EAGLE BREWERY WHARF

KINGSTON UPON THAMES, KT1 1HL

FLOOD RISK ASSESSMENT

230350-GSL-XX-XX-RP-C-0001

VERSION 4 FEBRUARY 2024

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References

National Planning Policy Guidance (NPPG)
National Planning Policy Framework 2021 (NPPF)
Kingston Upon Thames Strategic Flood Risk Assessment (SFRA) 2021
Kingston Upon Thames Surface Water Management Plan (SWMP) 2011
The London Plan 2021
Building Regulations Part H –Drainage and Waste Disposal 2015
CIRIA C753 The SuDS Manual 2015

DATE	VERSION	PURPOSE	ISSUED BY	CHECKED BY
29/02/24	3	FOR PLANNING	ASB	ASB
26/02/24	3	FOR PLANNING	ASB	MM
19/02/24	2	FOR PLANNING	ASB	MM
02/02/24	1	DRAFT	ASB	ASB

EXECUTIVE SUMMARY

The project involves refurbishing the landscaping to a public park adjacent to the River Thames, requiring the installation of some new raised planters, local regrading of ground levels and the addition of new SuDS features.

Flood Zone information published by Environment Agency shows that the development site is located within Flood Zones 2 and 3, at risk of flooding from the adjacent River Thames.

The EA have advised that a 100-year (+35% climate change) flood level of **8.52 AOD** occurs onsite. Based on the range of levels recorded by the topographic survey (6.91-7.44) this would result in flood depths of 1080mm to 1610mm onsite.

The development proposals involve the displacement of small volumes of floodwater due to a raised planting bed being partly within the Flood Zone 3 area at the North of the site. The development provides compensatory flood storage through the addition of swales and general reduction of levels around the site. The compensatory flood storage provided exceeds the volume of floodwater displaced.

Proposals involve lowering the river wall adjacent the site to sit flush with existing site levels. Reviewing the surrounding existing river wall levels, it is evident this will not increase flood risk as the upstream and downstream river wall levels are lower than the levels of the site itself.

Groundwater and reservoir breach flood risk has also been identified onsite. Although these are deemed low risk due to the nature of the proposals.

The drainage strategy involves the installation of some new drainage and the reuse of part of the existing drainage network including the outfall to the river. The CCTV survey reported this pipework is in good condition, suitable for reuse.

SuDS in the form of Swales and filter drains are included as part of the proposals which will both slow rainwater and encourage infiltration. Additionally, as the proposals involve an increase in soft landscaping area across the site, the peak surface water outflow from the site will be reduced, resulting in a benefit to downstream flood risk.

1. INTRODUCTION

Graphic Structures Limited have been appointed by the Royal Borough of Kingston Upon Thames to produce a Flood Risk Assessment (FRA) to support a detailed planning application for their proposals adjacent the River Thames at Eagle Brewery Wharf, Kingston Upon Thames.

The purpose of this report is to assess the risk of flooding at the proposed site and will review any impacts the development will have with regards to flood risk to surrounding properties. The report will also outline the approach taken with regards to the below ground drainage proposals, it evaluates the selection of SuDS devices utilised and demonstrates how the surface water disposal hierarchy has been followed.

This report has been produced in compliance with the NPPF, NPPG and Kingston Upon Thames Local Plan policies, as well as Kingston Upon Thames's Strategic Flood Risk Assessment (SFRA) 2021 and Surface Water Management Plan (SWMP) 2011.

2. DEVELOPMENT DESCRIPTION

2.1 Site Location

The site is situated on the Eastern side of the River Thames and is approximately 0.5km South-West of Kingston Station. The National Grid reference for the site is TQ 17757 69035.

The site is bounded to the North by the outdoor beer garden of the Ram pub, a carpark to the East and residential properties to the South.

2.2 Existing Site

The site is currently used as a public open space which is mostly covered by hardstanding along with an assortment of benches and bins.

Figure 1 – Development Site Location

A topographical survey of the existing site was undertaken in February 2023; refer to Appendix 1 for details. This shows that the site itself is relatively flat with levels varying from 6.91 AOD to 7.44 AOD with varying fall directions. The survey shows that the site itself is raised relative to surrounding areas. The existing levels along the river edge are lower both upstream and downstream.

The total area of the existing site is approximately 890m^2, which includes 180m^2 soft landscaping. The existing impermeable area of the site is measured as 710m^2.

A desk study report has been undertaken by Southern Testing, dated September 2023 which can be found in Appendix 7. This reported that based on BGS maps the expected ground conditions are alluvium over the Langley Silt Member over London Clay. Nearby historic borehole records (including one onsite) also suggest that the geology includes some surface gravels and chalk at depth, as shown in Figure 2 below.

BH Reference	Final Depth (mbgl)	Distance from site (m) & Direction	Remarks
TQ16NE10	152	On site	2.44m Made Ground over 1.22m gravel over 97.23m clays over 6.1m sands over 45m chalk and flint. Groundwater level was not recorded in this borehole.
TQ16NE76	7.61	58 south	3.35m sand over 3.36m sand and gravel over 0.91m clays with groundwater encountered at 3.66m.
STL 1308	8.00	160 north	1.70m fill over 1.0m gravel over 0.2m silt over 2.6m sand and gravel over 2.5m clay. Groundwater was encountered at 2.30m.
TQ16NE102	15.10	180 east	0.1m blacktop over 2.2m made ground over 2.5m sandy gravel over 9.0m silty clay. Groundwater was not encountered.

Figure 2 – Nearby Historic Borehole Records

The Lead Local Flood Authority (LLFA) responsible for all flood risk matters that do not relate directly to designated Main Rivers, is the Royal Borough of Kingston Upon Thames. The Statutory Sewerage Undertaker for the area is Thames Water.

The NPPF includes guidance on flood vulnerability classification dependent on the use of the existing site. Consulting this, the site can be classified as ‘water compatible development’ due to its public open space designation.

2.3 Proposed Development

The proposals involve refreshing the public realm with and an increase in the soft landscaped area. Both surface level and raised planting beds are proposed along with new bench features. An extract of Farrer Huxley's proposed site plan can be seen in Figure 3, which can be found within Appendix 2.

Figure 3 – Proposed Site Plan

New drainage is proposed as part of the works which involves some changes to site levels to achieve falls. The proposed site drainage and SuDS are discussed in Section 6. The proposed area of soft landscaping is increased to approximately 310m^2, with approximately 580m^2 of the site impermeable.

The proposed works also involve removing the raised river wall adjacent the site. The implications of any associated increase in flood risk is discussed in Section 5.

The NPPF flood vulnerability classification of the development is classified as 'water compatible development' due to its public open space designation. This means the new development achieves sane flood vulnerability classification as the existing site.

3. FLOOD RISK

The risk of flooding at the development site has been assessed for the following sources:

- Rivers & Seas
- Surface Water (Overland Flow)
- Sewers
- Groundwater
- Artificial Water Bodies

The following sections of this report evaluate each source of flood risk in relation to the development proposals, using data provided by both the GOV.uk website and the Kingston Upon Thames Strategic Flood Risk Assessment (SFRA) 2021.

The SFRA shows the site is not located within a critical drainage area, although there is one approximately 50m to the East of the site.

3.1 Flood Risk from Rivers & Sea

Flood Zone information published by Environment Agency shows that the development site is located within Flood Zones 2 and 3 as shown in Figure 4 below.

Figure 4 – EA Flood Risk: Rivers & Seas

The site is bounded by the River Thames to the West. The river adjacent the site is non tidal as Teddington Lock is located around 2km downstream from the site. The EA have advised that a 100-year (+35% climate change) flood level of **8.52 AOD** occurs onsite. Based on the range of levels recorded by the topographic survey (6.91-7.44) this would result in flood depths of 1080mm to 1610mm onsite.

The Hogsmill River, a minor tributary, joins the Thames around 100m downstream of the site.

The implications of the development on the displacement of modelled flood water are discussed within Section 5.

After review of the relevant information, this site is considered to be at a **medium risk** of flooding from rivers and seas.

3.2 Flood Risk from Surface Water (Overland Flows)

Figure 5 has been taken from the SFRA online maps. This shows that the site is located within an area which has a low risk of surface water flooding. There is a flood flow route for the 1 in 1000-year event which runs through the neighbouring beer garden to the North of the site.

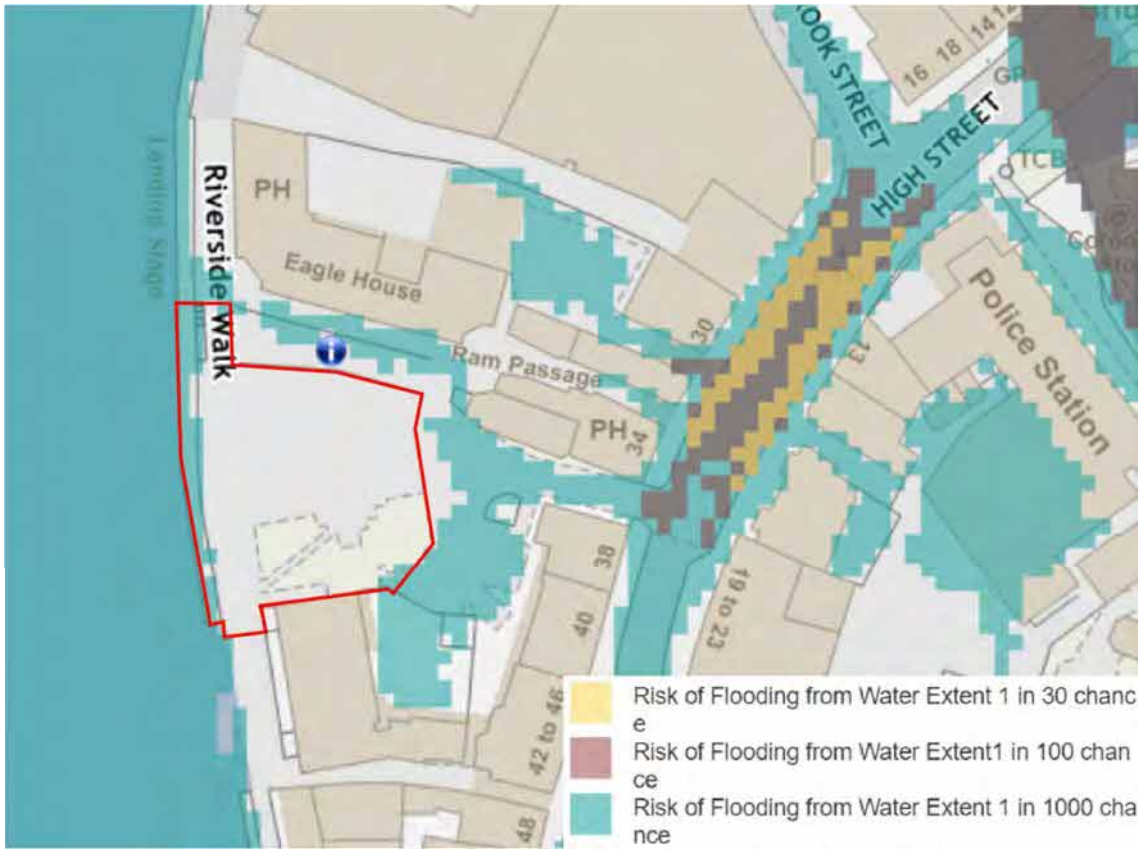


Figure 5 – GOV.uk Flood Risk: Surface Water

After review of the relevant information, this development is considered to be at a **low risk** of flooding from surface water.

3.3 Flood Risk from Sewers

Public sewer records have been obtained from Thames Water; refer to Appendix 4 for details. Records show that there are no public sewers within the site although are foul and surface sewers running under the High St to the East, refer to Section 6 for a summary.

Thames Water are responsible for operating and maintaining their sewer infrastructure, therefore the likelihood of surcharge due to blockages is generally expected to be low. Sewer flooding history has also been obtained from Thames Water, which confirms that there have been no reported incidents of flooding in the vicinity of the site due to public sewer surcharge.

After review of the relevant information, this development is considered to be at a **low risk** of flooding from sewers.

3.4 Flood Risk from Groundwater

The SFRA groundwater flooding map indicates the site may be susceptible to flooding. An extract of the map is shown in Figure 6.

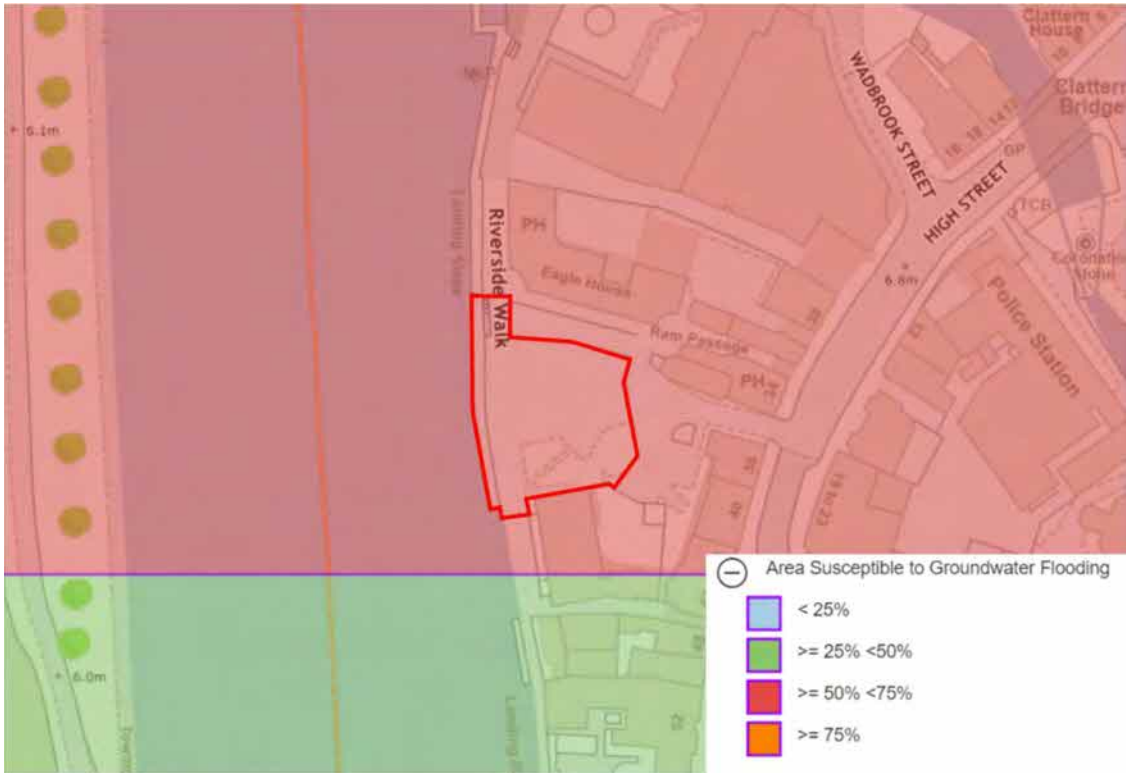


Figure 6 – Kingston Upon Thames SFRA: Areas at Risk of Flooding from Groundwater

As discussed in Section 2.2 the site is raised relative to surrounding areas which mitigates the risk of this form of flooding. Furthermore, no significant depth of open cut excavation to facilitate construction is expected.

After review of the relevant information, this development is considered to be at a **low risk** of flooding from groundwater.

3.5 Flood Risk from Artificial Water Bodies

Figure 7 has been taken from the GOV.uk flood risk maps. This shows that the development site is located within an area of flooding generated by the residual risk of a reservoir breach.

Figure 7 – GOV.uk Flood Risk: Reservoirs – Extent of Flooding

All large reservoirs are regularly inspected by the Environment Agency and essential maintenance works carried out. Reservoir flooding is very unlikely to occur and it is recorded that no loss of life has been caused from this flood source since 1925.

There are no historical reports of any flood events caused by any other artificial sources, such as water mains, in the vicinity of the site.

After careful consideration of the relevant information, this development is considered to be at a **low risk** of flooding from artificial water bodies.

4. SEQUENTIAL AND EXCEPTION TEST

4.1 Sequential Test

It is a requirement for the development to receive confirmation from the LLFA of passing the sequential test (and exception test if required) before planning consent is granted.

Paragraph 158 of the NPPF states; "*The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding. The Strategic Flood Risk Assessment will provide the basis for applying this test. A sequential approach should be used in areas known to be at risk from any form of flooding.*"

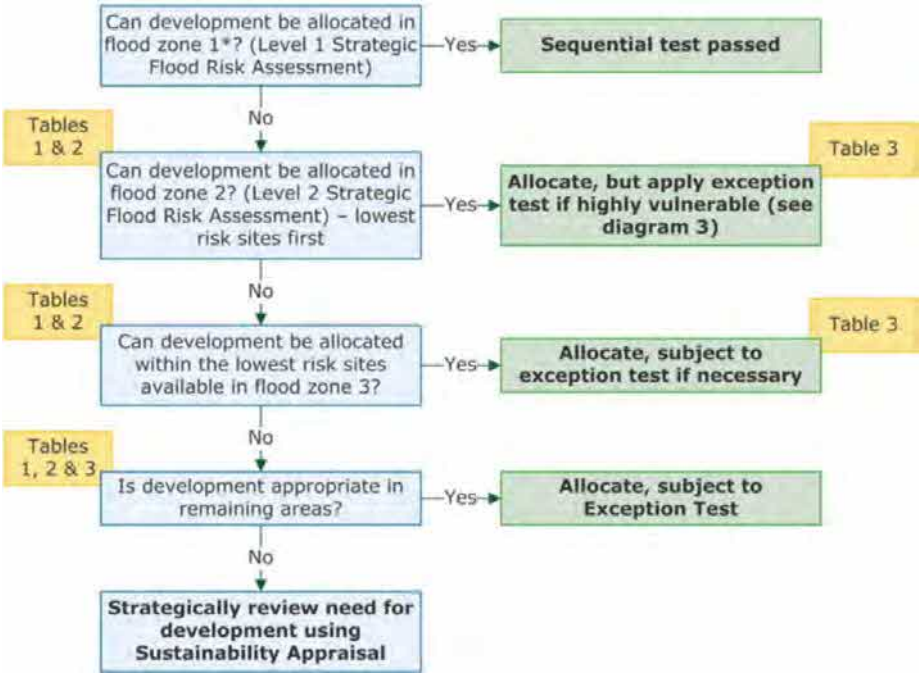


Figure 8: Application of Sequential Test, www.gov.uk

Figure 8 illustrates the application of the sequential test. The site is located within Flood Zones 2 and 3, therefore, the exception test is required.

4.2 Exception Test

The exception test is a method to demonstrate and help ensure that flood risk to people and property will be managed satisfactorily, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available. Figure 9 shows the requirements for an exception test to be carried out with regards to flood vulnerability and flood zone.

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	×	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	×	×	×

Key: ✓ Development is appropriate.
× Development should not be permitted.

Figure 9: Exception Test Requirements, www.gov.uk

For the exception test to be passed, the following criteria needs to be met as set in NPPF paragraph 160;

> "*The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. For the exception test to be passed it should be demonstrated that:*
>
> > *(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and*
> >
> > *(b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall."*

The first requirement of the exception test is passed by the LLFA providing written confirmation that the site passes the sequential test.

This FRA aims to satisfy the second requirement of the exception test by demonstrating that the development will be safe for its lifetime taking account the vulnerability of the users without increasing offsite flood risk.

5. FLOOD RISK MANAGEMENT

5.1 EA liaison

The EA have been consulted from an early stage of design for this development due to the proximity to the River Thames as well as the flood risk onsite. Below is a timeline of correspondence with the EA which can be found in Appendix 3.

- 7th March 2023 –Graphic Structures flood levels request sent to EA
- 4th April 2023 –EA response to flood level request
- 25th April 2023 –Enquiry email sent by Farrer Huxley to EA
- 21st June 2023 –EA response to Farrer Huxley
- 25th July 2023 –Time charged advice agreement between Kingston Council and EA set up
- 11th August 2023 –Kingston queries sent to EA
- 1st September 2023 –EA initial charged advice response
- 2nd November 2023 –Kingston further queries sent to EA
- 19th December 2023 –EA further charged advice response

5.2 Fluvial Flood Level

As discussed in Section 3.1, the EA have advised that a 100-year (+35% climate change) flood level of **8.52 AOD** occurs onsite. Based on the range of levels recorded by the topographic survey (6.91-7.44) this would result in flood depths of 1080mm to 1610mm onsite during this event.

5.3 Flood Compensation

The EA have advised that the effect of floodwater displacement is considered as part of the application. The proposals involve the addition of raised planting beds around the site, one of which is located partly within an area of Flood Zone 3 at the North of the site. Figure 10 shows an extract from a sketch showing an overlay of the proposals with the flood map which can be found in Appendix 5.

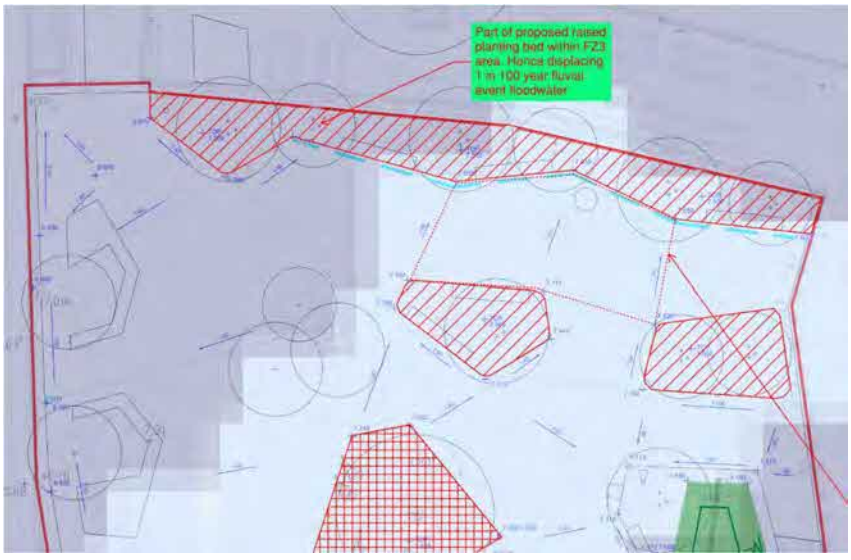


Figure 9: Flood Map Overlay with Proposals

It has been calculated that the raised planting bed would displace 8.8m^3 of floodwater during the 1 in 100-year fluvial flood event which the EA flood map for planning is based on.

In order to mitigate the displaced floodwater, swales are included within the design to provide flood storage. Furthermore, generally the proposed site levels are set lower than existing which provides further storage for floodwater.

Calculations included on the sketch show that the flood storage volume provided by these swales plus the general reduction of site levels will more than account for the floodwater displaced by the raised planting bed. The swales provide a combined additional volume of 6.4m^3, and the hardstanding area analysed provides 9.4m^3 of compensatory storage. It is important to note that as only a small area of hardstanding has been analysed, the flood storage added as a result of the development will be greater.

Therefore, the proposals will not lead to a net increase in floodwater displaced from the site, not contributing to any increase in flood risk offsite.

5.4 River Wall Height Reduction

Proposals involve lowering the river wall adjacent the site to sit flush with existing site levels. From the existing river wall levels, it is evident this will not increase flood risk as the upstream and downstream river wall levels are lower than the levels of the site itself.

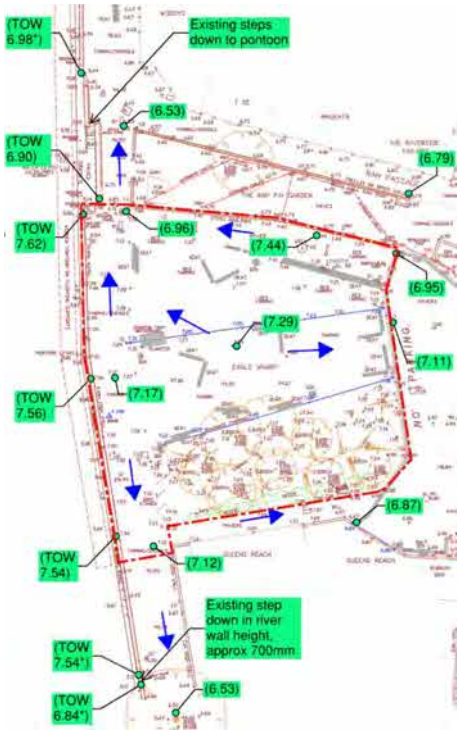


Figure 9: Existing River Wall Levels

Furthermore, the proposals will not result in any change to existing fluvial flood mechanisms given a breach would occur both upstream and downstream of the site before river levels reach those of the site.

6. DRAINAGE & SUDS

6.1 Existing Drainage

Public sewer records have been obtained from Thames Water; refer to Appendix 4 for details. An extract of the asset plan has been shown in Figure 10 below shows there are no public sewers within the site itself although are foul and surface sewers running under the High St to the East

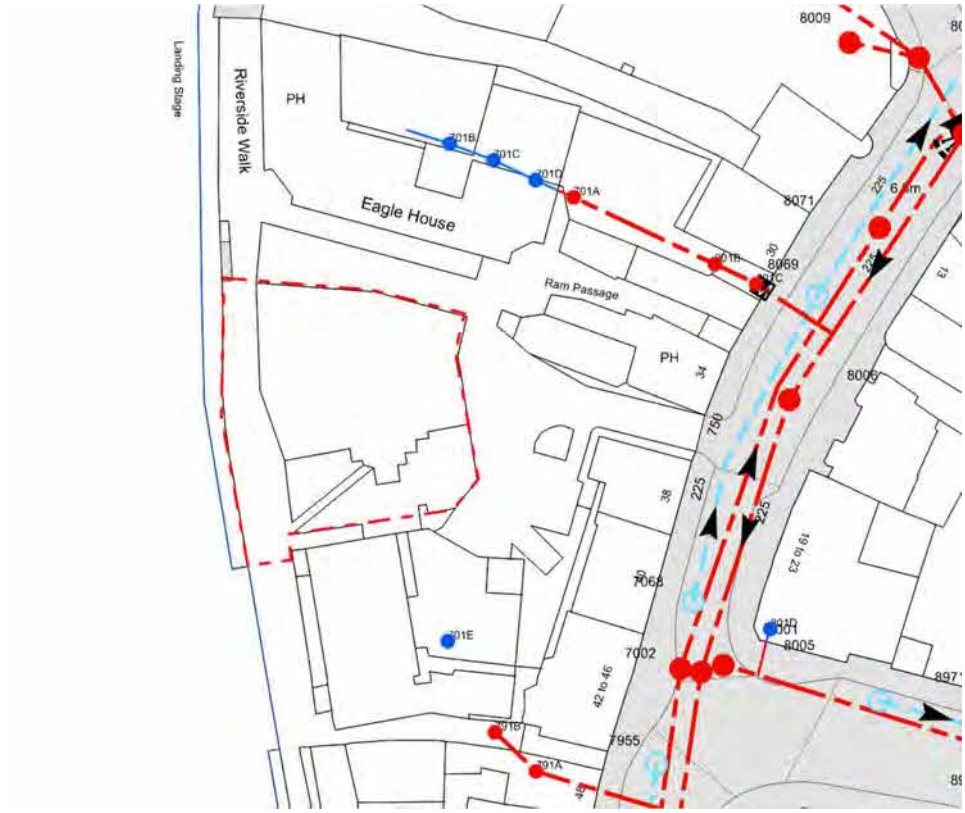


Figure 10 – Thames Water Sewer Records

A CCTV drainage survey of the existing drainage within the site has been undertaken on site by Spatial Dimensions, dated July 2023. Figure 11 shows on extract from the CCTV survey plans have been included within Appendix 6.

Figure 11 – Existing Site Drainage

The survey recorded minor surface water runs which pick up existing drainage channels and gullies within the site. An existing 150mm diameter outfall to the Thames through the river wall was found at the Northwest corner of the site. The survey also confirmed that there are no public sewers crossing the site.

There were no live offsite connections from third party land picked up by the CCTV survey.

6.2 Proposed Drainage

Refer to Figure 12 for the Preliminary Drainage Plan which can be found in Appendix 5.

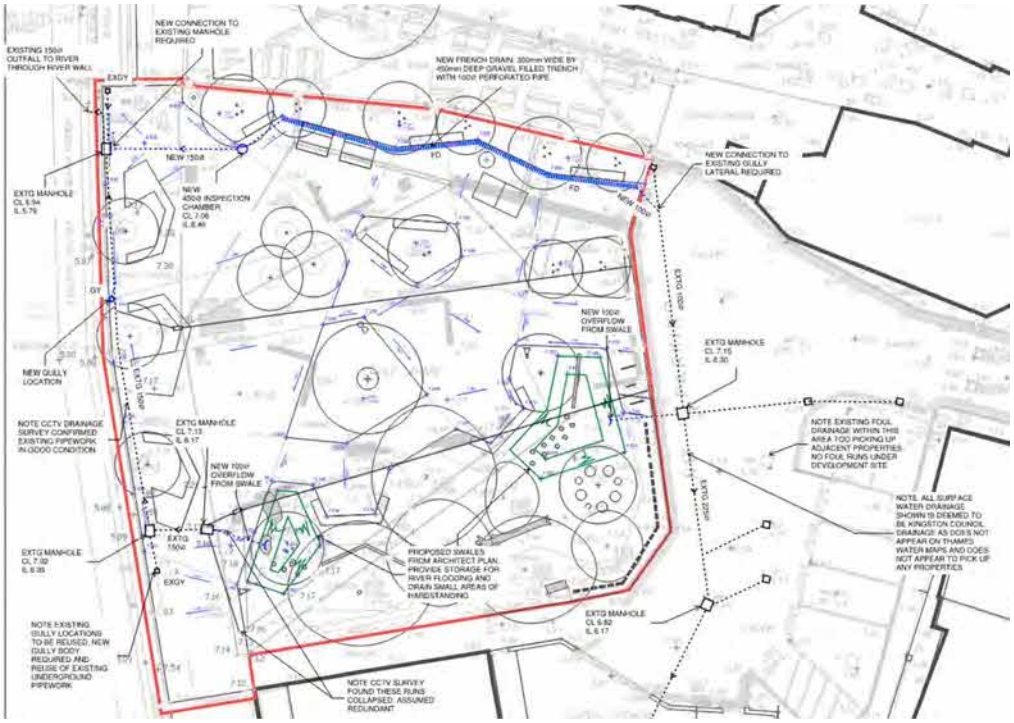


Figure 12 – Proposed Drainage

The strategy involves the installation of some new drainage and the reuse of part of the existing drainage network including the outfall to the river. The CCTV survey reported this pipework is in good condition, suitable for reuse.

The use of sustainable drainage techniques (SuDS) are included in the proposals to control storm water as close to the source as possible and reduce both the onsite and offsite flood risk from the development's surface water flows. Swales have been included within the design which serve a dual function of draining areas of hardstanding and providing compensatory flood storage as described earlier in Section 5.1. A filter (or French) drain is included at the North of the site.

It is expected that the underlying soil will have a degree of infiltration due to the presence of a layer of gravel within the historic borehole recorded onsite. However, total disposal of surface water from the site is deemed very unlikely due to the relatively impermeable alluvium and Langley silt formations. The swales and filter drains will encourage infiltration as well as slowing surface water leading to reductions in peak flows from the site.

As there will be a net decrease in impermeable area and associated peak surface flows offsite, it is understood that there is no requirement to agree consent for reuse of the existing outfall.

7. CONCLUSION

Flood Zone information published by Environment Agency shows that the development site is located within Flood Zones 2 and 3, at risk of flooding from the adjacent River Thames.

The EA have advised that a 100-year (+35% climate change) flood level of **8.52 AOD** occurs onsite. Based on the range of levels recorded by the topographic survey (6.91-7.44) this would result in flood depths of 1080mm to 1610mm onsite.

The development proposals involve the displacement of small volumes of floodwater due to a raised planting bed being partly within the Flood Zone 3 area at the North of the site. The development provides compensatory flood storage through the addition of swales and general reduction of levels around the site. The compensatory flood storage provided exceeds the volume of floodwater displaced.

Proposals involve lowering the river wall adjacent the site to sit flush with existing site levels. Reviewing the surrounding existing river wall levels, it is evident this will not increase flood risk as the upstream and downstream river wall levels are lower than the levels of the site itself.

Groundwater and reservoir breach flood risk has also been identified onsite. Although these are deemed low risk due to the nature of the proposals.

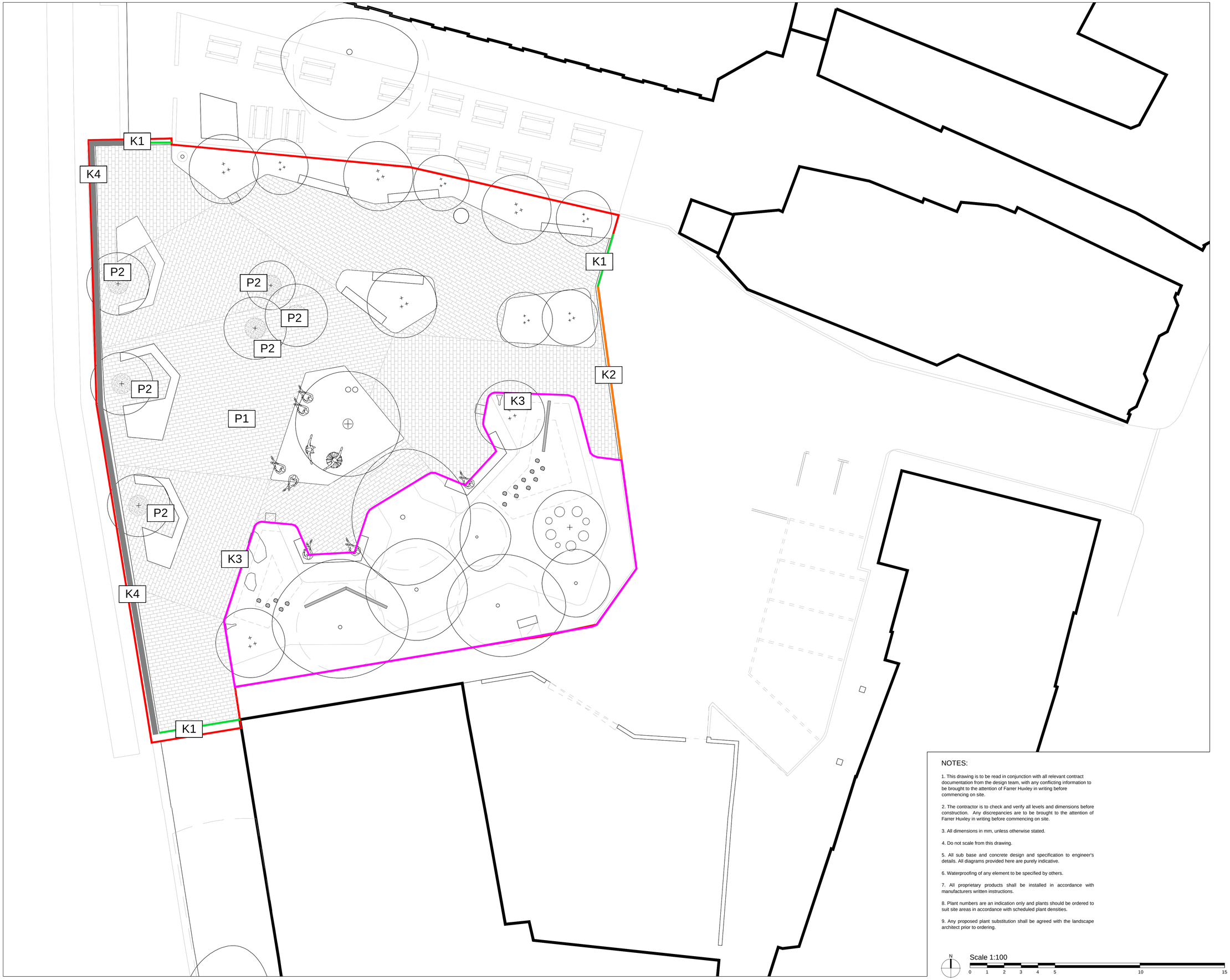
The drainage strategy involves the installation of some new drainage and the reuse of part of the existing drainage network including the outfall to the river. The CCTV survey reported this pipework is in good condition, suitable for reuse.

SuDS in the form of Swales and filter drains are included as part of the proposals which will both slow rainwater and encourage infiltration. Additionally, as the proposals involve an increase in soft landscaping area across the site, the peak surface water outflow from the site will be reduced, resulting in a benefit to downstream flood risk.

Appendix 1 –Topographical Survey

RIVER THAMES
FLOW -->
EMMS PASSAGE
RED PAVERS
PAVED
Finger Post
CCTV
VODDEN PONTOON ON FLOATING SUPPORTS
CONCRETE
PAVERS
RAILINGS 1m HIGH
RIVER BED LEVEL 3.05
WOODYS
TARMAC/SHINGLE
I DO
MAGENTA
THE RIVERSIDE TAILORS
EAGLE HOUSE
KINGLY HOUSE
RAM PASSAGE
THE RAM P.H. GARDEN
PUB SIGN
PUB KIOSK
OVERHEAD CABLES
TRELLIS ON BRICK WALL 0.6m HIGH
STEEL RAILINGS
GRANITE SETTS
RED TARMAC
BARKMAN COMPUTERS
CAVENDER ESTATE AGENT
THE RAM PUBLIC HOUSE
COBBLES
BUFF PAVERS
HIGH STREET
ROSE THEATRE
CANOPY
OXFAM
DRAINAGE CHANNEL
KINGSTON FIRST NOTICEBOARD
PLANTER
EAGLE WHARF
NO PARKING.
PRIVATE. NO PARKING
PRIVATE
LOADING ONLY
RUBBISH BINS
SALT BIN
BIN STORAGE
BEST ONE
HAMPTONS
GOURMET BURGER KITCHEN
GIGGLING SQUID
QUEENS REACH
PONTOON LEVEL 5.00
RIVER BED LEVEL 3.39
WATER LEVEL 14/02/2023 11.00am
0.48m HIGH WALL
0.54 HIGH WALL
1.1m HIGH WALL
2.0m WALL
0.9m HIGH WALL
WALK YOUR CYCLE
BIKE STANDS
MOORING RING
LADDER
SEAT
BIN
PILLAR
BOLLARD
HEDGE
S.BIRCH
LIFEBUOY
HISTORY PLAQUE
INFO PANEL
BW4
BW3
NK4B

Appendix 2 - Architect Site Plans



Site Boundary

Hard Landscape

P1 - Main area
Block Paving (Impermeable), pedestrian loading
Warm tones

Bond and pattern shown indicatively. To be developed post planning.

P2 - Tree pits
Material: Resin bound tree pit gravel
Permeable
Warm tones

Kerbs and Edges

K1 - Flush kerb
Material: Granite

K2 - Raised kerb
Material: Granite

K3 - Metal edge to soft landscape
Material: Aluminum

K4 - River edge
Row of 4 setts
Material: Natural stone setts - granite

Trees

Existing trees

Root protection area - RPA

Proposed tree

NOTES:

- All works within the RPAs of the existing trees to be hand dug and in accordance with BS5837:2012 and supervised by an qualified aboriculturist and follow instructions in the AIA and AMS.
- All levels to be retained within the RPA's of existing trees.

NOTES:

1. This drawing is to be read in conjunction with all relevant contract documentation from the design team, with any conflicting information to be brought to the attention of Farrer Huxley in writing before commencing on site.

2. The contractor is to check and verify all levels and dimensions before construction. Any discrepancies are to be brought to the attention of Farrer Huxley in writing before commencing on site.

3. All dimensions in mm, unless otherwise stated.

4. Do not scale from this drawing.

5. All sub base and concrete design and specification to engineer's details. All diagrams provided here are purely indicative.

6. Waterproofing of any element to be specified by others.

7. All proprietary products shall be installed in accordance with manufacturers written instructions.

8. Plant numbers are an indication only and plants should be ordered to suit site areas in accordance with scheduled plant densities.

9. Any proposed plant substitution shall be agreed with the landscape architect prior to ordering.

N

Scale 1:100

0 1 2 3 4 5 10 15

DATE	ISSUED	DESCRIPTION OF REVISION	REVISION	APPROVED
24/02/26	HW	FOR PLANNING	01	HW

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DRAWING STATUS :
FOR PLANNING

CLIENT :
KINGSTON COUNCIL

PROJECT TITLE :
EAGLE BREWERY WHARF

DRAWING TITLE :
HARD LANDSCAPE PLAN

DRAWING SCALE :	DRAWN BY :	DRAWN DATE :
1:100	DW	FEB 2024
PAPER SIZE :	APPROVED BY :	
A1	HW	

DRAWING NUMBER : 827-FH-XX-00-DP-L-201
REVISION : 01

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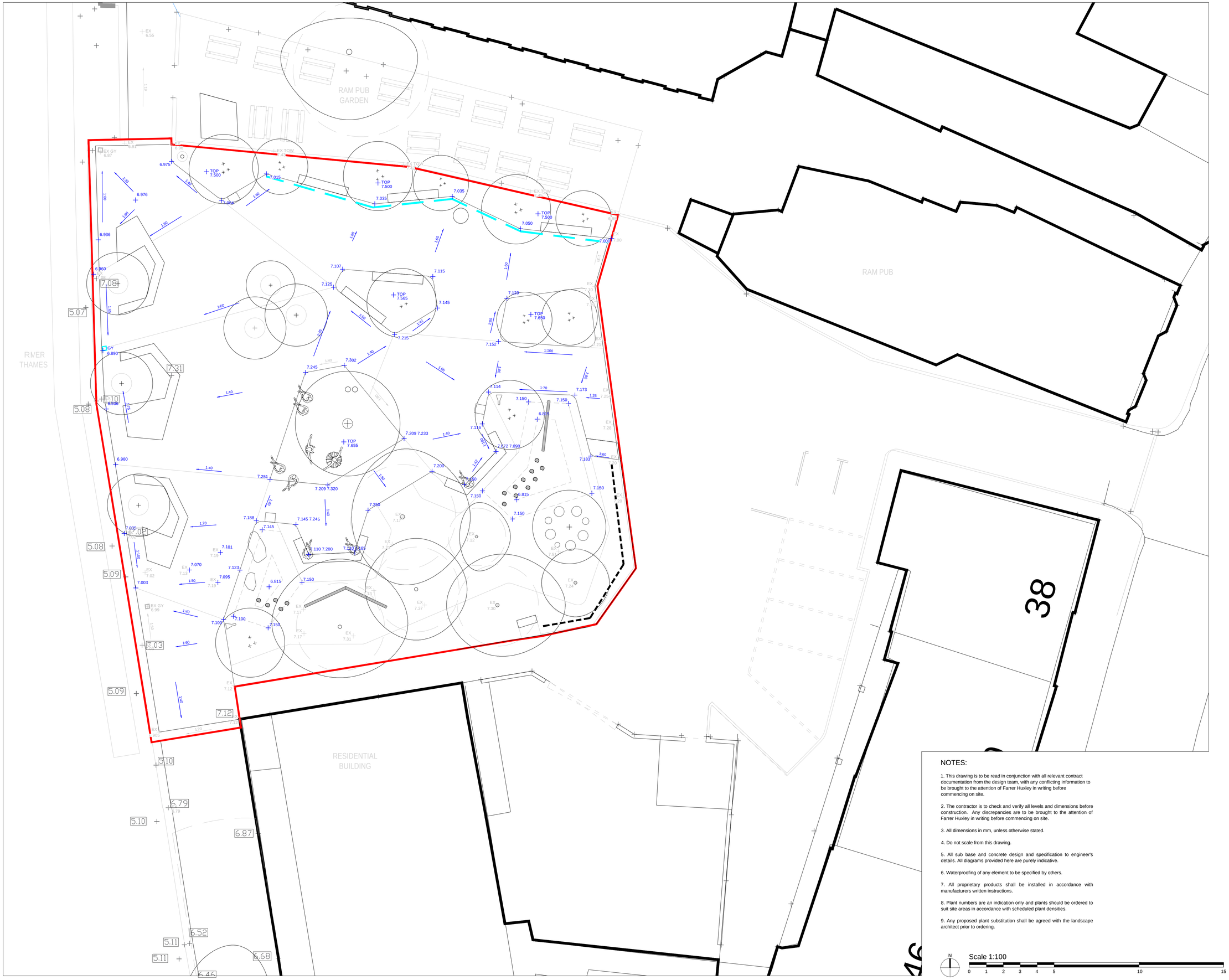

KEY

- Site Boundary
- Proposed Fall (1:40)
- Existing Fall (1:40)
- Proposed Levels (e.g. FFL)
- Existing Levels (e.g. +0.xx)
- Proposed French Drain
- Existing Drainage Gully
- Proposed Drainage Gully

Trees

- Existing trees
- Root protection area - RPA
- Proposed tree

NOTES:

- All works within the RPAs of the existing trees to be hand dug and in accordance with BS5837:2012 and supervised by an qualified aboriculturist and follow instructions in the AIA and AMS.
- All levels to be retained within the RPA's of existing trees.

NOTES:

1. This drawing is to be read in conjunction with all relevant contract documentation from the design team, with any conflicting information to be brought to the attention of Farrer Huxley in writing before commencing on site.

2. The contractor is to check and verify all levels and dimensions before construction. Any discrepancies are to be brought to the attention of Farrer Huxley in writing before commencing on site.

3. All dimensions in mm, unless otherwise stated.

4. Do not scale from this drawing.

5. All sub base and concrete design and specification to engineer's details. All diagrams provided here are purely indicative.

6. Waterproofing of any element to be specified by others.

7. All proprietary products shall be installed in accordance with manufacturers written instructions.

8. Plant numbers are an indication only and plants should be ordered to suit site areas in accordance with scheduled plant densities.

9. Any proposed plant substitution shall be agreed with the landscape architect prior to ordering.

N

Scale 1:100

0 1 2 3 4 5 10 15

DATE	ISSUED	DESCRIPTION OF REVISION	REVISION	APPROVED
24/02/26	HW	FOR PLANNING	01	HW

FARRER HUXLEY

Unit 11, Union Wharf
23 Wenlock Road, London, N1 7SB
www.farrerhuxley.co.uk info@farrerhuxley.co.uk
T: 020 7490 3625

DRAWING STATUS :
FOR PLANNING

CLIENT :
KINGSTON COUNCIL

PROJECT TITLE :
EAGLE BREWERY WHARF

DRAWING TITLE :
LEVELS & DRAINAGE STRATEGY PLAN

DRAWING SCALE :	DRAWN BY :	DRAWN DATE
1:100	DW	FEB 2024
PAPER SIZE :	APPROVED BY :	
A1	HW	

DRAWING NUMBER : 827-FH-XX-00-DP-L-301
REVISION : 01

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KEY

- Site Boundary
- Existing trees retained
- Root protection area - RPA
- Existing tree to be removed

Trees

- **T1 : Tree along the river**
  Liquidamber styraciflua
  Girth: 20-25cm
- **T2 : Tree group in hard landscape**
  Ginkgo biloba
  Girth: 20-25cm
- **T3: Evergreen specimen tree**
  Pinus nigra
  Girth: 20-25cm
- **T4-T6: Trees to raised planters (multi stem)**
  T4: Pinus sylvestris
  Height: 2-2.5m
  T5: Acer campestre
  Height: 1.5-2.0m
  T6: Amelanchier lamarckii
  Height: 1.5-2.0m
- **T7: Trees to green edge**
  Corylus avellana - multi stem
  Height: 2.5-3.0m

Planting

- **PL1 - Raised planters**
  Structural grasses, biodiverse shrubs and seasonal perennials.
  Seasonal bulb planting for winter interest
- **PL3 - Shrub / hedge planting** to private car park
  Biodiverse deciduous and evergreen hedge planting
- **PL4 - Swales**
  Pockets of damp tolerant grasses and perennials
- **G1 - Green Edge**
  Shade resistant flowering lawn

NOTES:

- All works within the RPAs of the existing trees to be hand dug and in accordance with BS5837:2012 and supervised by an qualified aboriculturist and follow instructions in the AIA and AMS.
- All trees to be planted with irrigation and aeration pipes, underground guying and root barriers against surrounding hard landscape and buildings.
- All levels to be retained within the RPA's of existing trees.

Scale 1:100

0 1 2 3 4 5 10 15

DATE	ISSUED	DESCRIPTION OF REVISION	REVISION	APPROVED
24/02/26	HW	FOR PLANNING	01	HW

FARRER HUXLEY

Unit 11, Union Wharf
23 Wenlock Road, London, N1 7SB
www.farrerhuxley.co.uk info@farrerhuxley.co.uk
T: 020 7490 3625

DRAWING STATUS :
FOR PLANNING

CLIENT :
KINGSTON COUNCIL

PROJECT TITLE :
EAGLE BREWERY WHARF

DRAWING TITLE :
SOFT LANDSCAPE PLAN

DRAWING SCALE :	DRAWN BY :	DRAWN DATE :
1:100	DW	FEB 2024
PAPER SIZE :	APPROVED BY :	
A1	HW	

DRAWING NUMBER : 827-FH-XX-00-DP-L-401
REVISION : 01

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Appendix 3 –Environment Agency Correspondence

creating a better place
for people and wildlife

Environment Agency

[redacted]
Royal Borough of Kingston upon Thames

Our ref: SL/2023/122875/02-L01
Your ref: EBW

Sent via email

Date: 19 December 2023

[redacted]

Public realm improvements to Eagle Brewery Wharf in Kingston

Thank you for your request for [redacted] advice regarding the above site. We have reviewed the email dated November 2nd 2023 which contains the following document and comment as follows:

- 827-FH Eagle Brewery Wharf Design_River Wall

To confirm the 1% Annual Exceedance Probability flood with a 35% allowance for climate change is 8.52 flood level. Flood Zone 3 is 1% AEP. The 1% flood level is 7.14m AOD. 8.52m AOD takes climate change into account (1% plus 35% allowance).

Regarding the questions asked within the email:

1. Is the existing wall providing any environmental protections / flood mitigation measures?

We have this recorded on our asset database as concrete metal piling, described as the right riverbank protection. We do not own or maintain this structure. Removal of the top section of the river wall or change to a rail, is likely to result in lowering the standard of protection the wall offers. We would not recommend this section of wall is lowered but if the council wishes to assess this further, the first step would be to assess the benefit the wall provides and whether changes would result in increased flood risk. Proposed work to the wall/ bank would require a flood risk activity permit and we would expect a Flood Risk Assessment (FRA) to be undertaken and submitted in support of the application, demonstrating no increase in flood risk. An assessment will need to consider the crest level of the entire extent of the wall and understand the relationship with surrounding topography and breaks in the wall assessed to ordnance datum.

We note there is a break in the wall from the photo in the attached document. What is the level at the break and how does this compare with the surrounding topography and river wall? It is described in the email that the wall gets higher at the south, as the ground slopes down along Riverside Walk.

2. Would the removal of the top portion of the wall provide any environmental / flooding benefits?

Removal of the wall could possibly allow floodwater to inundate the area in a lower flood return period.

3. What mitigation measures would need to be employed during construction to prevent pollution (dust, debris) into the river?

A flood risk activity permit would need to be undertaken for this work. Flood risk activities: environmental permits - GOV.UK (www.gov.uk) You would need to develop a management system that describes your method of work and what you'll do to manage risk. If the works do not increase flood risk and you are considering submitting a flood risk activity permit, consideration would need to be made to capturing dust and rubble during construction, to ensure it does not fall in the river. Also, you would need to demonstrate the riverbank or bed, will not be damaged undertaking the work and consideration would also need to be made to fish if undertaking any work that caused vibration e.g. drilling or piling etc.

4. Do you foresee other significant constraints to its removal?

You may need to consider undertaking a river wall structural condition survey.

Design of tree pits
Whilst an irrigation/aeration tube would not be the most suitable design choice, it will never replace an open/porous surface for both rain penetration and also oxygen diffusion into the root zone, so we would advise that the layers above the root ball are permeable

Once the soil and tree roots are isolated from the surroundings, the tree is effectively growing in a pot and so ongoing maintenance will be essential for healthy growth/survival and this should be specified at the planning stage. We would request the trees are native, ideally of local provenance.

Please note that the view expressed in this letter is a response to a pre application enquiry and does not represent our final view in relation to any future planning application made in relation to this site. We reserve the right to change our position in relation to any such application. You should seek your own expert advice in relation to technical matters relevant to any planning application before submission.

Yours sincerely,

[redacted]
Planning Specialist

Direct e-mai[redacted]

creating a better place
for people and wildlife

Environment Agency

[redacted]
Royal Borough of Kingston upon Thames

Sent via email

Our ref: SL/2023/122875/01-L01
Your ref: EBW

Date: 01 September 2023

[redacted]

Public realm improvements to Eagle Brewery Wharf in Kingston

Thank you for your request fo[redacted]advice regarding the above site.

We have reviewed the email 11 August 2023, which contains the following documents and comment as follows:

- Site location plan
- SK-C-0001 - Existing Site Flood Map Overlay
- SK-C-0002 - Proposed Site Flood Map Overlay
- Soft Landscape Plan

Flood Risk
We understand from the email sent from Paul Cohoon (dated 11/08/2023) that you were unable to obtain the flood level from the detailed flood modelling to make their assessment. The 1% annual flood with a 35% allowance for climate change from the Thames flood model for this site is 8.52m A.O.D. The flood map overlay drawing shows a flood displacement calculation. The flood level for the 1% flood has been approximated in the absence of having levels from the EA from the Thames flood modelling. The 1% flood was calculated as 7.20m A.0.D.

The planter is shown on the overlay plan as 32m2 and the mound is 22m2. The average ground level is shown as 7.10m A.O.D. The height shown on the table for the mound and planter is 7.50m A.O.D. We assume the depth of these are therefore 400mm. If this is the case, the assessment assumes that flood level is 7.20m A.O.D. but if the flood level (1% with 35% allowance for climate change) is 8.52m A.O.D. the all of the 400mm height will be displaced. If this is the case the volume being displaced would be 12.8m3 for the planter and 8.8m3 for the mound. If our assumption on depth of the planter and mound is incorrect, the council now has the flood level of 8.52m A.O.D. to assess the displacement.

We would recommend some adjustment to the proposal to reduce the loss of flood storage. The plan explains the mound is proposed to provide separation between different areas. Could the mound be changed to some hedging, which would be permeable to floodwater, or a boundary treatment that is permeable to floodwater? The raised planters are described on the plan as being timber framed. Could they be designed on pillars or have an opening underneath to reduce the impact on flood storage?

A flood risk assessment would be required to support the application, although the level of detail with depend on the scale and nature of the proposal. We would not expect to see a large assessment for this proposal. The assessment needs to focus on baseline flood risk e.g. site in the Flood Zones, state the design flood level from the detailed modelling 1% flood with 35% allowance (8.52m AOD), set out the structures proposed and volume calculation, set out mitigation measures to address loss of floodplain storage.

Biodiversity
We believe from the submitted information that currently Eagle Wharf Brewery is an informal seating area on the riverside, with, mainly, wooden benches scattered around. We welcome the scheme to improve this area for the public enhancing the soft landscaping of this by planting trees, shrub and hedge planting. As confirmed there are to be no work to the river wall.

With reference to the soft landscaping plan, we are unsure what the dotted area is, in the middle of the shrub/hedge planting, for example. Please can you confirm?

Overall, we're very supportive of the idea to enhance this area. I can see that the key on the Soft Landscape Plan shows meadow turf, which seems to relate to a very small area on the plan. We would recommend that to make the meadow/wildflower area more of a feature. The current proposals will make the area much more aesthetically pleasing but it will still be in a predominantly concreted area and a wildflower area will be very beneficial for pollinators (in addition to the raised planters that could also provide some value for pollinators depending on the species planted). All planting (trees/hedges etc) should be native species, ideally of local provenance. A mixed species hedge, rather than a monoculture/low species hedge, would also be preferable.

Regarding lighting we would request no additional lighting of this area directly next to the river. Would be supportive if you are considering a more sensitive lighting strategy.

Environmental permit - advice to applicant
The Environmental Permitting (England and Wales) Regulations 2016 require a permit to be obtained for any activities which will take place:

- on or within 8 metres of a main river (16 metres if tidal)
- on or within 8 metres of a flood defence structure or culverted main river (16 metres if tidal)
- on or within 16 metres of a sea defence
- involving quarrying or excavation within 16 metres of any main river, flood defence (including a remote defence) or culvert
- in the floodplain of a main river if the activity could affect flood flow or storage and potential impacts are not controlled by a planning permission

For further guidance please visit https://www.gov.uk/guidance/flood-risk-activities-environmental-permits or contact our National Customer Contact Centre on 03708 506 506. The applicant should not assume that a permit will automatically be forthcoming once planning permission has been granted, and we advise them to

consult with us at the earliest opportunity.

Please note that the view expressed in this letter is a response to a pre application enquiry and does not represent our final view in relation to any future planning application made in relation to this site. We reserve the right to change our position in relation to any such application. You should seek your own expert advice in relation to technical matters relevant to any planning application before submission.

Yours sincerely,

[redacted]
Planning Specialist
[redacted]

[redacted]

From: [redacted]
Sent: 19 December 2023 11:45
To: [redacted]
Cc:

Subject: RE: Fw: Eagle Brewery Wharf, Kingston - Landscape Enquiry
Attachments: SL122875-02 (AG) Eagle Brewery Wharf .pdf

[redacted]

Hope you are well. Please see attached comment from reviewing the latest submitted design strategy and our response to some queries you raised regarding the river wall. Apologies for the delay.

Any questions please do get in touch.

Kind Regards

[redacted]
Planning Specialist - South London

Sustainable Places | Environment Agency | Kent & South London
☏ 020 847 48325/07881506415 | ✉ KSLPlanning@environment-agency.gov.uk
Environment Agency, 3rd Floor, Seacole Building, 2 Marsham Street, London, SW1P 4DF

From [redacted]
Sent: Monday, December 4, 2023 12:19 PM
[redacted]

Apologies that we have not sent our comments from reviewing the recently submitted information. I have received comments from our consultees although I'm awaiting a response from our asset performance team regarding the status of the river wall here. I am awaiting confirmation if this part of the wall forms part of a formal flood defence. This is something that would be important to identify as early as possible as may impact local flood risk given it is proposed to lower the wall at this location.

I will provide a update as soon as I can when I hear back from our asset team.

Kind Regards

[redacted]
Planning Specialist - South London

Sustainable Places | Environment Agency | Kent & South London
☏ 020 847 48325/07881506415 | ✉ KSLPlanning@environment-agency.gov.uk
Environment Agency, 3rd Floor, Seacole Building, 2 Marsham Street, London, SW1P 4DF

From: [redacted]
Sent: Tuesday, November 7, 2023 2:31 PM
[redacted]

Hope you are well. Many thanks for sending us the attached info and update on the project. I have sent across your queries and design details to our consultee teams who previously commented on the project proposals. Regarding the 100yr (+35%) climate change flood level of 8.52 AOD, I've checked, and this is the level stated by our flood risk team. It is worth nothing that this includes an allowance for climate changes whereas Flood Zone 3 is based on the 1 in 100yr event without an allowance for climate change hence the site not showing as entirely within FZ3. But our flood risk team can confirm the appropriate design levels, especially as if you weren't aware the Thames flood model was being updated and potentially available for public use soon so we can provide you with the latest flood levels.

I will try and get an update back to you late this week on potential timescales for our reply but its usually 21 days of receipt of information.

Any further questions please do get in touch.

Kind Regards

[redacted]
Planning Specialist - South London

Sustainable Places | Environment Agency | Kent & South London
☏ 020 847 48325/07881506415 | ✉ KSLPlanning@environment-agency.gov.uk
Environment Agency, 3rd Floor, Seacole Building, 2 Marsham Street, London, SW1P 4DF

[redacted]

Sent: Thursday, November 2, 2023 3:10 PM
[redacted]

Subject: Re: Fw: Eagle Brewery Wharf, Kingston - Landscape Enquiry

[redacted]

Thank you for providing your initial response to our design proposals for Eagle Brewery Wharf - we shall build these recommendations into the scheme which is currently being revised. To help us proceed, I have one clarification question, and one further query in relation to demolition of the top portion of the river wall.

Clarification question

You have advised a 100yr (+35%) climate change flood level of 8.52 AOD would apply at the site which is much higher than the 7.20 AOD level we interpreted. **We were wondering if this might be a typo and that you mean 7.52 AOD?** Note the topographic survey is to ordinance datum and the 8.52 flood level would mean the entire site would be in FZ3 which is not the case on the flood map for planning.

River wall query

We are considering seeking permission to remove the portion of river wall that sits above grade, along the western boundary of the site.
Our structural engineers are reviewing, but I would like EA advice in regards to environmental implications (including during construction).
I have provided further information about the existing river wall below, and have also attached a document showing the proposed design with the river wall removed.
My queries are:
1. Is the existing wall providing any environmental protections / flood mitigation measures?
2. Would the removal of the top portion of the wall provide any environmental / flooding benefits?
3. What mitigation measures would need to be employed during construction to prevent pollution (dust, debris) into the river?
4. Do you foresee other significant constraints to its removal?

The riverwall has a consistent datum height along its top, but varies in height from grade, as the grade slopes down. It is approximately 500mm high along the main western boundary of the site.
It gets higher at the south, as the ground slopes down along Riverside Walk.
I have included two images showing the river wall, below.
You can see the river wall on Google Street View here.

Please also note that your previous invoice for £300+VAT has been processed.

Many thanks,
[redacted]

On Fri, 1 Sept 2023 at 12:47, [redacted] wrote:

[redacted]

Hope you are well, please see attached our response from reviewing the submitted information. Overall we are pleased with the proposed public realm enhancements. As mentioned before with regards to assessing flood risk, we would need flood risk assessment to make a more informed assessment of the scheme. We have provided some information regarding flood levels that you were unable to acquire from us previously. Please let me know if you have any issues still obtaining that data as was unsure if in your email from last month if there was just a delay on our side or you couldn't use the data we provided for some reason.

Any further questions regarding our comments please do get in touch.

Kind Regards

[redacted]

Planning Specialist - South London

Sustainable Places | Environment Agency | Kent & South London

☏ 020 847 48325/07881506415 | ✉ KSLPlanning@environment-agency.gov.uk

Environment Agency, 3rd Floor, Seacole Building, 2 Marsham Street, London, SW1P 4DF

[redacted]

Subject: Re: Fw: Eagle Brewery Wharf, Kingston - Landscape Enquiry

[redacted]

As previously discussed, we are providing information to you for pre-application discussion for the site at Eagle Brewery Wharf, in Kingston Upon Thames.

Please see the below, and attached. I have copied our design team, including the landscape architects and engineers who have compiled this information.

We write to you with further information and flood risk related queries following our original enquiry (dated 25/04/23) and response from Ajit Gill (21/06/23). Since this initial correspondence the **current preferred option does not involve any works to the river wall as previously proposed**. The current proposals involve general landscaping enhancements to the public realm which is located in both Flood Zone 2 and Flood Zone 3.

Please find attached the following information for preplanning review;

- Site location plan
- SK-C-0001 - Existing Site Flood Map Overlay
- SK-C-0002 - Proposed Site Flood Map Overlay
- Soft Landscape Plan

Below is a list of flood risk related queries and notes. Please could you provide feedback where applicable.

- Fluvial flood level

- We previously made an application for flood level data onsite (Ref: THM304650 230314/CMC10) although the EA were unable to provide us with a Product 4 pack necessary to determine accurate fluvial flood levels onsite
- In lieu of this information we have interpreted a 100yr flood level of **7.20 AOD** based on an overlay of the topographic survey and EA flood map for planning. This is illustrated on the attached SK-C-0001.

- Flood displacement

  - The current proposals involve raised planters and mounding within FZ3 at a level above existing, hence displacing small volumes of floodwater as illustrated on the attached SK-C-0002. Note benches are also proposed with FZ3, although these will allow free passage of water beneath (eg mounted on steel legs)
  - Please could you confirm if the calculated overall flood displacement volume of 5.4m^3 is small enough to be considered negligible?

- Note the significant increase in soft landscaped area will lead to a net benefit on both biodiversity and surface water outfall rates to the River
- We are assuming a Flood Risk Assessment would still be requirement for planning even if no works are proposed to the river wall?
- Please could you advise if the EA have any further requirements or recommendations?

Please advise when you intend to send a response, and please do let us know if we can provide anything further.

Many thanks,

[redacted]

[redacted]

[redacted]

Royal Borough of Kingston upon Thames

On Thu, 27 Jul 2023 at 17:43, [redacted]

[redacted]

Many thanks for sending that over. I will set up the project on our end. As you confirmed in your previous email you hope to have a FRA ready to submit by the 11th Aug. I would recommend that we wait until this is submitted before we can commence our review. It may delay our final review if I send our consultees information in more than one consultation as will involve two rounds of review and may not have sufficient time to allow for that given their other role requirements. If you are happy to wait until the 11th and confident the FRA will be ready for submission then I recommend this approach.

Kind Regards

[redacted]

Planning Specialist - South London

Sustainable Places | Environment Agency | Kent & South London

☏ 020 847 48325/07881506415 | ✉ KSLPlanning@environment-agency.gov.uk

Environment Agency, 3rd Floor, Seacole Building, 2 Marsham Street, London, SW1P 4DF

[redacted]

Sent: 25 July 2023 11:34

[redacted]

Subject: Re: Fw: Eagle Brewery Wharf, Kingston - Landscape Enquiry

[redacted]

Please find attached Charged Advice Request Form.

I am also including a site location plan and site plan with red line boundary from Farrer Huxley Landscape Architects. The Flood Risk Assessment was been instructed, and I will let you know the date for delivery as soon as I know.

Please let me know if you require any further information.

Many thanks,

[redacted]

On Tue, 25 Jul 2023 at 10:24, [redacted] rote:

[redacted]

Do you know when you be able to send across the completed form. We can't commence our review until we have the required information to set up the charged agreement.

Kind Regards

[redacted]

Planning Specialist - South London

Sustainable Places | Environment Agency | Kent & South London

☏ 020 847 48325/07881506415 | ✉ KSLPlanning@environment-agency.gov.uk

Environment Agency, 3rd Floor, Seacole Building, 2 Marsham Street, London, SW1P 4DF

From: [redacted]
Sent: 18 July 2023 16:50
[redacted]
Subject: RE: Fw: Eagle Brewery Wharf, Kingston - Landscape Enquiry

[redacted]

The 'your ref' row is if you have given your own ref for the project. We ask for this usually as would refer to it on any future correspondence/responses to help identify the project for anyone external.

Kind Regards

[redacted]

Planning Specialist - South London

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Environment Agency, 3rd Floor, Seacole Building, 2 Marsham Street, London, SW1P 4DF

From: [redacted]
Sent: 17 July 2023 17:08
[redacted]
Subject: Re: Fw: Eagle Brewery Wharf, Kingston - Landscape Enquiry

[redacted]

I am completing the Charged Advice Request Form now - do we have a reference number to note?

Many thanks,
[redacted]

On Mon, 17 Jul 2023 at 16:46 [redacted] wrote:

> Hi
>
> Please find attached the current landscape strategy for Eagle Brewery Wharf. We can confirm that the project will be submitted to planning.
>
> We currently have 2 options which we are exploring.
>
> - Option A - leaves the river wall intact, but is removing the raised edge to the river and new railing is proposed.

- Option B - is cutting into the river wall about 1m to create a sunken seating area closer to the river, but not all the way down.

Both options retain the existing moorings in place and are looking to transform the existing space into a much greener space, offering a range of activities for a wide range of users.

A FRA is currently underway for the site to support proposals as well.

As part of the initial response we would like to understand the viability of any intervention to the river wall and principle terms and conditions in relation to working within the ownership of the EA and the River Thames. Please can you provide advice and comments on the outline proposals and if interventions to the river wall is something that the EA would consider in this location. We would also like to better understand any implications of construction to the river bed. Please can you forward any construction guidance and recommendations that we might need to consider if the EA would be supportive of interventions to the river wall in this location.

The current programme is looking to submit to planning early autumn, with the aim to be starting construction on site after Christmas.

Please don't hesitate to contact us if you have any comments or questions. Please also let us know if there is any further infomration that you might need at this stage to provide advice.

Kingston Council will be in touch to arrange for the payment.

We look forward to hearing from you. Your earliest advice would be much appreciated.

Kind regards

[redacted]

From: [redacted]
Sent: Monday, July 10, 2023 18:16
[redacted]
Subject: RE: Fw: Eagle Brewery Wharf, Kingston - Landscape Enquiry

[redacted]

I'm afraid our availability for a meeting is quite restricted at the moment as various internal teams have limited resource at the moment. There would be a few teams that would need to comment on these proposals and would ideally need all present as their disciplines crossover each other to a degree. To provide initial comments on your proposed design as soon as possible I would advise that we review any detailed plans/designs you have and can provide written comments. If available I can set up a meeting later on to discuss our comments. We received the design options from Hanna in her email on the 25/04 so can base our review on these if that's the latest info you have on the proposal?

In the interim, as already requested, can you confirm if this project would need planning permission? I presume it may do but its vital that this is confirmed as our advice will be based on what permission(s) the project will need as our advice will be based on the relative policy/legislation. In addition, can you please fill and return the charged advice form that I sent across to Hanna last month. I've attached this again. We wont be able to proceed without the information within the form as would need this to set up the charged advice agreement on our end.

Kind Regards

[redacted]
Planning Specialist - South London
Sustainable Places | Environment Agency | Kent & South London
☏ 020 847 48325/07881506415 | ✉ KSLPlanning@environment-agency.gov.uk
Environment Agency, 3rd Floor, Seacole Building, 2 Marsham Street, London, SW1P 4DF

From: [redacted]
Sent: 05 July 2023 16:13
[redacted]
Subject: Fwd: Fw: Eagle Brewery Wharf, Kingston - Landscape Enquiry

You don't often get email fro[redacted]earn why this is important

[redacted]

Following on from the conversation below, we would like to arrange a pre-app meeting with you as soon as possible to discuss design proposals for the Eagle Brewery Wharf scheme.

Please can you confirm the cost for this and we will set up a PO for this now. [redacted] will shortly share design information

Thank you,
[redacted]

[redacted]
High Street Regeneration Lead

Regeneration & Economic Recovery,
Royal Borough of Kingston upon Thames,
Guildhall 2,
Kingston upon Thames,
Greater London
KT1 1EU

From: [redacted]
Sent: Monday, June 26, 2023 14:58
[redacted]
Subject: RE: Eagle Brewery Wharf, Kingston - Landscape Enquiry

[redacted]

We would charge for any planning advice that falls outside the statutory consultation process such as pre-application stage. We would need to know if the project would need planning as this would determine which team within the agency would lead on providing advice and the teams required to input into this. If the project does not require planning permission there may be other permissions required such as a Flood Risk Activity Permit (FRAP) which would be led by another team so would still advise you seek advice from them. If the project does not need planning then please confirm and I can put you in touch with our team that deals with FRAP's.

Our timeframes are dependant on the level of information submitted/required, usually within 21 days of receipt.

Kind Regards

[redacted]

Planning Specialist - South London

Sustainable Places | Environment Agency | Kent & South London

☏ 020 847 48325/07881506415 | ✉ KSLPlanning@environment-agency.gov.uk

Environment Agency, 3rd Floor, Seacole Building, 2 Marsham Street, London, SW1P 4DF

From: [redacted]
Sent: 23 June 2023 06:25
[redacted]
Subject: RE: Eagle Brewery Wharf, Kingston - Landscape Enquiry

Morning

Thank you for your reply.

Please may we clarify a few things. If we need planning do we still pay for your advice or is it part of the planning process? (We are just confirming if we need planning at the moment).

Understood in relation to the FRA, we will review with our engineers.

If we sign up for the service as highlighted below, what are the timeframes for your reply and advice please? We are on a tight programme for this site, so early advice would be appreciated.

Kind regards

[redacted]

From: [redacted]
Sent: Wednesday, June 21, 2023 4:10 PM

To [redacted]
Subject: RE: Eagle Brewery Wharf, Kingston - Landscape Enquiry

[redacted]

Thank you for your enquiry, apologies for the delay in responding. The Kent and South London planning team covers Kingston but we only just received your original email from our colleagues in the Thames region planning team.

We were approached b[redacted] Kingston in February (see attached) for this project requesting advice but we never heard back. Can you confirm if these works will require planning permission? If they do then any advice we would provide would fall under our cost recovery service as this falls outside of our statutory remit.

We can review and provide advise based on the information you submitted however given there are changes to the river wall, this would require a detailed Flood Risk Assessment to demonstrate that the works will not result in an increase of flood risk elsewhere for example. Without a FRA our advice would be somewhat limited specifically regarding the proposals to the river wall. We most likely wont be in a position to confirm if we would support the proposals to the river wall but can outline our usual requirements and identify any potential issues/opportunities that may need to be addressed such as biodiversity and navigation based on the information submitted so far. Please let me know how you want to proceed.

Charged Advice

Our charges are currently £100+VAT per officer per hour. Our standard estimates are below, but please be aware that we will only charge for the time we actually use and will never exceed these estimates without notifying you.

Highlighted below is the service that best fits your request.

Simple enquiry (2-5h)	£200 – 500 +VAT
Single Document Review (incl. follow up reviews)	£1000+VAT
Multiple Document Review (Incl. follow up reviews)	£2000+VAT
Meeting with up to 2 EA Officers (incl. follow up)	£1000+VAT
Meeting with multiple EA Officers (incl. follow up)	£2000+VAT
Agreed Statement (only applicable to FRA and PRA)	£2000+VAT
Modelling Reviews (incl. FRA, Hydrology and Hydraulic reviews) – Please note this service has a longer turnaround of around 6 weeks	£7000+VAT

We can also offer bespoke estimates for larger projects and long-term arrangements, please get in touch if you require this type of service.

For meetings outside of our offices, additional costs for travel time applies at £100 per officer per hour.

If you accept the estimate relevant for your requirements, please fill in the attached form and return to us. We will then process your request and provide you with an indication of timeframes. I have also attached a brochure for further information about our charged planning advice service Our standard terms can be found online at (https://www.gov.uk/government/publications/planning-and-marine-licence-advice-standard-terms-for-our-charges/planning-and-marine-licence-advice-standard-terms-for-our-charges).

Kind Regards

[redacted]

Planning Specialist - South London

Sustainable Places | Environment Agency | Kent & South London

☏ 020 847 48325/07881506415 | ✉ KSLPlanning@environment-agency.gov.uk

Environment Agency, 3rd Floor, Seacole Building, 2 Marsham Street, London, SW1P 4DF

[redacted]

Sent: 25 April 2023 15:28

[redacted]

Subject: Eagle Brewery Wharf, Kingston - Landscape Enquiry

You don't often get email from [redacted] Learn why this is important

Related emails attached

Hi

We are landscape architects who are working with the Regeneration Team at Kingston Council and Kingston First on the public realm improvements to Eagle Brewery Wharf in Kingston. The landscape improvement works to the site represent an opportunity to implement the strategic aims of the emerging local plan for Kingston Town Centre Area and to create an accessible and inclusive public realm. The site is adjacent to Rams Passage, KT1 1HL in Kingston upon Thames, Greater London.

As part of the initial design works (pre planning) the design team is looking at potential interventions to the existing river wall. The current river wall consists of an upstand concrete plinth around 500mm high, with moorings below accessed via a floating pontoon. The moorings are operated by Charter Quay. There are 3 moorings directly in front of Eagle Brewery Wharf, out of which 1 is actively used, with the other two taken up by 1 half sunken boat and one boat, which doesn't look like it is lived on.

Three initial design options are currently being explored in close consideration with Kingston Council. Outline costing is also currently underway to review the viability of potential interventions to the river wall. Option 1 and 2 would require the 3 moorings along the front of the site to be relocated. Option 3 allow the moorings to be retained. At the moment either option 2 or 3 are looking most viable.

Option 1 - Existing river wall retained with the introduction of a series of static jetties

- Improving connection with the water's edge and introducing a dynamic and interesting threshold to the river.
- Jetties to extend into the water and offer a variety of seating opportunities.
- Planting to reach into the water to improve biodiversity and to nestle platforms within greenness.
- Piles would need to be driven into the river bed in order to secure the outer-most portions for the proposed structure. The structure would be designed to resist impact as well as the force of the high winter river flows.
- Use of robust materials such as pre cast concrete and steel posts.

Option 2 – Seating steps carved out of the existing river wall

- Intervention reaches into the site and is creating a significant impact and focus on the river as part of proposals.
- Improving connection with the water's edge and introducing a dynamic and interesting threshold to the river.
- Timber and concrete platforms / steps to extend into the water and offer a variety of seating opportunities.
- Planting to reach into the water to improve biodiversity and to nestle platforms within greenness.
- Utilising the existing level change to provide stepped seating.
- Scheme echoes the steps a little downstream at the Bishop which are popular in the summer.
- Use of robust materials such as insitu and pre cast concrete and steel posts.
- Additional static jetty could be explored to add on to the stepped concrete seating.

Option 3 – Steps carved out of the existing site and river wall, with the existing moorings retained

- Intervention reaches into the site and is creating a significant impact and focus on the river as part of proposals.
- Improving connection with the water's edge and introducing a dynamic and interesting threshold to the river.
- Timber and concrete platforms / steps offer a variety of seating opportunities.

- Introduction of planting around the existing moorings to improve biodiversity and to introduce a greener setting.
- Scheme echoes the steps a little downstream at the Bishop which are popular in the summer.
- Use of robust materials such as insitu and pre cast concrete.

The benefits of all three options are summarised below:

- **Access for all** - improving public access to the river.
- **Biodiversity Net Gain** – Enhancing and enriching the site with planting both on land and habitats in the water for wildlife.
  Adding floating planting features would be a benefit and could mirror the re-wilding that has been done downstream at the Hogsmill tributary.
- **Natural Flood Defences:** Option 2 and 3 would help to improve seasonal flooding along this stretch of the river.

To provide further information on the options being explored, please see attached the following information:

- Sections and Plans of the proposals
- Existing Site Photos
- Site Location Plan
- Site Survey Plan
- River Wall Concept Study
- Eagle Brewery Design Brief - 230202_Eagle Brewery Wharf_Design Guidance.pdf
- Plan and decision notice of moorings approved in 1998

As part of the initial response we would like to understand the viability of any intervention to the river wall and principle terms and conditions in relation to working within the ownership of the EA and the River Thames. Please can you provide advice and comments on the outline proposals and if interventions to the river wall is something that the EA would consider in this location. We would also like to better understand any implications of construction to the river bed. Please can you forward any construction guidance and recommendations that we might need to consider if the EA would be supportive of interventions to the river wall in this location.

Please don't hesitate to contact us if you have any comments or questions. We look forward to hearing from you.

Kind regards

[redacted]

Associate

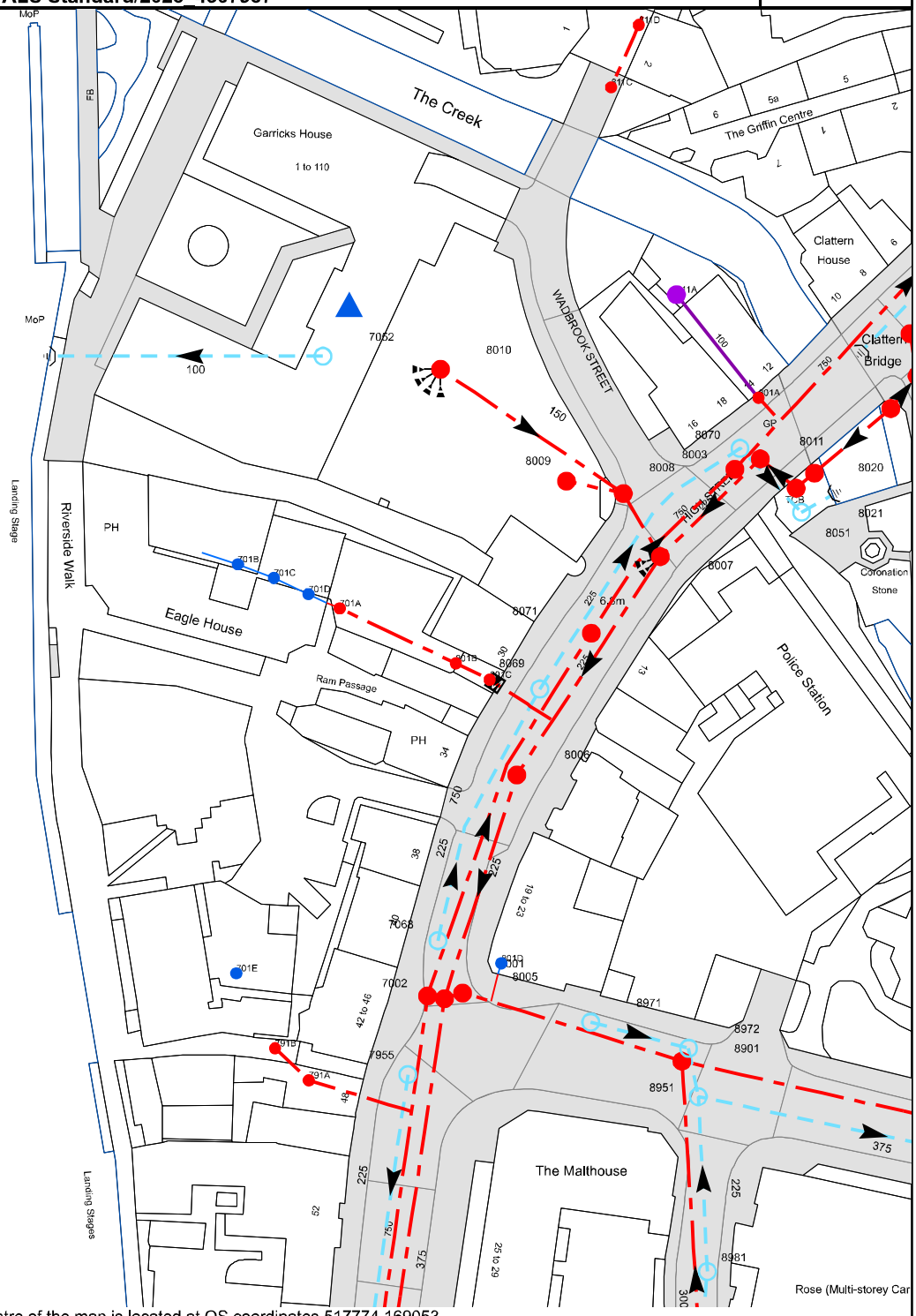
I choose to work flexibly and may therefore send emails outside of normal working hours.

There is no expectation for you to respond outside of your own working hours.

FARRER
HUXLEY

Appendix 4 –Thames Water Maps

Asset Location Search Sewer Map - ALS/ALS Standard/2023_4807937



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 517774,169053

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map (2020) with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
8901	7.32	n/a
8972	7.27	5.85
8971	7.18	6.03
8001	7.27	3.84
8005	n/a	n/a
801D	n/a	n/a
7068	7.12	5.67
8006	6.98	4.38
8069	6.84	5.45
801C	n/a	n/a
801B	n/a	n/a
8071	n/a	n/a
8007	6.84	4.57
8051	7.22	5.01
8008	6.77	5.12
8021	7.22	4.71
8951	7.62	5.87
8981	n/a	n/a
8009	6.94	6.23
8020	6.15	3.74
8003	7.11	3.34
8011	7.28	4.66
8070	7.22	5.08
8017	6.19	3.99
801A	n/a	n/a
8016	7.59	4.7
8010	6.96	6.1
7052	n/a	n/a
8183	7.61	4.7
811A	n/a	n/a
811C	n/a	n/a
811D	n/a	n/a
791A	n/a	n/a
7955	7.18	5.18
791B	n/a	n/a
7002	7.54	3.46
701E	n/a	n/a
701A	n/a	n/a
701D	n/a	n/a
701C	n/a	n/a
701B	n/a	n/a

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

Foul Sewer: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.

Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.

Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.

- Storm Sewer
- Sludge Sewer
- Foul Trunk Sewer
- Surface Trunk Sewer
- Combined Trunk Sewer
- Foul Rising Main
- Surface Water Rising Main
- Combined Rising Main
- Vacuum
- Thames Water Proposed
- Vent Pipe
- Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

- Sewer
- Culverted Watercourse
- Proposed
- Decommissioned Sewer
- Content of this drainage network is currently unknown
- Ownership of this drainage network is currently unknown

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

- Air Valve
- Meter
- Dam Chase
- Vent
- Fitting

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

- Ancillary
- Drop Pipe
- Control Valve
- Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

- Inlet
- Outfall
- Undefined End

Other Symbols

Symbols used on maps which do not fall under other general categories.

- Change of Characteristic Indicator
- Public / Private Pumping Station
- Invert Level
- Summit

Areas

Lines denoting areas of underground surveys, etc.

- Agreement
- Chamber
- Operational Site

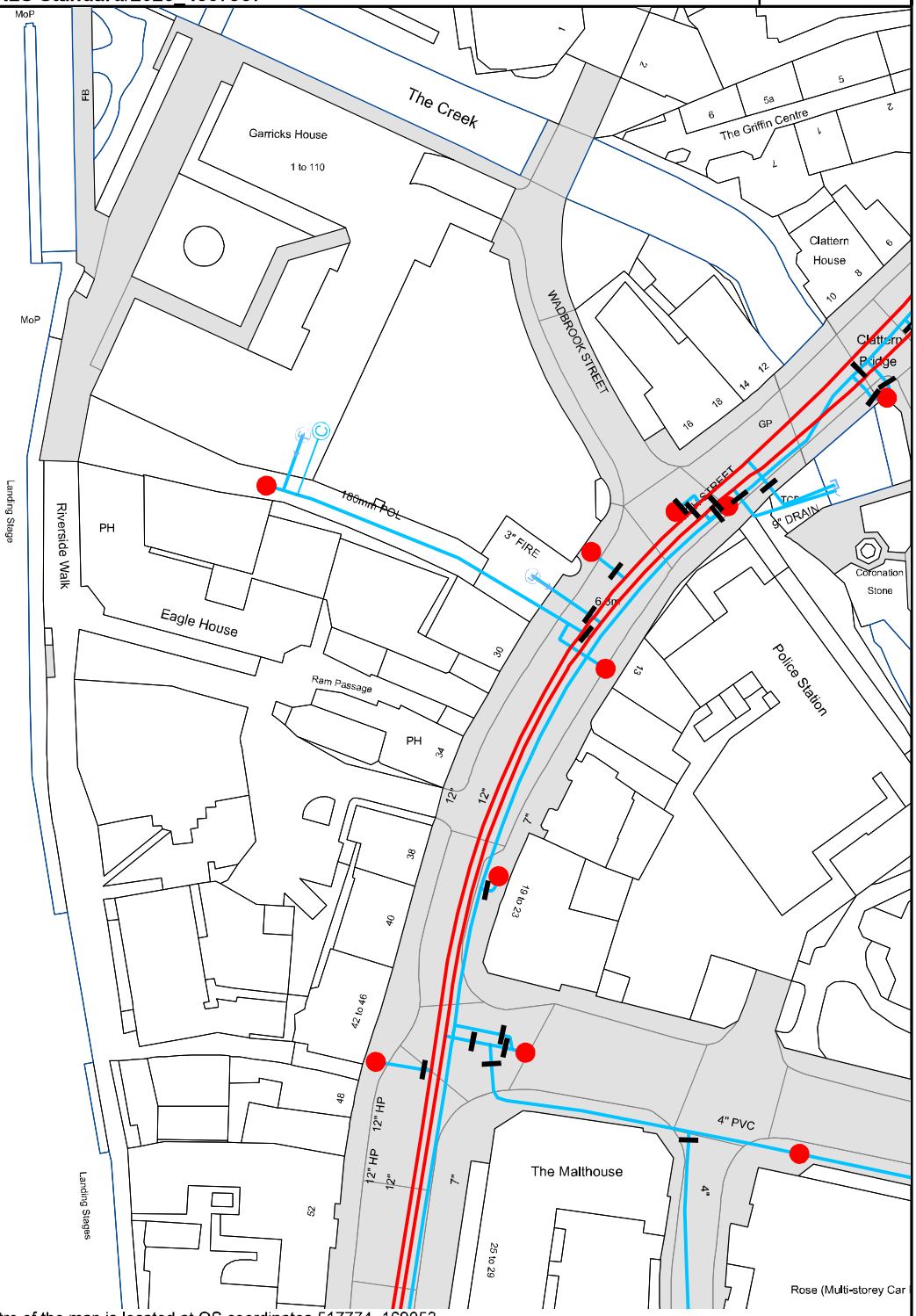
Ducts or Crossings

- Casement — Ducts may contain high voltage cables. Please check with Thames Water.
- Conduit Bridge
- Subway
- Tunnel

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.
2) All measurements on the plan are metric.
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
5) 'na' or '0' on a manhole indicates that data is unavailable.
6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters.
Text next to a manhole indicates the manhole reference number and should not be taken as a measurement.
If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.

Asset Location Search Water Map - ALS/ALS Standard/2023_4807937



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 517774, 169053.

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map (2020) with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

Asset Location Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

Distribution Main: The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.

Trunk Main: A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.

Supply Main: A supply main indicates that the water main is used as a supply for a single property or group of properties.

Fire Main: Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.

Metered Pipe: A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.

Transmission Tunnel: A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.

Proposed Main: A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 6")
600mm and bigger (24" plus)	1200mm (4')

Valves

- General Purpose Valve
- Air Valve
- Pressure Control Valve
- Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

Symbol indicating what happens at the end of a water main.

- Blank Flange
- Capped End
- Emptying Pit
- Undefined End
- Manifold
- Customer Supply
- Fire Supply

Operational Sites

- Booster Station
- Other
- Other (Proposed)
- Pumping Station
- Service Reservoir
- Shaft Inspection
- Treatment Works
- Unknown
- Water Tower

Other Symbols

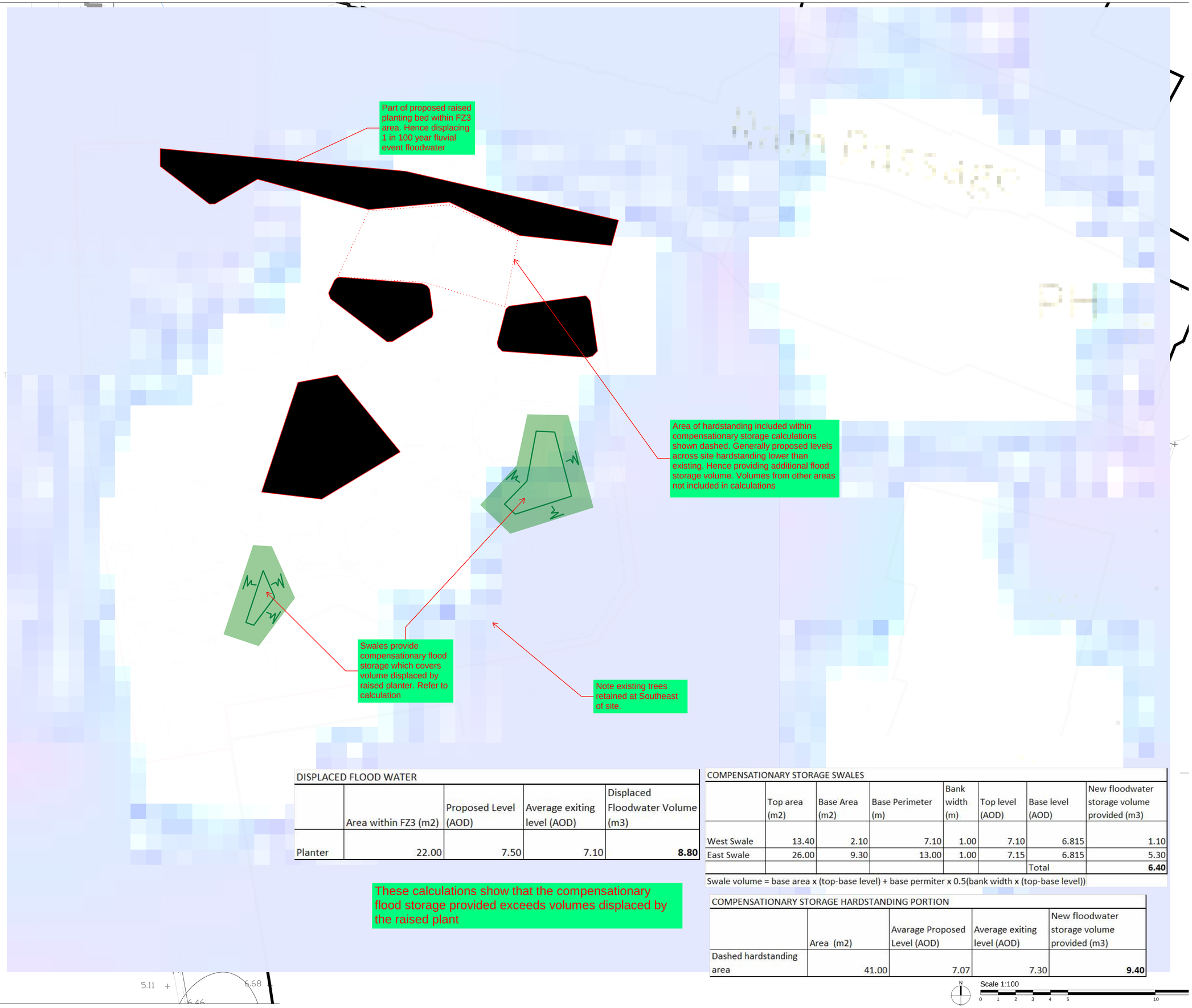
- Data Logger
- **Casement:** Ducts may contain high voltage cables. Please check with Thames Water.

Other Water Pipes (Not Operated or Maintained by Thames Water)

Other Water Company Main: Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.

Private Main: Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

Appendix 5 –Graphic Structures Drawings



DISPLACED FLOOD WATER

	Area within FZ3 (m2)	Proposed Level (AOD)	Average exiting level (AOD)	Displaced Floodwater Volume (m3)
Planter	22.00	7.50	7.10	**8.80**

These calculations show that the compensationary flood storage provided exceeds volumes displaced by the raised plant

COMPENSATIONARY STORAGE SWALES

	Top area (m2)	Base Area (m2)	Base Perimeter (m)	Bank width (m)	Top level (AOD)	Base level (AOD)	New floodwater storage volume provided (m3)
West Swale	13.40	2.10	7.10	1.00	7.10	6.815	1.10
East Swale	26.00	9.30	13.00	1.00	7.15	6.815	5.30
						Total	**6.40**

Swale volume = base area x (top-base level) + base permiter x 0.5(bank width x (top-base level))

COMPENSATIONARY STORAGE HARDSTANDING PORTION

	Area (m2)	Avarage Proposed Level (AOD)	Average exiting level (AOD)	New floodwater storage volume provided (m3)
Dashed hardstanding area	41.00	7.07	7.30	**9.40**

N

Scale 1:100

0 1 2 3 4 5 10

GRAPHIC STRUCTURES

2nd FLOOR, 60A WESTON STREET,
LONDON, SE1 3QJ
T: 0203 151 5821 E: info@graphicstructues.com

www.graphicstructures.com

General Notes:

1. This drawing is to be read in conjunction with all the relevant Architect's, Engineer's and specialists' drawings and specifications.
2. Do not scale from this drawing in either paper of digital form. Use written dimensions only. Setting out of grid by others.
3. Health & Safety: All specific drawing notes are to be read in conjunction with the project "Information Pack" and "Site Rules".
4. Existing underground services may be present and should be surveyed prior to excavation.

KEY

- **Site Boundary**
- **Additional potential site area** (To be costed separately)
- **Proposed Fall** (1:40)
- **Existing Fall** (1:40)
- **Proposed Levels** (+x.xx to FFL)
- **Existing Levels** (+XX.x.xx)
- **New Channel Drain**
- **Existing Drainage Gully**
- **Underground Surface Water**
- **Existing Trees**
- **Proposed Trees**

KEY

- EA FLOOD ZONE 1
- EA FLOOD ZONE 2
- EA FLOOD ZONE 3
- PROPOSED RAISED PLANTING BED
- PROPOSED SWALE
- PROPOSED RAISED TIMBER PLATFORM

Ver	Date	By	Chk	Amendment
03	14.02.24	ASB	ASB	Updated to suit latest layout
02	02.02.24	ASB	ASB	Updated to suit latest layout
01	11.08.23	ASB	ASB	First Issue

EAGLE BREWERY WHARF
ROYAL BOROUGH OF KINGSTON

Project & Client

FOR INFORMATION
NOT FOR CONSTRUCTION

Status

PROPOSED SITE
FLOOD MAP OVERLAY

SCALE: 1:100 @ A1

Scale

230150-GSL-XX-XX-SK-C-0002

Sketch No.

Status Code **---** Version **03**

GRAPHIC STRUCTURES

GRAPHIC STRUCTURES
2nd FLOOR, 60A WESTON STREET,
LONDON, SE1 3QJ
T: 0203 151 5821 E: info@graphicstructues.com

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General Notes:
1. This drawing is to be read in conjunction with all the relevant Architect's, Engineer's and specialists' drawings and specifications.
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3. Health & Safety: All specific drawing notes are to be read in conjunction with the project "Information Pack" and "Site Rules".
4. Existing underground services may be present and should be surveyed prior to excavation.

DRAINAGE KEY

EXISTING LEVEL (7.00)

EXISTING LEVEL ASSUMED (7.00*)

EXISTING OVERLAND FLOW ROUTE

SITE BOUNDARY

Proposals involve lowering the river wall adjacent the site to sit flush with existing site levels. From the existing river wall levels it is evident this will not increase flood risk as the upstream and downstream river wall levels are lower than the levels of the site itself.

Furthermore the proposals will not result in any change to existing fluvial flood mechanisms given a breach would occur both upstream and downstream of the site before river levels reach those of the site.

(6.36)

No existing wall. Flush edge to riverside

(TOW 7.02*)

(6.46)

(6.83)

(TOW 6.98*)

Existing steps down to pontoon

(6.53)

(TOW 6.90)

(6.79)

(TOW 7.62)

(6.96)

(7.44)

(6.95)

(7.29)

(7.11)

(TOW 7.56)

(7.17)

(7.02)

(6.87)

(TOW 7.54)

(7.12)

(7.20)

Existing step down in river wall height, approx 700mm

(TOW 7.54*)

(TOW 6.84*)

(6.53)

Ver	Date	By	Chk	Amendment
01	02.02.24	ASB	ASB	First Issue

EAGLE BREWERY WHARF
ROYAL BOROUGH OF KINGSTON

Project & Client

FOR INFORMATION
NOT FOR CONSTRUCTION

Status

RIVER WALL LEVELS

SCALE: NTS@A3

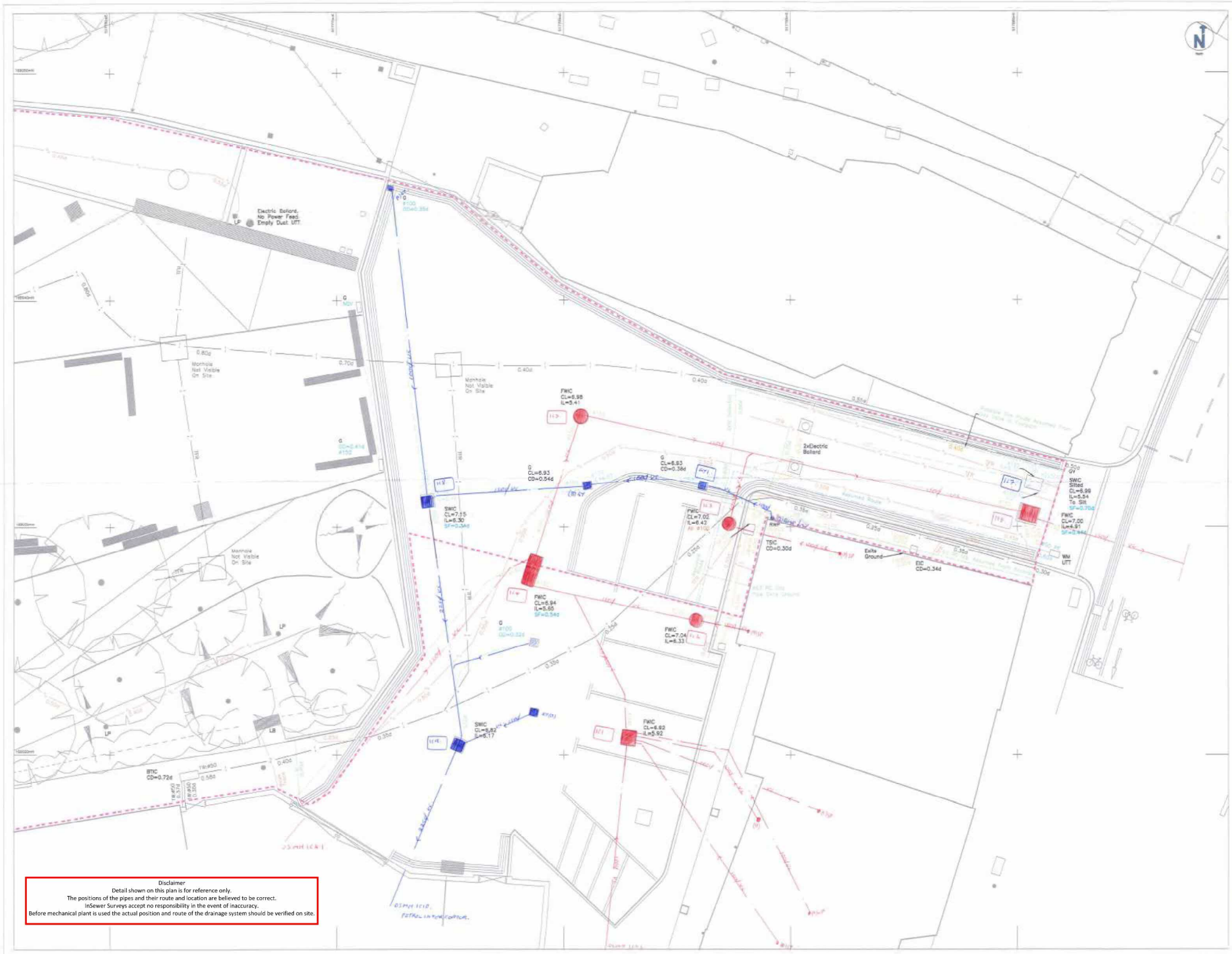
230150-GSL-XX-XX-SK-C-0004
Sketch No.

Status Code --- Version 01

GRAPHIC STRUCTURES

Appendix 6 –CCTV Survey Plans

Full document can be provided upon request.


Electric Bollard, No Power Feed. Empty Duct. UIT.
Manhole Not Visible On Site
Manhole Not Visible On Site
Manhole Not Visible On Site
2xElectric Bollard
FWIC CL=6.98 IL=5.41
SWIC CL=7.15 IL=5.30
FWIC CL=6.94 IL=5.65
SWIC CL=6.82 IL=6.17
FWIC CL=7.02 IL=6.42
FWIC CL=7.04 IL=6.33
FWIC CL=6.92 IL=5.92
SWIC Silted CL=6.99 IL=5.54
FWIC CL=7.00 IL=4.91
TSIC CD=0.30d
EIC CD=0.34d
BTIC CD=0.72d
Disclaimer
Detail shown on this plan is for reference only.
The positions of the pipes and their route and location are believed to be correct.
InSewer Surveys accept no responsibility in the event of inaccuracy.
Before mechanical plant is used the actual position and route of the drainage system should be verified on site.
SPATIAL DIMENSIONS
Royal Borough of Kingston Upon Thames
Utility Survey
Eagle Brewery Wharf, Kingston upon Thames, Surrey KT1 1HL

Exits Wall Into River

G Full Of Silt

SWIC CL=6.47 IL=5.76

BTIC CD=0.50d

JB

G In Pub Garden

No Access

G Full Of Silt

Exits Wall Into River

SWIC CL=6.94 IL=5.79

EIC CD=0.28d

LP

BTIC CD=0.48d

BTIC CD=0.50d Approximate Position

Electric Bollard No Power Feed. Empty Duct UTT

Manhole Not Visible On Site

G NSV

SWIC CL=7.13 IL=6.17

SWIC CL=7.02 IL=6.09

EIC CD=0.41d

G

BTIC CD=0.72d

Manhole Not Visible On Site

LB

Topographical Survey provided by the client. Spatial Dimensions has not verified this information and cannot guarantee any form of accuracy.

Scale in Metres 1:50 @ A0

Disclaimer
Detail shown on this plan is for reference only.
The positions of the pipes and their route and location are believed to be correct.
InSewer Surveys accept no responsibility in the event of inaccuracy.
Before mechanical plant is used the actual position and route of the drainage system should be verified on site.

SPATIAL DIMENSIONS

Client: Royal Borough of Kingston Upon Thames

Drawing Title: Utility Survey

Project: Eagle Brewery Wharf, Kingston upon Thames, Surrey KT1 1HL

Drawn by S.D. Checked S.L. Status FINAL Rev.

Date of Survey 14/06/23 SD Ref No. 23203_01 Sheet 01 of 02

Appendix 7 – Desktop Study Extract

Full document can be provided upon request.

Southern Testing
Environmental & Geotechnical

ST Consult
Environmental & Geotechnical

Desk Study Report

Project Name: Eagle Brewery Wharf

Location: off High Street, Kingston upon Thames, KT1 1HH

Client: Royal Borough of Kingston upon Thames

Project ID: J15525

Report Date: 05 September 2023

Report Issue: 1

SUMMARY

The site, which extends to 0.14ha comprises a public amenity space. It is proposed to renovate the area.

Geological records indicate the site to be underlain by Alluvium and Langley Silt Member over London Clay.

A Desk Study was carried out and indicates that the site has a history of industrial use as a brewery followed by a coal yard and wharf, and later as temporary offices.

An Unexploded Ordnance (UXO) risk assessment was not included in our brief.

Pending the final design details for the site, an intrusive investigation may be required to investigate the nature and extent of potential contamination beneath the site. The presence of contamination may affect the classification of waste soils, or the potential for their re-use.

The Desk Study was conducted and this report has been prepared for the sole internal use and reliance of Royal Borough of Kingston upon Thames and their appointed Engineers. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Southern Testing Laboratories Ltd. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The findings and opinions conveyed via this investigation report are based on information obtained from a variety of sources as detailed within this report, and which Southern Testing Laboratories Ltd. believes are reliable. Nevertheless, Southern Testing Laboratories Ltd. cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

The recommendations contained in this report are made in respect of the particular context of the investigation as described in the report and may not be appropriate to alternative development schemes. This report should be considered in its entirety and Southern Testing Laboratories Ltd accepts no responsibility for and excludes liability in respect of any omission or alteration made by others, and any use of the report for any purpose other than that for which it was produced.

Author	G J Dibben BEng (Hons)	[redacted]
	S K Toms BSc (Hons) MSc MIEnvSc PIEMA	
Check / Review	P J Sugden BSc MSc FGS	

For and on behalf of Southern Testing Laboratories Limited

DOCUMENT HISTORY AND STATUS

Issue No.	Date	Purpose or Status	Author	Check / Review
1	5.09.2023	Desk Study Report	GD/SKT	PJS

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9 Conceptual Site Model 9
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Site Plans

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Phase 1 Desk Study – Historical Mapping

APPENDIX D
Phase 1 Desk Study – Environmental Database Search Results and Mapping

A INTRODUCTION

1 Authority

Our authority for carrying out this work is contained in our project order form from Paul Cohoon of Royal Borough of Kingston upon Thames dated 26th July 2023 (Q230894).

2 Location

The site is located on the eastern bank of the River Thames; approximately 0.5km south west of Kingston Railway Station. The approximate National Grid Reference of the site is TQ 17757 69035. The site location is indicated on Figure 1 within Appendix A.

3 Proposed Construction

It is proposed to renovate the existing area of public open space. At this stage the final design is unknown.

For the purposes of the contamination risk assessment, the proposed development land use is classified as Public Open Space (park), CLEA Model Ref [1] / C4SL Report Ref [2].

The gas sensitivity of the proposed development is rated as Low CIRIA C665 Ref [3].

4 Object

This is a Phase 1 Desk Study and Walkover.

The object of the investigation was to assess the likely nature and extent of soil, groundwater and soil gas contamination on the site.

5 Scope

This report presents our Desk Study findings, and our interpretation of these data.

A UXO risk assessment was not requested within our brief for the investigation.

The Desk Study has been completed with reference to BS 5930 Ref [4] and BS 10175 Ref [5].

The findings and opinions conveyed via this Desk Study report are based on information obtained from a variety of sources as detailed within this report, and which Southern Testing Laboratories Ltd. believes are reliable. Nevertheless, Southern Testing Laboratories Ltd. cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

The Desk Study was conducted and this report has been prepared for the sole internal use and reliance of Royal Borough of Kingston upon Thames and their appointed Engineers. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Southern Testing Laboratories Ltd. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The recommendations contained in this report are made in respect of the particular context of the investigation as described in the report and may not be appropriate to alternative development schemes. This report should be considered in its entirety and Southern Testing Laboratories Ltd accepts no responsibility for and excludes liability in respect of any omission or alteration made by others, and any use of the report for any purpose other than that for which it was produced.

B DESK STUDY AND WALKOVER SURVEY

6 Desk Study

A Desk Study has been carried out. Reference has been made to the following information sources.

- Online Geological Maps Ref [6] & Ref [7]
- Aerial Photographs
- Historical Ordnance Survey Maps
- Environmental Databases
- BGS Online Historical Borehole Records Ref [8]
- Search on Local Authority Planning Portal for planning history
- UK Radon Ref [9] and BRE Radon Ref [10]
- Google Earth (for old aerial photographs)

The environmental databases search report compiled for this Desk Study contains site-specific environmental data drawn from data sets that comprise publicly available information together with data from third parties, some of which is under review. Accordingly, Southern Testing Laboratories Limited does not warrant its accuracy, reliability or completeness.

The full report is included in Appendix C and D, a summary of the salient features is included in the following sections of this report.

6.1 Geology

The British Geological Survey Map No 270 (South London, 1998) indicates that the site geology consists of Alluvium over Langley Silt Member over London Clay.

6.1.1 Alluvium

Alluvium is a geologically recent deposit found in association with watercourses. It is typically soft to firm normally consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel. A stronger, desiccated surface zone may be present.

Running sand or silt may be encountered. Excavations are often unstable. Bottom heave may be encountered in clayey soils below 3 m.

It is inherently variable and rapid lateral transitions in soil type should be anticipated.

6.1.2 Langley Silt Member

The Langley Silt Member is a Brickearth (loess deposit); a recent deposit which is so called as it is suited to brick manufacture. It is predominantly an aeolian deposit; formed during cold, dry climatic conditions. There is evidence that brickearth has been reworked as part of ‘sheet flooding’ which helped incorporate flint gravels into the deposit. Brickearth consists mainly of ferruginous silty clay, which is often sandy and may contain some finely divided chalk, scattered flints and gravelly seams, or other locally derived material. It is usually poorly consolidated and may contain numerous hollow root tubes and worm burrows.

6.1.3 London Clay

The London Clay mainly comprises blue-grey or grey-brown fissured clay and silty clay, which weathers to brown near the surface. It commonly contains thin courses of carbonate concretions ('cementstone nodules'), selenite crystals and disseminated pyrite. It also includes a few thin beds of shells and fine sand partings or pockets of sand, which commonly increase towards the base and towards the top of the formation.

Although slopes will stand in the clay at steep angles in the short term, the long-term stable slope angle is about 7o for grassed, or cleared slopes, and a few degrees more for wooded slopes.

This formation is known to contain pyrite.

6.2 Historical Borehole Records

A search of previous exploratory hole records both from the online British Geological Survey database (BGS) [8] and Southern Testing in-house records, revealed four records within the near vicinity of this site, three from the BGS[1] source and one from the STL source.

BH Reference	Final Depth (mbgl)	Distance from site (m) & Direction	Remarks
TQ16NE10	152	On site	2.44m Made Ground over 1.22m gravel over 97.23m clays over 6.1m sands over 45m chalk and flint. Groundwater level was not recorded in this borehole.
TQ16NE76	7.61	58 south	3.35m sand over 3.36m sand and gravel over 0.91m clays with groundwater encountered at 3.66m.
STL 1308	8.00	160 north	1.70m fill over 1.0m gravel over 0.2m silt over 2.6m sand and gravel over 2.5m clay. Groundwater was encountered at 2.30m.
TQ16NE102	15.10	180 east	0.1m blacktop over 2.2m made ground over 2.5m sandy gravel over 9.0m silty clay. Groundwater was not encountered.

6.3 Geological Hazards and Mining Activities

Data from various sources relating to potential geological hazards at the site are summarized below. The Hazard Potentials listed for the BGS data are as presented in the Envirocheck report, derived from various generic BGS sources, **which are not considered as site-specific**. It is important that this information is considered in context of the actual site topography, ground conditions encountered during future investigation, and development proposals.

Data Source	Hazard	Hazard Potential to Site	Remarks
BGS	Potential for Collapsible Ground Stability Hazard	Very Low	
	Potential for Compressible Ground Stability Hazard	High	
	Potential for Ground Dissolution Stability Hazard	None	
	Potential for Landslide Ground Stability Hazard	Very Low	
	Potential for Running Sand Ground Stability Hazard	Low	

[1] BGS records accessed 28th July 2023

Data Source	Hazard	Hazard Potential to Site	Remarks
	Potential for Swelling or Shrinkage Clay Ground Stability Hazard	Moderate	
	Shallow Mining Hazard	None	
	BGS recorded mineral site	None	
ARUP [Ref [11]]	Mining Instability	None	None identified within 5km of the site.
CCS [Ref [12]] KURG [Ref [13]]	Underground Openings	Low	Nearest 560m SE localised subsidence.
PBA	Natural & Mining Cavities	None	

6.4 Radon Risk

With reference to the Envirocheck report, UK Radon Ref [9] and BRE Radon Ref [10] guidance: no radon protection is required on this site.

6.5 Hydrology and Hydrogeology

Data from the Environment Agency and other information relating to controlled waters is summarised below.

Data		Remarks	Possible Hazard to/from Site (Y/ N)
Aquifer Designation	Superficial Deposits	Secondary Undifferentiated (Alluvium)	Y
	Bedrock	Unproductive Strata (London Clay)	N
Groundwater Vulnerability		Medium vulnerability Secondary Aquifer	Y
Abstractions	Surface Water	Nearest 601m N Heat pump	N
	Groundwater	Nearest 655m N Pollution remediation	N
Source Protection Zones		None identified	N
Surface Watercourses		River Thames adjacent to western site boundary	Y
Groundwater Flood Risk		The site is not shown within an area mapped as being at risk.	N
Surface Water Flood Risk*		The site is shown adjacent to an area mapped as being at low risk.	Y
Marine / Fluvial Flood Risk*		The site is shown within an area mapped as being at risk of Extreme Flooding (Zone 3).	Y
Reservoir Flood Risk*		The site is not shown within/adjacent to an area mapped as being at risk.	N

Data	Remarks	Possible Hazard to/from Site (Y/ N)
Discharge Consents	121m SW 1962 Effluent discharge into River Thames (revoked)	N
	219m S 1966 Cooling water into soakaway (revoked)	N
	221m E 2019 Storm sewage into Hogsmill River (revoked)	N
	370m E 1989 Other matter into Hogsmill River (revoked)	N
	402m S 1989 Treated sewage into River Thames	N
	430m N 1982 Other matter into River Thames (revoked)	N
	462m W 1995 Sewage onto land/gravel	N

** These sections are provided for information only, this report does not constitute a formal flood risk assessment and specialist advice should be sought in relation to potential flooding issues.*

The River Thames is located adjacent to the western boundary of the site; flowing northwards.

The site is recorded to be located on Alluvium which is classified as a Medium Vulnerability Secondary Undifferentiated Aquifer. The underlying Langley Silt and London Clay bedrock is of low permeability, and is classified as unproductive strata. The shallow groundwater (within the Alluvium/Langley Silt) will be at potential risk from mobile contaminants arising from both an onsite source, and through migration from off-site sources. Groundwater flow is anticipated to be in a westerly/north-westerly direction across the site, towards the River Thames. Therefore, the site will be at risk from the migration of mobile contaminants located to the south and east.

The banks of the River Thames are canalised and therefore this will prevent the lateral migration of any potentially mobile contamination into the River Thames. The site is mapped within an area at risk from extreme flooding. Appropriate flood measures should therefore be considered for any future proposals on this site.

6.6 Historical Ordnance Survey Maps

Copy extracts of historical Ordnance Survey plans dating from 1850 to 2023 were obtained and are presented in Appendix C. A summary of the salient features is presented below.

The 1850 map shows that the site was situated within an urban area on the eastern bank of the River Thames. The map does not specifically identify the layout of buildings on site or in the vicinity. In 1868, a brewery is mapped onsite with several associated buildings. The site is mapped as a brewery until 1934. Aerial photography from Google Earth shows it is present in 1945. Between 1956 and 1969, the site is mapped as a coal yard and wharf. The site is then mapped as public amenity space as it is in 2023.

The surrounding area has a similar history of use as the site, comprising industrial/commercial land uses, which were gradually replaced by more commercial premises.

Surrounding land uses shown on the mapping include a saw mill approximately 40m to the south of the site in 1868, with a distillery approximately 60m to the north east and a tannery approximately 200m to the north.

The saw mill is mapped until 1898, then mapped as a dry cleaners in 1907. A gantry crane is mapped in place of the buildings between 1956 and 1969. Buildings are mapped in this location from 1986 onwards.

The distillery building is mapped until 1956. From 1969 onwards, it is mapped as a police station.

The tannery 226m to the north of the site is mapped until 1956. It is then shown to be a car park between 1969 and 1991. Aerial photography from 1999 shows it to be a series of commercial buildings. A cinema is mapped approximately 50m north of the site between 1934 and 1969. Between 1986 and 1991 it is mapped as a car park. Aerial photography from 1999 shows a construction site. As of 2023, it is a theatre.

6.7 Environmental Databases

Data Source	Distance (m)	Direction	Details	Possible Hazard to Site (Y/N)
Historical Industrial Land Use (within 500m of the site)	0	-	1899 – 1949 Brewing and Malting	Y
	0	-	1907 Tank associated with brewery	N
	45	SE	1907 Gas (furnace)	Y
	53	S	1898 Sawmill	Y
	70	NE	1907 Gas (distillery)	N
	88	N	1907 Gas (garage)	N
	90	NE	1907 Fuel storage (petrol)	N
	93	SE	1907 Gas (garage)	Y
	226	N	1899 Leather tanning	N
	344	E	1871 Military land	N
	376	N	1987 Sawmill	N
	380	N	1938 – 1987 Transport	N
	438	N	1987 Transport	N
Current Industrial Land Use (within 500m of the site)	127	E	Waste disposal services	N
	226	NE	Perfume supplier	N
	232	E	Food products	N
	399	N	Distillery	N
	419	NE	Perfume supplier	N
	447	E	Stained glass	N
	455	N	Cosmetic manufacture	N
	458	N	Cladding supplier	N
Current and Historical Landfills	-	-	None identified within 1km of the site	N
Potentially Infilled Land (within 500m of the site)	361	NW	1872 Unknown infilled water body	N
	374	SE	1920 Unknown infilled water body	N
	379	NW	1920 Unknown infilled water body	N
Fuel Sites (within 1km of the site)	239	S	Garage (obsolete)	N
	906	S	Garage (obsolete)	N
Pollution Incidents (within 250m of the site)	28	SE	1997 Unknown sewage	N
	61	NE	Unknown oils	N
	83	NE	1998 Unknown oils	N
	99	E	1990 Unknown sewage	N
	104	E	1991 Unknown chemicals	N
	123	S	1998 General pollutant	N
	133	S	1992 Unknown oils	N
	142	N	1994 Miscellaneous	N
	147	N	Unknown oils	N
	197	N	1991 Unknown oils	N
IPPC/LAPPC Authorisations (within 1km of the site)	605	NE	Dry cleaning	N
	632	NW	Dry cleaning	N
	876	S	Waste oil burners	N

Data Source	Distance (m)	Direction	Details	Possible Hazard to Site (Y/N)
Hazardous Substances Consents (within 1km of the site)	765	NE	Nearest: Flammable gas	N
Sensitive Land Uses (within 250m of the site)	0 238	- W	Nitrate vulnerable zone Site of Special Scientific Interest	N N

The site has had a history of use as a brewery, followed by use as a coal yard. This presents a potential contamination risk within the underlying Made Ground and groundwater. It is possible that contaminants from potential historical sources upstream from the site (to the south and east), such as the saw mill, may have migrated onto the site.

The current land-uses identified are unlikely to present a contamination risk to the site, as they consist primarily of retail and commercial premises. Much of the surrounding area comprises roads and hard standings, which are likely to have engineered drainage features. Surface water and groundwater migration is therefore considered to be unlikely.

6.8 Planning Application History

The following applications for the site are listed on the Royal Borough of Kingston upon Thames Council's planning website[2].

https://publicaccess.kingston.gov.uk/online-applications/spatialDisplay.do?action=display&searchType=Application

Application Number	Application Date	Proposal Details / Comments	Decision
19/03136/TCA	13/12/2019	Adjacent to northern boundary. Felling of maple tree	No objection
18/12911/FUL	29/10/2018	Adjacent to northern boundary. Change of use to retail unit.	Granted
19/01239/LDP	10/05/2019	Adjacent to northern boundary. Hip to gable and rear dormer roof extension with front and side roof lights for loft conversion.	Granted
19/01248/LDP	13/05/2019	Adjacent to northern boundary. Change of use to estate agent	Granted
21/01388/LBC	04/05/2021	Adjacent to eastern boundary. Installation of raising bollards at entrance of car park.	Withdrawn
21/01387/LBC	04/05/2021	Adjacent to eastern boundary. Installation of raising bollards at entrance of car park.	Granted
21/01134/CREG3	13/04/2021	Adjacent to eastern boundary. Installation of temporary gate at entrance to car park.	Withdrawn
21/01135/LBC	13/04/2021	Adjacent to eastern boundary. Installation of temporary gate at entrance to car park.	Withdrawn
21/01458/FUL	04/05/2021	Adjacent to southern boundary. Replacement of existing security barrier with automatic gates.	Granted

[2] https://publicaccess.kingston.gov.uk/online-applications/spatialDisplay.do?action=display&searchType=Application - accessed 2nd August 2023

None of the applications identified above are considered to present a contamination rise. Therefore the risk to the site is considered to be negligible.

6.9 Ground Gas Risk

There are no historical or active landfill sites recorded within 1km of the site. Three areas of historical potentially backfilled ground are shown in the environmental database. Two of these are located on the western side of the River Thames, and can therefore be discounted as a potential risk to the site. The other area is located 374m to the south-east of the site. From the historical mapping this appears to relate to a ford which crossed Denmark Road. This can also be discounted as a potential source of ground gases; due to its nature and distance from the site.

The site is mapped as underlain by Alluvium, with Made Ground also likely to be present given its long history of development. However, neither of these potential sources of ground gases are considered to be significant.

Therefore, the risk to the site from the generation and migration of ground gases is considered to be low. Given the sites proposed redevelopment, no further work with respect to ground gases is considered to be required.

6.10 UXO Risk Management

The agreed scope of work did not allow for either a preliminary or detailed UXO risk assessment.

6.11 Other Information Sources

A plaque was found on the quayside wall during the Walkover Survey. This denoted the history of the site, including its previous land uses. The brewery was founded in the early 19th century and remained in use until around 1914. After this point it was used for storage until the late 1920s, when the site was used as a coal wharf. A relief road was proposed on site in 1971, but was later withdrawn. The site was used for temporary council offices before being used as open space, which was renovated in 2010. A photograph of the plaque can be found in Appendix B.

7 Site Walkover Survey

A walkover survey was carried out on 11th August 2023.

7.1 General Site Description and Boundaries

The site comprised a paved road to the east and a public amenity space to the west. A footpath ran north/south through the western end of the site, parallel to the River Thames.

The site was accessed from the High Street, via Ram Passage. There was also pedestrian access in the north western and south western corners of the site via the aforementioned footpath.

The northern boundary was marked by the brick walls of the outside seating area associated with the adjacent café and a pub. The western boundary was marked by the quayside wall and moorings on the River Thames. The southern boundaries are marked by a three-storey residential building and wall surrounding associated parking and an adjacent shop. The western boundaries are marked by double yellow lines associated with the car park adjacent to the south west and the pavement on High Street.

7.2 Topography and Drainage

The site was generally flat, with the public amenity area being slightly raised. The footpaths sloped away from the site to the north and south.

Engineered drainage features were identified adjacent to the River Thames, and in the car park adjacent to the south-east.

7.3 Vegetation

An area of grass with birch trees and various bushes was identified in the south western area of the site. Raised planters were also located in the west and northwest.

Two more trees (alder and ash) were identified growing into the quayside wall on the south western boundary of the site.

7.4 Buildings and Land Use on Site and Nearby

The site itself comprised a paved road to the east and public amenity space to the west comprising benches, litter bins, raised planters and associated hard standings. Moorings with pontoons and house boats were situated on the River Thames, adjacent to the western boundary. A café with associated outside seating, and a pub were situated to the north-west and north-east of the site respectively. The High Street was adjacent to the site to the east. Adjacent to the site to the south-west was a shop and associated car park. Flats were adjacent to the site to the south.

7.5 Inaccessible Site Areas

It was not possible to view the quayside wall in detail as the pontoons adjacent to the west of the site were not accessible.

7.6 Site Photographs

A series of photographs showing the site and associated features are included in Appendix B.

C PRELIMINARY SITE MODELS

8 Conceptual Engineering Geological Ground Model

From the Desk Study information and walkover undertaken at this site the following conceptual ground model has been formulated.

Data Source	Comments
Geology	Historical borehole records suggest that the soils underlying the site comprise Made Ground over Alluvium over London Clay. The Made Ground is anticipated to be 2-3m in thick, the sands/gravels 1-2m thick and the London Clay 97-98m thick.
Former Site Use	The site has had a history of industrial use in the form of a brewery followed by a coal wharf. Contaminants associated with these land uses may still be present in the underlying soil. Underground structures including old foundations and basements may be encountered during any future intrusive works.
Groundwater	The site is not mapped within an area at risk of groundwater flooding. Shallow groundwater should however be anticipated to be encountered as the site is adjacent to the River Thames.
Surface Water	The site is mapped within an area at low risk from surface water flooding. Appropriate flood protection measures should therefore be considered for any future proposals on this site.

9 Conceptual Site Model

In the context of this report, the conceptual model summarises the potential pollutant linkages identified for the site and forms the basis of the risk assessment for the site. The preliminary model comprises the potential sources of contamination, receptors that could be harmed and exposure pathways identified from the Desk Study and walkover survey. These potential linkages form the basis upon which the investigation is designed and reported.

9.1 Potential Sources of Contamination

The site has a history of industrial use and is located within an urban area.

A few potentially contaminative uses have been identified, both on site and in the locality.

9.1.1 On-Site Sources

Potential Source	Potential Contaminants	Likely hazard to Site
Made Ground resulting from historic uses of the site as a Brewery and later a Coal Yard/Wharf	Asbestos, Polyaromatic hydrocarbons (PAHs), metals and petroleum hydrocarbons	Low to moderate

The site has a long history of development, as a brewery and later as a coal yard. It is likely that this would have led to changes in the layout of the buildings on site over time, and consequently the deposition of Made Ground on the site. Such material is likely to contain a range of contaminants, most typically heavy metals and polyaromatic hydrocarbons – particularly given the storage and use of coal on the site.

The brewing process would have require heat, which is likely to have been generated by coal or coke fired boilers, potentially with oil fired boilers at a later date.

There is also a possibility that the buildings, particularly during later phases of development, may have contained asbestos containing materials.

The date at which the site was redeveloped as an area of public open space is uncertain, but appears to have been in the 1980's/1990's, with renovations taking place in 2010. It is assumed that any gross contamination would have been removed, particularly during the later renovation works.

9.1.2 Off-Site Sources

The site may be impacted by contamination migrating from beyond the site boundary. The following potential off-site sources have been identified.

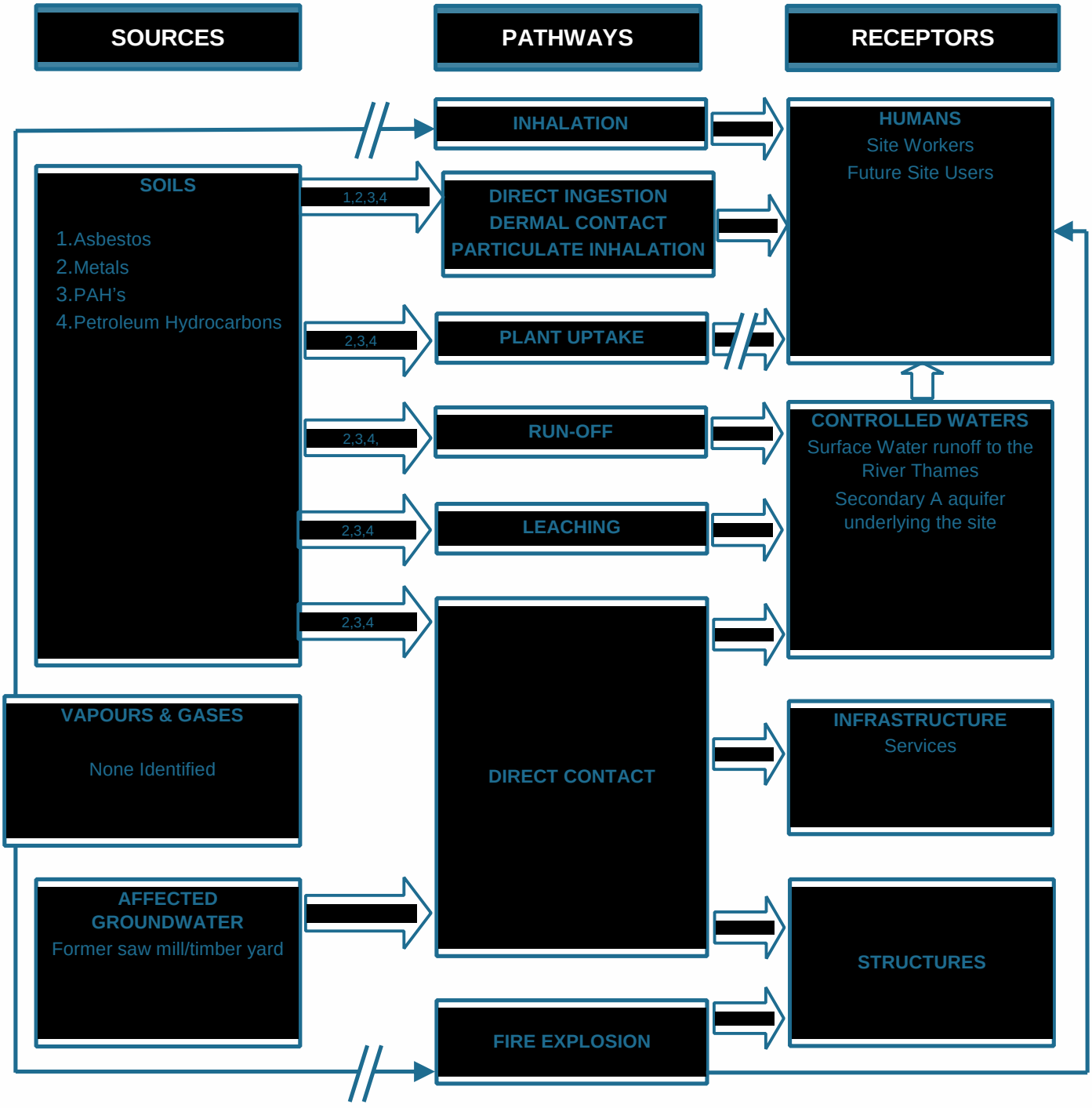
Potential Source	Distance from Site Boundary	Direction	Potential Contaminants	Likely hazard to Site
Car Park	0m	SE	Metals, PAH, BTEX, Petroleum Hydrocarbons	Negligible
Former sawmill/timber yard	20m	S	metals, fuels, preservatives, acids/alkalis	Very Low

The nearest potential source of contamination is the car park adjacent to the site to the south east. This comprised a paved surface with associated drainage. It is therefore likely any surface water run-off will flow into the associated drains and not onto site. Contamination from this source is therefore considered to be negligible.

The former timber yard presents a potential, but very low, risk of contamination via migration of groundwater. Contaminants associated with this former land use may still be present on site within the Made Ground.

9.2 Pollutant Linkages and Conceptual Site Model Summary

The following diagram shows the potential pollutant linkages identified for the site and summarises the preliminary conceptual model:



// Denotes potential pollutant linkage not complete.

10 Conclusions and Recommendations

The site has a history of industrial land use in the form of a brewery followed by a coal yard/wharf and offices, prior to its current redevelopment as an area of public open space. It is proposed to renovate the area, which will retain its use as an area of public open space.

Contaminants associated with the historical site uses may still be present in the underlying Made Ground. Migration of contaminated groundwater from off-site sources is also considered possible, but considered to pose a very low risk.

Where the site is to remain under hardcover, this will break the potential pollutant linkage between any potentially contaminated material and future site users. However, if the new site layout includes areas of soft landscaping, it is recommended that an intrusive investigation is undertaken in order to assess the nature and extent of any potential contamination beneath the site.