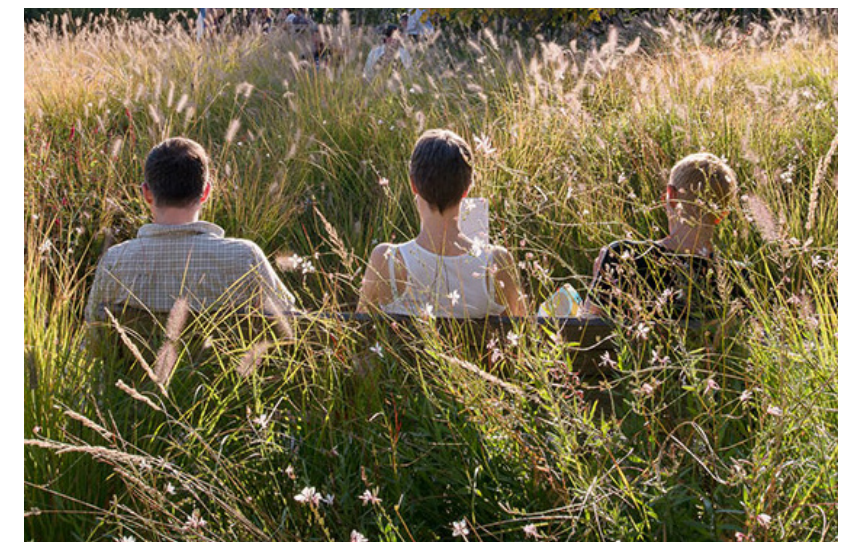
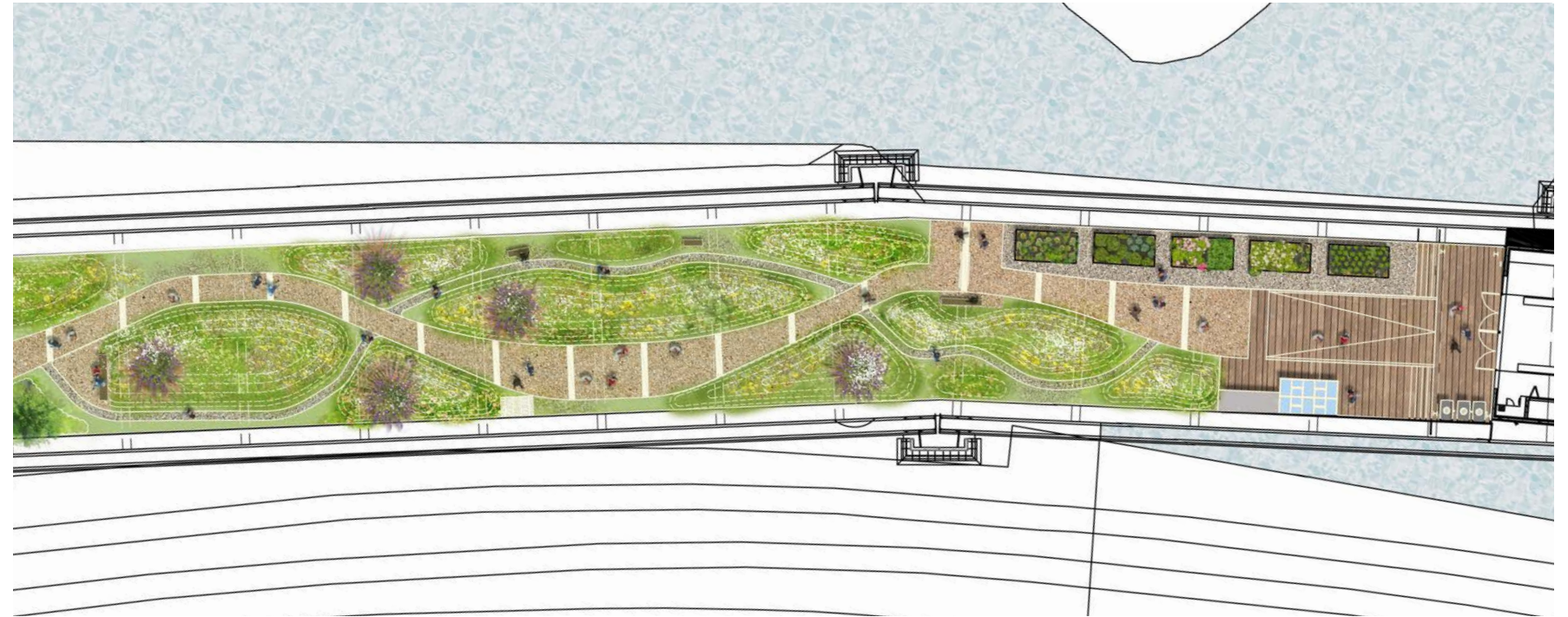
Creating a sense of discovery and transition through the meadow mounds with raised planting, helping to frame and reveal views toward the WaterAid Garden.

Secondary informal, narrow gravel paths wind through in between the mounds, to create a choice of routes, and add a sense of exploration and journey to the Viaduct experience.

Swaying grasses, soft textures and natural feel with native wildflowers, supplemented with nectar-rich plug planting will evoke the character of a flowing meadow with enhanced biodiversity, ecological value, and catching the light and breeze.

A combination of wildflower turf and seed will be used over the mounds, and will be designed to add ecological value, supporting a variety of beneficial insects and butterflies. A general wildflower landscape mix will be used, with potential to include seed collected from areas of the existing viaduct to create a mix which is local and meaningful to the viaduct.

Through the use of supplementary plug plants of perennials and grasses, the season of interest and colour will extend, and structure and rhythm will be created, providing a sensory experience for people to enjoy.



05 LANDSCAPE STRATEGY

Zone 01 | Celebrating Seasonality

Spring / Summer



Autumn



Winter



05 LANDSCAPE STRATEGY

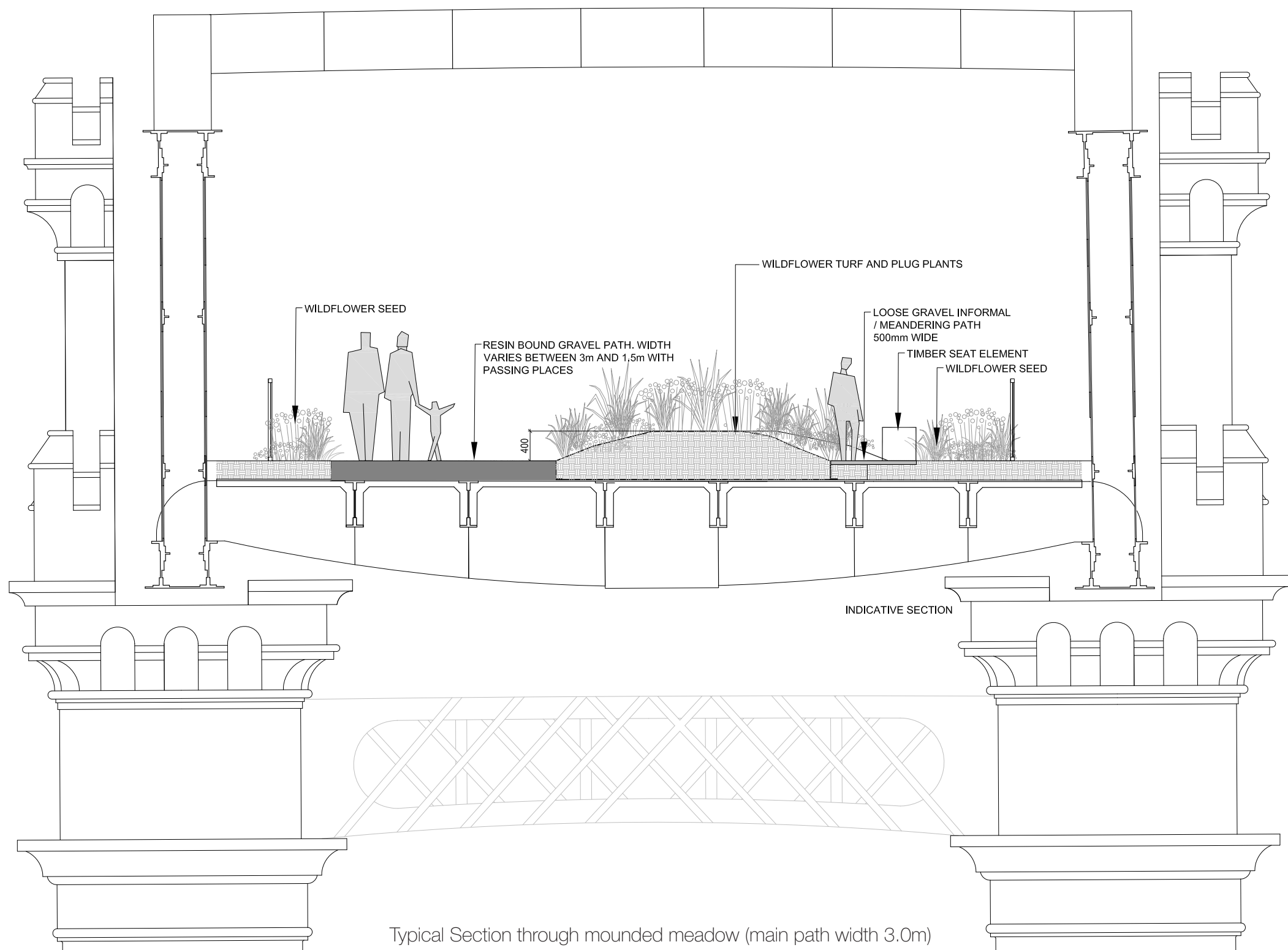
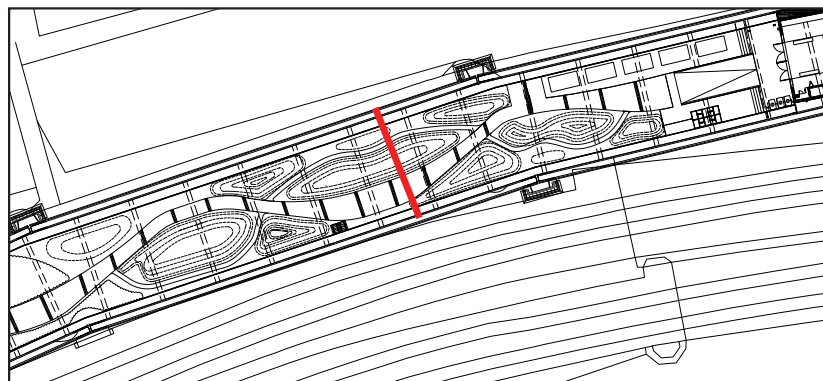
Zone 01 | Varying Planting Heights

The typical cross sections in the adjacent images shows the intent to create a mounded terrain within the wildflower zone, to support the planting arrangement above and create more interest, dynamics and intrigue to the journey along the viaduct.

The sections through the Meadow Mounds illustrate how having a raised profile can create a sense of immersion and exploration, creating a more tactile and sensory environment for people to move through and interact with. Bringing plants up towards eye level enables visitors to encounter flowers, butterflies and nature at a closer level of detail, which in turn imparts a sense of wellbeing and relaxation as people slow down their pace to engage with their environment.

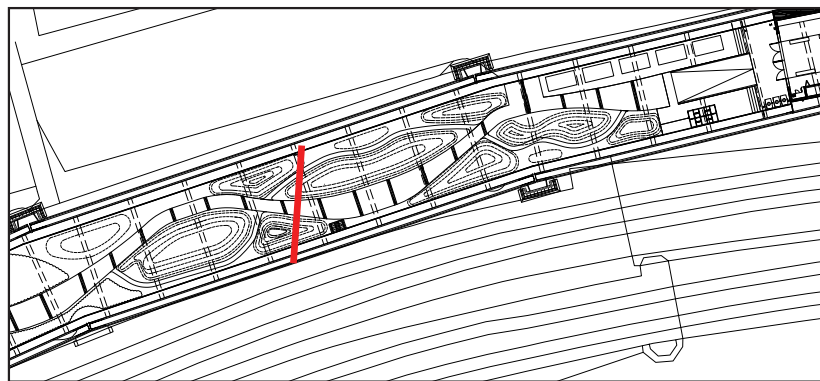
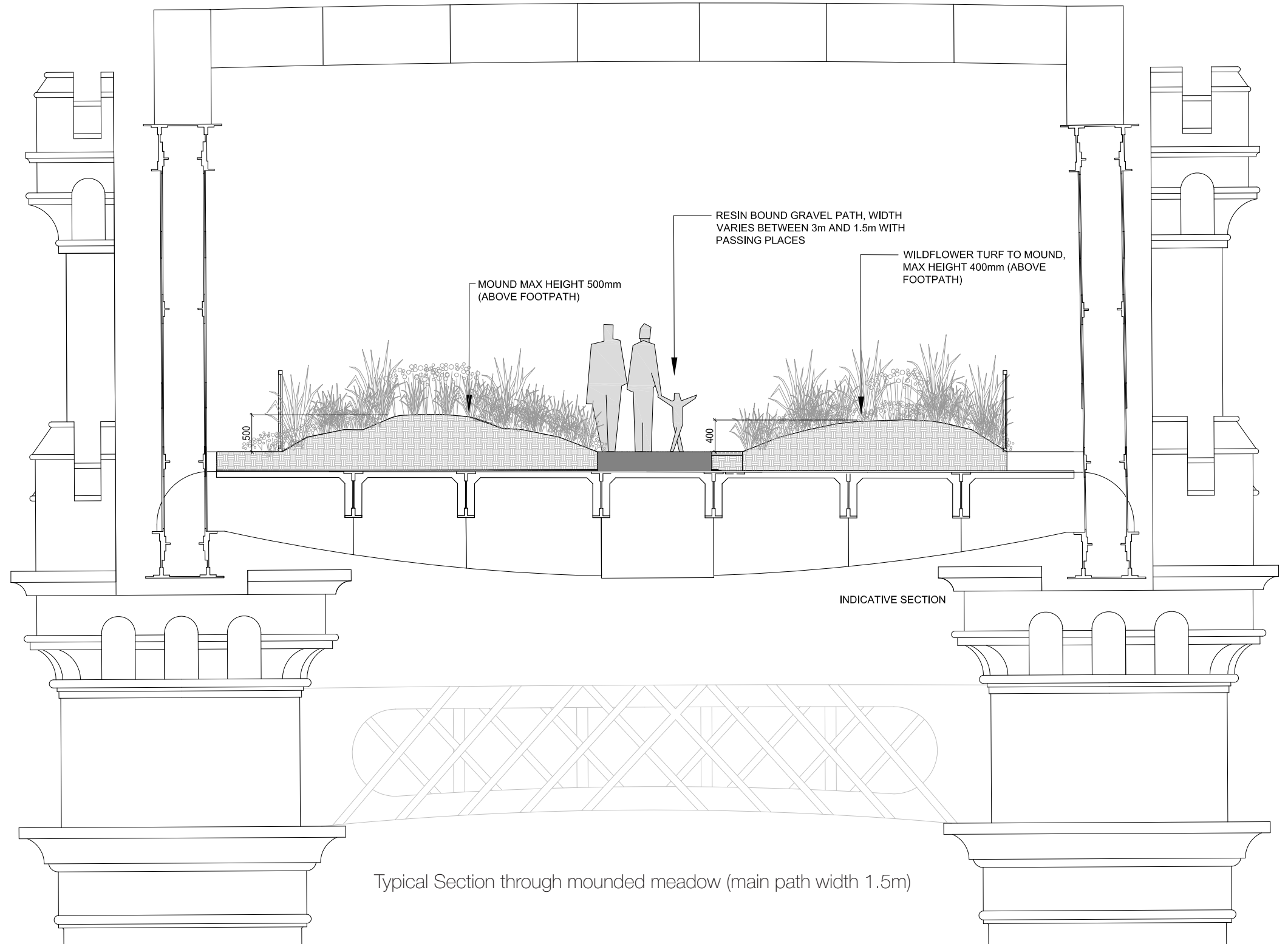
The removal of the existing gravel ballast and replacing with light-weight fill and growing medium enables planting to be at the same level as the paths. A combination of different shaped mounded soils create deeper pockets for larger specimens, which will be strategically positioned over the stronger beams of the viaduct structure.

The primary path width varies to reinforce a sense of discovery, and create a more interesting experience for people. The path width varies from 3m wide to 1.5m wide with passing places, located where key views have been identified within the 'Viaduct Vision' scheme.



05 LANDSCAPE STRATEGY

Zone 01 | Varying Planting Heights



05 LANDSCAPE STRATEGY

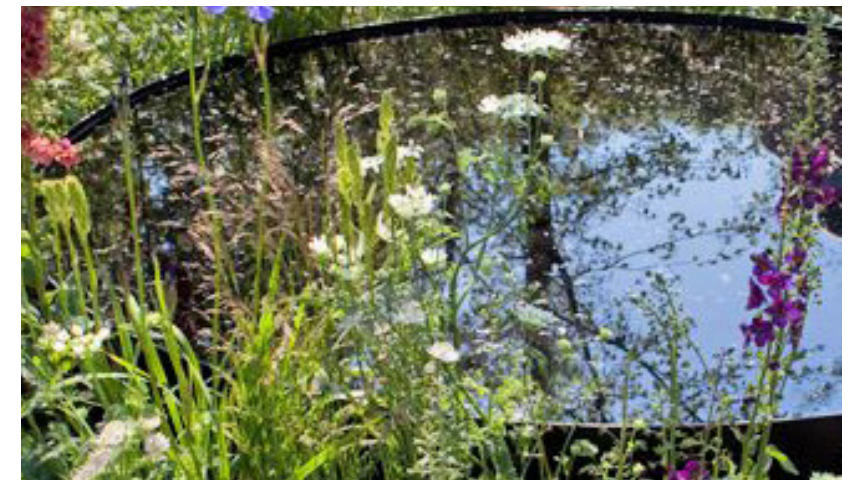
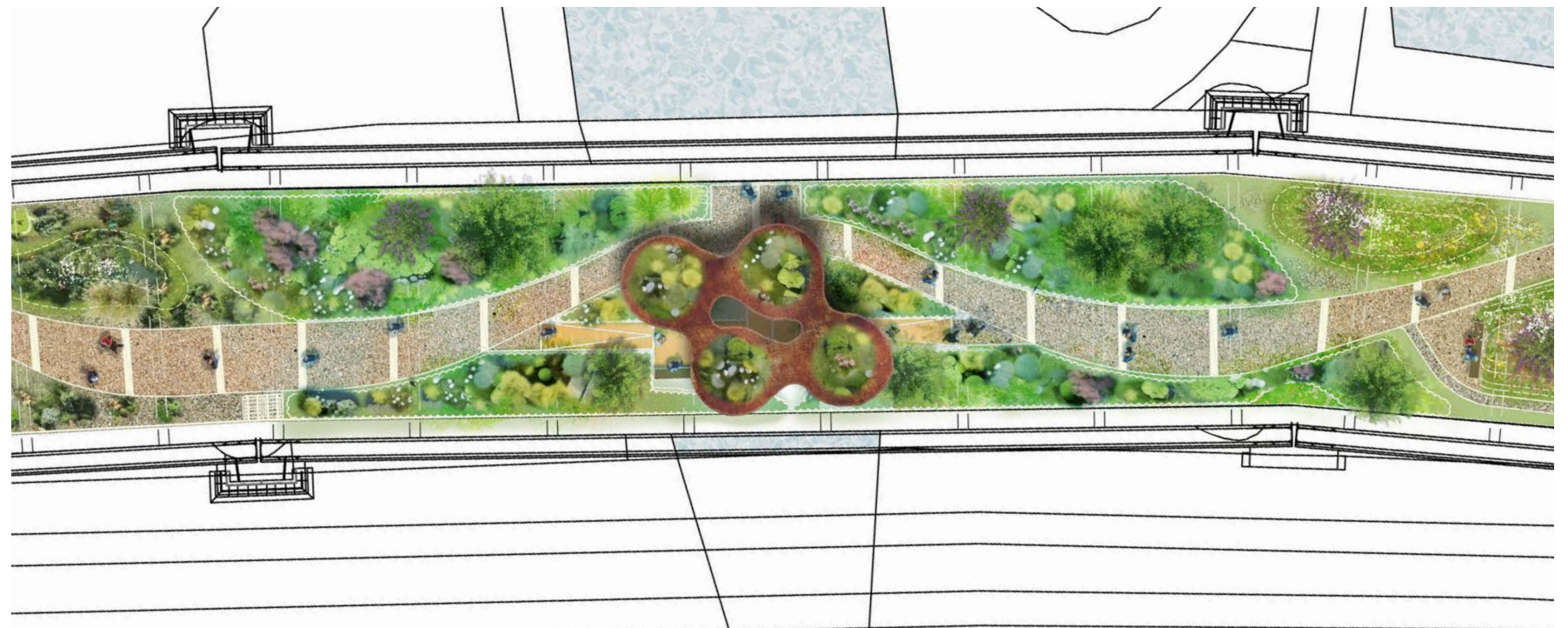
Zone 02 | WaterAid Garden

The WaterAid garden appeared at the RHS Chelsea Flower Show in 2024, and was designed by Tom Massey and Je Ahn to harness the power of rainwater and highlight the importance of sustainable water management to combat the effects of climate change.

The garden will be re-located to the Castlefield Viaduct where the focus will be on sustainable water management. The centrepiece of the thought-provoking design is the rainwater-harvesting pavilion inspired by WaterAid's work with communities around the world to develop sustainable water solutions. The structure efficiently harvests rainfall, filtering and storing this precious resource for later use such as irrigating planting whilst also slowing flow and providing shade.

The roof of the structure will be planted with species tolerant of harsh dry and exposed conditions. The landscape below will be contoured to create low and high points. In the higher, dryer areas of the garden the planting will be tolerant of these conditions whilst in the lower depressions species that prefer wetter conditions will be selected.

Beneath the garden an innovative passive irrigation system will collect rainfall that lands on the structure and the garden and store it for later use. The system works by implementing a series of wicks in the storage tank, when the soil above is dry moisture is wicked from the tank up into the soil, providing a passive low input way of keeping the garden thriving.



05 LANDSCAPE STRATEGY

Zone 02 | WaterAid Garden at Chelsea Flower Show 2024



Texture



Water resilience



05 LANDSCAPE STRATEGY

Zone 03 | Gravel Mosaic Planting

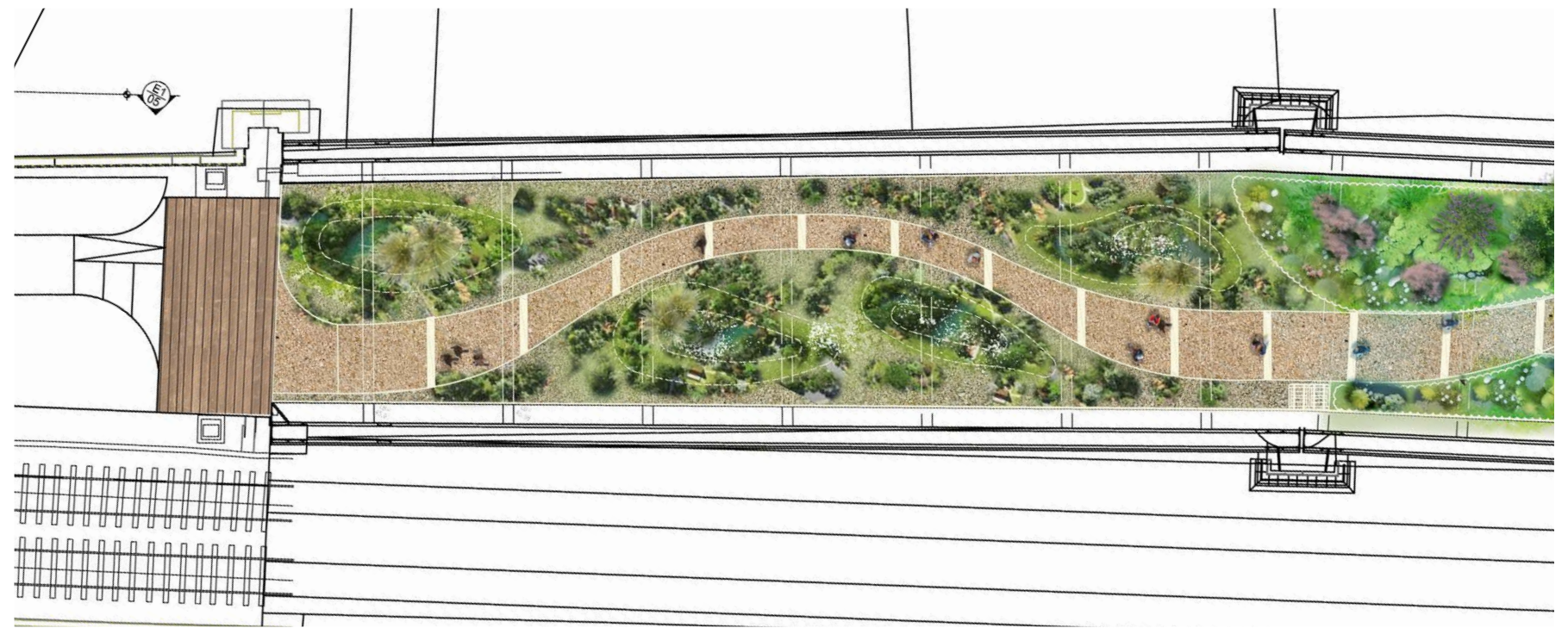
Zone 3, the Gravel Mosaic planting area is located to the west of the Water Aid Garden on approach to the Open Viaduct. Part of the process in creating this 'Garden' is a detailed botanical survey of the existing self-seeded plants and a strategy to make full use of the existing plants and seeds that have come to colonise naturally on the viaduct gravel ballast. To respond to future climate change and species adaption, the proposal is to curate a combination of native species and non-native drought tolerant species which will help extend the season of interest.

The philosophy behind the Gravel Mosaic planting area is to preserve much of the existing urban / open mosaic landscape typology, and the plants that have self-seeded naturally. Clean recycled substrates will replace contaminated ballast creating a variety of growing mediums into which particular species will colonise. The aspiration is to create a space which is rich with wildlife and has a diverse plant community.

Through translocation, a number of plants, shrubs and small trees from the existing viaduct will be lifted and re-planted, to create a richly biodiverse and sustainable environment which can evolve over time, through self-seeding. Existing *Cotoneaster* plants will be removed as they are named as invasive and non-native in Schedule 9 of the Wildlife and Countryside Act 2010. These will be and replaced with biodiverse species which are not invasive.

Working alongside Urban Green Ecologists and National Trust, the final matrix of planting will include both native and non-native biodiverse species which have been identified within gravel areas on the Phase 1 Pilot Scheme 'naked viaduct', and on the Phase 2 existing viaduct.

Undulations and hollows will enable species to populate according to their water demands, as can be seen on the current Phase 2 viaduct, with lichens and ferns growing in micro-colonies where small variations in water levels and soil / gravel depths make a difference to where the plants prefer to grow, creating a 'patchwork' arrangement of foliage amongst the gravel.



05 LANDSCAPE STRATEGY

Zone 03 | Gravel Mosaic Planting

Planting impressions



05 LANDSCAPE STRATEGY

Planting details | Ecology and Biodiversity

Planting Details

Due to the loading limitations of the viaduct structure, the importing of soils and materials is limited without strengthening the deck plates. By removing the contaminated ballast we propose to import clean recycled aggregates and soil up to a depth of 250mm. To gain height in the planting beds and meadow mounds, the strategy is to use a light-weight fill in layers, to bring the planting up to the desired height in order to create a more immersive and interesting experience.

By using a variety of substrate heights and a range of soils and gravels, the planting design is able to vary within each zone, and accomodate a wide range of species.

Using membranes and shallow permavoid tanks in key locations where water demand is likely to be higher, such as the WaterAid garden, a passive irrigation method of 'wicking' water creates a more sustainable re-use of rain water.

Ecology and Biodiversity

Urban Green have carried out Preliminary Ecological Assessment and BNG Assessment based on the existing site condition, and the proposed landscape interventions. Notable species include bats and birds, and recommendations for nest and roosting boxes to be fitted onto the side of the building, or the viaduct structure. The scheme achieves over 10% net gain, therefore offsite mitigation is not required.

A Habitat Management and Monitoring Plan will be implemented to ensure the long term success and monitoring of planting communities, habitats and wildlife.

A degree of flexibility is proposed in the Phase 2 planting strategy, to enable species to self-seed and colonise. National Trust also have a desire to involve the local community in the development of the planting as funds and projects become available. Any future developments to the planting proposals will follow the key principles of sustainability and supporting wildlife.

Zone 1 Horticulture

This zone will provide National Trust a flexible space for nursery bed stock and growing plants, and carrying out horticultural workshops with community groups. The beds may include a range of plants. It is proposed that some of the beds would be raised to facilitate access by wheelchair users.



Zone 1 Meadow Mounds

Typical species within the pre-grown wildflower turf and seed mix include:

Achillea millefolium
Allium scoenoprasum
Achinacea purpurea
Festuca longifolia
Leucanthemum vulgare
Petrohagia saxifraga
Silene maritima

Plug Plants / translocated plants include:

Verbena bonariensis
Rudbeckia columnifera
Buddleia



05 LANDSCAPE STRATEGY

Maintenance

Zone 2 WaterAid Garden

Typical species include:

Alnus glutinosa (Small / transplanted)
Cornus sanguinea
Angelica archangelica
Valeriana officinalis
Cirsium rivulare
Fragaria vesca
Echium vulgare
Sisyrinchium striatum
Erigeron karvinskianus
Hesperaloe parviflora

Zone 3 Gravel Mosaic

Typical species include:

Betula pendula (Small / transplanted)
Maidenhair spleenwort
Eupatorium purpurea
Angelica archangelica
Lysimachia atropurpurea
Smyrniolum perfoliatum
Erigeron karvinskianus
Gaura lindheimeria
Yellow Toadflax
Verbascum olympicum

Maintenance

The approach to creating a 'water-smart' garden, reduces the need for high-maintenance associated with irrigation. Rainwater harvesting from the canopy of the building enables water to be stored in tanks for use in the higher demand spaces such as the horticulture area and nursery beds.

Within the WaterAid Garden the pavilion funnels help capture rainwater and slowly filter it through planting and substrates. The funnels also create cooler growing conditions to the planting beneath. The variety of water attenuation features and open 'ponds' through the use of punctured liners will make the Gardens self reliant, using sustainable passive irrigation methods, thus removing the need to use mains water other than in the establishment period.

Compost bins are strategically positioned along the viaduct, to provide extra capacity for plant waste to be re-cycled into compost, which can in turn be used in the horticultural area for propagating new plants.

Maintenance is anticipated to be relatively low, given the self-reliance of much of the planting, and the minimal woody material which will be generated. Seed heads and spent flowers are to be retained on the plants for winter interest and food sources, and will be trimmed back in early spring once new growth begins to emerge. A combination of National Trust staff and community volunteers will undertake general maintenance of soft landscape spaces.

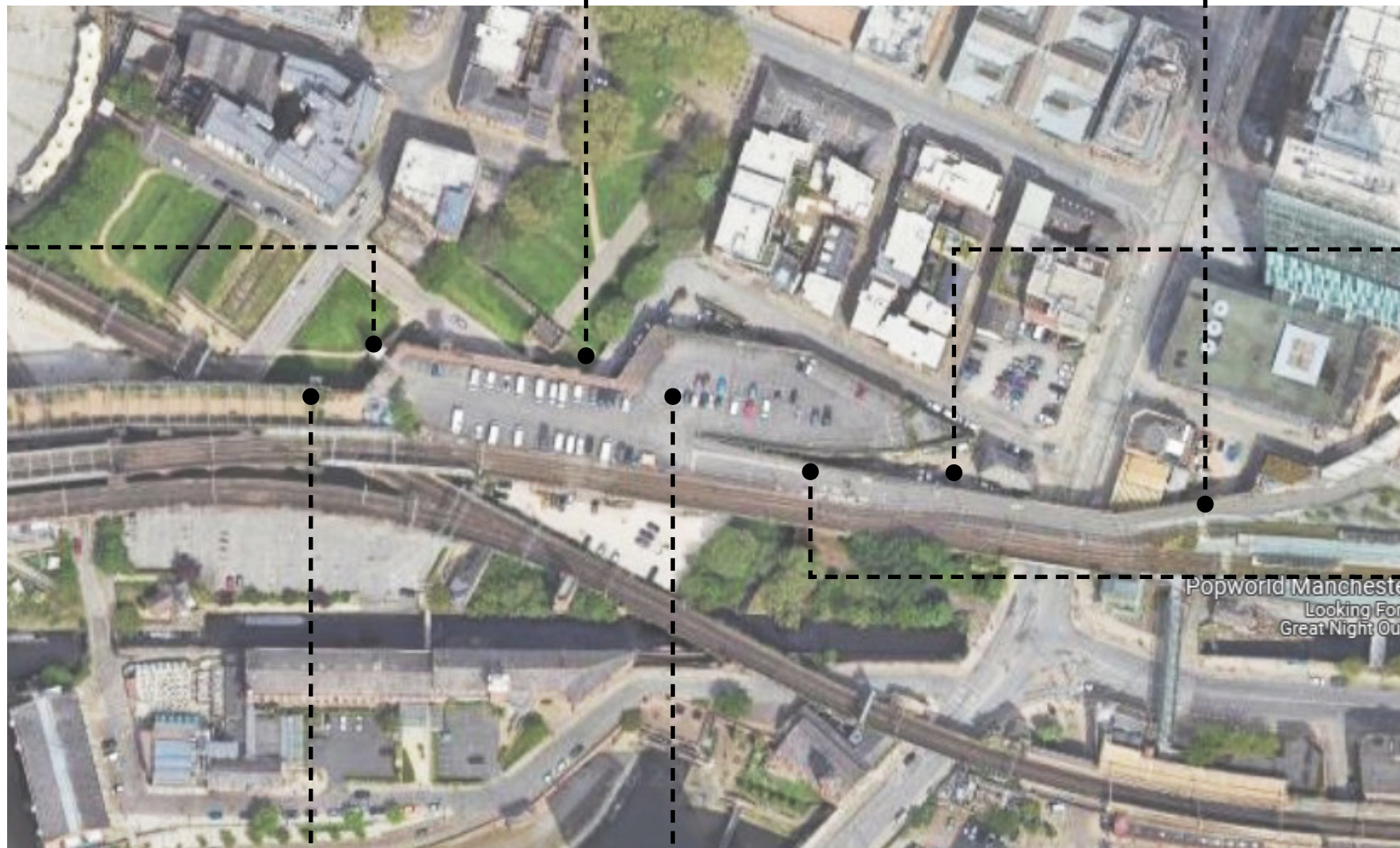


06 SERVICES AND STRATEGIES



06 SERVICES AND STRATEGIES

Access route from Deansgate - Castlefield



This diagram shows the pedestrian access route from Deansgate - Castlefield tram stop. Refer to transport statement for more information.