084 **Dorsal Bridge**

A sensuously engaging **sculptural** bridge, providing enjoyment and **shelter** for individuals and an appropriately **distinctive** urban landmark, while **touching lightly** on each bank.

2. HEIGHT ACROSS RIVER AND INHERENT ACCESS ISSUES:

Dorsal spine structure **minimises height** while achieving clearance, creating a cohesive **balanced** landmark, while peeled-off cycle ramps sensitively embrace public spaces at each end, with **flexibility** for other sites.

Elegant **efficient** structure suits the **sensuous** curves in plan & elevation. A **haunched** beam spanning between banks is shaped into a **dorsal spine** above deck for **maximum clearance** at the river pier pinch-points.

End spans are tied down with land piers (at lifts), giving positive **pre-stress** to reduce main span sagging, resulting in an **exceptionally slender** structure in elevation. Box girder deck with curved soffit is torsionally stiff, rigid and **robust**.

Sculpted openings are carefully placed to carry forces in **truss action**, lightening the mass, and enhancing **user involvement** and views. Accessible stairs, ramps and lifts at each end.

Cycle ramps **peel-off** the dorsal spine to ensure flexibility for detailed resolution in any context. Ramps define and **augment public realm** at each end, before returning to align with adjacent pedestrian route for efficient road crossings.

Entire structure in **stainless steel** plate simplifies fabrication avoiding internal maintenance access (roll-bonded clad plate is more expensive).

Distinctive animated profile, **luminous** reflectivity and **humanising** scale differentiates this bridge, inviting **endearing** nicknames, which further extend its influence in **area branding, recognition** and **usefulness.**

3. PHASED CONSTRUCTION TO ENSURE RIVER TRAFFIC CONTINUES:

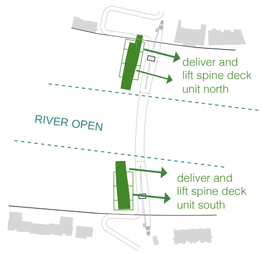
Our process **minimises impact** on river navigation and properties near site. The structure would be detailed to utilise prefabrication and delivery of large pieces by barge.

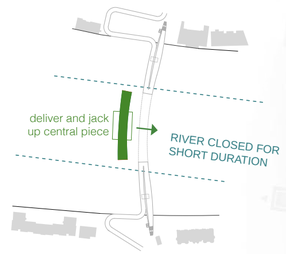
Landing piers constructed in-situ with bored piles due to high tensile demand. River piers also founded on **bored piles** for reasons of structural and ship impact demand. In-situ pile-cap built within a **cofferdam** is most suitable method to achieve a buried foundation with only the pier shaft protruding from the river bed.

Sculpted shafts of the **river piers** benefit from off site precasting, either as an external shell completed with an in-situ core or whole sections stitched together. Material delivery by river is feasible for land structures and those in the river.

Inherent stability of the primary deck structure lends itself to installation in **three large units**: two end units spanning from each landing pier to the point of contraflexure, and a **drop-in span**. The spine beam's height and navigational clearance of existing Thames bridges preclude delivery of the end units with the spine assembled.

Three barges coupled together would deliver the **spine deck units** with the spine laid flat on the bridge deck. Spine is then reared vertically with jacks and connected to the deck. The link barges would be ballasted down and removed to allow the units to be **jacked up** to higher than the piers on the remaining barges and moved into position. The **central piece** can be delivered by barge and lifted by strand jacks mounted on the ends of the cantilevers.





1. INTEGRATING CYCLE AND PEDESTRIAN TRAFFIC:

We use the structure and form to safely separate pedestrians and cyclists, while retaining the **liveliness** of adjacent use.

Continuous cycle route without interruption for **fast commuters**. Parallel paths of different colours **avoid cross-overs**. Stairs and glass lifts at each end are apart from cycle traffic.

Spine divides paths and provides **windbreak**. Pedestrians can use cycle path, not vice-versa. Where paths adjacent, separation enhanced with **benches** and blister/corduroy surfaces, with either a level deck or curb height difference. Deck surfaces are external grade recycled dense rubber chippings for smooth **quiet atmosphere**.

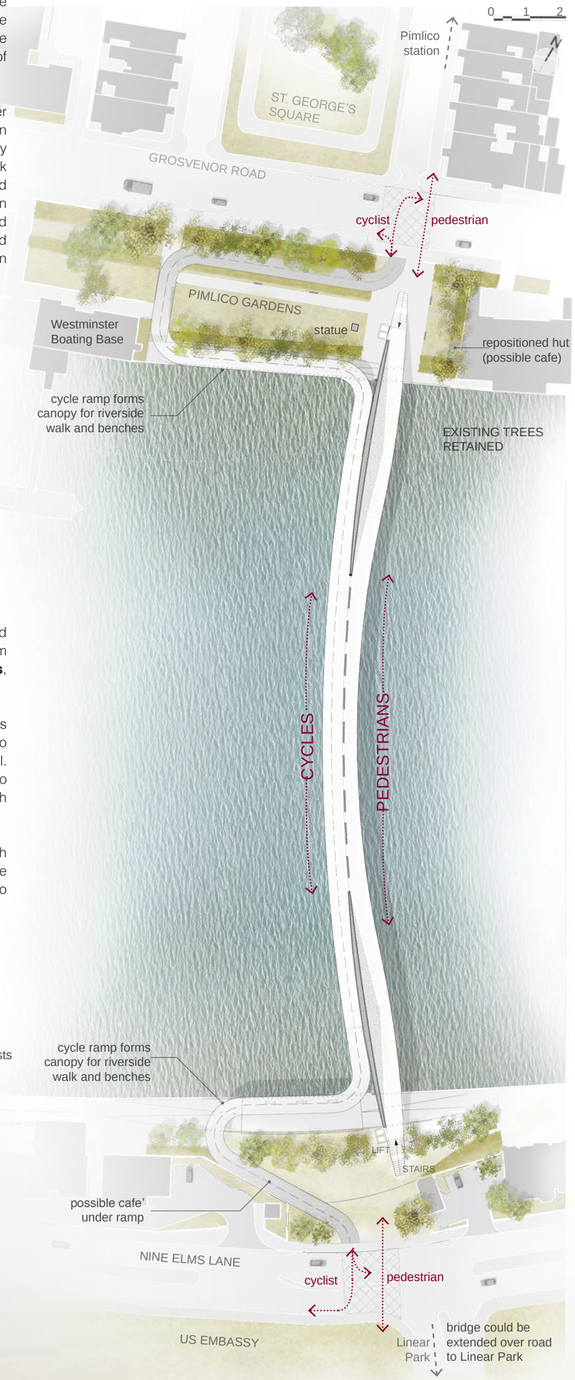
Cycle path 5m wide with 1 in 21 **ramps** intended for cyclists only (others can use but the form naturally discourages it). Walkers use **stairs**, wheelchairs use **lifts**.

Cyclists unable to go up ramps can use lifts or **stair cycle-troughs**, walking their bikes to the centre span to join the cycle path downhill. Pedestrian path width varies 4m to 6m to encourage pausing and is **gently curved** with no slope more than 1 in 21.

Paths meet in **generous public spaces** with signalled junctions on Grosvenor Road and Nine Elms Lane to ensure safe efficient connection to on-going routes.

LOCATION:

Site Option 1 illustrates our proposal, but our **robust design concept** and solutions to the Challenges retain **flexibility for any site** chosen.



4. PLACE MAKING ACROSS THE BRIDGE AND AT ITS LANDING POINTS:

A uniquely **stimulating** and memorably **shimmering** object encouraging people to pause and use the bridge as a place, as well as a route.

Structure of minimum bulk and maximum **presence**, allows cycle ramps to detach with **autonomous flexibility** at each bank.

A **coherent** set of **sinuous** new riverscape spaces that join & enhance **public realm** each side, **reflecting** the ambitious transformation of Nine Elms, and **sensitively augmenting** the nature of Pimlico Gardens.

Gently **curved** to enliven user experience & rationalise angle at banks. Cycle ramps sensitively embrace, define and **animate** landing spaces, forming a river edge **canopy** at each bank sheltering walkers/sitters below and framing views. Raised riverside paths improve **views** and anticipate higher flood defences.

Stainless is mainly **satin polished,** inside holes & all underside is **mirrored**. Other finishes highlight details. Balustrade supports create **dynamic rhythm** and continue underneath in diminishing **tendrils** giving **texture** & finesse to the important underside elevation.

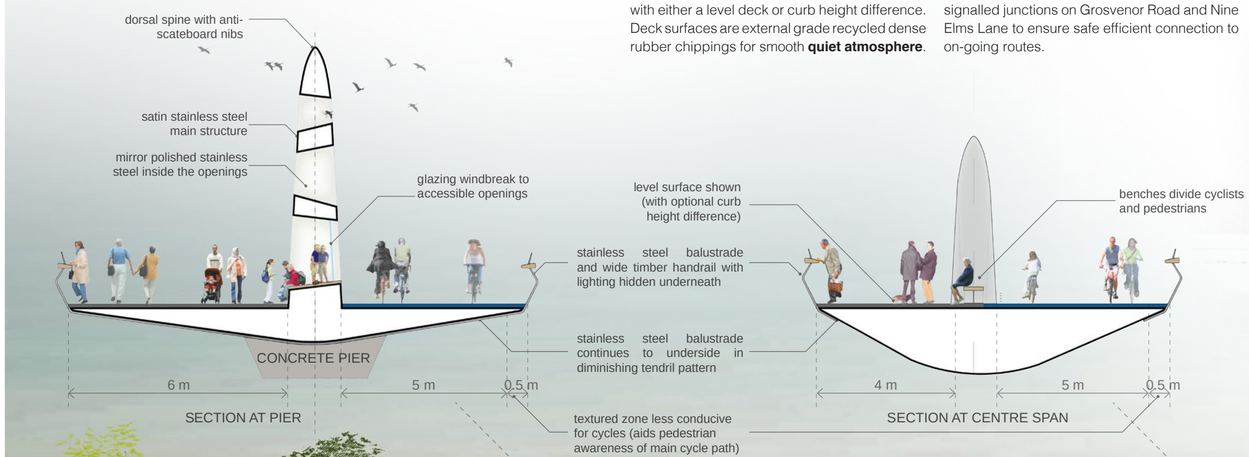
Accessed openings are **weather-protected** benches divided from cycle path by glass, to **windbreak** prevailing westerlies, increasing walker comfort for 50% of crossing. **Singular** nature of welded/polished stainless steel **invites** people to stop/engage, sit/play.

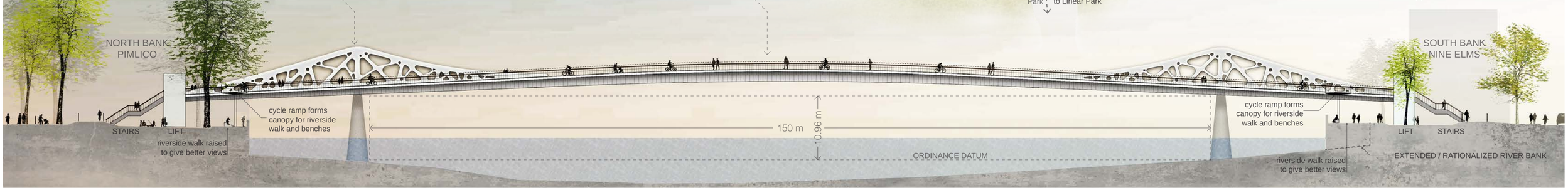
North Bank - Pimlico Garden & Shrubbery:
The bridge is **sensitively** set to retain character and **trees.** Re-set statue commands the improved space. While creating an exciting **memorable** experience for northbound cyclists to peddle **'into the trees',** the reflective underside of the **ramp/canopy** augments the gardens contemplative nature and **shelters** users.

South Bank - Riverwalk
Given the existing space from river to road, the uneven stepped bank, and required cycle ramp length, we propose an **extended** simplified **riverbank** for a suitably **generous public realm.** Pending discussion, this improved bank sets the future qualitative standard of form, materials and flood defence.

Continuous **lights** under the wide **timber handrail** avoids glare for users. Subtle accent lights in the spine holes gently invigorate their **lustrous** character. Lights from the piers bathe the underside accentuating its delicate pattern of extended balustrade tendrils.

Our track record of **artist collaborations**, and desire to contribute to the **cultural strategy** of both riversides underlies our approach.





Dorsal Bridge

'dorsal' - *adjective* Anatomy, Zoology, & Botany: *on or relating to the upper side or back of an animal, plant, or organ*

A sensuously engaging **sculptural** bridge, providing enjoyment and **shelter** for individuals, and an appropriately **distinctive** urban landmark, while **touching lightly** on each bank.

Integrating Cycle & Pedestrian Traffic

We use the structure and form to safely separate **pedestrians** and **cyclists**, while retaining the **liveliness** of adjacent use.

The cycle route is un-interrupted for **fast commuters**. Parallel paths of different colours **avoid cross-overs**. Stairs & **glass lifts** at each end are apart from cycle traffic. The spine divides paths and provides a **windbreak**. Pedestrians can use cycle path, not vice-versa. Where paths are adjacent at mid-span, the are kept apart by **benches** and a curb. The deck is recycled rubber chippings for a smooth **quiet atmosphere**. Cycle path is 5m wide with gently sloped **ramps** intended for cyclists only (walkers use **stairs**, wheelchairs / buggies use the **lifts**). Cyclists unable to manage the ramps can use the lifts, then walk their bikes to join the cycle path downhill. Pedestrian path width varies 4m to 6m to encourage pausing and is **gently curved** and sloped. **Generous public spaces** are created at each bank, with signalled junctions to the roads to safely connect to on-going routes.

Height Across River & Inherent Access Issues

The **dorsal spine** structure **minimises height** and achieves river clearance, creating a cohesive balanced **landmark**, while peeled-off cycle **ramps sensitively embrace** the public spaces at each end (with flexibility for other sites).

Elegant efficient structure suits the **sensuous** curves in plan and elevation. A haunched beam spanning between the columns in the river is shaped into a **dorsal spine** above deck. The ends are tied-down underground (at the lifts), which bends the whole bridge into its gently arched and **exceptionally slender** shape. **Sculpted** openings are carefully placed where there are no engineering forces, lightening the bridge and enhancing **user involvement** and views. The stairs, ramps and lifts at each end are carefully positioned for easy use. The cycle ramps detach from the dorsal spine to **encompass** the places at each bank.

The entire bridge is **stainless steel** with different levels of polishing. The distinctive animated profile, **luminous** reflectivity and **humanising** scale differentiates the bridge, inviting endearing **nicknames**, helping people welcome it as a new part of the city.

Place Making Across the Bridge & Landing Points

A **stimulating** and memorable **shimmering** object encouraging **people to pause** and use it as a place, as well as a route.

Gently **curved** to be more fun to use, the bridge is designed like a set of **sinuous** new riverscape spaces. It creates a new way to **enjoy** the river, as well as joining and enhancing the **public realm** on each side, **reflecting** the ambitious transformation of Nine Elms, and **sensitively augmenting** the nature of Pimlico Gardens. Cycle ramps carefully embrace, define and **animate** landing spaces, forming a **river edge canopy** at each bank **sheltering** walkers/sitters below and **framing views**. The handrail is natural **timber**. **Openings** in the dorsal spine beam invite people to **stop/engage, sit/play**. They are weather-protected and divided from the cycle path by glass, to **windbreak** the prevailing westerlies, making half the crossing length much more **comfortable for walkers**.

The south riverbank is **extended** and improved for a suitably **generous** public realm. Continuous lights under the wide timber handrail avoids glare for users. Subtle accent **lights** in the dorsal spine holes gently invigorate their **lustrous** character. Lights from the main columns bathe the underside of the bridge.

All the Pimlico Gardens' **trees remain**. Northbound cyclists have the fun of peddling 'into the trees', while the reflective underside of their ramp creates a **canopy** sheltering riverside walkers and sitters below.