

COMMON LAND - BRIDGING TOPOGRAPHY

01 // CYCLE AND PEDESTRIAN TRAFFIC - INTERMINGLING URBAN FLOWS

The aim of the proposal is to connect urban and structural flows across the river by generating a unique spatial and kinaesthetic experience and an intelligible and elegant design. The spatial intertwining of pedestrian and cycle routes is the origin point for the evolving bridge geometry. Lanes are separated spatially to ensure a high level of safety: While the cycle route follows a slightly bended line that logically connects to the existing cyclist network, the pedestrian route slightly meanders, splits from the main lane and crosses it to create the required structural height of the bridge. Thereby a topography evolves, a common land which celebrates views onto its surrounding context and becomes a place of exchange and interaction between the two neighbourhoods.

02 // PLACE MAKING AND LANDING POINTS - A COMMON TOPOGRAPHY

The new Thames Bridge will become a balancing landmark that does not only connect two different river banks and historical contexts - by creating various places across the river it will become a memorable and characteristic place on its own. The landings on both sides are designed to minimise the impact on the existing river banks. The circular ramps provide a comfortable and safe access for cyclists and create an inviting, partly covered space for public seating areas in Pimlico Garden and along the river promenade on Nine Elms side. The pedestrian lane follows the idea of a diversified architectural promenade that constantly transforms prospects due to its curved geometry.

The bottom view of the bridge becomes a characteristic elevation of the proposal which is highly visible from boats, both landings and on the bridge itself. To accentuate the surface the structural members are displayed which follow inner stresslines. They create an atmospheric interplay of pattern, colour and reflection between the structure of the bridge and the water surface below.

03 // HEIGHT ACROSS THE RIVER - ACCESSIBILITY FOR ALL

The lower lane of the bridge describes a continuous curve of 216 meter length with a maximum inclination of five percent. The panoramic pedestrian lane is 255 meter long with a maximum inclination of five percent. (A fast track for pedestrians follows the bicycle route). Elevators on each side ensure universal access. For safe and comfortable cyclists' access the proposal suggest to build circular ramps on both sides. The required navigation clearance of 150 meter horizontally and 10.96 meter vertically is guaranteed.

04 // APPROACH TO CONSTRUCTION - MINIMIZING IMPACT

The bridge is designed as a steel structure, foundations and structure below high water level consist of reinforced concrete. The crossing lanes ensure constructive height in the middle of the structure while keeping the appearance of the bridge slender.

The structural system is single span steel structure with cantilevering ends. The maximum span between the supports is 150 meters, the maximum cantilever on the bridge ends is 40 meters. Steel cross-sections vary according to the force flow. Bridge deck, longitudinal lamellae and caps at the bottom of the lamellae are configured according to internal loads. The form box profiles are braced by ribs at the supports and areas utilized by torsional or compression forces. At areas utilized by mainly tensile forces or horizontal bending moments they act as horizontal I-shaped cross-sections. The foundations consist of raft foundations and bored reinforced concrete piles. Access ramps and stairs are supported by the bridge ends and rest on the river bank.

Construction phases organize in three major steps: building concrete supports, constructing steel structure of the cantilevering parts above supports and mounting the middle part of the bridge. As supports are located outside the river traffic zone, concrete works for piles and foundations will not affect the river traffic. The steel structure consists of prefabricated large elements that are delivered by boat. The cantilevering steel structures are built up from the river side via crane and do not affect the river traffic zone. Connections will be welded on site. The middle element has a span of 75 meters and connects both sides. It is assembled at the river side, located and mounted via cargo boats. Bolted joints allow for a quick mounting of the last part to minimize the impact on the river traffic.





