Hammersmith Temporary Ferry

Design and Access Statement

TRANSPORT FOR LONDON

Uber Boat by thames clippers

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Status: Planning
Date: 11 June 2021
Revision: P02

Controlled Document Status

Project Title: Hammersmith Temporary Ferry

Document Title: Design and Access Statement

Document Ref: 2048-BRL-02-XX-RP-C-1600

Revision Record

Rev	Issue Date	Summary of Changes	Prepared	Checked	Approved
P01	14.05.2021		FB	HP	TKHB
P02	11.06.2021	Updated CGI's with CCTV	FB	GG	GG

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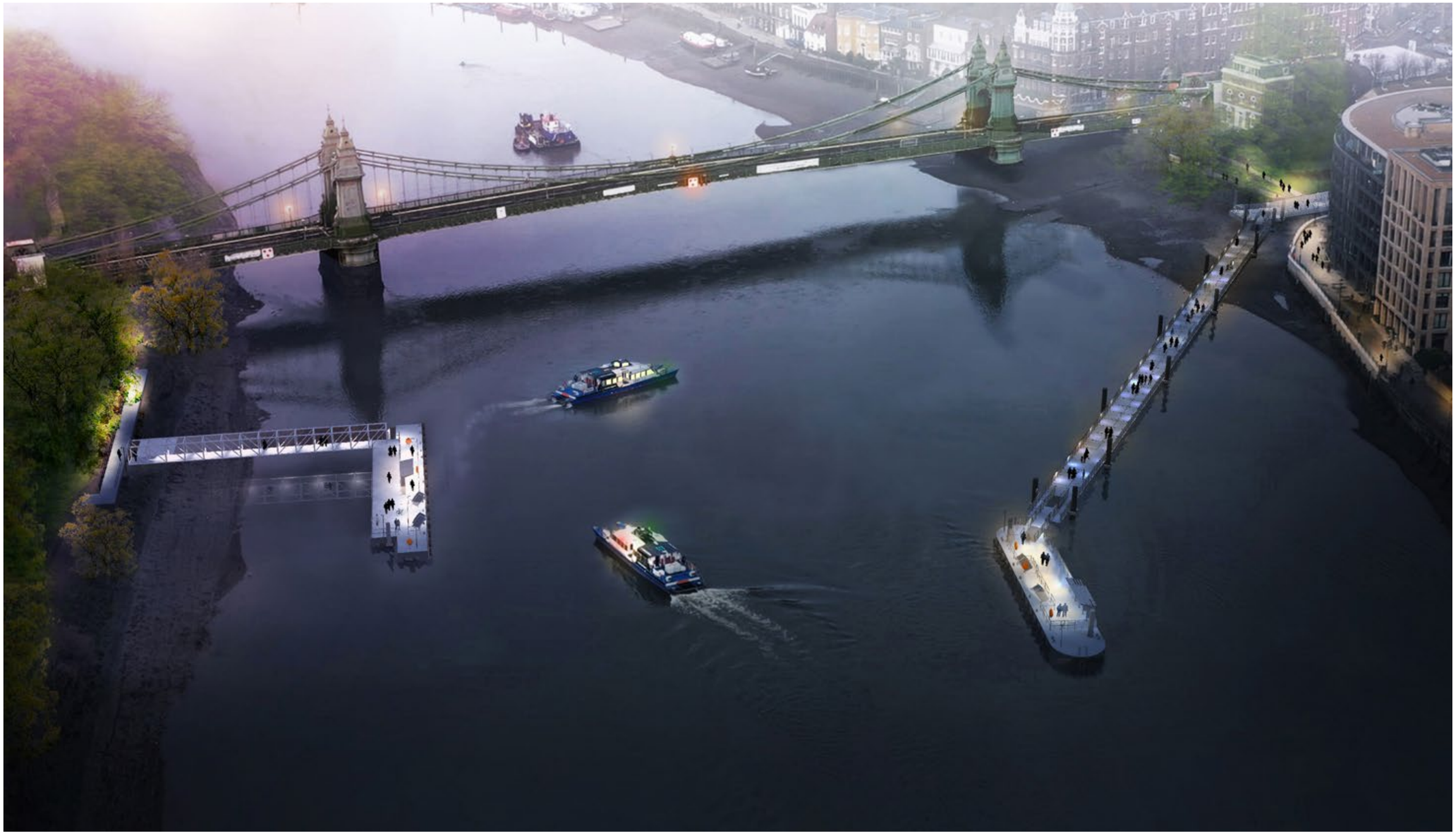


Aerial visualisation of the wider masterplan

Key Terminology

FLOATING WALKWAY

A floating walkway is a series of modular pontoons, held in place by piles or anchors, that provides a safe pedestrian walkway across a body of water.

PONTOON

A pontoon is a floating structure , often made from steel. In this case, the pontoon forms the landing support for the canting brow, a waiting area for users of the pier, and a berthing structure for vessels.

CANTING BROW

A canting brow is a walkway structure connecting the shore to the pontoon. Bearings fixed at either end allow the structure to move, enabling access at all states of the tide.

PILE

Tubular berthing/mooring piles are steel tubes driven deep into the riverbed which become a fully fixed restraint that allows structures to be built ontop of or attached to the pile. These often require impact hammer driving and will be embedded between a third and one half of their total length into the bed. This type of pile is difficult to remove from the bed if required.

BANKSEAT

A bankseat is a support structure to which the landside bearings of the canting brow are fixed.

SPUD LEG

Spud legs are a pin-anchor system for barges/pontoons that utilise tubular piles dropped through the deck of the barge with a shallow embedment into the riverbed. These anchor piles prevent the barge from drifting in position, but allow free movement on the tide. Unlike a traditional dolphin pile these spud legs are shallow embedment and act in the form of an anchor, as opposed to a fully fixed restraint.

JACK-UP RIG

A jackup rig is a barge fitted with long support legs that can be raised or lowered. The jackup is manoeuvred (self-propelled or by towing) into location with its legs up and the hull floating on the water. Upon arrival at the work location, the legs are jacked down onto the seafloor.

1.0 Introduction

1.1 Purpose of Document

Beckett Rankine (BR) has been commissioned by Uber Boat by Thames Clippers (UBTC) to undertake the Design & Access Statement (DAS) for Hammersmith Pier and Barnes Pier which form the fixed infrastructure for the Hammersmith Temporary Ferry scheme. These piers will be in use to provide a temporary river crossing while Hammersmith Bridge is closed to pedestrians and cyclists during refurbishment works. UBTC have been contracted by Transport for London (TfL) to provide the Temporary Ferry service and associated enabling infrastructure.

This report aims to inform the planning applications, where the relevant authorities are:

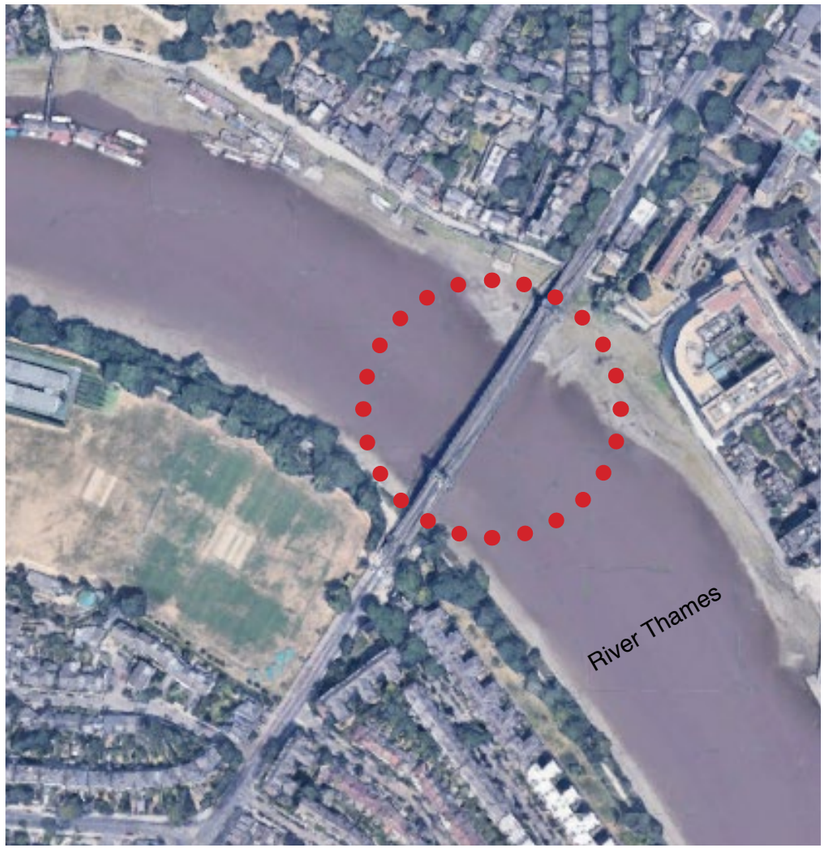
- The London Borough of Hammersmith and Fulham (LBHF) – Hammersmith Pier
- The London Borough of Richmond upon Thames (LBRuT) – Barnes Pier

This DAS provides a summary of the design process leading up to the planning applications. It summarises the urban design, public realm, heritage and access considerations that have shaped the proposals, and describes how the ferry will provide safe and convenient access for pedestrians and cyclists over the river while the main bridge is closed for repair. It also describes how the ferry piers will appear in the context of the existing listed bridge, the River Thames and the neighbouring areas on each side of the river. The planning drawings and technical documents that accompany the applications may be referred to for more detailed information about its construction, environmental impact and the transport case for the scheme.

Aerial view of the site

The Site

1.2 Project Background



Aerial view of the site

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The Site

Closed Bridge

Hammersmith Bridge provides a major link between Hammersmith and Barnes. There are no cross-river London Underground services in this location. The bridge's closure to all traffic in August 2020 has resulted in major disruption to the local and wider area due to the absence of an alternative nearby river crossing.

TfL has concluded that the quickest way to provide a safe alternative river crossing at Hammersmith is to provide a temporary ferry operation for pedestrians and cyclists. To enable this service two temporary piers are required, one on the Hammersmith shore and the other on the Barnes shore.

The overriding objective of the project is to maintain connectivity across the River Thames near Hammersmith Bridge, to allow uninterrupted crossing for pedestrians and cyclists until the restoration of the main bridge is complete. The ferry will also facilitate the efficient delivery of the restoration of the main bridge.

1.3 Loss of Connectivity

The main Hammersmith Bridge has for a long time been the principal link between Barnes and Hammersmith town centre. This has led to a pattern of development where each side of the river relies on the other for access to local services, leisure opportunities and onward travel by public transport. Until its closure, the bridge provided people living south of the river with access to the extensive shopping and leisure facilities in Hammersmith and to London Underground services at Hammersmith Station. Five bus routes provided regular services across the bridge.

Following the closure of the bridge, the nearest alternative vehicle crossing points are Chiswick Bridge and Putney Bridge, which are 4 kilometres to the west and 2.8km to the east respectively, requiring a substantial diversion while the bridge remains closed. This is explained in more detail in the Transport Assessment (ref. D002 Hammersmith Ferry Transport Assessment) that accompanies the planning application to each borough.

1.4 Design Principles

The piers have been designed with the following design principles in mind:

- Two of the piers are repurposing existing infrastructure in the form of the Savoy Pier pontoon and a spud-leg barge to reduce the need for new materials;
- As the piers are temporary in nature, a number of efficiencies can be made across the design process by choosing a design life of 5 years; and
- The piers and associated infrastructure are designed to be reused. The brows, piers and floating walkways are all intended to be repurposed following decommissioning of the temporary ferry.

Further information regarding the design philosophy in the context of the circular economy can be found in the Circular Economy, produced by Rolfe Judd Planning and included in the planning submission.

Savoy Temporary Pier operated for 20 years before being removed in 2020

1.5 Planning Policy Context

The policy context for the scheme is addressed in more detail in the Planning Statement. The individual policies considered most relevant to the issues of design and access, which have helped inform the development of the design, shown in the table across.

Full analysis of the scheme in the context of planning policy is undertaken in the Planning Statement, produced by Rolfe Judd Planning and supplied as part of this application.

New London Plan 2021	Hammersmith and Fulham Local Plan (2018)	Richmond upon Thames Local Plan (2018)
Policy D3, Optimising Site Capacity Through the Design-Led Approach	Policy DC1, Built Environment	Policy LP1, Local Character and Design Quality
Policy D4, Delivering Good Design	Policy OS5, Greening the Borough	Policy LP3, Designated Heritage Assets
Policy D5, Inclusive Design	Policy DC8, Heritage and Conservation	Policy LP5, Views and Vistas
Policy D8 Public Realm	Policy RTC1, River Thames	Policy LP13, Green Belt, MOL and Local Green Space
Policy HC1, Heritage Conservation and Growth	Policy RTC2, Access to the Thames Riverside and Foreshore	Policy LP18, River Corridors
Policy G7, Trees and Woodlands	Policy RTC,3 Design and Appearance of Development	Policy LP30, Health and Well Being
Policy SI7, Reducing Waster and Supporting the Circular Economy	within the Thames Policy Area	Policy LP44, Sustainable Travel Choices Location
Policy SI16, Waterways, Use and Enjoyment	Policy DC7, Views and landmarks	
Policy T1, Strategic Approach to Transport	Policy T1, Transport	
Policy T2, Healthy Streets	Policy T3, Increasing and Promoting Opportunities for Cycling and Walking	
Policy T3, Transport Capacity, Connectivity and Safeguarding		
Policy T5, Cycling		

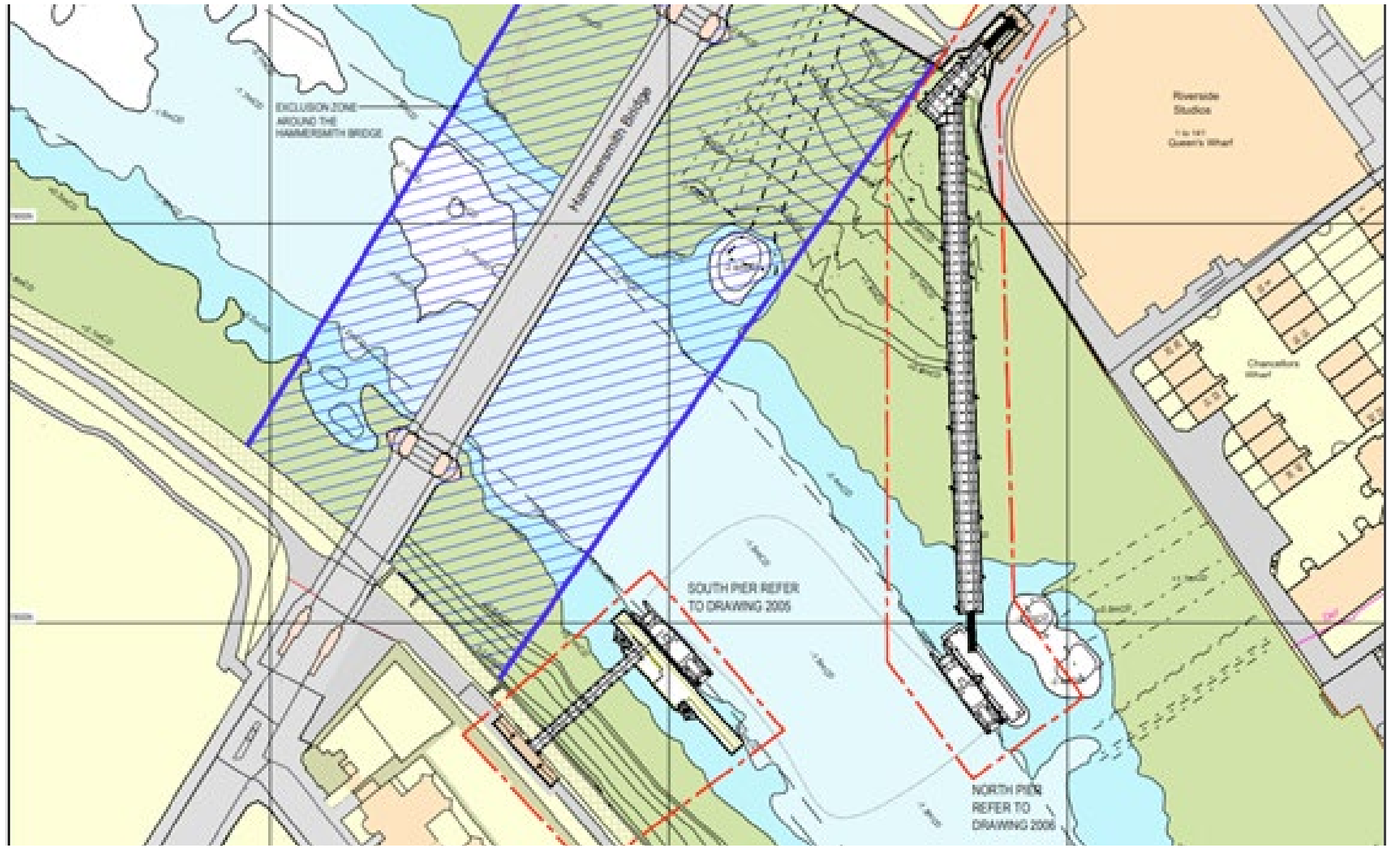
Planning Policy Context

2.0 Site Analysis

2.1 Location

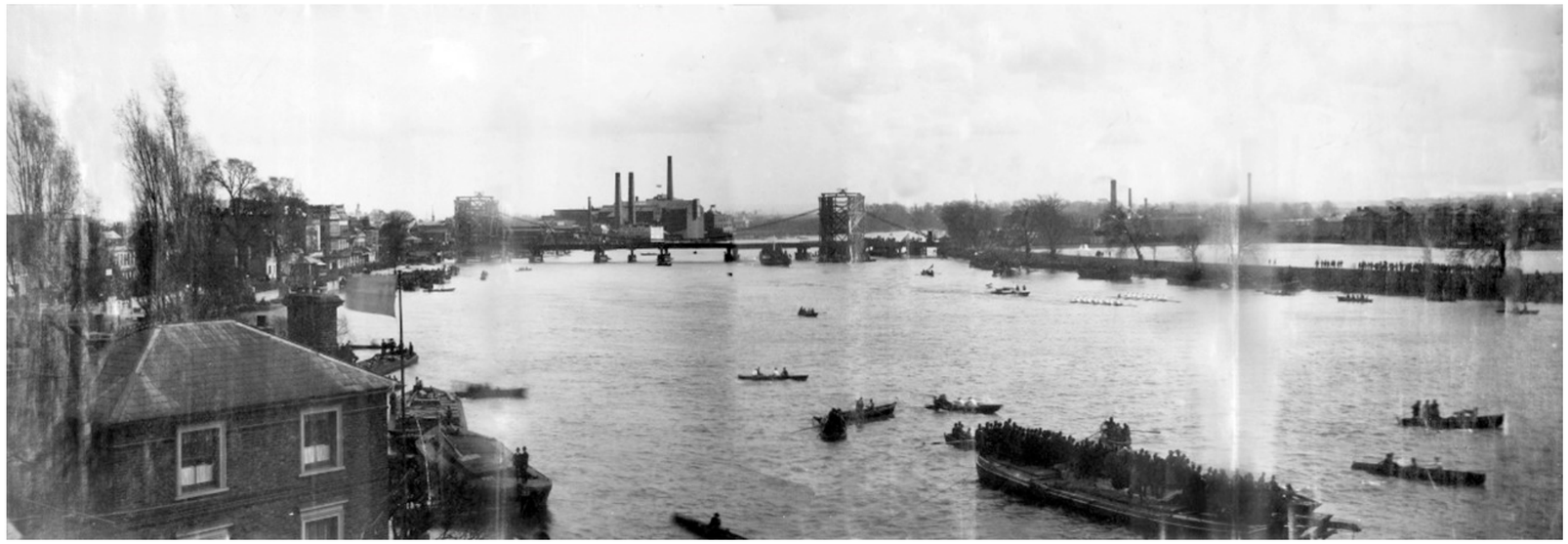
The Temporary Piers will be located on either side of the river, immediately downstream of Hammersmith Bridge. Hammersmith Pier on the north bank will land at the end of Queen Caroline Street, while Barnes Pier will land of the Thames towpath on the south bank.

The location is shown below, Hammersmith Pier and Barnes Pier are located at TQ2308978003 and TQ2299377985 respectively. The blue hatched area is an exclusion zone which has been established to prevent vessels from navigating near the bridge.



Proposed Scheme Location

2.2 Heritage Context



Hammersmith Bridge under construction 1886

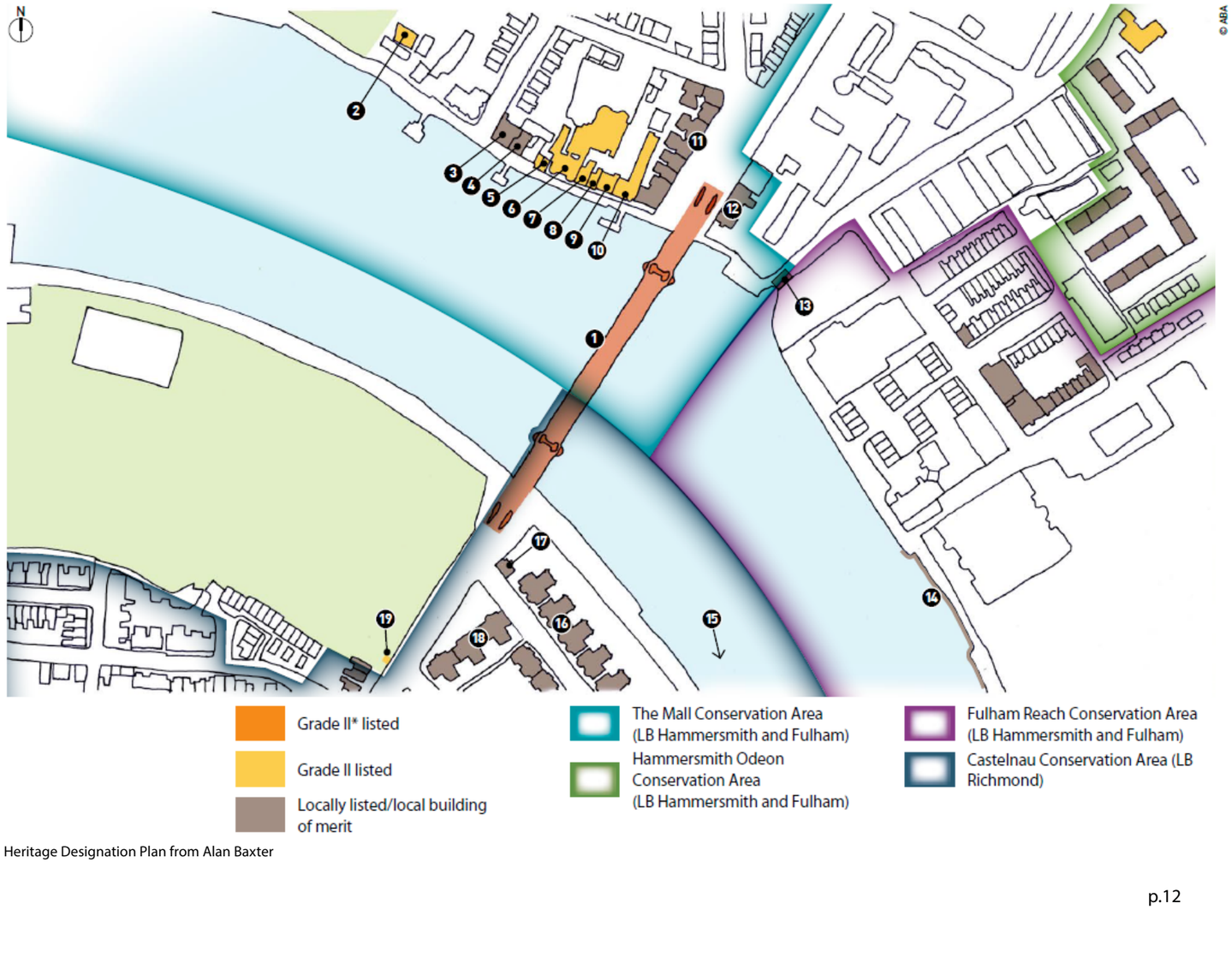
The setting of the Temporary Ferry is dominated by the Grade II* listed main Hammersmith Bridge for which it is to provide temporary relief. Hammersmith Bridge is of exceptional historical interest. As a largely unaltered example of a late-nineteenth century suspension bridge, designed by one of the nineteenth century's leading engineers, Sir Joseph Bazalgette. It derives additional historic interest from its rarity, as one of only four surviving largely unaltered nineteenth century road suspension bridges. The historic and architectural significance of the main bridge is explored in detail in the Heritage Statement (ref. 1817-125/05/21) by Alan Baxter that accompanies the planning application to each borough, as shown in the diagram on the following pages.

Each bank is also of considerable historic and townscape value. The ferry landing points will fall within The Mall Conservation Area in Hammersmith on the north bank and the Castelnau Conservation in Barnes on the south bank. The Fulham Reach Conservation Area lies immediately downstream of the bridge on the north bank.

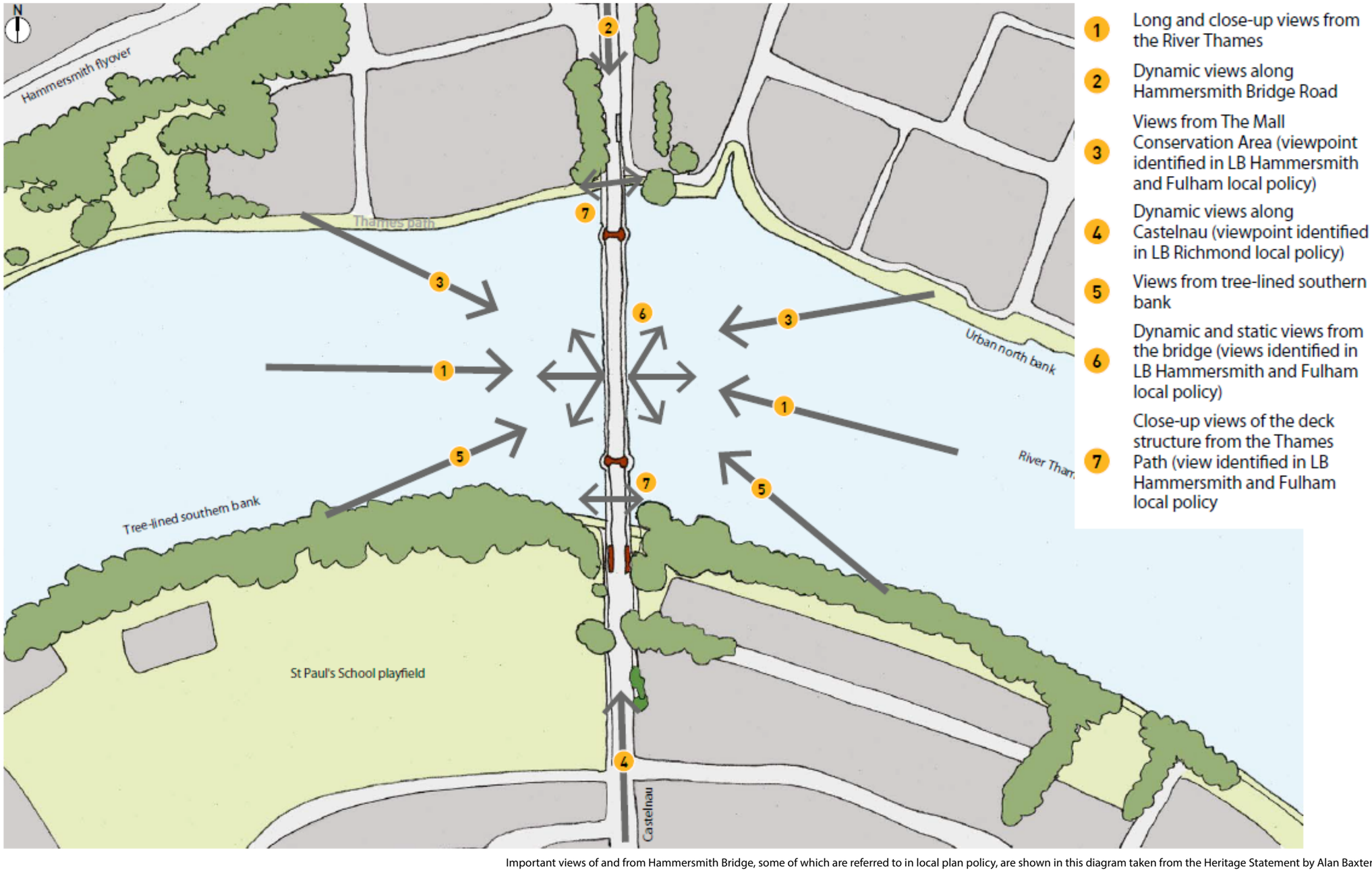
Lower Mall in The Mall Conservation Area contains a number of fine buildings dating from the seventeenth, eighteenth and nineteenth centuries, most of which are statutorily or locally listed. These lie on the opposite, upstream side of the bridge from the ferry landing points, and the landing points will not therefore impact materially on their setting.

On the south side of the river, the Castelnau Conservation Area is characterised by large residential properties built between 1898 and 1909, designed by the architect Delissa Joseph. Many of the houses in Castelnau, Castelnau Gardens and Riverview Gardens are locally listed.

The ferry landing points will impact most directly on the setting of the locally listed properties on the corner of Castelnau with Riverview Gardens that lie close to the proposed southern landing point.



Heritage Designation Plan from Alan Baxter



1. Long and close-up views from the River Thames
2. Dynamic views along Hammersmith Bridge Road
3. Views from The Mall Conservation Area (viewpoint identified in LB Hammersmith and Fulham local policy)
4. Dynamic views along Castelnau (viewpoint identified in LB Richmond local policy)
5. Views from tree-lined southern bank
6. Dynamic and static views from the bridge (views identified in LB Hammersmith and Fulham local policy)
7. Close-up views of the deck structure from the Thames Path (view identified in LB Hammersmith and Fulham local policy

Important views of and from Hammersmith Bridge, some of which are referred to in local plan policy, are shown in this diagram taken from the Heritage Statement by Alan Baxter.

2.3 Local Setting

The Temporary Piers will be located on the North and South of the river respectively, immediately downstream of Hammersmith Bridge. Hammersmith Pier lands in LBHF and Barnes Pier in LBRuT.

The piers and their landings, henceforth referred to collectively as the site, are surrounded by urbanised areas on both sides of the River Thames. The areas near the site are a combination of residential properties, social infrastructure, commercial properties, and open space.

The precise area where the Hammersmith Pier will land is the slipway located at the end of Queen Caroline Street. The area is characterised by the heavily built-up river frontage with vertical river walls which historically were used for cargo handling. Today new mixed commercial and residential properties are present to the east side of Hammersmith Bridge, Riverside Studios and Queens Wharf. According to the planning application of this new development, the building includes 165 residential units and the new Riverside Studios (previously an historic film studio formed in 1930), that includes a performing arts centre, a gallery, bars, and restaurants.

View from Barnes of Hammersmith Riverside

View from Hammersmithof Barnes Riverside

Barnes towpath

To the west side of Hammersmith Bridge at the Lower Mall, is a row of Victorian buildings running along the river which provide residential use, commercial uses (pubs and restaurants) and social uses (three rowing clubs). Two areas of green space (Furnivall Gardens to the west and Frank Banfield Park to the east of Hammersmith Bridge) are found just over 250m from the proposed site.

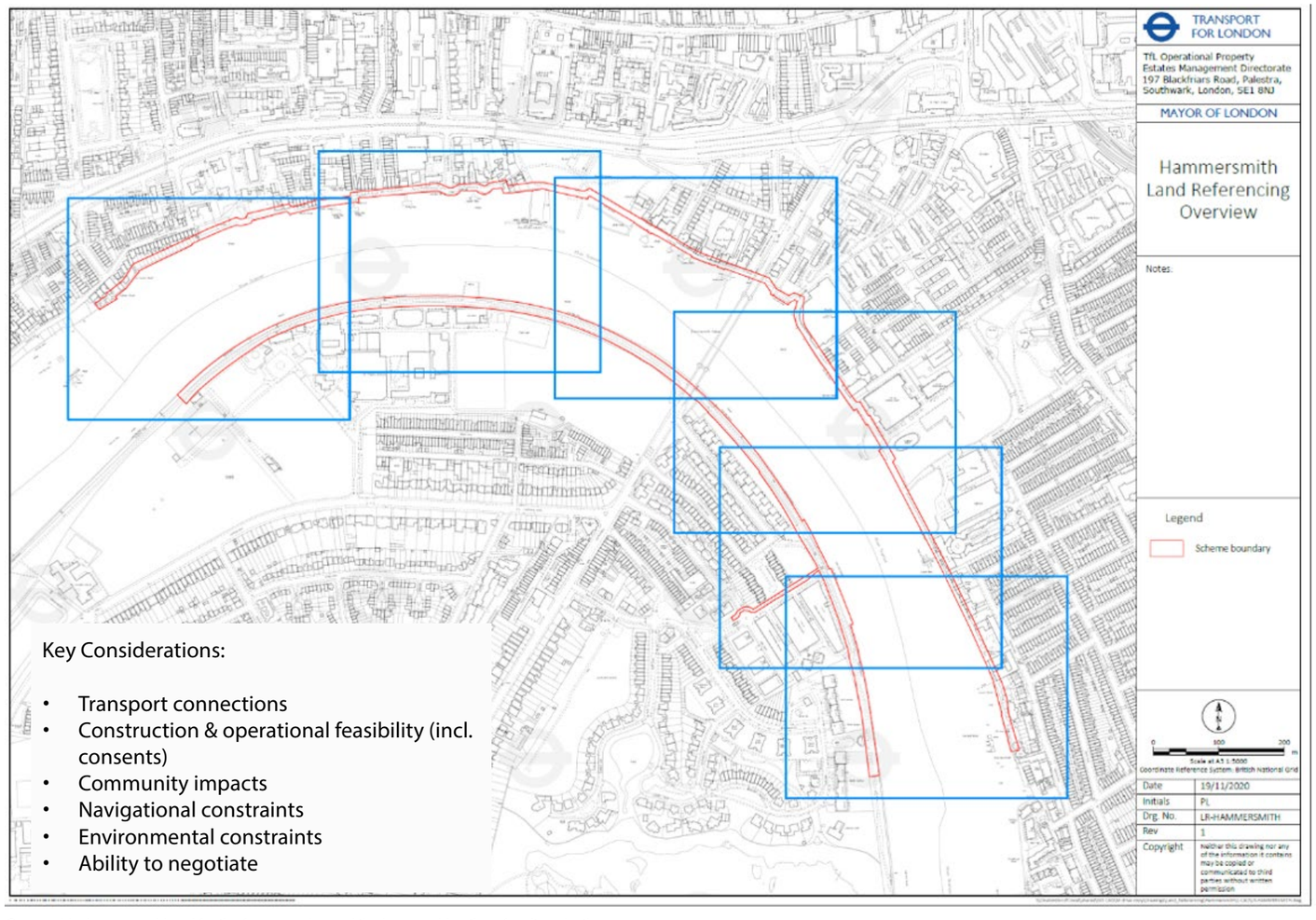
The Barnes Pier landing is on the towpath on the south riverbank which leads to Castelnau, and Riverview Gardens. The riverfront is more naturalised with a sloping revetment and a towpath running along the river bounded by a line of trees. The surrounding area running along Castlenau from Hammersmith Bridge, is dominated by buildings with mixed use (residential and commercial). To the east, at Riverview Gardens, the area is mainly residential properties. To the west section, the playing fields of St Paul's School are a demarked green space.

2.4 Landing Site Selection

Several landing sites were considered for the Temporary Ferry piers. Landing sites upstream of Hammersmith Bridge were discounted due to the current closure of the bridge to navigation. The closure to navigation would make constructing the piers difficult since most of the materials for the piers and the construction plant will all be delivered by river from sites downstream. Furthermore, the vessels themselves will arrive from downstream with one of the three vessels being on standby at Plantation Wharf Pier; any major maintenance and repair work will be done at boatyards downstream. During the ferry operation supply vessels arriving from downstream will need to regularly access the piers. If the ferry was located upstream of the bridge all this traffic could be severely constrained which, in turn, would adversely affect the reliability of the ferry service. For this reason, sites upstream of the bridge were not considered further.

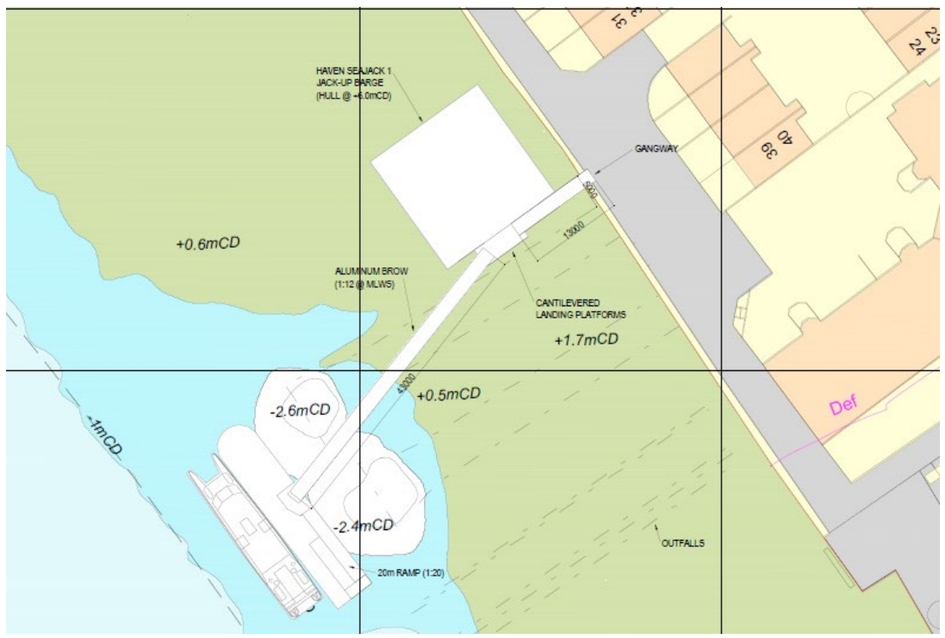
Sites further downstream of Fulham Reach Boat Club (FRBC) were not considered due to the distance away from the desire line of the bridge crossing. Additionally, there is a great deal of small boat activity in the area from FRBC pier downstream which would increase the navigational risk of operating the ferry. Therefore, the area for sites considered reaches from Hammersmith Bridge eastwards along to FRBC.

FRBC were approached to explore the possibility of adding an extension to their pier to provide an all-tide berth for a ferry. However, FRBC felt that such a solution would prevent them from being able to use their pier for their normal activities which ruled out this option.



Geographical area considered for the ferry crossing and the key considerations for site selection

Buttressed Flood wall at Chancellor's Wharf



Plan of Jack-up barge at Chancellor's Wharf

Another site considered was Chancellor's Wharf. The river frontage here is in uncertain condition with buttresses having been added to brace it (see image left). Piling close to the wall or landing a brow on the wall would be likely to be problematic. The Environment Agency (EA) would require it to be demonstrated that the wall could take the extra loading and to prove that would require site investigation consisting of trial pits behind the wall and bores down through it to determine its form. These investigations could take months to obtain consents for and then carry out (with the likelihood that they would only confirm the wall's vulnerability) so an alternative design was investigated utilising a jack-up barge independently supporting brows and gangways that could be used to access the Hammersmith pier location from Chancellor's Wharf (see image lower left).

While the jack-up solution was technically feasible it involved locating a very large (and expensive) item of plant close to the river wall directly in front of the residential properties at Chancellor's Wharf. Of necessity the jack-up's pontoon hull would extend above the river wall completely blocking the view of the river in front of several houses. Such a design would have a significant impact on the residents in those properties.

The land surrounding the riverwall at Chancellor's Wharf, as well as the adjacent lengths upstream and downstream, are privately owned (whether as part of Chancellor's Wharf, the Fulham Reach development or otherwise). While TfL undertook initial land searches and enquiries, securing agreement for potentially complex works with any of these private landowners would encounter lengthy negotiations to obtain the necessary rights to build and operate the scheme in this location. Given the feedback we received from those in the area the negotiations would be complex and may never be resolved.

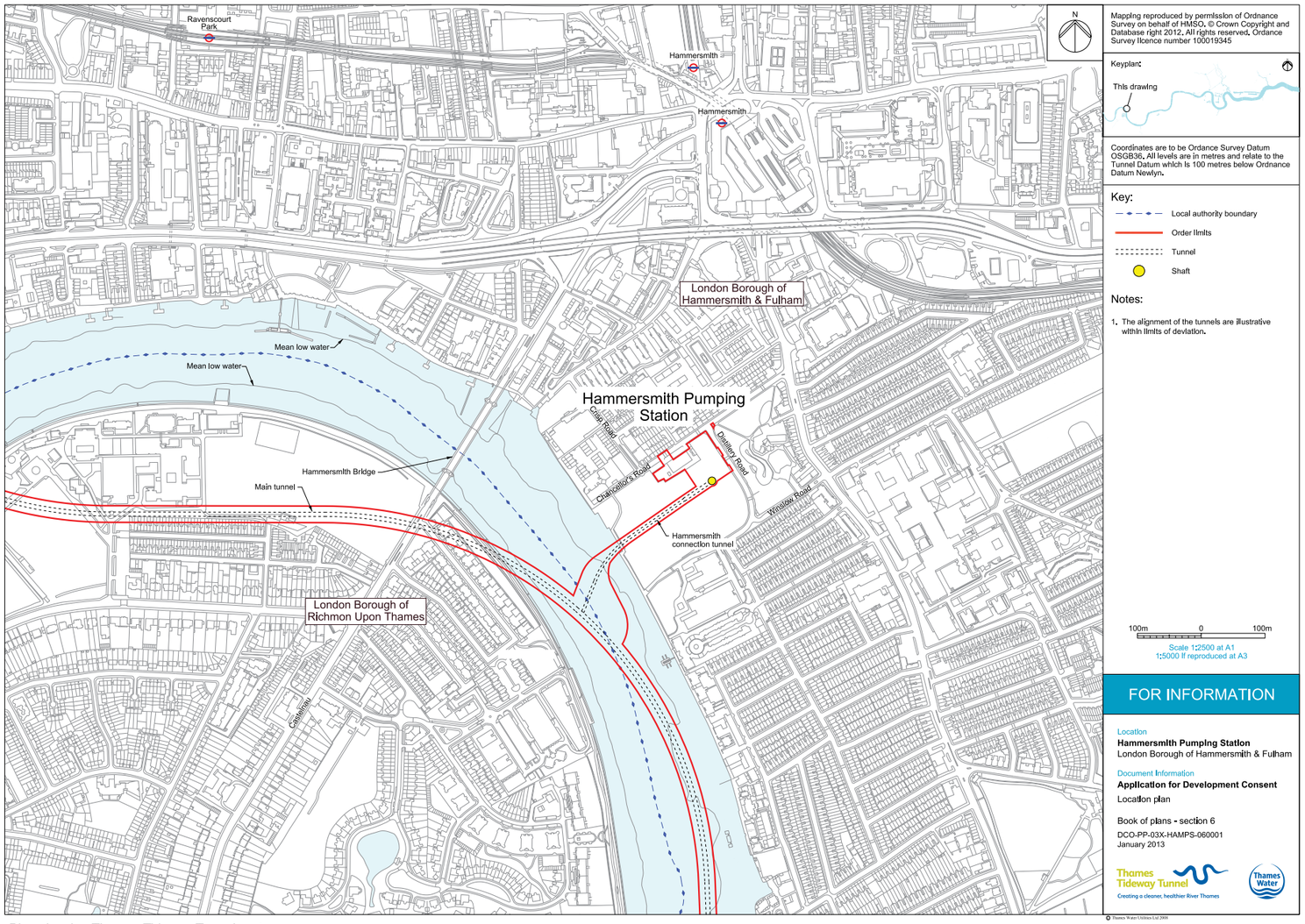
Compulsory Purchase powers would greatly assist but would add substantial time (minimum 12 months) to the delivery programme. The solution at Queen Caroline Street slipway conversely allows much simpler structures which land directly onto public highway.

Using the Queen Caroline slipway as a landing point enables an access over the flood defence boards to a floating walkway that involves no large bankseat structure and no increased loading on the flood defences; consequently, obtaining EA consent ought to be straightforward. The slipway is not directly overlooked by residents and access is good via the road and footpath.

As the slipway is in public ownership obtaining consent from the local authority for its use is a much simpler, cheaper and quicker process than negotiating a private land access. The slipway was consequently chosen as the landing point for Hammersmith Pier.

Locating Barnes Pier's landing is simpler with the main requirement being to keep clear of the Thames Tideway Tunnel zone where there are restrictions on installing piles. The towpath downstream of Hammersmith Bridge is owned by the Port of London Authority (PLA) who also own the riverbed. The Barnes Pier landing is located as close to Hammersmith Bridge as the navigational exclusion zone and the requirement not to damage any trees allows. This provides the shortest possible walking route to Castlenau.

The two piers are close to each other but slightly staggered which allows an efficient circular path to be followed by the two vessels which will operate during peak times. The close proximity of the piers means that the vessels can side slip across the river only turning to face the opposite direction when the tide turns. This mode of operation provides the quickest crossing time, the least engine power, the least noise and emissions.



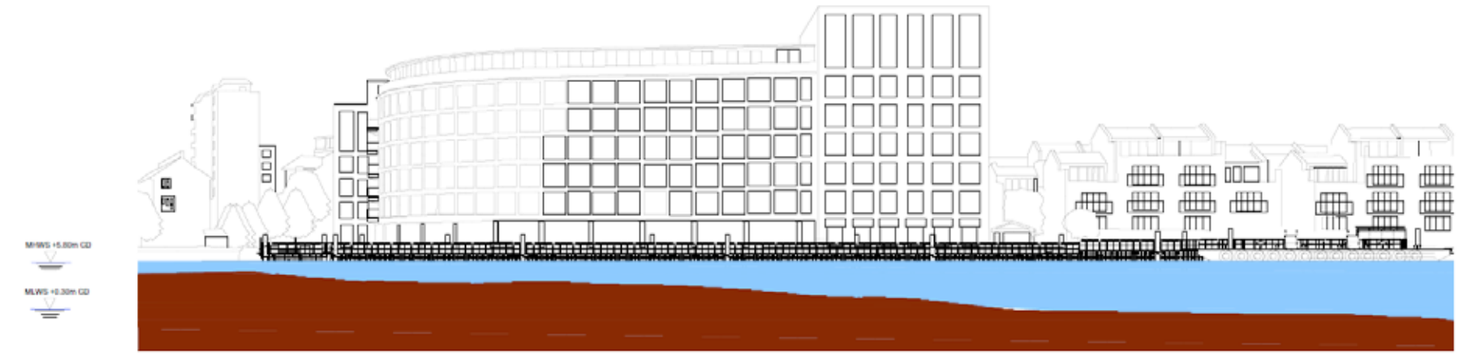
Plan showing Thames Tideway Tunnel route

Sketch of view along Hammersmith walkway

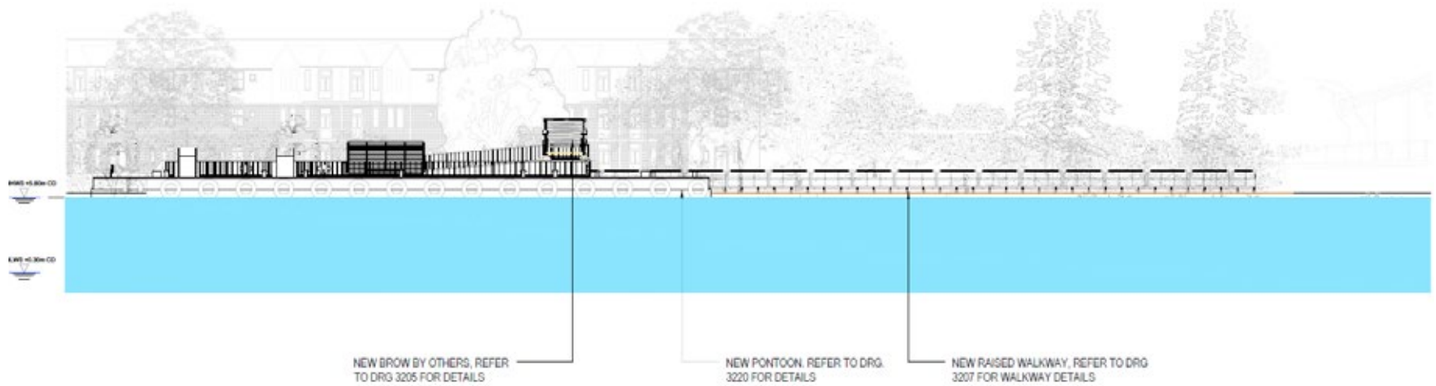
3.0 The Design

3.1 The Proposed Piers

Both the Hammersmith Pier and Barnes Pier which make up the Hammersmith Temporary Ferry service are to be temporary in nature and will be removed on re-opening of Hammersmith Bridge. The design of each structure has therefore been completed with ease of removal as a key criterion.



Hammersmith Temporary Pier Proposed Elevation at High Tide



Barnes Temporary Pier Elevation at High Tide

Visualisation of the two piers from Fulham Reach Development

Hammersmith Temporary Pier

The proposed Hammersmith Pier is to land on the slipway located at the end of Queen Caroline Street. The slipway is seldom used and is closed off with timber flood boards. Access to the pier is to be via a lightweight steel ramp which will span over the flood boards.

A 125m long modular floating walkway (using units by EZ Dock) will span between the flood defence wall and a second-hand barge, modified for use as a pier. The walkway will be restrained by 12 tubular piles of up to 0.5m diameter. The required piling is to be minimised to avoid major impacts and disturbance of the river environment.

The barge will be restrained by a pair of spud legs – these have been selected given their temporary nature and lesser impact when compared to piles. The pier is skewed downstream to facilitate passage of large vessels beneath Hammersmith Bridge (the bridge is open for occasional navigation when no works are in progress on it).

Landside

The landside works for Hammersmith Pier will consist of installing a ramp that will land on a transition platform and will provide access over the flood boards to the slipway at the end of Queen Caroline Street. The overall length of the ramp together with the transition platform is estimated at 17.5m. The proposed landing area is shown below. The slope of the ramp will be Disability Discrimination Act (DDA) compliant with a slope that meets the recommended guidelines.

Proposed Landing Area for Hammersmith Pier Access Ramp

Visualisation of Landing Area for Hammersmith Pier Access Ramp

Visualisation of Barnes Pier from the towpath

Barnes Temporary Pier

The proposed Barnes Pier is formed from the old Savoy pier, itself a temporary structure, which will be repurposed for this development. The pontoon will be modified such that is restrained by a pair of spud legs rather than its current radial arms to minimise impact on the foreshore.

Access to the pier is by a 35m aluminium linkspan, with clear width 2.5m, connecting to the landside tow path.

The towpath is located below flood defence level and floods on large tides. As part of the works, a 45m lightweight steel frame walkway will be installed to allow dry access to the pier., the clear width of this structure will be a minimum of 2.5m to suit segregated pedestrian and cycle traffic.

Landside

The landside works for Barnes Pier will involve installing a concrete base for the brow bearings, a raised walkway on the current embankment towpath and re-grading the slope to the side of Hammersmith Bridge.

The embankment towpath is located below Highest Astronomical Tide level and floods on large tides. As part of the works, a 45m long lightweight steel frame raised walkway will be installed to allow dry access to the pier. The clear width of this structure will be a minimum of 2.5m to suit segregated pedestrian and cycle traffic. The slope to the side of Hammersmith Bridge will be regraded to improve accessibility to the walkway. The slope consists of a gravelled path an image of which is shown below. The path will be reprofiled with compacted MOT Type 1 granular base.

Path to the Side of Hammersmith Bridge

Repurposed Savoy Pier

Visualisation of Barnes Temporary Pier

3.2 Safety & Security

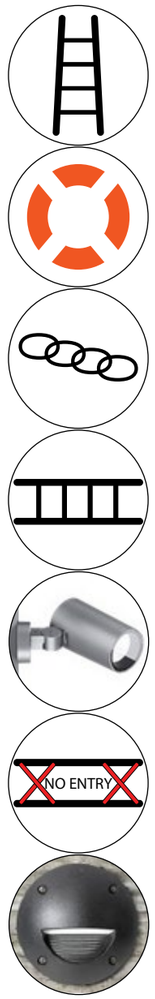
Multiple safety features shall be provided as part of the works in accordance with design codes to protect against accidental or deliberate injury and death.

The Metropolitan Police have been engaged with regarding the scheme and have provided feedback on the proposals with respect to their counter terrorism resilience. Their recommendations have been included in this application. Further to this a separate counter terrorism assessment will be undertaken in conjunction with TfL or UBTC but does not form part of this application.

The piers will be staffed at all times during their operation, this will ensure the pier is operating safely at all times & in accordance with the set out best work practice established as a result of running the river bus services across London.

These include:

- Safety ladders located on the piers, arranged such that persons do not have to manoeuvre around the piles;
- Lifesaving equipment provided at strategic locations;
- Grab Chains located around the perimeter of the pontoon allow a person in the water to hold on whilst awaiting rescue or to move towards the closest ladder;
- Handrailing provided throughout at a minimum of 1100mm high;
- A comprehensive CCTV scheme;
- Locked gates to each pier when not in use; and
- Good light levels to all accessible areas of the pier, whilst preventing light pollution both upwards and onto the surrounding river.



3.3 Visual Impact

Visualisation looking towards Hammersmith Bridge from Chancellor's Wharf

From the Hammersmith side of the river the ferry piers will be most easily seen from the Thames Path downstream of the bridge, from the southern end of Queen Caroline Street, and from the Queen Caroline Estate and residential properties in the Riverside Studios building also fronting the river. It will also be seen in longer views along the from the east.

Views of the ferry piers from the Barnes side of the river will be more limited in nature because of the bend in the river. Also, the Thames Path here is mostly bounded on the land side by the rear gardens of the large houses in Riverview Gardens or, upstream of the main bridge, by the St Paul's School playing fields. On the south side, the piers will be most prominent in views from the Thames Path downstream from the bridge, or from the rear windows of houses in Riverview Gardens, but will not be seen in longer views from streets away from the river.

The images show that the ferry piers will have a very limited impact on the setting of Hammersmith Bridge and a neutral impact on some of the other character areas defined. Any impact will be temporary in nature, lasting no more than the five years (maximum) that the ferry is expected to be required, and will be more than outweighed by the long-term heritage benefit of facilitating the restoration of Hammersmith Bridge.

Arboricultural Impact

An Arboricultural Impact Assessment (ref. 2048-BRL-02-XX-RP-C-1700 Section 3) was undertaken to support this application and is included in the Landscape and External Design report, produced by Beckett Rankine.

From the findings of this study, it has been determined that the risks posed to the existing landscaping of the surrounding area and to the trees situated in close proximity to the works is very low and temporary in nature. As such, it is concluded that the proposed works will not cause or contribute to deterioration of status or jeopardise achieving good status for the ecology or environment of the surrounding area of the works in the long term.

Typical view of the River from Barnes towpath

Typical view of Barnes towpath

4.0 Access

4.1 Access to the Temporary Ferry

Walking Links to the Ferry

On the north bank, Queen Caroline Street provides a direct walking route between the River Thames and Hammersmith Broadway. Its footways are generally of a good surface quality comprised of in-situ concrete or concrete slab construction. Drop kerbs are provided at junctions and crossovers although few have tactile provision. Crisp Road and other adjoining roads are comparable.

On the south side of the river, the footways on both sides of Castelnau provide a safe and convenient walking route between the river, the Castelnau shopping parade, the bus stops at the corner with Lonsdale Road and the wider Barnes area to the south. The footpaths are generally in good condition with purpose-built drop kerbs and tactile paving at the junctions with side roads.

The Thames Paths on each side of the river forms part of the longer National Trail running the length of the river. As already noted, access to the northern Thames Path from the wider pedestrian network in Hammersmith is largely seamless. Access to the southern Thames Path in Barnes is more limited, as the path is mostly bounded on the land side by the rear gardens of private houses or by the St Paul's School playing fields.

The principal access to the river on the south bank is via the two ramped footpaths that lead down to the Thames Path from Castelnau, one of each side of the main bridge. Each footpath down has a rough hoggin surface and is prone to potholes and standing water. The ramped footpath leading down to Barnes pier will be regraded and resurfaced with a crushed stone surface.

Wheelchair Access

Cycling Links

Cycle routes in the area are of mixed quality and generally consist of on-carriageway signed routes and off carriageway (originally) pedestrian routes which have been designated for shared use.

There is no formal provision for cyclists in Queen Caroline Street on the Hammersmith side of the river, but the area is not a through-route for traffic and vehicle numbers and speeds are both low. On the south side of the river, the wide footpaths on each side of Castelnau are designated to be shared with cyclists as part of a designated local cycle route. Cyclists can also use the northbound bus lane on the approach to the main bridge.

The route of Cycleway 9 (connecting Brentford and Kensington Olympia) is expected to pass through Hammersmith town centre. This is currently under construction at Kew Bridge and full completion is currently planned for later in 2021. National Cycle Network Route 4 runs to the south of the London Wetland Centre, approximately 1.3km to the south.

Access to Public Transport

The closure of the bridge to motorised traffic has resulted in the severance of five bus routes (the numbers 33, 72, 209, 419 and 485) that formerly crossed the River Thames here. This has interrupted the important connection between residential areas in Barnes on the south side of the river and the major transport nodes and employment, leisure and shopping opportunities in Hammersmith town centre on the north side.

Some bus routes now end at the junction of Castelnau with Lonsdale Road in Barnes or at Hammersmith Broadway on the opposite side of the river, while others have been withdrawn.

The ferry will ensure continued passage across the river by foot for residents wishing to continue their onward journey by public transport, in the absence of which residents of Barnes, in particular, currently suffer a substantial deterioration in their access to London Underground and bus services at Hammersmith Broadway and onward connections to other parts of London.

Access to the Ferry Landing Points

The ferry landing points are designed to integrate with the existing public footway network on both sides of the river and to be fully accessible for all users including those with mobility impairments. Way-finding signage will be provided on the approaches to the ferry and from Hammersmith town centre.

The main approach route from Hammersmith town centre will be along Queen Caroline Street.

Pedestrians and cyclists approaching from the direction of the town centre will have direct, step-free access to the ramp and walkways and will be able to join the pier in a seamless manner.

The main approach route from Barnes on the south side of the river will be via the existing eastern ramp between Castelnau and the Thames Path.

In conclusion, the temporary ferry will link with and facilitate existing walking and cycling routes across the river and the design will ensure easy and safe access to the ferry for all users. It will also maintain access to the Thames Path on both sides of the river. In this respect, the scheme accords with Policies D3, T1 and T2 of the London Plan, Policies RTC2 and RTC3 of the Hammersmith and Fulham Local Plan (2018), and Policies LP1 and LP18 of the Richmond Local Plan (2018).

4.2 Pier Accessibility

The piers are designed for accessible use in accordance with the London River Services (LRS) design guidelines for river infrastructure.

The fixed ramps (over the flood defence on the Hammersmith side) and other gradients (alongside Hammersmith Bridge on the Barnes side) are at a maximum of 1:20 gradient.

The canting brow on the Barnes Pier achieves a maximum gradient at Mean Low Water Springs (MLWS) of 1:12, in accordance with the LRS Guidelines. Accepting a steeper gradient here is justified in that this gradient occurs during low spring tides only, twice a month and always during the middle of the day (off-peak). The piers are also staffed and therefore those who need to negotiate the steeper gradient will be able to request assistance.

A minimum clear width on all walkways, brows and pontoons of 2.5m is provided to both piers, to allow for two-way traffic.

Floating Walkway Trial

4.3 Wayfinding

On the Hammersmith side, the ferry pier will be accessed principally via Queen Caroline Street, which is about 70 metres to the east of Hammersmith Bridge Road. This is a substantively different route and therefore new wayfinding signage will be required. Further, given that the ferry may be in place for up to three years, a reliance on temporary signage is unlikely to be appropriate.

A wayfinding strategy will be developed in consultation with Hammersmith and Fulham Council and other stakeholders during the period of the planning application and construction and will be implemented prior to the opening of the ferry piers.

On the Barnes side, the pier will be accessed from the Thames Path about 57m downstream of the bridge. Wayfinding will be needed to bring passengers down the slope to the south of the bridge and to the ferry pier entrance.

No new or additional wayfinding is proposed in the Borough of Richmond upon Thames as the approach to the ferry from the south is very close to the bridge.

4.4 Lighting

Good light levels are to be maintained to all accessible areas of the piers. Low energy and easily maintainable LED lights will be used throughout. Lighting will be low walkway lighting built into handrails where possible. Luminaires have been chosen and positioned to minimise light spill onto the water and foreshore. Escape lighting will be provided where necessary for use in the event of power failure.

Navigation lights will be included at each end of Hammersmith Pier and at the downstream end of Barnes Pier. A navigation light has not been shown at Barnes pier's upstream end based on advice from the PLA.

Night sky

The lighting as described above is low level and designed to illuminate decking areas only. It will therefore not have an impact on the night sky in the areas surrounding the piers.

5.0 Sustainability

5.1 Sustainable Construction

Sustainability has been a critical decision factor throughout the design process; the aim being to reduce both embodied and operational carbon emissions; to increase local wildlife biodiversity and to protect the existing habitat along the river foreshore.

Emissions

The nature of the vessel operation is such that emissions from the vessels are minimised. Benefitting from the action of the tides, the vessels will cross the river using a technique known as ferry gliding. This involves traversing a river by utilising the tidal flow to maintain stability and control over the vessel. The force of the flow on the vessel and its steering gear pushes the vessel across the river with a minimum amount of engine input required.

The engines are a pair of the EPA Marine Tier 3 (EU Stage 3a/ IMO Tier 2 compliant) John Deere 6090SFM85 engines. They will be governed down and operating at considerably less power than their rated 317 kw/425 hp at 2300 rpm. At this reduced power, it will mean that in turn, their emissions output will be reduced.

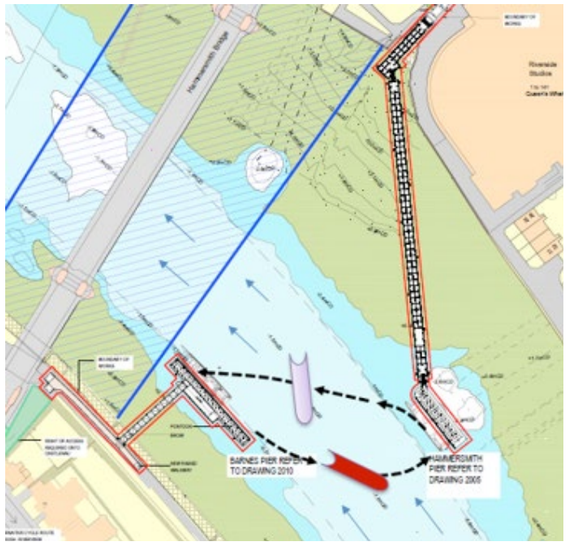
On a wider level, the scheme will aim to reduce congestion and congestion-related emissions in the area by reducing the number of vehicle journeys currently required to circumnavigate the closed bridge.

Biodiversity

The design of the scheme aims to minimise the impact on biodiversity in the area through a number of mitigations:

- A low depth embedment on the piles (acceptable due to the temporary nature of the scheme) minimises the impact of the piles on the foreshore ecology;
- The size of the piles is also minimised by assessing the design with respect to a 5-year design life only; and
- The construction methodology proposed includes soft-start piling and only utilising a vibratory hammer as opposed to an impact driving hammer (this is enabled by the low embedment related to the short design life as discussed above).

Ebb flow Diagram



Flood Tide Diagram

Reusing Savoy Pier

Reduce, Reuse, Recycle

5.2 Principles of the Circular Economy

Embodied carbon has been reduced by implementing an economy of materials at every available opportunity.

The majority of the two piers are made from second-hand material thus drastically reducing the carbon footprint of the scheme.

The shorter design life of the piers allows for further value engineering to be undertaken on the amount of structural material required.

The majority of the infrastructure for the temporary piers will be repurposed upon decommissioning of the Temporary Ferry service.

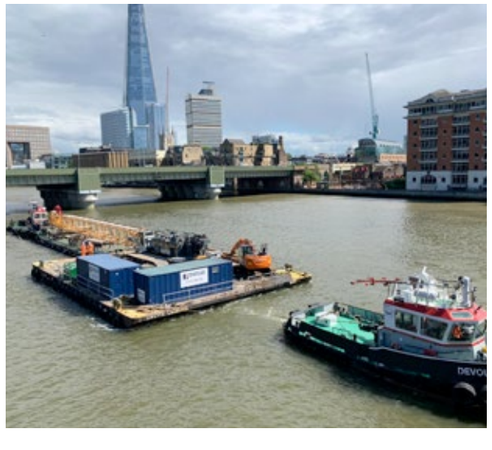
Further information regarding the design philosophy in the context of the circular economy can be found in the Circular Economy Statement, produced by Rolfe Judd and included in the planning submission.

5.3 Social Sustainability

The scheme aims to provide a wider benefit for society in the local areas each side of the bridge by providing a safe, regular and reliable link across the river in this location whilst the repairs to the bridge are being undertaken.

There is a wide spectrum of societal benefits associated with the re-opening of the river crossing in this reach of the Thames.

Protestors at Hammersmith Bridge



Fabrication and Barge Towing examples

5.4 Summary of the Construction and Removal Process

Construction

Off-site fabrication will be utilised where possible, and all items brought to site by river where appropriate.

The first activity will be to install the piles, which will be driven by the crawler crane mounted on a spud leg barge. A jack-up barge will act as a piling gate where accessible. In the case of the 4 most northern piles, a landside excavator will act as the piling gate. Piles will be driven dry where possible, and in the minimum water level possible where not possible.

The floating walkway will then be floated in from the public slipway and connected to the piles.

The two pier pontoons will be brought upriver to the site and connected to the piles. The brow will be brought up to site on the same barge and lifted onto the Barnes Pier when in place.

The landside elements will be prefabricated where possible, brought to site and assembled.

Removal

The removal and decommissioning of the temporary piers will follow a similar sequence in reverse to the construction. The floating walkway and Barnes brow will be removed first, and the two piers floated down river to be re-used.

The landside works will be demounted and taken away from site. The regrading fill on the Barnes side will be removed and the existing surface re-exposed.

5.5 Management and Maintenance

Day to day maintenance will be carried out on the Hammersmith side and will be facilitated by a service vessel which will berth on the inside face of the pontoon. The service vessel will contain tanks for fuel, lubricants, slops and foul water as well as containing crew facilities and stores.

Spare gear and tools for the ferries will also be held in the service vessel which will function as an extension of UBTC's Trinity Buoy Wharf base, running the same Centrik safety and maintenance computer base program and UBTC's bespoke Stockwise stock control systems to manage the vessels, pontoons and brow facilities.




Cleaning and Maintenance on boats

6.0 Reinstatement

6.1 Landscape Design Strategy

The landscaping of the area will be returned to its existing condition.

On the Barnes side, the raised walkway will be removed and the existing pathway exposed – this pathway will not be impacted by the proposed works. The regrading fill material on the pathway alongside Hammersmith Bridge will be removed, exposing the original and existing material.

The concrete bankseat to support the Barnes Pier brow will be removed and the existing Thames Path footway made good to match the surrounding materials.

On the Hammersmith side, the access slope and stairway are designed to be easily removable and demountable, such that the existing surfaces will not be impacted, and these will be exposed upon decommissioning of the ferry .

7. 0 Conclusion

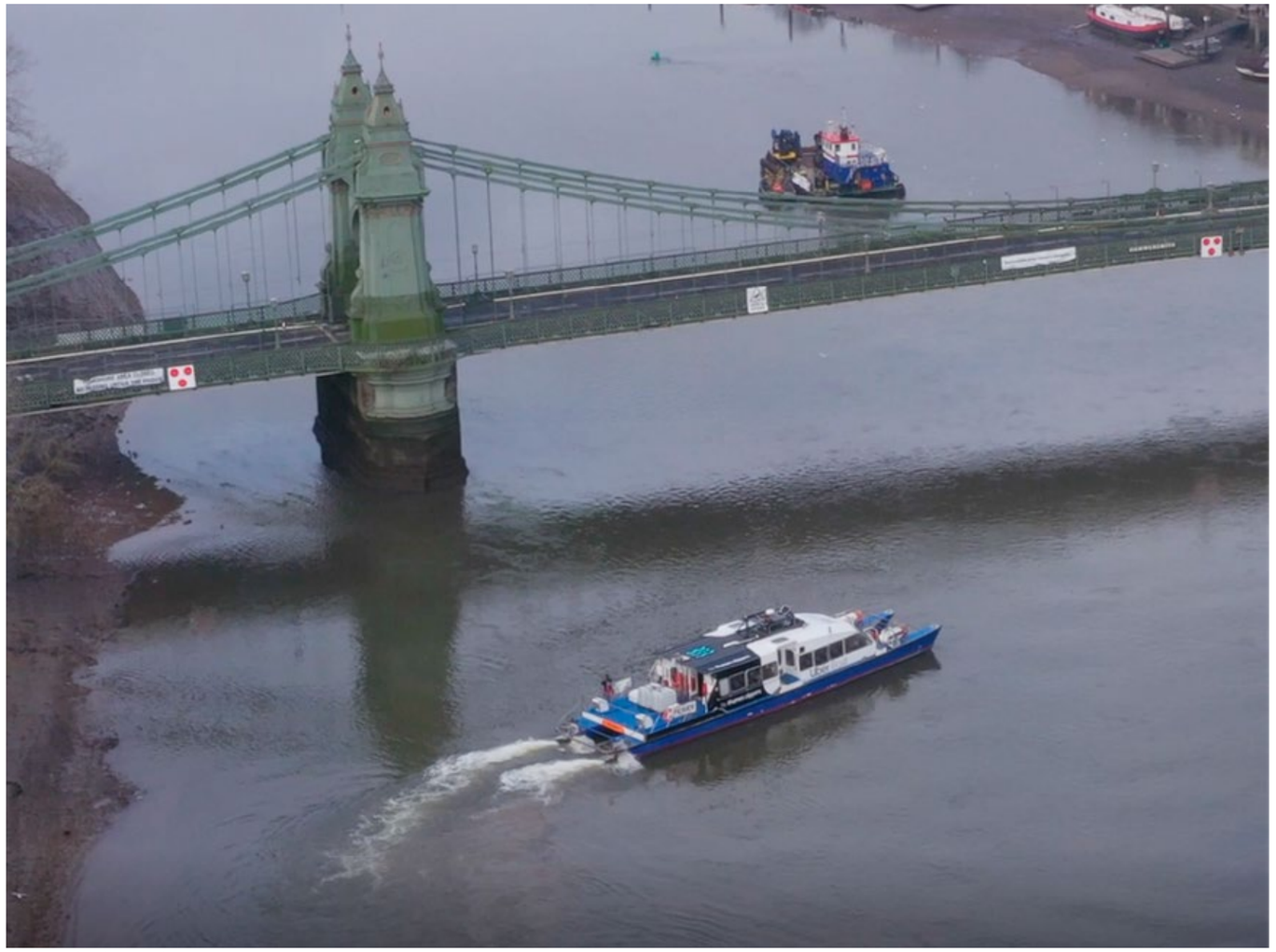
This statement has described how the ferry will maintain vital connectivity across the River Thames for the full duration of restoration works to the existing Grade II* listed Hammersmith Bridge.

It has also described the impact that the piers and associated structures will have on the setting of Hammersmith Bridge and on the character and appearance of the adjoining areas on each bank of the river, and how these impacts will be limited by the prefabricated and temporary nature of the structure.

The ferry will provide a safe and step-free environment accessible to everyone.

In conclusion, the provision of the ferry in this location, while Hammersmith Bridge is closed, is consistent with the National Planning Policy Framework, the Mayor's Transport Strategy and London Plan. The design will provide a safe and convenient means of crossing the river consistent with the Mayor's Healthy Streets Approach. By ensuring continued connectivity across the river, the ferry service will help support the local economy during the closure of the bridge.

The scheme is also considered consistent with Hammersmith and Fulham and Richmond Council's connectivity, transport, heritage and urban design policies, principally Policies DC1, DC7, DC8, RTC2, RTC3 and T3 of the Hammersmith and Fulham Local Plan (2018) and Policies LP1, LP3, LP18 and LP44 of the Richmond Local Plan (2018).



Uber Boat by Thames Clippers at Hammersmith Bridge

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TRANSPORT FOR LONDON

Uber Boat by thames clippers

BECKETT RANKINE
Marine Consulting Engineers