

04 DESIGN RESPONSE

The Garden | Secondary path materiality

The secondary paths, made from geocell-retained gravel, weave through the meadow mound in the urban garden. This path offers a natural contrast to the primary pathway, blending seamlessly into the landscape. The geocell structure, filled with gravel, creates a stable, permeable surface that resists erosion while maintaining an organic appearance.

The path meanders gently, providing an intimate and immersive experience. Softly defined edges allow wildflowers and grasses to encroach, enhancing the naturalistic feel. Strategic benches and clearings along the way encourage stoppage and gatherings, serving as perfect spots to relax and viewing.



Geocell Retained Gravel (grey)



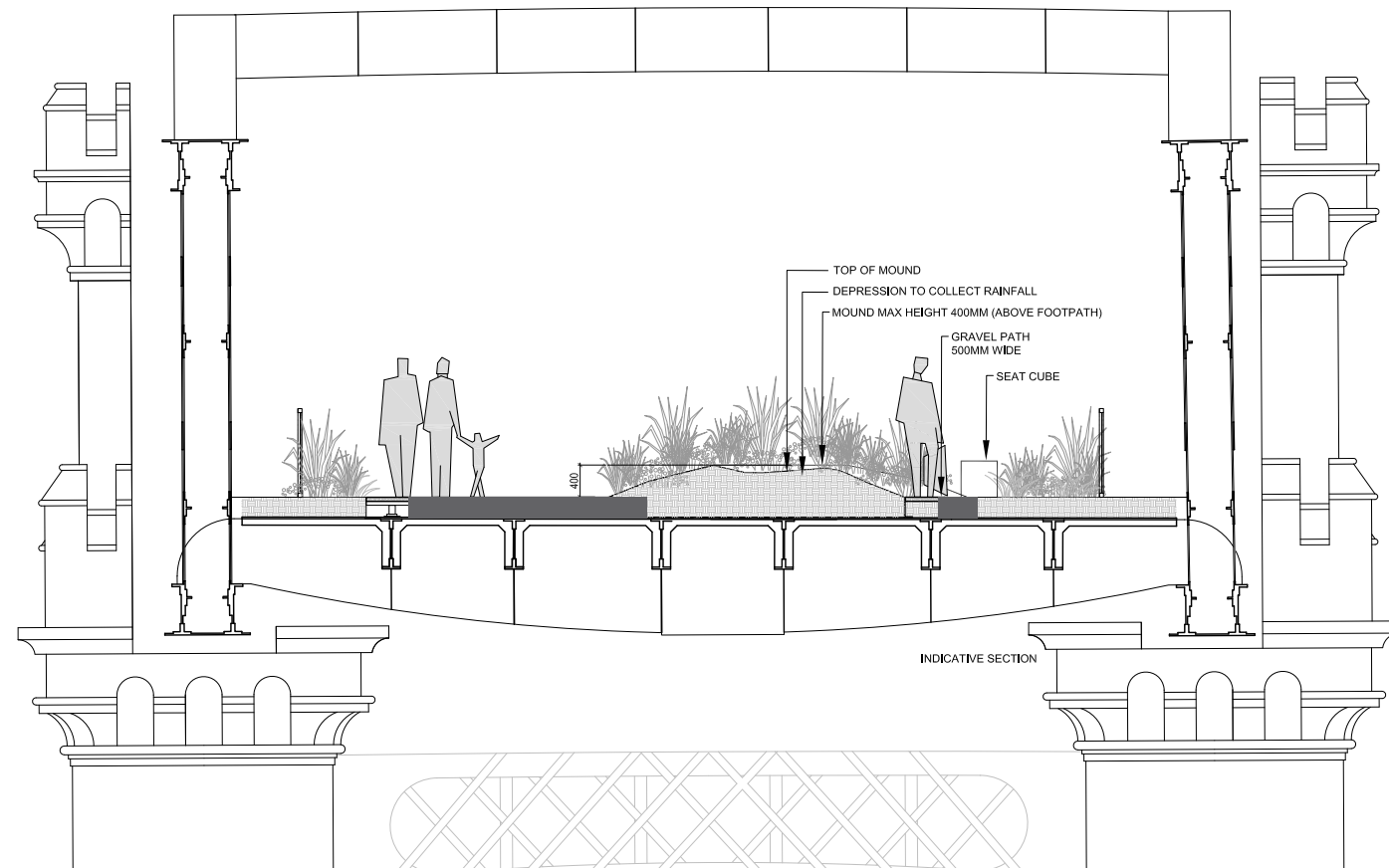
04 DESIGN RESPONSE

The Garden | Ballast removal & general planting strategy

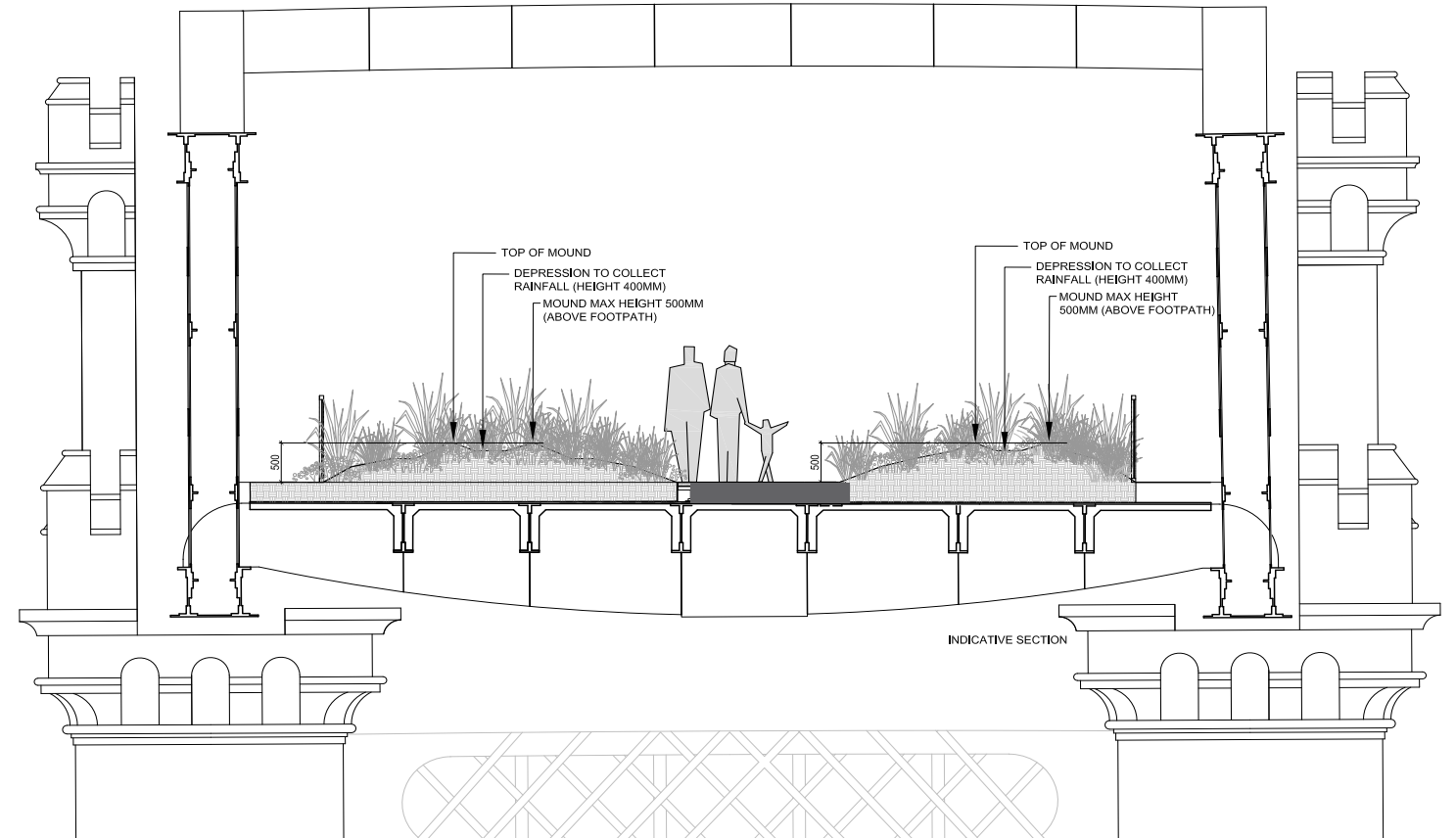
To ensure the structural load capacity for the new project, the existing ballast of the unused viaduct will be carefully removed. This process involves clearing the old ballast material to reduce the weight on the viaduct structure, thus preparing it for the new development. Extra care will be taken to ensure the existing deck and structures are not damaged.

Once the ballast is removed, new resin-bound gravel, meadow mounds, and topsoil will be added to create the urban park. The topsoil will be enriched to support a variety of plant life, while the meadow mounds will be shaped to enhance the landscape's aesthetic and ecological value.

Given the extra soil weight, void form will be used to create the intended mounds. For more information, see Chapter 6 and the ARUP structural engineers' report.



Typical Section through mounded meadow
(main path width 3.0m)



Typical Section through mounded meadow
(main path width reduced to 1.5m)

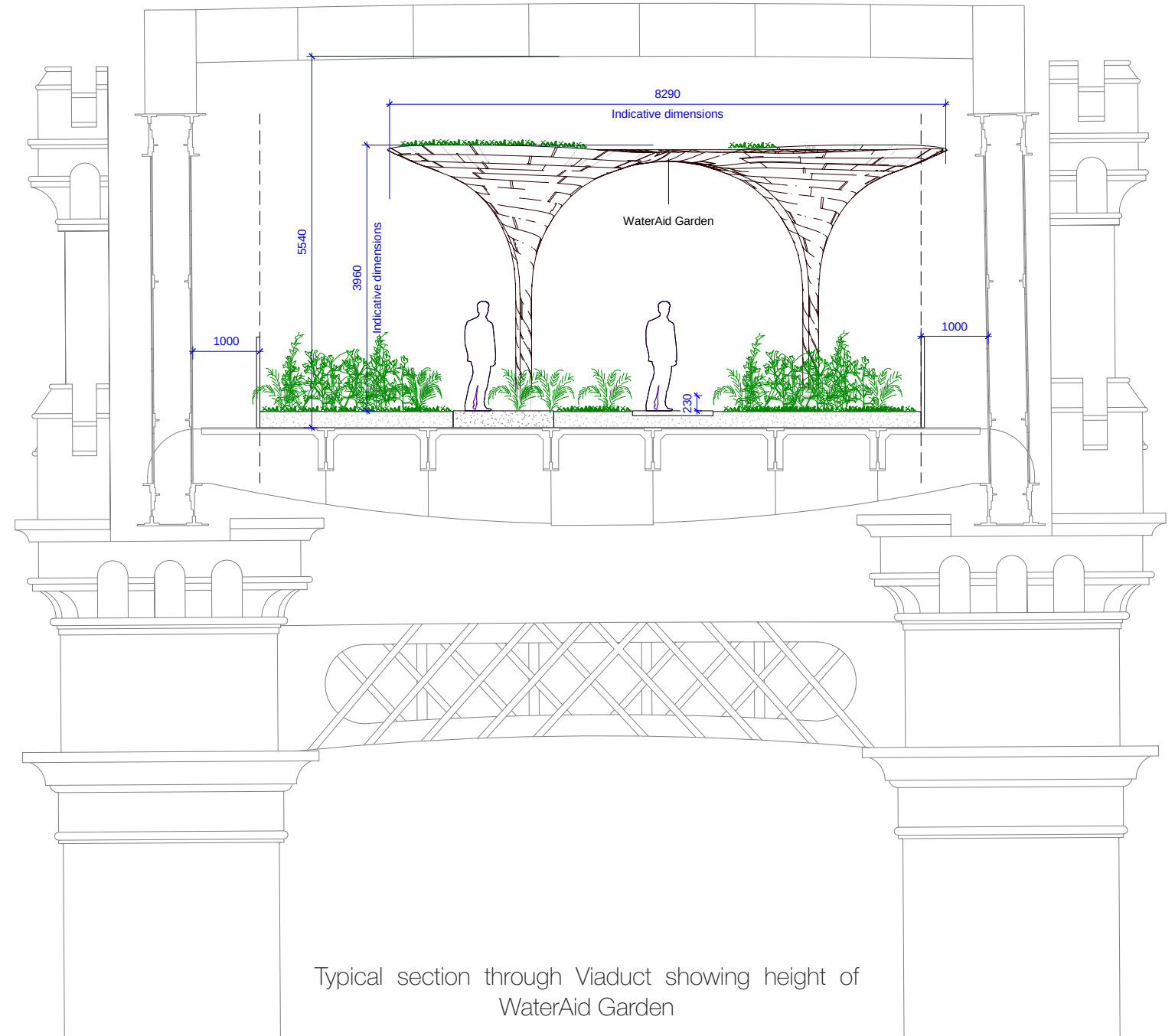
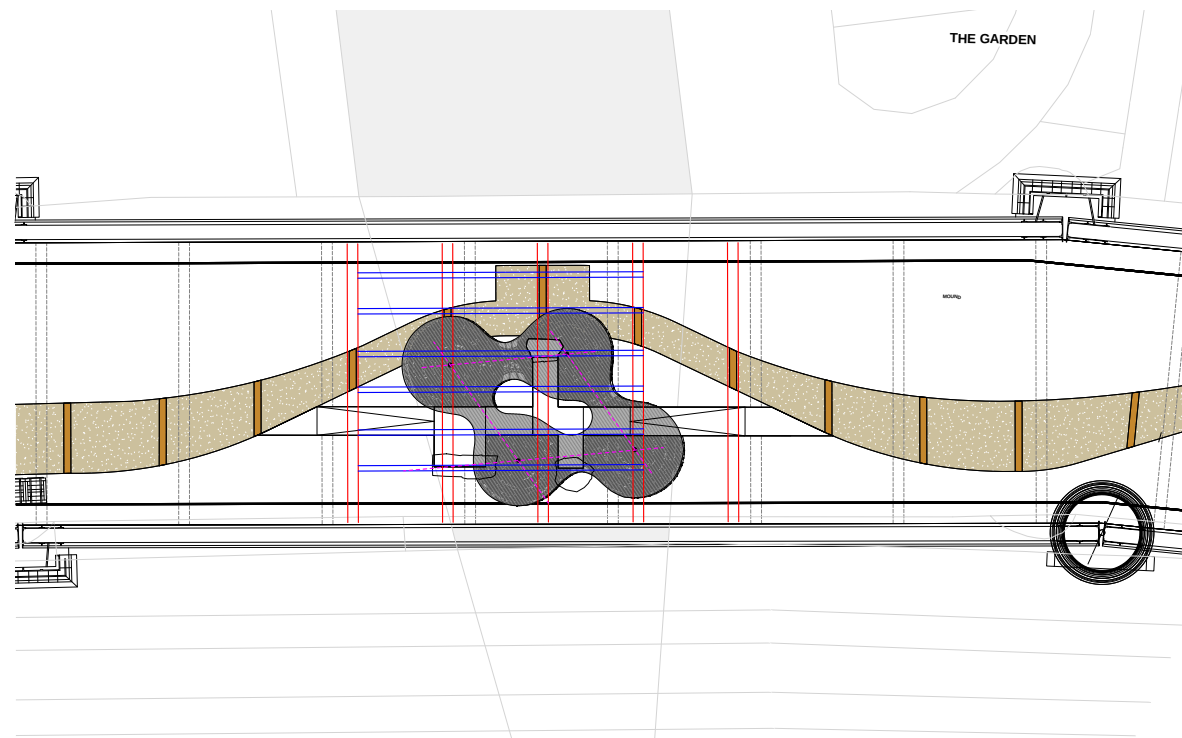
04 DESIGN RESPONSE

The Garden | WaterAid Garden

Original constructed as part of RHS Chelsea Flower Show 2024, the WaterAid garden explores the challenges presented by an ever-changing climate. It focuses on sustainable water management and features a colourful array of plant species designed to deal with varying amounts of rainfall.

Relocated into the middle section of steel viaduct, the WaterAid Garden will be dismantled into 2 parts, lifted onto the Viaduct and reassembled. The WaterAid Garden's four supporting structural columns will sit on a steel grillage and lined up over the existing transverse and longitudinal beams. Due to the thickness of the supporting grillage, the path through and around the WaterAid Garden will be packed with void form and soil. See chapter 6 structural strategy and Structural Engineer report for more information.

This Garden will act as a welcoming feature for visitors to the site and contribute to the original vision of a growing public urban oasis.

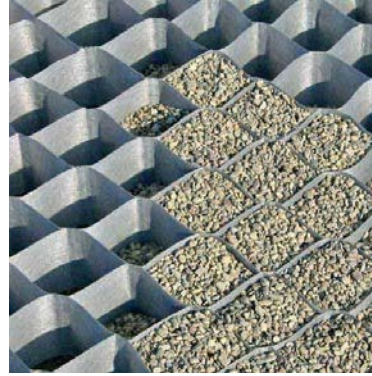


04 DESIGN RESPONSE

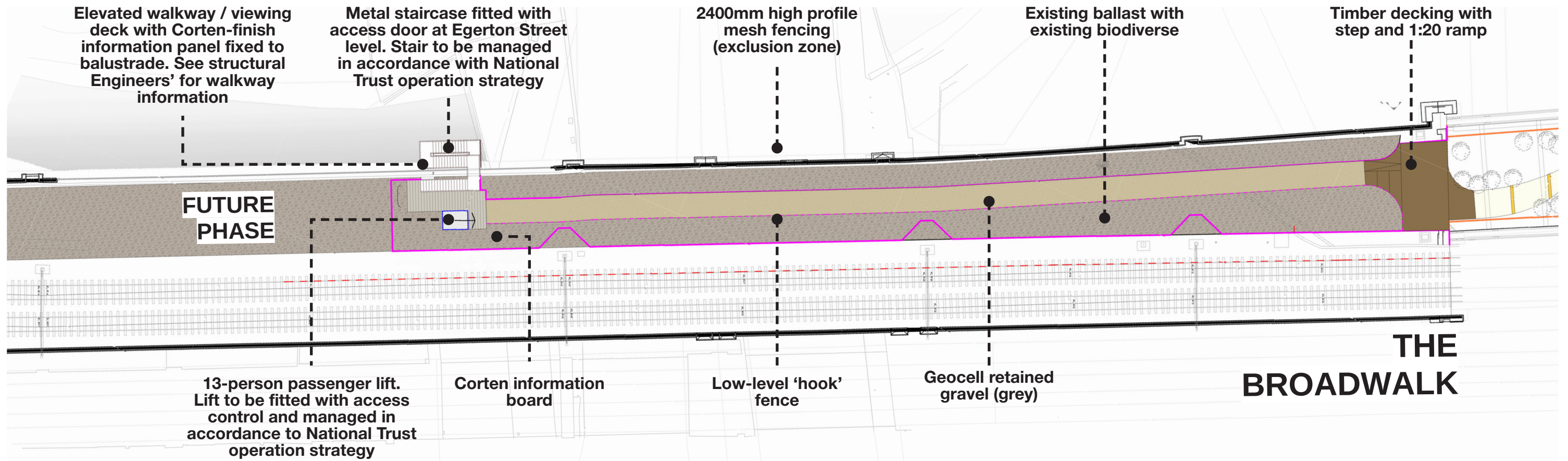
The Broadwalk

The Broadwalk, constructed from geocell-retained gravel, provides an open experience for visitors as it traverses the site of the Metrolink, along the existing ballast with minimal intervention to the area's wild biodiversity. Low-level 'hook' fencing prevents visitors from going over the existing ballast, while additional mesh fencing ensures compliance with the TfGM exclusion zone from the train track.

The design preserves the site's natural state and seamlessly integrates the new structure into the existing environment. Visitors are guided directly to a new vertical access point on Egerton Road, which is integrated into the design, providing a safe and efficient means for visitors to descend from the elevated walkway to the road level.

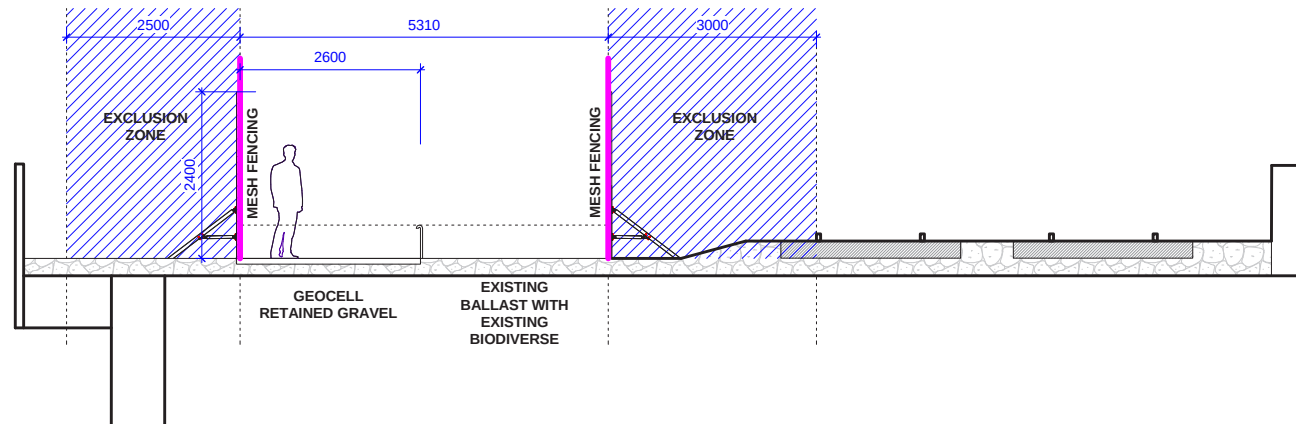


Geocell retained Gravel (grey)



04 DESIGN RESPONSE

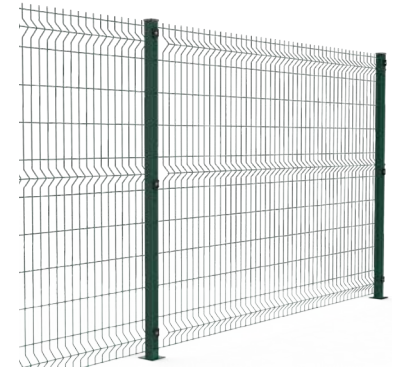
The Broadwalk | Boundary & Materiality



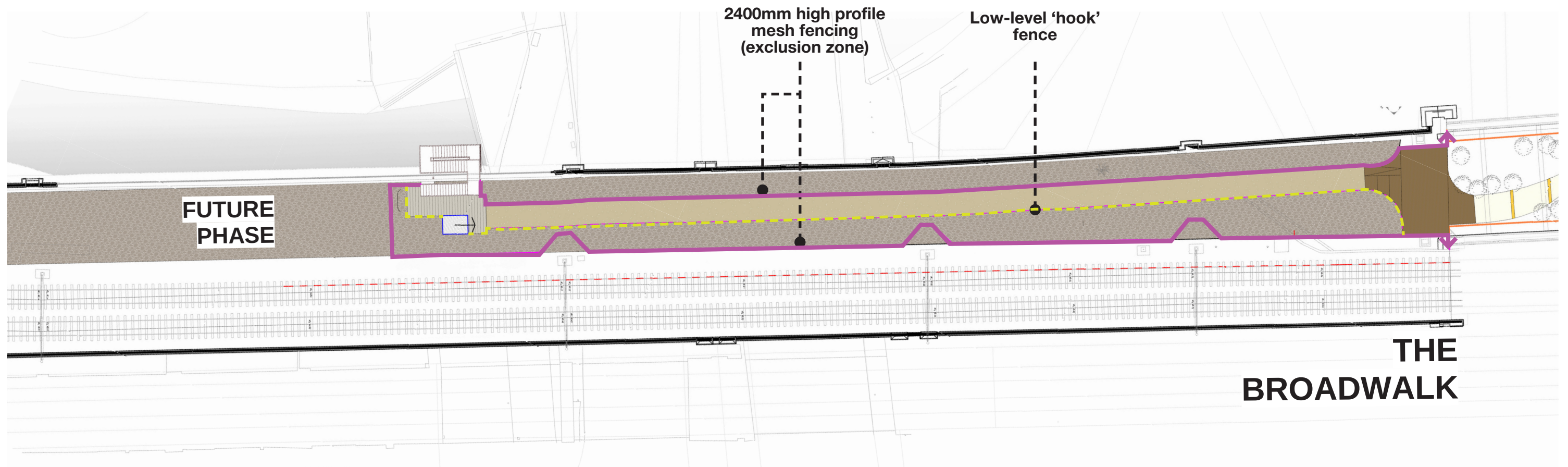
Indicative exclusion zone required by Metrolink



Low level 'hook' fencing



Mesh profile fencing



04 DESIGN RESPONSE

Egerton Egress | Site context and conditions

As stated in the Statement of Significance, the section of the masonry viaduct bridging over Egerton Street was formerly known as Combrook Viaduct—a steel-plated girder bridge on the western side of Dawson Street. Underneath the viaduct, Arch 272 provides a pathway for pedestrians and a bike route running along Egerton Street and the Mancunian Way. This area falls within the boundary of the Embassy Village project and is flanked by the Medlock River and Porcelanosa land.

The viaduct rises approximately 13.5 meters from the Egerton Street level, with both a bike path and pedestrian path passing through Arch 272. Currently, graffiti covers the existing steel parapet, and the blue brick pier shows heavy marking from water leakage above, along with clear signs of weathering.



Existing condition of Arch 272 Pier

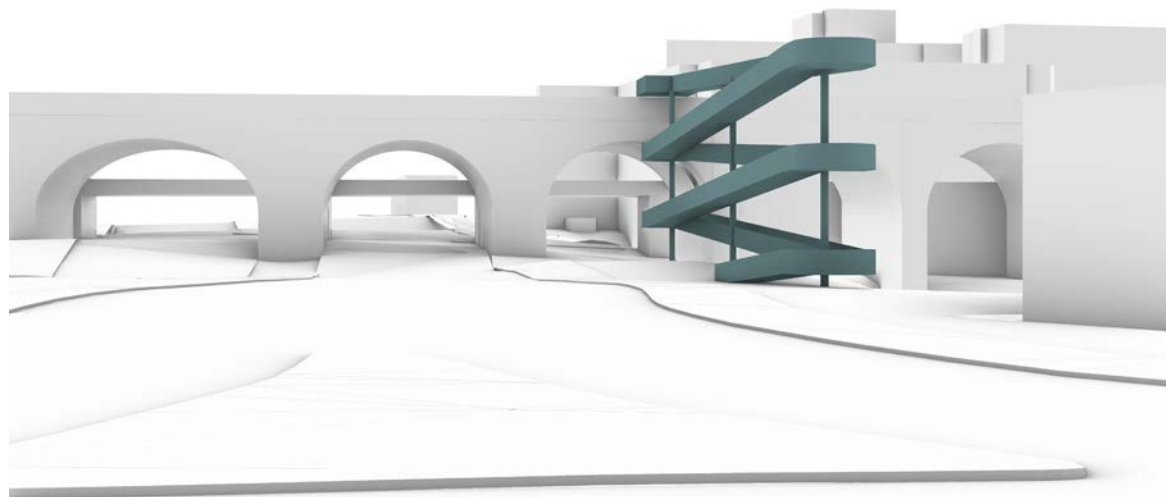
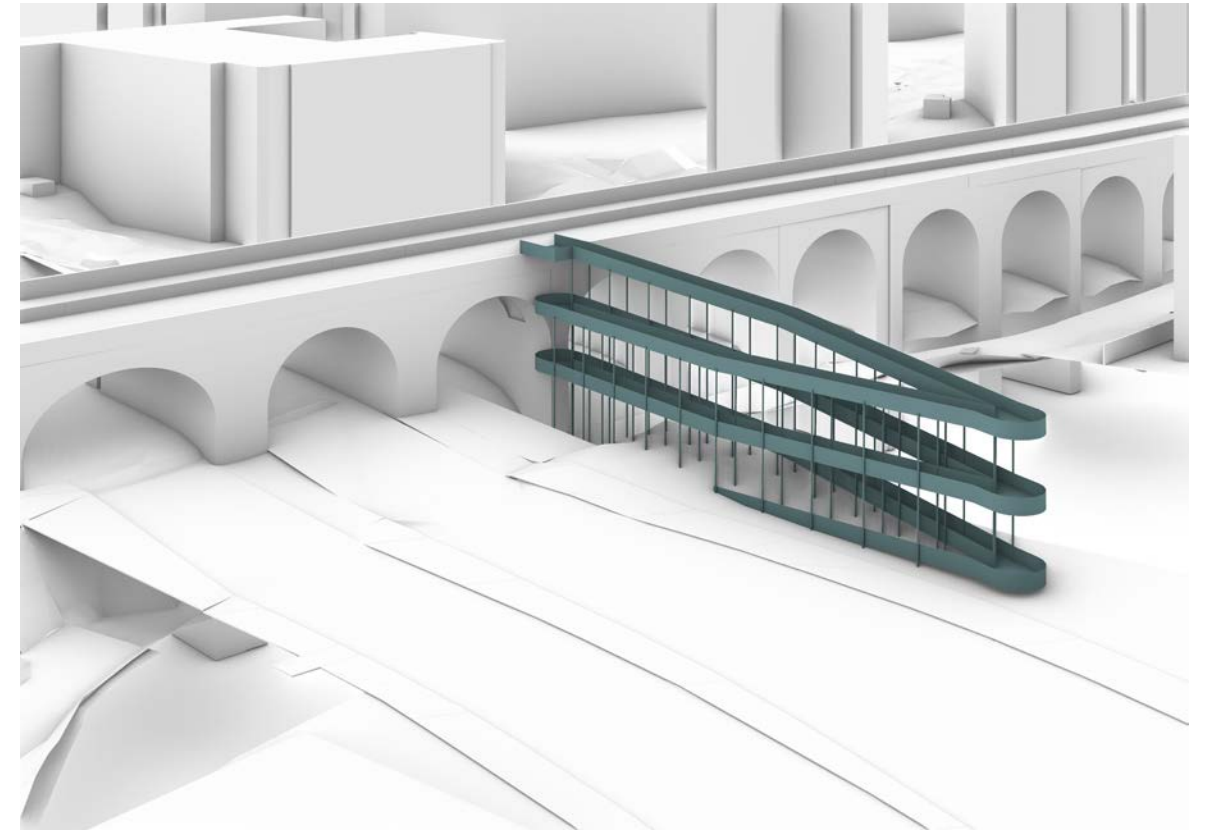
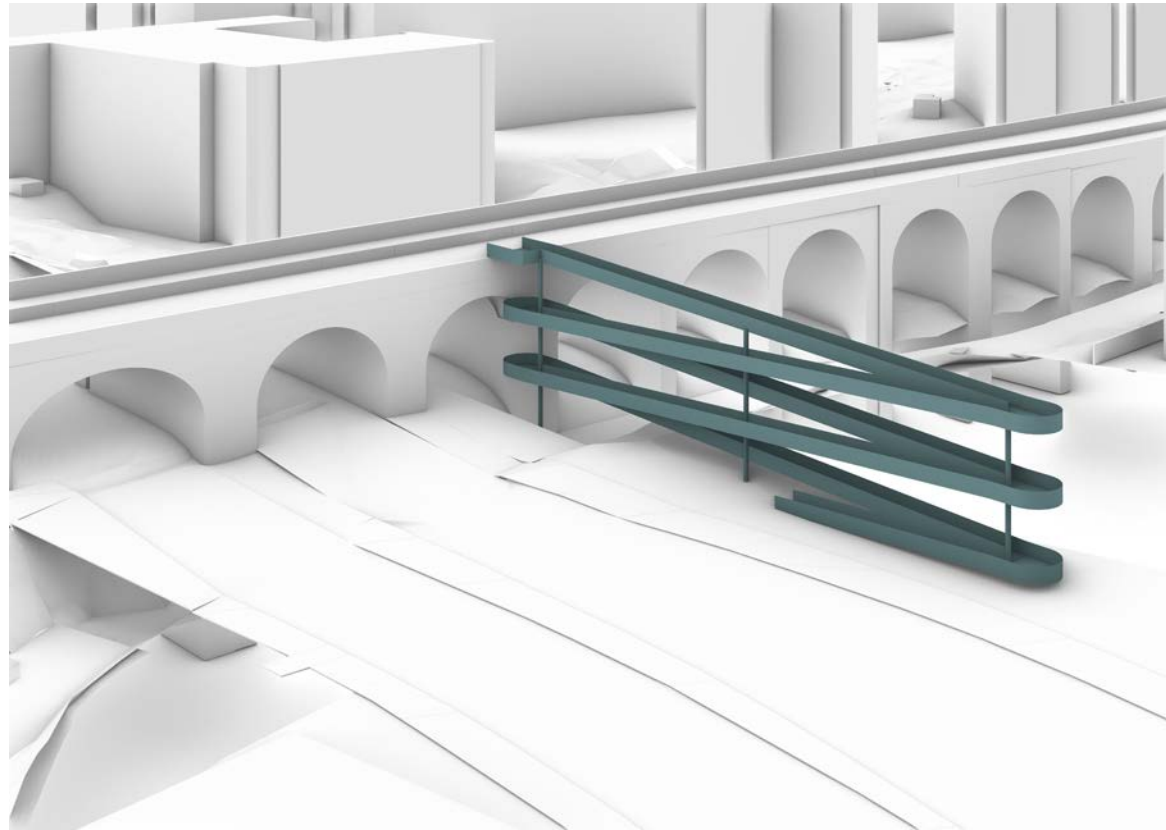


View toward masonry viaduct from Porcelanosa land

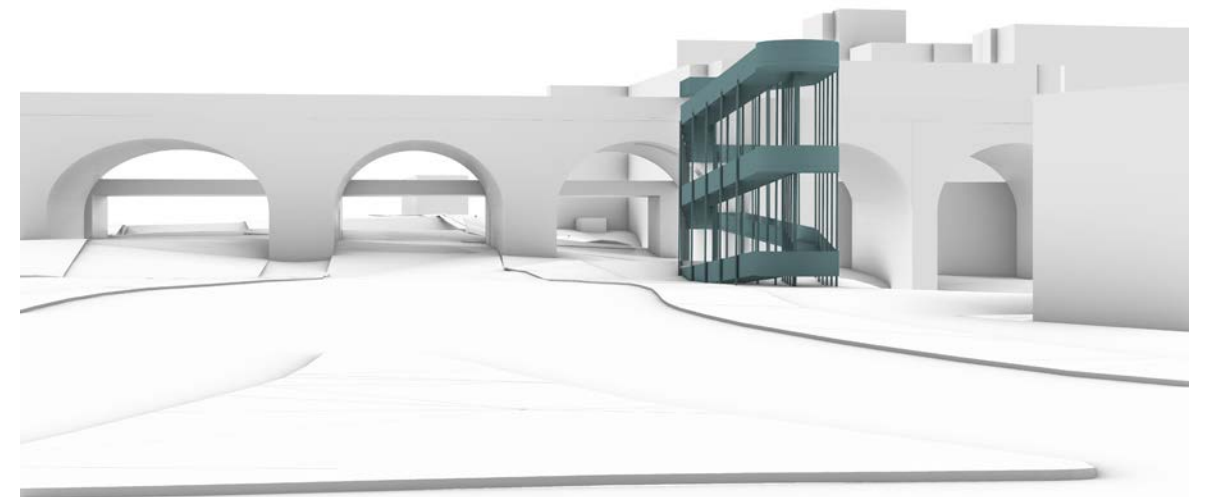
04 DESIGN RESPONSE

Egerton Egress | Ramp options

At an early stage of the project, ramp design options were considered to provide accessibility for pedestrians and wheelchair users. However, considering the required 1:20 ramp gradient and landings, the ramp length needed to cover the height elevation of roughly 13 meters would be excessive, making it unfeasible to implement.



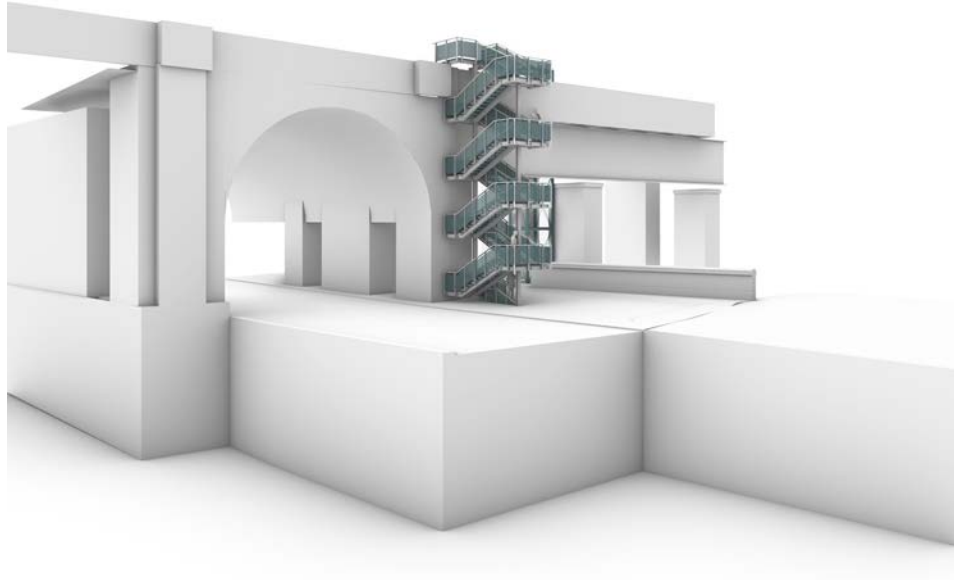
Ramp option 01



Ramp option 02

04 DESIGN RESPONSE

Egerton Egress | Preliminary staircase options



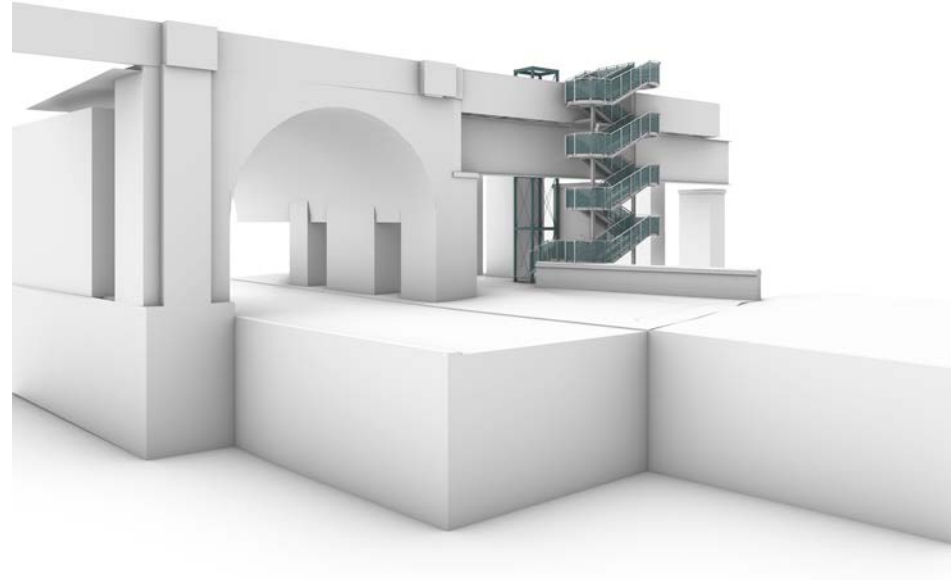
Stair option 01 : Perpendicular to Viaduct on existing bridge

Pros

- Less structural intervention

Cons

- Uncertainty with construction on existing bridge
- Obstructive to existing traffic and bike path
- Positioned away from proposed lift
- Potential heritage impact



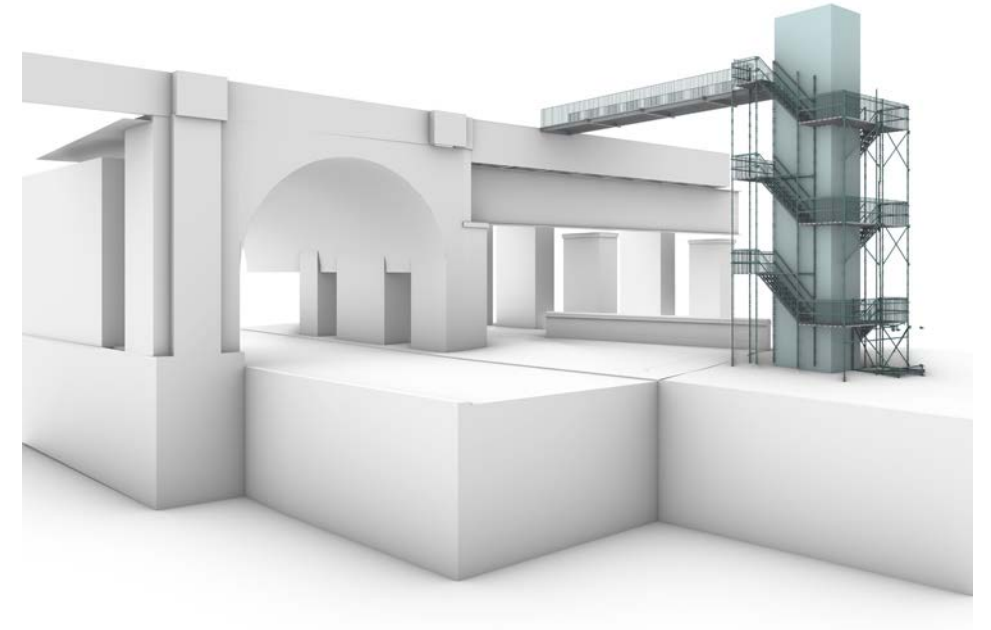
Stair option 02 : Parallel to Viaduct

Pros

- Coherent design with the Viaduct
- Better location for access from and onto the Viaduct

Cons

- Additional structural work to cantilever over the river
- Agreement with Embassy Villagen and TfGM for viaduct modification
- Additional cost



Stair option 03 : Away from Viaduct with walking bridge

Pros

- Less structural intervention on the viaduct

Cons

- Only temporary solution
- Required agreement with multiple stakeholders
- More costly as more structure required
- Potential heritage impact

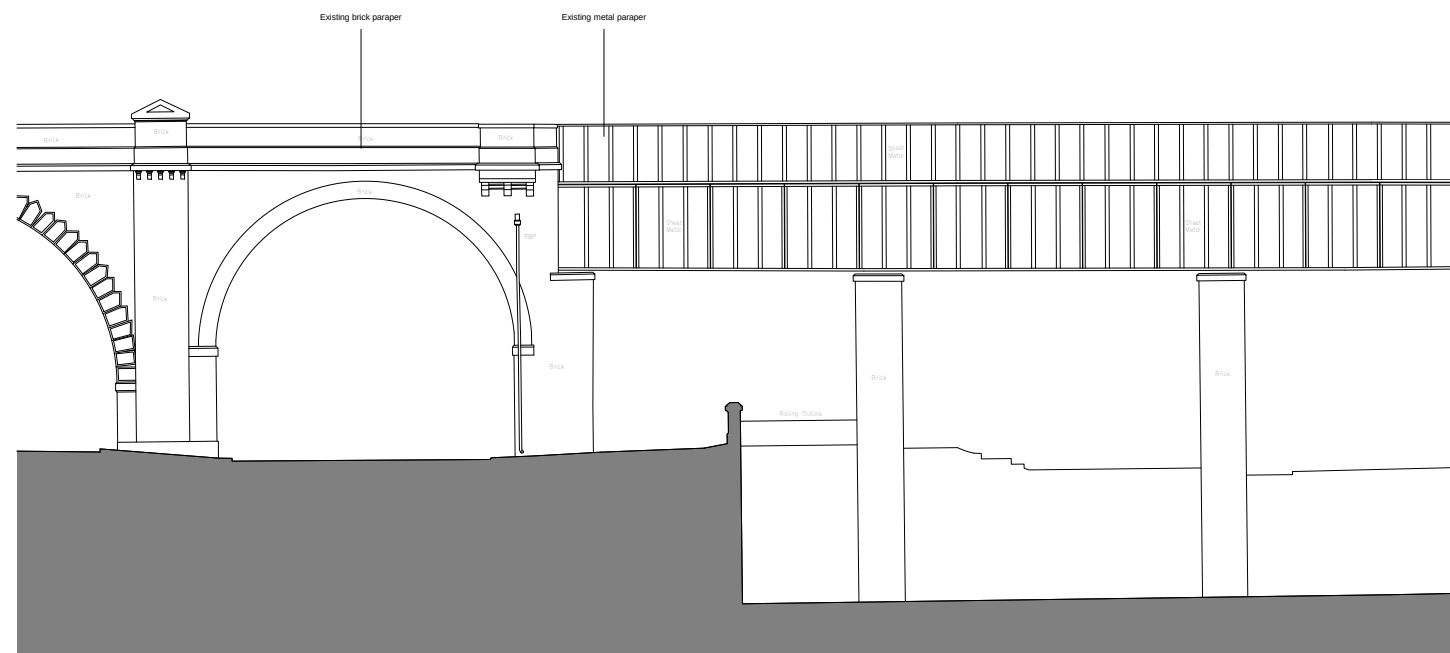
04 DESIGN RESPONSE

Egerton Egress | Preferred option | Proposed elevation.

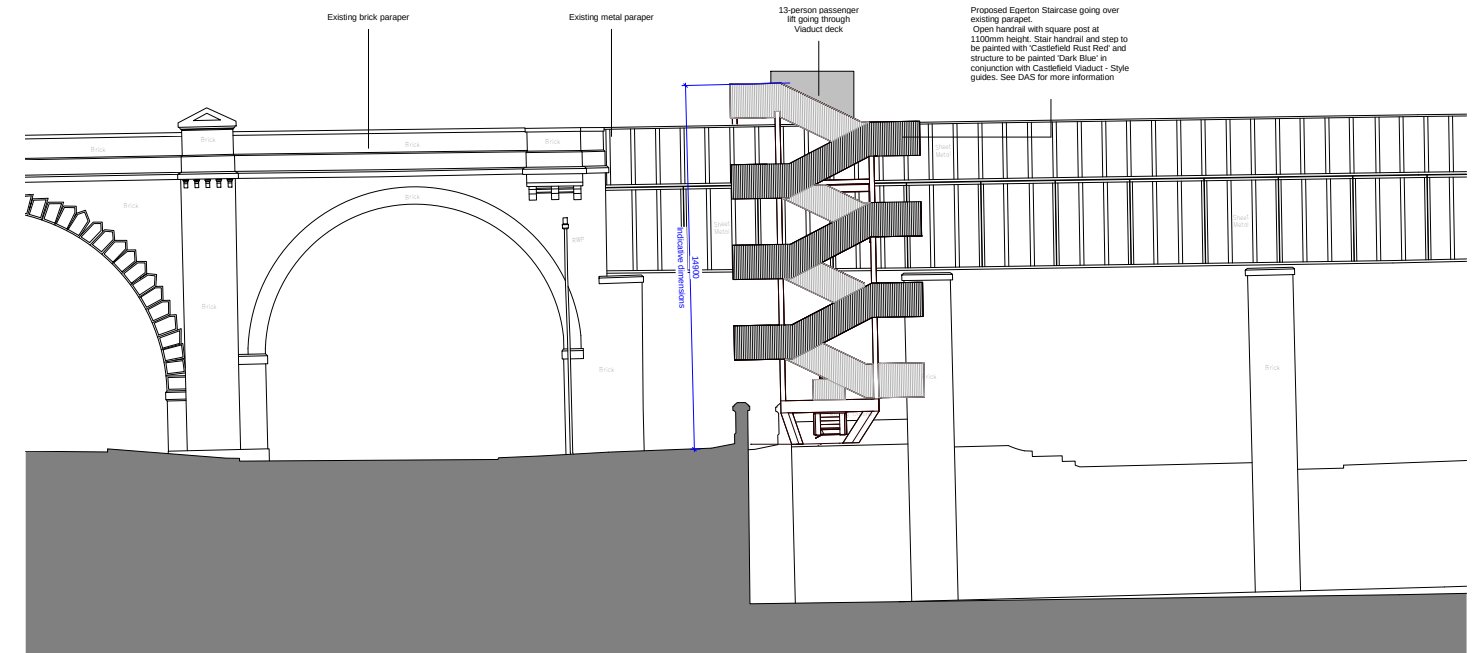
Taking into consideration the site surroundings, the staircase is positioned as close as possible to the viaduct, with the entire structure cantilevered from a new foundation/ steel grillage at the Egerton Street level. To minimize impact, the staircase is set within the limits of Arch 272 and lifted away from the existing parapet of the bridge over the Medlock. The staircase ascends above and over the existing metal parapet of the viaduct to ensure no physical contact with this feature.

The handrail of the staircase is designed as an open handrail to reduce the overall massing of the staircase. This design choice also has a structural benefit, as it eases lateral loading, thereby reducing the size of supporting structural beams and columns.

For material and finish decisions, please refer to page 73.



Existing Egerton street elevation



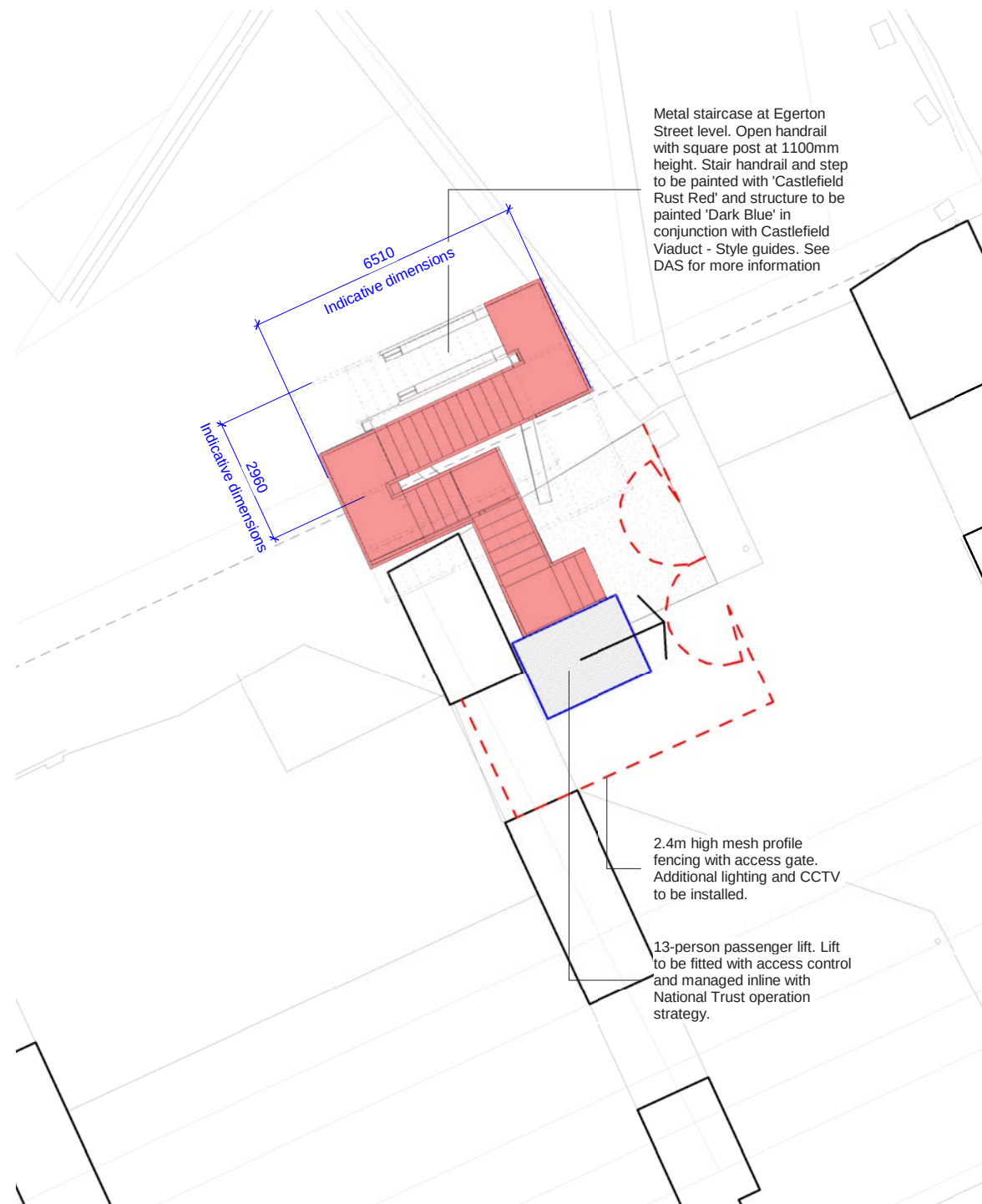
Proposed Egerton street elevation

04 DESIGN RESPONSE

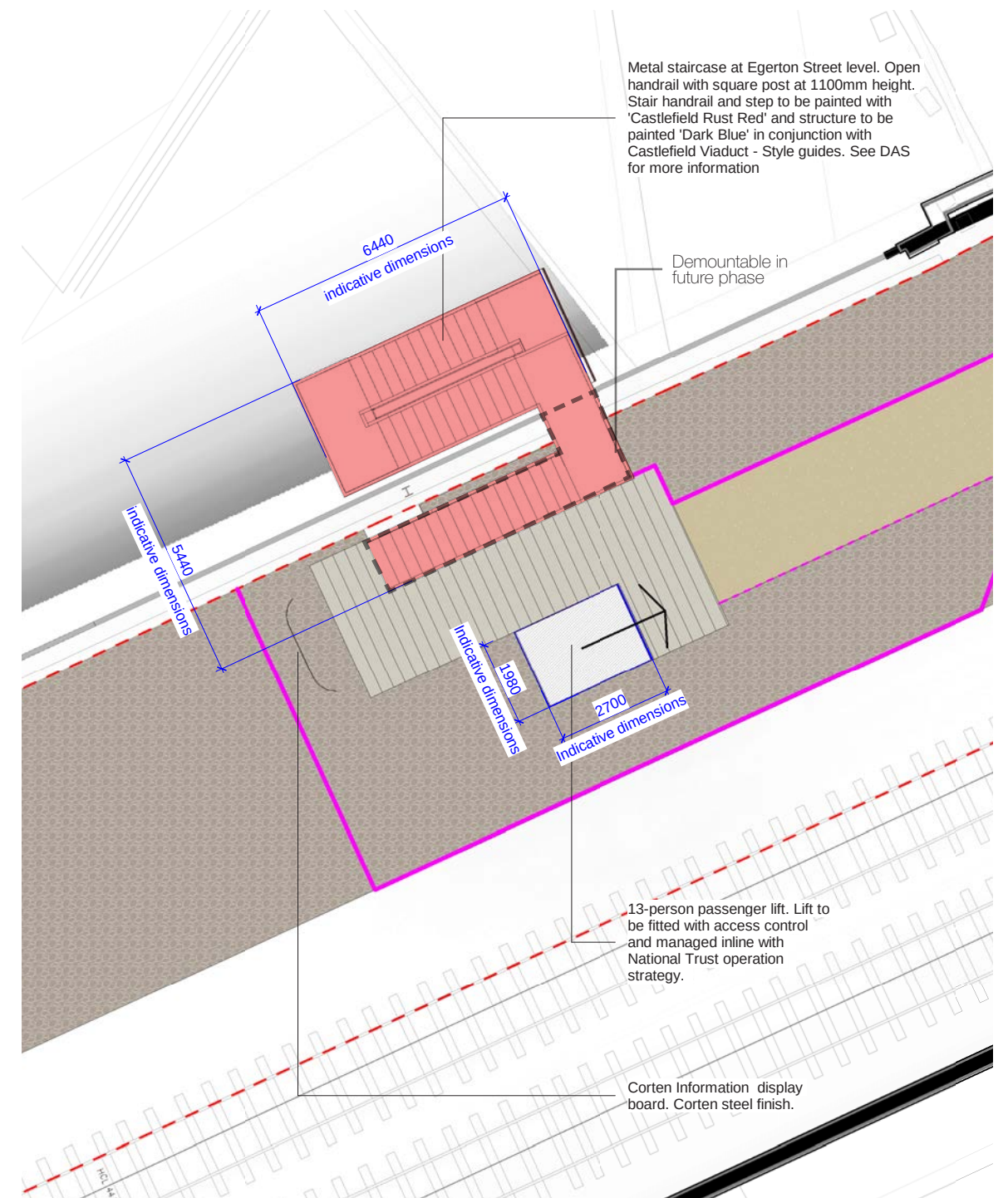
Egerton Egress | Preferred option | Landings

At the viaduct level, the Egerton Staircase will extend over the existing metal parapet to avoid structural alterations to the viaduct's existing fabric. This design also prevents the need to relocate TfGM service cables and minimizes disruption to the Metrolink service.

As the staircase descends to the Egerton Street level, the flights are tucked back so that the exit aligns with the adjacent passenger lift, ensuring a coherent traffic flow within the fenced compound.



Staircase landing - Egerton Street level

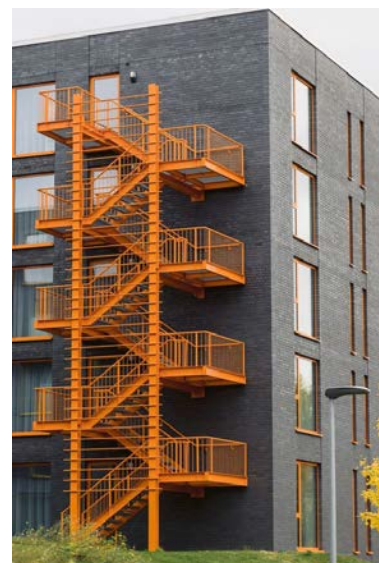


Staircase landing - Viaduct level

04 DESIGN RESPONSE

Egerton Egress | Staircase precedents | Preferred design

Serving as a secondary access to Castlefield Viaduct, the staircase also acts as a subtle focal point to help pedestrians and visitors navigate the traffic-heavy Mancunian Way, facilitating pedestrian movement within the surrounding areas.



Staircase precedents



Preferred staircase design - Egerton street looking towards Viaduct

Egerton Egress | 13-person passenger lift | Landings

To ensure accessibility for all visitors, a 13-person passenger lift will be provided. The lift will penetrate through the deck of the existing viaduct, with structural interventions kept to a minimum to preserve the condition of the viaduct.

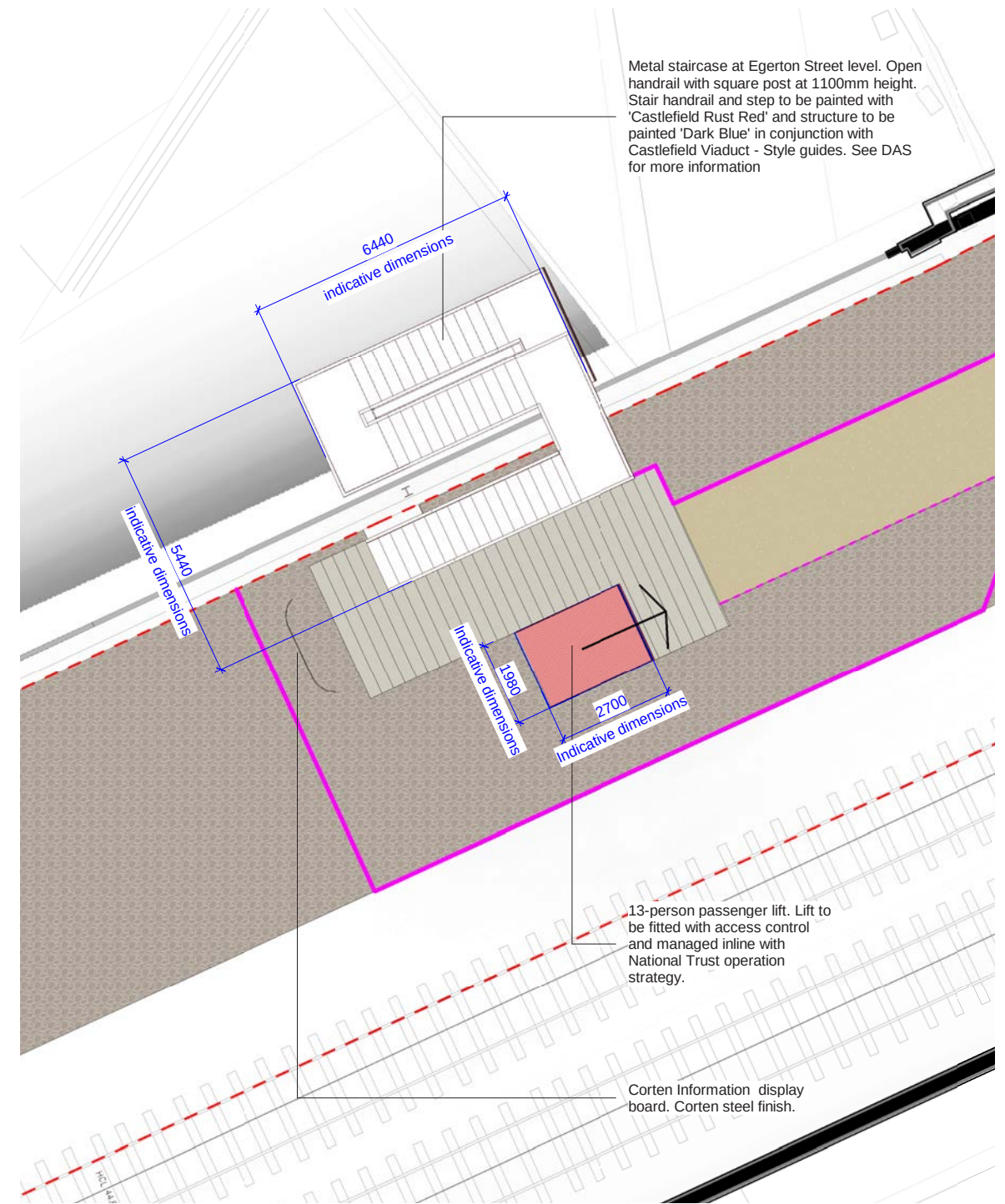
The lift will be fabricated offsite and integrated with the newly installed foundation, allowing it to be disassembled and relocated if necessary.

The passenger lift will land in a fenced compound under arch 272 of the viaduct. Access to the compound will correspond with the viaduct's opening hours.

For structural intervention information, refer to ARUP structural reports and sketches.



Lift landing - Egerton street level



Lift landing - Viaduct level

04 DESIGN RESPONSE

Egerton Egress | Lift precedents

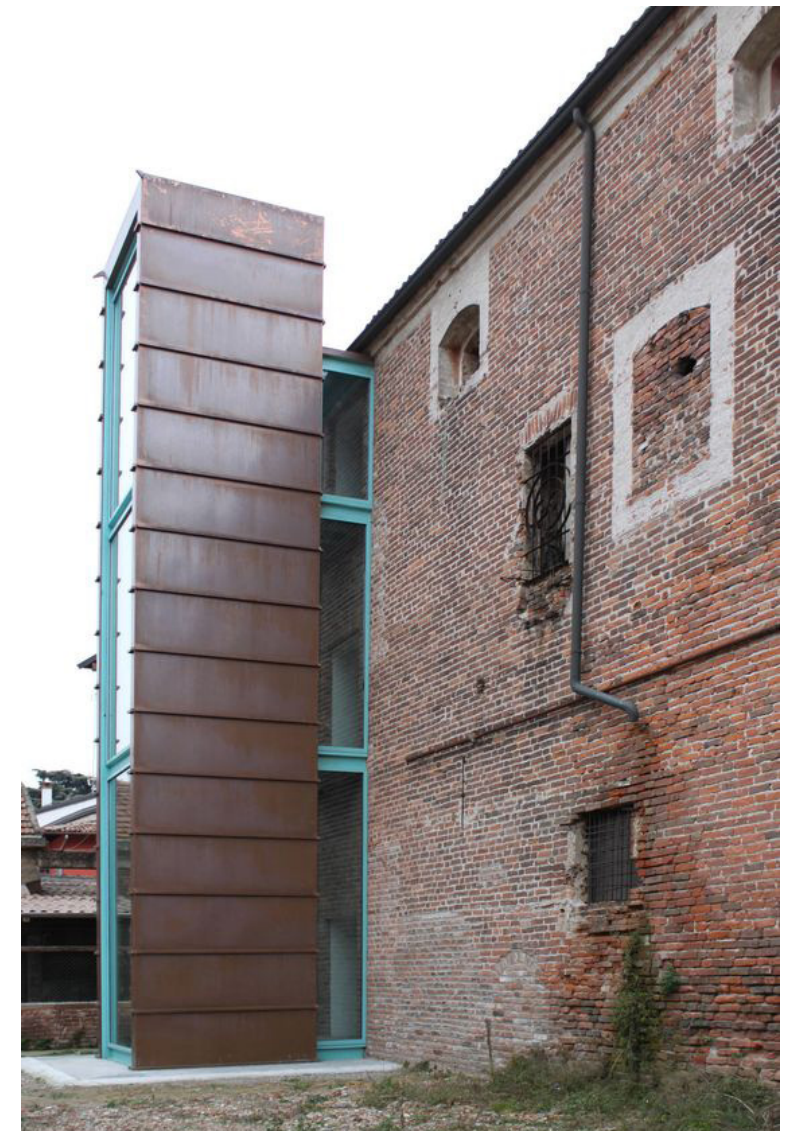
As a new access to Castlefield Viaduct, the lift is designed with durability in mind. The cladding of the lift was a major component to be considered. It needs to be durable, cost-effective, and complementary to the existing tone and texture. After considering different materials, metal cladding proved to be the preferred choice, given its versatility.



Option 1
Glazed cladding



Option 2
Perforated metal cladding



Option 3 - Preferred
Metal cladding

04 DESIGN RESPONSE

Egerton Egress | Stair & Lift finish

As part of the wider project, the Egerton Egress staircase and lift adopt the color palette developed in the National Trust Castlefield Viaduct Visual Guides. This palette is inspired by the local surroundings and draws references from local architecture and railway heritage.

To ensure color coherence with the existing blue brick of the masonry viaduct, the lift cladding and all egress steel structures will be painted in Dark Blue (HEX #4e575b). The staircase handrail, serving as a wayfinding device and a welcoming feature of the second access, will be painted in Rust Red (HEX #e8412c), reflecting the Cheshire red brick.



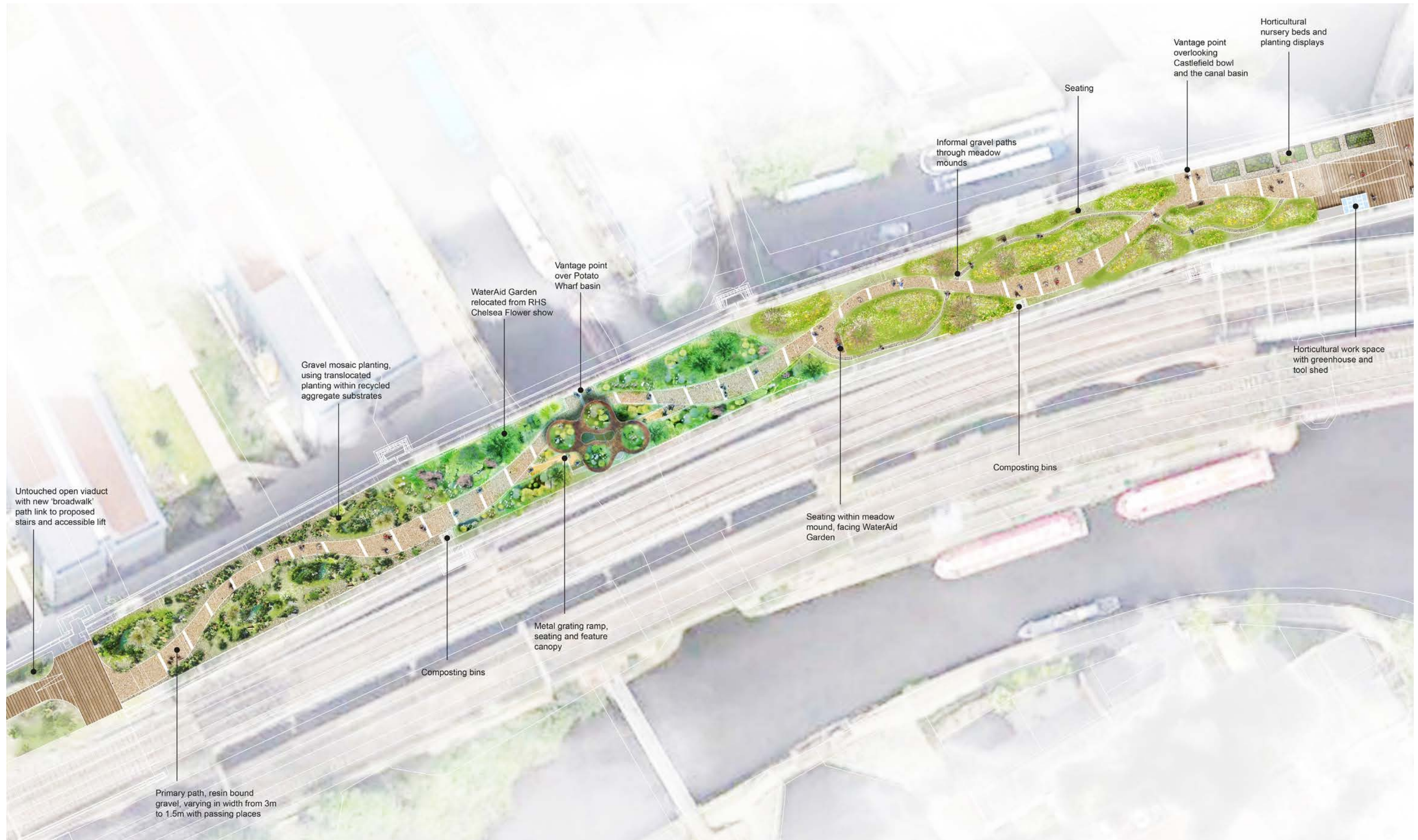
Indicative view of Egerton Street access

05 LANDSCAPE STRATEGY



05 LANDSCAPE STRATEGY

General planting strategy



05 LANDSCAPE STRATEGY

Planting Strategy

The Planting Strategy for Phase 2 proposes to create a range of soft landscape palettes which celebrate sustainability, seasonality, biodiversity, and bringing sensory excitement and wildlife to the Viaduct.

The 150m length of viaduct will provide a test bed that transitions planting themes for Phase 2, taking elements of the character areas proposed within the Masterplan Vision, using a central winding path to form the spine of the Gardens, and then applying 3 key themed Gardens around this. This includes the 'Meadow Mounds', 'WaterAid Garden' and 'Gravel Mosaic planting'.

The proposals will create a range of experiences with planting and will help National Trust gauge their success, for both visitor experience, community engagement and to test how maintenance regimes can flex according to the planting themes.

There will be 3 x (approx. 50m) zones, plus the spill out space from the central building, that encapsulate a sense of immersion through the WaterAid Garden, the seasonal sensory character of Meadow Mounds, whilst overlapping with and the openness and natural feel of the Gravel Mosaic planting.

Each character zone will have distinction in terms of species, and with it, a unique experience and micro-climate. A key component of each zone will be to:

Bringing a sense of seasonality and maximum interest from Spring to Winter;

Use plants in a variety of topography undulations and hollows to encourage variety in plant species, and to enable different interactions with the planting;

To create intrigue, frame views and encourage dwell time by creating a green oasis and refuge;

Use plants with purpose to create meaning for people and add value for wildlife;

Include species which appeal to the senses;

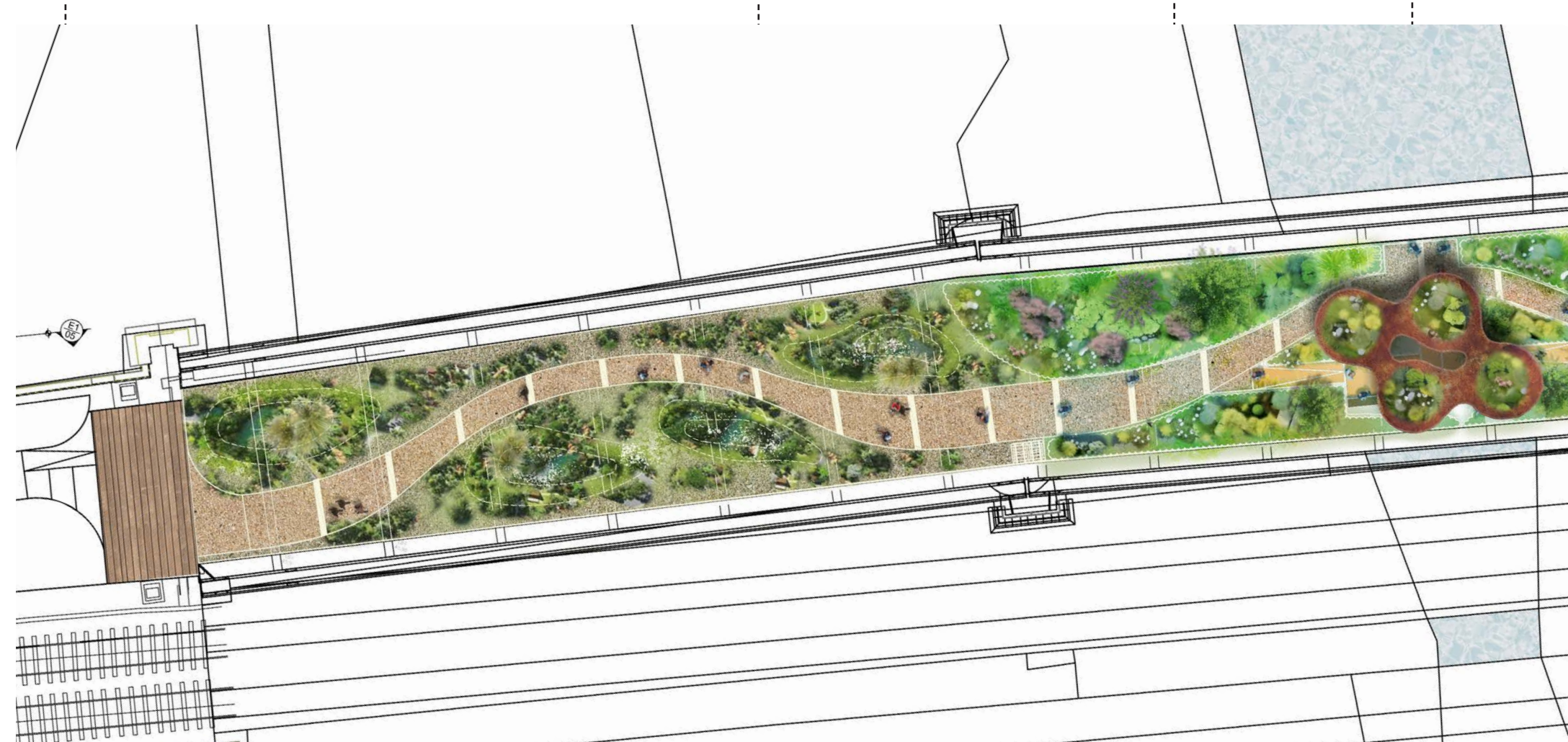
Respond to the limited availability of water, soils, and anticipated maintenance operations.

Untouched open viaduct with new 'broadwalk' path link to proposed stairs and accessible lift

Gravel mosaic planting, using translocated planting within recycled aggregate substrates

WaterAid Garden relocated from RHS Chelsea Flower show

Vantage point over Potato Wharf basin



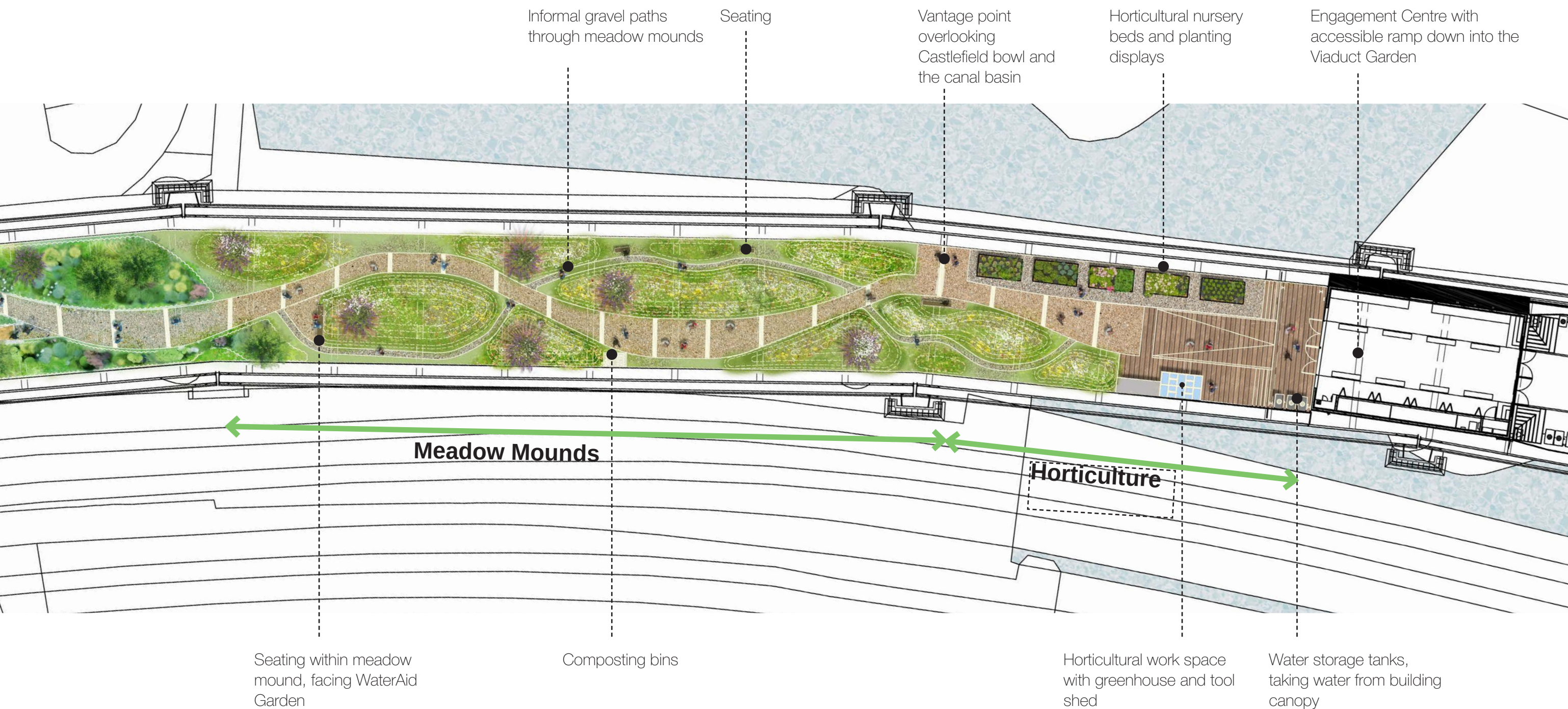
Landscape Plan

Primary path, resin bound gravel, varying in width from 3m to 1.5m with passing places

Composting bins

Metal grating ramp, seating and feature canopy





05 LANDSCAPE STRATEGY

Planting zones

The proposed strategy is to create a planting design with synergy along its length, with the overarching theme of sustainability and water management at the core. Planting will transition between 3 key zones, with some species repeated throughout each zone for visual continuity. Focal points such as small multi-stemmed shrubs / trees and the sculpture within the WaterAid garden create points of intrigue and focus, encouraging people to explore.

Each zone represents a different strategy for dealing with shallow substrates, low water availability, and species adaption for climate change. Substrates will vary, using recycled / reclaimed aggregates, low-nutrient topsoils, and demonstrate innovative methods of shading and passive irrigation.

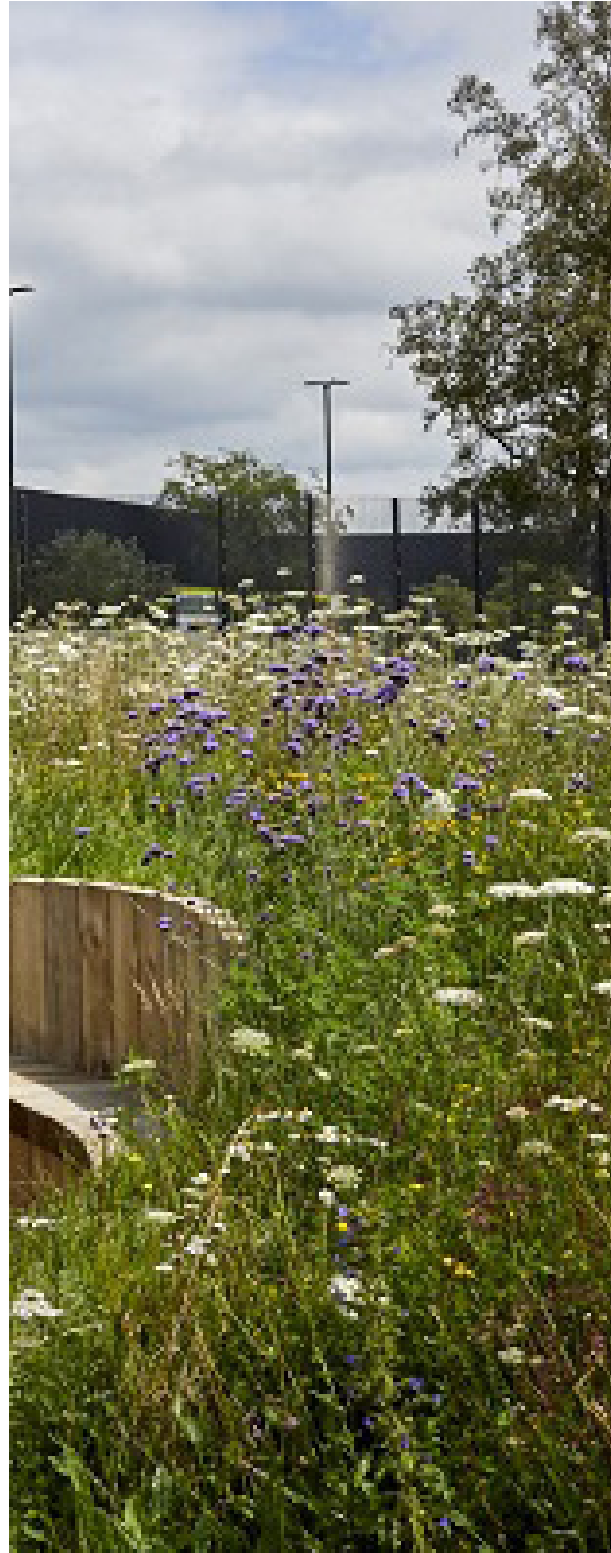
The strategy explores planting palettes in both natives and non-native species that can work with limitations on water usage and making use of sustainable attenuation methods.

The aim for Phase 2 is to create a water-smart sustainable planting solution, that can also continue to capture the imagination and align with the Viaduct 'Vision' and aspiration of the community stakeholders and future users of the Viaduct.

Within the Meadow mounds zone, planting will be selected to include local native species, supplemented with nectar-rich non-natives which will extend the flowering season and help provide winter structure. Planting as the areas move outward towards the open viaduct would become less water tolerant and adapted to more drought conditions, to sit alongside the philosophy of the WaterAid Garden and align with National Trust's policy and sustainability ambitions.

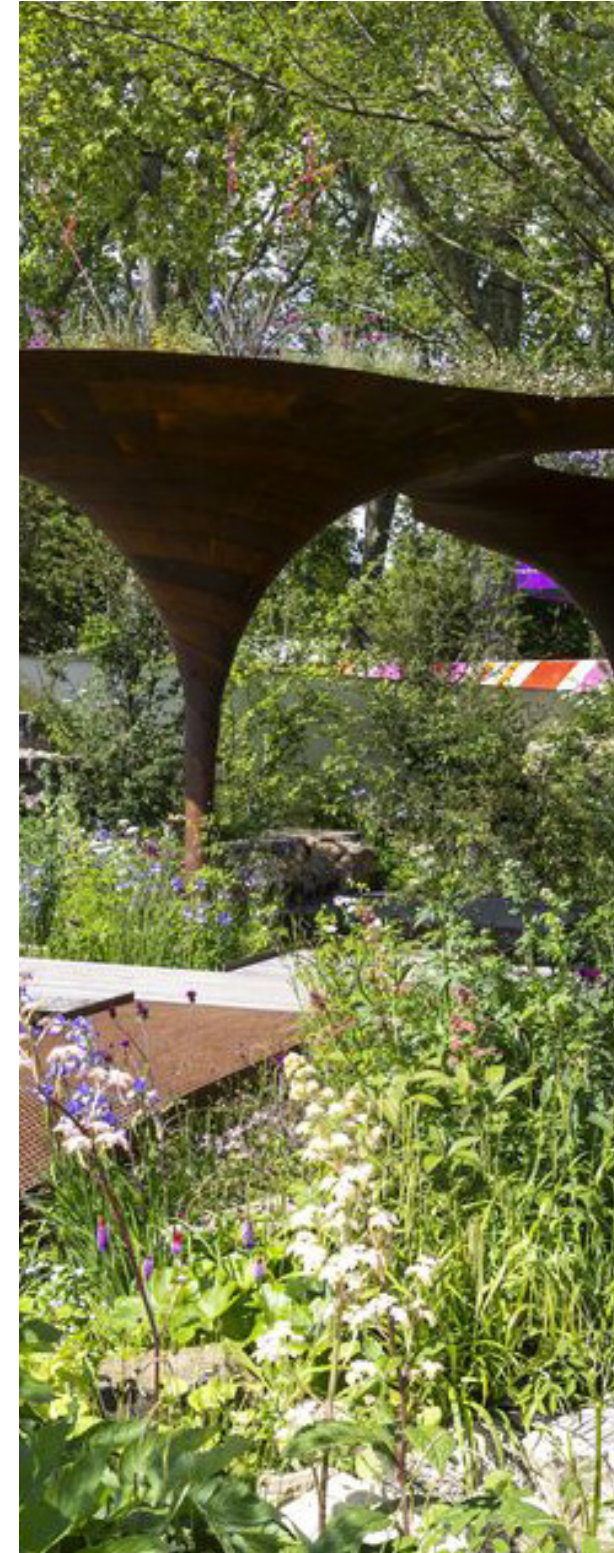
The detailed choice of species and planting plans will be further shaped alongside National Trust and community stakeholders to define the character areas of the Viaduct 'Gardens' alongside the WaterAid Garden, to maximise Biodiversity Net Gain and be responsive to local flora and fauna.

Meadow mounds



Immersive/ Colour/ seasonal

WaterAid Garden



Sustainable/ educational

Gravel Mosaic Planting



Naturalistic / Native / Open