

Appendix H

RSA1 DESIGNERS RESPONSE





London Borough of Richmond upon Thames

TWICKENHAM RIVERSIDE

Stage 1 Road Safety Audit - Response Report





London Borough of Richmond upon Thames

TWICKENHAM RIVERSIDE

Stage 1 Road Safety Audit - Response Report

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 70059704

OUR REF. NO. RSA1

DATE: MARCH 2022

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QUALITY CONTROL

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Remarks				
Date	March 2022			
Prepared by	Thomas Edwards			
Signature				
Checked by	Tim Gabbitas			
Signature				
Authorised by	Tim Gabbitas			
Signature				
Project number	70059704			
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1 INTRODUCTION

1.1 OVERVIEW

- 1.1.1. This Road Safety Audit (RSA) Response Report relates to the revised Stage 1 Road Safety Audit for the proposed urban regeneration scheme of Twickenham Riverside in the London Borough of Richmond upon Thames.
- 1.1.2. The proposals involve the demolition of existing building and structures, and the redevelopment of the site comprising residential (Use Class C3, ground floor commercial / retail / café (Use Class E), and public hours (Sui Generis), boathouse locker storage and floating pontoon with associated landscaping, restoration of Diamond Jubilee Gardens and other relevant works.
- 1.1.3. A drawing of the proposed site is shown by Hopkins Architecture drawing number 3000-P04.

1.2 ROAD SAFETY AUDIT HISTORY

- 1.2.1. A previous Stage 1 RSA was undertaken in September 2020 in relation to the proposed masterplan site, with the RSA instruction at the time focused on the Water Lane and Wharf Lane junctions to the north of the site. A Stage 1 (Feasibility Stage) independent Road Safety Audit was carried out on the WSP design by Project Centre Limited. The audit identified a number of road safety issues associated with the proposed introduction of two-way working arrangements in both Wharf Lane and Water Lane. At present, a one-way system operates with traffic entering via Water Lane and exiting via Wharf Lane.
- 1.2.2. Design proposals have been developed and continue to be redeveloped in response to previous road safety issues raised and in response to highways feedback from LBRUT in November 2021. Several improvements to proposed designs have been made, including the reduction of the servicing bay in Wharf Lane and proposals for an extended carriageway widening / raised table, providing additional space for pedestrians.
- 1.2.3. This revised RSA Stage 1 has subsequently been instructed to review and address the masterplan site as a whole, including the Embankment to the south of the site, in response to both highways comments received and as a due diligence request from the client team to reassess the latest scheme designs.

1.3 ROAD SAFETY AUDIT 2022

- 1.3.1. The revised Stage 1 RSA was undertaken by Steven Alexander and Jatindra Chana, both of Project Centre Limited on 2nd February 2022.
- 1.3.2. In advance of the survey, a site audit brief in accordance with the DMRB GG119 Road Safety Audit Brief Template was prepared by and provided by WSP which comprised a description of the proposals with the following appended:
 - Site Location & Boundary Plan
 - Proposed Site Plan including all internal masterplan roads and external junctions.
 - Visual of Water Lane junction and associated vehicle swept-path analysis tracking
 - Visual of Wharf Lane junction and associated vehicle swept-path analysis tracking
 - Visual of the Embankment and Eel Pie Island servicing area and associated vehicle swept-path analysis drawings, including access, egress and internal flow through site

- A summary of Vision Zero accident data obtained from TfL and included within the Transport Assessment submitted for planning in July 2021
- Traffic Flow Data – (Surveys undertaken by SYSTRA on behalf of the Council)

1.3.3. The Design Team have carefully considered the problems and recommendations in the Stage 1 RSA Report (dated 3 March 2022), included within Appendix A of this document, and provided a response to each within chapter two of this report.

1.3.4. A Decision Log has been prepared in accordance with GG119 Revision 1, and is appended to this report (See Appendix B).

2 ITEMS RAISED AT STAGE 1 ROAD SAFETY AUDIT

2.1 OVERVIEW

2.1.1. The summary of potential problems assessed and considered are outlined in Table 2-1 herein:

Table 2-1 – Considered Problems Summary Table

Design Standard Category	Problems Identified	Drawing Reference Key
General	No problems identified	
Local Alignment	No problems identified	
Junctions	Yes	3.3.1 / 3.3.2
Walking, Cycling & Horse Riding	Yes	3.4.1
Traffic Signs	No problems identified	
Carriageway Markings	No problems identified	
Lighting	No problems identified	

2.2 POTENTIAL PROBLEMS

2.2.1. This section outlines verbatim the perceived issues identified in the RSA report for completeness, before providing a design response for each issue raised.

1. JUNCTIONS – WHARF LANE

3.3.1	<p>PROBLEM:</p> <p>Location: Junction of Wharf Lane with King Street.</p> <p>Summary: Wharf Lane exit close to signal stop line, risk of side-swipe collisions for vehicles moving into the offside lane to continue straight ahead.</p> <p>Detail: It is proposed to widen Wharf Lane, moving the give-way closer to the signal stop-line across King Street. There are two lanes on King Street at this junction, the nearside lane for vehicles turning left and the offside lane for vehicles continuing straight ahead. Vehicles intending to turn out of Wharf Lane and continue straight ahead on King Street may be at risk of side-swipe collisions as they pull into the offside lane.</p> <p>Recommendation: Adjust the alignment of the Wharf Lane junction to minimise the risk of side-swipe collisions.</p>
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DESIGN RESPONSE

- 2.2.2. The issue identified with respect to the Wharf Lane junction with King Street is acknowledged and understood, but should be recognised as an issue inherent with the existing junction layout and operation, rather than a new design issue associated with the proposed scheme. The current junction arrangement, which accommodates significantly more traffic exiting onto King Street than is forecast following implementation of the masterplan scheme, already requires vehicles to pull out of Wharf Lane and cut across the nearside lane on King Street to reach the offside (ahead) lane. This requirement is retained in the proposed scheme. Whilst two-way traffic working is proposed (with widening of the junction to accommodate this), overall two-way traffic flows in the future would be a fraction of the existing flows making the exit movement from Wharf Lane onto King Street westbound.
- 2.2.3. Through the Stage 3 design process, several optioneering studies have been undertaken to address perceived safety and access issues, with due consideration given to pedestrian and vehicle safety and vehicle turning requirements. The benefits of introducing two-way traffic working on Wharf Lane to the wider masterplan are significant, and the widening of the junction will facilitate this operation, with other mitigation measures including the removal of the existing parking bays within Wharf Lane to allow for two-way flows, removal of the contraflow cycle lane as a result of two-way working being introduced, and the introduction of new bell bollards either side of the junction bell mouth to protect pedestrians and manage traffic movements.
- 2.2.4. WSP believes the safety concerns associated with this junction are mitigated by the following:
- The **traffic volumes** using Wharf Lane in the future will be very low when compared with the existing situation. The masterplan proposals will close the Embankment to through-traffic movements, removing the vast majority of traffic currently exiting from Wharf Lane onto King Street. In addition, existing on-street parking at the north end of Wharf Lane, close to the junction with King Street, will be removed to improve safety for all road users and allow for the introduction of two-way traffic working.
 - The **slow speeds** that vehicles would be travelling at when either approaching the junction to turn left into Wharf Lane from King Street (due to the sharp turn, restricted visibility and raised table), or when approaching the junction to turn left into King Street from Wharf Lane (due to the give way line at the junction, restricted visibility and raised table).
 - The **signalised junction** on King Street immediately west of Wharf Lane will create regular natural gaps in the traffic flow along King Street (when the signals are red) in which traffic exiting from Wharf Lane will have the opportunity to pull out safely (as per the current situation).
- 2.2.5. In addition, it should be noted that PIA data at the junction has been obtained from TfL and analysed, and there is no evidence of near misses or collisions in this location, suggesting the current arrangements have not led to any safety issues.

2. JUNCTIONS – WATER LANE

3.3.2

PROBLEM:

Location: Junction of Water Lane with King Street.

Summary: Restricted visibility at the junction may increase the risk of collisions between road users pulling out of Water Lane and those on King Street.

Detail: It is proposed to widen Water Lane. The visibility splay is obscured at the junction by the tree to the northeast and the building line. There is a risk that road users joining King Street may not see approaching traffic on the main road, resulting in collisions at the junction. |

Recommendation: The carriageway at King Street is approximately 5 meters wide. Realign the junction mouth and move the give-way line forward to improve the visibility at this junction.

DESIGN RESPONSE

- 2.2.6. It is recognised that 30mph visibility splays at the Water Lane junction egress onto King Street are not achievable due to the proximity of existing building to the east; however, actual vehicle speeds on this section of the road have been observed to be significantly lower due to the proximity of the signal controlled junction between King Street and London Road to the east of Water Lane, and because of the road geometry and limited visibility for drivers travelling westbound on King Street, which encourages low vehicle speeds due to the S-bend horizontal alignment between the London Road and Water Lane junctions.
- 2.2.7. In addition, the proximity of the signal-controlled junction of King Street with London Road to the east creates gaps in the westbound traffic movements, which will allow vehicles to safely egress from Water Lane onto King Street westbound.
- 2.2.8. WSP accept that there is a safety issue at this junction and that introducing two-way working at the junction is a new concept, but consider that this risk is low because:
- The **traffic volumes** using Water Lane in the future will be very low when compared with the existing levels of traffic due to the removal of a significant amount of parking (including pay and display parking) from the Embankment as part of the masterplan proposals.
 - The **signalised junction** between King Street and London Road immediately east of Water Lane, combined with the restricted visibility and horizontal road alignment, results in low traffic speeds on the King Street westbound carriageway approach to the Water Lane junction.

3. WALKING, CYCLING & HORSE RIDING

3.4.1	<p>PROBLEM:</p> <p>Location: Junction mouths of Wharf Lane and Water Lane.</p> <p>Summary: Pedestrians with sight impairments may enter the road without realising, resulting in conflict with passing traffic leading to injury.</p> <p>Detail: It is proposed to provide raised tables at the junctions with Wharf Lane and Water Lane. The details of the surfacing have not been provided, however if the raised tables are installed in a similar way to the existing, then there will not be a significant colour contrast between the surface of the carriageway and the footway. There is a risk that pedestrians with sight impairments may enter the road without realising and come into conflict with traffic, resulting in pedestrian injury.</p> <p>Recommendation: Provide suitable high-contrast tactile paving on the footway at the pedestrian crossing points, to warn pedestrians with sight impairments that they are entering a traffic environment.</p>
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DESIGN RESPONSE

- 2.2.9. The existing pedestrian crossings include tactile paving along pedestrian crossings at both Wharf Lane and Water Lane, and it should be noted that concerns regarding significant colour contrast between the surface of the carriageway and the footway are an issue associated with the existing junction mouths of Wharf Lane and Water Lane.
- 2.2.10. Through the Stage 4 design process, further work has been undertaken by the landscape architects and civil engineers with regards to the landscape design, including the review of delineation of kerb lines, footway levels, pedestrian crossings and review of appropriate paving types. Tactile paving will be reintroduced at existing crossings at both the Water Lane and Wharf Lane junctions. The scheme landscape architects are abreast of new and emerging design guidance with regards to high-contrast paving and appropriate implementation of tactile paving at pedestrian crossing points will continue to be reviewed and assessed within detailed design stage.
- 2.2.11. Consideration at the next design stage can be given to pedestrian desire lines and whether additional tactile pavement at the Water Lane junction could be installed.
- 2.2.12. It should also be noted that the nature of the proposals, which focus on pedestrian priority and active travel throughout the masterplan, will contribute towards a safer environment for pedestrians and cyclists due to the removal of traffic associated with the public car park, public realm created along the Embankment and new junction treatments along Water Lane, Wharf Lane and their junctions.

Appendix A

ROAD SAFETY AUDIT STAGE 1 REPORT



Road Safety Audit Stage 1

Twickenham Riverside

Prepared for: London Borough of Richmond-upon-Thames

Document Reference: 1000008115/RSA1

Date: March 2022

DOCUMENT CONTROL

Project Centre has prepared this report in accordance with the instructions from London Borough of Richmond-upon-Thames. Project Centre shall not be liable for the use of any information contained herein for any purpose other than the sole and specific use for which it was prepared.

Rev	V01	V02	
Reason	Initial issue	Revision	
Prepared by	S Alexander	S Alexander	
Date	23/02/2022	07/03/2022	
Reviewed by	J.Chana	J.Chana	
Date	24/02/2022	07/03/2022	
Authorised by	H Dhand	H Dhand	
Date	03/03/2022	07/03/2022	

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Twickenham Riverside RSA1\2 Project Delivery\11 Submission\2022-02-22 Twickenham
Riverside S1 RSA.docx

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QUALITY	

1. SCHEME DETAILS

1.1 Project Details

Report Title:	Stage 1 Road Safety Audit Twickenham Riverside
Date:	07/03/2022
Document Reference and Revision:	1000008115/RSA1
Prepared by:	Steven Alexander, Project Centre, Fourth Floor, The Urban Building, 3-9, Albert Street, Slough, SL1 2BE
On behalf of: (Overseeing Organisation)	Anna Sadler London Borough of Richmond upon Thames, Civic Centre, 44 York Street, Twickenham, TW1 3BZ.
Design organisation	WSP WSP House, 70 Chancery Lane, London, WC2A 1AF

1.2 Introduction

- 1.2.1 This report details the results of a Stage 1 Road Safety Audit undertaken in February 2022 on the proposed development at Twickenham Riverside in the London Borough of Richmond-upon-Thames.
- 1.2.2 The scheme is located on King Street between the junctions of Wharf Lane and Water Lane. The works consist of an urban regeneration scheme involving demolition of existing buildings and structures and redevelopment of the site comprising residential (Use Class C3), ground floor commercial/retail/cafe (Use Class E), and public house (Sui Generis), boathouse locker storage and floating pontoon with associated landscaping, restoration of Diamond Jubilee Gardens and other relevant works.

- A pedestrian priority space type public realm and high-quality landscape will link the buildings and the public highways providing access to the site.
 - A service road, currently a 'cul-de-sac' accessed via Wharf Lane, will be retained and will continue to serve King Streets units from the rear and will also serve the new development.
 - Cycle parking will be provided in line with the London Plan (2021) standards and London Cycle Design Standards (LCDS) best practice. The Proposed Development will be car-free with the exception of blue badge parking provision.
 - The proposed site will enhance the site access through conversion to two-way access at both Water Lane and Wharf Lane junctions, closure of The Embankment along the riverside except to pedestrians and cyclists (with occasional HGV movement facilitated by managed bollard removal), implementation of raised tables and widening of the junction mouths of Wharf Lane and Water Lane with King Street to accommodate the two-way traffic arrangement.
 - The Embankment and river activity zone, which is currently operational to parking and vehicle traffic, will become pedestrian priority and will be operated by bollards and managed by the Council. Vehicle turning heads at the south of both Wharf Lane and Water Lane will ensure vehicles do not need to access the Embankment west-east or east-west. Total and peak hour vehicle movements in this location will be small in number and contained within the turning head (vehicle tracking included within the appendices to this document). Vehicle movements will be small and infrequent, especially when compared to the existing site where vehicles regularly access the embankment to travel along Wharf Lane throughout the day. Road markings and delineation will further re-enforce the pedestrian priority across the area.
- 1.2.3 The report has been prepared in response to a brief provided by the Overseeing Organisation detailed above in February 2022.
- 1.2.4 The Road Safety Audit Team consists of:
- Steven Alexander Team Leader
 - Jatindra Chana Team Member
- 1.2.5 The Audit took place at the Slough office of Project Centre in February 2022 and comprised of an examination of the drawings and documents as listed in Appendix A of this report. This included the whole of Wharf Lane, Water Lane and The Embankment within the extents of the scheme, including tie-ins to the surrounding road network.
- 1.2.6 The Audit Team visited the site together on Wednesday 2nd February 2022 between the hours of 16:00 and 17:00. The weather was cold but dry. There was a light flow of traffic in the Riverside area, but there was much more traffic on Twickenham High Street.
- 1.2.7 At the time of the site visit the footway and part of the carriageway alongside the river Thames was flooded. The flooding was mainly located at the junction of The Embankment and Water Lane. The water was not deep and vehicles were observed driving through the flooded area. The Audit Team observed that this was an existing issue.

- 1.2.8 The terms of reference of the Road Safety Audit are as described in GG 119. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.
- 1.2.9 Personal Injury Collision Data was not provided on this occasion. A review of the online software 'CRASHMAP' indicates that, in the last 5 years, there have been two personal injury collisions resulting in slight injury within the scheme extents.
- 1.2.10 No details of any departures from standards have been provided.
- 1.2.11 All comments and recommendations are referenced to the design drawings and A4 location plans in Appendix B of this report.

2. ITEMS RAISED AT PREVIOUS ROAD SAFETY AUDIT(S)

2.1 Summary

- 2.1.1 A previous Stage 1 Road Safety Audit was carried out on the proposals for Twickenham Riverside in September 2020. A designers' response was prepared by the Design Organisation in October 2020.
- 2.1.2 The Road Safety Audit and Response is included with the full Road Safety Audit Brief included in Appendix C.
- 2.1.3 Issue 3.4.2 was still considered to be an issue by the Audit Team and is included in this Stage 1 Road Safety Audit under item 3.4.1.

3. STAGE 1 ROAD SAFETY AUDIT

3.1 GENERAL

3.1.1 No issues have been identified at this stage.

3.2 LOCAL ALIGNMENT

3.2.1 No issues have been identified at this stage.

3.3 JUNCTIONS

3.3.1 PROBLEM:

Location: Junction of Wharf Lane with King Street.

Summary: Wharf Lane exit close to signal stop line, risk of side-swipe collisions for vehicles moving into the offside lane to continue straight ahead.

Detail: It is proposed to widen Wharf Lane, moving the give-way closer to the signal stop-line across King Street. There are two lanes on King Street at this junction, the nearside lane for vehicles turning left and the offside lane for vehicles continuing straight ahead. Vehicles intending to turn out of Wharf Lane and continue straight ahead on King Street may be at risk of side-swipe collisions as they pull into the offside lane.

Recommendation: Adjust the alignment of the Wharf Lane junction to minimise the risk of side-swipe collisions.

3.3.2 PROBLEM:

Location: Junction of Water Lane with King Street.

Summary: Restricted visibility at the junction may increase the risk of collisions between road users pulling out of Water Lane and those on King Street.

Detail: It is proposed to widen Water Lane. The visibility splay is obscured at the junction by the tree to the northeast and the building line. There is a risk that road users joining King Street may not see approaching traffic on the main road, resulting in collisions at the junction.

Recommendation: The carriageway at King Street is approximately 5 meters wide. Realign the junction mouth and move the give-way line forward to improve the visibility at this junction.

3.4 WALKING, CYCLING AND HORSE RIDING

3.4.1 PROBLEM:

Location: Junction mouths of Wharf Lane and Water Lane.

Summary: Pedestrians with sight impairments may enter the road without realising, resulting in conflict with passing traffic leading to injury.

Detail: It is proposed to provide raised tables at the junctions with Wharf Lane and Water Lane. The details of the surfacing have not been provided, however if the raised tables are installed in a similar way to the existing, then there will not be a significant colour contrast between the surface of the carriageway and the footway. There is a risk that pedestrians with sight impairments may enter the road without realising and come into conflict with traffic, resulting in pedestrian injury.

Recommendation: Provide suitable high-contrast tactile paving on the footway at the pedestrian crossing points, to warn pedestrians with sight impairments that they are entering a traffic environment.

3.5 TRAFFIC SIGNS, CARRIAGEWAY MARKING AND STREET LIGHTING

3.5.1 No issues have been identified at this stage.

4. AUDIT TEAM STATEMENT

We certify that this road safety audit has been carried out in accordance with GG 119.

ROAD SAFETY AUDIT TEAM LEADER	
Name:	Steven Alexander
Signed:	
Organisation:	Project Centre Limited
Date:	24/02/2022
ROAD SAFETY AUDIT TEAM MEMBER	
Name:	Jatindra Chana
Signed:	
Organisation:	Project Centre Limited
Date:	24/02/2022

Appendix A

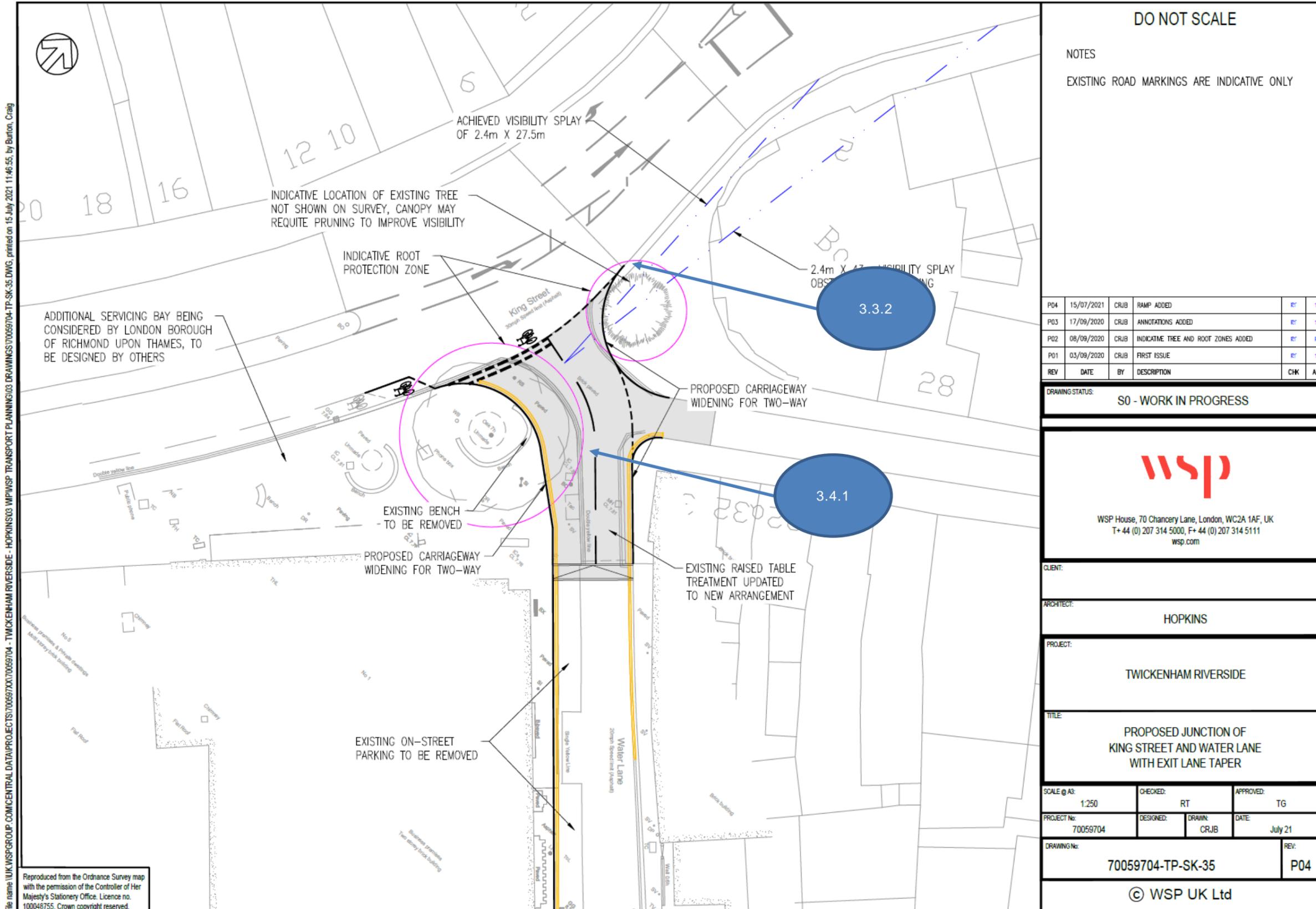
SCHEDULE OF DOCUMENTS EXAMINED (Documents Forming the Audit Brief)

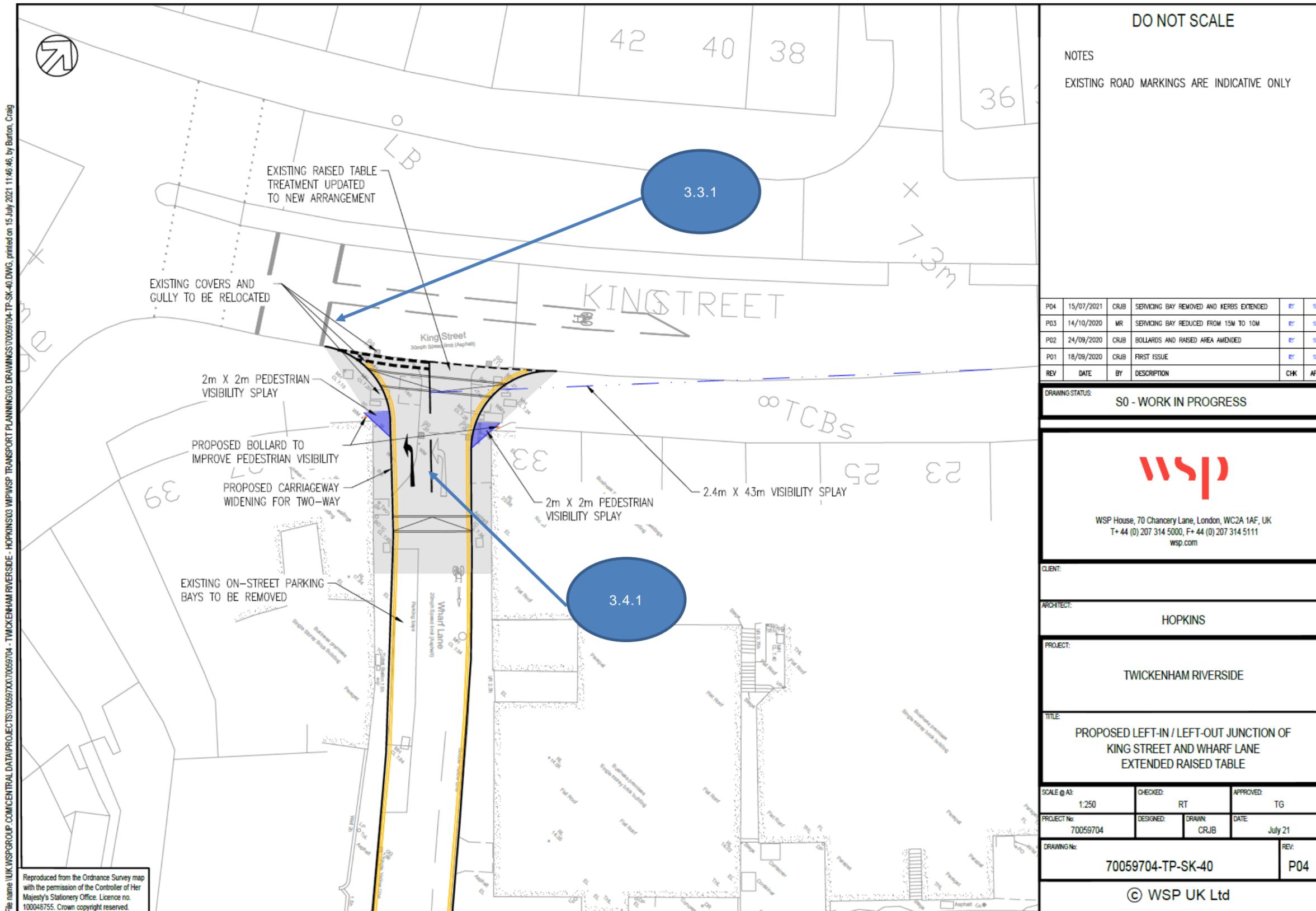
ROAD SAFETY AUDIT STAGE 1 – DRAWING LIST [February 2022]

DRAWING NUMBER	DRAWING TITLE
SK-246-P01	RIVER ACTIVITY AREA – VEHICULAR TURNING
3000-P04	SITE LOCATION PLAN
TP-SK-35-P04	PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER
TP-SK-35-TR1	PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER 12m RIGID SWEEP PATH ANALYSIS
TP-SK-35-TR2	PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER REFUSE SWEEP PATH ANALYSIS
TP-SK-35-TR3	PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER 7.5T BOX VAN SWEEP PATH ANALYSIS
TP-SK-35-TR4	PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER 3.5T PANEL VAN SWEEP PATH ANALYSIS
TP-SK-35-TR5	PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER LARGE CAR SWEEP PATH ANALYSIS
TP-SK-35-TR6	PROPOSED JUNCTION OF KING STREET & WATER LANE WITH EXIT LANE TAPER - REFUSE PASSING CAR SWEEP PATH ANALYSIS
TP-SK-40-P04	PROPOSED LEFT-IN / LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE EXTENDED RAISED TABLE
TP-SK-40-TR1	PROPOSED LEFT-IN/LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE EXTENDED RAISED TABLE REFUSE SWEEP PATH ANALYSIS
TP-SK-40-TR2	PROPOSED LEFT-IN/LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE EXTENDED RAISED TABLE 10M RIGID SWEEP PATH ANALYSIS
TP-SK-40-TR3	PROPOSED LEFT-IN/LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE EXTENDED RAISED TABLE 7.5T BOX VAN SWEEP PATH ANALYSIS
TP-SK-40-TR4	PROPOSED LEFT-IN/LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE EXTENDED RAISED TABLE 3.5T PANEL VAN SWEEP PATH ANALYSIS
TP-SK-40-TR5	PROPOSED LEFT-IN/LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE EXTENDED RAISED TABLE LARGE CAR SWEEP PATH ANALYSIS
TP-SK-52-TR16	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT BICYCLE PASSING LARGE VEHICLES
TP-SK-52-TR14	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT 6 TRANSIT BAYS WIDER FOOTWAY FIRE TURNING SWEEP PATH ANALYSIS
TP-SK-52-TR13	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT RIGID TRUCK SWEEP PATH ANALYSIS
TP-SK-52-TR12	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT REFUSE BAY SWEEP PATH ANALYSIS
TP-SK-52-TR11	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT REFUSE BAY SWEEP PATH ANALYSIS
TP-SK-52-TR10	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT SERVICE ROAD REFUSE ACCESS SWEEP PATH ANALYSIS
TP-SK-52-TR9	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT PROP SERVICE RD BAY & FIRE PASSING
TP-SK-52-TR8	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT EEL PIE ISLAND BAYS SWEEP PATHS
TP-SK-52-TR7	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT WHARF LN PARKING & SWEEP PATH
TP-SK-52-TR4	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT 2 BB BAYS ON WATER LANE
TP-SK-52-TR3	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT ARTIC SWEEP PATH
TP-SK-52-TR2	HOPKINS MASTERPLAN PROPOSED HIGHWAY ARRANGEMENT 7.5T VAN 5-POINT TURN MANOEUVRE

Other documents: - Road Safety Audit Stage 1 – Twickenham Riverside (September 2020)

Appendix B





File name: \\UK\WSP\GROUP\COM\CENTRAL DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\WSP\TRANSPORT PLANNING\303 DRAWINGS\70059704-TP-SK-40.DWG, printed on 15 July 2021 11:46:46, by Burton, Craig

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DO NOT SCALE

NOTES
EXISTING ROAD MARKINGS ARE INDICATIVE ONLY

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	15/07/2021	CRJB	SERVICING BAY REMOVED AND KERBS EXTENDED	RT	TG
P03	14/10/2020	MR	SERVICING BAY REDUCED FROM 15M TO 10M	RT	TG
P02	24/09/2020	CRJB	BOLLARDS AND RAISED AREA AMENDED	RT	TG
P01	18/09/2020	CRJB	FIRST ISSUE	RT	TG

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT:

ARCHITECT: **HOPKINS**

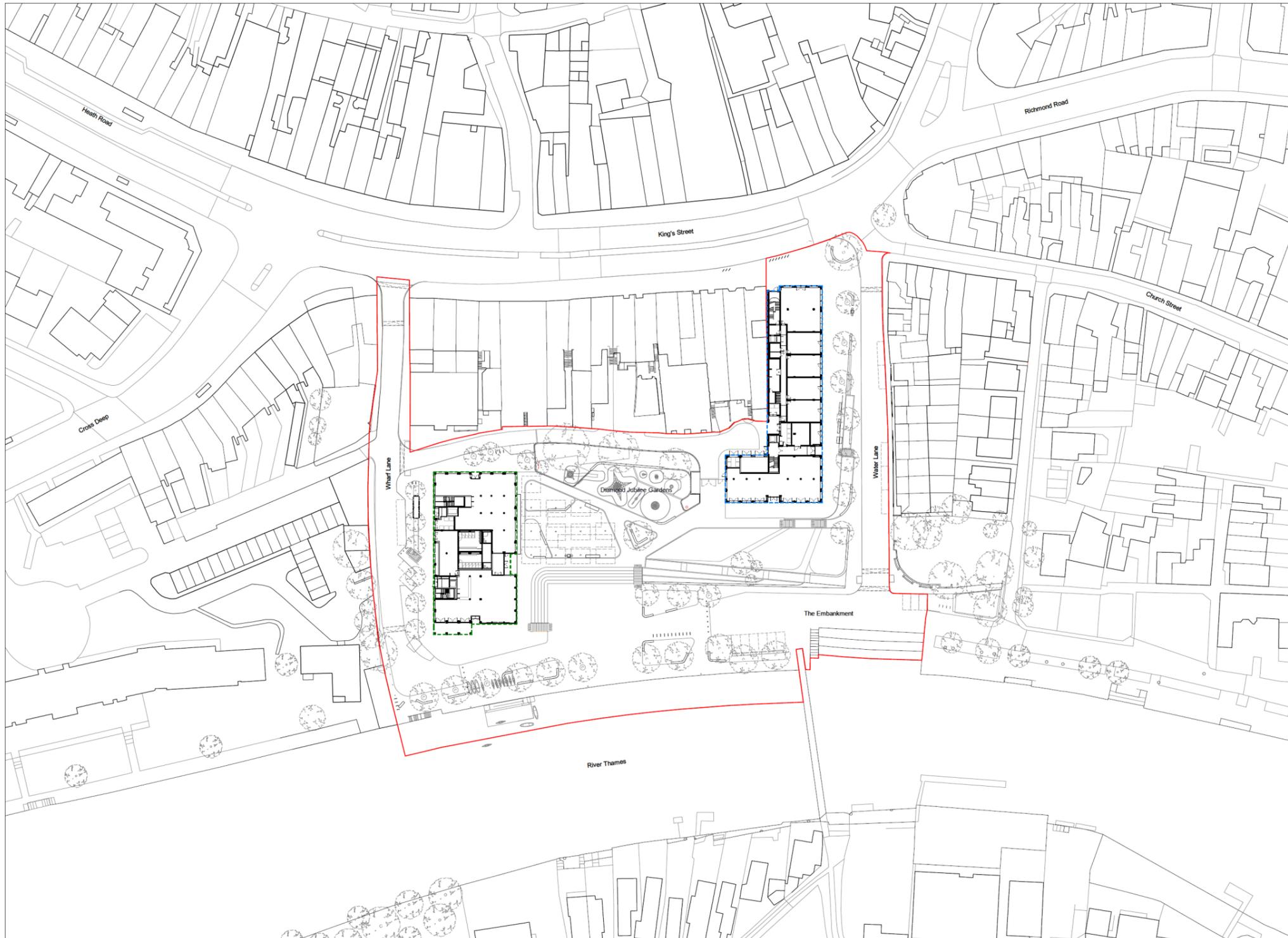
PROJECT: **TWICKENHAM RIVERSIDE**

TITLE: **PROPOSED LEFT-IN / LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE EXTENDED RAISED TABLE**

SCALE @ A3: 1:250	CHECKED: RT	APPROVED: TG
PROJECT No: 70059704	DESIGNED: CRJB	DATE: July 21

DRAWING No: **70059704-TP-SK-40** REV: **P04**

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This drawing has been produced for illustrative purposes only and is not based on accurate survey information. The layout is still subject to design development and this is deemed to be acknowledged by all parties if this drawing is used for legal purposes.

Existing locations of buildings, roads, waterways and parkland based on Ordnance Survey data (Stanfords OS MasterMap 28/05/2021) © Crown copyright and database rights 2021 OS Licence 100035409.

Existing site levels based on Stanfords Portal LIDAR Height Data DTM Survey Information (13/06/2019) © Crown copyright and database rights 2019 OS Licence 100035409.

Site boundary based on mark-up provided by LBRUT as part of Twickenham Riverside Invitation to Tender document, June 2019, using geographical features to determine boundaries. Requires legal verification.

Proposed plan uses Survey Solutions topographical survey information (25/06/2020) to determine edges of existing highways, river features and adjacent structures (drawing reference: 26576se-01).

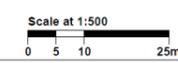
Proposed buildings and landscaping subject to design development, which may affect boundary conditions and areas. Wharf Lane podium edge subject to change. Landscape design and levels subject to change following further design development.

Legend

- Site Red Line Boundary
- Wharf Lane Building (Market Block)
- Water Lane Building (Affordable Block)

Date	Rev	Description	Approved By	Date	Rev	Description	Approved By
28/05/2020	P01	M004 - Issue to EA	MB				
22/04/2021	P02	M006 - Issue to LBRUT and Arcadis	MB				
21/05/2021	P03	M102 - Stage 1 Civil Works	MB				
28/01/2022	P04	M256 - Issue to WSP	MB				

DRAFT



Project	Twickenham Riverside	Code	TRS	File Name	Number	Rev.
Subject	Site Location Plan			TRS-HAL-00-00-DR-A-	3000	P04
Architects	Hopkins Architects Limited 27 Broadway Terrace, London, NW1 6LG T: 020 7724 1751 E: mail@hopkins.co.uk		Date	10/09/20	Scale	1:500 at A1

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Appendix C

Quality

It is the policy of Project Centre to supply Services that meet or exceed our clients' expectations of Quality and Service. To this end, the Company's Quality Management System (QMS) has been structured to encompass all aspects of the Company's activities including such areas as Sales, Design and Client Service.

By adopting our QMS on all aspects of the Company, Project Centre aims to achieve the following objectives:

- Ensure a clear understanding of customer requirements;
- Ensure projects are completed to programme and within budget;
- Improve productivity by having consistent procedures;
- Increase flexibility of staff and systems through the adoption of a common approach to staff appraisal and training;
- Continually improve the standard of service we provide internally and externally;
- Achieve continuous and appropriate improvement in all aspects of the company;

Our Quality Management Manual is supported by detailed operational documentation. These relate to codes of practice, technical specifications, work instructions, Key Performance Indicators, and other relevant documentation to form a working set of documents governing the required work practices throughout the Company.

All employees are trained to understand and discharge their individual responsibilities to ensure the effective operation of the Quality Management System.



Award Winning



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Accreditations



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Appendix B

RSA STAGE 1 DECISION LOG



TWICKENHAM RIVERSIDE

RSA Location	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
<p>Junction of Wharf Lane with King Street.</p>	<p>Summary: Wharf Lane exit close to signal stop line, risk of side-swipe collisions for vehicles moving into the offside lane to continue straight ahead.</p> <p>Detail: It is proposed to widen Wharf Lane, moving the give-way closer to the signal stop-line across King Street. There are two lanes on King Street at this junction, the nearside lane for vehicles turning left and the offside lane for vehicles continuing straight ahead. Vehicles intending to turn out of Wharf Lane and continue straight ahead on King Street may be at risk of side-swipe collisions as they pull into the offside lane.</p>	<p>Recommendation: Adjust the alignment of the Wharf Lane junction to minimise the risk of side-swipe collisions.</p>	<p>The issue identified with respect to the Wharf Lane junction with King Street is acknowledged and understood, but should be recognised as an issue inherent with the existing junction layout and operation, rather than a new design issue associated with the proposed scheme. The current junction arrangement, which accommodates significantly more traffic exiting onto King Street than is forecast following implementation of the masterplan scheme, already requires vehicles to pull out of Wharf Lane and cut across the nearside lane on King Street to reach the offside (ahead) lane. This requirement is retained in the proposed scheme. Whilst two-way traffic working is proposed (with widening of the junction to accommodate this), overall two-way traffic flows in the future would be a fraction of the existing flows making the exit movement from Wharf Lane onto King Street westbound.</p> <p>Through the Stage 3 design process, several optioneering studies have been undertaken to address perceived safety and access issues, with due consideration given to pedestrian and vehicle safety and vehicle turning requirements. The benefits of introducing two-way traffic working on Wharf Lane to the wider masterplan are significant, and the widening of the junction will facilitate this operation, with other mitigation measures including the removal of the existing parking bays within Wharf Lane to allow for two-way flows, removal of the contraflow cycle lane as a result of two-way working being introduced, and the introduction of new bell bollards either side of the junction bell mouth to protect pedestrians and manage traffic movements.</p> <p>WSP believes the safety concerns associated with this junction are mitigated by the following:</p> <p>(1)The traffic volumes using Wharf Lane in the future will be very low when compared with the existing situation. The masterplan proposals will close the Embankment to through-traffic movements, removing the vast majority of traffic currently exiting from Wharf Lane onto King Street. In addition, existing on-street parking at the north end of Wharf Lane, close to the junction with King Street, will be removed to improve safety for all road users and allow for the introduction of two-way traffic working.</p> <p>(2)The slow speeds that vehicles would be travelling at when either approaching the junction to turn left into Wharf Lane from King Street (due to the sharp turn, restricted visibility and raised table), or when approaching the junction to turn left into King Street from Wharf Lane (due to the give way line at the junction, restricted visibility and raised table).</p> <p>(3)The signalised junction on King Street immediately west of Wharf Lane will create regular natural gaps in the traffic flow along King Street (when the signals are red) in which traffic exiting from Wharf Lane will have the opportunity to pull out safely (as per the current situation). In addition, it should be noted that PIA data at the junction has been obtained from TfL and analysed, and there is no evidence of near misses or collisions in this Junction of Water Lane with King Street location, suggesting the current arrangements have not led to any safety issues.</p>		
<p>Junction of Water Lane with King Street.</p>	<p>Summary: Restricted visibility at the junction may increase the risk of collisions between road users pulling out of Water Lane and those on King Street.</p> <p>Detail: It is proposed to widen Water Lane. The visibility splay is obscured at the junction by the tree to the northeast and the building line. There is a risk that road users joining King Street may not see approaching traffic on the main road, resulting in collisions at the junction.</p>	<p>Recommendation: The carriageway at King Street is approximately 5 meters wide. Realign the junction mouth and move the give-way line forward to improve the visibility at this junction.</p>	<p>It is recognised that 30mph visibility splays at the Water Lane junction egress onto King Street are not achievable due to the proximity of existing building to the east; however, actual vehicle speeds on this section of the road have been observed to be significantly lower due to the proximity of the signal controlled junction between King Street and London Road to the east of Water Lane, and because of the road geometry and limited visibility for drivers travelling westbound on King Street, which encourages low vehicle speeds due to the S-bend horizontal alignment between the London Road and Water Lane junctions.</p> <p>In addition, the proximity of the signal-controlled junction of King Street with London Road to the east creates gaps in the westbound traffic movements, which will allow vehicles to safely egress from Water Lane onto King Street westbound.</p> <p>WSP accept that there is a safety issue at this junction and that introducing two-way working at the junction is a new concept, but consider that this risk is low because:</p> <p>(1) The traffic volumes using Water Lane in the future will be very low when compared with the existing levels of traffic due to the removal of a significant amount of parking (including pay and display parking) from the Embankment as part of the masterplan proposals.</p> <p>(2) The signalised junction between King Street and London Road immediately east of Water Lane, combined with the restricted visibility and horizontal road alignment, results in low traffic speeds on the King Street westbound carriageway approach to the Water Lane junction.</p>		
<p>Junction mouths of Wharf Lane and Water Lane.</p>	<p>Summary: Pedestrians with sight impairments may enter the road without realising, resulting in conflict with passing traffic leading to injury.</p> <p>Detail: It is proposed to provide raised tables at the junctions with Wharf Lane and Water Lane. The details of the surfacing have not been provided, however if the raised tables are installed in a similar way to the existing, then there will not be a significant colour contrast between the surface of the carriageway and the footway. There is a risk that pedestrians with sight impairments may enter the road without realising and come into conflict with traffic, resulting in pedestrian injury.</p>	<p>Recommendation: Provide suitable high-contrast tactile paving on the footway at the pedestrian crossing points, to warn pedestrians with sight impairments that they are entering a traffic environment.</p>	<p>The existing pedestrian crossings include tactile paving along pedestrian crossings at both Wharf Lane and Water Lane, and it should be noted that concerns regarding significant colour contrast between the surface or the carriageway and the footway are an issue associated with the existing junction mouths of Wharf Lane and Water Lane.</p> <p>Through the Stage 4 design process, further work has been undertaken by the landscape architects and civil engineers with regards to the landscape design, including the review of delineation of kerb lines, footway levels, pedestrian crossings and review of appropriate paving types. Tactile paving will be reintroduced at existing crossings at both the Water Lane and Wharf Lane junctions. The scheme landscape architects are abreast of new and emerging design guidance with regards to high-contrast paving and appropriate implementation of tactile paving at pedestrian crossing points will continue to be reviewed and assessed within detailed design stage.</p> <p>Consideration at the next design stage can be given to pedestrian desire lines and whether additional tactile pavement at the Water Lane junction could be installed.</p> <p>It should also be noted that the nature of the proposals, which focus on pedestrian priority and active travel throughout the masterplan, will contribute towards a safer environment for pedestrians and cyclists due to the removal of traffic associated with the public car park, public realm created along the Embankment and new junction treatments along Water Lane, Wharf Lane and their junctions.</p>		



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