

The Nine Elms to Pimlico bridge will be an exciting new landmark for London, offering all its users a quick, safe and enjoyable way to cross the Thames.

The design team is made up of keen cyclists and pedestrians. With our experience in mind, we have focussed on four important design solutions that we believe will be crucial to the bridge's success.

**1. No Dismounting**

Cyclists must be able to move onto and off the bridge without dismounting. Without this, the essential purpose of the bridge will be lost. There must be easy, continuous movement from end to end.

**2. Separating The Lanes**

Our proposed design separates not only pedestrians and cyclists, but also cyclists travelling in opposite directions: coming towards

other cyclists can sometimes be intimidating, especially at night. Therefore, three individual crossings are incorporated into the design to achieve safe and calm traffic, and accommodate different modes and speeds of travel.

**3. Lightweight Structure**

We strongly believe that the visual impact of the bridge must be characterised by lightness and grace. This has implications for the engineering of the bridge. It must be constructed using materials and techniques that minimize and harmonize its structural presence on the river and on both banks.

**4. No Pillars In The River**

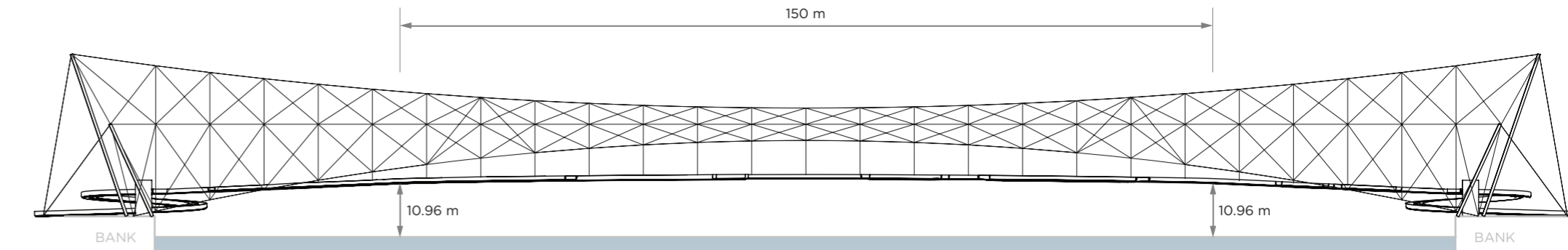
Finally, by placing the bridge's supporting pillars on the banks, we would create a bridge that entirely spans the Thames, uninterrupted by any pillars in the river. Our design is compatible with both Option 1 and Option 2 locations, and can also be adapted for other possibilities.



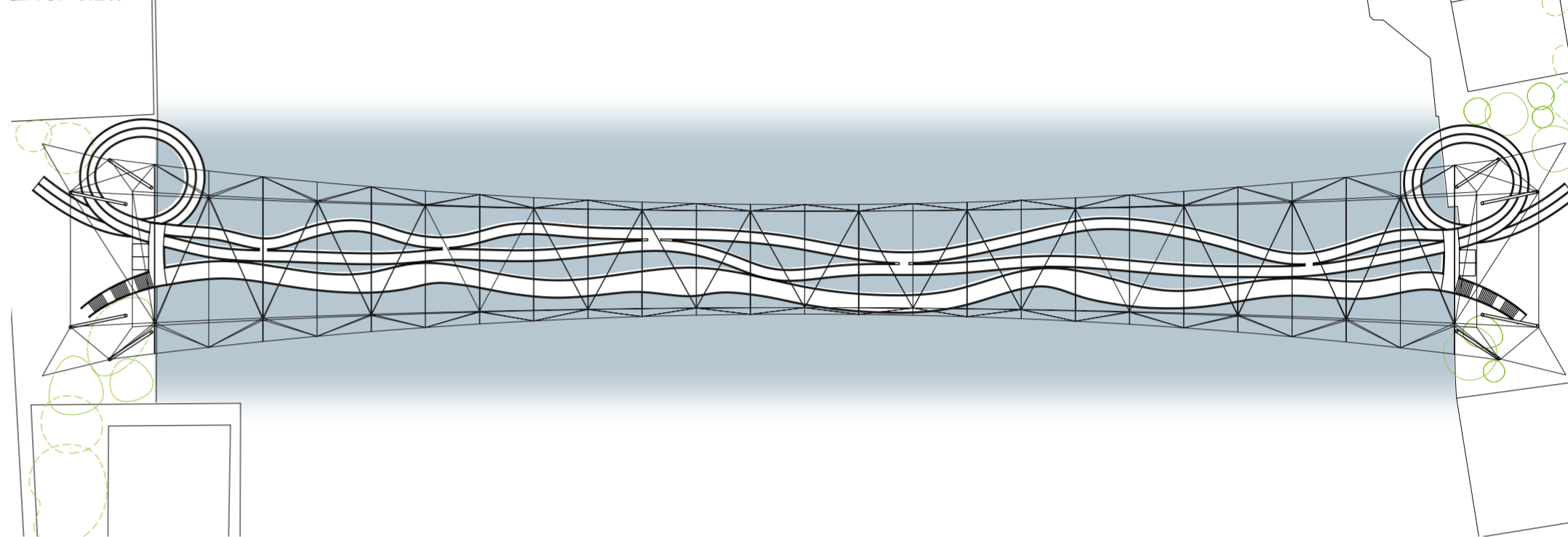
**Inspiration**

Our design for the three separate crossings has been influenced by the fluid, liquid lines found in nature, like the meanderings of river estuaries and deltas, or a raindrop travelling down a pane of glass. This inspiration has been used to create the soft organic curves which underline a sense of movement and progress. These crossings would represent a departure from most of London's bridges, with their strictly linear crossings.

**SECTION**



**TOP VIEW**



**Description**

The three individual crossings - for north-south cycle traffic, pedestrian traffic, and south-north cycle traffic, respectively - continue this organic theme with their gentle, rounded forms. Their exterior cladding would have a rippled texture and include horizontal lines of semi-reflective material. This would create a shimmering sense of motion across the bridge, as it reflects sunlight, water ripples and colours during daylight hours. The pedestrian crossing allows for comfortable passage even during busy periods and includes, at intervals, pocket spaces for conversation or simply taking in the views.

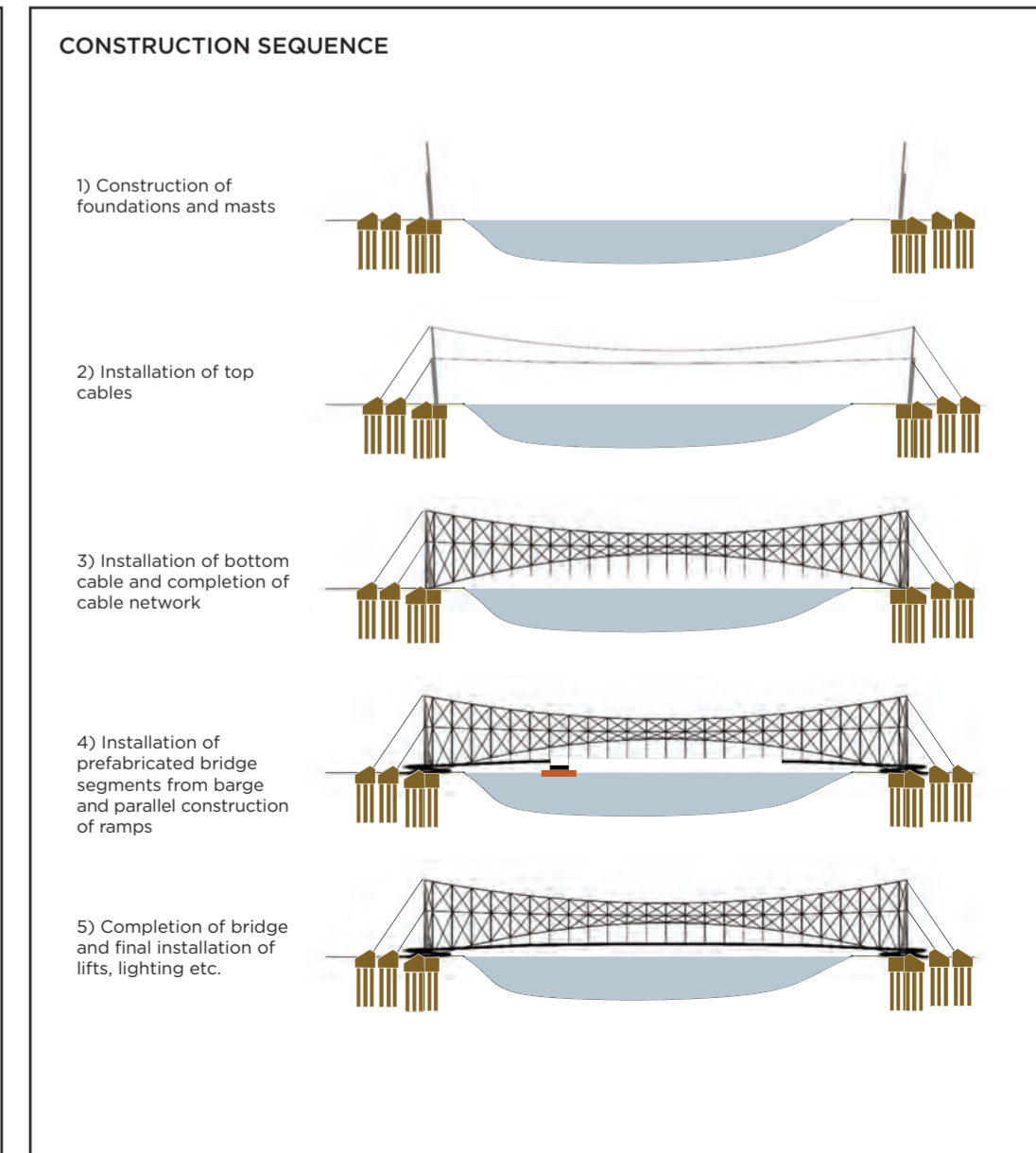
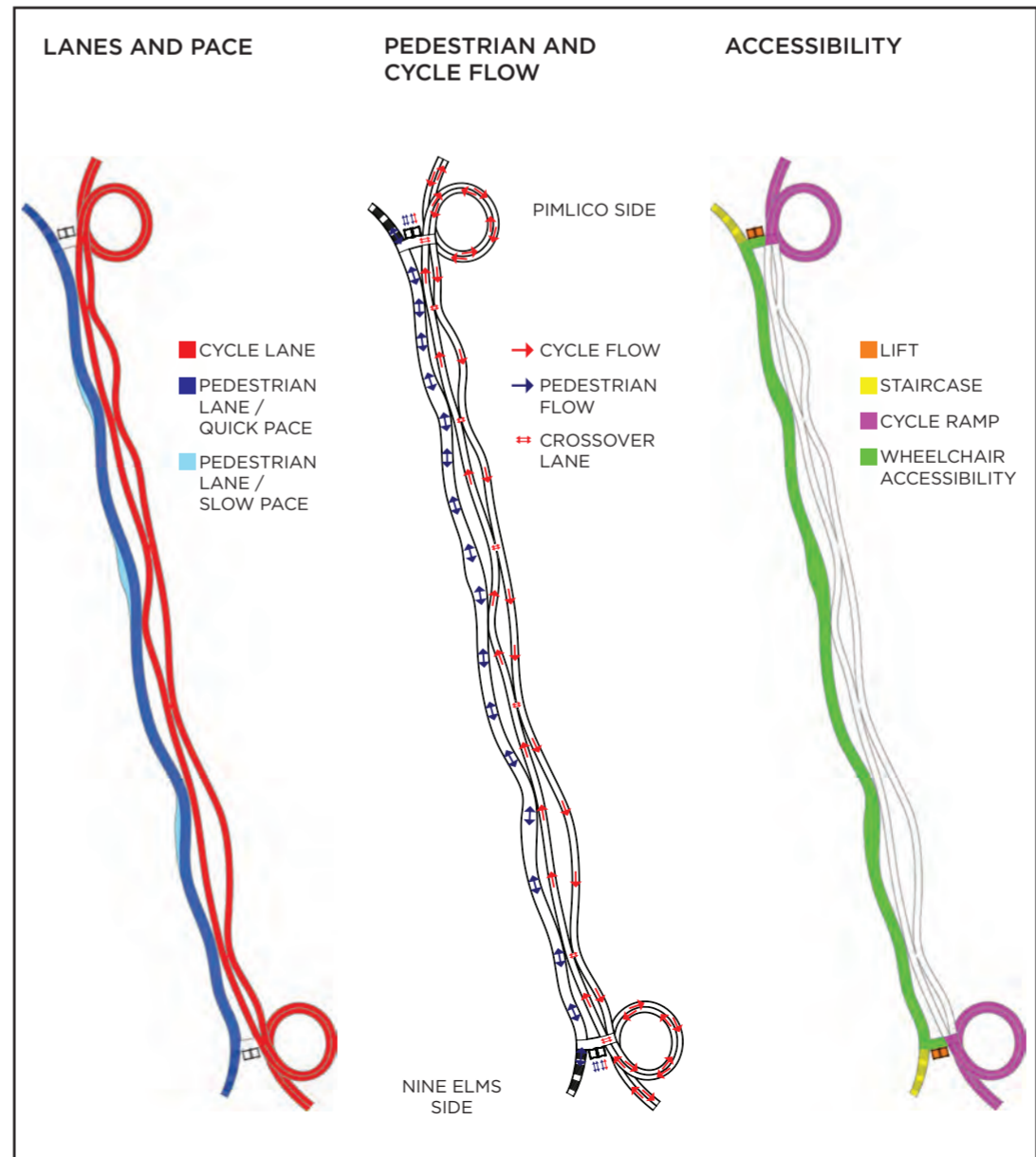
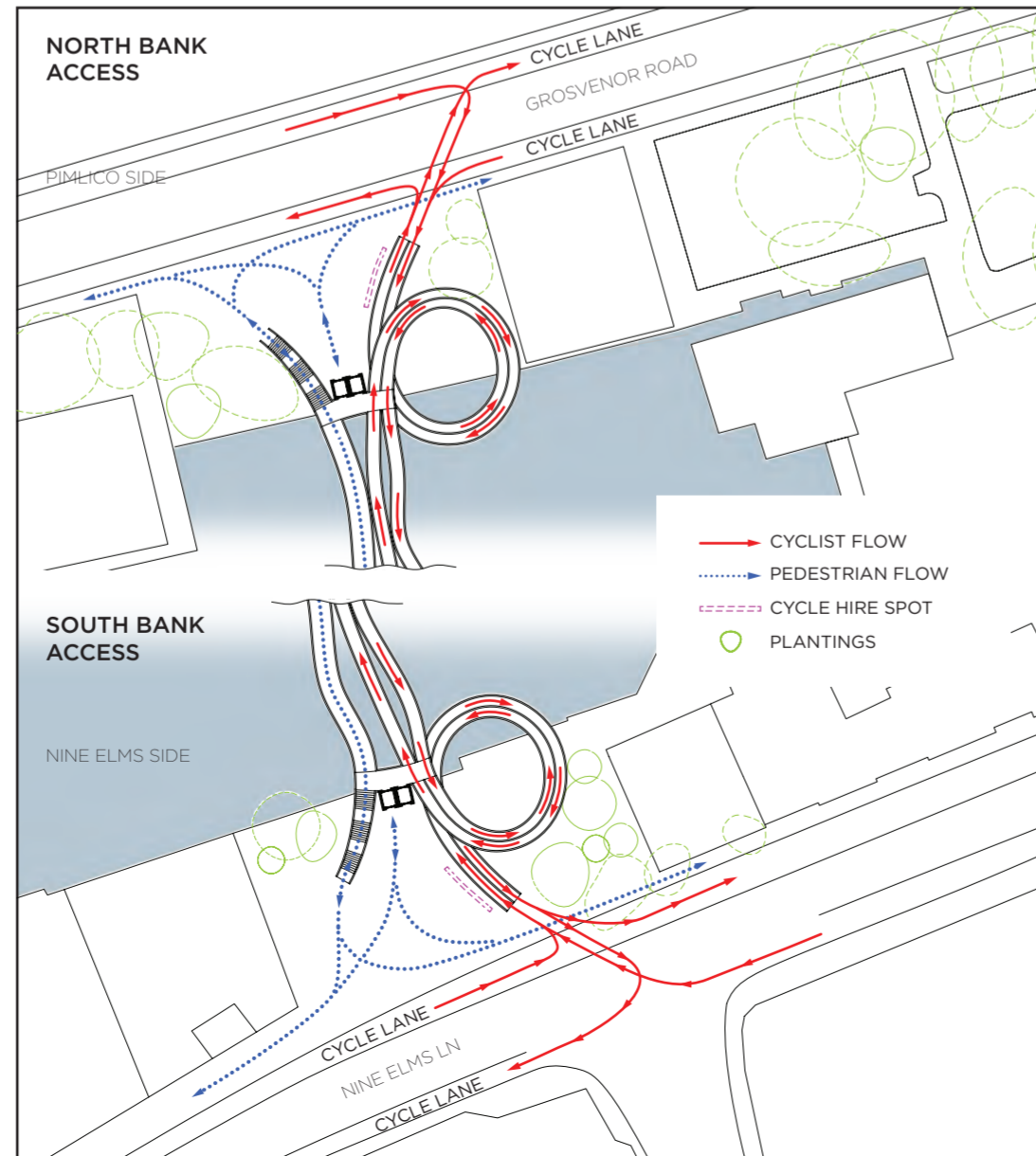
**Structural Concept**

The structural design is based on suspending cable network spanning between inclined struts or masts on each bank, without any intermediate support over the river. Six main cables span across the river: four cables are tensioned at high level supported via the masts to carry the gravity loads. The two remaining cables are anchored directly to the ground tensioned in reverse direction to hold the structure against uplift and horizontal loads from wind and notional horizontal loads. Cables in cross direction are arranged every 10 meters to provide hanging supports to the bridge lanes which will be made from prefabricated 10m long units. Diagonal cables are

arranged between the 6 main cables to provide shear stiffness vertically and horizontally. Lateral stiffness of the bridge deck structure is activated by connecting the ribbon structure of the three lanes together to activate horizontal diaphragm or truss action from the decks. The masts at the river banks are also used to suspend the cycling ramps as they are partially located over the river to save space on the banks.

**Construction Sequence**

The construction sequence is identical to the sequence of any suspended bridge. As all masts are arranged on the bank side no foundation works need to be undertaken in the river which will reduce the environmental impact and avoid any major impact on the shipping traffic. The masts will be erected and braced, the upper cables installed by winching across the river and lower cables installed to brace the system. The 10 meter units forming the structure of the ribbon crossing decks are small enough to be prefabricated. They will be delivered on site and from a barge they will be installed to the hangers and jointed, thus minimising river disruption.





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### **Inspiration**

Our design for the three separate crossings has been influenced by lines, particularly lines found in nature: the meandering lines of a river, the veins on a leaf, a raindrop travelling down a window pane. These natural shapes have been used to create three crossings - softly curved, organic, underlining a sense of movement and progress. These crossings would represent a departure from most of London's bridges, with their strictly linear crossings.

### **Description**

The bridge is hung from a network of cables supported by four cables tensioned via masts to the riverbanks and two cables anchored directly to the ground holding the structure downwards. A network of cross and diagonal cables provide additional stiffness. This structure is chosen to allow a minimalistic lightweight structure, in order to achieve a sense free floating lightness. The masts are based on each river bank, where they become fully integrated - both visually and functionally - with the surrounding landscape.

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