

BENCH OF THAMES

NINE ELMS TO PIMLICO PEDESTRIAN AND CYCLE BRIDGE



Vision

Our vision for the new pedestrian and bicycle bridge is not only a new connection in London, but as well a series of vibrant public urban spaces for all Londoners - bringing more urban life on top of the River Thames. One of the greatest challenges of a pedestrian bridge is they become solely instruments for moving people from a to b and have no extra space, for pauses, for waiting, for observing life, for pockets where city life can unfold. They lack public space! A historic bridge such as Pont Neuf in Paris has built-in seating elements, which means the bridge cannot only act as a connector, but more importantly, it can be a public space that people can inhabit. One of the greatest elements we as architects and urban planners can create for London is more quality public space. A bridge placed between Nine Elms and Pimlico at this characteristic bend of the Thames, propped up to this height in London gives amazing views of the city. We want to create a new public space on the Thames with a fantastic view onto the city!

Concept

Our concept for the new pedestrian and bicycle bridge is a series of frames creating public spaces, framing urban life and framing views onto the city (Challenge 1). These frames also acts as an integral design element in the suspension bridge. The frames are interconnected in a series of almost randomly placed horizontal links giving the bridge the appearance of bare Elm branches. For our design in the Nine Elms to Pimlico Pedestrian and Cycle Bridge competition, we have used alignment option 1 as a starting point for our design. This alignment starts in two urban parks the Pimlico Garden & Shrubbery towards north and the Riverside Walk towards south. This allows us to connect two urban parks. Instead of having two individual parks we have the possibility to combine both parks into a series of connected, vibrant urban spaces like beads on a string. Adding to this series two amphitheatres are created on the bridge cantilevering from the sides atop the River Thames. One amphitheater is pressed slightly

down, the other slightly up. Allowing for different views onto the city. In addition, both long sides of the bridge are shaped as benches, so that London gets two new super-benches each more than 200 meters long (Challenge 4). Both lands of the bridge are designed functionally for universal access, but are also designed as new urban spaces. Each landing point for the bridge are developed in a unique fashion to create a new space in Pimlico and in Nine Elms. These landings have been adapted to alignment 1, but can also adapt to other alignments (Challenge 4).

Our bridge design can be divided into two simple design elements; a series of interconnected frames creating a suspension bridge and a wooden deck placed within these frame. The wooden deck is developed as giant urban furniture shaped and crafted to accommodate sitting arrangements of people and also to separate flows of pedestrians and bicyclists.

Landmark

Re-imagining the suspension bridge not as a minimal cable structure, but as a new landmark for a new city development, the bridge is instead designed as a series of steel frames. London's new bridge has an immediate connotation to historic industrial bridges lending from its placement close to Nine Elms and its Battersea Power Station.

The frame design allows the bridge to span 150m and ensure the appropriate (12m) clearance underneath (Challenge 2). While walking across these frames act as portals that both frame urban activities on the bridge and also frame an almost unlimited number of panoramic views onto London in all directions. The vibrant public spaces on the bridge lending from Pimlico's urban gardens. The bridge becomes not only a prominent gateway whilst passing underneath by boat, but also a gateway while simply walking or cycling across. The bridge itself is - framing London - framing urban life (Challenge 4).

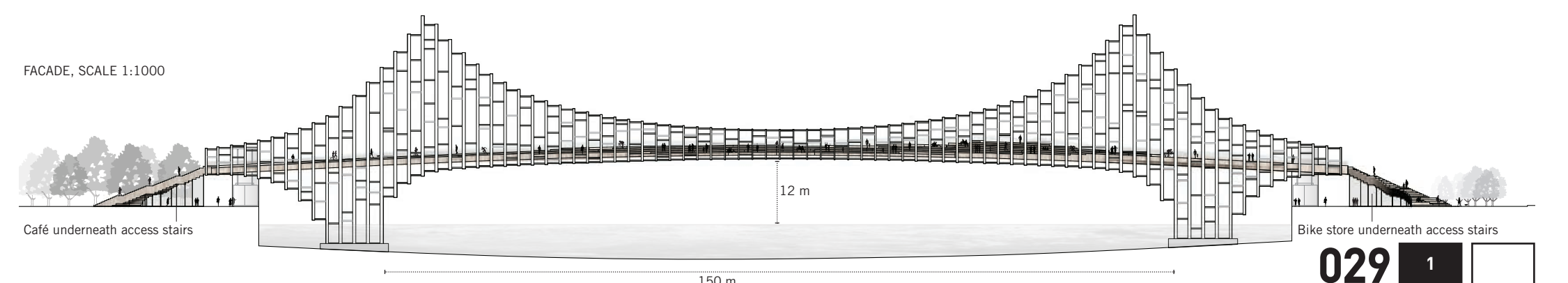
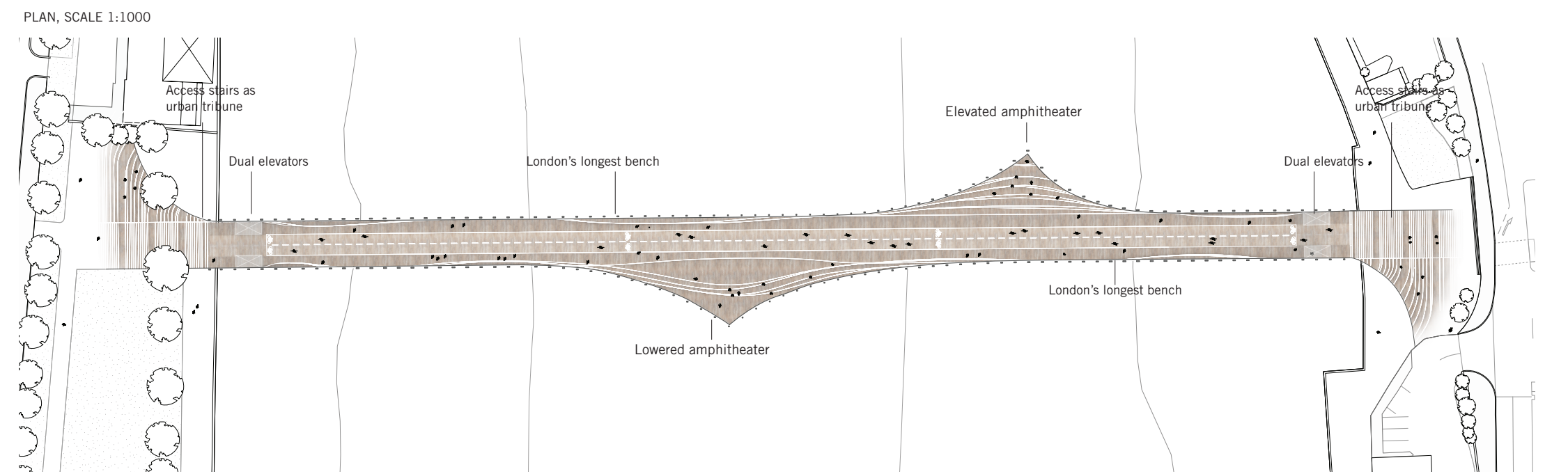
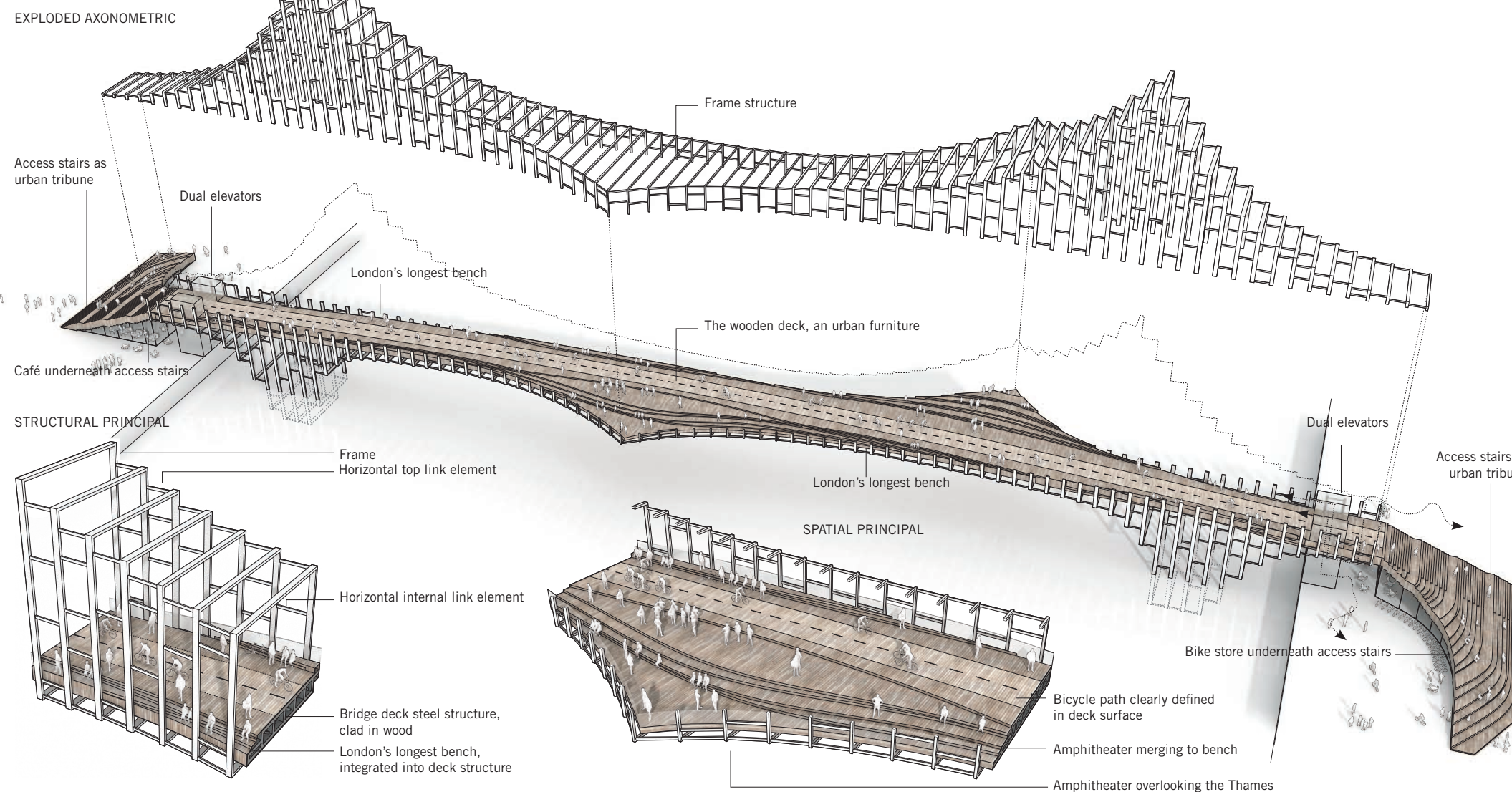
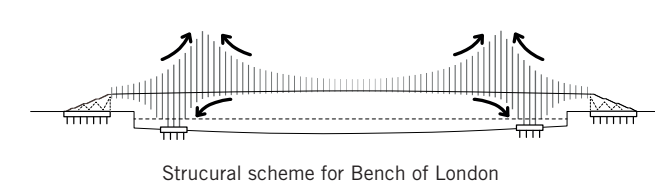
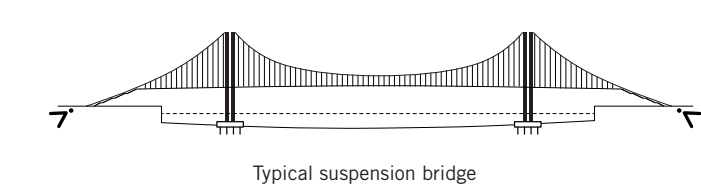
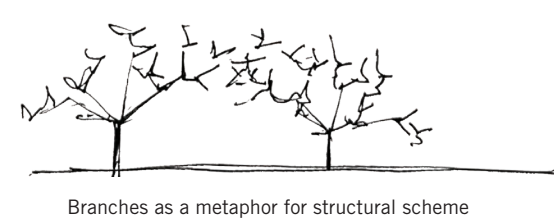
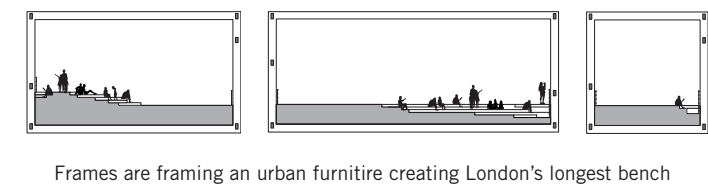
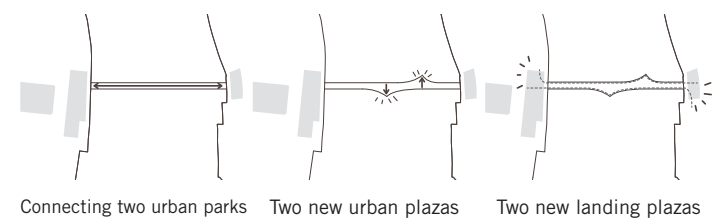
Structural Scheme

The idea behind the structural scheme is to create a new contemporary bridge using traditional bridge concepts. A series of vertical steel frames connected together are forming what normally is considered a suspension bridge. The horizontal link elements at the top and at the bottom between each frame is representing what a cable is doing for a suspended bridge. The internal horizontal link elements between the vertical frames are acting as an integrated part of the structural system. The top horizontal link is suspending the frames that are hanging the deck; the bottom one is adding tension to increase the global stability. The deck is a two-way steel grillage that is also giving horizontal stability to the bridge. To increase the damping, and secure a good dynamic performance of the bridge, there are a series of series of TMD's (Tune Mass Dampers) integrated in the bridge deck. The deck is covered in wood to become a piece of urban furniture.

The vertical elements of the frames that are touching the ground are acting as supports of the bridge. The vertical frames replace the piers normally found in a traditional bridge. The foundations and the anchor system will be in concrete and sitting above a series of piles. All frames and link elements are based on the same connection- and corner details, which secures a high level of construction repetition, and means that the bridge can be produced off-site in factory as a kit of parts and easily assembled on site.

The modular bridge design reduces construction time on site and disturbance to the local area (Challenge 3). The constructing sequence includes the following steps:

1. Construction of piles
2. Construction of pile caps and etys
3. Pre-fabrication in factory of steel micro elements (individual frame elements and links)
4. On site assembly of micro elements into macro elements
5. Start erection sequence with macro elements, starting from the piers and in progression versus the center
6. Assembly of bridge deck
7. Final fit out of balustrades, lighting, lifts, stairs, urban furniture
8. Construction of landscape





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